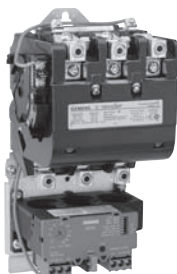


Class 14



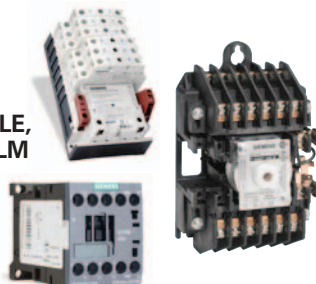
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Class LE, LC, CLM



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NEMA & General Purpose Control

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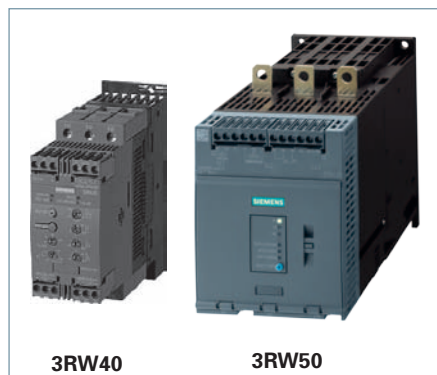
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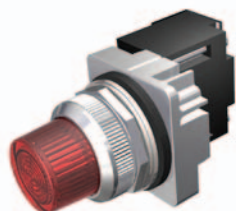
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Control Products

NEMA & General Purpose Controls

Controls Express

Starters at the speed you need

Siemens NEMA starters, pump panels and lighting contactors are known for their dependability and ruggedness, and now they are delivered faster than ever before through Controls Express.

Controls Express puts our most popular products in your hands faster, because we stock more products across our entire product line. Our Class 14 NEMA starters, Class 87 pump panels, and LC & LE lighting contactors are now available in stock for immediate or next day shipping. In addition, thousands of our open and enclosed starters can now be built-to-order and shipped in 1-3 days through Controls Express.

Siemens is committed to making your job easier by stocking more products, offering more configurations, expediting factory modifications, and delivering industry leading turnaround times on our most requested control products.

To quickly identify products that are part of Controls Express and therefore available in 3 days or less, applicable catalog numbers have a light blue background. See the appropriate selection pages listed below.

Class 14 NEMA Starters see pages 17-15 & 17-16

Class 17 NEMA Combination Starters see pages 17-18 & 17-20. For quick ship versions with factory modifications see on-line at www.usa.siemens.com/controls-express

Class 18 NEMA Combination Starters see page 17-22.

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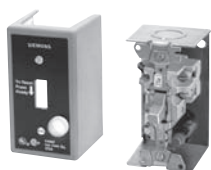
Controls Express lead times apply to orders of up to 6 units of the Class 14, Class 87, LC, or LE. Please contact customer service at 1-866-663-7324 for lead times of larger order volumes.

For more information on Controls Express and a complete list of available products, please visit our website at www.usa.siemens.com/controls-express

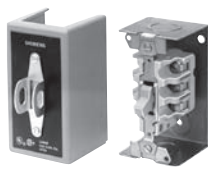
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NEMA & General Purpose Controls

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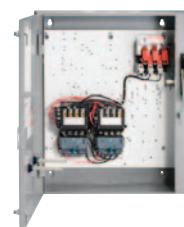
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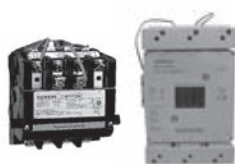
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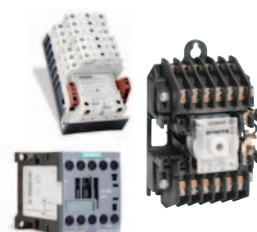
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NEMA & General
Purpose Control17
CONTROL
PRODUCTS

Manual Control

Fractional HP Starters, Class SMF

General

Class SMF

Class SMF fractional horsepower starters provide overload protection as well as manual on-off control for small horsepower motors in a variety of industrial and commercial applications. Available in one or two pole versions, these devices are suitable for use with AC single phase motors up to 1 HP. Two pole starters can also be used with DC motors up to $\frac{3}{4}$ HP. Typical applications include fans, conveyors, pumps, and small machine tools.

Continuous Current Rating

16 amperes.

Overload Trip Assembly

Motor protection is provided by a Class SMFH heater element which must be installed before the starter will operate.

Two Speed Starters

Two speed manual starters are designed for control of small single phase AC motors having separate windings for high and low speed operation. Two toggle operated starters are used, with overload protection included for each motor winding. Surface mounting devices, and those with a gray flush plate, utilize a mechanical interlock which allows direct control of the motor by means of the toggle operators.

Enclosures

Class SMF, NEMA Type 1 surface mounting enclosures are sheet steel with a thermo-plastic wrap-around cover for convenience in wiring. The NEMA Type 1 enclosure is also available in an oversized version which allows more wiring space. A zinc alloy die casting is used for NEMA Type 4 enclosures.

Pilot Lights

Red or green neon pilot light units are available for flush mounting plates, NEMA Type 1 enclosures, and NEMA Type 4 enclosures. Pilot lights may be either factory or field installed. (For starters that contain a pilot light, a Red light is standard. For a Green pilot light add "G" to the end of the catalog number.)

Terminals

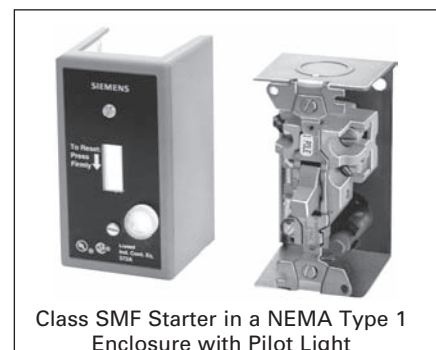
Binding head screw type terminals are suitable for #10 or smaller copper wire, and are accessible from the front. All terminals are clearly marked.

Mounting

Open types without a pilot light fit standard single gang switch boxes, and can be used with any cover plate having a standard toggle cutout. Single-unit flush mounting types, including those with pilot lights, are suitable for wall mounting in a standard switch box or for machine cavity mounting without a box.

Operation

Available with toggle handle or with removable key type operator to discourage unauthorized operation.



Class SMF Starter in a NEMA Type 1 Enclosure with Pilot Light

Emergency Off Actuator

A toggle operator extender is available for Class SMF, NEMA Type 1 surface mounted units. The extender has a red vinyl button that provides a fast and easy method for locating and switching the device's toggle operator into the OFF position. The Emergency Off Actuator is available in kit form only for field installation.

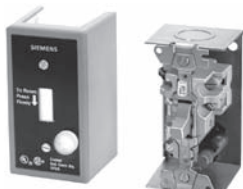
Handle Guard/Lock-Off

An optional handle guard on Class SMF, NEMA Type 1 enclosed starters prevents accidental operation of the toggle operator and also allows the toggle operator to be padlocked in either the "ON" or "OFF" position. This handle guard can be factory installed on NEMA Type 1 enclosed starters and is also available in kit form for field installation on NEMA Type 1 surface and flush mounting enclosures. Standard NEMA Type 4 metallic enclosures include provisions for padlocking the device in the OFF position.

Manual Control

Fractional HP Starters with Melting Alloy Overload, Class SMF

Selection

 Class SMF Starter in a NEMA Type 1 Enclosure with Pilot Light	Ordering Information		Horsepower Ratings			
	► Heater Elements see page 17-107. ► Field Modification Kits see page 17-88. ► Dimensions see page 17-114. ► Wiring Diagrams see page 17-143.		Maximum Horsepower			
			AC Single Phase		DC	
			Volts	1-Pole	2-Pole	2-Pole
			115	1	1	¾
			230	1	2	¾
			277	1	1	—

Starter—Class SMF, Single Phase^①

Type of Operator	No. of Poles	Starter Features ^⑤	General Purpose Flush Mounting Open Starter with Flush Plate (No Enclosure Provided)						NEMA Type 1 General Purpose Enclosure, Surface Mounting				NEMA Type 3R, 4 & 12 Watertight, Dust-tight Metallic Enclosure with Clear Cover		NEMA Type 4 Watertight, Dust-tight Metallic Enclosure		NEMA Type 3R, 7 & 9 Div 1 and Div 2 Class I Groups B, C, D & Class II Groups E, F, G Enclosures	
			Open Type		Gray Flush Plate		Standard Stainless Steel Flush Plate		Jumbo Stainless Steel Flush Plate		Standard		Oversized					
			Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
Toggle	1	Standard	SMFF01	—	SMFFF1	—	SMFFS1	—	—	—	SMFFG1	—	—	—	SMFFWN1	—	—	—
		Red Pilot Light	SMFF01P	—	SMFFF1P	—	SMFFS1P	—	—	—	SMFFG1P	—	—	—	—	—	—	—
	2	Standard	SMFF02	—	—	—	SMFFS2	—	—	—	SMFFG2	—	—	—	SMFFWN2	—	—	—
		Red Pilot Light	SMFF02P	—	SMFFF2P	—	SMFFS2P	—	SMFFSJ2P	—	SMFFG2P	—	SMFFGJ2P	—	—	—	—	—
Key	1	Standard	—	—	—	—	—	—	—	—	—	—	SMFFGJ3	—	SMFFWN3	—	—	—
		Red Pilot Light	SMFF03P	—	SMFFF3P	—	SMFFS3P	—	SMFFSJ3P	—	—	—	SMFFGJ3P	—	—	—	—	—
	2	Standard	SMFF04	—	—	—	SMFFS4	—	—	—	—	—	SMFFGJ4	—	SMFFWN4	—	—	—
		Red Pilot Light	—	—	SMFFF4P	—	SMFFS4P	—	SMFFSJ4P	—	—	—	SMFFGJ4P	—	—	—	—	—

Starter With Handle Guard/Lock-Off—Class SMF, Single Phase^①

Toggle	1	Standard	—	—	④	—	④	—	④	—	SMFFG5	—	SMFFGJ5	—	—	SMFFW1 ^②	—	SMFFR1 ^②
		Red Pilot Light	—	—	④	—	④	—	④	—	SMFFG5P	—	SMFFGJ5P	—	—	SMFFW1P ^②	—	—
		(2) 1/4" NPT Outlets	—	—	④	—	④	—	④	—	—	—	—	—	—	SMFFW1H	—	—
		(2) 1/4" NPT Outlets and Red Pilot Light	—	—	④	—	④	—	④	—	—	—	—	—	—	SMFFW1PH	—	—
	2	Standard	—	—	④	—	④	—	④	—	SMFFG6	—	SMFFGJ6	—	—	SMFFW2 ^②	—	—
		Red Pilot Light	—	—	④	—	④	—	④	—	SMFFG6P	—	—	—	—	—	—	—
		(2) 1/4" NPT Outlets	—	—	④	—	④	—	④	—	—	—	—	—	—	—	—	SMFFR2H
		(2) 1/4" NPT Outlets and Red Pilot Light	—	—	④	—	④	—	④	—	—	—	—	—	—	SMFFW2PH	—	—

One Starter in Duplex Enclosure—Class SMF, Single Phase^①

Type of Operator	Number of Poles	Starter Features ^⑤	General Purpose Flush Mounting Open Starter with Flush Plate - (No Enclosure Provided)				NEMA Type 1 General Purpose Enclosure Surface Mounting		Replacement Starters	
			Gray Flush Plate For Wall or Cavity Mounting		Stainless Steel Flush Plate for Wall or Cavity Mounting					
			Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
Toggle	2	Standard	—	—	—	—	—	—	SMFFG02	—
		Red Pilot Light	—	—	—	—	—	—	—	—
Key	2	Red Pilot Light	—	—	—	—	—	—	SMFFG04P	—

Two Starters In Duplex Enclosure—Class SMF, Single Phase^①

Toggle	2 Per Starter	Standard	SMFFF222	—	—	—	SMFFG222	—	—
		Red Pilot Light on Each Starter	SMFFF222P	—	—	—	—	—	—
Key	2 Per Starter	Standard	SMFFF44P	—	—	—	SMFFG44P	—	—
		Red Pilot Light on Each Starter	SMFFF44P	—	—	—	SMFFG44P	—	—

Starter And "Auto-Off-Hand" SPDT Selector Switch (AC Only)—Class SMF, Single Phase^①

Toggle	1	Standard	—	—	—	—	—	—	—
		Red Pilot Light	SMFFF71P	—	SMFFS71P	—	SMFFG71P	—	—
	2	Standard	—	—	—	—	—	—	—
		Red Pilot Light	SMFFF72P	—	SMFFS72P	—	SMFFG72P	—	—
Key	2	Standard	—	—	—	—	—	—	—
		Red Pilot Light	SMFFF74P	—	SMFFS74P	—	SMFFG74P	—	—

Two Speed Starters (AC Only)—Class SMF, Single Phase^③

Toggle	1	Mechanical Interlock	SMFFF11	—	—	—	—	—	SMFF01T	—
		Mechanical Interlock and (2) Red Pilot Lights	SMFFF11P	—	—	—	—	—	—	—
		Mechanical Interlock, HIGH-OFF-LOW Selector Switch and (2) Red Pilot Lights	—	—	—	—	—	—	—	—
		Mechanical Interlock and (2) Red Pilot Lights	SMFFF22	—	—	—	SMFFG22	—	—	—
	2	Mechanical Interlock and (2) Red Pilot Lights	SMFFF22P	—	—	—	SMFFG22P	—	SMFF02PT	—
		Mechanical Interlock, HIGH-OFF-LOW Selector Switch and (2) Red Pilot Lights	—	—	SMFFS202P	—	—	—	SMFF02PT	—

^① One heater element required.

^② Furnished with (1) 1/4" NPT Outlet in bottom (reversible for top feed).

^③ Two heater elements required.

^④ Order Open Type starter plus separate handle guard kit.

^⑤ For starters that contain a pilot light, a Red light is standard. For a Green pilot light add "G" to the end of the catalog number.

Manual Control

Fractional HP Switches, Class MMS, MRS

General

Class MMS, MRS

Class MMS and MRS motor starting switches provide manual "ON-OFF" control of single or three phase AC motors where overload protection is not required or is provided separately. Compact construction and a 600 volt rating make these switches suitable for a wide range of industrial and commercial uses. Typical applications include small machine tools, pumps, fans, conveyors and many other types of electrical machinery. They can also be used on non-motor loads such as resistance heating applications.

Continuous Current Rating

MMS & MRS: 30 amperes at 250 volts max, 26.4 amperes at 277 volts, 20 amperes at 600 volts max, 30 amperes resistive at 600 volts max.

Two Speed—Class MRS

Two speed manual switches may be used with separate winding three phase or single phase AC motors where overload protection is not required or is provided separately. Two switches are employed to give "ON-OFF" control in each speed.

Reversing—Class MRS

Reversing manual switches provide a compact means of starting, stopping and reversing AC motors where overload protection is not required or is provided separately. They are suitable for use with three phase squirrel cage motors and for single phase motors which can be reversed by reconnecting motor leads. Two switches are used, one to connect the motor forward rotation and one for reverse.

Enclosures

Class MMS, MRS, NEMA Type 1 surface mounting enclosures are sheet steel with a thermo-plastic wrap-around cover for convenience in wiring. The NEMA Type 1 enclosure is also available in an oversized version which allows more wiring space. A zinc alloy die casting is used for NEMA Type 4 enclosures.

Pilot Lights

Red or green neon pilot light units are available for flush mounting plates, NEMA Type 1 enclosures, and NEMA Type 4 enclosures. Pilot lights may be either factory or field installed. (For switches that contain a pilot light, a Red light is standard. For a Green pilot light add "G" to the end of the catalog number.)

Terminals

Binding head screw type terminals are suitable for #10 or smaller copper wire, and are accessible from the front. All terminals are clearly marked.

Mounting

Open types without a pilot light fit standard single gang switch boxes, and can be used with any cover plate having a standard toggle cutout. Single-unit flush mounting types, including those with pilot lights, are suitable for wall mounting in a standard switch box or for machine cavity mounting without a box.

Operation

Available with toggle handle or with removable key type operator to discourage unauthorized operation.



Class MMS Switch in a NEMA Type 1 Enclosure

Emergency Off Actuator

A toggle operator extender is available for Class MMS, MRS, NEMA Type 1 surface mounted units. The extender has a red vinyl button that provides a fast and easy method for locating and switching the device's toggle operator into the OFF position. The Emergency Off Actuator is available in kit form only for field installation.

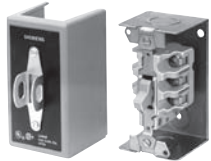
Handle Guard/Lock-Off

An optional handle guard on Class MMS, MRS, NEMA Type 1 enclosed switches prevents accidental operation of the toggle operator and also allows the toggle operator to be padlocked in either the "ON" or "OFF" position. This handle guard is available in kit form for field installation on NEMA Type 1 surface and flush mounting enclosures. Standard NEMA Type 4 metallic enclosures include provisions for padlocking the device in the OFF position.

Manual Control

Switches^①, Class MMS, MRS

Selection

 Class MMS Switch in a NEMA Type 1 Enclosure	Ordering Information	Horsepower Ratings								
	▶ Heater Elements not Required. ▶ Field Modification Kits see page 17-88. ▶ Dimensions see page 17-114. ▶ Wiring Diagrams see page 17-143.	Device	No of Poles	Motor Type AC	Maximum HP			DC Ratings		
					115V	230V	450–575V	90V	115V	230V
		Class MMS	2	Single Phase	2	2	3	1	2	1 1/2
			3	3-Phase	2	7 1/2	10	1	2	1 1/2
		Class MRS Reversing	2	Single Phase	2	2	3	1	2	1 1/2
			3	3-Phase	2	7 1/2	10	1	2	1 1/2
		Class MMS Two Speed	2	Single Phase	2	2	3	1	2	1 1/2
			3	3-Phase, Constant or Variable Torque	2	7 1/2	10	1	2	1 1/2
			3	3-Phase, Constant Horsepower	2	7 1/2	10	1	2	1 1/2

Switch—Class MMS, Single Phase and 3-Phase

Type of Operator	No of Poles	Switch Features ^④	General Purpose Flush Mounting Open Switch with Flush Plate (No Enclosure Provided)								NEMA Type 1 General Purpose Enclosure Surface Mounting				NEMA Type 3R, 4 & 12 Watertight, Dust-tight Metallic Enclosure with Clear Cover		NEMA Type 4 ^⑤ Watertight, Dust-tight Metallic Enclosure		NEMA Type 7 & 9 ^⑥ Class I Groups B, C & D & Class II Groups E, F, G Enclosures	
			Open Type		Gray Flush Plate		Standard Stainless Steel Flush Plate		Jumbo Stainless Steel Flush Plate											
			Catalog Number	List Price\$	Catalog Number	List Price\$	Catalog Number	List Price\$	Catalog Number	List Price\$	Catalog Number	List Price\$	Catalog Number	List Price\$	Catalog Number	List Price\$	Catalog Number	List Price\$	Catalog Number	List Price\$
Toggle	2	Standard	MMSK01		MMSKF1		MMSKS1		—		MMSKG1		—		MMSKWN1		MMSKW1		MMSKR1	
		Red Pilot Light 115V AC	MMSK01A ^③		MMSKF1A		MMSKS1A		—		MMSKG1A		MMSKGJ1A		—		MMSKW1A		—	
		Red Pilot Light 230V AC	MMSK01B ^③		MMSKF1B		—		MMSKSJ1B		MMSKG1B		—		—		MMSKW1B		—	
	3	Standard	MMSK02		MMSKF2		MMSKS2		—		MMSKG2		MMSKGJ2		MMSKWN2		MMSKW2		—	
		Red Pilot Light 208-240V AC	MMSK02B ^③		MMSKF2B		MMSKS2B		—		MMSKG2B		—		—		—		—	
		Red Pilot Light 440-600V AC	—		—		MMSKS2C		—		MMSKG2C		—		—		MMSKW2C		—	
Key	2	Standard	MMSK03		MMSKF3		MMSKS3		—		MMSKG3		MMSKGJ3		MMSKWN3		—		—	
		Red Pilot Light 115V AC	—		MMSKF3A		MMSKS3A		MMSKSJ3A		MMSKG3A		MMSKGJ3A		—		—		—	
		Red Pilot Light 230V AC	MMSK03B		MMSKF3B		MMSKS3B		MMSKSJ3B		MMSKG3B		—		—		—		—	
	3	Standard	MMSK04		MMSKF4		MMSKS4		—		MMSKG4		—		MMSKWN4		—		—	
		Red Pilot Light 208–240V AC	MMSK04B		MMSKF4B		MMSKS4B		MMSKSJ4B		MMSKG4B		MMSKGJ4B		—		—		—	
		Red Pilot Light 440–600V AC	MMSK04C		MMSKF4C		MMSKS4C		MMSKSJ4C		MMSKG4C		—		—		—		—	

Reversing Switch—Class MRS, Single Phase and 3-Phase

Type of Operator	Number of Poles	Suitable Motor Types	Switch Features ^④ (Including Mechanical Interlock)	General Purpose Flush Mounting Open Switch with Flush Plate (No Enclosure Provided)		NEMA Type 1 General Purpose Enclosure Surface Mounting		Replacement Switch Class MRS	
				Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
Toggle	2	Single Phase 3-Lead Repulsion-Induction	Standard	MRSKF11		—		MRSK01T	
			Red Pilot Device—115V AC	MRSKF11A		—		MRSK01AT	
			Red Pilot Device—230V AC	MRSKF11B		MRSKG11B		MRSK01BT	
	3	3-Phase; Also Single Phase Capacitor, Split Phase, or 4-Lead Repulsion-Induction	Standard	MRSKF22		MRSKG22		—	
			Red Pilot Light—110–120V AC	MRSKF22A		MRSKG22A		MRSK02AT	
			Red Pilot Light—208–220V AC	MRSKF22B		—		MRSK02BT	
			Red Pilot Light—440–600V AC	MRSKF22C		—		MRSK02CT	

Two Speed Switch—Class MMS, Single Phase and 3-Phase

Type of Operator	Number of Poles	Suitable Motor Types	Switch Features ^④ (Including Mechanical Interlock)	General Purpose Flush Mounting Open Switch with Flush Plate (No Enclosure Provided)		NEMA Type 1 General Purpose Enclosure Surface Mounting		Replacement Switch Class MRS	
				Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
Toggle	2	Single Phase Two Winding (3-Lead)	Standard	MMSKF11		—		MRSK01T	
			(2) Red Pilot Devices—115V AC	MMSKF11A		MMSKG11A		MRSK01AT	
			(2) Red Pilot Devices—230V AC	MMSKF11B		MMSKG11B		MRSK01BT	
	3	3-Phase Separate Winding (Wye-Connected)	Standard	MMSKF22		MMSKG22		MRSK02T	
			(2) Red Pilot Lights—208–240V AC	MMSKF22B		MMSKG22B		MRSK02BT	
			(2) Red Pilot Lights—440–600V AC	MMSKF22C		MMSKG22C		MRSK02CT	

① Manual switches do not include overloads.

② Furnished with (1) 3/4" NPT outlet in bottom (reversible for top feed). In order to obtain a 3/4" NPT outlet in top and bottom, add suffix letter "H" to type number with List Price adder.

③ Do not use as replacement interiors for NEMA Type 4 metallic enclosures. For replacement unit, order Type MMSK01 or MMSK02 and separate pilot light kit.

④ For switches that contain a pilot light, a Red light is standard. For a Green pilot light add "G" to the end of the catalog number.

Manual Control

Starters and Switches, Class 11 - 3RV

General

Now Available with the New 3RV2 Innovations MSP

Class 11 - 3RV

Class 11 across the line manual starters and switches provide control for machinery where remote start stop control is not required.

Class 11 - 3RV manual starters are used for single and poly-phase motors up to 20HP @ 575V. Starters have bimetallic heater elements to provide class 10 overcurrent protection. Each starter has a fourth bimetallic strip that reacts only to the ambient temperature inside the control panel. This ambient compensation helps prevent the starter from nuisance tripping when the panel temperature is higher than the ambient temperature of the motor.

A built-in differential trip bar causes the starter to trip faster on a phase loss condition to help reduce motor damage.

Magnetic trip elements in each starter take the device off line when it senses current of 13 times the maximum FLA dial setting.

Class 11 - 3RV switches provide control for inherently protected motors. Typical applications include metal and woodworking machinery, grinders, power saws, conveyors, fans, pumps, blowers, textile and packaging machinery, and paper cutters.

Each switch is provided with magnetic trip elements which take the device off line when it senses current of 13 times the maximum switch rating.

Class 11 - 3RV manual starters can be used as Type E self-protected manual combination starters (up to 22 amps) per UL508 or as components in Group Installation per NEC 430.53. When using the Class 11 - 3RV as a manual combination starter upstream protection is not required.

Class 11 - 3RV controllers are available with low voltage protection which will automatically open the power poles when the voltage drops or the power is interrupted.

Controllers with the LVP option provide the OSHA requirements for protecting personnel from potential injury caused by the automatic start-up of machinery following a voltage drop or power interruption when low voltage protection is specified.

Class 11 - 3RV is available as Open style, or in NEMA 1.

Standard Features include:

- ON/OFF rotary handle with lockout and visible trip indication
- Adjustment dial for setting to motor FLA (Starters only)
- Low Voltage Protection (LVP) Option
- Short Circuit trip at 13 times the maximum setting of the FLA dial or rated current
- Ambient compensated up to 140°F
- Phase loss sensitivity
- Test trip function
- LVP Option Meets OSHA Requirements
- UL Listed
- CSA Certified



OPEN TYPE
Starter



NEMA 1
General Purpose

Manual Control

Starters and Switches, Class 11 - 3RV

Selection



Class 11 Manual Motor Starter

Ordering Information

- ▶ No heaters required.
- ▶ Field Modification Kits see page 17-88.
- ▶ Dimensions see page 17-116.
- ▶ Wiring Diagrams see page 17-143.
- ▶ For applications requiring a low voltage protection coil see table at right.

Low Voltage Protection Coil Table

60 Hz Voltage	Letter
120V	*F
208V	*D
240V	*G
460V	*H

*Add corresponding letter to end of base Class 11 catalog number for low voltage protection coil with List Price adder.

Note: The LVP option for Open type 3RV is available from the factory, please order separately from the field modification kits on page 17-89.

The coil voltage should correspond with the line voltage.

Manual Starter—Class 11 - 3RV

FLA Adjustment Range ^①	Max HP						Enclosure			
	Single Phase HP Ratings		3-Phase HP Ratings				Open Type		NEMA 1 General Purpose	
	115V	230V	200V	230V	460V	575V	Catalog No.	List Price \$	Catalog No.	List Price \$
0.11-0.16	—	—	—	—	—	—	3RV2011-0AA10 ^②		11AD3B	
0.14-0.2	—	—	—	—	—	—	3RV2011-0BA10 ^②		11BD3B	
0.18-0.25	—	—	—	—	—	—	3RV2011-0CA10 ^②		11CD3B	
0.22-0.32	—	—	—	—	—	—	3RV2011-0DA10 ^②		11DD3B	
0.28-0.4	—	—	—	—	—	—	3RV2011-0EA10 ^②		11ED3B	
0.35-0.5	—	—	—	—	—	—	3RV2011-0FA10 ^②		11FD3B	
0.45-0.63	—	—	—	—	—	—	3RV2021-0GA10 ^②		11GD3B	
0.55-0.8	—	—	—	—	—	½	3RV2021-0HA10 ^②		11HD3B	
0.7-1	—	—	—	—	½	½	3RV2021-0JA10 ^②		11JD3B	
0.9-1.25	—	—	—	—	¾	¾	3RV2021-0KA10 ^②		11KD3B	
1.1-1.6	—	⅓	—	—	¾	1	3RV2021-1AA10 ^②		11LD3B	
1.4-2	—	⅓	—	—	1	1 ½	3RV2021-1BA10 ^②		11MD3B	
1.8-2.5	—	⅓	½	½	1 ½	1 ½	3RV2021-1CA10 ^②		11ND3B	
2.2-3.2	⅓	⅓	¾	¾	1 ½	2	3RV2021-1DA10 ^②		11PD3B	
2.8-4	⅓	⅓	¾	1	2	3	3RV2021-1EA10 ^②		11QD3B	
3.5-5	⅓	½	1	1	3	3	3RV2021-1FA10 ^②		11RD3B	
4.5-6.3	⅓	¾	1 ½	1 ½	5	5	3RV2021-1GA10 ^②		11SD3B	
5.5-8	⅓	1	2	2	5	5	3RV2021-1HA10 ^②		11TD3B	
7-10	½	1 ½	3	3	7 ½	10	3RV2021-1JA10 ^②		11UD3B	
9-12.5	½	2	3	3	7 ½	10	3RV2021-1KA10 ^②		11VD3B	
11-16	1	3	5	5	10	15 ^③	3RV2021-4AA10 ^②		11WD3B	
14-20	1 ½	3	5	7 ½	15	20 ^③	3RV2021-4BA10 ^②		11XD3B	
17-22	2	3	7 ½	7 ½	15	20 ^③	3RV2021-4CA10 ^②		11YD3B	
20-25	2 ^③	5 ^③	7 ½ ^③	7 ½ ^③	15 ^③	20 ^③	3RV2021-4DA10 ^②		11ZD3B	

Manual Switch—Class 11 - 3RV

Rated Current ^①	Max HP						Enclosure			
	Single Phase HP Ratings		3-Phase HP Ratings				Open Type		NEMA 1 General Purpose	
	115V	230V	200V	230V	460V	575V	Catalog No.	List Price \$	Catalog No.	List Price \$
1	—	—	—	—	½ ^③	½ ^③	3RV2321-0JC10 ^②		111D3B	
5	⅓ ^③	½ ^③	1 ^③	1 ^③	3 ^③	3 ^③	3RV2321-1FC10 ^②		112D3B	
10	½ ^③	1 ½ ^③	3 ^③	3 ^③	7 ½ ^③	10 ^③	3RV2321-1JC10 ^②		113D3B	
20	1 ½ ^③	3 ^③	5 ^③	7 ½ ^③	15 ^③	20 ^③	3RV2321-4BC10 ^②		114D3B	
25	2 ^③	5 ^③	7 ½ ^③	7 ½ ^③	15 ^③	20 ^③	3RV2321-4DC10 ^②		115D3B	

① Instantaneous Magnetic Trip will occur at 13 times the maximum FLA dial setting or rated switch current.

② Product Category: IEC

③ Shaded Ratings apply for Manual Motor Controllers Only! These Ratings do not apply as UL Listed Manual Combination Starters.

[illegible][illegible]

<u>Class</u>	<u>Size</u>	<u>Model</u>	<u>Solid-state OLR Current Range</u>	<u>Type</u>	<u>Line Volts</u>	<u>Enclosure Type</u>	<u>Coil</u>	<u>Disconnect Type[®]</u>
36 — Non Combination Reduced Voltage Starter	C — 0 D — 1 E — 1¾ F — 2 G — 2½ H — 3	U — Solid-state OLR size 0-4 & size 7 & 8 P — Solid-state size 5 & 6		T — Auto XFMR P — Part Wind. O — Wye Delta Open Trans. C — Wye Delta Closed Trans.	2 — 230 3 — 380 4 — 460 5 — 575 6 — 200/208	A — Open B — NEMA 1 W — NEMA 4/4X Stainless Steel 0 — NEMA 3/3R/4/12	D E F G H L	D — Non Fused Disc. F — Fusible Disc. P — MCP
37 — Combination Reduced Voltage Starter	I — 3½ J — 4 L — 5 M — 6 N — 7 P — 8							

① Single phase solid-state OLR available on Class 14 Starters only.

② Not available on sizes 5–8.
③ For Class 37 only.

④ Not available on sizes 7 and 8.

Heavy Duty Starters

Features and Benefits

General



Solid State Starter Class 14

Standard Features

Size 00–4 magnetic starters include the following standard features:

- Rugged Industrial Design
- Half Sizes for Cost and Space Savings
- Dual Voltage, Dual Frequency Coils
- Solid State Overload Protection
- Wide Range of Accessories
- Easy Coil Access
- Overload Test Feature
- Straight Thru Wiring
- Gravity Dropout
- Large Silver Cadmium Contacts
- UL listed file #E14900 (class 14, 22, 30, 40 & 43)
- CSA certified file #LR 6535 (class 14, 22, 30, 40 & 43)

Application

Heavy Duty starters are designed for across the line starting of single phase and polyphase motors.

These controls are available in NEMA Sizes 00 through 8. In addition to the usual NEMA Starter Sizes, Siemens offers three exclusive Half Sizes; 1¾, 2½ and 3½. These integral sizes offer the same rugged, industrial construction as our NEMA Sizes and ensure efficient operating performance. Half Sizes provide a real cost savings by cutting down on over capacity when NEMA Sizes exceed the motor ratings. All Siemens Heavy Duty controls, including our popular Half Sizes comply with applicable NEMA and UL tests.

All starters are supplied with a NO holding interlock that in conjunction with an appropriate pilot device will provide low voltage protection or release.

NEMA starters are ideal for applications requiring dependability and durability. Typical applications include use with machine tools, air conditioning equipment, material handling equipment, compressors, hoists and various production and industrial equipment as well as in demanding automotive applications.

Starters are available as an open type or in NEMA 1, 12/3/3R, 4 (painted), 4/4X (stainless), and 4X (fiberglass) enclosures.

Gravity Dropout

For added reliability, the gravity dropout of the armature and contacts is assisted by stainless steel springs which help provide quick, precise opening of the contacts.

45 Degree, Wedge Action Contacts

The 45 degree, wedge action contacts reduce tracking and provide faster arc quenching. The resulting self-cleaning and reduced contact bounce mean cooler operation and longer life for the large silver cadmium oxide contacts.

Terminal Design

Control terminals are self-rising pressure type.

Molded Coil

Magnetic coils are carefully wound and then sealed in epoxy. Encapsulation helps seal out moisture, promotes heat transfer and resists electrical, mechanical and thermal stresses.

Dual Voltage/Frequency Coil

Starters are available with dual voltage, dual frequency coils. They are designed to operate on either 50 or 60 Hertz.

Molded Stationary Contact Block

Thermoset materials resist arc tracking and the stresses of heat and severe impact.

Field Modification Kits

All starters can be modified in the field with a complete range of accessories. These include pushbuttons, selector switches, pilot lights, auxiliary contacts and surge suppressors.

Auxiliary Equipment

- NEMA starters are available with built-in START-STOP push buttons for 3-wire control or a HAND-OFF-AUTO selector switch for 2-wire control
- Field modifications such as auxiliary contacts, pilot lights, push buttons, selector switches, and fuse blocks are available to meet particular application requirements
- Normally opened or normally closed auxiliary power pole kits are available for Sizes 00 through 1¾
- Transformers can be ordered as either factory or field modifications. In some cases these may require a larger enclosure
- A full line of replacement parts are available including contact kits, coils, and overload relays

Size 5 & 6 Starters Additional Features

- Solid State Overload (3RB type) Standard
- Latest technology in arc quenching to extend contactor life
- Wide variety of enclosures in all starter configurations

Size 7 & 8 Starters Additional Features

- New Compact Design
- Can be mounted in any position
- Same coil voltage is AC or DC

Heavy Duty Starters

Features and Benefits

Selection



ESP200™ Solid State Starter

ESP200™ starters combine the rugged NEMA contactors with a state of the art solid state overload that provides phase loss, phase unbalance ground fault protection. It offers the user greater motor protection and extended life in heavy duty applications. The ESP200™ ultimately results in a cost savings to the user.

ESP200™ Solid State Overload Relays

Standard features provide Improved Starter Performance:

- True phase loss protection; trips within 3 seconds
- Phase unbalanced prevents motor running inefficiently
- Ground fault trip when selected
- Selectable trip class 5, 10, 20 or 30
- Reset trip can be selected Auto/ Manual restart
- Easy to select and use, Dip Switch selectable
- Overload is self powered, no need for external power source

Half Size Starters

Half-Size starters feature all the rugged performance characteristics of our NEMA rated starter sizes, but are fractionally sized to more closely match your exact motor rating. As a result, significant economic savings are made possible without sacrificing the reliability you expect from a heavy duty starter.

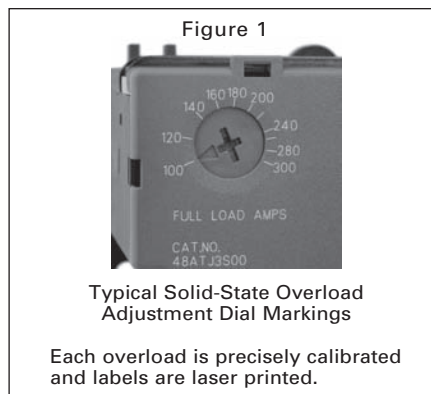
These additional starter sizes have the reserve capacity to handle occasional plugging and jogging applications without derating. Superior operating performance in heavy duty applications is assured by the large current carrying parts, not by derating the device.

Exclusive “half-sizes” save potentially hundreds, even thousands of dollars per project.

Using the table below, simply match the specific size starter to the horsepower rating of your motor. Every half-size starter saves you money—up to 31%.

All “half-sizes” comply to applicable NEMA and UL standards.

ESP200® FLA Adjustment Dial—Set the adjustment dial on the overload to the FLA of the motor.



Typical Solid-State Overload Adjustment Dial Markings

Each overload is precisely calibrated and labels are laser printed.



DIP Switch Settings

Adjust DIP switch settings to the Trip Class desired 5, 10, 20, or 30.

- Set Phase Unbalance ON or OFF
- Set Phase Loss ON or OFF
- Set Reset to Manual or Automatic
- Set Ground Fault ON or OFF

Savings for Siemens “Half-Size” Starters in NEMA 1 Enclosures, FVNR

Motor Size		Starter Size	Half Size	List Price \$	“Half-Size” Savings Over Next Full Size
230V	460V				
7½	10	1	—		—
10	15	—	1¾		31%
15	25	2	—		—
20	30	—	2½		20%
30	50	3	—		—
40	75	—	3½		13%
50	100	4	—		—

Standard Auxiliary Contacts			
Type	Size (3rd Character)	Configuration	Internal / External
All FVNR Starters & Contactors	B Thru E	1N.O.	Internal
	F Thru J	1N.O.	External
	L Thru M	2N.O., 2N.C.	External
	N Thru P	1N.O., 1N.C.	External

Heavy Duty Motor Starters

Solid State Overload with Auto/Manual Reset, Class 14

Selection



Ordering Information

- Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- Field Modification Kits see page 17-90.
- Factory Modifications see page 17-102.
- Dimensions see pages 17-117 open and 17-129 enclosed.
- Wiring Diagrams see page 17-144.
- Replacement Parts see page 17-108.

Coil Table

60Hz Voltage	Letter
24	J
120	F
110–120/220–240 ^④	A
200–208	D
220–240	G
277	L
220–240/440–480 ^④	C
440–480	H
575–600	E

For other voltages and frequencies, see Factory Modifications page 17-102.

Open Type & Standard Width Enclosure, 3-Phase, 3-Pole

Max Hp				NEMA Size	Half Size	Overload		Enclosure		NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant @ = W for 304 Stainless Steel @ = X for 316 Stainless Steel		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
200 Volts	230 Volts	460 Volts	575 Volts			Amp Range	Frame Size	Open Type Standard Auxiliary Contacts ^②		Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1/4	1/4	1/4	1/4	00	—	0.25–1	A	14BUA32A*		14BUB32B*		14BUB32B*		14BUB32B*		14BUB32B*	
1/2	1/2	1 1/2	2	00	—	0.75–3.4	A	14BUB32A*		14BUB32B*		14BUB32B*		14BUB32B*		14BUB32B*	
1 1/2	1 1/2	2	—	00	—	3–12	A1	14BUC32A*		14BUC32B*		14BUC32B*		14BUC32B*		14BUC32B*	
1/4	1/4	1/4	1/4	0	—	0.25–1	A	14CUA32A*		14CUA32B*		14CUA32B*		14CUA32B*		14CUA32B*	
1/2	1/2	1 1/2	2	0	—	0.75–3.4	A	14CUB32A*		14CUB32B*		14CUB32B*		14CUB32B*		14CUB32B*	
2	2	5	5	0	—	3–12	A1	14CUC32A*		14CUC32B*		14CUC32B*		14CUC32B*		14CUC32B*	
3	3	—	—	0	—	5.5–22	A1	14CUD32A*		14CUD32B*		14CUD32B*		14CUD32B*		14CUD32B*	
1/4	1/4	1/4	1/4	1	—	0.25–1	A	14DUA32A*		14DUA32B*		14DUA32B*		14DUA32B*		14DUA32B*	
1/2	1/2	1 1/2	2	1	—	0.75–3.4	A	14DUB32A*		14DUB32B*		14DUB32B*		14DUB32B*		14DUB32B*	
2	2	5	5	1	—	3–12	A1	14DUC32A*		14DUC32B*		14DUC32B*		14DUC32B*		14DUC32B*	
3	3	10	10	1	—	5.5–22	A1	14DUD32A*		14DUD32B*		14DUD32B*		14DUD32B*		14DUD32B*	
7 1/2	7 1/2	—	—	1	—	10–40	A1	14DUE32A*		14DUE32B*		14DUE32B*		14DUE32B*		14DUE32B*	
10	10	15	15	—	1 1/2	10–40	A1	14EUE32A*		14EUE32B*		14EUE32B*		14EUE32B*		14EUE32B*	
10	15	25	25	2	—	13–52	B	14FUF32A*		14FUF32B*		14FUF32B*		14FUF32B*		14FUF32B*	
15	20	30	30	—	2 1/2	25–100	B	14GUG32A*		14GUG32B*		14GUG32B*		14GUG32B*		14GUG32B*	
25	30	50	50	3	—	25–100	B	14HUG32A*		14HUG32B*		14HUG32B*		14HUG32B*		14HUG32B*	
30	40	75	75	—	3 1/2	50–200	B	14IUH32A*		14IUH32B*		14IUH32B*		14IUH32B*		14IUH32B*	
40	50	100	100	4	—	50–200	B	14JUH32A*		14JUH32B*		14JUH32B*		14JUH32B*		14JUH32B*	
75	100	200	200	5	—	55–250	—	14LPU32A*		14LPU32B*		—	—	—	—	14LPU32B*	
150	200	400	400	6	—	160–630	—	14MPX32A*		14MPX32B*		—	—	—	—	14MPX32B*	
—	300	600	600	7* ^③	—	400–1220	A1+CT	14NUN32A*		14NUN32B*		—	—	—	—	14NUN32B*	
—	450	900	900	8 ^④	—	400–1220	A1+CT	14PUN32A*		14PUN32B*		—	—	—	—	14PUN32B*	

Open Type & Standard Width Enclosure, Single Phase, 2-Pole^{②⑤}

Max Hp		NEMA Size	Overload		Enclosure		NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant @ = W for 304 Stainless Steel @ = X for 316 Stainless Steel		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
115 Volts	208/230 Volts		Amp Range	Frame Size	Open Type Standard Auxiliary Contacts		Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1/4	1/4	0	0.75–3.4	A	14CUB12A*		14CUB12B*		14CUB12B*		14CUB12B*		14CUB12B*	
1/2	1/2	0	3–12	A1	14CUC12A*		14CUC12B*		14CUC12B*		14CUC12B*		14CUC12B*	
1	2	0	5.5–22	A1	14CUD12A*		14CUD12B*		14CUD12B*		14CUD12B*		14CUD12B*	
1/4	1/4	1	0.75–3.4	A	14DUB12A*		14DUB12B*		14DUB12B*		14DUB12B*		14DUB12B*	
1/2	1/2	1	3–12	A1	14DUC12A*		14DUC12B*		14DUC12B*		14DUC12B*		14DUC12B*	
1	2	1	5.5–22	A1	14DUD12A*		14DUD12B*		14DUD12B*		14DUD12B*		14DUD12B*	
3	7 1/2	2	25–100	B	14FUG12A*		14FUG12B*		14FUG12B*		14FUG12B*		14FUG12B*	
7 1/2	15	3	25–100	B	14HUG12A*		14HUG12B*		14HUG12B*		14HUG12B*		14HUG12B*	

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

⑤ Dual voltage coils not available in size 5–8 starters.

② Coils D, F, or G will be wired for incoming voltage. J coil will be wired for separate source. Coils E, H, and L do not apply to single phase starters.

③ F coil 100–250V AC 50/60Hz, or DC, H coil 150–500V AC 50/60Hz, or DC

④ Only available F coil 100–250V AC 50/60Hz, or DC

⑤ To receive a single phase starter in an extra wide enclosure order an enclosure kit from pg 17-99 and the open style starter from pg 17-15 as separate items.

Heavy Duty Motor Starters

Solid State Overload with Auto/Manual Reset, Class 14

Selection

 NEMA 1	Ordering Information	Coil Table	
	▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order. ▶ Field Modification Kits see page 17-90. ▶ Factory Modifications see page 17-102. ▶ Dimensions see page 17-129. ▶ Wiring Diagrams see page 17-144. ▶ Replacement Parts see page 17-108.	60Hz Voltage	Letter
		24 120 110–120/220–240 200–208 220–240 277 220–240/440–480 440–480 575–600	J F A D G L C H E
For other voltages and frequencies, see Factory Modifications page 17-102.			

Extra Wide Enclosure, 3-Phase, 3-Pole

Max Hp				NEMA Size	Half Size	Overload		Enclosure		Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
200 Volts	230 Volts	460 Volts	575 Volts			Amp Range	Frame Size	NEMA 1 General Purpose	NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant @ = VV for 304 Stainless Steel @ = X for 316 Stainless Steel						
1/4	1/4	1/4	1/4	00	—	0.25–1	A	14BUA82B*		Use Size 0	—	Use Size 0	—	Use Size 0	—
1/2	3/4	1 1/2	2	00	—	0.75–3.4	A	14BUB82B*		Use Size 0	—	Use Size 0	—	Use Size 0	—
1 1/2	1 1/2	2	—	00	—	3–12	A1	14BUC82B*		Use Size 0	—	Use Size 0	—	Use Size 0	—
1/4	1/4	1/4	1/4	0	—	0.25–1	A	14CUA82B*		14CUA82@*		14CUA820*		14CUA820*	
1/2	3/4	1 1/2	2	0	—	0.75–3.4	A	14CUB82B*		14CUB82@*		14CUB820*		14CUB820*	
2	2	5	5	0	—	3–12	A1	14CUC82B*		14CUC82@*		14CUC820*		14CUC820*	
3	3	—	—	0	—	5.5–22	A1	14CUD82B*		14CUD82@*		14CUD820*		14CUD820*	
1/4	1/4	1/4	1/4	1	—	0.25–1	A	14DUA82B*		14DUA82@*		14DUA820*		14DUA820*	
1/2	3/4	1 1/2	2	1	—	0.75–3.4	A	14DUB82B*		14DUB82@*		14DUB820*		14DUB820*	
2	2	5	5	1	—	3–12	A1	14DUC82B*		14DUC82@*		14DUC820*		14DUC820*	
3	3	10	10	1	—	5.5–22	A1	14DUD82B*		14DUD82@*		14DUD820*		14DUD820*	
7 1/2	7 1/2	—	—	1	—	10–40	A1	14DUE82B*		14DUE82@*		14DUE820*		14DUE820*	
10	10	15	15	—	1 1/4	10–40	A1	14EUE82B*		14EUE82@*		14EUE820*		14EUE820*	
10	15	25	25	2	—	13–52	B	14FUF82B*		14FUF82@*		14FUF820*		14FUF820*	
15	20	30	30	—	2 1/4	25–100	B	14GUG82B*		14GUG82@*		14GUG820*		14GUG820*	
25	30	50	50	3	—	25–100	B	14HUG82B*		14HUG82@*		14HUG820*		14HUG820*	
30	40	75	75	—	3 1/4	50–200	B	14IUH82B*		14IUH82@*		14IUH820*		14IUH820*	

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

Combination Heavy Duty Starters

Features and Benefits

General



Combination Starter Features

Combination starters include the following features:

- Manufactured with Cold Forming "TOX" Process
- Solid State Overloads Standard on Sizes 5-8
- Easy to Install
- Wide Range of Enclosure Types Available
- Heavy Duty Quarter Turns
- 100kA Short Circuit Current Rating when Protected with Class R Fuses to 600V or MCP to 480V
- Visible Blade Disconnect
- Industrial Type Disconnect Handle
- UL listed file #E185287 (class 17, 18, 25, 26 & 32)
- CSA certified file #LR 6535 (class 17, 18, 25, 26 & 32)

Application

A combination starter meets National Electrical Code requirements for:

1. A means of providing short circuit motor protection with fused or breaker disconnection of line voltage.
2. A means of safeguarding personnel from contact with live parts and from accidental starting of machinery by disconnecting the motor and the controller.
3. A motor controller with overload protection.

Prewired combination starters eliminate the cost of wiring between separate disconnect and starter. Factory testing assures field performance. Combination starters also provide a more compact and attractive installation than separate units.

Enclosure Types

Combination starters are available in NEMA 1, 12/3/3R/4 (painted), 4/4X

(stainless), and 4X fiberglass enclosures. Enclosures protect personnel from contact with live parts and depending upon the construction, protect the control in varying degrees from physical damage and harmful atmospheres. All enclosures are supplied with corrosion resistant finishes.

Heavy Duty Disconnect Switches

The disconnect switch that goes the distance in durability, performance and reliability has the following advantages:

- Visible blades for the highest level of safety
- Double break switching action to reduce arcing, increase lifetime and eliminate the "electric hinge"
- More rugged positive action switch
- Oversized lugs are standard
- Line side shield to help guard personnel from contact with live parts
- Higher horsepower rating for design E high efficiency motors
- UL listed for IlSCO, Burndy and T&B crimp type lugs
- The 200A switch accepts up to 300 MCM versus 250 MCM wire size

Its rugged construction - with a high fault withstand rating of 100kA at 600 VAC when fused with class R rated fuses - meets the most stringent industry standards set forth by the automotive, petro-chemical, and pulp and paper industries. UL recognized and CSA certified, our disconnect switches are available either non-fusible or fusible with class R and class J fuse clips.



Enclosure Kits for NEMA Combination Starters Description

You can assemble a non-stocked combination starter per your unanticipated needs in minutes. Say, for example, your customer needs a fusible combination starter that you don't have in stock. You need it now, but don't sweat it.

Simply start with the enclosure kit which has the handle preinstalled. You install the required starter and fusible disconnect, connect the power wire and you are finished. Within minutes, you have the required combination starter in your hands. No more waiting on the factory. You need it, you got it!

What Is In It For You!

- **Reduce Lead-time** - What used to take days to get now takes minutes
- **Reduced Inventory** - Instead of stocking scores of various combination starters, simply stock a few enclosure kits, disconnect kits, circuit breaker kits and open starters. With these basic "building blocks" you virtually have hundreds of products on-hand
- **Quality** - The same high level of quality you have been accustomed to with our products will also be found in these new enclosure kits
- **UL Listed** - By correctly following the instructions included with the kits, the product you build is UL/CSA Listed

Refer to page 17-100 for more details.

Siemens Type ETI Circuit Breaker

The ETI circuit breaker is a device designed specifically for application in motor circuits. The ETI is a magnetic only protective device designed to provide protection against short circuit current.

The instantaneous-only type ETI circuit breaker employs adjustable magnetic trip settings to allow broader application ranges and a higher degree of motor short circuit protection.



Heavy Duty Starters

These combination starters use the same starters described in the heavy duty starter section of this catalog.

Combination Heavy Duty Starters

Non-Fusible with Solid State Overload, Class 17

Selection



Ordering Information

- Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- For Fusible Styles see page 17-20.
- Field Modification Kits see page 17-90.
- Factory Modifications see page 17-102.
- Dimensions see page 17-131.
- Wiring Diagrams see page 17-145.
- Replacement Parts see page 17-108.

Coil Table

60Hz Voltage	Letter
24	J
120	F
110–120/220–240 ^①	A
200–208	D
220–240	G
277	L
220–240/440–480 ^①	C
440–480	H
575–600	E
For other voltages and frequencies, see Factory Modifications page 17-102.	

Standard Width Enclosure, 3 Phase, 3-Pole

Max Hp						Overload		Disc. Amp Range	Enclosure							
200 Volts	230 Volts	460 Volts	575 Volts	NEMA Size	Half Size	Amp Range	Frame Size		NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant Ⓢ = W for 304 Stainless Steel Ⓢ = X for 316 Stainless Steel		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	List Price \$	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1/4	1/4	1/4	1/4	0	—	0.25–1	A	30	17CUA92B*		17CUA92@*		17CUA92F*		17CUA92N*	
1/2	1/2	1 1/2	2	0	—	0.75–3.4	A	30	17CUB92B*		17CUB92@*		17CUB92F*		17CUB92N*	
2	2	5	5	0	—	3–12	A1	30	17CUC92B*		17CUC92@*		17CUC92F*		17CUC92N*	
3	3	—	—	0	—	5.5–22	A1	30	17CUD92B*		17CUD92@*		17CUD92F*		17CUD92N*	
1/4	1/4	1/4	1/4	1	—	0.25–1	A	30	17DUA92B*		17DUA92@*		17DUA92F*		17DUA92N*	
1/2	1/2	1 1/2	2	1	—	0.75–3.4	A	30	17DUB92B*		17DUB92@*		17DUB92F*		17DUB92N*	
2	2	5	5	1	—	3–12	A1	30	17DUC92B*		17DUC92@*		17DUC92F*		17DUC92N*	
3	3	10	10	1	—	5.5–22	A1	30	17DUD92B*		17DUD92@*		17DUD92F*		17DUD92N*	
7 1/2	7 1/2	—	—	1	—	10–40	A1	60	17DUE92B*		17DUE92@*		17DUE92F*		17DUE92N*	
10	10	15	15	—	1 1/2	10–40	A1	60	17EUE92B*		17EUE92@*		17EUE92F*		17EUE92N*	
10	15	25	25	2	—	13–52	B	60	17FUF92B*		17FUF92@*		17FUF92F*		17FUF92N*	
15	20	30	30	—	2 1/2	25–100	B	100 ^②	17GUG92B*		17GUG92@*		17GUG92F*		17GUG92N*	
20 ^③	25 ^④	50	50	3	—	25–100	B	100	17HUG92B*		17HUG92@*		17HUG92F*		17HUG92N*	
30	40	75	75	—	3 1/2	50–200	B	200	17IUH92B*		17IUH92@*		17IUH92F*		17IUH92N*	
40	50	100	100	4	—	50–200	B	200	17JUH92B*		17JUH92@*		17JUH92F*		17JUH92N*	
75	100	200	200	5	—	55–250	—	400 ^⑤	17LPU92B*		—	—	—	—	17LPU92N*	
150	200	400	400	6	—	160–630	—	600	17MPX92B*		—	—	—	—	17MPX92N*	
—	300	600	600	7 ^⑥	—	400–1220	A1+CT	1200	17NUN92B*		—	—	—	—	17NUN92N*	
—	450	900	900	8 ^⑦	—	400–1220	A1+CT	1600	17PUN92B*		—	—	—	—	17PUN92N*	

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

- ① Dual voltage coils not available in starter sizes 5–8.
② For 60A disconnect, order fusible cat. no. page 17-20.

③ For 20 HP and 200A disconnect, order fusible cat. no. page 17-20.

④ For 25 HP and 200A disconnect, order fusible cat. no. page 17-20.

⑤ For 600A disconnect, order fusible cat. no. page 17-20.

⑥ F coil 100–250V AC 50/60Hz, or DC,
H coil 150–500V AC 50/60Hz, or DC

⑦ Only available
F coil 100–250V AC 50/60Hz, or DC

Combination Heavy Duty Starters

Non-Fusible with Solid State Overload, Class 17

Selection

	Ordering Information	Coil Table	
	▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order. ▶ For Fusible Styles see page 17-21. ▶ Field Modification Kits see page 17-90. ▶ Factory Modifications see page 17-102. ▶ Dimensions see page 17-131. ▶ Wiring Diagrams see page 17-145. ▶ Replacement Parts see page 17-108.	60Hz Voltage	Letter
		24	J
		120	F
		110–120/220–240 ^①	A
		200–208	D
		220–240	G
		277	L
		220–240/440–480 ^①	C
		440–480	H
		575–600	E
		For other voltages and frequencies, see Factory Modifications page 17-102.	

Extra Wide Enclosure, 3-Phase, 3-Pole

Hp				NEMA Size	Half Size	Overload		Disc. Amp Range	Enclosure					
200 Volts	230 Volts	460 Volts	575 Volts			Amp Range	Frame Size		NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant @ = W for 304 Stainless Steel @ = X for 316 Stainless Steel		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
									Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1/4	1/4	1/4	1/4	0	—	0.25–1	A	30	17CUA82B*		17CUA82@*		17CUA82N*	
1/2	3/4	1 1/2	2	0	—	0.75–3.4	A	30	17CUB82B*		17CUB82@*		17CUB82N*	
2	2	5	5	0	—	3–12	A1	30	17CUC82B*		17CUC82@*		17CUC82N*	
3	3	—	—	0	—	5.5–22	A1	30	17CUD82B*		17CUD82@*		17CUD82N*	
1/4	1/4	1/4	1/4	1	—	0.25–1	A	30	17DUA82B*		17DUA82@*		17DUA82N*	
1/2	3/4	1 1/2	2	1	—	0.75–3.4	A	30	17DUB82B*		17DUB82@*		17DUB82N*	
2	2	5	5	1	—	3–12	A1	30	17DUC82B*		17DUC82@*		17DUC82N*	
3	3	10	10	1	—	5.5–22	A1	30	17DUD82B*		17DUD82@*		17DUD82N*	
7 1/2	7 1/2	—	—	1	—	10–40	A1	60	17DUE82B*		17DUE82@*		17DUE82N*	
10	10	15	15	—	1 1/4	10–40	A1	60	17EUE82B*		17EUE82@*		17EUE82N*	
10	15	25	25	2	—	13–52	B	60	17FUF82B*		17FUF82@*		17FUF82N*	
15	20	30	30	—	2 1/4	25–100	B	100 ^①	17GUG82B*		17GUG82@*		17GUG82N*	
20 ^②	25 ^③	50	50	3	—	25–100	B	100	17HUG82B*		17HUG82@*		17HUG82N*	

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

^① For 60A disconnect, order fusible cat. no. page 17-21.

^② For 20 HP and 200A disconnect, order fusible cat. no. page 17-21.

^③ For 25 HP and 200A disconnect, order fusible cat. no. page 17-21.

Combination Heavy Duty Starters

Fusible with Solid State Overload, Class 17

Selection



Ordering Information

- Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- Field Modification Kits see page 17-90.
- Factory Modifications see page 17-102.
- Dimensions see page 17-131.
- Wiring Diagrams see page 17-145.
- Replacement Parts see page 17-108.

Coil Table

60Hz Voltage	Letter
24	J
120	F
110–120/220–240 ^⑤	A
200–208	D
220–240	G
277	L
220–240/440–480 ^⑤	C
440–480	H
575–600	E

For other voltages and frequencies, see Factory Modifications page 17-102.

Standard Width Enclosure, 3-Phase, 3-Pole^③

Max Hp						Overload		Disc.	Fuse Clip	Enclosure			
200 Volts	230 Volts	460 Volts	575 Volts	NEMA Size	Half Size	Amp Range	Frame Size			NEMA 1 General Purpose	NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant @ = W for 304 Stainless Steel @ = X for 316 Stainless Steel	NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant	NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof
Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$						
1/2	1/2	—	—	0	—	0.25–1	A	30	30A/250V	17CUA92B*10	17CUA92@*10	17CUA92F*10	17CUA92N*10
—	—	1/2	1/2	0	—	0.25–1	A	30	30A/600V	17CUA92B*11	17CUA92@*11	17CUA92F*11	17CUA92N*11
1/2	3/4	—	—	0	—	0.75–3.4	A	30	30A/250V	17CUB92B*10	17CUB92@*10	17CUB92F*10	17CUB92N*10
—	—	1 1/2	2	0	—	0.75–3.4	A	30	30A/600V	17CUB92B*11	17CUB92@*11	17CUB92F*11	17CUB92N*11
2	2	—	—	0	—	3–12	A1	30	30A/250V	17CUC92B*10	17CUC92@*10	17CUC92F*10	17CUC92N*10
—	—	5	5	0	—	3–12	A1	30	30A/600V	17CUC92B*11	17CUC92@*11	17CUC92F*11	17CUC92N*11
3	3	—	—	0	—	5.5–22	A1	30	30A/250V	17CUD92B*10	17CUD92@*10	17CUD92F*10	17CUD92N*10
1/2	3/4	—	—	1	—	0.25–1	A	30	30A/250V	17DUA92B*10	17DUA92@*10	17DUA92F*10	17DUA92N*10
—	—	1/2	1/2	1	—	0.25–1	A	30	30A/600V	17DUA92B*11	17DUA92@*11	17DUA92F*11	17DUA92N*11
1/2	3/4	—	—	1	—	0.75–3.4	A	30	30A/250V	17DUB92B*10	17DUB92@*10	17DUB92F*10	17DUB92N*10
—	—	1 1/2	2	1	—	0.75–3.4	A	30	30A/600V	17DUB92B*11	17DUB92@*11	17DUB92F*11	17DUB92N*11
2	2	—	—	1	—	3–12	A1	30	30A/250V	17DUC92B*10	17DUC92@*10	17DUC92F*10	17DUC92N*10
—	—	5	5	1	—	3–12	A1	30	30A/600V	17DUC92B*11	17DUC92@*11	17DUC92F*11	17DUC92N*11
3	3	—	—	1	—	5.5–22	A1	30	30A/250V	17DUD92B*10	17DUD92@*10	17DUD92F*10	17DUD92N*10
—	—	10	10	1	—	5.5–22	A1	30	30A/600V	17DUD92B*11	17DUD92@*11	17DUD92F*11	17DUD92N*11
7 1/2	7 1/2	—	—	1	—	10–40	A1	30	30A/250V	17DUE92B*10	17DUE92@*10	17DUE92F*10	17DUE92N*10
7 1/2	7 1/2	—	—	1	—	10–40	A1	60	60A/250V	17DUE92B*12	17DUE92@*12	17DUE92F*12	17DUE92N*12
—	—	15	15	—	1 1/2	10–40	A1	60	60A/600V	17EUE92B*13	17EUE92@*13	17EUE92F*13	17EUE92N*13
10	10	—	—	—	1 1/2	10–40	A1	60	60A/250V	17EUE92B*12	17EUE92@*12	17EUE92F*12	17EUE92N*12
10	15	—	—	2	—	13–52	B	60	60A/250V	17FUF92B*12	17FUF92@*12	17FUF92F*12	17FUF92N*12
—	—	25	25	2	—	13–52	B	60	60A/600V	17FUF92B*13	17FUF92@*13	17FUF92F*13	17FUF92N*13
—	—	—	30	—	2 1/2	25–100	B	60	60A/600V	17GUG92B*13	17GUG92@*13	17GUG92F*13	17GUG92N*13
—	—	30	—	—	2 1/2	25–100	B	100	100A/600V	17GUG92B*15	17GUG92@*15	17GUG92F*15	17GUG92N*15
15	20	—	—	—	2 1/2	25–100	B	100	100A/250V	17GUG92B*14	17GUG92@*14	17GUG92F*14	17GUG92N*14
20	25	—	—	3	—	25–100	B	100	100A/250V	17HUG92B*14	17HUG92@*14	17HUG92F*14	17HUG92N*14
—	—	50	50	3	—	25–100	B	100	100A/600V	17HUG92B*15	17HUG92@*15	17HUG92F*15	17HUG92N*15
25	30	—	—	3	—	25–100	B	200	200A/250V	17HUG92B*16	17HUG92@*16	17HUG92F*16	17HUG92N*16
30	40	—	—	—	3 1/2	50–200	B	200	200A/250V	17IUH92B*16	17IUH92@*16	17IUH92F*16	17IUH92N*16
—	—	75	75	—	3 1/2	50–200	B	200	200A/600V	17IUH92B*17	17IUH92@*17	17IUH92F*17	17IUH92N*17
40	50	—	—	4	—	50–200	B	200	200A/250V	17JUH92B*16	17JUH92@*16	17JUH92F*16	17JUH92N*16
—	—	100	100	4	—	50–200	B	200	200A/600V	17JUH92B*17	17JUH92@*17	17JUH92F*17	17JUH92N*17
75	100	—	—	5	—	55–250	—	400	400A/250V	17LP92B*18	—	—	17LP92N*18
—	100	—	—	5	—	55–250	—	600	600A/250V ^②	17LP92B*20	—	—	17LP92N*20
—	—	125	5	—	—	55–250	—	200	200A/600V	17LP92B*17	—	—	17LP92N*17
—	—	200	5	—	—	55–250	—	400	400A/600V	17LP92B*19	—	—	17LP92N*19
—	—	200	5	—	—	55–250	—	600	600A/600V ^②	17LP92B*21	—	—	17LP92N*21
150	200	—	—	6	—	160–630	—	600	600A/250V	17MPX92B*20	—	—	17MPX92N*20
—	—	400	400	6	—	160–630	—	600	600A/600V	17MPX92B*21	—	—	17MPX92N*21
—	—	400	400	6	—	160–630	—	800	800A/600V	17MPX92B*23	—	—	17MPX92N*23
—	—	600	600	7 ^④	—	400–1220	A1+CT	1200	1200A/600V	17NUN92B*24	—	—	17NUN92N*24
—	—	900	900	8 ^④	—	400–1220	A1+CT	1600	1600A/600V	17PUN92B*25	—	—	17PUN92N*25

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in starter sizes 5–8.

② Use Class J fuses only.

③ Single phase wiring page 17-144.

④ F coil 100–250V AC 50/60Hz, or DC, H coil 150–500V AC 50/60Hz, or DC

⑤ Only available

F coil 100–250V AC 50/60Hz, or DC

Combination Heavy Duty Starters

Fusible with Solid State Overload, Class 17

Selection



Ordering Information

- Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- Field Modification Kits see page 17-90.
- Factory Modifications see page 17-102.
- Dimensions see page 17-131.
- Wiring Diagrams see page 17-145.
- Replacement Parts see page 17-108.

Coil Table

60Hz Voltage	Letter
24	J
120	F
110–120/220–240	A
200–208	D
220–240	G
277	L
220–240/440–480	C
440–480	H
575–600	E

For other voltages and frequencies, see Factory Modifications page 17-102.

Extra Wide Enclosure, 3-Phase, 3-Pole

Max Hp				NEMA Size	Half Size	Overload		Disc. Amp Range	Fuse Clip Amp/Volts	Enclosure					
200 Volts	230 Volts	460 Volts	575 Volts			Amp Range	Frame Size			NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight, @ = W for 304 Stainless Steel @ = X for 316 Stainless Steel		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
										Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1/2	1/2	—	—	0	—	0.25–1	A	30	30A/250V	17CUA82B*10		17CUA82@*10		17CUA82N*10	
—	—	1/2	1/2	0	—	0.25–1	A	30	30A/600V	17CUA82B*11		17CUA82@*11		17CUA82N*11	
1/2	3/4	—	—	0	—	0.75–3.4	A	30	30A/250V	17CUB82B*10		17CUB82@*10		17CUB82N*10	
—	—	1 1/2	2	0	—	0.75–3.4	A	30	30A/600V	17CUB82B*11		17CUB82@*11		17CUB82N*11	
2	2	—	—	0	—	3–12	A1	30	30A/250V	17CUC82B*10		17CUC82@*10		17CUC82N*10	
—	—	5	5	0	—	3–12	A1	30	30A/600V	17CUC82B*11		17CUC82@*11		17CUC82N*11	
3	3	—	—	0	—	5.5–22	A1	30	30A/250V	17CUD82B*10		17CUD82@*10		17CUD82N*10	
1/2	1/2	—	—	1	—	0.25–1	A	30	30A/250V	17DUA82B*10		17DUA82@*10		17DUA82N*10	
—	—	1/2	1/2	1	—	0.25–1	A	30	30A/600V	17DUA82B*11		17DUA82@*11		17DUA82N*11	
1/2	3/4	—	—	1	—	0.75–3.4	A	30	30A/250V	17DUB82B*10		17DUB82@*10		17DUB82N*10	
—	—	1 1/2	2	1	—	0.75–3.4	A	30	30A/600V	17DUB82B*11		17DUB82@*11		17DUB82N*11	
2	2	—	—	1	—	3–12	A1	30	30A/250V	17DUC82B*10		17DUC82@*10		17DUC82N*10	
—	—	5	5	1	—	3–12	A1	30	30A/600V	17DUC82B*11		17DUC82@*11		17DUC82N*11	
3	3	—	—	1	—	5.5–22	A1	30	30A/250V	17DUD82B*10		17DUD82@*10		17DUD82N*10	
—	—	10	10	1	—	5.5–22	A1	30	30A/600V	17DUD82B*11		17DUD82@*11		17DUD82N*11	
5	5	—	—	1	—	10–40	A1	30	30A/250V	17DUE82B*10		17DUE82@*10		17DUE82N*10	
7 1/2	7 1/2	—	—	1	—	10–40	A1	60	60A/250V	17DUE82B*12		17DUE82@*12		17DUE82N*12	
—	—	15	15	—	1 1/2	10–40	A1	60	60A/600V	17EUE82B*13		17EUE82@*13		17EUE82N*13	
10	10	—	—	—	1 1/2	10–40	A1	60	60A/250V	17EUE82B*12		17EUE82@*12		17EUE82N*12	
10	15	—	—	2	—	13–52	B	60	60A/250V	17FUF82B*12		17FUF82@*12		17FUF82N*12	
—	—	25	25	2	—	13–52	B	60	60A/600V	17FUF82B*13		17FUF82@*13		17FUF82N*13	
—	—	—	30	—	2 1/2	25–100	B	60	60A/600V	17GUG82B*13		17GUG82@*13		17GUG82N*13	
—	—	30	—	—	2 1/2	25–100	B	100	100A/600V	17GUG82B*15		17GUG82@*15		17GUG82N*15	
15	20	—	—	—	2 1/2	25–100	B	100	100A/250V	17GUG82B*14		17GUG82@*14		17GUG82N*14	
20	25	—	—	3	—	25–100	B	100	100A/250V	17HUG82B*14		17HUG82@*14		17HUG82N*14	
—	—	50	50	3	—	25–100	B	100	100A/600V	17HUG82B*15		17HUG82@*15		17HUG82N*15	
25	30	—	—	3	—	25–100	B	200	200A/250V	17HUG82B*16		17HUG82@*16		17HUG82N*16	

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

Combination Heavy Duty Starters

MCP Type with Solid State Overload, Class 18

Selection



Ordering Information

- Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- Field Modification Kits see page 17-90.
- Factory Modifications see page 17-102.
- Dimensions see page 17-131.
- Wiring Diagrams see page 17-145.
- Replacement Parts see page 17-108.

Coil Table

60Hz Voltage	Letter
24	J
120	F
110–120/220–240 ^①	A
200–208	D
220–240	G
277	L
220–240/440–480 ^①	C
440–480	H
575–600	E

For other voltages and frequencies, see Factory Modifications page 17-102.

Standard Width Enclosure, 3-Phase, 3-Pole

Max Hp				NEMA Size	Half Size	Motor Circuit Interrupter ETI Amps	Overload		Enclosure							
200 Volts	230 Volts	460 Volts	575 Volts				Amp Range	Frame Size	NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant @ = W for 304 Stainless Steel @ = X for 316 Stainless Steel		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
									Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1/2	1/2	1	1	0	—	3	0.75–3.4	A	18CUB92B*		18CUB92@*		18CUB92F*		18CUB92N*	
2	2	5	5	0	—	10	3–12	A1	18CUC92B*		18CUC92@*		18CUC92F*		18CUC92N*	
3	3	—	—	0	—	25	5.5–22	A1	18CUD92B*		18CUD92@*		18CUD92F*		18CUD92N*	
1/2	1/2	1	1	1	—	3	0.75–3.4	A	18DUB92B*		18DUB92@*		18DUB92F*		18DUB92N*	
2	2	5	5	1	—	10	3–12	A1	18DUC92B*		18DUC92@*		18DUC92F*		18DUC92N*	
3	3	7 1/2	10	1	—	25	5.5–22	A1	18DUD92B*		18DUD92@*		18DUD92F*		18DUD92N*	
7 1/2	7 1/2	10	—	1	—	30	10–40	A1	18DUE92B*		18DUE92@*		18DUE92F*		18DUE92N*	
—	—	15	15	—	1 1/2	40	10–40	A1	18EUE92B*		18EUE92@*		18EUE92F*		18EUE92N*	
10	15	25	25	2	—	50	13–52	B	18FUF92B*		18FUF92@*		18FUF92F*		18FUF92N*	
15	20	30	30	—	2 1/2	100	25–100	B	18GUG92B*		18GUG92@*		18GUG92F*		18GUG92N*	
25	30	50	50	3	—	125	25–100	B	18HUG92B*		18HUG92@*		18HUG92F*		18HUG92N*	
30	40	75	75	—	3 1/2	125	50–200	B	18IUH92B*		18IUH92@*		18IUH92F*		18IUH92N*	
40	50	100	100	4	—	150	50–200	B	18JUH92B*		18JUH92@*		18JUH92F*		18JUH92N*	
50	75	150	200	5	—	250	55–250	—	18LPT92B*		—	—	—	—	18LPT92N*	
75	100	200	—	5	—	400	55–250	—	18LP92B*		—	—	—	—	18LP92N*	
100	125	250	300	6	—	400	160–630	—	18MPW92B*		—	—	—	—	18MPW92N*	
150	200	400	400	6	—	600	160–630	—	18MPX92B*		—	—	—	—	18MPX92N*	
—	250	500	500	7②	—	800	400–1220	A1+CT	18NUV92B*		—	—	—	—	18NUV92N*	
—	300	600	600	7②	—	1000	400–1220	A1+CT	18NUY92B*		—	—	—	—	18NUY92N*	
—	400	800	800	8③	—	1200	400–1220	A1+CT	18PUW92B*		—	—	—	—	18PUW92N*	
—	450	900	900	8③	—	1600	400–1220	A1+CT	18PUZ92B*		—	—	—	—	18PUZ92N*	

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in starter sizes 5–8.

② F coil 100–250V AC 50/60Hz, or DC, H coil 150–500V AC 50/60Hz, or DC

③ Only available F coil 100–250V AC 50/60Hz, or DC

Combination Heavy Duty Starters

MCP Type with Solid State Overload, Class 18

Selection

	Ordering Information	Coil Table	
	▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order. ▶ Field Modification Kits see page 17-90. ▶ Factory Modifications see page 17-102. ▶ Dimensions see page 17-131. ▶ Wiring Diagrams see page 17-145. ▶ Replacement Parts see page 17-108.	60Hz Voltage	Letter
		24	J
		120	F
		110–120/220–240	A
		200–208	D
		220–240	G
		277	L
		220–240/440–480	C
		440–480	H
		575–600	E
		For other voltages and frequencies, see Factory Modifications page 17-102.	

Extra Wide Enclosure, 3-Phase, 3-Pole

Max Hp				NEMA Size	Half Size	Motor Circuit Interrupter ETI Amps	Overload		Enclosure					
200 Volts	230 Volts	460 Volts	575 Volts				Amp Range	Frame Size	NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant @ = W for 304 Stainless Steel @ = X for 316 Stainless Steel		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$									
1/2	1/2	1	1	0	—	3	0.75–3.4	A	18CUB82B*		18CUB82@*		18CUB82N*	
2	2	5	5	0	—	10	3–12	A1	18CUC82B*		18CUC82@*		18CUC82N*	
3	3	—	—	0	—	25	5.5–22	A1	18CUD82B*		18CUD82@*		18CUD82N*	
1/2	1/2	1	1	1	—	3	0.75–3.4	A	18DUB82B*		18DUB82@*		18DUB82N*	
2	2	5	5	1	—	10	3–12	A1	18DUC82B*		18DUC82@*		18DUC82N*	
3	3	7 1/2	10	1	—	25	5.5–22	A1	18DUD82B*		18DUD82@*		18DUD82N*	
7 1/2	7 1/2	10	—	1	—	30	10–40	A1	18DUE82B*		18DUE82@*		18DUE82N*	
—	—	15	15	—	1 1/2	40	10–40	A1	18EUE82B*		18EUE82@*		18EUE82N*	
10	15	25	25	2	—	50	13–52	B	18FUF82B*		18FUF82@*		18FUF82N*	
15	20	30	30	—	2 1/2	100	25–100	B	18GUG82B*		18GUG82@*		18GUG82N*	
25	30	50	50	3	—	125	25–100	B	18HUG82B*		18HUG82@*		18HUG82N*	

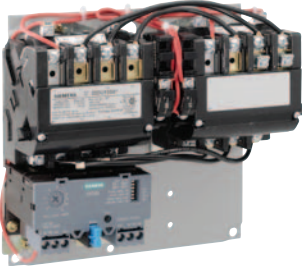
NEMA & General
Purpose Control17
CONTROL
PRODUCTS

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

Reversing Heavy Duty Starters

Solid State Overload, Class 22

Selection

	Ordering Information		Coil Table	
	► Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order. ► Field Modification Kits see page 17-90. ► Factory Modifications see page 17-102. ► Dimensions see page 17-118 open and 17-133 enclosed. ► Wiring Diagrams see page 17-146.		60Hz Voltage	Letter
			24	J
			120	F
			110–120/220–240 ^①	A
			200–208	D
			220–240	G
			277	L
			220–240/440–480 ^①	C
			440–480	H
			575–600	E
			For other voltages and frequencies, see Factory Modifications page 17-102.	

Open Type & Standard Width Enclosure, 3-Phase, 3-Pole

Max Hp				NEMA Size	Half Size	Overload		Enclosure		NEMA 1		NEMA 4/4X Stainless		NEMA 4X Fiberglass		NEMA 3/3R/4/12	
200 Volts	230 Volts	460 Volts	575 Volts			Amp Range	Frame Size	Open Type Standard Auxiliary Contacts ^④	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1/8	1/8	1/8	1/8	00	—	0.25–1	A	22BUA32A*		22BUA32B*		Use Size 0	—	Use Size 0	—	Use Size 0	—
1/8	1/8	1 1/2	2	00	—	0.75–3.4	A	22BUB32A*		22BUB32B*		Use Size 0	—	Use Size 0	—	Use Size 0	—
1 1/2	1 1/2	2	—	00	—	3–12	A1	22BUC32A*		22BUC32B*		Use Size 0	—	Use Size 0	—	Use Size 0	—
1/8	1/8	1/8	1/2	0	—	0.25–1	A	22CUA32A*		22CUA32B*		22CUA32W*		22CUA32F*		22CUA320*	
1/8	1/8	1 1/2	2	0	—	0.75–3.4	A	22CUB32A*		22CUB32B*		22CUB32W*		22CUB32F*		22CUB320*	
2	2	5	5	0	—	3–12	A1	22CUC32A*		22CUC32B*		22CUC32W*		22CUC32F*		22CUC320*	
3	3	—	—	0	—	5.5–22	A1	22CUD32A*		22CUD32B*		22CUD32W*		22CUD32F*		22CUD320*	
1/8	1/8	1/8	1/8	1	—	0.25–1	A	22DUA32A*		22DUA32B*		22DUA32W*		22DUA32F*		22DUA320*	
1/8	1/8	1 1/2	2	1	—	0.75–3.4	A	22DUB32A*		22DUB32B*		22DUB32W*		22DUB32F*		22DUB320*	
2	2	5	5	1	—	3–12	A1	22DUC32A*		22DUC32B*		22DUC32W*		22DUC32F*		22DUC320*	
3	3	10	10	1	—	5.5–22	A1	22DUD32A*		22DUD32B*		22DUD32W*		22DUD32F*		22DUD320*	
7 1/2	7 1/2	—	—	1	—	10–40	A1	22DUE32A*		22DUE32B*		22DUE32W*		22DUE32F*		22DUE320*	
10	10	15	15	—	1 1/2	10–40	A1	22EUE32A*		22EUE32B*		22EUE32W*		22EUE32F*		22EUE320*	
10	15	25	25	2	—	13–52	B	22FUF32A*		22FUF32B*		22FUF32W*		22FUF32F*		22FUF320*	
15	20	30	30	—	2 1/2	25–100	B	22GUG32A*		22GUG32B*		22GUG32W*		22GUG32F*		22GUG320*	
25	30	50	50	3	—	25–100	B	22HUG32A*		22HUG32B*		22HUG32W*		22HUG32F*		22HUG320*	
30	40	75	75	—	3 1/2	50–200	B	22IUH32A*		22IUH32B*		22IUH32W*		22IUH32F*		22IUH320*	
40	50	100	100	4	—	50–200	B	22JUH32A*		22JUH32B*		22JUH32W*		22JUH32F*		22JUH320*	
75	100	200	200	5	—	55–250	—	22LPU32A*		22LPU32B*		—	—	—	—	22LPU320*	
150	200	400	400	6	—	160–630	—	22MPX32A*		22MPX32B*		—	—	—	—	22MPX320*	
—	300	600	600	7 ^②	—	400–1220	A1+CT	22NUN32A*		22NUN32B*		—	—	—	—	22NUN320*	
—	450	900	900	8 ^③	—	400–1220	A1+CT	22PUN32A*		22PUN32B*		—	—	—	—	22PUN320*	

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in size 5–8 starters.

② Only available

F coil 100–250V AC 50/60Hz, or DC
H coil 150–500V AC 50/60Hz, or DC

③ Only available

F coil 100–250V AC 50/60Hz, or DC

④ Auxiliary contacts

22B–22E 4th pole built-in
22F–22J 2 NO & 2 NC

Combination Reversing Heavy Duty Starters

Non-Fusible, Class 25

Selection

	Ordering Information	Coil Table																				
	▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order. ▶ Fuse clips see page 17-103. ▶ Field Modification Kits see page 17-90. ▶ Factory Modifications see page 17-102. ▶ Dimensions see page 17-135. ▶ Wiring Diagrams see page 17-147. ▶ Replacement Parts see page 17-108.	<table><tr><th>60Hz Voltage</th><th>Letter</th></tr><tr><td>24</td><td>J</td></tr><tr><td>120</td><td>F</td></tr><tr><td>110–120/220–240^①</td><td>A</td></tr><tr><td>200–208</td><td>D</td></tr><tr><td>220–240</td><td>G</td></tr><tr><td>277</td><td>L</td></tr><tr><td>220–240/440–480^①</td><td>C</td></tr><tr><td>440–480</td><td>H</td></tr><tr><td>575–600</td><td>E</td></tr></table>	60Hz Voltage	Letter	24	J	120	F	110–120/220–240 ^①	A	200–208	D	220–240	G	277	L	220–240/440–480 ^①	C	440–480	H	575–600	E
	60Hz Voltage	Letter																				
24	J																					
120	F																					
110–120/220–240 ^①	A																					
200–208	D																					
220–240	G																					
277	L																					
220–240/440–480 ^①	C																					
440–480	H																					
575–600	E																					
	For other voltages and frequencies, see Factory Modifications page 17-102.																					

Standard Width Enclosure with Solid State Overload, 3-Phase, 3-Pole

Max Hp				NEMA Size	Half Size	Overload		Disc. Amp Rating	Enclosure							
200 Volts	230 Volts	460 Volts	575 Volts			Amp Range	Frame Size		NEMA 1 General Purpose	NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel	NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant	NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof				
									Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
½	½	¾	¾	0	—	0.25–1	A	30	25CUA92B*		25CUA92W*		25CUA92F*		25CUA92N*	
½	¾	1½	2	0	—	0.75–3.4	A	30	25CUB92B*		25CUB92W*		25CUB92F*		25CUB92N*	
2	2	5	5	0	—	3–12	A1	30	25CUC92B*		25CUC92W*		25CUC92F*		25CUC92N*	
3	3	—	—	0	—	5.5–22	A1	30	25CUD92B*		25CUD92W*		25CUD92F*		25CUD92N*	
½	½	¾	¾	1	—	0.25–1	A	30	25DUA92B*		25DUA92W*		25DUA92F*		25DUA92N*	
½	¾	1½	2	1	—	0.75–3.4	A	30	25DUB92B*		25DUB92W*		25DUB92F*		25DUB92N*	
2	2	5	5	1	—	3–12	A1	30	25DUC92B*		25DUC92W*		25DUC92F*		25DUC92N*	
3	3	10	10	1	—	5.5–22	A1	30	25DUD92B*		25DUD92W*		25DUD92F*		25DUD92N*	
7½	7½	—	—	1	—	10–40	A1	60	25DUE92B*		25DUE92W*		25DUE92F*		25DUE92N*	
10	10	15	15	—	1½	10–40	A1	60	25EUE92B*		25EUE92W*		25EUE92F*		25EUE92N*	
10	15	25	25	2	—	13–52	B	60	25FUF92B*		25FUF92W*		25FUF92F*		25FUF92N*	
15	20	30	30	—	2½	25–100	B	100	25GUG92B*		25GUG92W*		25GUG92F*		25GUG92N*	
20	25	50	50	3	—	25–100	B	100	25HUG92B*		25HUG92W*		25HUG92F*		25HUG92N*	
30	40	75	75	—	3½	50–200	B	200	25IUH92B*		25IUH92W*		25IUH92F*		25IUH92N*	
40	50	100	100	4	—	50–200	B	200	25JUH92B*		25JUH92W*		25JUH92F*		25JUH92N*	
75	100	200	200	5	—	55–250	—	400	25LPU92B*		—	—	—	—	25LPU92N*	
150	200	400	400	6	—	160–630	—	600	25MPX92B*		—	—	—	—	25MPX92N*	
—	300	600	600	7Ⓢ	—	400–1220	A1+CT	1200	25NUN92B*		—	—	—	—	25NUN92N*	
—	450	900	900	8Ⓢ	—	400–1220	A1+CT	1600	25PUN92B*		—	—	—	—	25PUN92N*	

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in starter sizes 5–8.

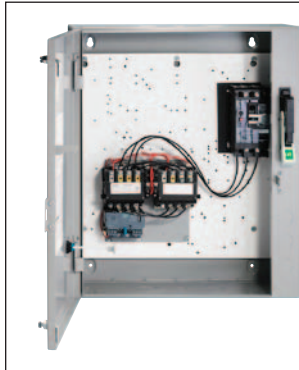
② F coil 100-250V AC 50/60Hz, or DC,
H coil 150-500V AC 50/60Hz, or DC

③ Only available
F coil 100-250V AC 50/60Hz, or DC

Combination Reversing Heavy Duty Starters

MCP Type, Class 26

Selection



Ordering Information

- Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- Field Modification Kits see page 17-90.
- Factory Modifications see page 17-102.
- Dimensions see page 17-135.
- Wiring Diagrams see page 17-147.
- Replacement Parts see page 17-108.

Coil Table

60Hz Voltage	Letter
24	J
120	F
110–120/220–240 ^①	A
200–208	D
220–240	G
277	L
220–240/440–480 ^①	C
440–480	H
575–600	E
For other voltages and frequencies, see Factory Modifications page 17-102.	

Standard Width Enclosure with Solid State Overload, 3-Phase, 3-Pole

Max Hp				NEMA Size	Half Size	Motor Circuit Interrupter ETI Amps	Overload		Enclosure							
200 Volts	230 Volts	460 Volts	575 Volts				Amp Range	Frame Size	NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
									Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1/2	1/2	1	1	0	—	3	0.75–3.4	A	26CUB92B*		26CUB92W*		26CUB92F*		26CUB92N*	
2	2	5	5	0	—	10	3–12	A1	26CUC92B*		26CUC92W*		26CUC92F*		26CUC92N*	
3	3	—	—	0	—	25	5.5–22	A1	26CUD92B*		26CUD92W*		26CUD92F*		26CUD92N*	
1/2	1/2	1	1	1	—	3	0.75–3.4	A	26DUB92B*		26DUB92W*		26DUB92F*		26DUB92N*	
2	2	5	5	1	—	10	3–12	A1	26DUC92B*		26DUC92W*		26DUC92F*		26DUC92N*	
3	3	7 1/2	10	1	—	25	5.5–22	A1	26DUD92B*		26DUD92W*		26DUD92F*		26DUD92N*	
7 1/2	7 1/2	10	—	1	—	30	10–40	A1	26DUE92B*		26DUE92W*		26DUE92F*		26DUE92N*	
—	—	15	15	—	1 1/2	40	10–40	A1	26EUE92B*		26EUE92W*		26EUE92F*		26EUE92N*	
10	15	25	25	2	—	50	13–52	B	26FUF92B*		26FUF92W*		26FUF92F*		26FUF92N*	
15	20	30	30	—	2 1/2	100	25–100	B	26GUG92B*		26GUG92W*		26GUG92F*		26GUG92N*	
25	30	50	50	3	—	125	25–100	B	26HUG92B*		26HUG92W*		26HUG92F*		26HUG92N*	
30	40	75	75	—	3 1/2	125	50–200	B	26IUH92B*		26IUH92W*		26IUH92F*		26IUH92N*	
40	50	100	100	4	—	150	50–200	B	26JUH92B*		26JUH92W*		26JUH92F*		26JUH92N*	
50	75	150	200	5	—	250	55–250	—	26LPT92B*		—	—	—	—	26LPT92N*	
75	100	200	—	5	—	400	55–250	—	26LPU92B*		—	—	—	—	26LPU92N*	
100	125	250	300	6	—	400	160–630	—	26MPW92B*		—	—	—	—	26MPW92N*	
150	200	400	400	6	—	600	160–630	—	26MPX92B*		—	—	—	—	26MPX92N*	
—	250	500	500	7*Ⓣ	—	800	400–1220	A1+CT	26NUV92B*		—	—	—	—	26NUV92N*	
—	300	600	600	7*Ⓣ	—	1000	400–1220	A1+CT	26NUY92B*		—	—	—	—	26NUY92N*	
—	400	800	800	8Ⓣ	—	1200	400–1220	A1+CT	26PUW92B*		—	—	—	—	26PUW92N*	
—	450	900	900	8Ⓣ	—	1600	400–1220	A1+CT	26PUZ92B*		—	—	—	—	26PUZ92N*	

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

② F coil 100–250V AC 50/60Hz, or DC,
H coil 150–500V AC 50/60Hz, or DC

③ Only available
F coil 100–250V AC 50/60Hz, or DC

① Dual voltage coils not available in starter sizes 5–8.

Two Speed Heavy Duty Starters

Features and Benefits

General

Features

- Rugged Industrial Design
- Dual Voltage, Dual Frequency Coils
- Compact Design
- Snap-On Front Removable Auxiliary Contacts
- Electrical and Mechanical Interlocks
- Half Sizes — Space and Cost Savings
- Industrial Type Disconnect Operating Handle
- Visible Blade Disconnect Thru Size 4
- Adjustable Motor Circuit Protector
- 100,000 Amp Fault Protection with MCP or Class R Fuses
- Pilot Device Locations identified on All Enclosures
- UL Listed File #E14900
- CSA Certified File #LR6535

Applications

Multi-speed magnetic starters automatically reconnect multi-speed motor windings for the desired speed in response to a signal received from push button stations or other pilot devices.

These starters are available for two speed motors.

Consequent Pole multi-speed motors having two speeds on a single winding (consequent pole) require a starter which reconnects the motor leads to half the number of effective motor poles at the high speed point. In this type of motor, **the low speed is one half the high speed.**

Separate Windings motors having separate windings for each speed provide more varied speed combinations in that the low speed need not be one half the high speed.

Starters for separate winding motors consist of a starter unit for each speed.

Multi-speed motor starters are available for constant torque, variable torque and constant horsepower motors.

Constant Torque motors maintain constant torque at all speeds. Horsepower varies directly with speed. This type of motor is applicable to conveyors, mills and similar applications.

Variable Torque motors produce a torque characteristic which varies as the square of the speed. This type of motor is applicable to fans, blowers and centrifugal pumps.

Constant Horsepower motors maintain constant horsepower at all speeds and therefore torque varies inversely with speed. This type of motor is applicable where the same horsepower is required at all speeds. **The higher current required at low speed requires derating on starters for constant horsepower applications.** This type of motor is applicable to metal working machines such as drills, lathes, mills, bending machines, punch presses, and power wrenches.

Operation

Magnetic starters for multi-speed applications select the desired speed in accordance with the pilot control.

The shock to machinery upon the reduction of speed is greater than when the speed is increased. Therefore, the pilot control should be wired so that the stop button must be depressed before dropping to a lower speed or time delays should be used for applications requiring full automatic operations. The multi-speed controls are available with the necessary interlocks or relays to provide this type of operation.

These controls may be modified for compelling or acceleration pilot control.

Selective Control permits the operator to start the motor at any speed and to change to a higher speed by merely pushing a button. To change to a lower speed it is necessary to first depress the stop button and to then press the proper speed button. Selective control is a function of the pilot control selected and requires no starter modifications.

Compelling Control requires that the motor always be started at the lower speed and that the push buttons be operated in speed sequence to go to the next higher speed. To change to a lower speed, the stop button must be depressed and then the push buttons operated in speed sequence until the desired speed is reached. Compelling control can be added from the factory modification section page 17-105.

Acceleration Control provides that the motor be accelerated automatically with timers by progressively energizing the controls from the push button station from the lowest to highest speed. To change to a lower speed the stop button is depressed and then it is necessary to proceed as if starting from rest. Acceleration control can be added from the factory modification section page 17-105.

Deceleration Control provides that the motor be decelerated automatically with a timer when going from high speed to low speed. The timer allows the motor to decelerate from high speed to a lower speed before automatically restarting the motor in low speed. Deceleration control can be added from the factory modification section page 17-105.

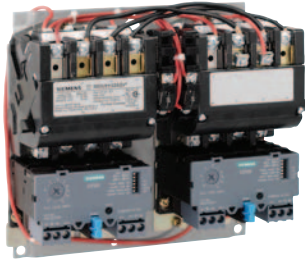


Open Style Two Speed Starter
(ESP100 Overload)

Two Speed Heavy Duty Starters

Constant or Variable Torque with Solid State Overload, Class 50

Selection



2S2W Starter
(ESP200 Overload)

Ordering Information

- Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- Replace the (†) with the letter that corresponds to the correct low speed FLA in the FLA table.®
- Field Modification Kits see page 17-90.
- Factory Modifications see page 17-102.
- Dimensions see page 17-124.
- Wiring Diagrams see page 17-148.
- Replacement Parts see page 17-108.

Coil Table

60Hz Voltage	Letter
24	J
120	F
110–120/220–240	A
200–208	D
220–240	G
277	L
220–240/440–480	C
440–480	H
575–600	E

For other voltages and frequencies, see Factory Modifications page 17-102.

Low Speed FLA Table

Size	FLA	OLR Frame Size	†
0,1	0.25–1	A	A
0,1	0.75–3.4	A	B
0,1	3–12	A1	C
0,1	5.5–22	A1	D
0-1 ³ / ₄	10–40	A1	E
2-3	13–52	B	F
2-3	25–100	B	G
3 ¹ / ₂ -4	50–200	B	H

One Winding Consequent Pole, 3-Phase (Constant or Variable Torque)

Max Hp						Overload		Enclosure		NEMA 1		NEMA 4/4X Stainless		NEMA 4X Fiberglass		NEMA 3/3R/4/12	
200 Volts	230 Volts	460 Volts	575 Volts	NEMA Size	Half Size	Amp Range	Frame Size	Open Type® Standard Auxiliary Contacts	List Price \$	General Purpose	List Price \$	Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel	List Price \$	Watertight, Dust-tight Corrosion Resistant	List Price \$	Watertight, Dust-tight, Weatherproof	List Price \$
1/2	3/4	1 1/2	2	0	—	0.75–3.4	A	30CUB†32A2V*		30CUB†32B2V*		30CUB†32W2V*		30CUB†32F2V*		30CUB†32O2V*	
2	2	5	5	0	—	3–12	A1	30CUC†32A2V*		30CUC†32B2V*		30CUC†32W2V*		30CUC†32F2V*		30CUC†32O2V*	
3	3	—	—	0	—	5.5–22	A1	30CUD†32A2V*		30CUD†32B2V*		30CUD†32W2V*		30CUD†32F2V*		30CUD†32O2V*	
1/2	3/4	1 1/2	1 1/2	1	—	0.75–3.4	A	30DUB†32A2V*		30DUB†32B2V*		30DUB†32W2V*		30DUB†32F2V*		30DUB†32O2V*	
2	2	5	5	1	—	3–12	A1	30DUC†32A2V*		30DUC†32B2V*		30DUC†32W2V*		30DUC†32F2V*		30DUC†32O2V*	
3	3	10	10	1	—	5.5–22	A1	30DUD†32A2V*		30DUD†32B2V*		30DUD†32W2V*		30DUD†32F2V*		30DUD†32O2V*	
7 1/2	7 1/2	—	—	1	—	10–40	A1	30DUE†32A2V*		30DUE†32B2V*		30DUE†32W2V*		30DUE†32F2V*		30DUE†32O2V*	
10	10	15	15	—	1 1/2	10–40	A1	30EUE†32A2V*		30EUE†32B2V*		30EUE†32W2V*		30EUE†32F2V*		30EUE†32O2V*	
10	15	25	25	2	—	13–52	B	30FUF†32A2V*		30FUF†32B2V*		30FUF†32W2V*		30FUF†32F2V*		30FUF†32O2V*	
15	20	30	30	—	2 1/2	25–100	B	30GUG†32A2V*		30GUG†32B2V*		30GUG†32W2V*		30GUG†32F2V*		30GUG†32O2V*	
25	30	50	50	3	—	25–100	B	30HUG†32A2V*		30HUG†32B2V*		30HUG†32W2V*		30HUG†32F2V*		30HUG†32O2V*	
30	40	75	75	—	3 1/2	50–200	B	30IUH†32A2V*		30IUH†32B2V*		30IUH†32W2V*		30IUH†32F2V*		30IUH†32O2V*	
40	50	100	100	4	—	50–200	B	30JUH†32A2V*		30JUH†32B2V*		30JUH†32W2V*		30JUH†32F2V*		30JUH†32O2V*	

Two Separate Windings, 3-Phase (Constant or Variable Torque)

Max Hp						Overload		Enclosure		NEMA 1		NEMA 4/4X Stainless		NEMA 4X Fiberglass		NEMA 3/3R/4/12	
200 Volts	230 Volts	460 Volts	575 Volts	NEMA Size	Half Size	Amp Range	Frame Size	Open Type® Standard Auxiliary Contacts	List Price \$	General Purpose	List Price \$	Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel	List Price \$	Watertight, Dust-tight Corrosion Resistant	List Price \$	Watertight, Dust-tight, Weatherproof	List Price \$
1/2	3/4	1 1/2	2	0	—	0.75–3.4	A	30CUB†32A1V*		30CUB†32B1V*		30CUB†32W1V*		30CUB†32F1V*		30CUB†32O1V*	
2	2	5	5	0	—	3–12	A1	30CUC†32A1V*		30CUC†32B1V*		30CUC†32W1V*		30CUC†32F1V*		30CUC†32O1V*	
3	3	—	—	0	—	5.5–22	A1	30CUD†32A1V*		30CUD†32B1V*		30CUD†32W1V*		30CUD†32F1V*		30CUD†32O1V*	
1/2	3/4	1 1/2	1 1/2	1	—	0.75–3.4	A	30DUB†32A1V*		30DUB†32B1V*		30DUB†32W1V*		30DUB†32F1V*		30DUB†32O1V*	
2	2	5	5	1	—	3–12	A1	30DUC†32A1V*		30DUC†32B1V*		30DUC†32W1V*		30DUC†32F1V*		30DUC†32O1V*	
3	3	10	10	1	—	5.5–22	A1	30DUD†32A1V*		30DUD†32B1V*		30DUD†32W1V*		30DUD†32F1V*		30DUD†32O1V*	
7 1/2	7 1/2	—	—	1	—	10–40	A1	30DUE†32A1V*		30DUE†32B1V*		30DUE†32W1V*		30DUE†32F1V*		30DUE†32O1V*	
10	10	15	15	—	1 1/2	10–40	A1	30EUE†32A1V*		30EUE†32B1V*		30EUE†32W1V*		30EUE†32F1V*		30EUE†32O1V*	
10	15	25	25	2	—	13–52	B	30FUF†32A1V*		30FUF†32B1V*		30FUF†32W1V*		30FUF†32F1V*		30FUF†32O1V*	
15	20	30	30	—	2 1/2	25–100	B	30GUG†32A1V*		30GUG†32B1V*		30GUG†32W1V*		30GUG†32F1V*		30GUG†32O1V*	
25	30	50	50	3	—	25–100	B	30HUG†32A1V*		30HUG†32B1V*		30HUG†32W1V*		30HUG†32F1V*		30HUG†32O1V*	
30	40	75	75	—	3 1/2	50–200	B	30IUH†32A1V*		30IUH†32B1V*		30IUH†32W1V*		30IUH†32F1V*		30IUH†32O1V*	
40	50	100	100	4	—	50–200	B	30JUH†32A1V*		30JUH†32B1V*		30JUH†32W1V*		30JUH†32F1V*		30JUH†32O1V*	

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

® If motor FLA are unknown, select overload on the basis that low speed FLA will be no greater than 50% of high speed FLA.

® Auxiliary contacts 30C-30E 4th pole built-in 30F-30J 2 NO & 2 NC

Two Speed Heavy Duty Starters

Constant HP with Solid State Overload, Class 30

Selection

2S2W Starter (ESP200 Overload)	Ordering Information	Coil Table	High/Low Speed FLA Table ^①				
	▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order. ▶ Replace the (t) with the letter that corresponds to the correct FLA in High/Low Speed FLA Table.^② ▶ Field Modification Kits see page 17-90. ▶ Factory Modifications see page 17-102. ▶ Dimensions see page 17-124. ▶ Wiring Diagrams see page 17-148. ▶ Replacement Parts see page 17-108.	60Hz Voltage	Letter	Size	FLA	OLR Frame Size	†
		24	J	0,1	0.25–1	A	A
		120	F	0,1	0.75–3.4	A	B
		110–120/220–240	A	0,1	3–12	A1	C
		200–208	D	0,1	5.5–22	A1	D
		220–240	G	0-1 ³ / ₄	10–40	A1	E
		277	L	2-3	13–52	B	F
		220–240/440–480	C	2-3	25–100	B	G
		440–480	H	3 ¹ / ₂ -4	50–200	B	H
		575–600	E				
		For other voltages and frequencies, see Factory Modifications page 17-102.		* First (t) for high speed, second (t) for low speed. Use motor nameplate to select FLA. If motor FLA are unknown, select overload on the bases that the low speed FLA will be no greater than 50 % of high speed FLA.			

One Winding Consequent Pole, 3-Phase (Constant Horsepower)

Max Hp						Enclosure									
						Open Type Standard Auxiliary Contacts ^②		NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
200 Volts	230 Volts	460 Volts	575 Volts	NEMA Size	Half Size	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
2	2	3	3	0	—	30CU††32A2H*		30CU††32B2H*		30CU††32W2H*		30CU††32F2H*		30CU††32O2H*	
5	5	7½	7½	1	—	30DU††32A2H*		30DU††32B2H*		30DU††32W2H*		30DU††32F2H*		30DU††32O2H*	
7½	7½	10	10	—	1½	30EU††32A2H*		30EU††32B2H*		30EU††32W2H*		30EU††32F2H*		30EU††32O2H*	
7½	10	20	20	2	—	30FU††32A2H*		30FU††32B2H*		30FU††32W2H*		30FU††32F2H*		30FU††32O2H*	
10	15	25	25	—	2½	30GU††32A2H*		30GU††32B2H*		30GU††32W2H*		30GU††32F2H*		30GU††32O2H*	
20	25	40	40	3	—	30HU††32A2H*		30HU††32B2H*		30HU††32W2H*		30HU††32F2H*		30HU††32O2H*	
25	30	50	50	—	3½	30IU††32A2H*		30IU††32B2H*		30IU††32W2H*		30IU††32F2H*		30IU††32O2H*	
30	40	75	75	4	—	30JU††32A2H*		30JU††32B2H*		30JU††32W2H*		30JU††32F2H*		30JU††32O2H*	

Two Separate Windings, 3-Phase (Constant Horsepower)

Max Hp						Enclosure									
						Open Type Standard Auxiliary Contacts ^②		NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
200 Volts	230 Volts	460 Volts	575 Volts	NEMA Size	Half Size	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
2	2	3	3	0	—	30CU††32A1H*		30CU††32B1H*		30CU††32W1H*		30CU††32F1H*		30CU††32O1H*	
5	5	7½	7½	1	—	30DU††32A1H*		30DU††32B1H*		30DU††32W1H*		30DU††32F1H*		30DU††32O1H*	
7½	7½	10	10	—	1¾	30EU††32A1H*		30EU††32B1H*		30EU††32W1H*		30EU††32F1H*		30EU††32O1H*	
7½	10	20	20	2	—	30FU††32A1H*		30FU††32B1H*		30FU††32W1H*		30FU††32F1H*		30FU††32O1H*	
10	15	25	25	—	2½	30GU††32A1H*		30GU††32B1H*		30GU††32W1H*		30GU††32F1H*		30GU††32O1H*	
20	25	40	40	3	—	30HU††32A1H*		30HU††32B1H*		30HU††32W1H*		30HU††32F1H*		30HU††32O1H*	
25	30	50	50	—	3½	30IU††32A1H*		30IU††32B1H*		30IU††32W1H*		30IU††32F1H*		30IU††32O1H*	
30	40	75	75	4	—	30JU††32A1H*		30JU††32B1H*		30JU††32W1H*		30JU††32F1H*		30JU††32O1H*	

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

① First (t) for high speed, second (t) for low speed. Use motor nameplate information to select FLA. If motor FLA are unknown, select overload on the basis that low speed FLA will be no greater than 50% of high speed FLA.

② Auxiliary contacts
30C-30E 4th pole built-in
30F-30J 2 NO & 2 NC

Combination Two Speed Heavy Duty Starters

Non-Fusible, Constant or Variable Torque with Solid State Overload, Class 32

Selection

Ordering Information	Coil Table	Low Speed FLA Table				
▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order. ▶ Replace the (†) with the letter that corresponds to the correct low speed FLA in the FLA table.② ▶ Fuse clips see page 17-103. ▶ Field Modification Kits see page 17-90. ▶ Factory Modifications see page 17-102. ▶ Dimensions see page 17-137. ▶ Wiring Diagrams see page 17-148. ▶ Replacement Parts see page 17-108.	60Hz Voltage	Letter	Size	FLA	OLR Frame Size	†
	24	J	0,1	0.25–1	A	A
	120	F	0,1	0.75–3.4	A	B
	110–120/220–240①	A	0,1	3–12	A1	C
	200–208	D	0,1	5.5–22	A1	D
	220–240	G	0-1 ^{3/4}	10–40	A1	E
	277	L	2-3	13–52	B	F
	220–240/440–480①	C	2-3	25–100	B	G
	440–480	H	3 ^{1/2} -4	50–200	B	H
	575–600	E				
For other voltages and frequencies, see Factory Modifications page 17-102.						

One Winding Consequent Pole, 3-Phase (Constant or Variable Torque)

Max Hp				NEMA Size	Half Size	Overload		Disc. Amp Range	Enclosure							
200 Volts	230 Volts	460 Volts	575 Volts			Amp Range	Frame Size		NEMA 1 General Purpose	NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel	NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant	NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof				
									Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1/2	3/4	1 1/2	2	0	—	0.75–3.4	A	30	32CUB†92B2V2*		32CUB†92W2V2*		32CUB†92F2V2*		32CUB†92N2V2*	
2	2	5	5	0	—	3–12	A1	30	32CUC†92B2V2*		32CUC†92W2V2*		32CUC†92F2V2*		32CUC†92N2V2*	
3	3	—	—	0	—	5.5–22	A1	30	32CUD†92B2V2*		32CUD†92W2V2*		32CUD†92F2V2*		32CUD†92N2V2*	
1/2	3/4	1 1/2	1 1/2	1	—	0.75–3.4	A	30	32DUB†92B2V2*		32DUB†92W2V2*		32DUB†92F2V2*		32DUB†92N2V2*	
2	2	5	5	1	—	3–12	A1	30	32DUC†92B2V2*		32DUC†92W2V2*		32DUC†92F2V2*		32DUC†92N2V2*	
3	3	10	10	1	—	5.5–22	A1	30	32DUD†92B2V2*		32DUD†92W2V2*		32DUD†92F2V2*		32DUD†92N2V2*	
7 1/2	7 1/2	—	—	1	—	10–40	A1	60	32DUE†92B2V2*		32DUE†92W2V2*		32DUE†92F2V2*		32DUE†92N2V2*	
10	10	15	15	—	1 1/2	10–40	A1	60	32EUE†92B2V2*		32EUE†92W2V2*		32EUE†92F2V2*		32EUE†92N2V2*	
10	15	25	25	2	—	13–52	B	60	32FUF†92B2V2*		32FUF†92W2V2*		32FUF†92F2V2*		32FUF†92N2V2*	
15	20	30	30	—	2 1/2	25–100	B	100	32GUG†92B2V2*		32GUG†92W2V2*		32GUG†92F2V2*		32GUG†92N2V2*	
20	25	50	50	3	—	25–100	B	100	32HUG†92B2V2*		32HUG†92W2V2*		32HUG†92F2V2*		32HUG†92N2V2*	
30	40	75	75	—	3 1/2	50–200	B	200	32IUH†92B2V2*		32IUH†92W2V2*		32IUH†92F2V2*		32IUH†92N2V2*	
40	50	100	100	4	—	50–200	B	200	32JUH†92B2V2*		32JUH†92W2V2*		32JUH†92F2V2*		32JUH†92N2V2*	

Two Separate Windings, 3-Phase (Constant or Variable Torque)

Max Hp				NEMA Size	Half Size	Overload		Disc. Amp Range	Enclosure							
200 Volts	230 Volts	460 Volts	575 Volts			Amp Range	Frame Size		NEMA 1 General Purpose	NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel	NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant	NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof				
Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$			
1/2	3/4	1 1/2	2	0	—	0.75–3.4	A	30	32CUB†92B1V2*	32CUB†92W1V2*	32CUB†92F1V2*	32CUB†92N1V2*				
2	2	5	5	0	—	3–12	A1	30	32CUC†92B1V2*	32CUC†92W1V2*	32CUC†92F1V2*	32CUC†92N1V2*				
3	3	—	—	0	—	5.5–22	A1	30	32CUD†92B1V2*	32CUD†92W1V2*	32CUD†92F1V2*	32CUD†92N1V2*				
1/2	3/4	1 1/2	1 1/2	1	—	0.75–3.4	A	30	32DUB†92B1V2*	32DUB†92W1V2*	32DUB†92F1V2*	32DUB†92N1V2*				
2	2	5	5	1	—	3–12	A1	30	32DUC†92B1V2*	32DUC†92W1V2*	32DUC†92F1V2*	32DUC†92N1V2*				
3	3	10	10	1	—	5.5–22	A1	30	32DUD†92B1V2*	32DUD†92W1V2*	32DUD†92F1V2*	32DUD†92N1V2*				
7 1/2	7 1/2	—	—	1	—	10–40	A1	60	32DUE†92B1V2*	32DUE†92W1V2*	32DUE†92F1V2*	32DUE†92N1V2*				
10	10	15	15	—	1 1/2	10–40	A1	60	32EUE†92B1V2*	32EUE†92W1V2*	32EUE†92F1V2*	32EUE†92N1V2*				
10	15	25	25	2	—	13–52	B	60	32FUF†92B1V2*	32FUF†92W1V2*	32FUF†92F1V2*	32FUF†92N1V2*				
15	20	30	30	—	2 1/2	25–100	B	100	32GUG†92B1V2*	32GUG†92W1V2*	32GUG†92F1V2*	32GUG†92N1V2*				
20	25	50	50	3	—	25–100	B	100	32HUG†92B1V2*	32HUG†92W1V2*	32HUG†92F1V2*	32HUG†92N1V2*				
30	40	75	75	—	3 1/2	50–200	B	200	32IUH†92B1V2*	32IUH†92W1V2*	32IUH†92F1V2*	32IUH†92N1V2*				
40	50	100	100	4	—	50–200	B	200	32JUH†92B1V2*	32JUH†92W1V2*	32JUH†92F1V2*	32JUH†92N1V2*				

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

② Dual voltage coils not available in modified starters.

② If motor FLA are unknown, select overload on the basis that low speed FLA will be no greater than 50% of high speed FLA.

Combination Two Speed Heavy Duty Starters

Non-Fusible, Constant Horsepower with Solid State Overload, Class 32

Selection

	Ordering Information	Coil Table	High/Low Speed FLA Table ^②				
	► Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order. ► Replace the (†) with the letter that corresponds to the correct FLA in the High/Low Speed FLA Table.^② ► Fuse clips see page 17-103. ► Field Modification Kits see page 17-90. ► Factory Modifications see page 17-102. ► Dimensions see page 17-137. ► Wiring Diagrams see page 17-148. ► Replacement Parts see page 17-108.	60Hz Voltage	Letter	Size	FLA	OLR Frame Size	†
		24	J	0,1	0.25–1	A	A
		120	F	0,1	0.75–3.4	A	B
		110–120/220–240 ^①	A	0,1	3–12	A1	C
		200–208	D	0,1	5.5–22	A1	D
		220–240	G	0-1 ³ / ₄	10–40	A1	E
		277	L	2-3	13–52	B	F
		220–240/440–480 ^①	C	2-3	25–100	B	G
		440–480	H	3 ¹ / ₂ -4	50–200	B	H
575–600	E						
		For other voltages and frequencies see Factory Modifications page 17-102.	* First (†) for high speed, second (†) for low speed. Use motor nameplate to select FLA. If motor FLA are unknown, select overload on the bases that the low speed FLA will be no greater than 50 % of high speed FLA.				

One Winding Consequent Pole, 3-Phase (Constant Horsepower)

Max Hp				NEMA Size	Half Size	Overload		Disc. Amp Range	Enclosure			
200 Volts	230 Volts	460 Volts	575 Volts			Amp Range	Frame Size		NEMA 1 General Purpose	NEMA 4/4X Stainless, Watertight, Dust-tight, Corrosion Resistant, 304 Stainless Steel	NEMA 4X Fiberglass, Watertight, Dust-tight, Corrosion Resistant	NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof
									Catalog Number	Catalog Number	Catalog Number	Catalog Number
2	2	3	3	0	—	—	—	30	32CU††92B2H2*	32CU††92W2H2*	32CU††92F2H2*	32CU††92N2H2*
5	5	7½	7½	1	—	—	—	30	32DU††92B2H2*	32DU††92W2H2*	32DU††92F2H2*	32DU††92N2H2*
7½	7½	10	10	—	1½	—	—	60	32EU††92B2H2*	32EU††92W2H2*	32EU††92F2H2*	32EU††92N2H2*
7½	10	20	20	2	—	—	—	60	32FU††92B2H2*	32FU††92W2H2*	32FU††92F2H2*	32FU††92N2H2*
10	15	25	25	—	2½	—	—	100	32GU††92B2H2*	32GU††92W2H2*	32GU††92F2H2*	32GU††92N2H2*
20	25	40	40	3	—	—	—	100	32HU††92B2H2*	32HU††92W2H2*	32HU††92F2H2*	32HU††92N2H2*
25	30	50	50	—	3½	—	—	200	32IU††92B2H2*	32IU††92W2H2*	32IU††92F2H2*	32IU††92N2H2*
30	40	75	75	4	—	—	—	200	32JU††92B2H2*	32JU††92W2H2*	32JU††92F2H2*	32JU††92N2H2*

Two Separate Windings, 3-Phase (Constant Horsepower)

Max Hp				NEMA Size	Half Size	Overload		Disc. Amp Range	Enclosure			
200 Volts	230 Volts	460 Volts	575 Volts			Amp Range	Frame Size		NEMA 1 General Purpose	NEMA 4/4X Stainless, Watertight, Dust-tight, Corrosion Resistant, 304 Stainless Steel	NEMA 4X Fiberglass, Watertight, Dust-tight, Corrosion Resistant	NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof
									Catalog Number	Catalog Number	Catalog Number	Catalog Number
2	2	3	3	0	—	—	—	30	32CU††92B1H2*	32CU††92W1H2*	32CU††92F1H2*	32CU††92N1H2*
5	5	7½	7½	1	—	—	—	30	32DU††92B1H2*	32DU††92W1H2*	32DU††92F1H2*	32DU††92N1H2*
7½	7½	10	10	—	1½	—	—	60	32EU††92B1H2*	32EU††92W1H2*	32EU††92F1H2*	32EU††92N1H2*
7½	10	20	20	2	—	—	—	60	32FU††92B1H2*	32FU††92W1H2*	32FU††92F1H2*	32FU††92N1H2*
10	15	25	25	—	2½	—	—	100	32GU††92B1H2*	32GU††92W1H2*	32GU††92F1H2*	32GU††92N1H2*
20	25	40	40	3	—	—	—	100	32HU††92B1H2*	32HU††92W1H2*	32HU††92F1H2*	32HU††92N1H2*
25	30	50	50	—	3½	—	—	200	32IU††92B1H2*	32IU††92W1H2*	32IU††92F1H2*	32IU††92N1H2*
30	40	75	75	4	—	—	—	200	32JU††92B1H2*	32JU††92W1H2*	32JU††92F1H2*	32JU††92N1H2*

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in modified starters.

② First † for high speed, second † for low speed. Use motor nameplate information to select FLA. If motor FLA are unknown, select overload on the basis that low speed FLA will be no greater than 50% of high speed FLA.

Combination Two Speed Heavy Duty Starters

MCP Type, Constant or Variable Torque with Solid State Overload, Class 32

Selection

Ordering Information	Coil Table	Low Speed FLA Table				
▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order. ▶ Replace the (†) with the letter that corresponds to the correct low speed FLA in the FLA table.® ▶ Field Modification Kits see page 17-90. ▶ Factory Modifications see page 17-102. ▶ Dimensions see page 17-137. ▶ Wiring Diagrams see page 17-148. ▶ Replacement Parts see page 17-108.	60Hz Voltage	Letter	Size	FLA	OLR Frame Size	†
	24	J	0,1	0.25–1	A	A
	120	F	0,1	0.75–3.4	A	B
	110–120/220–240 ^①	A	0,1	3–12	A1	C
	200–208	D	0,1	5.5–22	A1	D
	220–240	G	0-1 ³ / ₄	10–40	A1	E
	277	L	2-3	13–52	B	F
	220–240/440–480 ^①	C	2-3	25–100	B	G
	440–480	H	3 ¹ / ₂ -4	50–200	B	H
	575–600	E				
For other voltages and frequencies, see Factory Modifications page 17-102.						

One Winding Consequent Pole, 3-Phase (Constant or Variable Torque)

Max Hp				NEMA Size	Half Size	Motor Circuit Interrupter ETI Amps	Overload		Enclosure							
200 Volts	230 Volts	460 Volts	575 Volts				Amp Range	Frame Size	NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
									Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
¼	¼	1½	2	0	—	3	0.75–3.4	A	32CUB†92B2V*		32CUB†92W2V*		32CUB†92F2V*		32CUB†92N2V*	
2	2	5	5	0	—	10	3–12	A1	32CUC†92B2V*		32CUC†92W2V*		32CUC†92F2V*		32CUC†92N2V*	
3	3	—	—	0	—	25	5.5–22	A1	32CUD†92B2V*		32CUD†92W2V*		32CUD†92F2V*		32CUD†92N2V*	
¾	¾	1½	1½	1	—	3	0.75–3.4	A	32DUB†92B2V*		32DUB†92W2V*		32DUB†92F2V*		32DUB†92N2V*	
2	2	5	5	1	—	10	3–12	A1	32DUC†92B2V*		32DUC†92W2V*		32DUC†92F2V*		32DUC†92N2V*	
3	3	10	10	1	—	25	5.5–22	A1	32DUD†92B2V*		32DUD†92W2V*		32DUD†92F2V*		32DUD†92N2V*	
7½	7½	—	—	1	—	30	10–40	A1	32DUE†92B2V*		32DUE†92W2V*		32DUE†92F2V*		32DUE†92N2V*	
—	—	15	15	—	1½	40	10–40	A1	32EUE†92B2V*		32EUE†92W2V*		32EUE†92F2V*		32EUE†92N2V*	
10	15	25	25	2	—	50	13–52	B	32FUF†92B2V*		32FUF†92W2V*		32FUF†92F2V*		32FUF†92N2V*	
15	20	30	30	—	2½	100	25–100	B	32GUG†92B2V*		32GUG†92W2V*		32GUG†92F2V*		32GUG†92N2V*	
25	30	50	50	3	—	125	25–100	B	32HUG†92B2V*		32HUG†92W2V*		32HUG†92F2V*		32HUG†92N2V*	
30	40	75	75	—	3½	125	50–200	B	32IUH†92B2V*		32IUH†92W2V*		32IUH†92F2V*		32IUH†92N2V*	
40	50	100	100	4	—	150	50–200	B	32JUH†92B2V*		32JUH†92W2V*		32JUH†92F2V*		32JUH†92N2V*	

Two Separate Windings, 3-Phase (Constant or Variable Torque)

Max Hp				NEMA Size	Half Size	Motor Circuit Interrupter ETI Amps	Overload		Enclosure							
200 Volts	230 Volts	460 Volts	575 Volts				Amp Range	Frame Size	NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
									Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1/2	1/2	1 1/2	2	0	—	3	0.75–3.4	A	32CUB†92B1V*		32CUB†92W1V*		32CUB†92F1V*		32CUB†92N1V*	
2	2	5	5	0	—	10	3–12	A1	32CUC†92B1V*		32CUC†92W1V*		32CUC†92F1V*		32CUC†92N1V*	
3	3	—	—	0	—	25	5.5–22	A1	32CUD†92B1V*		32CUD†92W1V*		32CUD†92F1V*		32CUD†92N1V*	
1/2	1/2	1 1/2	1 1/2	1	—	3	0.75–3.4	A	32DUB†92B1V*		32DUB†92W1V*		32DUB†92F1V*		32DUB†92N1V*	
2	2	5	5	1	—	10	3–12	A1	32DUC†92B1V*		32DUC†92W1V*		32DUC†92F1V*		32DUC†92N1V*	
3	3	10	10	1	—	25	5.5–22	A1	32DUD†92B1V*		32DUD†92W1V*		32DUD†92F1V*		32DUD†92N1V*	
7 1/2	7 1/2	—	—	1	—	30	10–40	A1	32DUE†92B1V*		32DUE†92W1V*		32DUE†92F1V*		32DUE†92N1V*	
—	—	15	15	—	1 1/2	40	10–40	A1	32EUE†92B1V*		32EUE†92W1V*		32EUE†92F1V*		32EUE†92N1V*	
10	15	25	25	2	—	50	13–52	B	32FUF†92B1V*		32FUF†92W1V*		32FUF†92F1V*		32FUF†92N1V*	
15	20	30	30	—	2 1/2	100	25–100	B	32GUG†92B1V*		32GUG†92W1V*		32GUG†92F1V*		32GUG†92N1V*	
25	30	50	50	3	—	125	25–100	B	32HUG†92B1V*		32HUG†92W1V*		32HUG†92F1V*		32HUG†92N1V*	
30	40	75	75	—	3 1/2	125	50–200	B	32IUH†92B1V*		32IUH†92W1V*		32IUH†92F1V*		32IUH†92N1V*	
40	50	100	100	4	—	150	50–200	B	32JUH†92B1V*		32JUH†92W1V*		32JUH†92F1V*		32JUH†92N1V*	

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in modified starters.

② If motor FLA are unknown, select overload on the basis that low speed FLA will be no greater than 50% of high speed FLA.

Combination Two Speed Heavy Duty Starters

MCP Type, Constant Horsepower with Solid State Overload, Class 32

Selection

	Ordering Information		Coil Table		High/Low Speed FLA Table [®]			
	► Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order. ► Replace the (†) with the letter that corresponds to the correct FLA in the High/Low Speed FLA table.[®] ► Field Modification Kits see page 17-90. ► Factory Modifications see page 17-102. ► Dimensions see page 17-137. ► Wiring Diagrams see page 17-148. ► Replacement Parts see page 17-108.		60Hz Voltage Letter		Size	FLA	OLR Frame Size	†
			24 J 120 F 110–120/220–240 ^① A 200–208 D 220–240 G 277 L 220–240/440–480 ^① C 440–480 H 575–600 E		0,1	0.25–1	A	A

* First (†) for high speed, second (†) for low speed. Use motor nameplate to select FLA. If motor FLA are unknown, select overload on the bases that the low speed FLA will be no greater than 50 % of high speed FLA.

One Winding Consequent Pole, 3-Phase (Constant Horsepower)

Max Hp				NEMA Size	Half Size	Motor Circuit Interrupter ETI Amps	Overload		Enclosure							
200 Volts	230 Volts	460 Volts	575 Volts				Amp Range	Frame Size	NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	
2	2	3	3	0	—	10	—	A or A1	32CU††92B2H*		32CU††92W2H*		32CU††92F2H*		32CU††92N2H*	
5	5	7½	7½	1	—	25	—	A or A1	32DU††92B2H*		32DU††92W2H*		32DU††92F2H*		32DU††92N2H*	
7½	7½	10	10	—	1½	40	—	A1	32EU††92B2H*		32EU††92W2H*		32EU††92F2H*		32EU††92N2H*	
7½	10	20	20	2	—	50	—	B	32FU††92B2H*		32FU††92W2H*		32FU††92F2H*		32FU††92N2H*	
10	15	25	25	—	2½	100	—	B	32GU††92B2H*		32GU††92W2H*		32GU††92F2H*		32GU††92N2H*	
20	25	40	40	3	—	100	—	B	32HU††92B2H*		32HU††92W2H*		32HU††92F2H*		32HU††92N2H*	
25	30	50	50	—	3½	125	—	B	32IU††92B2H*		32IU††92W2H*		32IU††92F2H*		32IU††92N2H*	
30	40	75	75	4	—	150	—	B	32JU††92B2H*		32JU††92W2H*		32JU††92F2H*		32JU††92N2H*	

Two Separate Windings, 3-Phase (Constant Horsepower)

Max Hp				NEMA Size	Half Size	Motor Circuit Interrupter ETI Amps	Overload		Enclosure							
200 Volts	230 Volts	460 Volts	575 Volts				Amp Range	Frame Size	NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number
2	2	3	3	0	—	10	—	A or A1	32CU††92B1H*		32CU††92W1H*		32CU††92F1H*		32CU††92N1H*	
5	5	7½	7½	1	—	25	—	A or A1	32DU††92B1H*		32DU††92W1H*		32DU††92F1H*		32DU††92N1H*	
7½	7½	10	10	—	1½	40	—	A1	32EU††92B1H*		32EU††92W1H*		32EU††92F1H*		32EU††92N1H*	
7½	10	20	20	2	—	50	—	B	32FU††92B1H*		32FU††92W1H*		32FU††92F1H*		32FU††92N1H*	
10	15	25	25	—	2½	100	—	B	32GU††92B1H*		32GU††92W1H*		32GU††92F1H*		32GU††92N1H*	
20	25	40	40	3	—	100	—	B	32HU††92B1H*		32HU††92W1H*		32HU††92F1H*		32HU††92N1H*	
25	30	50	50	—	3½	125	—	B	32IU††92B1H*		32IU††92W1H*		32IU††92F1H*		32IU††92N1H*	
30	40	75	75	4	—	150	—	B	32JU††92B1H*		32JU††92W1H*		32JU††92F1H*		32JU††92N1H*	

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Dual voltage coils not available in modified starters.

② First † for high speed, second † for low speed. Use motor nameplate information to select FLA. If motor FLA are unknown, select overload on the basis that low speed FLA will be no greater than 50% of high speed FLA.

Heavy Duty Contactors

SIRIUS NEMA Rated Contactors

Features and Benefits

Siemens SIRIUS NEMA Rated Contactors; the right choice for applications that demand the best. Rugged, reliable, flexible, and safe performance. In an increasingly competitive marketplace, all these factors are essential to success, particularly when it comes to assuring reliable motor protection and control. Whether you're a consulting engineer, a contractor, or a plant manager, protecting the performance of your motors is a critical priority. And one of the best ways to do so is with world class Siemens contactors and overload relays. Our contactors and overload relays are engineered for rugged performance, manufactured to be dependable, designed to improve

safety, easy and quick installation saves on downtime and installation costs. All contactors and overload relays are UL listed and CSA certified.

Siemens manufactures a broad range of contactors and overload relays designed to meet all of your most demanding applications. Contactor NEMA sizes range from 0 to 6. Siemens also offers a wide range of overload options such as the 3RU21 thermal for up to 100 amps and 3RB20/21 and the 3RB30/31 solid-state overloads up to 630 amps which are all coordinated with the dimensions, connections, and technical characteristics of SIRIUS NEMA rated contactors. Another solid state overload option is the ESP200 overload relay. Step 1 Choose contactor based on

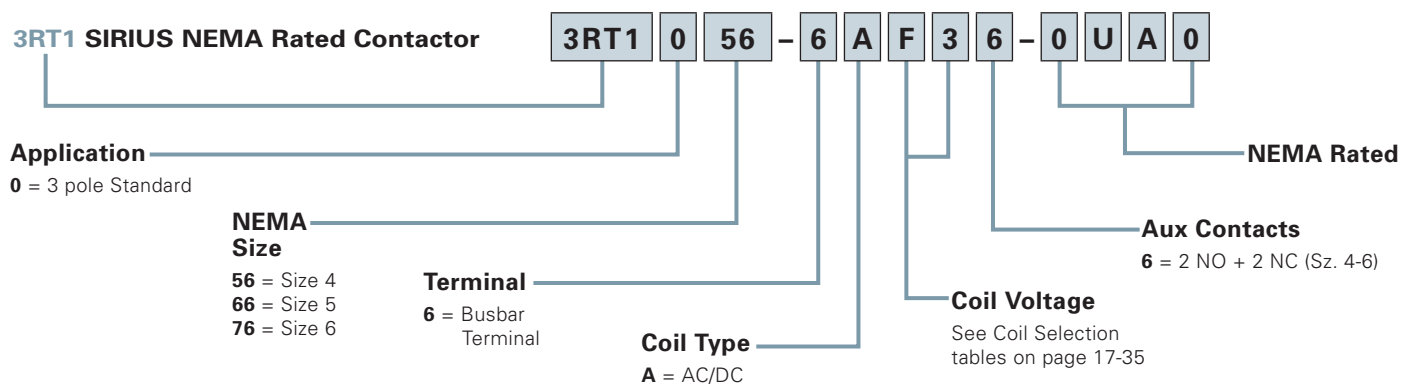
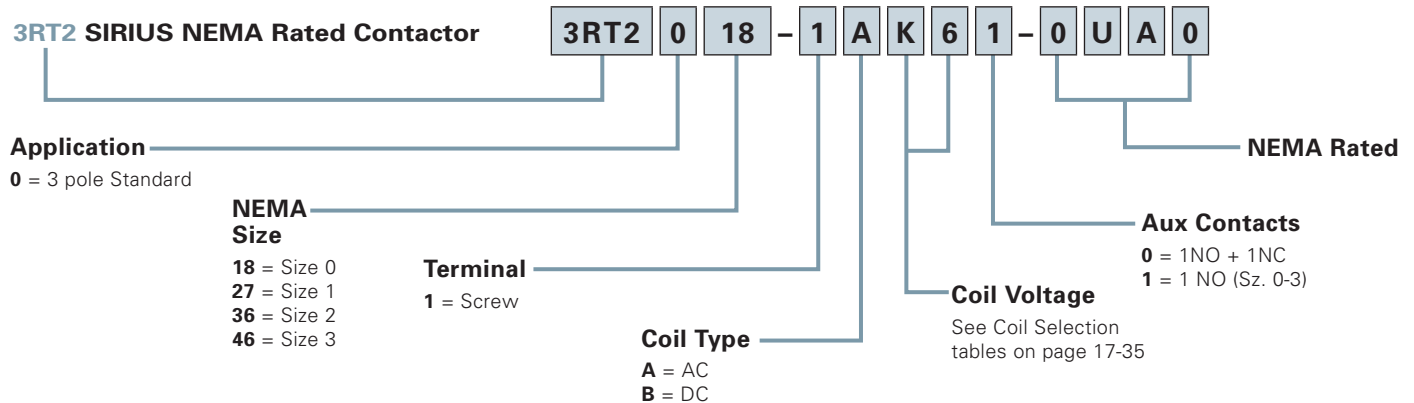
Full Load Amps (FLA) and HP -> Step 2 choose coil for contactor -> Step 3 Choose overload relay based on FLA. Tip select an overload with motor FLA in middle of adjustment dial.



Catalog Numbering System

NEMA & General
Purpose Control

17
CONTROL
PRODUCTS



- Tested and certified at all NEMA standards
- Are suitable for use in any climate
- Touchsafe terminals

- Screw terminals
- Auxiliary contacts available

- Surge suppression available
- AC and DC coils available

Heavy Duty Contactors

SIRIUS NEMA Rated Contactors

Selection



Ordering Information

- Replace the (**) with the letters from one of the coil tables.
- Field Modification Kits see Section 2, pages 68-85.
- Technical Data see Section 2, pages 123-153
- Dimensions see Section 2, pages 211-217.
- Wiring Diagrams see Section 2, pages 192-200.
- Replacement Parts see Section 2, pages 96-101.
- Selection of ESP200 solid state overload relays, see Section 9, page 59.
- Selection of IEC 3RU/3RB solid state overload relays, see Section 2.

See Industrial Controls Catalog for the sections mentioned above.

AC Coil table (3RT201,202,203,204)

Coil code	Voltage
C2 ^①	24vac
K6	120vac
P6	240vac
U6	277vac
V6	480vac
T6	600vac

DC Coil table (3RT201,202)

Coil code	Voltage
A2	12vdc
B4	24vdc
W4	48vdc
G4	125vdc

UC Coil table (3RT203,204)

Coil code	Voltage
B3	20...33vac/dc
F3	83...155vac/dc
P3	175...280vac/dc

UC Coil table (3RT105,106,107)

Coil code	Voltage
B3	23...26vac/dc
D3	42...48vac/dc
F3	110...127vac/dc
M3	200...220vac/dc
P3	220...240vac/dc
U3	240...277vac/dc
R3	440...480vac/dc
S3	500...550vac/dc
T3	575...600vac/dc

NEMA & General
Purpose Control

Open Type 3-Phase, 3-Pole

Max Hp				Contactor		Catalog Number		Use the Coil Code from the tables above to fill in **	
200 Volts	230 Volts	460 Volts	575 Volts	Amp Rating	NEMA Size	Screw Terminal with AC Coils	Screw Terminals with 24vDC coils		
3	3	5	5	18	0	3RT2018-1A**1-0UA0	3RT2018-1BB41-0UA0	AC	DC
7 1/2	7 1/2	10	10	27	1	3RT2027-1A**0-0UA0	3RT2027-1BB40-0UA0	AC	DC
10	15	25	25	45	2	3RT2036-1A**0-0UA0	3RT2036-1NB30-0UA0	AC	UC
25	30	50	50	90	3	3RT2046-1A**0-0UA0	3RT2046-1NB30-0UA0	AC	UC
						Screw Terminals with UC Coils			
40	50	100	100	135	4	3RT1056-6A**6-0UA0		UC	
75	100	200	200	270	5	3RT1066-6A**6-0UA0		UC	
150	200	400	400	540	6	3RT1076-6A**6-0UA0		UC	

17
CONTROL
PRODUCTS

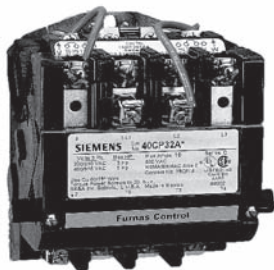
Note: Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

① Use code B0 for 3RT201.

Heavy Duty Contactors

3-Phase, Class 40

Selection



Ordering Information

- Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- Field Modification Kits see page 17-90.
- Factory Modifications see page 17-102.
- Dimensions see pages 17-119 open and 17-129 enclosed.
- Wiring Diagrams see page 17-150.
- Replacement Parts see page 17-108.

Coil Table

60Hz Voltage	Letter
24	J
120	F
110–120/220–240 ^①	A
200–208	D
220–240	G
277	L
220–240/440–480 ^①	C
440–480	H
575–600	E

For other voltages and frequencies, see Factory Modifications page 17-102.

Open Type & Standard Width Enclosure, 3-Phase, 3-Pole

Max Hp				Cont-actor Amp Rating	NEMA Size	Half Size	Enclosure									
200 Volts	230 Volts	460 Volts	575 Volts				Open Type ^④		NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight Corrosion Resistant 304 Stainless Steel		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
							Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1½	1½	2	2	9	00	—	40BP32A*		40BP32B*		Use Size 0	—	Use Size 0	—	Use Size 0	—
3	3	5	5	18	0	—	40CP32A*		40CP32B*		40CP32W*		40CP32F*		40CP320*	
7½	7½	10	10	27	1	—	40DP32A*		40DP32B*		40DP32W*		40DP32F*		40DP320*	
10	10	15	15	40	—	1¼	40EP32A*		40EP32B*		40EP32W*		40EP32F*		40EP320*	
10	15	25	25	45	2	—	40FP32A*		40FP32B*		40FP32W*		40FP32F*		40FP320*	
15	20	30	30	60	—	2½	40GP32A*		40GP32B*		40GP32W*		40GP32F*		40GP320*	
25	30	50	50	90	3	—	40HP32A*		40HP32B*		40HP32W*		40HP32F*		40HP320*	
30	40	75	75	115	—	3½	40IP32A*		40IP32B*		40IP32W*		40IP32F*		40IP320*	
40	50	100	100	135	4	—	40JG32A*		40JG32B*		40JG32W*		40JG32F*		40JG320*	
75	100	200	200	270	5	—	40LP32A*		40LP32B*		—	—	—	—	40LP320*	
150	200	400	400	540	6	—	40MP32A*		40MP32B*		—	—	—	—	40MP320*	
—	300	600	600	810	7 ^{②③}	—	40NH32A*		40NH32B*		—	—	—	—	40NH320*	
—	450	900	900	1215	8 ^{③⑤}	—	40PH32A*		40PH32B*		—	—	—	—	40PH320*	

Extra Wide Enclosure, 3-Phase, 3-Pole

Max Hp				Cont-actor Amp Rating	NEMA Size	Half Size	Enclosure					
200 Volts	230 Volts	460 Volts	575 Volts				NEMA 1 ^④ General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight Corrosion Resistant 304 Stainless Steel		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	List Price \$	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1½	1½	2	2	9	00	—	40BP82B*		Use Size 0	—	Use Size 0	—
3	3	5	5	18	0	—	40CP82B*		40CP82W*		40CP820*	
7½	7½	10	10	27	1	—	40DP82B*		40DP82W*		40DP820*	
10	10	15	15	40	—	1¼	40EP82B*		40EP82W*		40EP820*	
10	15	25	25	45	2	—	40FP82B*		40FP82W*		40FP820*	
15	20	30	30	60	—	2½	40GP82B*		40GP82W*		40GP820*	
25	30	50	50	90	3	—	40HP82B*		40HP82W*		40HP820*	
30	40	75	75	115	—	3½	40IP82B*		40IP82W*		40IP820*	
40	50	100	100	135	4	—	40JG82B*		40JG82W*		40JG820*	

Note: Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

① Dual voltage coils not available in size 5-8 starters.

② Only available
F coil 100-250V AC 50/60Hz, or DC
H coil 150-500V AC 50/60Hz, or DC
③ Only available
F coil 100-250V AC 50/60Hz, or DC

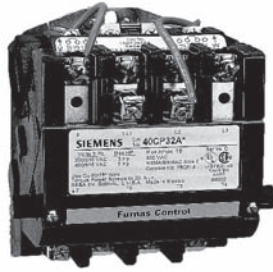
Standard Auxiliary Contacts			
Type	Size (3rd Character)	Configuration	Internal / External
All FVNR Starters & Contactors	B Thru E	1N.O.	Internal
	F Thru J	1N.O.	External
	L Thru M	2N.O., 2N.C.	External
	N Thru P	1N.O., 1N.C.	External

④ Lugs are not included, refer to page 17-94.

Heavy Duty Contactors

Single Phase, 4-Pole & Vacuum, Class 40

Selection



Ordering Information

- ▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- ▶ Field Modification Kits see page 17-90.
- ▶ Factory Modifications see page 17-102.
- ▶ Dimensions see pages 17-119 open and 17-129 enclosed.
- ▶ Wiring Diagrams see page 17-150.
- ▶ Replacement Parts see page 17-108.

Coil Table

60Hz Voltage	Letter
24	J
120	F
110–120/220–240 ^①	A
200–208	D
220–240	G
277	L
220–240/440–480 ^①	C
440–480	H
575–600	E
For other voltages and frequencies, see Factory Modifications page 17-102.	

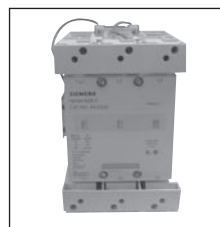
Open Type & Standard Width Enclosure, Single Phase, 2-Pole^{②③}

Max Hp		Cont-actor Amp Rating	NEMA Size	Half Size	Enclosure									
115 Volts	208/230 Volts				Open Type ^④		NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight Corrosion Resistant		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
					Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
¼	1	9	00	—	40BP12A*		40BP12B*		Use Size 0	—	Use Size 0	—	Use Size 0	—
1	2	18	0	—	40CP12A*		40CP12B*		40CP12W*		40CP12F*		40CP120*	
2	3	27	1	—	40DP12A*		40DP12B*		40DP12W*		40DP12F*		40DP120*	
3	5	35	1P	—	40EP12A*		40EP12B*		40EP12W*		40EP12F*		40EP120*	
3	7½	45	2	—	40FP12A*		40FP12B*		40FP12W*		40FP12F*		40FP120*	
5	10	60	—	2½	40GP12A*		40GP12B*		40GP12W*		40GP12F*		40GP120*	
7½	15	90	3	—	40HP12A*		40HP12B*		40HP12W*		40HP12F*		40HP120*	

Open Type & Standard Width Enclosure, 4-Pole

Max Hp				Cont- actor Amp Rating	NEMA Size	Half Size	Enclosure									
200 Volts	230 Volts	460 Volts	575 Volts				Open Type		NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight Corrosion Resistant		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
							Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1/8	1 1/2	2	2	9	00	—	40BP22A*		40BP22B*		Use Size 0	—	Use Size 0	—	Use Size 0	—
2	3	5	5	18	0	—	40CP22A*		40CP22B*		40CP22W*		40CP22F*		40CP220*	
3	7 1/2	10	10	27	1	—	40DP22A*		40DP22B*		40DP22W*		40DP22F*		40DP220*	
5	10	15	15	40	—	1 1/4	40EP22A*		40EP22B*		40EP22W*		40EP22F*		40EP220*	

Vacuum Contactors, 3-Phase, 3-Pole^①



Max Hp				Contactor Amp Rating	NEMA Size	Open Type	
200V	230V	460V	575V			Catalog Number	List Price \$
40	50	100	100	135	4	40JV32A*	
75	100	200	200	270	5	40LV32A*	
150	200	400	400	540	6	40MV32A*	

Note: Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

^① Dual voltage coils not available for vacuum contactors. Refer to Page 17-102 for a complete list of available coil voltages.

^② To order single phase contactor in an extra wide enclosure, order the enclosure kit from Page 17-99 and the open style contactor as separate items.

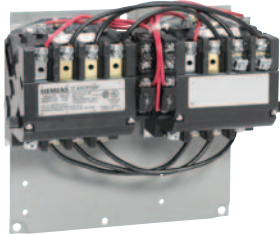
^③ Coils D, F, or G will be wired for incoming voltage. J coil will be wired for separate source. Coils E, H, and L do not apply to single phase starters.

^④ 1 NO Auxiliary.

Reversing Heavy Duty Contactors

Class 43

Selection



Ordering Information

- ▶ Replace the (*) with a letter from the coil table. Dual voltage coils are wired on high voltage unless specified on order.
- ▶ Field Modification Kits see page 17-90.
- ▶ Factory Modifications see page 17-102.
- ▶ Dimensions see pages 17-120 open and 17-133 enclosed.
- ▶ Wiring Diagrams see page 17-150.
- ▶ Replacement Parts see page 17-108.

Coil Table

60Hz Voltage	Letter
24	J
120	F
110–120/220–240 ^①	A
200–208	D
220–240	G
277	L
220–240/440–480 ^①	C
440–480	H
575–600	E

For other voltages and frequencies, see Factory Modifications page 17-102.

Open Type & Standard Width Enclosure, 3-Phase, 3-Pole

Max Hp				Cont-actor Amp Rating	NEMA Size	Half Size	Enclosure									
200 Volts	230 Volts	460 Volts	575 Volts				Open Type ^⑤		NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight Corrosion Resistant 304 Stainless Steel		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
							Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
½	½	2	2	9	00	—	43BP32A*		43BP32B*		Use Size 0	—	Use Size 0	—	Use Size 0	—
3	3	5	5	18	0	—	43CP32A*		43CP32B*		43CP32W*		43CP32F*		43CP320*	
7½	7½	10	10	27	1	—	43DP32A*		43DP32B*		43DP32W*		43DP32F*		43DP320*	
10	10	15	15	40	—	1¼	43EP32A*		43EP32B*		43EP32W*		43EP32F*		43EP320*	
10	15	25	25	45	2	—	43FP32A*		43FP32B*		43FP32W*		43FP32F*		43FP320*	
15	20	30	30	60	—	2½	43GP32A*		43GP32B*		43GP32W*		43GP32F*		43GP320*	
25	30	50	50	90	3	—	43HP32A*		43HP32B*		43HP32W*		43HP32F*		43HP320*	
30	40	75	75	115	—	3½	43IP32A*		43IP32B*		43IP32W*		43IP32F*		43IP320*	
40	50	100	100	135	4	—	43JG32A*		43JG32B*		43JG32W*		43JG32F*		43JG320*	
75	100	200	200	270	5	—	43LP32A*		43LP32B*		—	—	—	—	43LP320*	
100	200	400	400	540	6	—	43MP32A*		43MP32B*		—	—	—	—	43MP320*	
—	300	600	600	810	7 ^③	—	43NH32A*		43NH32B*		—	—	—	—	43NH320*	
—	450	900	900	1215	8 ^④	—	43PH32A*		—	—	—	—	—	—	—	—

Open Type & Standard Width Enclosure, Single Phase, 3-Wire, 2-Pole^②

Max Hp		Cont-actor Amp Rating	NEMA Size	Enclosure									
				Open Type		NEMA 1 General Purpose		NEMA 4/4X Stainless Watertight, Dust-tight Corrosion Resistant		NEMA 4X Fiberglass Watertight, Dust-tight Corrosion Resistant		NEMA 3/3R/4/12 Watertight, Dust-tight, Weatherproof	
115 Volts	208/ 230 Volts			Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
1/2	1	9	00	43BP12A*		43BP12B*		Use Size 0	—	Use Size 0	—	Use Size 0	—
1	2	18	0	43CP12A*		43CP12B*		43CP12W*		43CP12F*		43CP120*	
2	3	27	1	43DP12A*		43DP12B*		43DP12W*		43DP12F*		43DP120*	
3	5	35	1P	43EP12A*		43EP12B*		43EP12W*		43EP12F*		43EP120*	

Note: Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

① Dual voltage coils not available in size 5–8 starters.

② Coils D, F, or G will be wired for incoming voltage. J coil will be wired for separate source. Coils E, H, and L do not apply to single phase starters.

③ Only available
F coil 100–250V AC 50/60Hz, or DC
H coil 150–500V AC 50/60Hz, or DC

④ Only available
F coil 100–250V AC 50/60Hz, or DC

⑤ Auxiliary contacts
43B–43E 4th pole built-in
43F–43J 2 NO & 2 NC

Definite Purpose Control

Class 42 & 45

Product Nomenclature

Class 42 & 45 Product Nomenclature

Class 45 DP Contactor

Information shown on nomenclature sheets is for reference only to identify devices from existing catalog numbers.
This information is not to be used for the creation of new catalog numbers.

45	C	G	2	0	A	J	A
CLASS	AMP RATING	MODEL	POWER POLES	NC POWER POLES	ENCLOSURE	COIL	STD FEATURES
45 DP Contactor	E 30 G 40	G	1 1 power pole 2 2 power poles	0 None	A Open	F 120V, 60 HZ 110V, 50 HZ G 208-240V, 60 HZ 190-220V, 50 HZ H 440-480V, 60 HZ 380-440V, 50 HZ J 24V, 60 HZ 24V, 50 HZ L 277V, 60 HZ	A Jumper Bar * Class F coil standard. Binding head screws (30A)/ lugs (40A) and quad quick connect standard. * Contact cover comes standard.
							

Class 42 DP Contactor

Information shown on nomenclature sheets is for reference only to identify devices from existing catalog numbers.
This information is not to be used for the creation of new catalog numbers.

42	B	F	3	5	A	J
CLASS	AMP RATING	MODEL	POWER POLES	CONTROL CIRCUIT	ENCLOSURE	COIL
42 DP Contactor	B 30 C 40 D 50 E 60 F 75 G 90	F E* *75-90 amp only	1 2 power poles 3 3 power poles	5 Without auxiliary contact	A Open	F 110V, 50 HZ 120V, 60 HZ G 190-220V, 50 HZ 208-240V, 60 HZ J 24V, 50 HZ 24V, 60 HZ H 380-440V, 50 HZ 440-480V, 60 HZ L 277V, 60 HZ
						

Definite Purpose Control

Class 42 & 45

General Application

Class 45



45EG10AJ



45GG10AJ



45EG20AJ



45GG20AJ

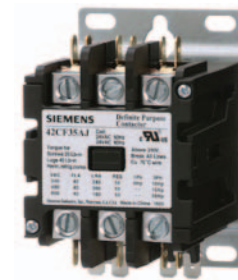
Features

- Power Terminations:
 - Quad Quick Connects
 - 30A: Screws
 - ≥40A: Box Lugs
- Compact Size
- Durable Metal Back Plate
- Enclosed Body and Coil
- One Pole Version Includes Shunt Bar
- Quiet Operation
- Weld-Resistant Silver Cadmium Oxide Contacts
- Visual Contact Position Indication
- Class F Coil Insulation

Class 42



42BF35AJ



42CF35AJ



42CF15AJ



42FE35AJ

Features

- Power Terminations:
 - Quick Connects
 - 30A: Screws
 - ≥40A: Box Lugs
- Compact Size
- Durable Metal Back Plate
- Quiet Operation
- Weld-Resistant Silver Cadmium Oxide Contacts
- Visual Contact Position Indication
- Class F Coil Insulation
- Snap-On Auxiliary Contacts
- Replacement Coils Available

Approvals & Standards:

- US
- ARI 780 & 790
- Canadian Heater Rated
- SCCR 600 VAC
- UL File E14900

Definite Purpose Control

Class 42 & 45

Selection

	Ordering Information		Coil Selection (●)		
	- Use complete catalog number. Replace the (●) with letter from the coil table on this page - For additional information see www.usa.siemens.com/controls		60Hz Voltage	50Hz Voltage	Letter
			24	24	J
			110–120	110	F
			208–240	190–220	G
			277	240	L
			440–480	380–440	H ^①
			① Not available on Class 42 2-pole units		

Contactors

Class 45 Contactors

FLA	Locked Rotor Amps				Non Inductive Amps	Poles	Catalog Number
	240V	277V	480V	600V			
30	180	180	—	—	40	1	45EG10A●A
40	240	240	—	—	50	1	45GG10A●A
30	180	—	150	120	40	2	45EG20A●
40	240	—	200	160	50	2	45GG20A●

Class 42 Contactors

FLA	Locked Rotor Amps			Non Inductive Amps	Horsepower					Poles	Catalog Number
	240V	480V	600V		1 PH		3 PH				
					120 V	240 V	240V	480V	600V		
30	180	150	120	40	2	3	7.5	—	—	2	42BF15A●
40	240	200	160	50	3	5	10	—	—	2	42CF15A●
30	180	150	120	40	—	3	7.5	10	15	3	42BF35A●
40	240	200	160	50	—	5	10	15	20	3	42CF35A●
50	300	250	200	63	—	5	15	20	25	3	42DF35A●
60	360	300	240	75	—	7.5	20	25	30	3	42EF35A●
75	450	375	300	94	—	15	25	40	40	3	42FE35A●
90	540	450	360	120	—	15	30	50	50	3	42GE35A●

Accessories

Auxiliary Contacts

Description	Class	Contactor FLA	Auxiliary Contact Ratings	Auxiliary Contacts	Catalog Number
Snap-on Side Mounted Auxiliary Contacts  49ACR0	42	30-60	NEMA A600 10A 600VAC	1 NO	49ACR0
				1 NC	49ACRC
				1 NO & 1 NC	49ACR6
				2 NO	49ACR7
				2 NC	49ACR8
				1 SPDT	49D36098001
	42	75-90	NEMA A600 10A 600V	2 SPDT	49D36098003
				1 NO	49D22125001
				1 NC	49D22125002
				1 SPDT	49CE42SPDT

Definite Purpose Control

Class 42 & 45

Replacement Parts

Replacement Coils

Class 42

Description	Third Character of Cat. No.	Fourth Character of Cat. No.	Volts 60 Hz	Volts 50 Hz	Catalog Number
 75D70646AF	B, C	F	24	24	75D70646AJ
			110-120	110	75D70646AF
			208-240	190-220	75D70646AG
			277	240	75D70646AL
			440-480	380-440	75D70646AH
 75D70550AF	D, E	F	24	24	75D70550AJ
			110-120	110	75D70550AF
			208-240	190-220	75D70550AG
			277	240	75D70550AL
			440-480	380-440	75D70550AH
 75D54772AF	F, G	E	24	24	75D54772AJ
			110-120	110	75D54772AF
			208-240	190-220	75D54772AG
			277	240	75D54772AL
			440-480	380-440	75D54772AH

Definite Purpose Control

Class 42 & 45

Cross Reference

Catalog Numbers

Poles	Amps	Coil Volts	SIEMENS	ABB	Allen Bradley	Arrow Hart	Eaton Cutler Hammer	Fasco	General Electric	Joslyn Clark	Products Unlimited	Square D	Steveco
1	30	24	45EG10AJA	DP30C1P-F	400-DP30NJ1	C301NU10	C25CNB130T	1S30-A	CR453CC3HAA	A77-306653A-3	3100-15Q2	8910DP31V14	94388
		120	45EG10AFA	DP30C1P-1	400-DP30ND1	C301NU20	C25CNB130A	1S30-B	CR453CC3AAA	A77-306653A-1	3100-15T2	8910DP31V02	94389
		208/240	45EG10AGA	DP30C1P-2	400-DP30NA1	C301NU30	C25CNB130B	1S30-C	CR453CC3BAA	A77-3066531-2	3100-15U2	8910DP31V09	94390
	40	24	45GG10AJA	—	—	—	C25CNB140T	—	—	—	3100-15Q19	8910DP41V14	—
		120	45GG10AFA	—	—	—	C25CNB140A	—	—	—	3100-15T19	8910DP41V02	—
		208/240	45GG10AGA	—	—	—	C25CNB140B	—	—	—	3100-15U19	8910DP41V09	—
	2	24	45EG20AJ	—	400-DP30NJ2	C302U10	C25BNB230T	2S30-A	CR453CC2HAA	A77-306657A-3	3100-20Q6	8910DPA32V14	90244
		120	45EG20AF	—	400-DP30ND2	C302U20	C25BNB230A	2S30-B	CR453CC2AAA	A77-306657A-1	3100-20T6	8910DPA32V02	90245
		208/240	45EG20AG	—	400-DP30NA2	C302U30	C25BNB230B	2S30-C	CR453CC2BAA	A77-306657A-2	3100-20U6	8910DPA32V09	90246
		277	45EG20AL	—	400-DP30NF2	C302050	C25BNB230H	—	CR453CC2FAA	—	3100-20V6	8910DPA32V04	—
		24	45GG20AJ	—	—	CA01NU10	C25BNB240T	—	CR453CE2HBB	—	3100-20Q18	8910DP42V14	—
		120	45GG20AF	—	—	CA01NU20	C25BNB240A	—	CR453CE2ABB	—	3100-20T18	8910DP42V02	—
		208/240	45GG20AG	—	—	CA01NU30	C25BNB240B	—	CR453CE2BBB	—	3100-20U18	8910DP42V09	—
3	30	24	42BF35AJ	DP30C3P-F	400-DP30NJ3	ACC330UM10	C25DND330T	3M30-A	CR453AC3HAA	A77-309044A-3	3100-30Q9	8910DPA33V14	90163
		120	42BF35AF	DP30C3P-1	400-DP30ND3	ACC330UM20	C25DND330A	3M30-B	CR453AC3AAA	A77-309044A-1	3100-30T99	8910DPA33V02	90164
		208/240	42BF35AG	DP30C3P-2	400-DP30NA3	ACC330UM30	C25DND330B	3M30-C	CR453AC3BAA	A77-309044A-2	3100-30U9	8910DPA33V03	90165
	40	24	42CF35AJ	DP40C4P-F	400-DP40NJ3	ACC430UM10	C25DNF340T	3M40-A	CR453AD3HBB	A77-309046A-3	3100-30Q10	8910DPA43V14	90170
		120	42CF35AF	DP40C4P-1	400-DP40ND3	ACC430UM20	C25DNF340A	3M40-B	CR453AD3ABB	A77-309046A-1	3100-30T10	8910DPA43V02	90171
		208/240	42CF35AG	DP40C4P-2	400-DP40NA3	ACC430UM30	C25DNF340B	3M40-C	CR453AD3BBB	A77-309046A-2	3100-30U10	8910DPA43V09	90172
	50	24	42DF35AJ	—	400-DP50NJ3	ACC530U10	C25FNF350T	3L50-A	CR353FE3BH1	A77-288514A-3	3100-30Q16	8910DPA53V14	92459
		120	42DF35AF	—	400-DP50ND3	ACC530U20	C25FNF350A	3L50-B	CR353FE3BA1	A77-288514A-1	3100-30T16	8910DPA53V02	92460
		208/240	42DF35AG	—	400-DP50NA3	ACC530U30	C25FNF350B	3L50-C	CR353FE3BB1	A77-288514A-2	3100-30U16	8910DPA53V09	92461
	60	24	42EF35AJ	DP60C3P-F	400-DP60NJ3	ACC630U10	C25FNF360T	3L60-A	CR353FF3BH1	A77-288517A-3	3100-30Q17	8910DPA63V14	92462
		120	42EF35AF	DP60C3P-1	400-DP60ND3	ACC630U20	C25FNF360A	3L60-B	CR353FF3BA1	A77-288517A-1	3100-30T17	8910DPA63V02	92463
		208/240	42EF35AG	DP60C3P-2	400-DP60NA3	ACC630U30	C25FNF360B	3L60-C	CR353FF3BB1	A77-288517A-2	3100-30U17	8910DPA63V09	92464
	75	24	42FE35AJ	—	400-DP75NJ3	ACC730U10	C25FNF375T	—	CR353EG3BH1	A77-288520A-3	3186-30I75	8910DPA73V14	92465
		120	42FE35AF	—	400-DP75ND3	ACC730U20	C25FNF375A	—	CR353EG3BA1	A77-288520A-1	3186-30J75	8910DPA73V02	92467
		208/240	42FE35AG	—	400-DP75NA3	ACC730U30	C25FNF375B	—	CR353EG3BB1	A77-288520A-2	3186-30K75	8910DPA73V09	92468
	90	24	42GE35AJ	—	—	—	C25GNF390T	—	CR353EH3BH1	—	3186-30I90	8910DPA93V14	92469
		120	42GE35AF	—	—	ACC930U20	C25GNF390A	—	CR353EH3BA1	—	3186-30J90	8910DPA93V02	—
		208/240	42GE35AG	—	—	ACC930U30	C25GNF390B	—	CR353EH3BB1	—	3186-30K90	8910DPA93V09	—

This cross reference does not purport to cover all details or variations in equipment, nor to provide for every possible contingency to be met in connection with installation, operation, or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the local Siemens Industry, Inc. sales office.

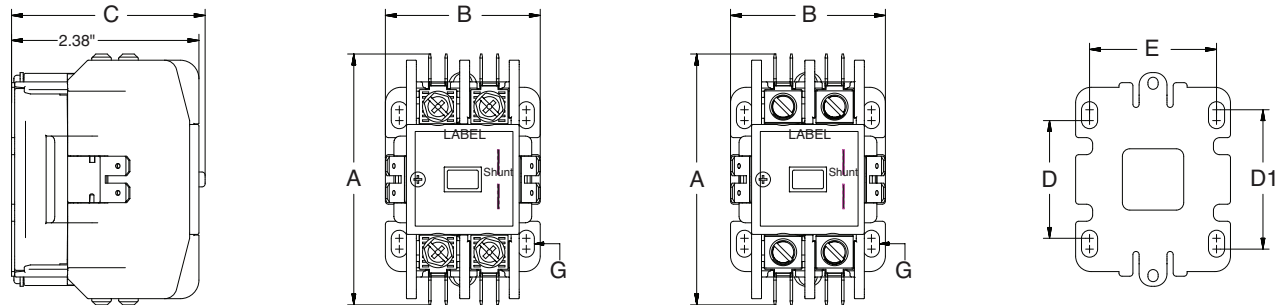
The contents of this cross reference shall not become part or modify any prior or existing agreement, commitment or relationship. The sales contract contains the entire obligation of Siemens Industry, Inc. The warranty contained in the contract between the parties is the sole warranty of Siemens Industry, Inc. Any statements contained herein do not create new warranties or modify the existing warranty.

Definite Purpose Control

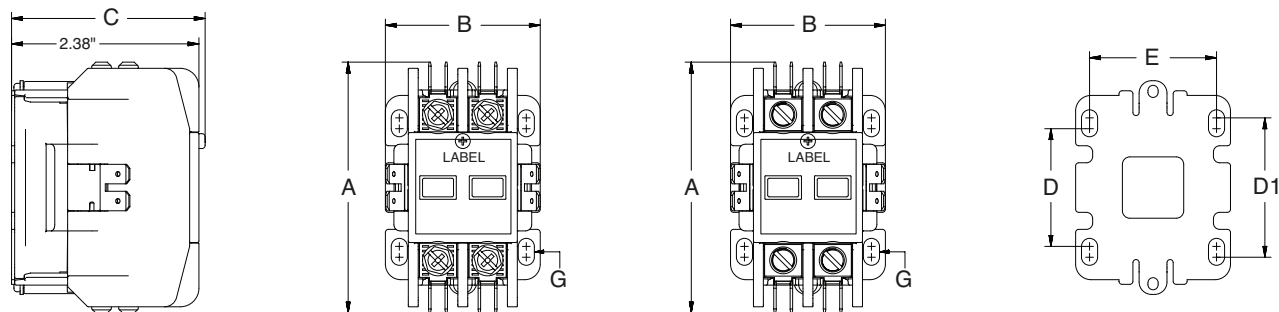
Class 42 & 45

Dimensions

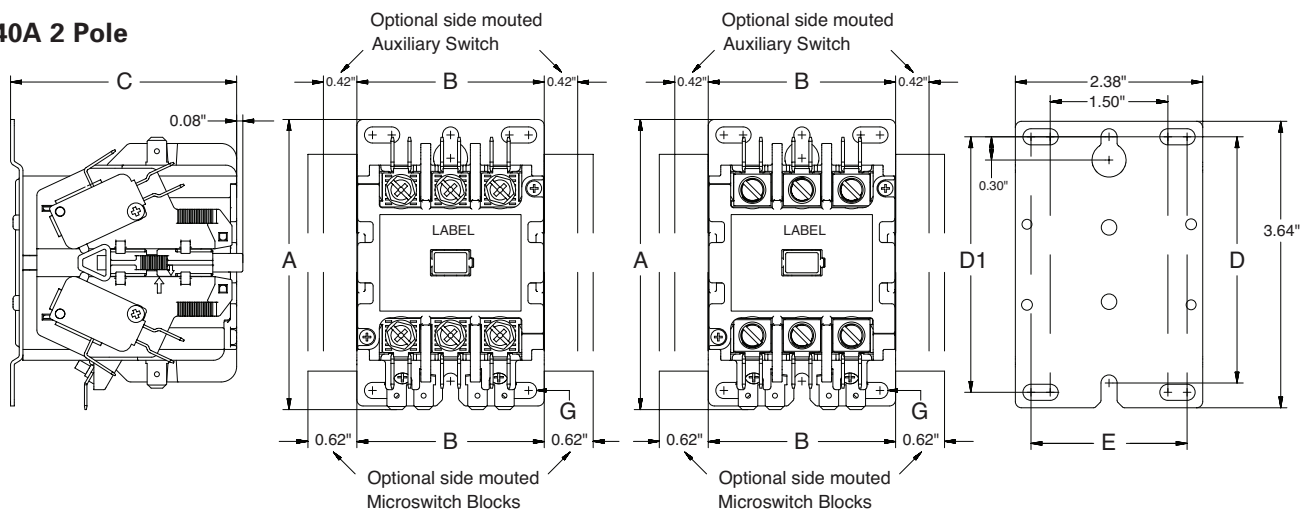
30-40A 1 Pole with Shunt



30-40A 2 Pole



30-40A 2 Pole



Catalog No.	FLA	Poles	Dimensions						Mounting Screw G	Max Wire Size
			A	B	C	D	D1	E		
45EG10A*A	30	1	3.19	1.97	2.46	1.5	1.77	1.61	10	8
45GG10A*A	40	1	3.19	1.97	2.46	1.5	1.77	1.61	10	4
45EG20A*A	30	2	3.19	1.97	2.46	1.5	1.77	1.61	10	8
45GG20A*A	40	2	3.19	1.97	2.46	1.5	1.77	1.61	10	4
42BF35A*	30	3	3.69	2.38	2.87	3.13	3.25	1.98	10	8
42CF35A*	40	3	3.69	2.38	2.87	3.13	3.25	1.98	10	4
42BF15A*	30-40	2(at 3P)*	3.69	2.38	2.87	3.13	3.25	1.98	10	4
42CF15A*										

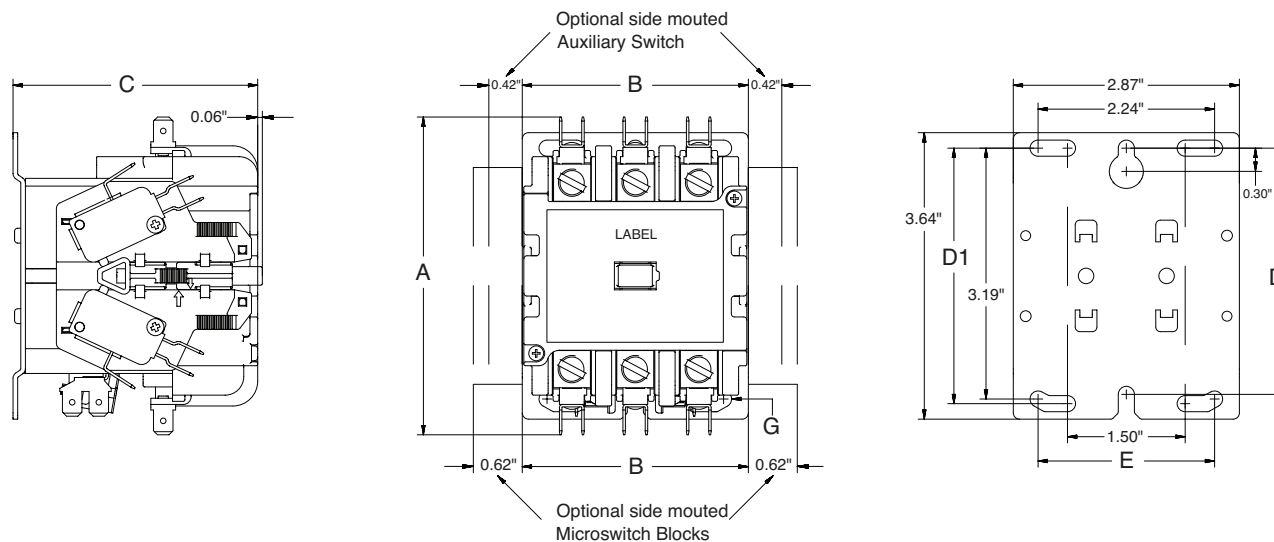
Note - 2* Pole is a 3 pole body with center contacts removed.

Definite Purpose Control

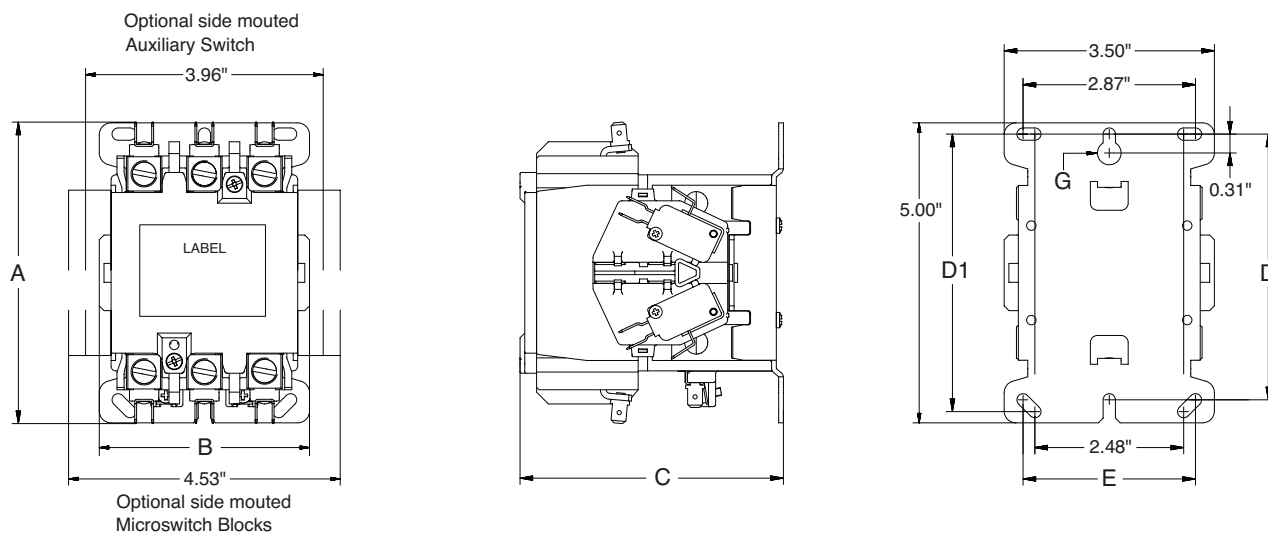
Class 42 & 45

Dimensions

50-60A 3 Pole



75-90A 3 Pole

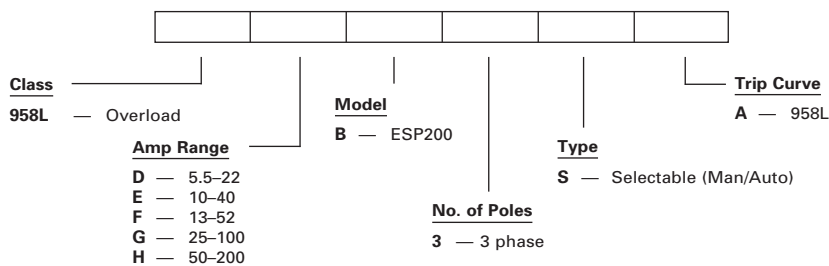
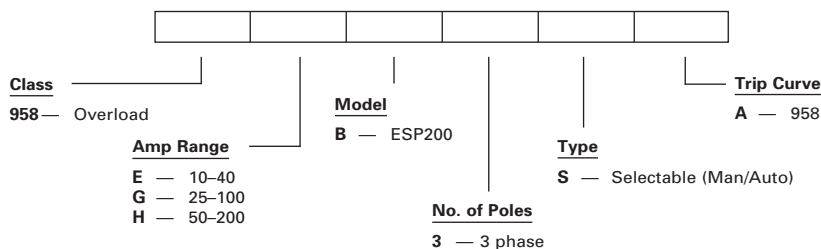
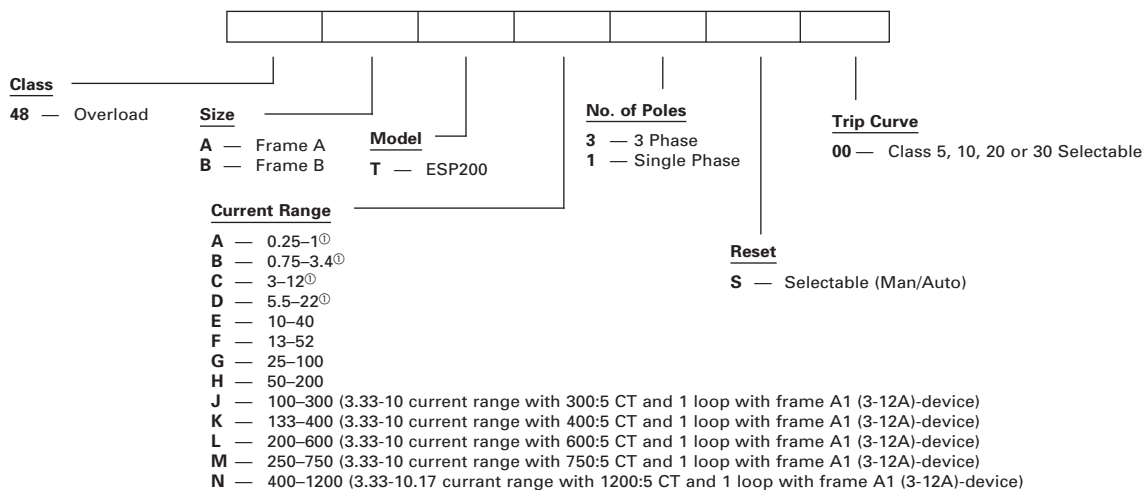


Catalog No.	FLA	Poles	Dimensions						Mounting Screw G	Max Wire Size
			A	B	C	D	D1	E		
42DF35A* 42EF35A*	50-60	3	4.04	2.87	3.11	3.13	3.25	2.24	10	2
42FE35A* 42GE35A*	75-90	3	5.02	3.5	4.39	4.43	4.63	2.87	10	1/10

Overload Relays

Catalog Numbering System

General



① Ranges available in Single or 3-phase.

Overload Relays

Solid State ESP200, Class 48, 958 and 958L

General



Features	Benefits
▪ Trip Classes - 5, 10, 20, or 30 Selectable by DIP-switches	▪ Field changeable reduces time and inventory. Suitable for light, normal and heavy starting conditions
▪ Phase Loss Protection - Trips in less than 3 Seconds	▪ Protects motor burn out and minimizes motor heating up
▪ Phase Unbalance - Trips based on Trip Class selected	▪ Minimizes temperature rise of the motor on a asymmetrical three-phase-system
▪ Ground Fault - Trips 60% of Motor Current	▪ Provides optimum system protection of motors against high-resistance short-circuits or ground faults due to moisture, condensation, damage of insulation or any other reason
▪ Trip Indicator - Visible	▪ Save time, faster to identify overload Trip
▪ Ambient Insensitive	▪ Prevents nuisance tripping
▪ No Heaters Required	▪ Saves cost and eliminates time for installation of heaters
▪ Self-Powered - No outside source required	▪ Reduce cost for external power supply
▪ FLA dial with wide Adjustment - 4:1 ratio	▪ Provides wide range, reduces inventory
▪ Self Protected in short circuit condition (when used with proper fuses or motor starter protector)	▪ Unlike bimetal overloads, this eliminates replacement of the overload heaters after short circuit
▪ Test Button - Tests Electronics	▪ Tests the complete electronic functions including the trip mechanism. Increases up time
▪ Thermal Memory	▪ Prevents re-starting motor when it is still hot
▪ Conformally coated circuit board	▪ Resists against environmental conditions
▪ 1 NO and 1NC Contacts Standard. B600, R300	▪ Makes it easier for user to wire local contacts
▪ Operating Temperature: -25 °C - 65 °C	▪ Wide operating temperature range prevents nuisance tripping with temperature changes
▪ Repeat Accuracy <1%.	▪ For more precise settings and reduced nuisance tripping
▪ Removable Terminal Block	▪ Terminal Block can be removed without removing wires. Saves time for replacements
▪ Automatic reset	▪ Auto. Reset is 3 minutes after tripping, allowing motor to cool down before re-start. If Manual Reset is selected, overload can be reset immediately
▪ Remote reset	▪ As an alternative to the mechanical RESET options, an electrical remote RESET can be used by applying 24 V DC to terminals A3 and A4
▪ DIN Rail Mounted	▪ Reduces installation time
▪ Touch - Safe Terminals	▪ Protects against accidental touching of live circuits
▪ UL listed CSA certified	▪ Third party approval standard

NEMA & General
Purpose Control

17
CONTROL
PRODUCTS

Overload Relays

Solid State ESP200, 958, 958L and Bimetal

General



ESP200 Solid State Overload



958 or 958L Solid State Overload

Applications

ESP200 Solid State Overloads

Designed for a wide variety of applications. The field selectable Trip Class 5, 10, 20 or 30 can easily be set by 2 DIP switches. This eliminates the guess factor of an application requirements and provides reduced inventory for multiple applications. The inherent benefits of the ESP200 ultimately results in cost savings for the user.

ESP200 has a 4:1 current adjustment range with a fine adjustment dial labeled in full load amps. The heaterless overload minimizes the heat trapped in the enclosures, reduces cost for ventilation or cooling. Easily accessible Reset button, provides visible and audible indications to ensure the tripped overload is ready to re-start.

Designed to replace thermal, or ESP100 overload relays for any application. It has the same dimensions and footprint of the ESP100 overload relays. It can be directly coupled to the contactors or remotely mounted. In addition to the NEMA contactor applications, it also can be used with other types of controllers for applications requiring DP or IEC contactors. As a retrofit for other brands, it is used with a plate available for retrofitting competitive products.

958 ESP200 Special Use Solid State Overloads

This overload is specifically designed for special applications, to provide excellent protection of hermetically sealed and artificially cooled motors that require ambient insensitive and quick trip response times. Combined with a series lockout relay, it provides unsurpassed protection for hermetically sealed compressor motors in air conditioning applications. The combination of high trip speed, current adjustment, and ease of installation makes it suitable for these applications. The trip curves are customized to provide proper overload protection for these loads without causing nuisance tripping.

It has selectable manual or automatic reset mode, and provides ground fault selection to protect equipment from damage in case of a fault.

958L ESP200 Oil Field Solid State Overloads

Specifically designed for the oil market and the cycling loads experienced with these types of pumping applications. These overload relays provide protection for standard motors, oil well pump motors, multi-torque connections, and ultra-high slip motors.

Rotors can be damaged in less than 15 seconds during motor stall conditions if electrical power is not removed. To prevent damage during motor stall, the 958L solid state overload removes the power in 7 seconds at 250% lock rotor current. Therefore, the motor casing and the rotor will be protected from being damage saving the user money and time.

Overload Relays

Solid State ESP200 and 3RB20

Selection



3-Phase, 48ATC3S00

Ordering Information

- ▶ For CT's see Accessories page 17-50.
- ▶ Dimensions see page 17-121.
- ▶ To retrofit or direct mount to a contactor, order 49ASMP1, 2, or 3 separately. See Retrofit Plates below.
- ▶ For remote mounting of frame size A order 49ASMS1 terminals separately, see page 17-94.

Solid State—Class 48

Current Adjustment Range	Phase	Frame Size	Catalog Number	MRPD/MLFB	List Price \$
0.25–1	3	"A"	48ATA3S00	3UB81134AB2	
0.75–3.4	3	"A"	48ATB3S00	3UB81134BB2	
3–12	3	"A1"	48ATC3S00	3UB81234CW2	
5.5–22	3	"A1"	48ATD3S00	3UB81234DW2	
10–40	3	"A1"	48ATE3S00	3UB81234EW2	
13–52	3	"B"	48BTF3S00	3UB81334FW2	
25–100	3	"B"	48BTG3S00	3UB81334GW2	
50–200	3	"B"	48BTH3S00	3UB81334HW2	
100–300	3	"A1" ②	48ATJ3S00	3UB81234JW2	
133–400	3	"A1" ③	48ATK3S00	3UB81234KW2	
200–600	3	"A1" ④	48ATL3S00	3UB81234LW2	
250–750	3	"A1" ⑦	48ATM3S00	3UB81234MW2	
400–1220	3	"A1" ⑤	48ATN3S00	3UB81234NW2	
0.25–1	1	"A"	48ATA1S00	3UB88134AB2	
0.75–3.4	1	"A"	48ATB1S00	3UB88134BB2	
3–12	1	"A1"	48ATC1S00	3UB88234CW2	
5.5–22	1	"A1"	48ATD1S00	3UB88234DW2	
25–100	1	"B"	48BTG1S00	3UB88334GW2	

Solid State—3RB206③④, 3-Phase, Manual/Auto Reset

For Contactor Size	Setting Range Amps	Class 10 Catalog Number	List Price \$	Class 20 Catalog Number	List Price \$
5	55 - 250	3RB2066-1GC2		3RB2066-2GC2	
6	160 - 630	3RB2066-1MC2		3RB2066-2MC2	

Retrofit Plates for Contactors, Class 48

Replacement for Starter Sizes	ESP200 Overload Frame Size①	Retrofit Plate Suffix	Plate Kit Separate	Price Adder \$
Size 00–1¼	A or A1	1P	49ASMP1	
Size 2, 2½	B	2P	49ASMP2	
Size 3, 3½	B	3P	49ASMP3	
Size 4	B	4P	49ASMP3	

① To determine frame size of replacement solid state overload, refer to retrofit plates table above.

② Requires use of 300:5 Current Transformers–3 of 97CT005.

③ Product Category: IEC.

④ Requires use of 600:5 Current Transformers–3 of 97CT008.

⑤ Requires use of 1200:5 Current Transformers–3 of 97CT012.

⑥ Overload has busbar connections.

⑦ Requires use of 750:5 Current Transformers–3 of 97CT009.

⑧ Requires use of 400:5 Current Transformers–3 of 97CT006.

Overload Relays

Special Use Solid State Overloads, Class 958 and 958L

Selection



Class 958, 958L

Ordering Information

► Dimensions see page 17-121.

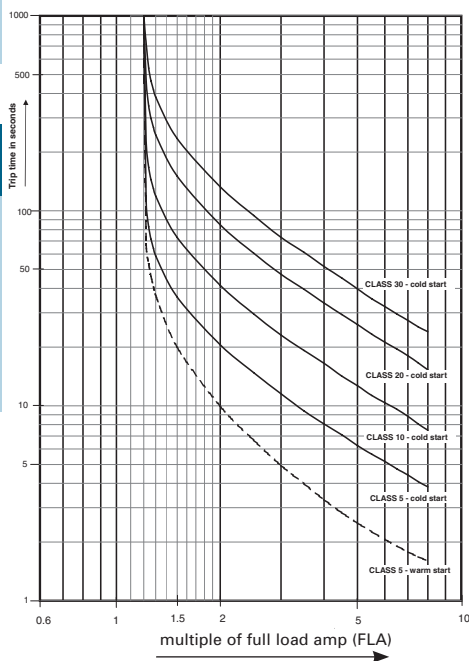
Current Transformers

Rating	Catalog No.	List Price \$
150:5	97CT002	
200:5	97CT003	
250:5	97CT004	
300:5	97CT005	
400:5	97CT006	
600:5	97CT008	
750:5	97CT009	
1200:5	97CT012	

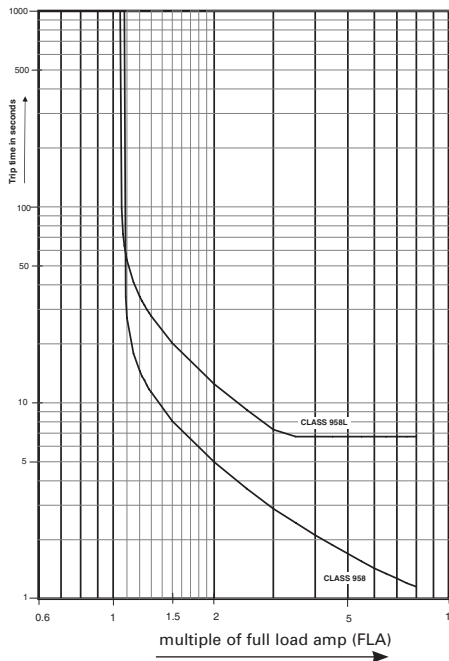
Solid State—Class 958 and 958L

Current Adjustment Range	Phase	Frame Size	Catalog Number	MRPD/MLFB	List Price \$
10–40	3	"A1"	958EB3SA	3UB85235EW2	
25–100	3	"B"	958GB3SA	3UB85335GW2	
50–200	3	"B"	958HB3SA	3UB85335HW2	
5.5–22	3	"A1"	958LB3SA	3UB85236DW2	
10–40	3	"A1"	958LEB3SA	3UB85236EW2	
13–52	3	"B"	958LFB3SA	3UB85336FW2	
25–100	3	"B"	958LGB3SA	3UB85336GW2	
50–200	3	"B"	958LHB3SA	3UB85336HW2	

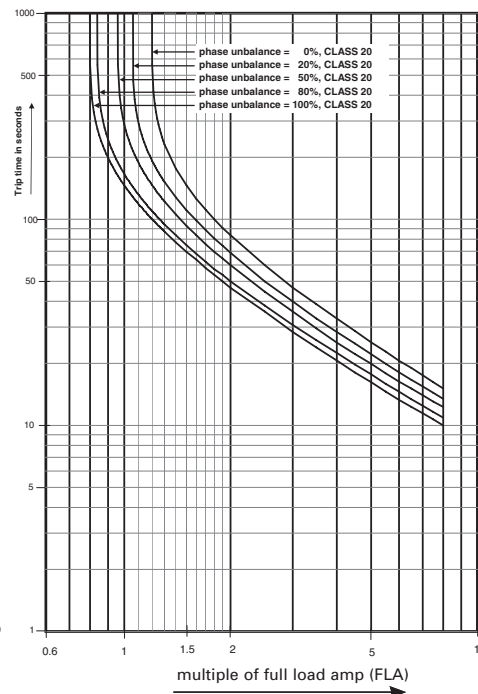
Time - Current - Characteristics
CLASS 48



Time - Current - Characteristics
CLASS 958, 958L



Trip - curve depending on unbalance
CLASS 20



① Temperature rating -25° to $+60^{\circ}\text{C}$.

Duplex Heavy Duty Controllers

General



Features

- Heavy Duty NEMA Starters
- Solid State Overload Relays
- Fusible or MCP
- Heavy Duty Disconnect Handle
- Flexibility with Field Modifications
- Alternator Transfer on De-energization
- UL Listed for Outdoor Use
- UL Listed file #E14900 (class 83); file #E185287 (class 84)
- CSA certified file #LR 6535 (class 83 & 84)

Application

Duplex pump controls are designed to perform one or both of two distinct functions: duplexing and alternation. The duplexing function provides capacity for system peaking or above normal demand without having the full motor capacity spinning at all times. It also provides standby capacity for use when one of the motors or pumps is disabled. The duplexing function is also referred to as lead/lag or main/standby. When two pumps or compressors are controlled by a duplex controller, they are started in sequence as necessary to attain preset values of pressure, flow or liquid level.

Two field devices such as pressure switches or float switches provide electrical signals to the duplex controller. One remote device is set to initiate the starting of the lead motor. This motor is rated to handle normal system demand. The second motor is usually the same rating and is referred to as the lag motor. It is only energized when the system demand is greater than the capacity of the lead motor. The lag motor is started when the second remote device is signalling for more output than the lead motor can produce.

The alternation function reverses the lead and lag mode for the two motors in a duplex system. Upon alternation the first motor as described above becomes the lag motor and the second motor assumes the lead function. The alternation is usually programmed to occur at any time both pumps come to rest. The alternation function equalizes wear on the two machines and extends the life of seals and bearings.

Enclosure Types

Duplex controllers are available in NEMA 1, 3R/4/12 and 4/4X (stainless) enclosures. Enclosures protect personnel from contact with live parts and depending upon the construction, protect the control in varying degrees from physical damage and harmful atmospheres. All enclosures are supplied with corrosion resistant finishes.

Heavy Duty Starters

These Duplex controllers use the same starters described in the heavy duty starter section of this catalog.

Siemens Type ETI Circuit Breaker

The ETI circuit breaker is a device designed specifically for application in motor circuits. The ETI is a magnetic only protective device designed to provide protection against short circuit current.

The instantaneous-only type ETI circuit breaker employs adjustable magnetic trip settings to allow broader application ranges and a higher degree of motor short circuit protection.

Features

Two control transformers may be provided for low voltage control to safeguard personnel from high voltage. One transformer is required for each starter to provide independent control circuits.

A Hand-Off-Auto selector switch for each starter may be mounted in the enclosure door or furnished separately for remote control. Test push buttons or pilot lights may also be installed on the enclosure.

Solid-state Overload Relays are supplied as standard.

Heavy Duty Disconnect Switches

The disconnect switch that goes the distance in durability, performance and reliability has the following advantages:

- Visible blades for the highest level of safety
- Double break switching action to reduce arcing, increase lifetime and eliminate the "electric hinge"
- More rugged positive action switch
- Oversized lugs are standard
- Line side shield to help guard personnel from contact with live parts
- Higher horsepower rating for design E high efficiency motors
- UL listed for Ilco, Burndy and T&B crimp type lugs
- The 200A switch accepts up to 300 MCM versus 250 MCM wire size

Its rugged construction - with a high fault withstand rating of 100kA at 600 VAC when fused with class R rated fuses - meets the most stringent industry standards set forth by the automotive, petro-chemical, and pulp and paper industries. UL recognized and CSA certified, our disconnect switches are available either non-fusible or fusible with class R and class J fuse clips.

NEMA & General
Purpose Control17
CONTROL
PRODUCTS

Duplex Heavy Duty Controllers

Non-Combination, Class 83

Selection



Ordering Information

- ▶ Standard duplex controllers include an alternator indicated by characters "92" within the catalog number. The standard coil voltage supplied with the alternator is 120V separate control. This is the only control voltage available with the alternator.
- ▶ To omit the alternator, change the character string within the catalog number from "92" to "95". All coil voltages listed in the coil table are valid with non-alternator controllers.
- ▶ To change the coil voltage for non-alternator controllers, change the 9th character in the catalog number with a letter shown in the coil table.
- ▶ Field Modification Kits see page 17-90.
- ▶ Factory Modifications see page 17-102.
- ▶ Dimensions see page 17-139.
- ▶ Wiring Diagrams see page 17-151.
- ▶ Replacement Parts see page 17-108.

Coil Table

60Hz Voltage	Letter
24 ^①	J
120	F
200-208 ^①	D
220-240 ^①	G
277 ^①	L
440-480 ^①	H
550-600 ^①	E

Non-Combination (with Solid-State Overload)

Max Hp						Overload		Enclosure		
200 Volts	230 Volts	460 Volts	575 Volts			Amp Range	Frame Size	NEMA 1 General Purpose	NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel	NEMA 3R/4/12 Watertight, Dust-tight, Weatherproof
				NEMA Size	Half Size			Catalog Number	Catalog Number	Catalog Number
1/8	1/8	1/8	1/2	0	—	0.25-1	A	83CUA92BF	83CUA92WF	83CUA920F
1/4	3/4	1 1/2	2	0	—	0.75-3.4	A	83CUB92BF	83CUB92WF	83CUB920F
2	2	5	5	0	—	3-12	A1	83CUC92BF	83CUC92WF	83CUC920F
3	3	—	—	0	—	5.5-22	A1	83CUD92BF	83CUD92WF	83CUD920F
1/8	1/8	1/8	1/2	1	—	0.25-1	A	83DUA92BF	83DUA92WF	83DUA920F
1/4	3/4	1 1/2	2	1	—	0.75-3.4	A	83DUB92BF	83DUB92WF	83DUB920F
2	2	5	5	1	—	3-12	A1	83DUC92BF	83DUC92WF	83DUC920F
3	3	10	10	1	—	5.5-22	A1	83DUD92BF	83DUD92WF	83DUD920F
7 1/2	7 1/2	—	—	1	—	10-40	A1	83DUE92BF	83DUE92WF	83DUE920F
10	10	15	15	—	1 1/4	10-40	A1	83EUE92BF	83EUE92WF	83EUE920F
10	15	25	25	2	—	13-52	B	83FUF92BF	83FUF92WF	83FUF920F
15	20	30	30	—	2 1/4	25-100	B	83GUG92BF	83GUG92WF	83GUG920F
25	30	50	50	3	—	25-100	B	83HUG92BF	83HUG92WF	83HUG920F
30	40	75	75	—	3 1/2	50-200	B	83IUH92BF	83IUH92WF	83IUH920F
40	50	100	100	4	—	50-200	B	83JUH92BF	83JUH92WF	83JUH920F

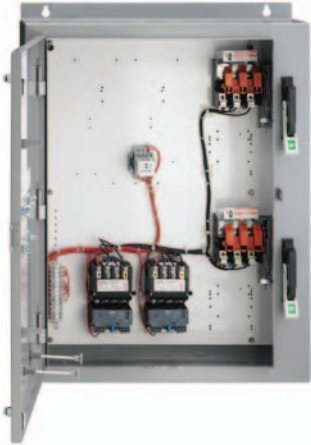
Note: Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

^① Not available on standard alternator style ('92' in the catalog number).

Duplex Heavy Duty Controllers

Combination Disconnect (Fusible & Non-Fusible), Class 84

Selection

	Ordering Information		Coil Table	
	▶ Standard duplex controllers include an alternator indicated by characters "92" within the catalog number. The standard coil voltage supplied with the alternator is 120V separate control. This is the only control voltage available with the alternator. ▶ To omit the alternator, change the character string within the catalog number from "92" to "95". All coil voltages listed in the coil table are valid with non-alternator controllers. ▶ To change the coil voltage for non-alternator controllers, change the 10th character in the catalog number with a letter shown in the coil table. ▶ For factory installed fusible disconnect, see page 17-103. ▶ Field Modification Kits see page 17-90. ▶ Factory Modifications see page 17-102. ▶ Dimensions see page 17-139. ▶ Wiring Diagrams see page 17-151. ▶ Replacement Parts see page 17-108.		60Hz Voltage	Letter
			24 ^①	J
			120	F
			200–208 ^①	D
			220–240 ^①	G
			277 ^①	L
			440–480 ^①	H
			550–600 ^①	E

Two Disconnect Switches with Solid-State Overload

Max Hp				NEMA Size	Half Size	Overload		Disc. Amp Range	Enclosure		
200 Volts	230 Volts	460 Volts	575 Volts			Amp Range	Frame Size		NEMA 1 General Purpose	NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel	NEMA 3R/4/12 Watertight, Dust-tight, Weatherproof
									Catalog Number	Catalog Number	Catalog Number
1/8	1/8	1/8	1/8	0	—	0.25–1	A	30	84CUA92BDF	84CUA92WDF	84CUA920DF
1/4	3/8	1 1/2	2	0	—	0.75–3.4	A	30	84CUB92BDF	84CUB92WDF	84CUB920DF
2	2	5	5	0	—	3–12	A1	30	84CUC92BDF	84CUC92WDF	84CUC920DF
3	3	—	—	0	—	5.5–22	A1	30	84CUD92BDF	84CUD92WDF	84CUD920DF
1/8	1/8	1/8	1/8	1	—	0.25–1	A	30	84DUA92BDF	84DUA92WDF	84DUA920DF
1/4	3/8	1 1/2	2	1	—	0.75–3.4	A	30	84DUB92BDF	84DUB92WDF	84DUB920DF
2	2	5	5	1	—	3–12	A1	30	84DUC92BDF	84DUC92WDF	84DUC920DF
3	3	10	10	1	—	5.5–22	A1	30	84DUD92BDF	84DUD92WDF	84DUD920DF
7 1/2	7 1/2	—	—	1	—	10–40	A1	30	84DUE92BDF	84DUE92WDF	84DUE920DF
10	10	15	15	—	1 1/2	10–40	A1	60	84EUE92BDF	84EUE92WDF	84EUE920DF
10	15	25	25	2	—	13–52	B	60	84FUF92BDF	84FUF92WDF	84FUF920DF
15	20	30	30	—	2 1/2	25–100	B	100	84GUG92BDF	84GUG92WDF	84GUG920DF
20	25	50	50	3	—	25–100	B	100	84HUG92BDF	84HUG92WDF	84HUG920DF
30	40	75	75	—	3 1/2	50–200	B	200	84IUH92BDF	84IUH92WDF	84IUH920DF
40	50	100	100	4	—	50–200	B	200	84JUH92BDF	84JUH92WDF	84JUH920DF

Note: Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

^① Not available on standard alternator style ('92' in the catalog number).

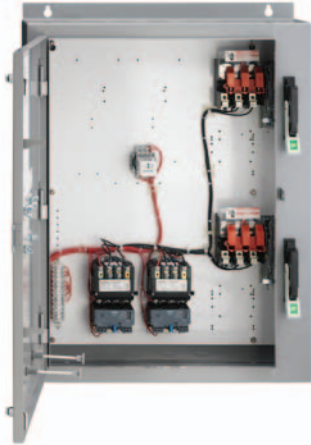
NEMA & General Purpose Control

17 CONTROL PRODUCTS

Duplex Heavy Duty Controllers

Combination Circuit Breaker, Class 84

Selection

	Ordering Information		Coil Table	
	▶ Standard duplex controllers include an alternator indicated by characters "92" within the catalog number. The standard coil voltage supplied with the alternator is 120V separate control. This is the only control voltage available with the alternator. ▶ To omit the alternator, change the character string within the catalog number from "92" to "95". All coil voltages listed in the coil table are valid with non-alternator controllers. ▶ To change the coil voltage for non-alternator controllers, change the 10th character in the catalog number with a letter shown in the coil table. ▶ Field Modification Kits see page 17-90. ▶ Factory Modifications see page 17-102. ▶ Dimensions see page 17-139. ▶ Wiring Diagrams see page 17-151. ▶ Replacement Parts see page 17-108.		60Hz Voltage	Letter
			24 ^①	J
			120	F
			200–208 ^①	D
			220–240 ^①	G
			277 ^①	L
			440–480 ^①	H
			550–600 ^①	E

2 Motor Circuit Protectors (with Solid-State Overload)

Max Hp				NEMA Size	Half Size	Overload		Motor Circuit Interrupter ETI	Enclosure		
200 Volts	230 Volts	460 Volts	575 Volts			Amp Range	Frame Size		NEMA 1 General Purpose	NEMA 4/4X Stainless Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel	NEMA 3R/4/12 Watertight, Dust-tight, Weatherproof
									Catalog Number	Catalog Number	Catalog Number
1/8	1/8	1/8	1/8	0	—	0.25–1	A	3	84CUA92BMF	84CUA92WMF	84CUA920MF
1/4	3/4	1 1/2	2	0	—	0.75–3.4	A	3	84CUB92BMF	84CUB92WMF	84CUB920MF
2	2	5	5	0	—	3–12	A1	10	84CUC92BMF	84CUC92WMF	84CUC920MF
3	3	—	—	0	—	5.5–22	A1	25	84CUD92BMF	84CUD92WMF	84CUD920MF
1/8	1/8	1/8	1/8	1	—	0.25–1	A	3	84DUA92BMF	84DUA92WMF	84DUA920MF
1/4	3/4	1 1/2	2	1	—	0.75–3.4	A	3	84DUB92BMF	84DUB92WMF	84DUB920MF
2	2	5	5	1	—	3–12	A1	10	84DUC92BMF	84DUC92WMF	84DUC920MF
3	3	10	10	1	—	5.5–22	A1	25	84DUD92BMF	84DUD92WMF	84DUD920MF
7 1/2	7 1/2	—	—	1	—	10–40	A1	30	84DUE92BMF	84DUE92WMF	84DUE920MF
—	—	15	15	—	1 1/4	10–40	A1	40	84EUE92BMF	84EUE92WMF	84EUE920MF
10	15	25	25	2	—	13–52	B	50	84FUF92BMF	84FUF92WMF	84FUF920MF
15	20	30	30	—	2 1/4	25–100	B	100	84GUG92BMF	84GUG92WMF	84GUG920MF
20	25	50	50	3	—	25–100	B	100	84HUG92BMF	84HUG92WMF	84HUG920MF
30	40	75	75	—	3 1/2	50–200	B	125	84IUH92BMF	84IUH92WMF	84IUH920MF
40	50	100	100	4	—	50–200	B	150	84JUH92BMF	84JUH92WMF	84JUH920MF

Note: Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

① Not available on standard alternator style ("92" in the catalog number).

Pump Control Panels

Advanced Technology Pump Panel with Solid State Overload Relay, 3RE48

General Information



3RE48

The 3RE48 NEMA rated pump panel is well suited for irrigation, oil fields and similar pumping applications and is built to withstand the harsh elements of the outdoors. It sports the latest and more advanced contactor technology with the SIRIUS NEMA rated contactor. The contactor is designed, constructed, tested and certified per the same NEMA requirements as that of the Class 87 NEMA contactor.

Typical applications:

- Crop irrigation
- Oil fields
- Wastewater treatment
- Dewatering

Features and benefits:

- Utilizes the latest and more advanced contactor technology with the SIRIUS NEMA rated contactor size 1 - 4. The contactor is designed, constructed, tested, and certified per the same NEMA requirements as that of the Class 40 NEMA rated contactor
- Priced lower than the Class 87
- Reduced risk of investment via a 3-year limited warranty on the SIRIUS NEMA rated contactor and coil
- Heavy-duty NEMA starters to provide reliable motor control and protection expected in the most demanding applications
- The ESP200 solid-state overload relay has a protective coating on the circuit board which gives it superior protection against high humidity, condensation and corrosive environments
- Heavy-duty disconnect switch with visible blades for safety and double break switch action to reduce arcing and increase lifetime (also available with circuit breaker)
- Line side shield on disconnect switch to help guard personnel from contact with live parts
- Type 3R enclosure fabricated with galvanized steel versus conventional cold rolled steel for superior corrosion resistance
- Rugged 3SU 30 mm H-O-A switch and Start push button, which are standard features, rated NEMA Type 3, 4, 12, and 13 are oil and dust tight and provide superior resistance to outdoor environmental elements
- Full gasketed door to ensure a dust tight and watertight seal
- Mounting flanges at top and bottom of enclosure for easy mounting on poles or flat surfaces using keyhole slots
- Oversized mounting panel for field mounting additional controls or for use as a wire way for large power conductors
- Heavy-duty quarter-turns for fast entry and proper sealing of enclosure
- Door is removable for ease of installation and maintenance
- Accessories for field modifications
- 100% factory testing of assembled pump panel
- High fault interrupting ratings up to 100kA at 600V
- UL rated as Service Entrance Equipment permitting equipment to be pole mounted and installed directly off of utility power lines
- cULus listed

Key Values the 3RE48

- 1. Cost savings:** It is priced lower than that of the Class 87 pump panel.
- 2. Reliability:** Superior protection against high humidity, condensation, and corrosive environments thanks to the protective coating on the circuit board of the ESP200 overload relay.
- 3. Extended product life:** Superior corrosion resistance due to enclosure fabricated with galvanized steel versus conventional cold rolled steel.
- 4. Safety:** High fault interrupting ratings up to 100kA at 600V.
- 5. Ease of Installation:** Oversized enclosure to pull and terminate large power conductors and for field installing additional components.
- 6. Assurance:** Reduced risk of investment via a 3-year limited warranty on the SIRIUS 3RT NEMA rated contactor and coil packaged in the 3RE48 pump panel.

Pump Control Panels

Advanced Technology Pump Panel with Solid State Overload Relay, 3RE48

Catalog Numbering

Catalog Numbering System

3RE4 8 0 1 - 0 G H 7 6 - 4 D A 0

Controller type

80 = Pump panel, NEMA rated, full-voltage, standard contactor, heavy-duty, with disconnect

81 = Pump panel, NEMA rated, full-voltage, standard contactor, heavy-duty, with motor circuit protector

NEMA Size

1
2
3
4

Enclosure type and size

G = NEMA Type 3R, standard size

Disconnect type and rating

Controller type 80

G = 30A disconnect switch with 30A/250V fuse clips
H = 30A disconnect switch with 30A/600V fuse clips
J = 60A disconnect switch with 60A/250V fuse clips
K = 60A disconnect switch with 60A/600V fuse clips
L = 100A disconnect switch with 100A/250V fuse clips
M = 100A disconnect switch with 100A/600V fuse clips
N = 100A disconnect switch with 200A/250V fuse clips
P = 200A disconnect switch with 200A/600V fuse clips

Controller type 81

G = 3A MCP
H = 10A MCP
J = 25A MCP
K = 30A MCP
L = 40A MCP
M = 50A MCP
N = 100A MCP
P = 125A MCP
Q = 150A MCP

Nominal coil voltage

3 = 110/120 V AC 50/60Hz
4 = 208 V AC 50/60Hz
5 = 220/240 V AC 50/60Hz
7 = 480 V AC 60Hz
8 = 600 V AC 60Hz

Overload relay type

6 = ESP200 solid state with selectable Trip Class 5-10-20-30 (factory set at 10)

Overload relay amp range

B = 0.75-3.4
C = 3-12
D = 5.5-22
E = 10-40
F = 13-52
G = 25-100
H = 50-200

Series / Generation

0 = 2022

Pump Control Panels

Advanced Technology Pump Panel with Solid State Overload Relay, 3RE48

Selection



Ordering Information

- ▶ Field Modification Kits see page 17-91.
- ▶ Factory Modifications (NA)
- ▶ Dimensions see page 17-140.
- ▶ Wiring Diagram see page 17-153.
- ▶ For Replacement Parts visit our Online support site at <https://support.industry.siemens.com>
- ▶ Replace the (●) with the code from the coil table.

Coil Table

Coil Selection (●)^①

Nominal voltage	Code
110/120 VAC 50/60 Hz	3
208 VAC 50/60 Hz	4
220/240 VAC 50/60 Hz	5
480 VAC 60 Hz	7
600 VAC 60 Hz	8

①208 - 600V coils will be wired for incoming voltage. 120V coils will be wired as separate source or control transformer secondary (if ordered).

Fusible disconnect

Max Hp rating				NEMA size	Overload relay amp range	Disc. amp rating	Fuse clip amp/volts	Catalog number
200 Volts	230 Volts	460 Volts	575 Volts					
—	—	1	1	1	0.75-3.4	30	30A/600V	3RE4801-0GH●6-4BA0
—	—	5	5	1	3-12	30	30A/600V	3RE4801-0GH●6-4CA0
—	—	10	10	1	5.5-22	30	30A/600V	3RE4801-0GH●6-4DA0
—	—	10	10	1	5.5-22	60	60A/600V	3RE4801-0GK●6-4DA0
—	—	25	25	2	13-52	60	60A/600V	3RE4802-0GK●6-4FA0
—	—	25	25	2	13-52	100	100A/600V	3RE4802-0GM●6-4FA0
—	—	50	50	3	25-100	100	100A/600V	3RE4803-0GM●6-4GA0
—	—	50	50	3	25-100	200	200A/600V	3RE4803-0GP●6-4GA0
—	—	100	100	4	50-100	200	200A/600V	3RE4804-0GP●6-4HA0
2	2	—	—	1	3-12	30	30A/250V	3RE4801-0GG●6-4CA0
3	3	—	—	1	5.5-22	30	30A/250V	3RE4801-0GG●6-4DA0
7½	7½	—	—	1	10-40	30	30A/250V	3RE4801-0GG●6-4EA0
7½	7½	—	—	1	10-40	60	60A/250V	3RE4801-0GJ●6-4EA0
10	15	—	—	2	13-52	60	60A/250V	3RE4802-0GJ●6-4FA0
10	15	—	—	2	13-52	100	100A/250V	3RE4802-0GL●6-4FA0
20	30	—	—	3	25-100	100	100A/250V	3RE4803-0GL●6-4GA0
25	30	—	—	3	25-100	200	200A/250V	3RE4803-0GN●6-4GA0
40	50	—	—	4	50-200	200	200A/250V	3RE4804-0GN●6-4HA0

Motor circuit protector

Max Hp rating				NEMA size	Overload relay amp range	MCP amp rating	Catalog number
200 Volts	230 Volts	460 Volts	575 Volts				
½	½	1	1	1	0.75-3.4	3	3RE4811-0GG●6-4BA0
2	2	5	5	1	3-12	10	3RE4811-0GH●6-4CA0
3	3	10	10	1	5.5-22	25	3RE4811-0GJ●6-4DA0
7½	7½	10	—	1	10-40	30	3RE4811-0GK●6-4EA0
10	15	25	25	2	13-52	50	3RE4812-0GM●6-4FA0
25	25	50	50	3	25-100	100	3RE4813-0GN●6-4GA0
40	50	100	100	4	50-200	150	3RE4814-0GQ●6-4HA0

Replace the (●) with the code from the coil table.

NEMA & General
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17
CONTROL
PRODUCTS

Pump Control Panels

Slim Line NEMA Pump Controller for the Agricultural industry, Class 82

General

Features

The Class 82 Slim Line NEMA Pump was designed specifically for the agricultural market. It is well suited for irrigation and similar pumping applications and is built to withstand the harsh elements of the outdoors

Typical applications include:

- Crop irrigation
- Sprinklers, misters and soakers
- Watering for livestock and other dairy applications
- Ground dewatering for excavation and construction sites

Why you should use the Class 82 Pump Panel

- Simplicity and its compact lightweight design makes this an attractive solution to your budgeting challenges.
- The contactor is NEMA rated to provide reliable motor control and protection expected in the most demanding applications.
- The ESP200 solid-state overload relay has a protective coating on the circuit board which gives it superior protection against high humidity, condensation and corrosive environments.
- Its size and weight is about half that of the Class 87 which increases the ease of installation.



Catalog Numbering System

82	A	D	C	6	F	B	H
----	---	---	---	---	---	---	---

Series

- A = Standard size enclosure
B = Extra large enclosure (starter size 1 only)

Starter Size

- D = 1
F = 2

OLR Current Range

- B = 0.75-3.4A
C = 3-12A
D = 5.5-22A
E = 10-40A
F = 13-52A

Cover Control

- 6 = HOA selector switch with Start push button

Disconnect Type

- F = Fusible disconnect

Disconnect & Fuse Clip Rating

- A = 30A/250V
B = 30A/600V
C = 60A/250V
D = 60A/600V

Coil Voltage

- F = 110VAC 50HZ / 120VAC 60HZ
G = 220VAC 50HZ / 240VAC 60HZ
H = 480VAC 60HZ

Pump Control Panels

Slim Line NEMA Pump Controller for the Agricultural industry, Class 82

General

	Ordering Information		Coil Table	
	► Field Modification Kits (see accessories on this page) ► Factory Modifications (NA) ► Dimensions see page 17-138 ► Wiring Diagram see page 17-154 ► Replacement Parts (refer to instruction sheet A5E35327591A)		50/60Hz Voltage	Letter
			110VAC 50HZ / 120VAC 60HZ	F
			220VAC 50HZ / 240VAC 60HZ	G ^①
			480VAC 60HZ	H ^②

Product Selection

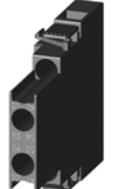
Max Hp Rating Motor Voltage		NEMA Size	Overload Relay Amp Range	Disc. Amp Rating	Fuse Clip Amp/Volts	HOA & Start Push Button		HOA & Start Push Button (Extra wide Encl)	
230	460					Catalog Number	List Price \$	Catalog Number	List Price \$
—	1	1	0.75–3.4	30	30A/600V	82ADB6FB*		82BDB6FB* ^③	
—	5	1	3–12	30	30A/600V	82ADC6FB*		82BDC6FB* ^③	
—	10	1	5.5–22	30	30A/600V	82ADD6FB*		82BDD6FB* ^③	
—	10	1	10–40	30	30A/600V	—		82BDE6FB* ^③	
2	—	1	3–12	30	30A/250V	82ADC6FA*		82BDC6FA* ^③	
3	—	1	5.5–22	30	30A/250V	82ADD6FA*		82BDD6FA* ^③	
7 1/2	—	1	10–40	30	30A/250V	82ADE6FA*		82BDE6FA* ^③	
—	25	2	13–52	60	60A/600V	82AFF6FD* ^③		—	
15	—	2	13–52	60	60A/250V	82AFF6FC* ^③		—	

Replace the (*) with a letter from the coil table.

③ Available in May 2017.

Accessories

Image	Description	Catalog Number	List Price
	3/4" type 3R conduit hub	ECHS075	
	1" type 3R conduit hub	ECHS100	
	1 1/4" type 3R conduit hub	ECHS125	
	1 1/2" type 3R conduit hub	ECHS150	
	Disconnect switch auxiliary contacts 2 NO/2 NC DPDT (NEMA A600)	HA261234	
	Fuse puller kit for 30A switch (1 kit required per switch)	HP61	
	30A, 240V Class R Fuse Clip Kits	HR21	
	30A, 600V Class R Fuse Clip Kits	HR612	

Image	Description	Catalog Number	List Price
	Contactor auxiliary contacts, side mounted 1 NO/NC (NEMA A300/Q300)	3RH29111DA11	
	ESP200 tamper resistance cover	49ASTC1	

① G coil is not available with a 600v disconnect

② H coil is not available with a 250v disconnect

Pump Control Panels

Slim Line NEMA Pump Controller for the Agricultural industry, Class 82

Selection

Class 82 Technical information

General Technical Data:	
Weight	Size 1 (Standard Encl.) 23lbs. Size 1 (Extra Wide Encl.) 47lbs. Size 2 (Standard Encl.) 47lbs.
Height x Width x Depth	Size 1 (Standard Encl.) 26 x 12 x 5in. Size 1 (Extra Wide Encl.) 35 x 17 x 6in. Size 2 (Standard Encl.) 35 x 17 x 6in.
Maximum altitude	6560 ft.
Ambient (outside enclosure) storage temperature	(-30 to 65)°C / (-22 to 149)°F
Ambient (outside enclosure) operating temperature	(-20 to 40)°C / (-4 to 104)°F
Country of origin	Mexico
Horsepower Rating:	
See selection table above	See selection table above
Contactor:	
Number of NO main contacts	3
Amp rating	32A, 50A
Mechanical operating cycles	10,000,000
Internal / Standard Auxiliary Contact:	
Number of NC / NO auxiliary contacts	1NC / 1NO
NEMA contact rating designation	A600 AC / Q600 DC
Optional auxiliary contacts available	Yes
Coil:	
Voltage	220/230V 50/60Hz, 460V 60Hz, or 110/120V 50/60Hz
Apparent pull-in / holding power	81 VA / 10.5 VA
Normal coil operating limits (% of rated voltage)	80% - 110% at 60Hz
Pick-up time / Drop-out time	8-40 / 4-16 msec
Overload Relay:	
Current range	0.75 - 3.4 or 3 - 12 or 5.5 - 22 or 10 - 40 Amps or 13 - 52 Amps
Trip Class	Class 5 / 10 (factory set) / 20 / 30
Trip detection	Overload, phase failure, phase unbalance, ground fault
Phase failure sensitivity	Trip time after phase loss: < 3 sec
Repeat accuracy	Within 1%
Reset options	Manual, automatic and remote
External reset	Yes
Test function	Electronics and manual actuation
Conformal coating on printed circuit board	Yes
Number of NC / NO auxiliary contacts	1NC / 1NO
Rating of auxiliary contacts	B600 AC / R300 DC
Single contact isolation	600 V
Dual contact isolation	300 V differing polarity / 600 V common polarity

Pump Control Panels

Slim Line NEMA Pump Controller for the Agricultural industry, Class 82

Technical Data

Class 82 Technical information

Disconnect Switch:	
Rating	30 A with 30A/600 or 30A/250 V Class H fuse clips 60 A with 60A/600 or 60A/250 V Class H fuse clips
Fuse type accepted	Class H, J or R
Enclosure:	
Type	NEMA Type 3/3R enclosure
Rating	Weather proof for outdoor use
Standard Control Devices:	
Hand-Off-Auto selector switch	3SU1 30mm, round, metal with matte finish
Start push button	3SU1 30mm, round, metal with matte finish
Mounting / Wiring:	
Mounting orientation	Vertical
Mounting type	Pole and surface
Disconnect line side connection type / torque	Box lug / 35 lb in (14 - 10); 40 lb in (8); 45 lb in (6 - 4) AWG
Disconnect line side solid and stranded conductors	1x(14 - 2 AWG) 60/75°C AL or CU
Power terminal block connection type / torque	Screw / 24 - 32 lb - in
Power terminal block solid and stranded conductors	1x(18 - 2 AWG) 75°C CU
Control terminal block connection type / torque	Screw / 12 - 18 lb - in
Control terminal block solid and stranded conductors	1x(22 - 8 AWG) 75°C CU
Coil connection type / torque	Screw / 7 - 10 lb in
Coil solid and stranded conductors	2x(16 - 12 AWG) CU 60/75°C
Main auxiliary contact connection type / torque	Screw / 7 - 10 lb in
Main auxiliary contact solid and stranded conductors	2x(20 - 16), 2x(18 - 14) 75°C CU
OLR auxiliary contact connection type / torque	Screw / 7 - 10 lb in
OLR auxiliary contact solid and stranded conductors	2x(20 - 14 AWG) CU 60/75°C
Short Circuit Current Rating:	
Fuses	10kA@600V (Class H or K); 85kA@600V (Class R or J)
Certificates / Approvals:	
cULus	UL (file no. E185287)
UL rated Service Entrance Equipment	ISO 9001 certification

Pump Control Panels

Class 87, 88

General

Features

- Fully Gasketed NEMA 3R Rainproof Enclosures
- 100,000 Amp Interrupting Capacity with Class R Fuses
- Heavy Duty NEMA Starters
- Solid State Overload Relays
- Heavy Duty Disconnect Handle
- Available in Reduced Voltage Versions
- Bold Pilot Legend on Front
- Generous Accessory Space
- Three point ground bar
- UL Listed for Outdoor Use and Service Equipment File #E185287

Application

Heavy duty pump control panels are designed to withstand the most demanding environments. Typical applications include irrigation, agriculture, petrochemical, wastewater treatment and wherever motor control is challenged by harsh elements.

Installation is easy. Panels are factory wired to provide flexible control and protect against short circuits and overloads. Ample space is provided for field modifications and installation of accessories.

The pump control panels feature a full sized panel for mounting of accessories.

Class 87 pump panels become jockey pump panels with the addition of a pressure switch. The jockey pump's primary function is to maintain water pressure at a preset level and thus compensate for possible shortage of water in the pumping system. When the water pressure drops below the preset level, the pressure switch energizes the starter which in turn activates the jockey pump. The water pressure is then brought back up to the desired level. This insures the maintenance of proper water pressure at all times.

Features

Specified by Fortune 500 companies, Siemens NEMA starters offer prolonged service under severe duty conditions. NEMA rated, these starters utilize large silver cadmium oxide contacts and wide copper heat sinks to ensure rapid heat dissipation and maximum electrical life.

ESP200 solid state overload relay

Refer to the section on Class 48 overload relays for features and benefits. Pump panels are factory set at trip Class 10.

HOA and Start Pushbutton

Every pump panel comes with an HOA and a start pushbutton.

Half Size Starters

Siemens motor matched starters feature all the rugged performance characteristics of our NEMA rated starter sizes, but are fractionally sized to more closely match your exact motor rating. As a result, significant economic savings are made possible without sacrificing the reliability you expect from a heavy duty starter.

These additional starter sizes have the reserve capacity to handle occasional plugging and jogging without de-rating the device.

Siemens motor matched can save hundreds, even thousands of dollars per project.

Siemens motor matched starters comply with NEMA, UL and CSA standards.



Pump Control Panels

Class 87, 88

General

Panels are predrilled for easy repositioning of the fuse trailer block to accommodate 250 and 600 volt fuses and full sized RK or compact J fuses. Circuit breakers are also available.

Heavy Duty Fusible Disconnect Switch

The disconnect switch has the following advantages:

- Visible blades for the highest level of safety
- Double Break Switching Action to reduce arcing, increase lifetime and eliminate the "electric hinge"
- Oversized lugs are standard
- Line side shield to help guard personnel from contact with live parts

Motor Circuit Protector

The motor circuit protector provides fast, accurate fault clearing that will minimize damage to the motor and control apparatus and protect branch circuit conductors. Continuous current ratings and adjustable trip ranges meet NEC requirements for full load and locked rotor currents. The adjustable instantaneous trip point can be set precisely to assure fault protection and eliminate nuisance tripping.

Removable Door

Enclosure door may be lifted off to make wiring easier.

Mounting Flanges

Convenient flanges at top and bottom of the enclosure provide easy mounting. They fit pole or flat surfaces using keyhole slots.

Quarter Turn Latches

Quarter turns are utilized to secure the door.

Wind Catches

A wind catch is provided to prevent the door from slamming shut (or open) due to high wind conditions.

Safety Disconnect Handle

Up to three padlocks can be used to lock the disconnect in the OFF position. Maintenance work can be performed without hazard to personnel.

External Reset

The overload relay may be quickly reset by means of a button on the front of the enclosure.

Ground Bar

Insures proper connecting of ground wires and lightning arresters.

UL Listed

Assures proper construction throughout control panel.

Reduced Voltage

Available in part winding, wye delta and auto transformer types, these controls may be necessary where the power company limits the amount of current drawn from its lines, or where starting torque must be reduced.

Fully gasketed NEMA 3/12 weather-proof enclosures are supplied with Class 88 reduced voltage starters.

Part Winding Starters apply starting current in timed steps to minimize voltage fluctuations.

Auto Transformer Starters maintain a closed circuit during transition and eliminate voltage or current surges. They draw less current than part winding starters and are well suited for starting motors over 20 Hp.

Wye Delta starters and motors are used in areas where the power supply is inadequate to supply full starting current without objectionable voltage drop or for applications where low starting torque is required. Centrifugal pumps and similar apparatus requiring a low starting torque are typical applications. Both ends of all three windings of the wye delta motor are brought out so that they may be accessible for reconnecting from wye to delta.

Auxiliary Equipment

Pilot Lights are easily installed on the enclosure. Oil Tight and Heavy Duty, they meet NEMA A600 requirements.

Lightning Arresters protect the control panel from lightning induced surges.

Undervoltage and Phase Sensing Relays protect the pump against low voltage, voltage imbalance, loss of phase and phase reversal.

Anti-Backspin Timers prevent the motor from starting during motor/shaft backspin.

Class 87 NEMA Vacuum Starter Pump Control Panels

The Siemens vacuum starter pump controllers are designed for the harshest environments. Typical environments include chemical, petrochemical, waste water treatment and mining. Contaminations present in these severe environments are detrimental to conventional air-break contacts decreasing their life expectancy and reliability. The Siemens vacuum starter pump controllers are well suited for these environments because the contacts are contained in hermetically sealed contact tubes. This prevents contaminants in the atmosphere from affecting the operation of the contacts. Additionally, neither arcs nor arcing gases are produced which dramatically increases the electrical endurance of the contacts.

Pump Control Panels

Standard Pump Panel with Solid State Overload, Class 87

Selection

	Ordering Information	Coil Table	
		60Hz Voltage	Letter
	► Field Modification Kits see page 17-90. ► Factory Modifications see page 17-102. ► Dimensions see page 17-140. ► Wiring Diagrams see page 17-154. ► Replacement Parts see page 17-108. ► Sizes 1-4 will be supplied standard with a 240/480 volt coil. To change the coil voltage, change the 8th character in the catalog number to the letter shown in the coil table. ► Sizes 5 & 6 will be supplied standard with a 480 volt coil. To change the coil voltage, change the 8th character in the catalog number to the letter shown in the coil table.	24	J
		120	F
		110–120/220–240	A ^①
		200–208	D
		220–240	G
		220–240/440–480	C ^①
		277	L
		440–480	H
		550–600	E

Fusible Disconnect

Max Hp				NEMA Size	Half Size	Overload		Disc. Amp Range	Fuse Clip Amp / Volts	Catalog Number
200 Volts	230 Volts	460 Volts	575 Volts			Amp Range	Frame Size			
—	—	1	1	1	—	0.75–3.4 ^②	A	30	30A/600V	87DUB6FC
—	—	5	5	1	—	3–12	A1	30	30A/600V	87DUC6FC
—	—	10	10	1	—	5.5–22	A1	30	30A/600V	87DUD6FC
—	—	10	10	1	—	5.5–22	A1	60	60A/600V	87DUD60C
—	—	15	15	—	1½	10–40	A1	30	30A/600V	87EUE6FC
—	—	15	15	—	1½	10–40	A1	60	60A/600V	87EUE60C
—	—	25	25	2	—	13–52	B	60	60A/600V	87FUF6FC
—	—	25	25	2	—	13–52	B	100	100A/600V	87FUF60C
—	—	30	30	—	2½	25–100	B	60	60A/600V	87GUG6FC
—	—	30	30	—	2½	25–100	B	100	100A/600V	87GUG60C
—	—	50	50	3	—	25–100	B	100	100A/600V	87HUG6FC
—	—	50	50	3	—	25–100	B	200	200A/600V	87HUG60C
—	—	75	75	—	3½	50–200	B	200	200A/600V	87IUH6FC
—	—	100	100	4	—	50–200	B	200	200A/600V	87JUH6FC
—	—	200	200	5	—	55–250	—	400	400A/600V	87LPU6FH
—	—	250	—	6	—	160–630	—	600	600A/600V	87MSW6FH
2	2	—	—	1	—	3–12	A1	30	30A/250V	87DUC6LC
3	3	—	—	1	—	5.5–22	A1	30	30A/250V	87DUD6LC
7½	7½	—	—	1	—	10–40	A1	30	30A/250V	87DUE6LC
7½	7½	—	—	1	—	10–40	A1	60	60A/250V	87DUE6PC
10	10	—	—	—	1½	10–40	A1	60	60A/250V	87EUE6LC
10	15	—	—	2	—	13–52	B	60	60A/250V	87FUF6LC
10	15	—	—	2	—	13–52	B	100	100A/250V	87FUF6PC
15	20	—	—	—	2½	25–100	B	60	60A/250V	87GUG6LC
15	20	—	—	—	2½	25–100	B	100	100A/250V	87GUG6PC
20	30	—	—	3	—	25–100	B	100	100A/250V	87HUG6LC
25	30	—	—	3	—	25–100	B	200	200A/250V	87HUG6PC
30	40	—	—	—	3½	50–200	B	200	200A/250V	87IUH6LC
40	50	—	—	4	—	50–200	B	200	200A/250V	87JUH6LC
75	100	—	—	5	—	55–250	—	400	400A/250V	87LPU6LG

Circuit Breaker

Max Hp				NEMA Size	Half Size	Overload		Motor Circuit Interrupter ETI Amps	Catalog Number
200 Volts	230 Volts	460 Volts	575 Volts			Amp Range	Frame Size		
½	½	1	1	1	—	0.75–3.4 ^②	A	3	87DUB6MC
2	2	5	5	1	—	3–12	A1	10	87DUC6MC
3	3	10	10	1	—	5.5–22	A1	25	87DUD6MC
7½	7½	10	—	1	—	10–40	A1	30	87DUE6MC
—	—	15	15	—	1½	10–40	A1	40	87EUE6MC
10	15	25	25	2	—	13–52	B	50	87FUF6MC
15	20	30	30	—	2½	25–100	B	100	87GUG6MC
25	30	50	50	3	—	25–100	B	100	87HUG6MC
30	40	75	75	—	3½	50–200	B	125	87IUH6MC
40	50	100	100	4	—	50–200	B	150	87JUH6MC
50	75	150	200	5	—	55–250	—	250	87LPT6MH
75	100	200	200	5	—	55–250	—	400	87LPU6MH
100	125	250	300	6	—	160–630	—	400	87MSW6MH
150	200	400	400	6	—	160–630	—	600	87MSX6MH

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

① Not available on Size 5 and larger.

② For an overload amp range of 0.25–1A, change the 5th character from a 'B' to an 'A'.

③ A version with coil code A is also stocked via Controls Express.

Vacuum Break Pump Control Panels

Class 87

Selection

Ordering Information	Coil Table	
► Field Modification Kits see page 17-90. ► Factory Modifications see page 17-102. ► Dimensions see page 17-140. ► Wiring Diagrams see page 17-154. ► Replacement Parts see page 17-108. ► Replace the (*) in the catalog number with a letter from the coil table.	60Hz Voltage	Letter
	24	J
	120	F
	200-208	D
	220-240	G
	277	L
	440-480	H
	550-600	E

Vacuum Break Pump Control Panels (Vacuum Contactor with Trip Class 10 Solid-State Overload Relay)

Max Hp		NEMA Size	Overload Relay Range	Fusible Disconnect		Circuit Breaker	
480 Volts	575 Volts			Fuse Clip Amps/Volts	Catalog Number	MCI Amps	Catalog Number
100	100	4	50-200A ^①	200A/600V	87JCN6F*	250A	87JCN6M*
100	100	4	55-250A	200A/600V	87JCM6F*	250A	87JCM6M*
200	200	5	55-250A	400A/600V	87LCU6F*	400A	87LCT6M*
250	300	6	160-630A	—	—	400A	87MCW6M*
400	400	6	160-630A	—	—	600A	87MCX6M*

Note: Hp's shown above are based on the overload amp range for the FLA's (per the National Electric Code) of typical industrial motors. All starter sizes carry one maximum Hp rating.

^① ESP200 overload relay.

Reduced Voltage Pump Panels

Auto Transformer & Part winding (2 Step) with Solid State Overload, Class 88

Selection

		Ordering Information	Coil & Control Voltage
	Auto Transformer	- Field Modification Kits see page 17-90. - Factory Modifications see page 17-102. - Dimensions see page 17-140. - Wiring Diagrams see pages 17-155 and 17-156. - Replacement Parts see page 17-108.	The coil voltage on the contactors will be the motor voltage. A CPT will be supplied to provide the control voltage. The control voltage will be 120V. To change the control voltage to customer supplied (no CPT included), change the 9th character to the following: for 24V , use "J" for 120V, use "F"
	Part Winding		

Auto Transformer Type

Motor Voltage	Max Hp	Overload		NEMA Size	Half Size	Fusible Disconnect			Circuit Breaker		
		Amp Range	Frame Size			Fuse Clip Size Amps/Volts	Catalog Number	List Price \$	Circuit Breaker Amps	Catalog Number	List Price \$
230	15	13-52	B	2	—	60A/250V	88FUFT2FG		50	88FUFT2MG	
	20	25-100	B	—	2½	100A/250V	88GUGT2FG		100	88GUGT2MG	
	30	25-100	B	3	—	100A/250V	88HUGT2FG		100	88HUGT2MG	
	40	50-200	B	—	3½	200A/250V	88IUHT2FG		125	88IUHT2MG	
	50	50-200	B	4	—	200A/250V	88JUHT2FG		150	88JUHT2MG	
	75	55-250	—	5	—	—	—		250	88LPST2MG	
	100	55-250	—	5	—	400A/250V	88LPUT2FG		400	88LPUT2MG	
	200	160-630	—	6	—	—	—		600	88MSXT2MG	
460	25	13-52	B	2	—	60A/600V	88FUFT4FH		50	88FUFT4MH	
	30	25-100	B	—	2½	60A/600V	88GUGT4FH		50	88GUGT4MH	
	50	25-100	B	3	—	100A/600V	88HUGT4FH		100	88HUGT4MH	
	75	50-200	B	—	3½	200A/600V	88IUHT4FH		125	88IUHT4MH	
	100	50-200	B	4	—	200A/600V	88JUHT4FH		150	88JUHT4MH	
	150	55-250	—	5	—	—	—		250	88LPST4MH	
	200	55-250	—	5	—	400A/600V	88LPST4FH		400	88LPUT4MH	
	250	160-630	—	6	—	—	—		400	88MSVT4MH	
	400	160-630	—	6	—	600A/600V	88MSXT4FH		600	88MSXT4MH	

Part Winding 2 Step

Motor Voltage	Max Hp	Overload		NEMA Size	Half Size	Fusible Disconnect			Circuit Breaker		
		Amp Range	Frame Size			Fuse Clip Size Amps/Volts	Catalog Number	List Price \$	Circuit Breaker Amps	Catalog Number	List Price \$
230	20	10-40	A1	—	1½	100A/250V	88EUEP2FG		100	88EUEP2MG	
	25	13-52	B	2	—	100A/250V	88FUF2FG		100	88FUF2MG	
	40	25-100	B	—	2½	200A/250V	88GUGP2FG		100	88GUGP2MG	
	50	25-100	B	3	—	200A/250V	88HUGP2FG		150	88HUGP2MG	
	60	50-200	B	—	3½	200A/250V	88IUHP2FG		250	88IUHP2MG	
	75	50-200	B	4	—	400A/250V	88JUHP2FG		250	88JUHP2MG	
	125	55-250	—	5	—	—	—		400	88LPSP2MG	
	150	55-250	—	5	—	600A/250V	88LPUP2FG		600	88LPUP2MG	
460	30	10-40	A1	—	1½	100A/600V	88EUEP4FH		100	88EUEP4MH	
	40	13-52	B	2	—	100A/600V	88FUF4FH		100	88FUF4MH	
	60	25-100	B	—	2½	200A/600V	88GUGP4FH		100	88GUGP4MH	
	75	25-100	B	3	—	200A/600V	88HUGP4FH		150	88HUGP4MH	
	100	50-200	B	—	3½	200A/600V	88IUHP4FH		250	88IUHP4MH	
	150	50-200	B	4	—	400A/600V	88JUHP4FH		250	88JUHP4MH	
	250	55-250	—	5	—	—	—		400	88LPSP4MH	
	350	55-250	—	5	—	600A/600V	88LPUP4FH		600	88LPUP4MH	

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

Reduced Voltage Pump Panels

Wye Delta with Solid State Overload, Class 88

Selection



Ordering Information

- Field Modification Kits see page 17-90.
- Factory Modifications see page 17-102.
- Dimensions see page 17-140.
- Wiring Diagrams see pages 17-157 and 17-158.
- Replacement Parts see page 17-108.

Coil & Control Voltage

The coil voltage on the contactors will be the motor voltage. A CPT will be supplied to provide the control voltage. The control voltage will be 120V.

To change the control voltage to customer supplied (no CPT included), change the 9th character to the following:

for 24V, use "J"

for 120V, use "F"

Wye Delta

Motor Voltage	Max Hp	Overload		NEMA Size	Half Size	Fuse Clip Size Amps/Volts	Motor Circuit Interrupter ETI Amps	Open Transition				Closed Transition			
		Amp Range	Frame Size					Fusible Disconnect		Circuit Breaker		Fusible Disconnect		Circuit Breaker	
								Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
200	10	10-40	A1	1	—	60A/250V	50	88DUE06FD		88DUE06MD		88DUEC6FD		88DUEC6MD	
	15	10-40	A1	—	1½	100A/250V	100	88EUE06FD		88EUE06MD		88EUEC6FD		88EUEC6MD	
	20	13-52	B	2	—	100A/250V	100	88FUF06FD		88FUF06MD		88FUC6FD		88FUC6MD	
	30	25-100	B	—	2½	200A/250V	125	88GUG06FD		88GUG06MD		88GUGC6FD		88GUGC6MD	
	40	25-100	B	3	—	200A/250V	150	88HUG06FD		88HUG06MD		88HUGC6FD		88HUGC6MD	
	50	50-200	B	—	3¾	200A/250V	250	88IUH06FD		88IUH06MD		88IUHC6FD		88IUHC6MD	
	60	50-200	B	4	—	400A/250V	250	88JUH06FD		88JUH06MD		88JUHC6FD		88JUHC6MD	
	75	55-250	—	5	—	400A/250V	400	88LPS06FD		88LPS06MD		88LPSC6FD		88LPSC6MD	
	150	55-250	—	5	—	600A/250V	600	88LPU06FD		88LPU06MD		88LPUC6FD		88LPUC6MD	
300	160-630	—	6	—	—	800	—		88MSX06MD		—		88MSXC6MD		
230	10	10-40	A1	1	—	60A/250V	50	88DUE02FG		88DUE02MG		88DUEC2FG		88DUEC2MG	
	15	10-40	A1	—	1½	60A/250V	50	88EUE02FG		88EUE02MG		88EUEC2FG		88EUEC2MG	
	25	13-52	B	2	—	100A/250V	100	88FUF02FG		88FUF02MG		88FUC2FG		88FUC2MG	
	30	25-100	B	—	2½	200A/250V	100	88GUG02FG		88GUG02MG		88GUC2FG		88GUC2MG	
	50	25-100	B	3	—	200A/250V	150	88HUG02FG		88HUG02MG		88HUC2FG		88HUC2MG	
	60	50-200	B	—	3¾	200A/250V	250	88IUH02FG		88IUH02MG		88IUHC2FG		88IUHC2MG	
	75	50-200	B	4	—	400A/250V	250	88JUH02FG		88JUH02MG		88JUHC2FG		88JUHC2MG	
	100	55-250	—	5	—	400A/250V	400	88LPS02FG		88LPS02MG		88LPSC2FG		88LPSC2MG	
	150	55-250	—	5	—	600A/250V	600	88LPU02FG		88LPU02MG		88LPUC2FG		88LPUC2MG	
350	160-630	—	6	—	—	1200	—		88MSX02MG		—		88MSXC2MG		
460	15	5.5-22	A1	1	—	30A/600V	30	88DUD04FH		88DUD04MH		88DUDC4FH		88DUDC4MH	
	30	10-40	A1	—	1½	60A/600V	50	88EUE04FH		88EUE04MH		88EUEC4FH		88EUEC4MH	
	40	13-52	B	2	—	100A/600V	100	88FUF04FH		88FUF04MH		88FUC4FH		88FUC4MH	
	60	25-100	B	—	2½	200A/600V	100	88GUG04FH		88GUG04MH		88GUC4FH		88GUC4MH	
	75	25-100	B	3	—	200A/600V	125	88HUG04FH		88HUG04MH		88HUC4FH		88HUC4MH	
	100	50-200	B	—	3¾	200A/600V	150	88IUH04FH		88IUH04MH		88IUHC4FH		88IUHC4MH	
	150	50-200	B	4	—	400A/600V	250	88JUH04FH		88JUH04MH		88JUHC4FH		88JUHC4MH	
	200	55-250	—	5	—	400A/600V	400	88LPS04FH		88LPS04MH		88LPSC4FH		88LPSC4MH	
	300	55-250	—	5	—	600A/600V	600	88LPU04FH		88LPU04MH		88LPUC4FH		88LPUC4MH	
700	160-630	—	6	—	—	1200	—		88MSX04MH		—		88MSXC4MH		
575	15	5.5-22	A1	1	—	30A/600V	30	88DUD05FE		88DUD05ME		88DUDC5FE		88DUDC5ME	
	30	10-40	A1	—	1½	60A/600V	50	88EUE05FE		88EUE05ME		88EUEC5FE		88EUEC5ME	
	40	13-52	B	2	—	100A/600V	50	88FUF05FE		88FUF05ME		88FUC5FE		88FUC5ME	
	60	25-100	B	—	2½	200A/600V	100	88GUG05FE		88GUG05ME		88GUC5FE		88GUC5ME	
	75	25-100	B	3	—	200A/600V	125	88HUG05FE		88HUG05ME		88HUC5FE		88HUC5ME	
	100	50-200	B	—	3¾	200A/600V	150	88IUH05FE		88IUH05ME		88IUHC5FE		88IUHC5ME	
	150	50-200	B	4	—	400A/600V	250	88JUH05FE		88JUH05ME		88JUHC5FE		88JUHC5ME	
	200	55-250	—	5	—	400A/600V	400	88LPS05FE		88LPU05ME		88LPSC5FE		88LPSC5ME	
	300	55-250	—	5	—	600A/600V	400	88LPU05FE		88LPU05ME		88LPUC5FE		88LPUC5ME	
700	160-630	—	6	—	—	1200	—		88MSX05ME		—		88MSXC5ME		

Note: All starter sizes carry one maximum Hp rating (per the National Electric Code).

Pump Control Panels

Notes

NEMA & General
Purpose Control

17
CONTROL
PRODUCTS

Lighting and Heating Control

Electrically Held Lighting Contactors, Class LE

Features

Simplicity and compact lightweight design makes Class LE lighting contactors an attractive solution to your budgeting challenges.



- Used in applications where it is not critical that contacts remain closed if control power is lost
- Rated for tungsten lighting (incandescent filament), ballast lighting (fluorescent, HID, metal halide, mercury vapor, quartz halogen and sodium-lamp), resistive and general use loads
- Contacts are rated 20 - 400 amps at 600 volts
- 3 and 4 pole (up to 12 pole for 30 and 60 amp contactors)
- Most contactors have built-in auxiliary contacts for convenient 3-wire control
- Combination lighting contactors are UL Listed for Service Entrance
- Wide range of coil voltages from 24 to 600 VAC 50/60Hz
- Compact design allows for smaller panels and more wiring room
- Finger and back-of-hand safe terminals
- Panel and DIN rail mounting
- Full line of enclosures including NEMA 1, 3R/4/12 and 4/4X stainless steel
- Available in combination form with choice of non-fusible disconnect, fusible disconnect or circuit breaker
- Full line of factory and field modifications

NEMA & General
Purpose Control

17
CONTROL
PRODUCTS

Lighting and Heating Control

Electrically Held Lighting Contactors, Class LE

Features

Catalog Numbering System

	LE					0			
Disconnect Type									
B = Combination Circuit Breaker									
D = Combination Non-Fused Disconnect									
F = Combination Fusible Disconnect									
N = Non-Combination									
Disconnect Rating									
0 = N/A									
A = 30A/250V Disconnect									
B = 30A/600V Disconnect									
C = 60A/250V Disconnect									
D = 60A/600V Disconnect									
E = 100A/250V Disconnect									
F = 100A/600V Disconnect									
G = 200A/250V Disconnect									
H = 200A/600V Disconnect									
J = 400A/250V Disconnect									
K = 400A/600V Disconnect									
T = 20A Circuit Breaker									
V = 30A Circuit Breaker									
Y = 60A Circuit Breaker									
Z = 100A Circuit Breaker									
Enclosure Type									
0 = Open									
1 = NEMA 1									
2 = NEMA 3R/4/12									
4 = NEMA 4/4X SS									
Contact Rating (Amp)									
B = 20									
C = 30									
D = 60									
E = 100									
F = 200									
G = 300									
H = 400									
N.C. Poles									
0 = None									
N.O. Poles									
03 = Three									
04 = Four									
06 = Six									
09 = Nine									
12 = Twelve									
Coil Voltage (AC 60Hz)									
024 = 24									
120 = 120									
208 = 208									
240 = 240									
277 = 277									
347 = 347									
480 = 480									
600 = 600									
Series									
A = 200 – 400A Contactors									
B = 20 & 30A Contactors									
C = 60 & 100A Contactors									

Lighting and Heating Control

Electrically Held Lighting Contactors, Class LE

Selection

	Ordering Information		Coil Table	
	▶ Replace *** with a number from the coil table. ▶ Field Modification Kits see page 17-90. ▶ Factory Modifications see page 17-102. ▶ Dimensions see page 17-123 for open, page 17-141 for enclosed. ▶ Wiring Diagram see page 17-159. ▶ Replacement Parts see page 17-111.		VAC 60Hz	***
			24	024
			120	120
			208	208
			240	240
			277	277
			347 ①	347
			480	480
			600	600
			Replace the (***) with a number from the coil table.	

Non-Combination Contactor

Max. Amp Rating	Number of Poles	Normally Closed Contacts	Normally Open Contacts	Enclosure Type			
				Open	1	3R/4/12	4/4X 304 S.S.
				Catalog Number			
20	3	0	3	LEN00B003***B	LEN01B003***B	LEN02B003***B	LEN04B003***B
	4	0	4	LEN00B004***B	LEN01B004***B	LEN02B004***B	LEN04B004***B
30	3	0	3	LEN00C003***B	LEN01C003***B	LEN02C003***B	LEN04C003***B
	4	0	4	LEN00C004***B	LEN01C004***B	LEN02C004***B	LEN04C004***B
	6	0	6	LEN00C006***B	LEN01C006***B	LEN02C006***B	LEN04C006***B
	9	0	9	LEN00C009***B	LEN01C009***B	LEN02C009***B	LEN04C009***B
	12	0	12	LEN00C012***B	LEN01C012***B	LEN02C012***B	LEN04C012***B
60	3	0	3	LEN00D003***C	LEN01D003***C	LEN02D003***C	LEN04D003***C
	6	0	6	LEN00D006***C	LEN01D006***C	LEN02D006***C	LEN04D006***C
	9	0	9	LEN00D009***C	LEN01D009***C	LEN02D009***C	LEN04D009***C
	12	0	12	LEN00D012***C	LEN01D012***C	LEN02D012***C	LEN04D012***C
100	3	0	3	LEN00E003***C	LEN01E003***C	LEN02E003***C	LEN04E003***C
200	3	0	3	LEN00F003***A	LEN01F003***A	LEN02F003***A	LEN04F003***A
300	3	0	3	LEN00G003***A	LEN01G003***A	LEN02G003***A	LEN04G003***A
400	3	0	3	LEN00H003***A	LEN01H003***A	LEN02H003***A	LEN04H003***A

① Not available on 60 - 400A contactors.

Lighting and Heating Control

Electrically Held Lighting Contactors, Class LE

Technical Data

Contactor	LEN00B003	LEN00B004	LEN00C003	LEN00C004
General technical data:				
Finger-safe (main circuit / control circuit)	yes / yes	yes / yes	yes / yes	yes / yes
Altitude (m)	2,000	2,000	2,000	2,000
Ambient storage temperature (°C)	-55 to 80	-55 to 80	-55 to 80	-55 to 80
Ambient operating temperature (°C)	0 to 40	0 to 40	0 to 40	0 to 40
Humidity (% non-condensing)	10 to 95	10 to 95	10 to 95	10 to 95
Shock resistance at rectangular impulse (g/ms)	6.7 / 5, 4.2 / 10	6.7 / 5, 4.2 / 10	7.5 / 5, 4.7 / 10	7.5 / 5, 4.7 / 10
Shock resistance at sine pulse (g/ms)	10.5 / 5, 6.6 / 10	10.5 / 5, 6.6 / 10	11.8 / 5, 7.4 / 10	11.8 / 5, 7.4 / 10
Mechanical operating cycles as operating time:				
of contactor	30,000,000	30,000,000	10,000,000	10,000,000
of contactor with additional aux contacts	10,000,000	10,000,000	10,000,000	10,000,000
Main circuit:				
Number of NC / NO main contacts	0NC / 3NO	0NC / 4NO	0NC / 3NO	0NC / 4NO
Typical power loss per conductor (W)	0.7	0.7	0.9	0.9
Off-load operating frequency (cycles per hour)	10,000	10,000	5,000	5,000
Current ratings:				
Tungsten (poles per phase)	20A @277V 1p 1ph 20A @480V 2p 1ph 20A @480V 3p 3ph	20A @277V 1p 1ph 20A @480V 2p 1ph 20A @480V 3p 3ph	30A @277V 1p 1ph 30A @480V 2p 1ph 30A @480V 3p 3ph	30A @277V 1p 1ph 30A @480V 2p 1ph 30A @480V 3p 3ph
Ballast (poles per phase)	20A @347V 1p 1ph 20A @600V 2p 1ph 20A @600V 3p 3ph	20A @347V 1p 1ph 20A @600V 2p 1ph 20A @600V 3p 3ph	30A @347V 1p 1ph 30A @600V 2p 1ph 30A @660V 3p 3ph	30A @347V 1p 1ph 30A @600V 2p 1ph 30A @600V 3p 3ph
General and resistive (poles per phase)	20A @600V 1p 1ph 20A @600V 2p 1ph 20A @600V 3p 3ph	20A @600V 1p 1ph 20A @600V 2p 1ph 20A @600V 3p 3ph	30A @600V 1p 1ph 30A @600V 2p 1ph 30A @600V 3p 3ph	30A @600V 1p 1ph 30A @600V 2p 1ph 30A @600V 3p 3ph
Coil ratings:				
Nominal voltage	2)	2)	2)	2)
Inrush / sealed power (VA)	31.7 / 4.8	31.7 / 4.8	87 / 9.4	87 / 9.4
Coil voltage tolerance factor	0.8 - 1.1	0.8 - 1.1	0.8 - 1.1	0.8 - 1.1
Internal/standard auxiliary contact:				
Number of NC / NO auxiliary contacts	0NC / 1NO	NA ^①	1NC / 1NO	1NC / 1NO
Rating	A600 / Q600	NA	A600 / Q600	A600 / Q600
Installation/mounting/dimensions:				
Mounting orientation	vertical	vertical	vertical	vertical
Type of mounting: screw / DIN rail	yes / yes	yes / yes	yes / yes	yes / yes
Height x Width x Depth (mm)	57.5 x 45 x 73	57.5 x 45 x 73	85 x 45 x 97	85 x 60 x 97
Minimum clearance to sides (mm)	0	0	0	0
Minimum clearance to earthed parts (mm)	6	6	6	6
Connection type / torque for main circuit terminals	screw / 7-10 lb in	screw / 7-10 lb in	screw / 18-22 lb in	screw / 18-22 lb in
Connection type / torque for control circuit terminals	screw / 7-10 lb in	screw / 7-10 lb in	screw / 7-10 lb in	screw / 7-10 lb in
Solid and stranded conductors for main contacts (AWG)	2x(20-16), 2x(18-14), 2x(12)	2x(20-16), 2x(18-14), 2x(12)	2x(6-12), 2x(14-8)	2x(6-12), 2x(14-8)
Solid and stranded conductors for control circuit (AWG)	2x(20-16), 2x(18-14)	2x(20-16), 2x(18-14)	2x(20-16), 2x(18-14)	2x(20-16), 2x(18-14)
Conductor type for main and control circuits	75°C CU	75°C CU	75°C CU	75°C CU
Short circuit current rating of main circuit:				
Short circuit current rating	5kA @ 600V	5kA @ 600V	5kA @ 600V	5kA @ 600V
Max fuse / circuit breaker (Amp)	30 / 25	30 / 25	60 / 40	60 / 40
Certificates:	cULus	cULus	cULus	cULus

① Must use an external (optional) auxiliary contact.

2) Refer to catalog selection tables for coil voltages.

Lighting and Heating Control

Electrically Held Lighting Contactors, Class LE

Technical Data

LEN00D003	LEN00E003	LEN00F003	LEN00G003	LEN00H003
no / yes	no / yes	no / yes	no / yes	no / yes
2,000	2,000	2,000	2,000	2,000
-55 to 80	-55 to 80	-55 to 80	-55 to 80	-55 to 80
0 to 40	0 to 40	0 to 40	0 to 40	0 to 40
10 to 95	10 to 95	10 to 95	10 to 95	10 to 95
11.8 / 5, 7.4 / 10	6.7 / 5, 4 / 10	8.5 / 5, 4.2 / 10	8.5 / 5, 4.2 / 10	8.5 / 5, 4.2 / 10
18.5 / 5, 10 / 10	10.6 / 5, 6.3 / 10	13.4 / 5, 6.5 / 10	13.4 / 5, 6.5 / 10	13.4 / 5, 6.5 / 10
Mechanical operating cycles as operating time:				
10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
Main circuit:				
ONC / 3NO	ONC / 3NO	ONC / 3NO	ONC / 3NO	ONC / 3NO
3.8	5.3	13	18	35
5,000	5,000	2,000	2,000	2,000
Current ratings:				
60A @277V 1p 1ph 60A @480V 2p 1ph 60A @480V 3p 3ph	100A @277V 1p 1ph 100A @480V 2p 1ph 100A @480V 3p 3ph	200A @277V 1p 1ph 200A @480V 2p 1ph 200A @480V 3p 3ph	300A @277V 1p 1ph 300A @480V 2p 1ph 300A @480V 3p 3ph	400A @277V 1p 1ph 400A @480V 2p 1ph 400A @480V 3p 3ph
60A @347V 1p 1ph 60A @600V 2p 1ph 60A @600V 3p 3ph	100A @347V 1p 1ph 100A @600V 2p 1ph 100A @600V 3p 3ph	200A @600V 1p 1ph 200A @600V 2p 1ph 200A @600V 3p 3ph	300A @600V 1p 1ph 300A @600V 2p 1ph 300A @600V 3p 3ph	400A @600V 1p 1ph 400A @600V 2p 1ph 400A @600V 3p 3ph
60A @347V 1p 1ph 60A @600V 2p 1ph 60A @600V 3p 3ph	100A @347V 1p 1ph 100A @600V 2p 1ph 100A @600V 3p 3ph	200A @600V 1p 1ph 200A @600V 2p 1ph 200A @600V 3p 3ph	300A @600V 1p 1ph 300A @600V 2p 1ph 300A @600V 3p 3ph	400A @600V 1p 1ph 400A @600V 2p 1ph 400A @600V 3p 3ph
Coil ratings:				
2)	2)	2)	2)	2)
188 / 16.5	326 / 22	300 / 5.8	590 / 6.7	830 / 9.2
0.8 - 1.1	0.8 - 1.1	0.8 - 1.1	0.8 - 1.1	0.8 - 1.1
Internal/standard auxiliary contact:				
1NC / 1NO	1NC / 1NO	2NC / 2NO	2NC / 2NO	2NC / 2NO
A600 / P600	A600 / P600	A300 / Q300	A300 / Q300	A300 / Q300
Installation/mounting/dimensions:				
vertical	vertical	vertical	vertical	vertical
yes / yes	yes / yes	yes / no	yes / no	yes / no
113 x 55 x 130	140 x 70 x 152	172 x 120 x 180	210 x 145 x 202	214 x 160 x 225
6	6	10	10	10
6	6	10	10	10
screw / 26-39 lb in	screw / 26-39 lb in	screw / 90-110 lb in	screw / 180-195 lb in	screw / 180-195 lb in
screw / 7-10 lb in	screw / 7-10 lb in	screw / 7-10 lb in	screw / 7-10 lb in	screw / 7-10 lb in
2 x (18 ... 2), 1 x (18 ... 1)	2 x (18 ... 2), 1 x (18 ... 1)	2x(6-3/0)	2x(2/0-500MCM)	2x(2/0-500MCM)
2x (20 ... 16), 2x (18 ... 14)	2 x (18 ... 2), 1 x (18 ... 1)	2x(18-14)	2x(18-14)	2x(18-14)
75°C CU	75°C CU	75°C CU	75°C CU	75°C CU
Short circuit current rating of main circuit:				
5kA @ 600V	10kA @ 600V	10kA @ 600V	18kA @ 600V	18kA @ 600V
100 / 80	200 / 125	400 / 250	600 / 400	800 / 500
cULus	cULus	cULus	cULus	cULus

Lighting and Heating Control

Electrically Held Lighting Contactors, Class LE

Selection



Ordering Information

- Replace *** with a number from the coil table.
- Field Modification Kits see page 17-90.
- Factory Modifications see page 17-102.
- Dimensions see page 17-141.
- Wiring Diagram see page 17-159.
- Replacement Parts see page 17-111.

Coil Table

VAC 60Hz	***
24	024
120	120
208	208
240	240
277	277
347 ^①	347
480	480
600	600

Replace the (***) with a number from the coil table.

Combination Contactor

Disconnect Type	Max. Amp Rating	Number of NO Poles	Disc. Amp Rating	Disc Amp/ Fuse Clip Rating	Circuit Breaker Rating	Enclosure Type		
						1	3R/4/12	4/4X 304 S.S.
						Catalog Number		
Non-Fusible	20	3	30A	—	—	LEDB1B003***B	LEDB2B003***B	LEDB4B003***B
	30	3	30A	—	—	LEDB1C003***B	LEDB2C003***B	LEDB4C003***B
	60	3	60A	—	—	LEDD1D003***B	LEDD2D003***B	LEDD4D003***B
	100	3	100A	—	—	LEDF1E003***B	LEDF2E003***B	LEDF4E003***B
	200	3	200A	—	—	LEDH1F003***A	LEDH2F003***A	LEDH4F003***A
	300	3	400A	—	—	LEDK1G003***A	LEDK2G003***A	LEDK4G003***A
Fusible	20	3	—	30A/250V	—	LEFA1B003***B	LEFA2B003***B	LEFA4B003***B
		3	—	30A/600V	—	LEFB1B003***B	LEFB2B003***B	LEFB4B003***B
	30	3	—	30A/250V	—	LEFA1C003***B	LEFA2C003***B	LEFA4C003***B
		3	—	30A/600V	—	LEFB1C003***B	LEFB2C003***B	LEFB4C003***B
	60	3	—	60A/250V	—	LEFC1D003***B	LEFC2D003***B	LEFC4D003***B
		3	—	60A/600V	—	LEFD1D003***B	LEFD2D003***B	LEFD4D003***B
	100	3	—	100A/250V	—	LEFE1E003***B	LEFE2E003***B	LEFE4E003***B
		3	—	100A/600V	—	LEFF1E003***B	LEFF2E003***B	LEFF4E003***B
	200	3	—	200A/250V	—	LEFG1F003***A	LEFG2F003***A	LEFG4F003***A
		3	—	200A/600V	—	LEFH1F003***A	LEFH2F003***A	LEFH4F003***A
	300	3	—	400A/250V	—	LEFJ1G003***A	LEFJ2G003***A	LEFJ4G003***A
		3	—	400A/600V	—	LEFK1G003***A	LEFK2G003***A	LEFK4G003***A
Circuit Breaker	20	3	—	—	20A	LEBT1B003***B	LEBT2B003***B	LEBT4B003***B
	30	3	—	—	30A	LEBV1C003***B	LEBV2C003***B	LEBV4C003***B
	60	3	—	—	60A	LEBY1D003***B	LEBY2D003***B	LEBY4D003***B
	100	3	—	—	100A	LEBZ1E003***B	LEBZ2E003***B	LEBZ4E003***B

Lighting and Heating Control

Electrically Held Lighting Contactors, Class LC

Features

Class LC lighting contactors deliver unprecedented versatility in application, simplicity in configuration and performance in operation. Ingenious design, rugged construction and a host

of truly useful features make them uniquely appealing to all those who use them.

Convenient side access field power wiring.

Contact position indication – when button protrudes, contact is closed

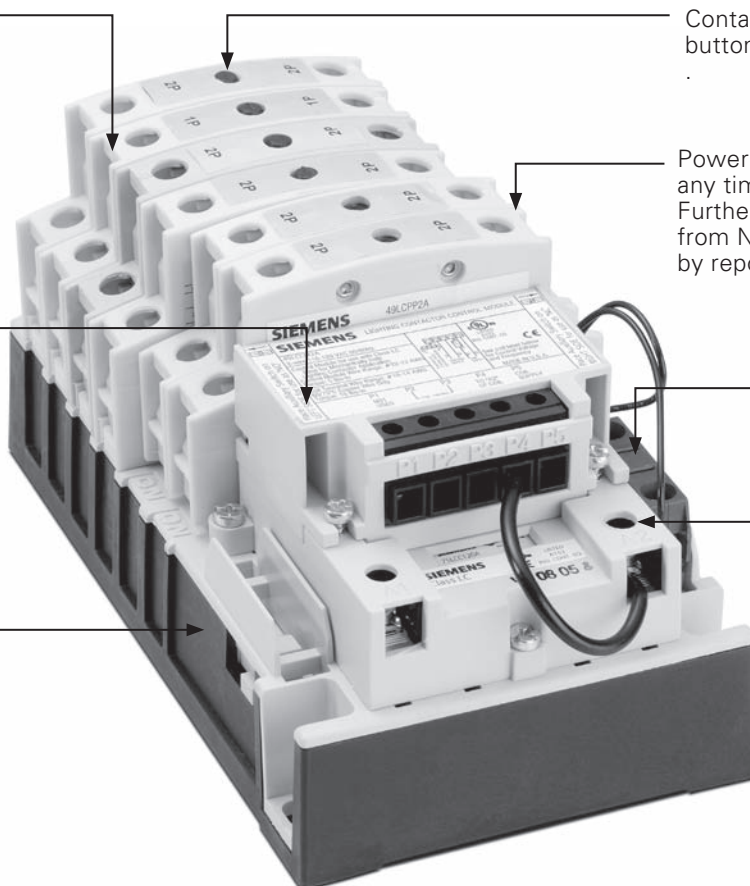
Power poles can easily be added at any time based on changing needs. Furthermore, they may be converted from NO to NC (or vice versa) simply by repositioning.

A simple kit easily converts electrically held units to mechanically held and includes a 2- or 3-wire control module.

Plug-in auxiliary contacts are NO when installed on the left side of the contactor, NC on the right.

Standard base enables contactor to be field expandable for flexibility and future needs.

Finger and back-of-hand safe terminals.



- Used in all applications where either electrically or mechanically held contactors are specifically suited and also ideal for maximum flexibility and future expansion
- Rated for tungsten lighting (incandescent filament), ballast lighting (fluorescent, HID, metal halide, mercury vapor, quartz halogen and sodium-lamp), resistive and general use loads
- Contacts are rated up to 30 amps at 600 volts
- Up to 12 poles (maximum of 8 normally closed)
- Wide range of coil voltages from 24 to 600 VAC 50/60Hz

- Can be ordered as either electrically or mechanically held and can also be converted from electrically to mechanically held in the field with a simple conversion kit
- Modular design enables you to stock the building block components to assemble all configurations of both the electrically and mechanically held contactors thus dramatically reducing inventory
- Full line of enclosures including NEMA 1, 3/3R, 4, 4/4X stainless steel and 12
- Full line of factory and field modifications

NEMA & General
Purpose Control

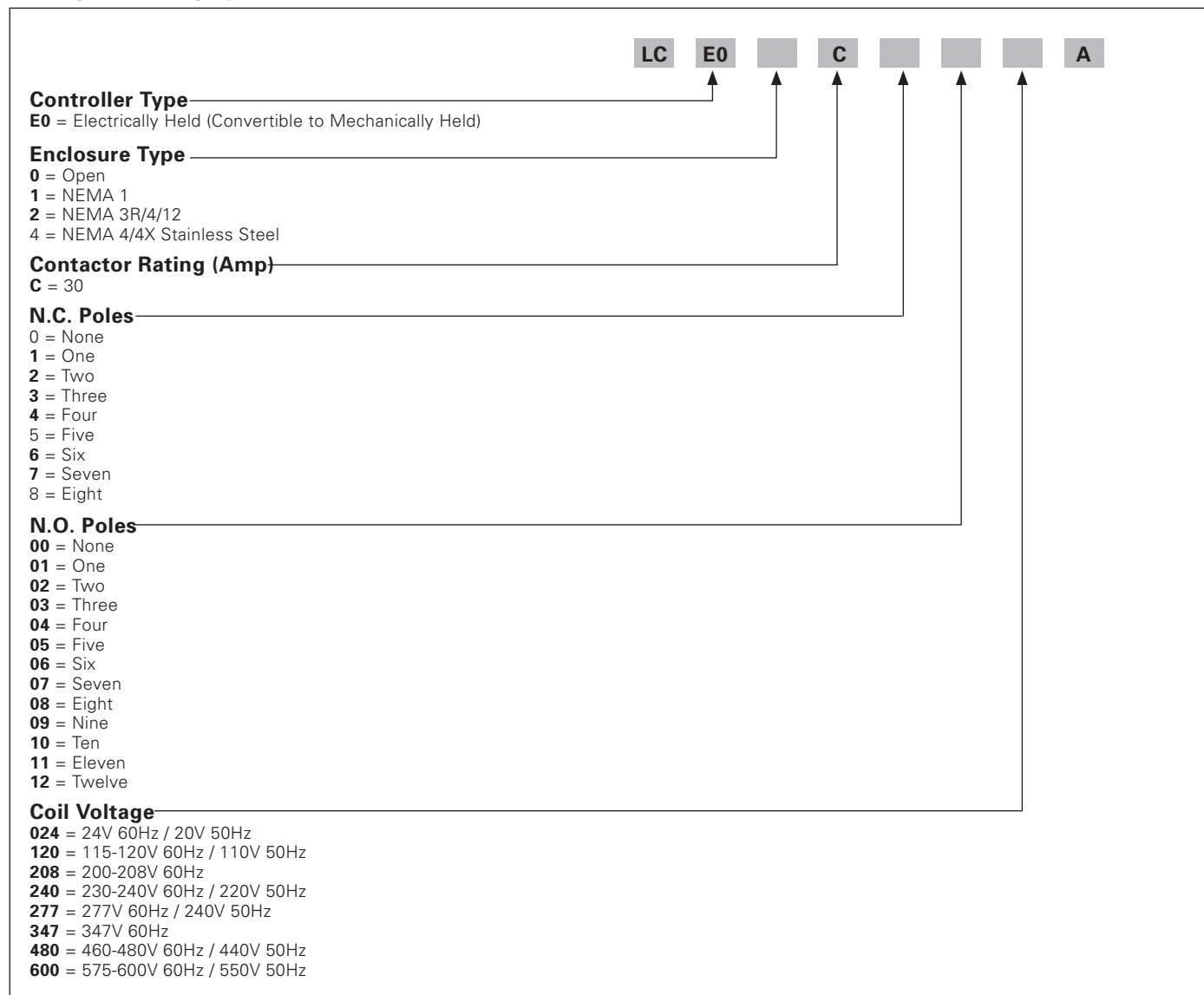
17
CONTROL
PRODUCTS

Lighting and Heating Control

Electrically Held Lighting Contactors, Class LC

Features

Catalog Numbering System



Lighting and Heating Control

Electrically Held Lighting Contactors, Class LC

Selection

	Ordering Information		Coil Table	
	▶ To order standard electrically held contactor, simply select catalog number from tables below. ▶ To order mechanically held contactor, select catalog number from tables below and specify conversion module from factory modification section from page 17-105. ▶ To convert standard electrically held contactor to mechanically held in the field, select catalog number from tables below and select conversion module kit from field modification section on page 17-92. ▶ Replace *** with a number from the coil table. ▶ Field Modification Kits see page 17-90. ▶ Factory Modifications see page 17-102. ▶ Dimensions see page 17-122 open, page 17-141 enclosed. ▶ Wiring Diagrams see page 17-159. ▶ Replacement Parts see page 17-111.		VAC 60Hz	***
			24	024
			120	120
			208	208
			240	240
			277	277
			347	347
			480	480
			600	600
			Replace the (***) with a number from the coil table.	

Non-Combination Contactor (30 Amp max.)

No. of Poles		Enclosure Type			
		Open	1	3R/4/12	4/4X 304 S.S.
N.C.	N.O.	Catalog Number			
2	0	LCE00C200***A	LCE01C200***A	LCE02C200***A	LCE04C200***A
3		LCE00C300***A	LCE01C300***A	LCE02C300***A	LCE04C300***A
4		LCE00C400***A	LCE01C400***A	LCE02C400***A	LCE04C400***A
5		LCE00C500***A	LCE01C500***A	LCE02C500***A	LCE04C500***A
6		LCE00C600***A	LCE01C600***A	LCE02C600***A	LCE04C600***A
7		LCE00C700***A	LCE01C700***A	LCE02C700***A	LCE04C700***A
8		LCE00C800***A	LCE01C800***A	LCE02C800***A	LCE04C800***A
1	1	LCE00C101***A	LCE01C101***A	LCE02C101***A	LCE04C101***A
2		LCE00C201***A	LCE01C201***A	LCE02C201***A	LCE04C201***A
3		LCE00C301***A	LCE01C301***A	LCE02C301***A	LCE04C301***A
4		LCE00C401***A	LCE01C401***A	LCE02C401***A	LCE04C401***A
5		LCE00C501***A	LCE01C501***A	LCE02C501***A	LCE04C501***A
6		LCE00C601***A	LCE01C601***A	LCE02C601***A	LCE04C601***A
7		LCE00C701***A	LCE01C701***A	LCE02C701***A	LCE04C701***A
8		LCE00C801***A	LCE01C801***A	LCE02C801***A	LCE04C801***A
0	2	LCE00C002***A	LCE01C002***A	LCE02C002***A	LCE04C002***A
1		LCE00C102***A	LCE01C102***A	LCE02C102***A	LCE04C102***A
2		LCE00C202***A	LCE01C202***A	LCE02C202***A	LCE04C202***A
3		LCE00C302***A	LCE01C302***A	LCE02C302***A	LCE04C302***A
4		LCE00C402***A	LCE01C402***A	LCE02C402***A	LCE04C402***A
5		LCE00C502***A	LCE01C502***A	LCE02C502***A	LCE04C502***A
6		LCE00C602***A	LCE01C602***A	LCE02C602***A	LCE04C602***A
7		LCE00C702***A	LCE01C702***A	LCE02C702***A	LCE04C702***A
8	3	LCE00C802***A	LCE01C802***A	LCE02C802***A	LCE04C802***A
0		LCE00C003***A	LCE01C003***A	LCE02C003***A	LCE04C003***A
1		LCE00C103***A	LCE01C103***A	LCE02C103***A	LCE04C103***A
2		LCE00C203***A	LCE01C203***A	LCE02C203***A	LCE04C203***A
3		LCE00C303***A	LCE01C303***A	LCE02C303***A	LCE04C303***A
4		LCE00C403***A	LCE01C403***A	LCE02C403***A	LCE04C403***A
5		LCE00C503***A	LCE01C503***A	LCE02C503***A	LCE04C503***A
6		LCE00C603***A	LCE01C603***A	LCE02C603***A	LCE04C603***A
7		LCE00C703***A	LCE01C703***A	LCE02C703***A	LCE04C703***A
8		LCE00C803***A	LCE01C803***A	LCE02C803***A	LCE04C803***A

NEMA & General
Purpose Control17
CONTROL
PRODUCTS

Lighting and Heating Control

Electrically Held Lighting Contactors, Class LC

Selection

Non-Combination Contactor (30 Amp max.)

No. of Poles		Enclosure Type			
		Open	1	3R/4/12	4/4X 304 S.S.
N.C.	N.O.	Catalog Number			
0	4	LCE00C004***A	LCE01C004***A	LCE02C004***A	LCE04C004***A
1		LCE00C104***A	LCE01C104***A	LCE02C104***A	LCE04C104***A
2		LCE00C204***A	LCE01C204***A	LCE02C204***A	LCE04C204***A
3		LCE00C304***A	LCE01C304***A	LCE02C304***A	LCE04C304***A
4		LCE00C404***A	LCE01C404***A	LCE02C404***A	LCE04C404***A
5		LCE00C504***A	LCE01C504***A	LCE02C504***A	LCE04C504***A
6		LCE00C604***A	LCE01C604***A	LCE02C604***A	LCE04C604***A
7		LCE00C704***A	LCE01C704***A	LCE02C704***A	LCE04C704***A
8		LCE00C804***A	LCE01C804***A	LCE02C804***A	LCE04C804***A
0	5	LCE00C005***A	LCE01C005***A	LCE02C005***A	LCE04C005***A
1		LCE00C105***A	LCE01C105***A	LCE02C105***A	LCE04C105***A
2		LCE00C205***A	LCE01C205***A	LCE02C205***A	LCE04C205***A
3		LCE00C305***A	LCE01C305***A	LCE02C305***A	LCE04C305***A
4		LCE00C405***A	LCE01C405***A	LCE02C405***A	LCE04C405***A
5		LCE00C505***A	LCE01C505***A	LCE02C505***A	LCE04C505***A
6		LCE00C605***A	LCE01C605***A	LCE02C605***A	LCE04C605***A
0	6	LCE00C006***A	LCE01C006***A	LCE02C006***A	LCE04C006***A
1		LCE00C106***A	LCE01C106***A	LCE02C106***A	LCE04C106***A
2		LCE00C206***A	LCE01C206***A	LCE02C206***A	LCE04C206***A
3		LCE00C306***A	LCE01C306***A	LCE02C306***A	LCE04C306***A
4		LCE00C406***A	LCE01C406***A	LCE02C406***A	LCE04C406***A
5		LCE00C506***A	LCE01C506***A	LCE02C506***A	LCE04C506***A
6		LCE00C606***A	LCE01C606***A	LCE02C606***A	LCE04C606***A
0	7	LCE00C007***A	LCE01C007***A	LCE02C007***A	LCE04C007***A
1		LCE00C107***A	LCE01C107***A	LCE02C107***A	LCE04C107***A
2		LCE00C207***A	LCE01C207***A	LCE02C207***A	LCE04C207***A
3		LCE00C307***A	LCE01C307***A	LCE02C307***A	LCE04C307***A
4		LCE00C407***A	LCE01C407***A	LCE02C407***A	LCE04C407***A
0	8	LCE00C008***A	LCE01C008***A	LCE02C008***A	LCE04C008***A
1		LCE00C108***A	LCE01C108***A	LCE02C108***A	LCE04C108***A
2		LCE00C208***A	LCE01C208***A	LCE02C208***A	LCE04C208***A
3		LCE00C308***A	LCE01C308***A	LCE02C308***A	LCE04C308***A
4		LCE00C408***A	LCE01C408***A	LCE02C408***A	LCE04C408***A
0	9	LCE00C009***A	LCE01C009***A	LCE02C009***A	LCE04C009***A
1		LCE00C109***A	LCE01C109***A	LCE02C109***A	LCE04C109***A
2		LCE00C209***A	LCE01C209***A	LCE02C209***A	LCE04C209***A
0	10	LCE00C010***A	LCE01C010***A	LCE02C010***A	LCE04C010***A
1		LCE00C110***A	LCE01C110***A	LCE02C110***A	LCE04C110***A
2		LCE00C210***A	LCE01C210***A	LCE02C210***A	LCE04C210***A
0	11	LCE00C011***A	LCE01C011***A	LCE02C011***A	LCE04C011***A
0	12	LCE00C012***A	LCE01C012***A	LCE02C012***A	LCE04C012***A

NEMA & General
Purpose Control17
CONTROL
PRODUCTS

Lighting and Heating Control

Electrically Held Lighting Contactors, Class LC

Technical Data

General technical data:	
Finger-safe (main circuit / control circuit)	yes / yes
Degree of pollution	3
Altitude (m)	2,000
Ambient storage temperature (°C)	-30 to 65
Ambient operating temperature (°C)	-25 to 40
Humidity (% non-condensing)	no data
Shock resistance at rectangular impulse (g/ms)	no data
Shock resistance at sine pulse (g/ms)	no data
Rated impulse voltage resistance (kV)	no data
Rated insulation voltage (V)	600
Mechanical operating cycles as operating time:	
of contactor	100,000
of contactor with additional aux contacts	100,000
Main circuit:	
Number of main contacts	2 - 12 (maximum of 8 NC)
Typical power loss per conductor (W)	no data
Off-load operating frequency (cycles per hour)	60 for continued operation
Current ratings:	
Tungsten (poles per phase)	20A @277V 1p 1ph 20A @480V 2p 1ph 20A @480V 3p 3ph
Ballast (poles per phase)	30A @347V 1p 1ph 30A @600V 2p 1ph 30A @600V 3p 3ph
General and resistive (poles per phase)	30A @600V 1p 1ph 30A @600V 2p 1ph 30A @600V 3p 3ph
Coil ratings:	
Nominal voltage	(refer to coil voltage table)
Inrush / sealed power (VA)	248 / 28
Coil voltage tolerance factor	0.85 - 1.1
External/optional auxiliary contact:	
Number of NC / NO auxiliary contacts	2NC / 2NO max
Rating	A600, 24VDC, 24VAC
Installation/mounting/dimensions:	
Mounting orientation	vertical
Type of mounting: screw / DIN rail	yes / no
Height x Width x Depth (mm)	188 x 106 x 98
Minimum clearance to sides (mm)	12.7
Minimum clearance to earthed parts (mm)	12.7
Connection type / torque:	
Main contact terminals	screw / 35 lb in
Coil terminals	screw / 15 lb in
Auxiliary contact terminals	screw / 7-12 lb in
Control module terminals	screw / 5 lb in
Solid and stranded conductors (AWG):	
Main contact terminals	1x(14-8), #8 solid or stranded 2x(14-8), #8 stranded only
Coil terminals	2x(18-14)
Auxiliary contact terminals	2x(22-12)
Control module terminals	1x(22-12)
Conductor type for main / control circuits	75°C CU / 60-75°C CU
Short circuit current rating of main circuit:	
Short circuit current rating	(see SCCR tables)
Certificates:	cUL

Coil voltages:	
24V 60Hz / 20V 50Hz	
115-120V 60Hz / 110V 50Hz	
200-208V 60Hz	
230-240V 60Hz / 220V 50Hz	
277V 60Hz / 240V 50Hz	
347V 60Hz	
460-480V 60Hz / 440V 50Hz	
575-600V 60Hz / 550V 50Hz	

Short circuit current ratings with fuses:			
Max. Volt.	Fuse	Max. Device Rating (Amps)	SCCR (kA)
600	RK fuse	60	5

Short circuit current ratings with circuit breakers:			
Max. Volt.	Siemens Listed Circuit Breaker	Max. Device Rating (Amps)	SCCR (kA)
600	NGG3B040L	40	5
480	HEG3B040L	40	5
480	ED63B040L	40	5
480	NGG3B040L	40	5

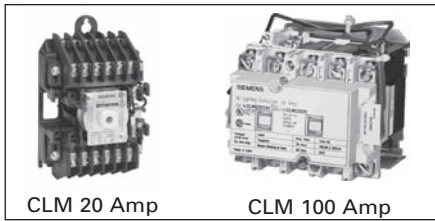
Conversion module:		
Input Volt. (AC)	Steady State Current @ Rated Volts (mA)	Max. VA
24	80	5
115-120	83	12
200-277	91	30

Conversion module:	
Min. pulse duration (3-wire module)	250ms
Max. allowable leakage current	1.8 mA
EMI	35 V/m
Surge transient peak	6 kV
Frequency range	40-70 Hz

Lighting and Heating Contactors

Mechanically and Magnetically Held Lighting Contactors, Class CLM

Selection



Mechanically Latched Lighting and Heating Contactor

The CLM Lighting Contactors can be used with metal halide, mercury vapor, quartz halogen, tungsten and fluorescent lighting. They provide reliable and convenient lighting control in numerous applications, such as industrial plants, schools, hospitals, office buildings, shopping centers, airports, stadiums . . . literally everywhere lighting is required.

The CLMs are listed under UL 508 with no derating when used open or enclosed. Combination lighting contactors are listed for UL service entrance.

UL listed File #E60310
CSA Certified File LR 6535

Type CLM 20 Amp Lighting Contactor Solid State Control Modules

The CLM 20 amp lighting contactor is an electromagnetically operated, mechanically latched three wire control contactor. The most commonly used method of control is a three position momentary contact switch with a center-off position. The controlling device must be able to make the coil inrush current but need not break it. The coil current is interrupted by the control contacts within the CLM contactor. Power for the control line may come from a separate source or directly from the line side of the CLM contactor. The CLM contactor can also be controlled by devices such as:

- Break-glass control stations
- Timers having single pole, double throw contacts
- Photo-electric cells^①
- Energy management systems^①
- Microprocessors^①
- Occupancy sensors^①

Control modules make it possible to use a controlling device that does not have enough current-carrying capacity to control the CLM contactor directly. Control modules are also used when

the control station is to be located at a distance greater than the allowable contactor line run.

Another use for control modules occurs when the controlling device is only available as a single pole single-throw contact necessitating a two wire control line.

Still another application for control modules is when start-stop three wire control is needed.

Control modules also can make it possible to operate the CLM coil from its own incoming line at one voltage while providing the control at a second, perhaps lower voltage.

Two Wire Control Module (Accessory 47)

The advantages of two wire controls are:

1. Control station can have lower ampacity rating.
2. Control station can be located an extended distance from the CLM contactor.
3. Control module can frequently be controlled directly from microprocessor.
4. Control devices can be two wire single pole, single-throw types.
5. Control voltage may be different than the CLM coil circuit and at a lower voltage level.

Note: If the control power to the solid state control module is lost while the module is energized the lighting contactor will open. If the line power to the lighting contactor is lost while the contactor is energized the contactor will not change state with return of line voltage. Power will be restored to the load if the control module is still energized. Control station should be the maintained type.

Three Wire Control Module (Accessory 48)

1. The accessory 48 consists of two relays with contacts appropriately interconnected which provides for an interlocking that prevents both relays from being energized simultaneously.
2. This module has similar characteristics to the two wire module (Accessory 47) except there is no change of switch contact position upon loss of control line power. Control stations should be the momentary type.

Stop-Start Control Module (Accessory 49)

Stop-start three wire maintained control is an arrangement used mostly when controlling motors, but can be used in lighting applications.

Any number of momentary contact control stations consisting of normally open start buttons and normally closed stop buttons can be used. Start buttons are connected in parallel and stop buttons in series.

Operation (Magnetic Latch)

A permanent magnet is built into the contactor structure of the 30A, 60A, 100A, and 200A contactors that will maintain the contactor in its energized state indefinitely without using control power. When energized, a DC current is applied that produces a magnetic field that reinforces the polarity of the permanent magnet, and the contactor pulls in immediately. The current to the coil is disconnected by the coil clearing interlock. In order to drop out the contactor, it is necessary to apply a field through the OFF coil in the reverse direction to the permanent magnet. This momentarily cancels the magnetic attraction and the contactor drops out. Coil and module failures are possible when used with solid state relays and PLC outputs. 24-volt systems are ok to use, but 120 volts and above should be discouraged. If higher values cannot be avoided, an interposing relay should be used.

(Mechanically Latched)

The 300 & 400A lighting and heating contactors operate using a latching mechanism.

Closing – When the “close” pushbutton is operated, the closing coil is energized, closing the contactor. As the contactor closes, the latch lever hooks over the latch pin to mechanically latch the contactor closed. The coil-clearing auxiliary contact de-energizes the closing coil.

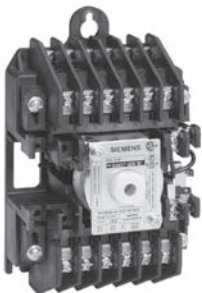
Opening – When the “Trip” pushbutton is operated, the trip solenoid coil is energized, unhooking the latch lever from the latch pin, which allows the contactor to open. As the contactor opens, the coil-clearing auxiliary contact de-energizes the trip solenoid coil.

^① Operation through control modules.

Lighting Control

Mechanically and Magnetically Held Lighting Contactors, Class CLM

Selection

	Ordering Information		Coil Table	
	▶ Replace *** with a number from the coil table. ▶ Field modification kits see page 17-90. ▶ Factory modifications see page 17-102. ▶ Dimensions see page 17-127 open page 17-141 enclosed. ▶ Wiring Diagrams see page 17-162. ▶ Replacement parts see page 17-111.		60Hz Voltage	Number
			24 ^②	024
			120	120
			208	208
			240	240
			277	277
			480 ^④	480
			600 ^④	600

Open and Non-combination Enclosed Contactors

Max Amp Rating	Number of Poles	Open Type ^③	Enclosure		
		Catalog Number	NEMA 1	NEMA 3R/4/12 Watertight, Dust-tight, Weatherproof	NEMA 4/4X Stainless Steel Watertight, Dust-tight, Corrosion Resistant, 304 Stainless Steel
			Catalog Number	Catalog Number	Catalog Number
20	2	see table below	CLM1B02***	CLM2B02***	CLMSB02***
	3		CLM1B03***	CLM2B03***	CLMSB03***
	4		CLM1B04***	CLM2B04***	CLMSB04***
	6		CLM1B06***	CLM2B06***	CLMSB06***
	8		CLM1B08***	CLM2B08***	CLMSB08***
	10		CLM1B10***	CLM2B10***	CLMSB10***
	12		CLM1B12***	CLM2B12***	CLMSB12***
30	2	CLM0C02***	CLM1C02***	CLM2C02***	CLMSC02***
	3	CLM0C03***	CLM1C03***	CLM2C03***	CLMSC03***
	4	CLM0C04***	CLM1C04***	CLM2C04***	CLMSC04***
	5	CLM0C05***	CLM1C05***	CLM2C05***	CLMSC05***
	6	CLM0C06***	CLM1C06***	CLM2C06***	—
	8	CLM0C08***	CLM1C08***	CLM2C08***	—
	9	CLM0C09***	CLM1C09***	CLM2C09***	—
60	10	CLM0C10***	CLM1C10***	CLM2C10***	—
	12	CLM0C12***	CLM1C12***	CLM2C12***	—
100	2	CLM0D02***	CLM1D02***	CLM2D02***	CLMSD02***
	3	CLM0D03***	CLM1D03***	CLM2D03***	CLMSD03***
	4	CLM0D04***	CLM1D04***	CLM2D04***	CLMSD04***
	5	CLM0D05***	CLM1D05***	CLM2D05***	CLMSD05***
	6	CLM0D06***	CLM1D06***	CLM2D06***	—
	8	CLM0D08***	CLM1D08***	CLM2D08***	—
	9	CLM0D09***	CLM1D09***	CLM2D09***	—
200	10	CLM0D10***	CLM1D10***	CLM2D10***	—
	12	CLM0D12***	CLM1D12***	CLM2D12***	—
300	2	CLM0E02***	CLM1E02***	CLM2E02***	CLMSE02***
	3	CLM0E03***	CLM1E03***	CLM2E03***	CLMSE03***
	4	CLM0E04***	CLM1E04***	CLM2E04***	CLMSE04***
	5	CLM0E05***	CLM1E05***	CLM2E05***	CLMSE05***
400	2	CLM0F02***	CLM1F02***	CLM2F02***	CLMSF02***
	3	CLM0F03***	CLM1F03***	CLM2F03***	CLMSF03***
	4	CLM0F04***	CLM1F04***	CLM2F04***	CLMSF04***
	5	CLM0F05***	CLM1F05***	CLM2F05***	CLMSF05***

Open 20 Amp Contactors

Max Amp Rating	Number of Poles ^①	110–120V Coil 50/60Hz Catalog Number	208–240V Coil 50/60Hz Catalog Number	265–277V Coil 50/60Hz Catalog Number
20	2	CLM22031	CLM22061	CLM22071
	3	CLM32031	CLM32061	CLM32071
	4	CLM42031	CLM42061	CLM42071
	6	CLM62031	CLM62061	CLM62071
	8	CLM82031	CLM82061	CLM82071
	10	CLM102031	CLM102061	CLM102071
	12	CLM122031	CLM122061	CLM122071

① Contactors with 2–6-poles will be assembled with all poles located in the top portion of the contactor. Contactors with 8–12-poles will be assembled with 6-poles in the top portion and the remaining poles in the bottom portion of the contactor.

② 24 volt coils are not available on 20, 300 and 400 amp contactor sizes. For 24 volt control of 20 amp contactor select solid state control module.

③ CLM 30 & 60A 6-12-pole can be field assembled. Order mounting kit 49MCMPPMA and the appropriate number of 2-5 pole contactors.

④ 480 or 600 volt coils are not available on 20 amp contactors.

Lighting Control

Combination Mechanically and Magnetically Held Lighting Contactors, Class CM

Selection

	Ordering Information	Coil Table	
	▶ Replace *** with a number from the coil table. ▶ Field modification kits see page 17-90. ▶ Factory modifications see page 17-102. ▶ Dimensions see page 17-141. ▶ Wiring Diagrams see page 17-162. ▶ Replacement parts see page 17-111.	60Hz Voltage	Number
		24 ^①	024
		120	120
		208	208
		240	240
		277	277
		480	480
		600 ^②	600

Combination Lighting Contactors

Disconnect Type	Contactor Amp Rating	Number of NO Poles	Disc Amp Rating	Disc Amp/ Fuse Clip Rating	Circuit Breaker Rating	Enclosure		
						NEMA 1	NEMA 3R/4/12 Watertight, Dust-tight, Weatherproof	NEMA 4/4X Stainless Steel Watertight, Dust-tight, Corrosion Resistant 304 Stainless Steel
						Catalog Number	Catalog Number	Catalog Number
Non-Fusible	20	3	30A	—	—	CMNB14***	CMNB24***	CMNBS4***
	30	3	30A	—	—	CMNC14***	CMNC24***	CMNCS4***
	60	3	60A	—	—	CMND15***	CMND25***	CMNDS5***
	100	3	100A	—	—	CMNE16***	CMNE26***	CMNES6***
	200	3	200A	—	—	CMNF17***	CMNF27***	CMNFS7***
	300	3	400A	—	—	CMNG18***	CMNG28***	CMNGS8***
Fusible	20	3	—	30A/250V	—	CMFB10***	CMFB20***	CMFBS0***
		3	—	30A/600V	—	CMFB11***	CMFB21***	CMFBS1***
	30	3	—	30A/250V	—	CMFC10***	CMFC20***	CMFCS0***
		3	—	30A/600V	—	CMFC11***	CMFC21***	CMFCS1***
	60	3	—	60A/250V	—	CMFD12***	CMFD22***	CMFDS2***
		3	—	60A/600V	—	CMFD13***	CMFD23***	CMFDS3***
	100	3	—	100A/250V	—	CMFE14***	CMFE24***	CMFES4***
		3	—	100A/600V	—	CMFE15***	CMFE25***	CMFES5***
	200	3	—	200A/250V	—	CMFF16***	CMFF26***	CMFFS6***
		3	—	200A/600V	—	CMFF17***	CMFF27***	CMFFS7***
	300	3	—	400A/250V	—	CMFG18***	CMFG28***	CMFGS8***
		3	—	400A/600V	—	CMFG19***	CMFG29***	CMFGS9***
Circuit Breaker	20	3	—	—	20A	CMBB14***	CMBB24***	CMBBS4***
	30	3	—	—	30A	CMBC15***	CMBC25***	CMBCS5***
	60	3	—	—	60A	CMBD18***	CMBD28***	CMBDS8***
	100	3	—	—	100A	CMBE18***	CMBE28***	CMBES8***
	200	3	—	—	200A	CMBF10***	CMBF20***	CMBFS0***
	300	3	—	—	300A	CMBG11***	CMBG21***	CMBGS1***

Lighting & Heating Contactor Ratings CLM

Maximum AC/DC Voltage and Amp Ratings

Load Type	Amperes Continuous	Poles to Load	
		1 for 1-Phase	2 for 1-Phase 3 for 3-Phase
Tungsten	20	250V AC	250V AC
Ballast	20	347V AC	600V AC
General	30	347V AC	600V AC
General	20	125V DC	250V DC

Inrush Current Over Fuse Size (amps RMS) at AC Control Voltage 20A CLM

Amps	120V	240V	277V	347V	480V
Inrush	5.0	2.5	2.2	1.8	1.3
Fuse	2.0	1.0	1.0	0.75	0.5

Contactor Ratings			
Load Type	Amperes Continuous	Max Volts Line to Line	Max Volts Line to Neutral
Tungsten	30-400	480	277
Ballast	30-400	600	346
Heating	30-400	600	346

AC Coil Data			
Contactor Amperes	No. Poles	Inrush VA	Dropout VA
20	2-12	625	6
30	2-5	410	40
60	2-3	410	40
60	4-5	600	40
100/200	2-3	900	200
100/200	4-5	1300	130
300/400	2-3	1600	550

① 24 volt coils are not available on 20 and 300 amp contactors. Use solid state control module on 20 amp size.

② 600 volt coils are not available on 20 amp contactors.

Industrial Control Power Transformers

Class MT

General

Features

- Enclosed coils (50-5000VA); Completely encloses the transformer coils against moisture, dust, dirt and industrial contaminants for maximum protection in hostile and industrial environments.
- Fuse clips (most models). Factory mounted for integral fusing on the secondary side to save panel space, save wiring time and save the cost of buying an add-on fuse block or kit
- Integrally finger safe terminals. Between terminals and transformer, protect against electrical creepage. Up to 30% greater terminal contact area permits low-loss connections. Extra-deep barriers reduce the chance of shorts from frayed leads or careless wiring
- Terminals. Molded into the transformer, are difficult to break during wiring. A full quarter-inch of thread on the 8-32 terminal screws prevents stripping and pullout
- Jumpers supplied. Two jumper links are standard with all transformers which can be wired for dual primary voltages

Operation

Industrial control circuits and motor control loads typically require more current when they are initially energized than under normal operating conditions. This period of high current demand, referred to as inrush, may be as great as ten times the current required under steady state (normal) operating conditions, and can last up to 40 milliseconds. A transformer in a circuit subject to inrush will typically attempt to provide the load with the required current during the inrush period. However, it will be at the expense of the secondary voltage stability by allowing the voltage to the load to decrease as the current increases. This period of secondary voltage instability, resulting from increased current, can be of such magnitude that the transformer is unable to supply sufficient voltage to energize the load. The transformer must therefore be designed and constructed to accommodate the high inrush current, while maintaining secondary voltage stability. According to NEMA standards, the secondary voltage would typically be at 85% of the rated voltage.



Industrial Control Power Transformers are specifically designed and built to provide adequate voltage to the load while accommodating the high current levels present at inrush. These transformers deliver excellent secondary voltage regulation and meet or exceed the standards established by NEMA, ANSI, UL and cUL. Their rugged construction and excellent electrical characteristics ensure reliable operation of electromagnetic devices and trouble-free performance.

Specifications

- Laminations are built with silicon steel to minimize core losses and to increase optimum performance and efficiency
- Copper magnet wire of the highest quality assures efficient operation
- Factory mounted type "K" fuse clips are standard on all secondary transformers where possible
- Two jumper links are standard with all transformers which can be wired for dual primary voltages
- cUL Listed and CSA certified

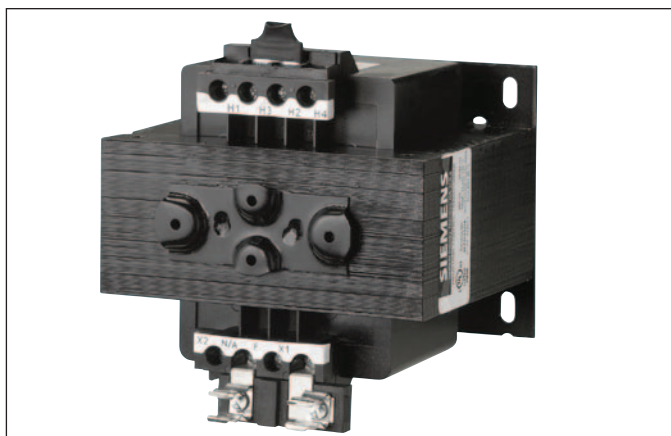
- 50/60 Hz rated
- Insulation materials are of the highest rating available for the temperature class
- Mounting plate is heavy gauge steel to add strength to core construction and provide stable mounting. Slotted mounting feet permit easy installation
- Attractive black finish; easy-to-read nameplate with complete rating data and wiring diagram
- Class 130°C (226°F) insulation system. 80°C (176°F) temperature rise. (50-750VA typical)
- Class 180°C (356°F) insulation system. 120°C (248°F) temperature rise. (1000-5000VA typical)
- Optional field mounted 2-pole primary Class CC fuse block is available

NEMA & General
Purpose Control17
CONTROL
PRODUCTS

Industrial Control Power Transformers

Class MTG

General



Features

- Class MTG Industrial Control Transformers are 100% certified for all domestic and International Applications
- The MTG line has full compliance with IEC Safety standards EN 61 558
- CE Mark in accordance with requirements for EN 61 558
- Meets IP-20 specifications per IEC 529 for finger-safe protection because all of our CPTs come standard with touchsafe terminals, both primary and secondary sides. There is no need to buy any terminal cover accessories.
- UL Listed
- Exceeds applicable requirements for control transformers as determined by NEMA and ANSI
- Insulation requirements is twice that of UL5085
- Class 130°C (226°F) insulation system. 80°C (176°F) temperature rise. (50-750VA typical)
- Class 180°C (356°F) insulation system. 120°C (248°F) temperature rise. (1000-5000VA typical)
- Primary and secondary fusing capability available as field installed kits for domestic or international fusing
- Integrally-molded terminals and barriers between terminals make breakage virtually impossible during wiring. The MTG transformer construction is the same as our high quality Class MT transformers

Optional Field Installed Fuse Clip Kits For Panel Mounting

- 2-Pole primary Class CC fuse block
- 1-Pole secondary midget fuse block for $1\frac{3}{32} \times 1\frac{1}{2}$ fuses
- 2-Pole primary international type fuse blocks
- 1-Pole secondary international type fuse blocks

Touch safe terminals are standard on all CPTs

The Touch-Safe terminals are designed to comply with IEC 742 and IP 20 requirements. The international fuse block kits have inherent touch safe terminals and fuse clips.

Siemens Meets International Standards

CSA (Canadian Standards Association) was utilized as a Competent Body in reviewing, interpreting and properly complying with the requirements of IEC-742 to place a CE mark on its MTG Series product. As a National Certification Body, CSA also has the proper documentation and reports on file for MTG Series to utilize the CB Scheme ensuring acceptance throughout the world.

The standard Siemens MTG product is available with terminal covers which meets the requirements of IEC-529, IP20 degree of protection and meets the applicable requirements for covers per IEC-742.

IEC-742

The requirements for industrial control circuit transformers to be used in the European Common Market are identified by the International Electrotechnical Commission (IEC) and specified under IEC-742, Non-Short Circuit Proof Isolating Transformers, under the Low Voltage Directive 73/23/EEC. Manufacturers of control transformers indicate compliance with these requirements by placing a CE mark on the product.

- Winding to winding insulation requirements may be twice that for IEC-742 compared to UL506
- The electrical clearances between current carrying parts are one-third greater to comply with IEC-742 requirements for units up to 250VA with voltages up to 440 volts ac
- Transformers manufactured to IEC-742 requirements will have a minimum of 10% higher overload capacity than those manufactured only to UL506 requirements

While no requirement exists in IEC-742 for the electrical connections to be either finger safe or touch proof, the specification does state that IF a transformer is supplied with a cover to prevent incidental contact with current carrying parts, that cover must utilize two separate methods or places of securing it to the component, with neither being dependent upon the other. Additionally, one of these methods MUST require a tool to remove it.

IEC-529

The requirements for finger-safe or touch-proof electrical connections are identified by the International Electrotechnical Commission (IEC) under specification 529, Classification of Degrees of Protection Provided by Enclosures. These various degrees of protection are identified and differentiated by IP ratings.

The IP specification which most closely approximates protection to a human finger is IP20. This IP rating would be the most common degree of touch-proof connection for electrical components such as transformers.

EN 61 558

The requirements for industrial control transformers to be used in the European Common Market are identified by the IEC and specified in EN 61 558, Safety of Power Control Transformers, under Low Voltage Directive 73/23/EEC. CE mark on the product indicates compliance.

Industrial Control Power Transformers

Class MT, MTG

General

Transformer Selection Process

Selecting a transformer for industrial control circuit applications requires knowledge of the following terms:

Inrush VA is the product of load voltage (V) multiplied by the current (A) that is required during circuit start-up. It is calculated by adding the inrush VA requirements of all devices (contactors, timers, relays, pilot lights, solenoids, etc.), which will be energized together. Inrush VA requirements are best obtained from the component manufacturer.

Sealed VA is the product of load voltage (V) multiplied by the current (A) that is required to operate the circuit after initial start-up or under normal operating conditions. It is calculated by adding the sealed VA requirements of all electrical components of the circuit that will be energized at any given time. Sealed VA requirements are best obtained from the component manufacturer. Sealed VA is also referred to as steady state VA.

Primary Voltage is the voltage available from the electrical distribution system and its operational frequency, which is connected to the transformer supply voltage terminals.

Secondary Voltage is the voltage required for load operation which is connected to the transformer load voltage terminals.



Fuse Clip Kit KCCFPX2R

Primary Fuse Kit

In addition to factory installed secondary fusing, Siemens offers a primary fuse kit for class MT transformers size 50–1500 VA for field installation. The primary fuse kit includes a 2-pole Class CC fuse block, instructions and all associated mounting and wiring hardware. Additionally, this fuse kit will fit most competitors' units. To order this kit, use catalog number **KCCFPX2R**. The primary fuse kit, when installed, will add a maximum of 0.69 in. (18 mm) to the transformer "A" dimension and 1.94 in. (49 mm) to the "C" dimension.

Once the circuit variables have been determined, transformer selection is a simple 5-step process as follows:

1. Determine the Application Inrush VA by using the following industry accepted formula:
Application Inrush VA = $\sqrt{(\text{Inrush VA})^2 + (\text{Sealed VA})^2}$
2. Refer to the Regulation Data Chart. If the primary voltage is basically stable and does not vary by more than 5% from nominal, the 90% secondary voltage column should be used. If the primary voltage varies between 5% and 10% of nominal, the 95% secondary voltage column should be used.
3. After determining the proper secondary voltage column, read down until a value equal to or greater than the Application Inrush VA is found. In no case should a figure less than the Application Inrush VA be used.
4. Read left to the Transformer VA Rating column to determine the proper transformer for this application. As a final check, make sure that the Transformer VA Rating is equal to or greater than the total sealed requirements. If not, select a transformer with a VA rating equal to or greater than the total sealed VA.
5. Refer to the following pages to determine the proper catalog number based on the transformer VA, and primary and secondary voltage requirements.

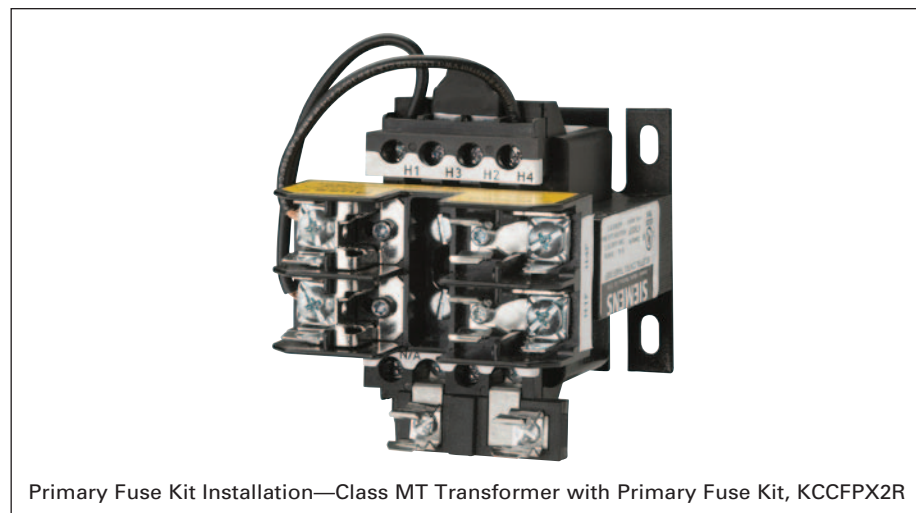
Regulation Data Chart

Transformer VA Ratings	Inrush VA At 20% Power Factor		
	NEMA/IEC 95% Sec Voltage	NEMA/IEC 90% Sec Voltage	NEMA/IEC 85% Sec Voltage
25	100/—	130/—	150/—
50	170/190	200/220	240/270
75	310/350	410/460	540/600
100	370/410	540/600	730/810
150	780/860	930/1030	1150/1270
200	810/900	1150/1270	1450/1600
250	1400/1540	1900/2090	2300/2530
300	1900/2090	2700/2970	3850/4240
350	3100/3410	3650/4020	4800/5280
500	4000/4400	5300/5830	7000/7700
750	8300/9130	11000/12100	14000/15400
1000 ^①	15000/—	21000/—	27000/—
1000 ^②	9000/—	13000/—	18500/—
1500	10500/—	15000/—	205000/—
2000	17000/—	25500/—	34000/—
3000	24000/—	36000/—	47500/—
5000	55000/—	92500/—	115000/—

To comply with NEMA standards, which require all magnetic devices to operate successfully at 85% of rated voltage, the 90% secondary voltage column is most often used in selecting a transformer.

① For units with Class 105°C insulation systems.

② For units with Class 180°C insulation systems.



Primary Fuse Kit Installation—Class MT Transformer with Primary Fuse Kit, KCCFPX2R

NEMA & General Purpose Control

17 CONTROL PRODUCTS

Industrial Control Power Transformers

Domestic, Class MT

Selection



Ordering Information

- ▶ Use the Voltage Table to determine the primary and secondary voltage required.
- ▶ Field Modifications see page 17-98.
- ▶ Dimension and wiring diagrams are available in CAD and PDF format on SIOS.
- ▶ All MT and MTG CPTs come standard with touch safe terminals.

Voltage Table

Primary Volts 50/60 Hz	Secondary Volts	Letter
240 X 480, 230 X 460, 220 X 440	120/115/110	A
240 X 480	24	B
120 X 240	24	C
115 X 230	24	D
550/575/600	110/115/120	E
208/277	120	F
208/230/460	115	G
230/460/575	95/115	H
380/400/415	110 X 220	I
208/230/460, 200/220/440, 240/480	24 X 115, 23 X 110, 25 X 120	J
240/416/480/600, 230/400/460/575, 220/380/440/550, 208/500	99/120/130, 95/115/125, 91/110/120, 85/100/110	L
240 X 480	120 X 240	M

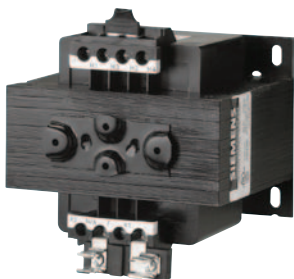
VA Rating	Voltage Letter A		Voltage Letter B		Voltage Letter C		Voltage Letter D		Voltage Letter E		Voltage Letter F	
	Catalog No	List Price \$	Catalog No	List Price \$	Catalog No	List Price \$	Catalog No	List Price \$	Catalog No	List Price \$	Catalog No	List Price \$
50	MT0050A		MT0050B		MT0050C		MT0050D		MT0050E		MT0050F	
75	MT0075A		MT0075B		MT0075C		MT0075D		MT0075E		MT0075F	
100	MT0100A		MT0100B		MT0100C		MT0100D		MT0100E		MT0100F	
150	MT0150A		MT0150B		MT0150C		MT0150D		MT0150E		MT0150F	
200	MT0200A		MT0200B		MT0200C		MT0200D		MT0200E		MT0200F	
250	MT0250A		MT0250B		MT0250C		MT0250D		MT0250E		MT0250F	
300	MT0300A		MT0300B		MT0300C		MT0300D		MT0300E		MT0300F	
350	MT0350A		MT0350B		MT0350C		MT0350D		MT0350E		MT0350F	
500	MT0500A		MT0500B		MT0500C		MT0500D		MT0500E		MT0500F	
750	MT0750A		MT0750B		MT0750C		—	—	MT0750E		MT0750F	
1000	MT1000A		MT1000B		—	—	—	—	MT1000E		MT1000F	
1500	MT1500A		—	—	—	—	—	—	MT1500E		MT1500F	
2000	MT2000A		—	—	—	—	—	—	MT2000E		MT2000F	
3000	MT3000A		—	—	—	—	—	—	MT3000E		MT3000F	
5000	MT5000A		—	—	—	—	—	—	MT5000E		—	—

VA Rating	Voltage Letter G		Voltage Letter H		Voltage Letter I		Voltage Letter J		Voltage Letter L		Voltage Letter M	
	Catalog No	List Price \$	Catalog No	List Price \$	Catalog No	List Price \$	Catalog No	List Price \$	Catalog No	List Price \$	Catalog No	List Price \$
50	MT0050G		MT0050H		MT0050I		MT0050J		MT0050L		MT0050M	
75	MT0075G		MT0075H		MT0075I		MT0075J		—	—	MT0075M	
100	MT0100G		MT0100H		MT0100I		MT0100J		MT0100L		MT0100M	
150	MT0150G		MT0150H		MT0150I		MT0150J		MT0150L		MT0150M	
200	MT0200G		MT0200H		MT0200I		MT0200J		—	—	MT0200M	
250	MT0250G		MT0250H		MT0250I		MT0250J		MT0250L		MT0250M	
300	MT0300G		MT0300H		MT0300I		MT0300J		—	—	MT0300M	
350	MT0350G		MT0350H		MT0350I		MT0350J		MT0350L		MT0350M	
500	MT0500G		MT0500H		MT0500I		MT0500J		MT0500L		MT0500M	
750	MT0750G		MT0750H		MT0750I		—	—	MT0750L		MT0750M	
1000	MT1000G		MT1000H		MT1000I		—	—	—	—	MT1000M	
1500	MT1500G		MT1500H		MT1500I		—	—	—	—	MT1500M	
2000	MT2000G		MT2000H		MT2000I		—	—	—	—	MT2000M	
3000	MT3000G		MT3000H		MT3000I		—	—	—	—	MT3000M	
5000	MT5000G		MT5000H		MT5000I		—	—	—	—	MT5000M	

Industrial Control Power Transformers

International, Class MTG

Selection

	Ordering Information ▶ Use the Voltage Table to determine the primary and secondary voltage required. ▶ Field Modifications see page 17-98. ▶ Dimension and wiring diagrams are available in CAD and PDF format on SIOS. ▶ All MT and MTG CPTs come standard with touch safe terminals.		Voltage Table		
			Primary Volts 50/60 Hz	Secondary Volts	Letter
			240 X 480, 230 X 460, 220 X 440	120/115/110	A
			240 X 480	24	B
			120 X 240	24	C
			550/575/600	110/115/120	E
			380/400/415	110 X 220	I
			208/230/460, 200/220/440, 240/480	24 X 115, 23 X 110, 25 X 120	J
			380	24	P

VA Rating	Voltage Letter A		Voltage Letter B		Voltage Letter C		Voltage Letter E		Voltage Letter I		Voltage Letter J		Voltage Letter P	
	Catalog No	ListPrice\$	Catalog No	ListPrice\$	Catalog No	ListPrice\$	Catalog No	ListPrice\$	Catalog No	ListPrice\$	Catalog No	ListPrice\$	Catalog No	ListPrice\$
50	MTG0050A		MTG0050B		MTG0050C		MTG0050E		MTG0050I		MTG0050J		MTG0050P	
75	MTG0075A		MTG0075B		MTG0075C		MTG0075E		MTG0075I		MTG0075J		MTG0075P	
100	MTG0100A		MTG0100B		MTG0100C		MTG0100E		MTG0100I		MTG0100J		MTG0100P	
150	MTG0150A		MTG0150B		MTG0150C		MTG0150E		MTG0150I		MTG0150J		MTG0150P	
200	MTG0200A		MTG0200B		MTG0200C		MTG0200E		MTG0200I		MTG0200J		MTG0200P	
250	MTG0250A		MTG0250B		MTG0250C		MTG0250E		MTG0250I		MTG0250J		MTG0250P	
300	MTG0300A		MTG0300B		MTG0300C		MTG0300E		MTG0300I		MTG0300J		MTG0300P	
350	MTG0350A		MTG0350B		MTG0350C		MTG0350E		MTG0350I		MTG0350J		MTG0350P	
500	MTG0500A		MTG0500B		MTG0500C		MTG0500E		MTG0500I		MTG0500J		MTG0500P	
750	MTG0750A		MTG0750B		MTG0750C		MTG0750E		MTG0750I		MTG0750J		MTG0750P	
1000	MTG1000A		MTG1000B		MTG1000C	—	MTG1000E	—	MTG1000I	—	MTG1000J		—	—
1500	MTG1500A		—	—	—	—	MTG1500E	—	MTG1500I	—	MTG1500J		—	—
2000	MTG2000A		—	—	—	—	MTG2000E	—	MTG2000I	—	—	—	—	—
3000	MTG3000A		—	—	—	—	MTG3000E	—	MTG3000I	—	—	—	—	—
5000	MTG5000A		—	—	—	—	MTG5000E	—	MTG5000I	—	—	—	—	—

NEMA & General
Purpose Control17
CONTROL
PRODUCTS

Field Modification Kits

Class SMF, MMS, MRS

Selection

Accessories—Class SMF

Description	Catalog Number	List Price \$
Handle Guard Kit with Padlock Provision	SMFFL1	
Emergency Off Actuator	SMFPB1	
Additional Key for Key Operated Devices	SMFFK1	

Pilot Light Kits—Class MMS, MRS^①

Device	Voltage Rating	Green Pilot Light	
		Catalog Number	List Price \$
Class SMF	115–277V AC	SMFPL10G	

Enclosures—Class SMF

Enclosure Type	For Use With SMF	Catalog Number	List Price \$
Oversized NEMA Type 1 General Purpose	FO1, FO1P, FO2, FO2P, FO3, FO3P, FO4, FO4P	SMFFE1	
NEMA 3R, 4, 12 Watertight Dust-tight	FO1, FO1P, FO2, FO2P, FO3, FO3P, FO4, FO4P	SMF40BC2	

Nameplates—Class SMF

For Use On	Nameplate Marking	Without Pilot Light		With Pilot Light	
		Catalog Number	List Price \$	Catalog Number	List Price \$
Standard commercial switch box cover including stainless steel plates	None	—	—	—	—
Stainless Steel Plate	None	SMFFSN3		SMFFSN4	
NEMA 1 surface mounted enclosure or gray flush plate	None	SMFFN30		SMFFN40	
	High	SMFFN31		SMFFN41	
	Low	SMFFN32		SMFFN42	

Replacement Parts—Class SMF, MMS

Description	Catalog Number	List Price \$
Replacement Toggle Kits:Type FW and KW (NEMA 4 Metallic Enclosure)	SMFHW1	

Accessories—Class MMS, MRS

Description	Catalog Number	List Price \$
Handle Guard Kit with Padlock Provision	SMFFL1	
Emergency Off Actuator	SMFPB1	
Additional Key for Key Operated Devices	SMFFK1	

Pilot Light Kits—Class MMS, MRS^①

Device	Voltage Rating	Red Pilot Light		Green Pilot Light	
		Catalog Number	List Price \$	Catalog Number	List Price \$
Class MMS	110–120V AC	—		SMFPL11G	
	208–277V AC	SMFPL12		SMFPL12G	
	440–600V AC	SMFPL13		SMFPL13G	

Enclosures—Class MMS

Enclosure Type	For Use With SMF	Catalog Number	List Price \$
Oversized NEMA Type 1 General Purpose	KO1, KO2B, KO2C, KO3, KO3A, KO3B, KO4, KO4B, KO4C, KO2	—	—
Jumbo NEMA Type 1 General Purpose	KO1, KO2B, KO2C, KO3, KO3A, KO3B, KO4, KO4B, KO4C, KO2	SMFKE2	
NEMA 3R, 4, 12 Watertight Dust-tight	KO1, KO2B, KO2C, KO3, KO3A, KO3B, KO4, KO4B, KO4C	SMF40BC2	

Nameplates—Class MMS

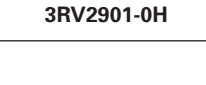
For Use On	Nameplate Marking	Without Pilot Light		With Pilot Light	
		Catalog Number	List Price \$	Catalog Number	List Price \$
Standard commercial switch box cover including stainless steel plates	None	SMFFN1		—	—
NEMA 1 surface mounted enclosure or gray flush plate	None	SMFFN10		SMFFN20	
	High	SMFFN11		SMFFN21	
	Low	SMFFN12		SMFFN22	
	Forward	SMFFN13		—	—
	Reverse	SMFFN14		SMFFN24	

^① Pilot lights can be field installed on standard NEMA 1 general purpose surface mount enclosures, and NEMA 3R, 4 and 12 enclosures only. For flush mounting units a complete switch unit with pilot light must be ordered.

Field Modification Kits

Class 11 - 3RV

Selection

	Description		Type	Catalog Number	List Price \$
	Auxiliary Contact Blocks				
 3RV2901-1D	Plug in contact block 1 block per 3RV mountable at the front		1 SPDT contact, NO/NC 1 NO + 1 NC 1 SPDT contact NO/NC electronic contact ^④	3RV2901-1D 3RV2901-1E 3RV2901-1G	
	Side mount auxiliary contact with screw connection 1 side mount auxiliary contact per 3RV mountable on the left-hand side		1 NO + 1 NC 2 NO 2 NC 2 NO + 2 NC	3RV2901-1A 3RV2901-1B 3RV2901-1C 3RV2901-1J	
 3RV2901-1A	Signaling Contact Block				
	Signaling contact 1 signaling contact per 3RV mountable on the left-hand side. Can also be fitted together with side mount auxiliary contact.		1NO + 1NC for any trip + 1NO + 1NC for short circuit trip only.	3RV2921-1M	
 3RV2922-1CP0	Auxiliary Releases				
	Undervoltage release 1 undervoltage release per 3RV mountable on the right-hand side. Cannot be fitted together with shunt trip.		AC 50Hz — 230V 415V	AC 60Hz 120V 208V 240V 480V	3RV2902-1AF0 3RV2902-1AM1 3RV2902-1AP0 3RV2902-1AV1
 3RV2922-1CP0	Undervoltage release with early make contacts (2NO) 1 undervoltage release per 3RV mountable at the right-hand side. Cannot be fitted together with shunt trip.		AC 50Hz 230V 415V	AC 60Hz 240V 480V	3RV2922-1CP0 3RV2922-1CV1
	Shunt trip 1 shunt trip per 3RV mountable at the right-hand side. Cannot be fitted together with undervoltage release.		AC 50Hz/60Hz ^① 20–24V 90–110V 200–240V 350–415V	DC ^② 20–70V 70–190V 190–330V 330–500V	3RV2902-1DB0 3RV2902-1DF0 3RV2902-1DP0 3RV2902-1DV0
 3RV2902-1DP0	Pilot Lights (LED) AC 50Hz/60Hz				
	For NEMA 1 enclosure only. Kit includes Red, Green, and Amber lenses		24 to 240 V AC/DC 277 V AC	49SDLBU^③ 49SDLBL^③	
 3RV2928-1H	Lug Kit				
	Required for Type E Manual Combination Starter		For 3RV with amp range: 0.11–22A up to 480V Max. 0.11–12.5A up to 575V Max	3RV2928-1H	
 3RV2928-1H	Mounting				
	Push-in Mounting Hole Kit For screw panel mounting of the 3RV		Four mounting holes required for each 3RV.	3RV2928-0B	
 3RV2901-0H	Sealing device				
	Adjustment Dial covers		For sealing the FLA adjustment dial (Kit includes 10 covers)	3RV2908-0P	
 3RV2901-0H	Front mount auxiliary cover		For sealing the front mount auxiliary opening. (Kit includes 10 covers)	3RV2901-0H	
	Door Operators				
 3RV2901-0H	Thru-the-door operators Rotary operating mechanism, rated NEMA 12, lockable with up to 3 padlocks in the OFF position. Includes extension shift and connecting element for the 3RV.		With Black Handle	130 mm depth 330 mm depth with supporting bracket	3RV2926-0B 3RV2926-0K

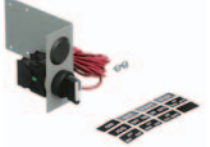
① 100% on time.
 ② 5 sec. max. on time.
 ③ Product Category: PILO.

④ Compatible for use in dusty atmospheres. Contacts rated for 1-300mA @ 3-60V.

Field Modification Kits

Pilot Devices

Selection

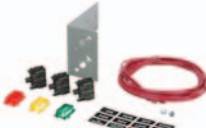
Push Buttons and Selector Switches	Class	Enclosure Type	Controller Size or (Lighting Rating)	Type	Catalog Number
 49SDPB5  49SDSB1  49SAP05  49SAS01	14, 40, LC, LEN, CLM ^①	Open	00-4	Start, Stop Push Buttons	49SAPB5
		1	00-4 or (20–100A)	Hand-Off-Auto Selector Switch	49SASB1
				Off-On Selector Switch	49SASB4
				Start, Stop Push Buttons	49SDPB5
			5-8 or (200–400A)	Hand-Off-Auto Selector Switch	49SDSB1
				Off-On Selector Switch	49SDSB4
				Start, Stop Push Buttons	49SAP05
		12, 4/4X	00-8 or (20–400A)	Hand-Off-Auto Selector Switch	49SAS01
				Keyed Hand-Off-Auto (key removable in all positions)	49SAS09
				Off-On Selector Switch	49SAS04
				Start, Stop Push Buttons	49SAP05
				Hand-Off-Auto Selector Switch	49SAS01
				Keyed Hand-Off-Auto (key removable in all positions)	49SAS09
	22, 43	1	00-4	Forward-Off-Reverse Selector Switch	49SASB2
				Forward-Off-Reverse Selector Switch	49SDSB1
			5-8	Forward, Reverse, Stop Push Buttons	49SAP02
				Forward-Off-Reverse Selector Switch	49SAS02
			0-8	Forward, Reverse, Stop Push Buttons	49SAP02
				Forward-Off-Reverse Selector Switch	49SAS02
	30 (2S1W)	Open	0-4	High-Off-Low Selector Switch	49SASB3
			0-1 3/4	High-Off-Low Selector Switch	49SDSB1
			2-4	High, Low, Stop Push Buttons	49SAP03
		12, 4/4X	0-4	High-Off-Low Selector Switch	49SAS03
				High, Low, Stop Push Buttons	49SAP03
				High-Off-Low Selector Switch	49SAS03
	30 (2S2W)	Open	0-4	High-Off-Low Selector Switch	49SASB3
		1	0-4	High-Off-Low Selector Switch	49SDSB1
		12, 4/4X	0-4	High, Low, Stop Push Buttons	49SAP03
				High-Off-Low Selector Switch	49SAS03
	17, 18, 83, 84, LED, LEF, LEB, CMN ^① , CMF ^① , CMB ^①	1, 12, 4/4X	0-8 (20–400A)	Start, Stop Push Buttons	49SAP05
				Hand-Off-Auto Selector Switch	49SAS01
				Keyed Hand-Off-Auto (key removable in all positions)	49SAS09
				Off-On Selector Switch	49SAS04
		1, 12, 4/4X	0-8	Forward, Reverse, Stop Push Buttons	49SAP02
				Forward-Off-Reverse Selector Switch	49SAS02
		1, 12, 4/4X	0-4	High, Low, Stop Push Buttons	49SAP03
				High-Off-Low Selector Switch	49SAS03

① To be used for replacement of switch only. Does not include relay or extra contact block on 30-400A CLM and CM Lighting Contactors. Class 49SB not available for these devices.

Field Modification Kits

Pilot Lights

Selection

	Description			Lens Color (Lamp Type)	Legend(s)	Voltage	Catalog Number
	Class	Enclosure Type	Controller Size or (Lighting Rating)				
 49SDLBU	14, 40, LC, LEN, CLM	1 (with lift- off cover)	00–4 or (20–100A)	Red, Green, Amber (LED lamp)	ON, RUN, OFF ^① , OLR TRIPPED	24 to 240 V AC/DC 277 V AC	49SDLBU 49SDLBL
	3RE48, 14, 17, 18, 40, 83 ^② , 84 ^② , 88, CLM, CM, LE, LEN, LC	1 (with hinged cover), 3/3R, 4, 4X, 12	00–8 or (20–400A)	Red (Transformer Type incandescent lamp) ^③	ON OFF ^{①②}	(Refer to voltage table) (Refer to voltage table)	49SPL0BR* 49SPL0AR*
				Green (Transformer Type incandescent lamp) ^③	ON OFF ^{①②}	(Refer to voltage table) (Refer to voltage table)	49SPL0BG* 49SPL0AG*
	3RE48, 82, 87	3/3R	1-6	Red (LED lamp)	ON OFF ^①	24 to 240 V AC/DC 277 V AC 24 to 240 V AC/DC 277 V AC	49SFL0BRU 49SFL0BRL 49SFL0ARU 49SFL0ARL
 49SPL0BRF				Green (LED lamp)	ON OFF ^①	24 to 240 V AC/DC 277 V AC 24 to 240 V AC/DC 277 V AC	49SFL0BGU 49SFL0BGL 49SFL0AGU 49SFL0AGL
	22, 43	1 (with lift- off cover)	00–4	Red, Red (LED lamp)	FORWARD, REVERSE	24 to 240 V AC/DC 277 V AC	49SDLB7RU 49SDLB7RL
				Green, Green (LED lamp)	FORWARD, REVERSE	24 to 240 V AC/DC 277 V AC	49SDLB7GU 49SDLB7GL
	22, 25, 26, 43	1 (with hinged cover), 3/3R, 4, 4X, 12	00-8	Red, Red (Transformer Type incandescent lamp) ^③	FORWARD, REVERSE	(Refer to voltage table)	49SPL0JR*
 49SPL0JRF				Green, Green (Transformer Type incandescent lamp) ^③	FORWARD, REVERSE	(Refer to voltage table)	49SPL0JG*
	30	1 (with lift- off cover)	0-1 3/4 (1-winding) 0-4 (2-winding)	Red, Red (LED lamp)	HIGH, LOW	24 to 240 V AC/DC 277 V AC	49SDLB7RU 49SDLB7RL
				Green, Green (LED lamp)	HIGH, LOW	24 to 240 V AC/DC 277 V AC	49SDLB7GU 49SDLB7GL
	30, 32	1 (with hinged cover), 3/3R, 4, 4X, 12	0-4 (1- or 2-winding)	Red, Red (Transformer Type incandescent lamp) ^③	HIGH, LOW	(Refer to voltage table)	49SPL0KR*
 49SFL0BGU				Green, Green (Transformer Type incandescent lamp) ^③	HIGH, LOW	(Refer to voltage table)	49SPL0KG*
 49SBLBL	Lens Kit for pilot light kits 49SDLB*			Red, Green, Amber	—	—	49SBLBL
 52AED2	LED lamp BA9s type used to replace incandescent or LED lamps. Applies only to 49SP* pilot light kits.			Red	—	24 V AC/DC	52AED2
				Green			52AED3
				Amber			52AED4
				White			52AEDB
				Red	—	120 - 600 V AC/DC	52AEB2
				Green			52AEB3
				Amber			52AEB4
				White			52AEBB

Voltage Table

Voltage	Code (*)
24 V AC (Full voltage)	J
120 V AC	F
240 V AC	G
480 V AC	H
600 V AC	E

① To use as an OFF indicator, the contactor must have a normally closed (NC) auxiliary contact available for the circuit. Order separately as needed.

② Includes a normally closed (NC) auxiliary contact for NEMA controller sizes 0–4.

③ Incandescent lamps may be replaced with 52AE* LED lamps listed on this page.

④ Class 83 and 84 requires a quantity of two pilot light kits.

Field Modification Kits

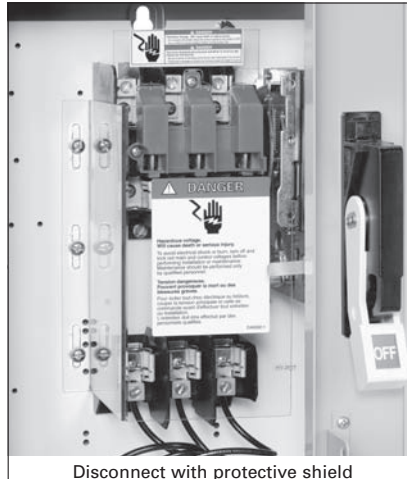
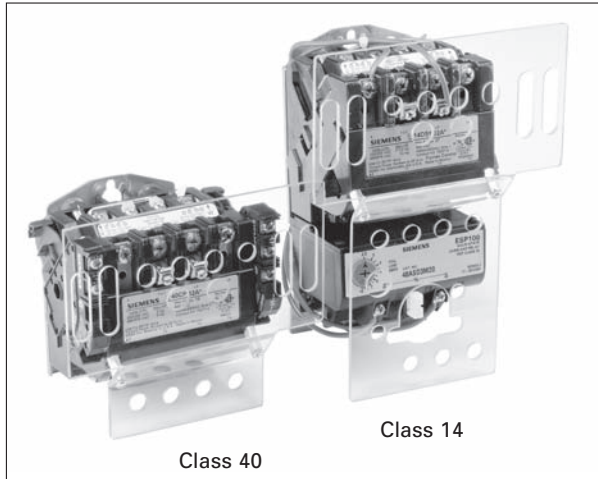
NEMA, Lighting and Heating Contactors, 20 Amp CLM, CMB, CMF, CMN

Selection

Solid State Control Module Kits For Lighting and Heating Contactors^①

	CLM 20 Amp Contactor Kit Description	Accessory	Catalog Number	List Price \$	Accessory	Catalog Number	List Price \$	Accessory	Catalog Number	List Price \$
	120V AC, 50/60 Hz	47 (2-Wire Control) (2W)	CLM4379771		48 (3-Wire Control) (3W)	CLM4379781		49 (Start/Stop Control) (3WS)	CLM4379791	
	24V AC/DC, 50/60 Hz		CLM4379772			CLM4379782			CLM4379792	
	240/277V AC, 50/60 Hz		CLM4379773			CLM4379783			CLM4379793	

Protective Shielding for NEMA Products



Class 14, 22, 30, 40, 43

Contactor or Starter Size	00-1%	List Price \$	2-2%	List Price \$	3-3%	List Price \$	4	List Price \$
Contactor Shield Catalog Number	49PSC1		49PSC2		49PSC3		49PSC4	
Starter Shield Catalog Number	49PSS1		49PSS2		49PSS3		49PSS4	

Class 17, 25, 32, 87

Disconnect Size	Catalog Number	List Price \$
30A	49PSD5	
60 & 100A	49PSD6	
200A	49PSD7	

Power Pole Kits	Class	Enclosure type	Contactor Size (Amp)	Description	Field Kit Catalog No.
	LC	Open, 1, 12, 4/4X	30	Single power pole Double power pole	49LCCP1A 49LCCP2A

Electrically Held to Mechanically Held Conversion Modules	Class	Enclosure type	Contactor Size (Amp)	Description	Field Kit Catalog No.
	LC	Open, 1, 12, 4/4X	30	2-wire, 24VAC 2-wire, 110-120VAC 2-wire, 200-277VAC 3-wire, 24VAC 3-wire, 110-120VAC 3-wire, 200-277VAC	49LCCM1A 49LCCM2A 49LCCM3A 49LCCM4A 49LCCM5A 49LCCM6A

^① These kits are only for use with 20A mechanically held lighting contactors.

NEMA & General Purpose Control

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CONTROL PRODUCTS

Field Modification Kits

NEMA, Reduced Voltage and Lighting

Selection

Starter/Contactor Auxiliary Contact Kits

Description	Class	Size	Type	Catalog Number
	14, 17, 18, 22, 25, 26, 30, 32, 40, 43, 83, 84, 87, 88	00-4	1 NO	49AB10
			1 NC	49AB01
			1 NC Early Break	49AB01EB
			1 NC Late Break	49AB01LB
			1 NC Extra Late Break	49AB01XLB
			1 NO Extra Late Make	49AB10XLM
			1 NO & 1 NC	49AB11
			2 NO	49AB20
			4 NO	49AB40
			3 NO & 1 NC	49AB31
			2 NO & 2 NC	49AB22
	3RE48	1 - 3	1 NO & 1 NC laterally mounted	3RH2921-1DA11
		4		3RH1921-1JA11
		1 - 3	2 NO laterally mounted	3RH2921-1DA20
		4		—
		1 - 3	2 NC laterally mounted	3RH2921-1DA02
		4		—
3RH  49C 	14, 17, 18, 22, 25, 26, 40, 43, 87, 88	5, 6	2 NO	3RH1921-1EA20
			1 NO & 1 NC	3RH1921-1DA11
			2 NC	3RH1921-1EA02
		7, 8	1 NO & 1 NC (Inside L or R)	49CAL18-11
LC  LE 	14, 17, 18, 22, 25, 26, 40, 43	30	1 NO/NC	49CAC1PA
			2 NO/NC	49CAC2PA
			Front Mounted 1 NO/NC	3RH2911-1HA11
			Side Mounted 1 NO/NC	3RH2911-1DA11
	LC	20 30-100 200-400	Side Mounted 1 NO/NC	3RH1921-1EA11
			20 Amps	CLM4097291
			2 NO/NC SPDT	CLM4097292
			1 NO & 1 NC	CLMFCAK11
			2 NC	CLMFCAK02
			2 NO	CLMFCAK20
			1 Coil Clearing NO & NC	CLMFCK11
			1 NO & 1 NC	CLMHCAK11
			2 NC	CLMHCAK02
			2 NO	CLMHCAK20
			1 Coil Clearing NO & NC	CLMHCK11

NEMA & General
Purpose ControlControl Power Transformer Kits^{①③}

Description	Recommended Transformer Size		VA	Catalog	Transformer Table		
	Product Class and Size	Transformer VA	Rating	Number	Primary Volts	Secondary Volts	Code
 Transformer 50/60HZ	Class 14,17,18,22,25,26,30,32,40,43,83,84,87		45 VA	KT*050 ^{②③}	120	24	1
	00-2½	45 or 50 ^③	50 VA	KT*050P ^③	208	24	G
	3-3½	75	100 VA	KT*100	208	120	H
	4	150	150 VA	KT*150	240/480	24	4
	5-6	150	200 VA	KT*200	240/480	120	8
	7-8	300	300 VA	KT*300	277	24	5
	Class CLM		500 VA	KT*500	277	120	7
	20A, 2 - 12P	150	Replace * with code from Transformer table. Kits used with NEMA 1 general purpose lift-off cover type require extra wide enclosure. Class 14 Sizes 0-2½ Class 30 (2S2W) Sizes 0-2½ Class 30 (2S1W) Sizes 0-1½		600	24	6
	30A, 3P	100			600	120	9
	30A, 6 - 12P	200					
	60A, 3P	100					
	60A, 4 - 6P	150					
	60A, 8 - 12P	250					
	100/200A, 3P	200					
	100/200A, 5P	250					
	300/400A, 3P	250					
	Class LC & LE						
	LC 30A, 2-12P	100					
	LE 20, 30, 60A, 3 & 4P	45 or 50 ^③					
	LE 30A, 6P	45 or 50 ^③					
	LE 30A, 9-12P	100					
	LE 60A, 6-12P	150					
	LE 100, 200A, 3P	100					
	LE 300, 400A, 3P	150					
	3RE48						
	1	45 or 50 ^③					
	2-4	100					

① Installation of CPTs may require a larger enclosure.

② 45VA transformer kits will include secondary but not primary fusing. Sizes 50VA and higher include 2-pole primary fusing and 1-pole secondary fusing.

③ For 24VAC control a minimum of 100VA CPT is required.

Field Modification Kits

ESP200 Accessories

Selection

Accessories

Description			Catalog Number
	ESP200 Tamper Resistance Cover		49ASTC1 3UB89848
	ESP100/200 Mounting Plate	Frame Size	Controller Size
		A or A1	00 - 1 3/4
		B	2 - 2 1/2
		B	3-4
	Mounting Kit		49ASMS1
	Universal Reset Operator 8" for class 3RE48 and 87 in NEMA 1, 12 and 3R		49MARB
	Overload Relay Reset Operator for Class 14, 22, 30 and 83 non-combination starters in NEMA type 1, 12 and 4/4X enclosures		49MBRS
	Overload Relay Reset Operator for Class 17, 18, 25, 26, 32 and 84 combination starters in NEMA type 1 enclosures		49MBRS1
	Overload Relay Reset Operator for Class 17, 18, 25, 26, 32 and 84 combination starters in NEMA type 12 and 4/4X enclosures		49MBRS2
	Overload Relay Reset Operator with red button for any Class in NEMA type 1, 3R, 4/4X and 12 enclosures with a 30mm hole		49MARSR
	ESP200 Reset Extender		49ASRE
	Protective Boot Offers protection from ice and foreign substances from interfering with button operation. For use with 49MARSR reset.		52AABA
	Current Transformer 300:5 use with 3UB81234JW2		97CT005
	Current Transformer 400:5 use with 3UB81234KW2		97CT006
	Current Transformer 600:5 use with 3UB81234LW2		97CT008
	Current Transformer 750:5 use with 3UB81234MW2		97CT009
	Current Transformer 1200:5 use with 3UB81234NW2		97CT012

NEMA & General
Purpose Control17
CONTROL
PRODUCTS

Field Modification Kits

NEMA Accessories

Selection

Miscellaneous Kits

Description			Class	Encl Type	Controller Size		Catalog Number								
	Mechanical Interlock for Horizontally Mounted Contactors		Includes wire	14, 40	Open	00-1 1 3/4 2, 2 1/2 3, 3 1/2 4	49CCF22H 49EEF22H 49GGF22H 49HHP22H 49JJG22H								
			Interlock Only	14, 40		Open	5, 6	3RA1954-2A							
			Wire Kit Only		5 6		3RA1963-2A 3RA1973-2A								
			Base Plate Only		5 6		3RA1962-2A 3RA1972-2A								
			Mechanical Interlock		14, 40	Open	7 8	49VM750H 49VM1650H							
			Includes wire & mounting plate		14, 40	Open	00-1 1 3/4 2, 2 1/2 3, 3 1/2 4	49CCF22HP 49EEF22HP 49GGF22HP 49HHP22HP 49JJG22HP							
			Includes mounting plate (Different Frame Sizes)		14, 40	Open	Left 2, 2 1/2 3, 3 1/2 Right 3, 3 1/2 2, 2 1/2	49L107944 49L107945							
	Surge Suppressor		Surge Suppressor for 120V AC coil. Limits transient voltage produced by the coil to 220% maximum peak line volts.	All but Class LC, LE, CLM	All	00-4 ^①	49D26344								
	Auxiliary Power Pole		NC 25A at 600V AC Max NC 25A at 600V AC Max	All but Class LC, LE, CLM	All	00-1 3/4	49SAF0 49SAFC								
	Main Contacts Lighting Contactors		Top or Bottom, 2-Pole Top, 3-Pole Top or Bottom, 4-Pole Top or Bottom, 6-Pole	CLM	All	20 Amps	CLM4097331 CLM4097332 CLM4097333 CLM4097334								
	Load Side Power Take Off Kit		Includes 3 power lugs for making extra connections to the load side of the contactor	All but Class LC, LE, CLM	All	00-1 3/4	49SAE								
	Lug Kit for Contactors <table><tr><th>Item</th><th>Wire Range</th></tr><tr><td>49SAAF</td><td>2-14</td></tr><tr><td>49SAAH</td><td>2/0-14</td></tr><tr><td>75D35994001</td><td>250MCM-6</td></tr></table>		Item	Wire Range	49SAAF	2-14	49SAAH	2/0-14	75D35994001	250MCM-6	For AL/CU Wire	14, 40	All	2-2 1/2 3-3 1/2 4 Line 4 Load	49SAAF ^③ 49SAAH ^③ 75D35994002 ^③
			Item	Wire Range											
			49SAAF	2-14											
			49SAAH	2/0-14											
75D35994001	250MCM-6														
For AL/CU Wire	14, 40	All	5, 6	3RT1966-4G ^②											
Use CU Only	14, 40	All	7 8	49ZATK750-3 ^② 49ZATK1650-6 ^②											
	Three Conductor Ground Lug		2-14 AWG AL/CU Wire Kit Meets UL 508 and CSA Standard 22.2 No 14-1973	All	All	All	75D28182001								
	Lightning Arrestor			All	All	All	49D45584002								
	Backspin Timer		On delay timer that reduces risk of starting into a backspin	3RE48, 87, 88	All	All	3RP2025-1AQ30 3RP2025-1AP30								
	Hole Plug		Covers the hole in the enclosure door/cover normally filled by over-load reset 49MBRS. Hole plug is used for enclosed contactors.	40, 43, LC, LE, CLM & CM	1	All	49MZPB2								
	Description		Contactor	Encl Type			Catalog Number								
	Lug Kit 1 Kit = 1 Terminal block. 1 kit necessary for each line and load.		NEMA size 4 (Vacuum) NEMA size 5 NEMA size 6	2/0 to 600 MCM, max. one 500MCM & one 600MCM			3RT1966-4G								

① Surge Suppression for NEMA sizes 5 – 8 are supplied internal with the coil. For size 4 panel mount.

② Only 3 lugs are supplied for line or load.
If lugs for line and load are required order 2 kits.

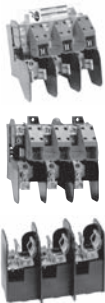
③ Lug Kit for contactors include 3 lugs for line or load.
75D35994001 for line side.
75D35994002 for load side.

Field Modification Kits

NEMA Accessories

Selection

Fused and Non-Fused Disconnect Switch Kits^②

	Basic Switch Ampere Rating	Switch Catalog No. Non-Fused	Switch Catalog No. Fused	Kit Description	Load Base Catalog No. Class J	Load Base Catalog No. Class H ^③	Lug Wire Size
	30	HNB612	HFB21	30A, 250V	—	HBB21	#14-2 AWG (Cu/Al)
			HFB612	30A, 600V	HBB612	HBB612	
	60	HNB623	HFB22	60A, 250V	—	HBB22	#14-2 AWG (Cu/Al)
			HFB62	60A, 600V	HBB62	HBB62	
	100	HNB623	HFB63	100A, 250V	—	HBB63	#14-1/0 AWG (Cu/Al)
				100A, 600V	HBB63		
	200	HNB64	HFB64	200A, 250V	—	HBB64	#6-300 AWG (Cu/Al)
				200A, 600V	HBB64		

Class R Fuse Conversion Kits

	Catalog No.	Description
	HR21	30A, 240V
	HR612	30A, 600V
	HR612	60A, 240V
	HR62	60A, 600V
	HR63	100A, 240/600V
	HR64	200A, 240/600V

Disconnect Auxiliary Switch Kits

	Description	Class	CB Rating	Type	Catalog No.
	Non-fusible or Fusible Type	3RE48, 17, 25, 32, 83, 84, 87, 88, LED, LEF, CMN, CMF	30 - 200A	2 NO/2 NC DPDT (NEMA A600)	HA261234
	MCP	3RE48, 18, 26, 32, 83, 84, 87, 88, LEB, CMB	3A-125A	1 NO/1 NC 15A @240VAC	A02ED62
			250A	1 NO/1 NC 480V	A02FD64
			400A-600A	(2) 1 NO/1 NC SPDT-480V	A02JLD64

① Product Category: PILO.
② Product Category: HDSS.

③ For Class R fuses order Class H kit from this table
and the Class R conversion kit.

Field Modification Kits

NEMA, Overload Relays

Selection

Sirius 3RB20

Illustration	Description		For Overload Type	Catalog Number	List Price \$
 Reset plunger with reset button  Flexible reset	Reset mechanisms				
	Reset plunger Mounts directly to overload relay. Requires separate reset operator in enclosure door. Kit includes reset plunger, holder and funnel.		3RB206	3RU1900-1A	
	Flexible cable reset mechanism Requires a 6.5 mm hole in the enclosure with a maximum enclosure thickness of 8 mm.	Cable length 15.75 in (400mm)	3RB206	3RU1900-1B	
		Cable length 23.62 in (600mm)		3RU1900-1C	
	Covers Tamper resistant cover for current setting and manual/automatic reset button.		3RB206	3RB2984-0	

Competitive Retrofit Overload Plates

Manufacturer	NEMA Size	Plate Part Number	List Price \$
A-B	0, 1	49D57090	
A-B	2	49D57161	
Sq. D	0, 1	49D57091	

Electronic Coil System with Remaining Lifetime Indication and 24VDC PLC Output

Class	Size	Model Type	21 - 27V		96 - 127V		200 - 277V	
			Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
All	5	P	—	—	3RT1965-5PF31		3RT1965-5PP31	
		V	—	—	3RT1966-5PF31		3RT1966-5PP31	
	6	P	—	—	3RT1975-5PF31		3RT1975-5PP31	
		V	—	—	3RT1976-5PF31		3RT1976-5PP31	

NEMA & General
Purpose Control

17
CONTROL
PRODUCTS

Field Modification Kits

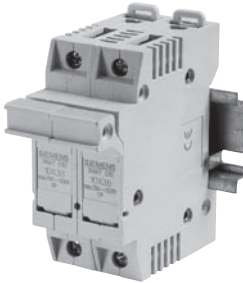
Class MT, MTG

Selection

Fuse Blocks, Touch-Safe Terminal Covers

Catalog Number	Description	List Price \$
 KCCF1G	SECONDARY FUSE BLOCK, 1P, 250V MAX	
 KCCFBCK	SINGLE POLE FUSE BLOCK COVER KIT	
 KCCFP2RG	2 Pole PRIMARY FUSE BLOCK, 2P, 600V MAX (block only)	
 KCCFPX2R	2 Pole PRIMARY FUSE BLOCK KIT with wire Leads	
US2:SECFUBLK	Secondary Fuse Block Assy 50va to 750va	
US2:SECFUBLK2	2nd fuse blk assy. genII 1kva to 5kva	
US2:49JUCPT2	Terminal Jumper 750VA and below	
US2:49JUCPT3	Terminal Jumper 1kVA and above	
 US2:KCCSEFCVR	Touch safe cover for secondary fuse clips	
 US2:KCCFP3POLE	3 pole fuse blk (2 pole primary and 1 pole secondary)	

International Fusing^①

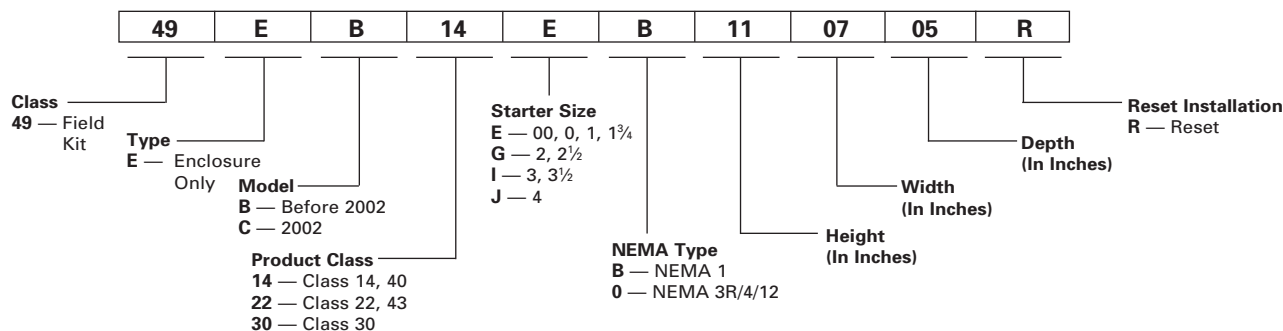
Catalog Number	Description	List Price \$
 8WA1011-1SF12	1-Pole Fuse Block, Touch-Safe. Up to 6.3A for 5 mm x 20 mm or 5 mm x 25 mm (Requires DIN Rail Mounting)	
 3NW7013	1-Pole Fuse Block, Touch-Safe 32A, for 10 x 38 mm Cylindrical Fuses. (Requires DIN Rail Mounting.)	
 3NW7023	2-Pole Fuse Block, Touch-Safe 32A, for 10 x 38 mm Cylindrical Fuses. (Requires DIN Rail Mounting.)	
 3NW7111	1-Pole Fuse Block, Touch-Safe 4-50A, for 14 x 51 mm Cylindrical Fuses. (Requires DIN Rail Mounting.)	
 8WA1815	Fuse Block DIN Rail Mounting for separate screw mounting to panel. (Max 2-pole 2-25A size per rail.) (Max 1-pole 4-50A size per rail.)	

① Product Category: IEC.

Heavy Duty Control

Non-Combination Enclosure Kits, Class 49

Selection



Non-Reversing Starters & Contactors Class 14, 40

Size	NEMA 1 General Purpose (Clamshell)①③			NEMA 3R/4/12 Watertight, Dust-tight, Weatherproof②④	
	Without CPT	With CPT (Extra Wide)	Max. CPT VA	Without CPT	With CPT (Extra Wide)
	Catalog Number	Catalog Number		Catalog Number	Catalog Number
00-1 1/4	49EC14EB110705R	49EC14IB201208R	200	49EB14E0130806R	49EB22E0131306R
2, 2 1/2	49EC14GB140807R	49EC14IB201208R	200	49EB14G0160907R	49EB22G0161406R
3, 3 1/2	49EC14IB201208R	49EC14IB201208R	100	49EB14J0261408R	49EB14J0261408R
3, 3 1/2	—	49EC14JB251409R	250	—	—
4	49EC14JB251409R	49EC14JB251409R	300	49EB14J0261408R	—

Reversing Starters & Reversing Contactors Class 22, 43

Size	NEMA 1 General Purpose (Clamshell)①③			NEMA 3R/4/12 Watertight, Dust-tight, Weatherproof②④	
	Without CPT	With CPT (Extra Wide)	Max. CPT VA	Without CPT	With CPT (Extra Wide)
	Catalog Number	Catalog Number		Catalog Number	Catalog Number
00-1 1/4	49EC14IB201208R	49EC14IB201208R	200	49EB22E0131306R	49EB22E0131306R
2, 2 1/2	49EC14IB201208R	49EC14IB201208R	200	49EB22G0161406R	49EB22G0161406R
3, 3 1/2	49EC14JB251409R	49EC14JB251409R	250	—	—
4	49EC14JB251409R	49EC14JB251409R	300	—	—

Lighting Contactors Class LC and LE

Class	Size	Pole	NEMA 1 General Purpose (Clamshell)①③			NEMA 3R/4/12 Watertight, Dust-tight, Weatherproof②④	
			Without CPT	With CPT (Extra Wide)	Max. CPT VA	Without CPT	With CPT (Extra Wide)
			Catalog Number	Catalog Number		Catalog Number	Catalog Number
LC	30A	2-12	49EC14GB140807R	49EC14IB201208R	200	49EB22G0161406R	49EB30G0161808R
LE	20A, 30A	3-4	49EC14EB110705R	49EC14IB201208R	200	49EB22G0161406R	49EB22G0161406R
LE	30A	6-9	49EC14IB201208R	49EC14IB201208R	200	49EB22G0161406R	49EB14J0261408R
LE	30A	12	49EC14IB201208R	49EC14JB251409R	250	49EB22G0161406R	49EB14J0261408R
LE	60A	3-6	49EC14GB140807R	49EC14IB201208R	200	49EB22G0161406R	49EB22G0161406R
LE	60A	9-12	49EC14IB201208R	49EC14IB201209R	250	49EB22G0161406R	49EB14J0261408R
LE	100A	3	49EC14IB201208R	49EC14IB201208R	200	49EB14J0261408R	49EB14J0261408R

Lighting Contactors Class CLM

Size	Pole	NEMA 1 General Purpose (Clamshell)①③			NEMA 3R/4/12 Watertight, Dust-tight, Weatherproof②④	
		Without CPT	With CPT (Extra Wide)	Max. CPT VA	Without CPT	With CPT (Extra Wide)
		Catalog Number	Catalog Number		Catalog Number	Catalog Number
20A	2-12	49EC14GB140807R	49EC14IB201208R	200	49EB22G0161406R	49EB22G0161406R
30A	2-5	49EC14EB110705R	49EC14IB201208R	200	49EB22G0161406R	49EB22G0161406R
30A	6-12	49EB30G0161808R	49EB30G0161808R	200	49EB22G0161406R	49EB30G0161808R
60A	2-5	49EC14GB140807R	49EC14IB201208R	250	—	—
100A	2-5	49EC14IB201208R	49EC14IB201208R	200	—	—

① Clamshell enclosure suitable for two operating devices and two pilot lights. See Field Mods page 17-90.

② Hinged cover enclosures, except for 49EB14E0130806R, are suitable for one or more class

52 operating devices and one or more class 52 pilot lights. See Field Mods page 17-82.

③ Install NEMA 1 hole plug cat. no. 3SB1902-0AR (included) when the cover OL reset is not needed.

④ Install NEMA 12 hole plug cat. no. 52ABH6 (not included) when the cover OL reset is not needed.

Combination Starter Enclosure Kits

Features and Benefits

Features

- 100kA short circuit rating when protected with class R fuses to 600V or MCP to 480V and when installing listed components from the instruction guide
- Enclosure types available, NEMA 1, 12, 3R and painted NEMA 4. NEMA 12 convertible to 3R/4 with the appropriate conduit hub and drain hole
- Pre-Drilled mounting panels
- Heavy duty quarter turns
- Industrial type disconnect handle

Disconnect Type Enclosure Kit

- Used to assemble both non-fusible and fusible combination starters
- Accommodates Class 14 full voltage non-reversing (FVNR) NEMA starters 00 – 4 including Siemens exclusive half sizes
- Handle mechanism, mounting panel, reset assembly, and instruction guide included. Power wire, hardware for panel mounted devices and disconnect switch are not included.

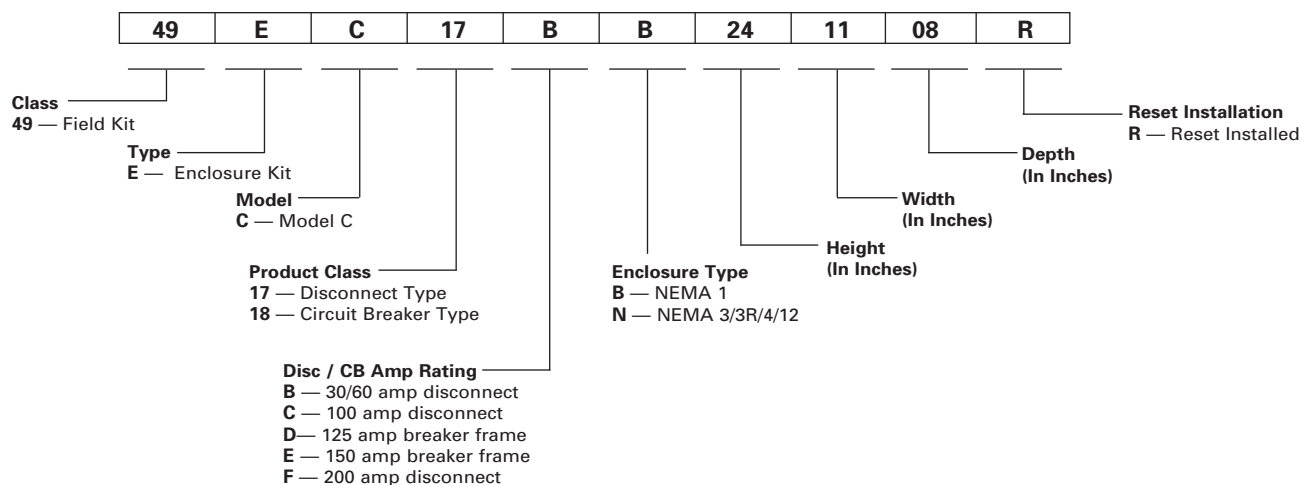
MCP Type Enclosure Kit

- Used to assemble combination starters with circuit breakers
- Accommodates Class 14 full voltage non-reversing (FVNR) NEMA starters 00 – 4 including Siemens exclusive half sizes
- Handle mechanism, mounting panel, reset assembly and instruction guide included. Power wire and hardware for panel mounted devices are not included. Circuit breaker not included however, mounting hardware for the circuit breaker is included.

How to Select the Required Kits to Assemble a Combination Starter

1. From the catalog, select a class 14 open type starter.
2. Based on the starter size, select the enclosure kit from table 1a for fusible or non-fusible combination starters or select from table 1b for combination starters with an MCP.
3. For a non-fusible combination starter, select the disconnect switch kit from table 2a. For a fusible combination starter, select the appropriate disconnect switch, fuse clip kit, and class R rejection kit from table 2b (for H fusing, class R rejection kit not required). For combination starters with MCP, select the appropriate circuit breaker kit from table 3.

Nomenclature for Combination Enclosure Kits



Combination Starter Enclosure Kits

Selection

Table 1a - FVNR Combination Starter Kits for use with Disconnect Devices

Starter Size	Disc. Amp Rating	NEMA 1 General Purpose	NEMA 3R/4/12 Watertight, Dust-tight, Weatherproof
		Catalog Number	Catalog Number
0 - 2	60	49EC17BB241108R	49EC17BN241108R
2 ½ - 3	100	49EC17CB242008R	49EC17CN242008R

Table 1b. – FVNR Combination Starter Kits for use with MCP Devices

Starter Size	Max MCP Amps	NEMA 1 General Purpose	NEMA 3R/4/12 Watertight, Dust-tight, Weatherproof
		Catalog Number	Catalog Number
0 - 2	50	49EC18DB241108R	49EC18DN241108R
2 ½ - 3	125	49EC18DB242008R	49EC18DN242008R

Table 2a – Non-Fusible Disconnect Kits

Disconnect Switch	
Switch Rating	Catalog Number
30A	HNB612
60A	HNB623
100A	HNB623
200A	HNB64

Table 2b – Fusible Disconnect Kits

Fuse Clip Ratings	Class	Disconnect Switch	Load Base for Fuse	Rejection Clips for Class R Fusing
		Catalog Number	Catalog Number	Catalog Number
30A-250V	H	HFB21	HBB21	HR21
30A-600V	H	HFB612	HBB612	HR612
60A-250V	H	HFB22	HBB22	HR612
60A-600V	H	HFB62	HBB62	HR62
100A-250V	H	HFB63	HBB63	HR63
100A-600V	H	HFB63	HBB63	HR63
200A-250V	H	HFB64	HBB64	HR64
200A-600V	H	HFB64	HBB64	HR64

Table 3 – Circuit Breaker Kits

Starter Size	MCP Type Used with Solid State Overload Relay		
	Overload Amp Range	Motor Circuit Interrupter Amps	Circuit Breaker Kit
	0.75-3.4	3	ED63A003
0	3-12	10	ED63A010
	5.5-22	25	ED63A025
	0.75-3.4	3	ED63A003
1	3-12	10	ED63A010
	5.5-22	25	ED63A025
	10-40	30	ED63A030
1 ½	10-40	40	ED63A040
2	13-52	50	ED63A050
2 ½	25-100	100	ED63A100
3	25-100	100	ED63A100
3 ½	50-200	125	ED63A125
4	50-200	150	FXD63A150L



NEMA & General Purpose Control

17 CONTROL PRODUCTS

Factory Modifications

Selection

Ordering Information

- All modifications will consist of Siemens standard components as available. Standard equipment dimensions and enclosure construction may not apply when certain modifications and special features are added.

Pilot Devices

Description	Modification	Class	Enclosure Type	Modification Code
Push Buttons	Start, Stop	14, 17, 18, 40, 83 ^③ , 84 ^③ , CLM, CM, LC, LE	All	A1
	Forward, Reverse, Stop	22, 25, 26, 43	All	A2
	High, Low, Stop	30, 32	All	
	E-Stop	14, 17, 18, 22, 25, 26, 30, 32, 40, 43	All	ES
Selector Switches	Hand-Off-Auto	14, 17, 18, 40, 83 ^③ , 84 ^③ , LC, LE	All	A3
		CM, CLM	All	A3
	For 24 volt HOA control, 20 Amp contactor only	CM, CLM	1	EM
	Off-On	14, 17, 18, 22, 25, 26, 30, 32, 40, 43, 83 ^③ , 84 ^③ , CLM, CM, LC, LE	All	A4
	Auto-Off	14, 17, 18, 40, 83 ^③ , 84 ^③ , CM, CLM, LC, LE	All	A6
	Forward-Off-Reverse	22, 25, 26, 43	All	A5
	High-Off-Low	30, 32	All	
	Hand-Off-Auto (Keyed)	14, 17, 18, 40, 83 ^③ , 84 ^③ , LC, LE, CLM, CM	All	A9
	Auto-Off-Low-High	30, 32	All	A0

Pilot Lights

Class 14, 17, 18, 22, 25, 26, 30, 32, 40, 43, 83 ^③ , 84 ^③ , 87, 88, LC, LE, CLM, CM												
Lens Color →	Red	Green	Red	Green	Red	Green	Amber	White	Red Push-To-Test	Green Push-To-Test	Green Push-To-Test	LED Bulb Upgrade
Legend →	On For/Rev Low/High	On For/Rev Low/High	Run	Run	Off	Off	Overload Relay Tripped	Control Power On	On For/Rev Low/High	On For/Rev Low/High	Off	
Mod Code →	FA	FB	FC	FD	FJ	FK	FL	FW	FS	FT	FU	FE ^①

Coil Options

Class 14, 17, 18, 22, 25, 26, 40, 43, 87, 88		
Controller Size 00 – 4		
Volts 60 HZ	Volts 50 HZ	Coil Letter Change
24	24	J
120	110	F
110–120/220–240	110/190–220	A
200–208	—	D
220–240	190–220	G
277	240	L
220–240/440–480	190–220/380–440	C
440–480	380–440	H
575–600	550	E
DC Coil ^②	24V	S ^⑤
	48V	U
	125V	V
	250V	W

Coil Options

Class 14, 17, 18, 22, 25, 26, 40, 43, 87, 88	
Controller Size 4 (Vacuum Only), 5 and 6	
AC (50–60 HZ) or DC	Coil Letter Change
23–26V	J
42–48V	U
110–127V	F
200–220V	D
220–240V	G
240–277V	L
380–420V	K
440–480V	H
575–600V	E

① Pilot lights are transformer type as standard. For LED type bulbs, order suffix FE in addition to the standard device suffix(es). For example, to order red "ON" and green "OFF" pilot lights with LED bulbs, order FA, FK and FE.

② DC coils include 1 NC, late break aux. contact. This aux. contact takes up one side of the starter (00–4 only).

③ For Class 83 and 84, two devices are included.

④ For Class 83, 84 standard enclosure (92) alternating relay available in 24V or 120V control only.

⑤ S coil is not available for size 4 contactors or starters.

Factory Modifications

Selection

Ordering Information	Transformer Table		
► Replace (*) with letter from Transformer Table.	Primary Volts	Secondary Volts	Letter
	120	24	B
	208	24	S
	208	120	T
	240	24	J
	240	120	F
	277	24	N
	277	120	P
	380	110	U
	415	100	W
	480	240	R
	480/240	24	D
	480/240	120	A
	600	24	E
	600	120	C

Control Power Transformers

Description	Modification Code	Product Class ^③
Standard Capacity ^① with 1-Secondary Fuse	B*	All
Standard Capacity with 2-Primary and 1-Secondary Fuse	D*	
100VA Extra Capacity with 2-Primary and 1-Secondary Fuse	C*	
150VA Extra Capacity with 2-Primary and 1-Secondary Fuse	C*1	

Factory Assembled Fuse Clips—Class 25, 32, 84^④

Fuse Clip Amps	Volts	Modification Code
30	250	10
30	600	11
60	250	12
60	600	13
100	250	14
100	600	15
200	250	16
200	600	17
400	250	18
400	600	19
600	250	20
600	600	21
800	600	23
1200	600	24
1600	600	25

Note: Factory will furnish the same voltage coils as transformer secondary voltage (except with class 36,37).

^① The standard control transformer supplied for starter sizes 0 through 2½ will be rated 45VA and have the appropriate secondary fuse. Primary fuses will not be supplied as standard. For primary fuse option select appropriate suffix from table.

^③ Class 83 and 84 duplex controllers requires two CPTs.

^④ Class 84 Duplex Controllers require two fusible disconnects.

Additional Auxiliary Contacts

Class	NO Contacts	NC Contacts	Modification Code	Controller Size — List Price \$			
				00-1 $\frac{3}{4}$	2-4	5-6	7-8
14, 17, 18, 40, 83 ^③ , 84 ^③	—	1	G01			—	—
	—	2	G02			—	—
	1	—	G10			—	—
	1	1	G11			—	—
	1	2	G12			—	—
	2	—	G20			—	—
	2	1	G21			—	—
	2	2	G22			—	—
	2	3	G23			—	—
	3	1	G31			—	—
	3	2	G32			—	—
	3	3	G33		—	—	—
	4	—	G40			—	—
	4	1	G41			—	—
	4	2	G42		—	—	—
	4	4	G44		—	—	—
22, 25, 26, 43 & 30, 32 (2-winding)	5	—	G50			—	—
	5	1	G51		—	—	—
	5	3	G53		—	—	—
	6	—	G60		—	—	—
	6	2	G62		—	—	—
	7	1	G71		—	—	—
30, 32 (1-winding)	8	—	G80		—	—	—
	—	2	G02 ^①			—	—
	2	—	G20 ^①			—	—
	2	2	G22 ^①			—	—
	4	0	G40 ^①			—	—
	4	4	G44 ^①			—	—
LE, CLM, CM	6	2	G62 ^①			—	—
	8	0	G80 ^①			—	—
	0	2	G02 ^①	—		—	—
	2	—	G20 ^①	—		—	—
	2	2	G22 ^①			—	—
	4	—	G40 ^①			—	—
LC	4	4	G44 ^①	—		—	—
	6	2	G62 ^①	—		—	—
	8	—	G80 ^①	—		—	—
	1	1	G11		—	—	—
	0	1	G01				
	1	0	G10				
LE, CLM, CM	1	1	G11				
	0	2	G02				
	2	0	G20				
	0	2	G02 ^①		—	—	—
	2	0	G20 ^①		—	—	—
	2	2	G22 ^①		—	—	—

Description	Class	Modification Code	Controller Size - Price Deduction \$					
			0, 1	1 $\frac{3}{4}$ - 2 $\frac{1}{2}$	3	3 $\frac{1}{2}$, 4	5, 6	7, 8
Omit Overload Relay and Reset Button	17, 18, 25, 26	EX1						

① Auxiliary contacts will be added evenly across contactors. (i.e. Class 22, G02 suffix will add 2 NC contacts (one per contactor)).

② Double the price addition for Class 30 and 32.

③ For class 83 and 84 contacts will be added to both starters. Price x 2.

Factory Modifications

Selection

Control Options

Description	Class	Modification Code
Lighting Control Modules (does not include pilot devices)	CLM 20 Amp only	2W (2-wire control module) 3W (3-wire control module) 3WS (Start/Stop control module)
Surge Suppression for 120V AC Coil ^①	14, 17, 18, 22, 25, 26, 30, 32, 83, 84, 87, 88	SS
Disconnect Switch Interlock 2 NO/2 NC DPDT	17, 25, 32, 84, CM, LE	GY
Motor Circuit Protector Interlock NO/NC SPDT	18, 26, 32, 84, CM, LE	GY
Lightning Arrestor	All	L
Circuit Breaker Shunt Trip	18, 26, 32, 84, 87, 88, CM, LE	L6
Circuit Breaker Undervoltage Trip	18, 26, 32, 84, 87, 88, CM, LE	L7
Circuit Breaker Alarm Switch Trip	18, 26, 32, 84, 87, 88, CM, LE	L8
Ground Lug – 3 Conductor	All	L10
Control Circuit Fuse and Holder (Transformer Primary Fusing)	All	F1 (1 fuse) F2 (2 fuses)
Control Circuit Circuit Breaker Internally Operated	All	F4
Space Heater (120V separate control)	All	SH
Space Heater with Thermostat (120V separate control)	All	ST
Alarm Package (includes horn, light, relay & push-button)	83, 84, 87, 88	M7
Backspin Protection	87, 88	T5
Blown Control Fuse Indicator Light	17, 25, 32, 84, 87, 88, CM, LC, LE	L11
Minimum Run Timer 0.2 sec. - 3 mins.	87, 88	T6
Single Phase 120VAC Combination Starter	17, 18, 25, 26	SP1
Single Phase 240VAC Combination Starter	17, 18, 25, 26	SP2

SIMOCODE Motor Management with Communications^③

	Basic Unit	Class	Mod. Code
	pro S General Performance PROFIBUS DP interface 1.5 Mbit/s	14, 17, 18, 22, 25, 26, 87	Z1
	pro V General Performance Ethernet / PROFINET IO with One Bus Connection		
	pro V General Performance Ethernet / PROFINET IO with Two Bus Connections		
	pro V High Performance PROFIBUS DP interface 12 Mbit/s		
	pro V High Performance Modbus RTU interface		
	pro V High Performance Ethernet / PROFINET IO with Two Bus Connections		
	pro V High Performance Ethernet / IP interface		
	Factory Parameterization of SIMOCODE		

Current Measuring Module

	Current Range (Amps)
	0.3 - 3 2.4 - 25 10 - 100 20 - 200 63 - 630

Current/Voltage Measuring Module

	Current Range (Amps)
	0.3 - 4 3 - 40 10 - 115 20 - 200 63 - 630

Electrically Held to Mechanically Held Conversion Modules

	Class	Contactor Size (Amp)	Description	Modification Code
	LC	30	2-wire, 24VAC 2-wire, 110-120VAC 2-wire, 200-277VAC 3-wire, 24VAC 3-wire, 110-120VAC 3-wire, 200-277VAC	2W1 2W2 2W3 3W1 3W2 3W3

^① Supplied as NEMA 12, field convertible to NEMA 3R.

^② Surge Suppression for NEMA sizes 5 – 8 are supplied internal with the coil.

^③ To order, select modification code Z1. Specify within the order notes the basic unit and measuring module. Also indicate if factory parameterization is needed.

A CPT must also be ordered to power the motor management device.

Factory Modifications

Selection

Control Relays

Description	Class	Modification Code
Control Relay 4-Poles Max	4 NO	R40
	2 NO/2 NC	R22
Under/Over Voltage, Phase Failure, Phase Sequence, Phase Unbalance		R1
Ground Fault Relay		R5
Electronic On Delay Relay (.15s–100h) 24 V AC/DC, 100-127 VAC	All	T1
Electronic On Delay Relay (.15s–100h) 24 V AC/DC, 200-240 VAC ^①		T2
Electronic Off Delay Relay (.15s–100s) 100-127 V AC/DC		T3
Electronic Off Delay Relay (.15s–100s) 200-240 V AC/DC ^①		T4
24 hour time clock	LC, LE, CLM, CM	T7
24 hour time clock with day omission		T8
7 day time clock		T9
Compelling Relay		A6
Acceleration Control	30, 32	A7
Deceleration Control		A8

Meters—Mounted on Enclosure

Description	Class	Enclosure Type	Modification Code
Ammeter (includes a C.T. if necessary)		1, 3, 4, 4X, 12	M1
Ammeter and Switch (3-Phase with 3 C.T.'s)	14, 17, 18, 22,	1, 12	M2
Voltmeter	25, 26, 30 ^④ , 32 ^④ ,	1, 3, 4, 4X, 12	M3
Voltmeter and Switch (3-Phase)	40, 43, 83, 84, 87, 88	1, 12	M4
Elapsed Time Meter ^②		1, 3, 4, 4X, 12	M5

Function Identification Plates

Description	Class	Modification Code
Function identification plate, with marking as specified	All	N1

Terminal Blocks

Description	Class	Modification Code
3 Point Terminal		TC3 ^③
6 Point Terminal	All	TC6 ^③
9 Point Terminal		TC9 ^③

Special Ratings

Description	Class	Modification Code
Service Entrance Rating Please note Class 87, 88, CM and LE (combination type) are UL Listed for Service Entrance as standard and thus does not need to be modified for such.	17, 18, 25, 26, 32, 84	N3

Drawings

Description	Class	Catalog Number
Approval/submittal and as-built drawings for factory modified product may be ordered. The drawing set includes an enclosure outline, a panel layout and a schematic. When entering the order, use the line item notes to reference a product and modifications or an existing order that the drawings are to be engineered for. Specify the contact information and an email address in the ship to address field. Attach any reference drawings to the order or forward to National Customer Support. Once completed, the drawing set will be emailed.	All	CONTROLDRAWING

① Not available on Class 36, 37.
② ETM available with 120V coil only.

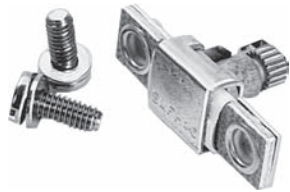
③ For terminal point more than 9 terminals use additional suffixes. Max 3 suffixes can be selected.

④ Class 30 and 32 can be modified with only an elapsed time meter. No other meters apply to class 30 or 32.

Manual Control

Heater Elements, Class SMF

General



Heater Elements Class SMF

Ordering Information

1. Determine number of heater elements required from Table A.
2. Determine motor full load current and service factor.
3. If the motor and controller are in the same ambient temperature:
 - a. For 1.15 to 1.25 service factor motors use 100% of motor full load current for heater element selection.
 - b. For 1.0 service factor motors use 90% of motor full load current for heater element selection.
 - c. Heater elements are class 20.
4. If the motor and controller are in different ambient temperatures multiply motor full load current by the multiplier in Table B. Use the resultant full load current for heater element selection.
5. Select proper heater element from table below.
6. All tables are based on the operation of the motor and controller in the same ambient temperature, 40°C (104°F) or less. Always be certain the correct heater element is installed in the starter before operating the motor.

Heater Catalog Number	Motor Full-Load Current (Amps)	List Price \$
SMFH01	0.157–0.173	
SMFH02	0.174–0.192	
SMFH03	0.193–0.212	
SMFH04	0.213–0.235	
SMFH06	0.262–0.289	
SMFH08	0.322–0.355	
SMFH09	0.356–0.399	
SMFH10	0.41–0.44	
SMFH11	0.45–0.49	
SMFH12	0.50–0.53	
SMFH13	0.54–0.58	
SMFH14	0.59–0.65	
SMFH16	0.72–0.78	
SMFH17	0.79–0.85	
SMFH18	0.86–0.96	
SMFH19	0.97–1.04	
SMFH20	1.05–1.16	
SMFH21	1.17–1.25	
SMFH22	1.30–1.39	
SMFH23	1.38–1.54	
SMFH24	1.48–1.63	
SMFH26	1.66–1.86	
SMFH27	1.80–1.99	

Heater Catalog Number	Motor Full-Load Current (Amps)	List Price \$
SMFH28	1.96–2.15	
SMFH29	2.16–2.38	
SMFH30	2.39–2.75	
SMFH31	2.76–2.84	
SMFH32	2.85–3.06	
SMFH33	3.07–3.45	
SMFH34	3.46–3.70	
SMFH35	3.71–4.07	
SMFH36	4.08–4.32	
SMFH37	4.33–4.90	
SMFH39	5.36–5.85	
SMFH40	5.86–6.41	
SMFH41	6.42–6.79	
SMFH42	6.80–7.57	
SMFH43	7.58–8.15	
SMFH44	8.16–8.98	
SMFH45	8.99–9.67	
SMFH47	9.96–10.8	
SMFH48	10.9–12.1	
SMFH49	12.2–13.1	
SMFH50	13.2–13.9	
SMFH51	14.0–15.0	
SMFH52	15.1–16.0	

Table A
Number of Heater Elements

Device	Number of Heater Elements	Notes
SMFF*1 SMFF*2 SMFF*3 SMFF*4 SMFF*5 SMFF*6	1	All single pole and two pole SMF starters require only 1 Heater Element.
SMFF*22 SMFF*44	2	Duplex Unit. One Heater Element per starter.
SMFF*11 SMFF*22	2	Two Speed Starter. One Heater Element per speed.

Table B—Special Applications
Heater Element Selection

Continuous Duty Motor Service Factor	Ambient Temperature of Motor		
	Same as Controller Ambient	Constant 10°C (18°F) Higher Than Controller Ambient	Constant 10°C (18°F) Lower Than Controller Ambient
	Full Load Current Multiplier		
1.15 to 1.25	1.0	0.9	1.05
1.0	0.9	0.8	0.95

NEMA & General Purpose Control

17 CONTROL PRODUCTS

Replacement Parts

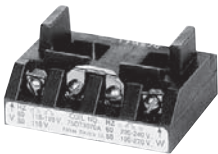
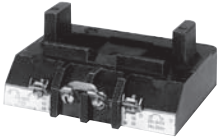
Starters and Contactors – AC Coils

Selection

Ordering Information

► 4th character of starter or contactor catalog number indicates model.

AC Coils — For Class 14, 17, 18, 22, 25, 26, 30, 32, 40, 43, 83, 84, 87, 88

	Size	Model	Volts		Catalog Number	List Price \$
			60Hz	50Hz		
	00-2½	P U (ESP200)	24 120 110-120/220-240 208 220-240 277 220-240/440-480 440-480 575-600	24 110 110/190-220 — 190-220 240 190-220/380-440 380-440 550	75D73070J 75D73070F 75D73070A 75D73070D 75D73070G 75D73070L 75D73070C 75D73070H 75D73070E	
	3, 3½	P U (ESP200)	24 120 110-120/220-240 208 220-240 277 220-240/440-480 440-480 575-600	24 110 110/190-220 — 190-220 240 190-220/380-440 380-440 550	75D73251J 75D73251F 75D73251A 75D73251D 75D73251G 75D73251L 75D73251C 75D73251H 75D73251E	
	4	G U (ESP200)	24 120 120/220-240 208 220-240 277 220-240/440-480 440-480 575-600	24 110 110/190-220 — 190-220 240 190-220/380-440 380-440 550	75D70131J 75D70131F 75D70131A 75D70131D 75D70131G 75D70131L 75D70131C 75D70131H 75D70131E	
	4, 5	V (Vacuum)	23-26 110-127 200-220 220-240 240-277 380-420 440-480 575-600	23-26 110-127 200-220 220-240 240-277 380-420 440-480 575-600	3RT1966-5AB31 3RT1966-5AF31 3RT1966-5AM31 3RT1966-5AP31 3RT1966-5AU31 3RT1966-5AV31 3RT1966-5AR31 3RT1966-5AT31	
	5	P	23-26 110-127 200-220 220-240 240-277 380-420 440-480 575-600	23-26 110-127 200-220 220-240 240-277 380-420 440-480 575-600	3RT1965-5AB31 3RT1965-5AF31 3RT1965-5AM31 3RT1965-5AP31 3RT1965-5AU31 3RT1965-5AV31 3RT1965-5AR31 3RT1965-5AT31	
	6	P V (Vacuum)	23-26 110-127 200-220 220-240 240-277 380-420 440-480 575-600	23-26 110-127 200-220 220-240 240-277 380-420 440-480 575-600	3RT1975-5AB31 3RT1975-5AF31 3RT1975-5AM31 3RT1975-5AP31 3RT1975-5AU31 3RT1975-5AV31 3RT1975-5AR31 3RT1975-5AT31	
	7	H	100-250 150-500	100-250 150-500	75ZAF750-70 75ZAF750-71	
	8	H	100-250	100-250	75ZAF1650-70①	

① Set of 2 coils. Recommend to change printed circuit board when changing coils. 49ZP1650 see page 9/107.

Replacement Parts

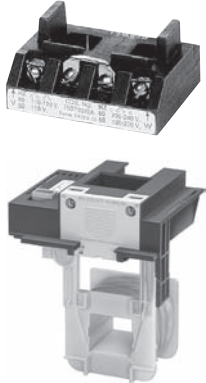
Starters and Contactors – DC Coils, Late Break Aux Contacts, Rectifiers, Contact Kits

Selection

Ordering Information

- 4th character of starter or contactor catalog number indicates model.
- DC Coils for Size 00-4 require Late Break Interlock.

DC Coils — For Class 14, 17, 18, 22, 25, 26, 30, 32, 40, 43

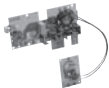
	Size	Model	Volts DC	Catalog Number	List Price \$
	00-2½	P U (ESP200)	12	75D73070R	
			24	75D73070S	
			32	75D73070T	
			48	75D73070U	
			125	75D73070V	
			250	75D73070W	
	3, 3½	P U (ESP200)	12	75D73251R	
			24	75D73251S	
			32	75D73251T	
			48	75D73251U	
			125	75D73251V	
			250	75D73251W	
	4	G U (ESP200)	48	75D70131U	
			125	75D70131V	
			250	75D70131W	
	4, 5	V (Vacuum)	23-26	3RT1966-5AB31	
			42-48	3RT1966-5AD31	
			110-127	3RT1966-5AF31	
			240-277	3RT1966-5AU31	

Note: For sizes 7 & 8 contactors the AC coils are used for DC see page 17-104.

Late Break Auxiliary Contacts

	Control Size	Model	Catalog Number	List Price \$
	00-4	P, G, S, T	49AB01LB	

Board for Size 8 Contactor

	Control Size	Model	Catalog Number	List Price
	8	H	49ZP1650	

Contact Kits – Single Pole Stationary and Movable Contacts, Contact Spring^①

Description	Size	Number of Poles in Kit	Model (4th position in part number)	Catalog Number	List Price \$
	Internal Aux Contact (00-1-¾)		P, U	75AF14	
	00		P, U	75BF14	
	0		P, U	75CF14	
	1		P, U	75DF14	
	1¼-1P	1	P, U	75EF14	
	2	1	P, U	75FP14	
	2½	1	P, U	75GP14	
	3		P, U	75HF14	
	3½	1	P, U	75IF14	
	4		G, T	75JG14	
Class 14, 17, 18, 22, 25, 26, 30, 32, 40, 43, 83, 84, 87, 88	4 (Vacuum)	3 (Bottles)	V, C	3RT1964-6V	
	5	3	P	3RT1966-6A	
	5 (Vacuum)	3 (Bottles)	V, C	3RT1966-6V	
	6	3	P	3RT1976-6A	
	6 (Vacuum)	3 (Bottles)	V, C	3RT1976-6V	
	7	3	H	49ZL750	
	8	3	H	49ZL1650	
	14, 40				

Armature and Magnet Kits

Size	Catalog Number	List Price \$
00-2½	49AMSA2	
3-3½	49AMSA3	
4	49AMSA4	

① On 3-phase controls, all 3-poles should be replaced - 3 kits required.

NEMA & General
Purpose Control

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PRODUCTS

Replacement Parts

Lighting Contactors

Selection

Power Pole Kits

	Class	Enclosure type	Contactor Size (Amp)	Description	Catalog No.
	LC	Open, 1, 12, 4/4X	30	Single power pole Double power pole	49LCPP1A 49LCPP2A

Replacement Contact Kits

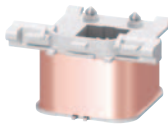
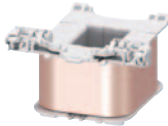
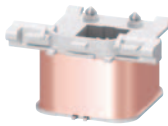
	Class	Contactor Size (Amp)	Description	Catalog No.
	LC	30	NA	NA
	LE	20, 30	NA	NA
		60 100 200 300 400	1 contact kit includes 3 moving and 6 fixed contacts.	3RT2937-6A 3RT1945-6A 3RT1956-6A 3RT1965-6A 3RT1975-6A

Replacement Parts

Lighting Contactors, Type LC, LE, CLM, CMF, CMN

Selection

Replacement Coil Kits

	LC	30	24V 60Hz / 20V 50Hz 115-120V 60Hz / 110V 50Hz 200-208V 60Hz 230-240V 60Hz / 220V 50Hz 277V 60Hz / 240V 50Hz 347V 60Hz 460-480V 60Hz / 440V 50Hz 575-600V 60Hz / 550V 50Hz	75LCC024A 75LCC120A 75LCC208A 75LCC240A 75LCC277A 75LCC347A 75LCC480A 75LCC600A
		20, 30	NA	NA
	LE	60	24VAC 50/60Hz 110VAC 50Hz / 120VAC 60Hz 208VAC 50/60Hz 220VAC 50Hz / 240VAC 60Hz 277VAC 60Hz 480VAC 60Hz 600VAC 60Hz	3RT29345AC21 3RT29345AK61 3RT29345AM21 3RT29345AP61 3RT29345AU61 3RT29345AV61 3RT29345AT61
		100	24VAC 50/60Hz 110VAC 50Hz / 120VAC 60Hz 208VAC 50/60Hz 220VAC 50Hz / 240VAC 60Hz 277VAC 60Hz 480VAC 60Hz 600VAC 60Hz	3RT29445AC21 3RT29445AK61 3RT29445AM21 3RT29445AP61 3RT29445AU61 3RT29445AV61 3RT29445AT61
	LE	200	23 - 26 V AC 50-60Hz / DC 110 - 127 V AC 50-60Hz / DC 200 - 220 V AC 50-60Hz / DC 220 - 240 V AC 50-60Hz / DC 240 - 277 V AC 50-60Hz / DC 440 - 480 V AC 50-60Hz / DC 575 - 600 V AC 50-60Hz / DC	3RT19555AB31 3RT19555AF31 3RT19555AM31 3RT19555AP31 3RT19555AU31 3RT19555AR31 3RT19555AT31
		300	23 - 26 V AC 50-60Hz / DC 110 - 127 V AC 50-60Hz / DC 200 - 220 V AC 50-60Hz / DC 220 - 240 V AC 50-60Hz / DC 240 - 277 V AC 50-60Hz / DC 440 - 480 V AC 50-60Hz / DC 575 - 600 V AC 50-60Hz / DC	3RT19655AB31 3RT19655AF31 3RT19655AM31 3RT19655AP31 3RT19655AU31 3RT19655AR31 3RT19655AT31
		400	23 - 26 V AC 50-60Hz / DC 110 - 127 V AC 50-60Hz / DC 200 - 220 V AC 50-60Hz / DC 220 - 240 V AC 50-60Hz / DC 240 - 277 V AC 50-60Hz / DC 440 - 480 V AC 50-60Hz / DC 575 - 600 V AC 50-60Hz / DC	3RT19755AB31 3RT19755AF31 3RT19755AM31 3RT19755AP31 3RT19755AU31 3RT19755AR31 3RT19755AT31

AC Coils 20 Amps^②

	Type	Contactor Size	Number of Poles	120V, 60Hz 110V, 50Hz	240V, 60Hz 208V, 50Hz	277V 50/60Hz
	CLM	20 Amp	2-12	CLM4097341	CLM4097342	CLM4097343

AC Coils 30-400 Amps^③

	Type	Contactor Size	Number of Poles	Catalog Number						
				24V AC	120V AC	208V AC	220/240V AC	277V AC	480V AC	600V AC
CLMC4C120	CLM+C	30 Amp	2-3-Pole	CLMC4C024	CLMC4C120	CLMC4C208	CLMC4C240	CLMC4C277	CLMC4C480	CLMC4C600
			4-Pole	CLMC4C024	CLMC4C120	CLMC4C208	CLMC4C240	CLMC4C277	CLMC4C480	CLMC4C600
CLMGU3C120	CLM+D	60 Amp	5-Pole	CLMC5C024	CLMC5C120	CLMC5C208	CLMC5C240	CLMC5C277	CLMC5C480	CLMC5C600
			2-3-Pole	CLMD3C024	CLMD3C120	CLMD3C208	CLMD3C240	CLMD3C277	CLMD3C480	CLMD3C600
CLMGU3C120	CLM+E	100, 200 Amp	4-Pole	CLMD5C024	CLMD5C120	CLMD5C208	CLMD5C240	CLMD5C277	CLMD5C480	CLMD5C600
			5-Pole	CLMD5C024	CLMD5C120	CLMD5C208	CLMD5C240	CLMD5C277	CLMD5C480	CLMD5C600
CLMGU3C120	CLM+G Latching Coil	300/400 Amp	2-3-Pole	CLME3C024	CLME3C120	CLME3C208	CLME3C240	CLME3C277	CLME3C480	CLME3C600
			4-Pole	CLME5C024	CLME5C120	CLME5C208	CLME5C240	CLME5C277	CLME5C480	CLME5C600
CLMGU3C120	Unlatch Coil	300/400 Amp	5-Pole	CLME5C024	CLME5C120	CLME5C208	CLME5C240	CLME5C277	CLME5C480	CLME5C600
			2-3-Pole	—	CLMGL3C120	CLMGL3C208	CLMGL3C240	CLMGL3C277	CLMGL3C480	CLMGL3C600
CLMGU3C120	Unlatch Coil	300/400 Amp	4-Pole	—	CLMGU3C120	CLMGU3C208	CLMGU3C240	CLMGU3C277	CLMGU3C480	CLMGU3C600
			5-Pole	—	CLMGU3C120	CLMGU3C208	CLMGU3C240	CLMGU3C277	CLMGU3C480	CLMGU3C600

① Product Category: IEC.

② Coil kits for 20 amp CLM contactors include the coil clearing auxiliary contact.

③ For 30-200 amp CLM contactors, in the event that either the coil or the control module fails, it is recommended that both be replaced.

Replacement Parts

Lighting Contactors, CLM, CMB, CMF & CMN

Selection

Ordering Information

- **For CLM:** 5th character of contactor catalog number indicates Frame Size.
- **For CMB, CMF, CMN:** 4th character of contactor catalog number indicates Frame Size.

Main Contacts 20 Amp Lighting Contactors

 CLM4097334	Type	Contactors Size	Number of Poles	Location	Catalog Number	List Price \$
	CLM	20 Amp	2 3 4 6	Top or Bottom Top Top or Bottom Top or Bottom	CLM4097331 CLM4097332 CLM4097333 CLM4097334	

Main Contacts 30–400 Amp Lighting Contactors

Type	Frame Size	Contactors Size	Number of Poles	Catalog Number	List Price \$
CLM	C	30 Amp	2	CLMCCK02	
			3	CLMCCK03	
			4	CLMCCK04	
			5	CLMCCK05	
	D	60 Amp	2	CLMDCK02	
			3	CLMDCK03	
			4	CLMDCK04	
			5	CLMDCK05	
	E	100 Amp	2	CLMECK02	
			3	CLMECK03	
			4	CLMECK04	
			5	CLMECK05	
	F	200 Amp	2	CLMFCK02	
			3	CLMFCK03	
			4	CLMFCK04	
			5	CLMFCK05	
	G	300 Amp	2	CLMGCK02	
			3	CLMGCK03	
	H	400 Amp	2	CLMHCK02	
			3	CLMHCK03	

Auxiliary Contact Blocks 20 Amp Lighting Contactors^②

Type	Contactors Size	Contacts	Catalog Number	List Price \$
CLM	20 Amp	1 Form C NO, NC Contact 2 Form C NO, NC Contacts	CLM4097291 CLM4097292	

Auxiliary Contact Blocks 30–400 Amp Lighting Contactors

 CLMFCAK11	Type	Frame Size	Contactors Size	Contact Configuration	Catalog Number	List Price \$
	CLM	C to F ^②	30–200 Amps	1 NO and 1 NC 2 NC 2 NO 1 Coil Clearing NO and NC	CLMFCAK11 CLMFCAK02 CLMFCAK20 CLMFCC11	
		G to H ^①	300–400 Amps	1 NO and 1 NC 2 NC 2 NO 1 Coil Clearing NO and NC	CLMHCAK11 CLMHCAK02 CLMHCAK20 CLMHCC11	

Control Module Rectifier^③

Type	Device	Contactors Size	Number of Poles	Catalog Number	List Price \$
CLM	CLMfC to CLMfF	30–200 Amps	All	CLMKCMR	

① Maximum 1 block per contactor.

② Maximum 2 blocks per contactor.

③ For 30–200 amp CLM contactors, in the event that either the coil or the control module fails, it is recommended that both be replaced.

Replacement Parts

Miscellaneous

Selection

Replacement Handle Assemblies and Disconnect Mechanisms Enclosure Types 1, 3R, 4, 4X Stainless Steel & 12

			Handle Assembly Only	Handle Assembly and Disconnect Mechanism
Class	Disconnect (Amps)	Enclosure Size	Catalog Number	Catalog Number
3RE48, 17, 25, 32, 84, 87, CM, LE	30, 60 & 100	All Standard and Extra-wide Sizes	75D73944015	75D68257103
88	30 & 60		75D73944018	75D68257048
17, 25, 32, 84	200		75D73944015	75D68257105
88, CM, LE	200		75D73944015	75D68257063
3RE48, 87	200		75D73944023	75D68257068
17, 25, 87, 88, CM, LE	400 & 600		75D73944027	75D68257078
			Handle Assembly Only	Handle Assembly and Disconnect Mechanism
Class	Motor Circuit Interrupter (Amps)	Enclosure Size	Catalog Number	Catalog Number
18, 26, 32, CM, LE	3 - 125	(24″H x 11″W x 8″D), (24″H x 20″W x 8″D)	75D73944025	75D68257080
18, 26, 32	100 - 125	(36″H x 24″W x 8″D)	75D73944025	75D68257073
18, 26, 32	150 & 250	All Standard Sizes	75D73944028	75D68257089
18, 26, 87, 88, CM	300 - 600		75D73944027	75D68257078
3RE48, 87	3 - 125		75D73944025	75D68257080
3RE48, 87	150		75D73944028	75D68257089
87	250		75D73944011	75D68257077
88	30 - 125		75D73944025	75D68257073
84, 88, CM	150 - 250		75D73944011	75D68257077
84	3 - 125		75D73944025	75D68257074

Quarter Turn Assemblies

Description		Class	Enclosure Type	Catalog Number
	Quarter-Turn Latch	3RE48, 17, 18, 25, 26, 32, 87 & 88	1, 3R & 12	75D46260004
			4 & 4X	75D46260005

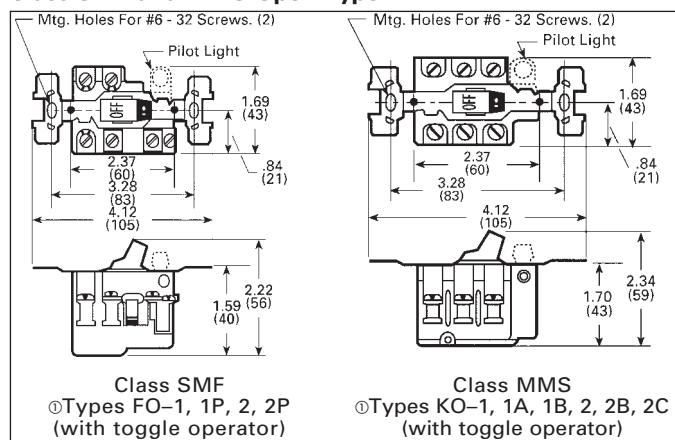
NEMA & General
Purpose Control17
CONTROL
PRODUCTS

Manual Control

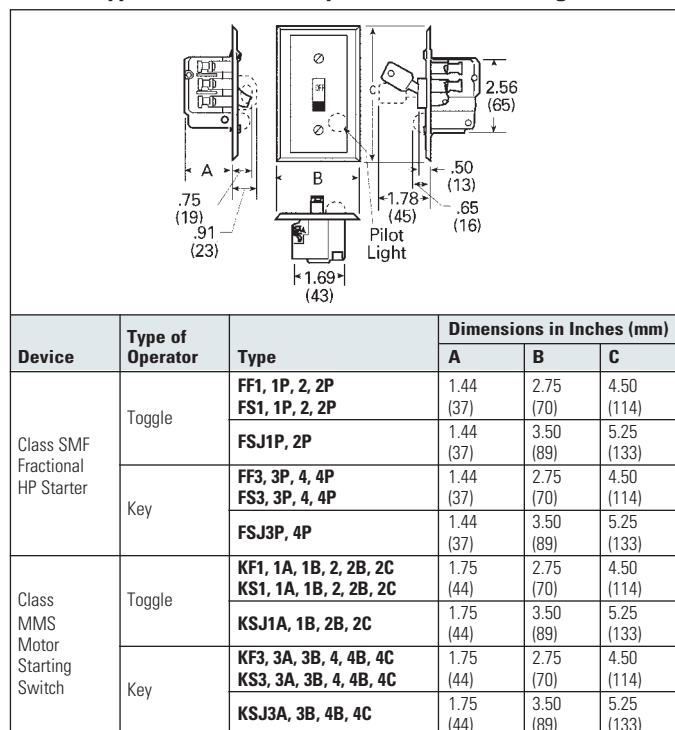
Class SMF, MMS

Dimensions

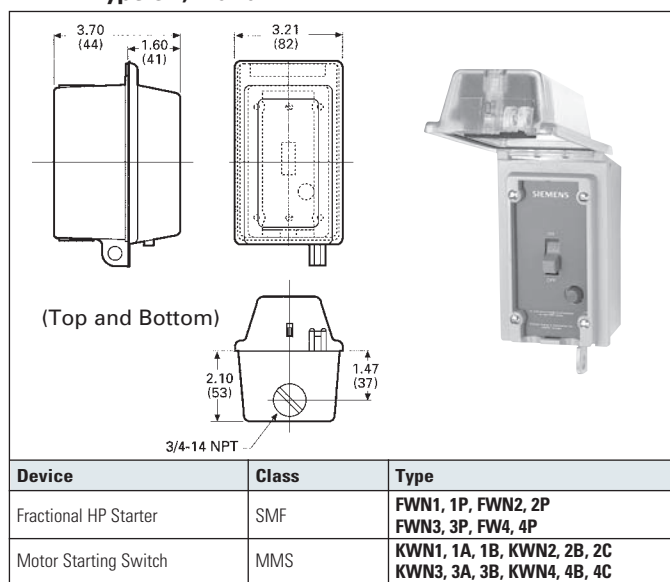
Class SMF and MMS Open Type



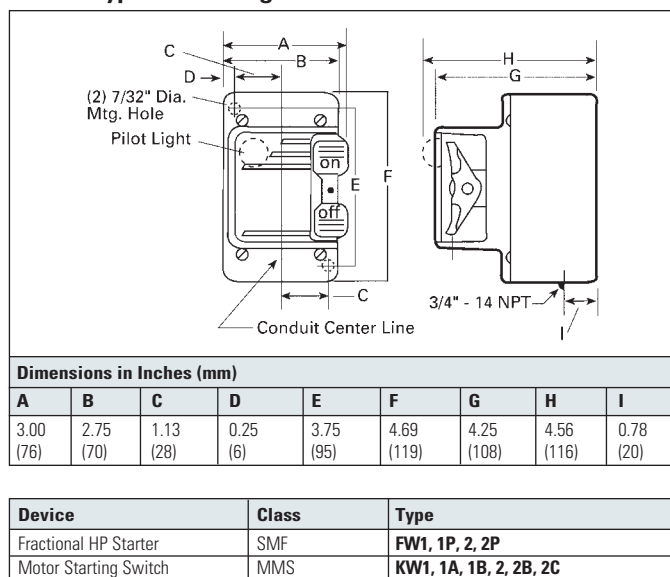
NEMA Type 1B General Purpose Flush Mounting



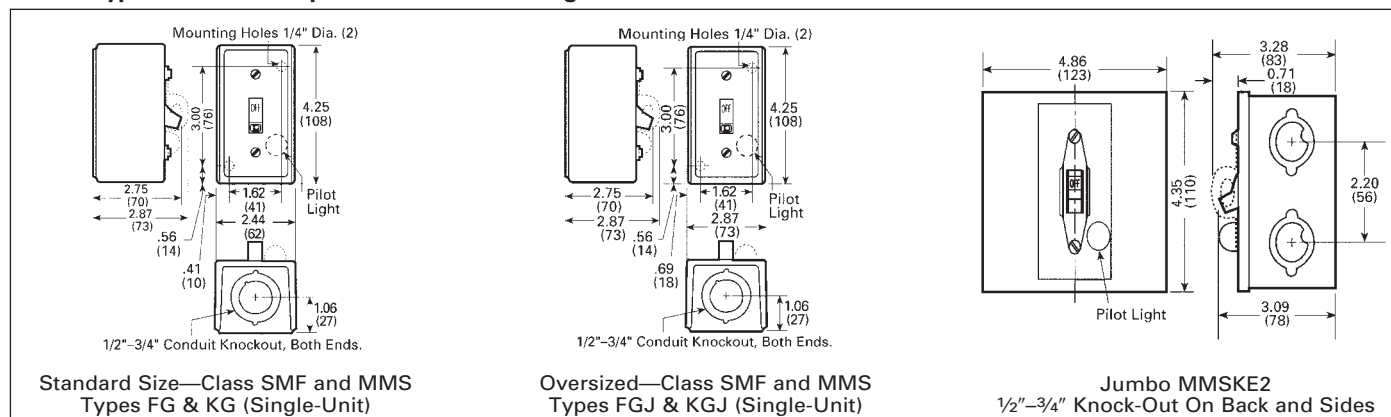
NEMA Type 3R, 4 and 12



NEMA Type 4 Watertight Die Cast Zinc Enclosure



NEMA Type 1 General Purpose Surface Mounting Enclosures



Note: Dimensions for reference, not for construction.
Dimensions are in inches (mm).

① Dimensions typical for key operator devices.

Manual Control

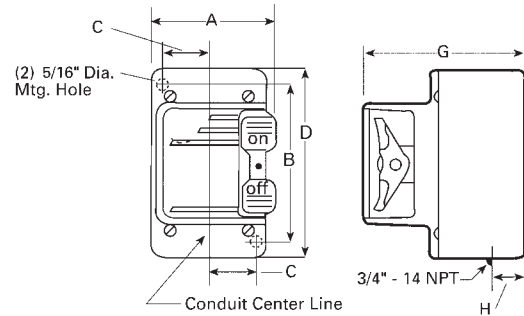
Class SMF, MMS

Dimensions

NEMA Type 7 and 9 Cast Aluminum Enclosure

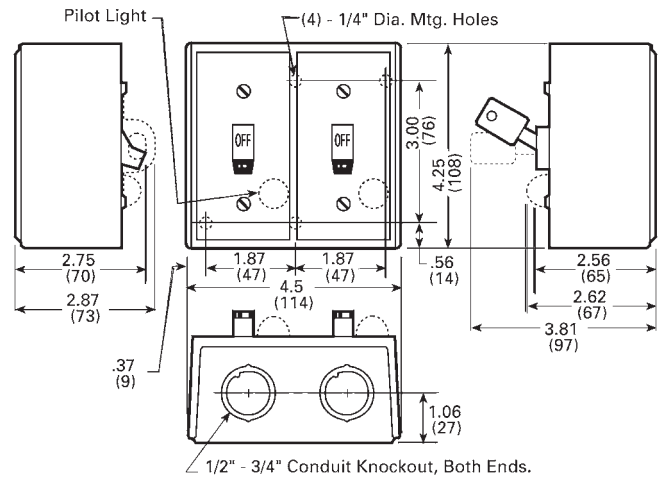
Dimensions in Inches (mm)					
A	B	C	D	G	H
4.00 (101)	5.75 (146)	1.38 (35)	6.36 (161)	4.38 (111)	1.20 (30)

Device	Class	Type
Fractional HP Starter	SMF	FR1, FR2
Motor Starting Switch	MMS	KR1, KR2



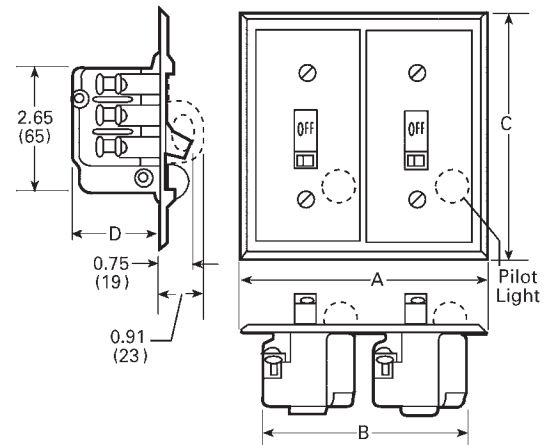
NEMA Type 1 General Purpose Enclosure For Two Unit Devices

Device	Type of Operator	Class	Type
One Starter	Toggle	SMF	FG02, 02P
	Key	SMF	FG04P
Two Starters	Toggle	SMF	FG222, 222P
	Key	SMF	FG44P
One Starter and One Sel. Switch ^①	Toggle	SMF	FG71, 71P, 72, 72P
	Key	SMF	FG74P
Reversing Switch ^②	Toggle	MRS	KG11, 11A, 11B, 22, 22A, 22B, 22C
Two Speed Starter	Toggle	SMF	FG11, 11P, 22, 22P
Two Speed Switch	Toggle	MMS	KG11, 11A, 11B, 22, 22B, 22C



NEMA Type 1B General Purpose Flush Mounting For Two Unit Devices

Device ^③	Type of Operator	Class	Type	A	B	C	D
Two Starters	Toggle	SMF	FF22, 22P	5.25 (133)	3.75 (95)	5.25 (133)	1.44 (37)
			FS22P	4.56 (116)	3.50 (89)	4.50 (114)	1.44 (37)
	Key	SMF	FF44P	5.25 (133)	3.75 (95)	5.25 (133)	1.44 (37)
			FS44P	4.56 (116)	3.50 (89)	4.50 (114)	1.44 (37)
One Starter and One Selector Switch ^④	Toggle	SMF	FF71, 71P, 72, 72P	5.25 (133)	0.75 (19)	5.25 (133)	2.00 (51)
			FS71P, 72P	4.56 (116)	3.50 (89)	4.50 (114)	2.00 (51)
	Key	SMF	FF74P	5.25 (133)	3.75 (95)	5.25 (133)	2.00 (51)
			FS74P	4.56 (116)	3.50 (89)	4.50 (114)	2.00 (51)
Reversing Switch	Toggle	MRS	KF11, 11A, 11B KF22, 22A 22B, 22C	5.25 (133)	3.75 (95)	5.25 (133)	1.75 (44)
Two Speed Switch	Toggle	SMF	FF11, 11P, 22, 22P	5.25 (133)	3.75 (95)	5.25 (133)	1.44 (37)
Two Speed Switch	Toggle	MMS	KF11, 11A, 11B 22, 22B, 22C	5.25 (133)	3.75 (95)	5.25 (133)	1.44 (37)



Note: Dimensions for reference, not for construction.
Dimensions are in inches (mm).

- ① Selector switch is on the left, increases overall depth to 3.50 in. (89 mm).
② Only one pilot light (located on right) is used on MRS switches.

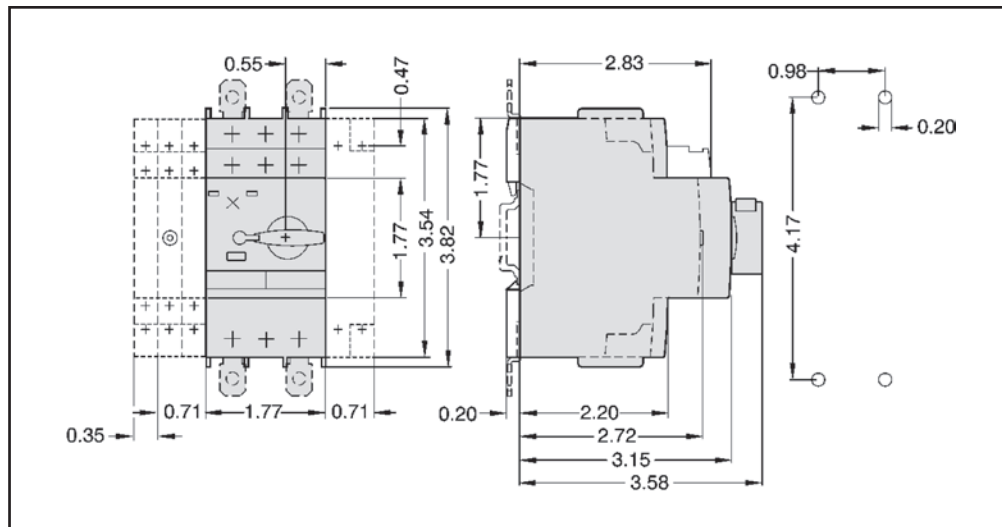
- ③ Dimensions include factory wired power connections.
④ Selector switch is on the left, extends 1.62 in. (41 mm) from mounting surface.

Manual Control

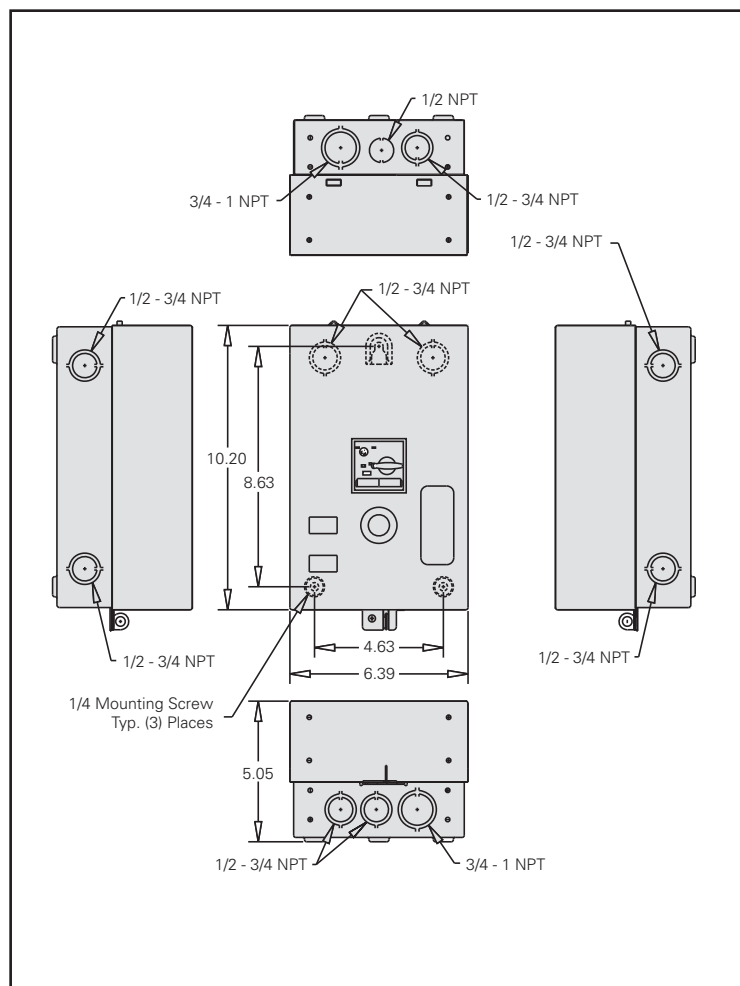
Class 11 - 3RV

Dimensions

3RV102



Class 11 - NEMA 1 Enclosure



Note: Dimensions in inches (millimeters). Dimensions for reference, not for construction. Contact Sales Office for dimensions not listed.

Heavy Duty Motor Starters

Solid State Overload, Class 14

Dimensions

Figure 1

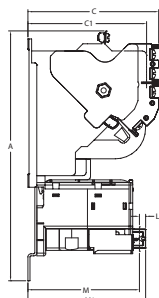


Figure 2

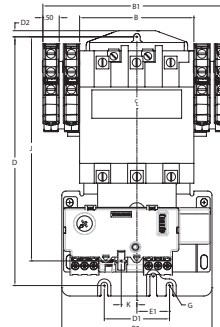
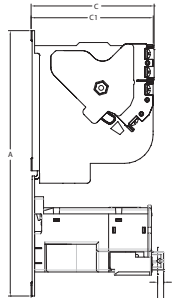
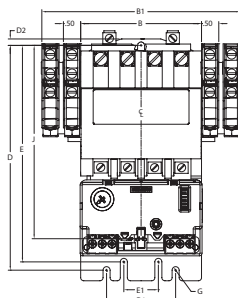


Figure 3

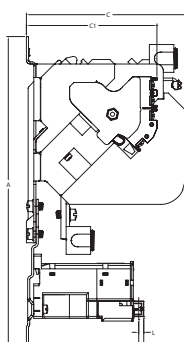
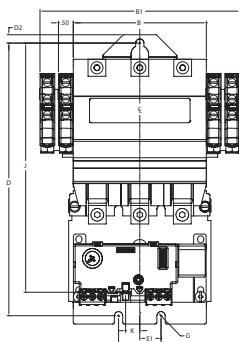
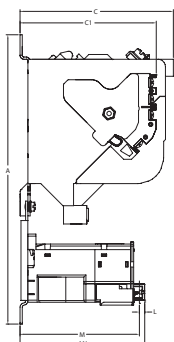


Figure 4

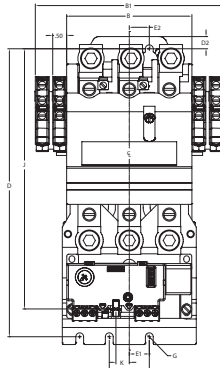
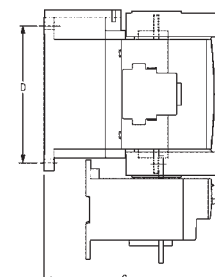
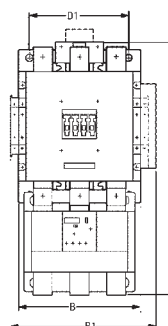


Figure 5



Open Type Solid State Overload

Size	Figure	Outline Dimensions						Mounting Dimensions						Mounting Screw	Reset Dimensions				
		A	B	B1	B2	C	C1	D	D1	D2	E	E1	E2	G	J	K	L	M	M1
00-1¼	1	7.44 (189)	3.50 (89)	5.75 (146)	—	3.75 (95)	3.50 (89)	6.50 (165)	2.00 (51)	0.19 (5)	6.27 (159)	1.00 (25)	—	#10	5.60 (142)	—	0.18 (5)	3.23 (82)	3.41 (87)
2-2½	2	8.13 (207)	3.50 (89)	5.75 (146)	4.60 (117)	4.00 (102)	3.77 (96)	7.62 (194)	2.00 (51)	0.19 (5)	—	1.00 (25)	—	#10	6.87 (174)	0.48 (12)	0.18 (5)	3.88 (99)	4.06 (103)
3-3½	3	9.78 (248)	4.50 (114)	6.75 (171)	—	5.19 (132)	4.66 (118)	9.22 (234)	1.44 (37)	0.28 (7)	—	0.72 (18)	—	0.25 (6)	8.43 (214)	0.48 (12)	0.18 (5)	4.04 (103)	4.22 (107)
4	4	11.06 (281)	4.50 (114)	6.75 (171)	—	5.75 (146)	4.66 (118)	10.34 (263)	1.44 (37)	0.44 (11)	—	0.72 (18)	0.72 (18)	0.25 (6)	9.35 (237)	0.48 (12)	0.18 (5)	4.04 (103)	4.22 (107)
5	5	12.76 (324)	5.71 (145)	6.89 (175)	—	8.54 (217)	—	7.09 (180)	4.72 (120)	—	—	—	—	0.35 (9)	—	—	—	—	—
6	6	13.03 (331)	6.30 (160)	7.48 (190)	—	9.29 (236)	—	7.09 (180)	5.12 (130)	—	—	—	—	0.35 (9)	—	—	—	—	—

Note: Dimensions in inches (millimeters). Dimensions for reference, not for construction. Contact Sales Office for dimensions not listed.

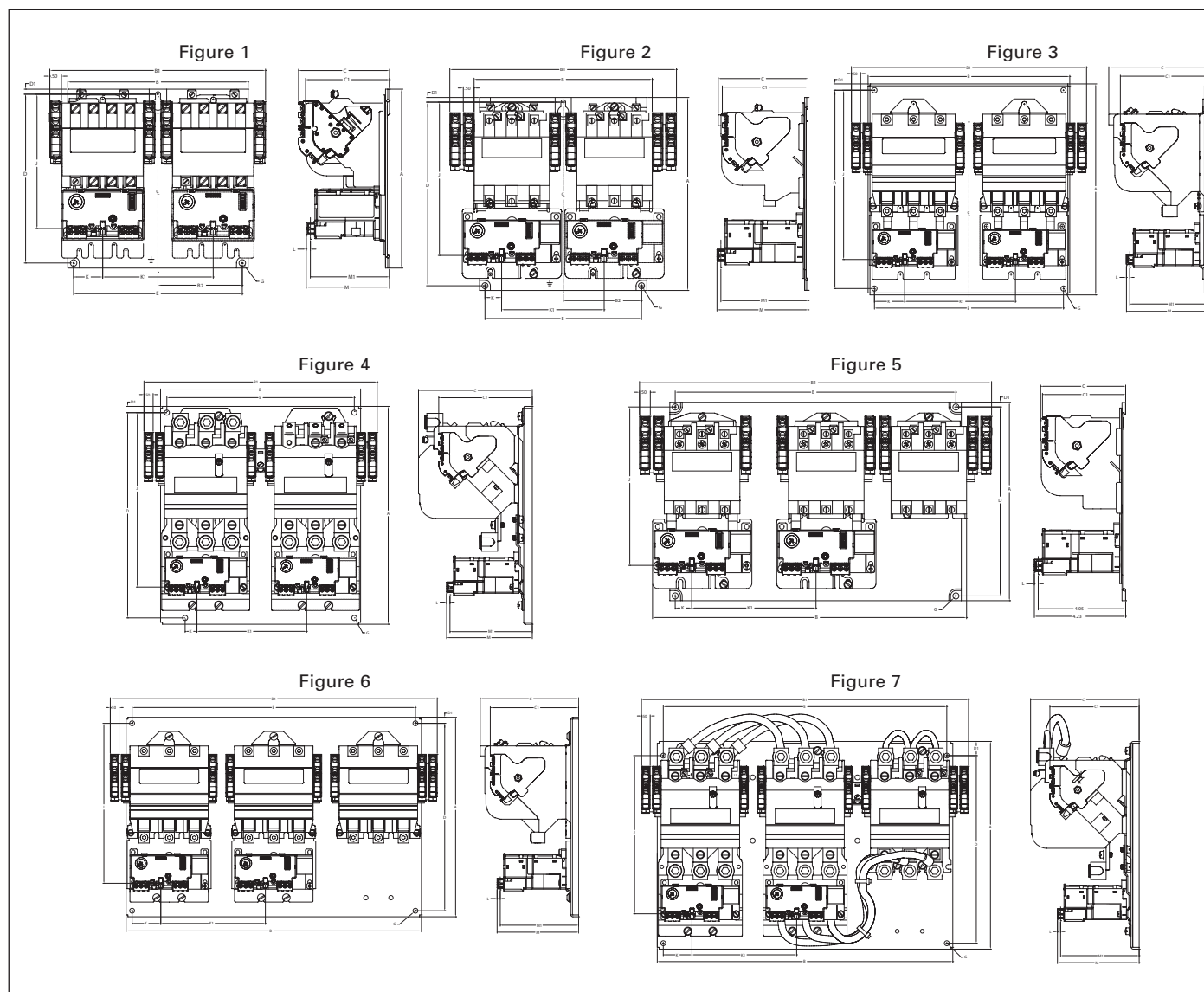
Reversing & Multispeed Heavy Duty Starters

Solid State Overload Class 22, 30

Dimensions

NEMA & General
Purpose Control

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CONTROL
PRODUCTS



Class 22 Reversing & Class 30 2 Speed/2 Winding

Size	Figure	Outline Dimensions						Mounting Dimensions			Mounting Screw	Reset Dimensions					
		A	B	B1	B2	C	C1	D	D1	E		J	K	K1	L	M	M1
00-1½	1	7.69	7.75	10.50	3.62	3.92	3.61	7.25	0.22	7.25	#10	5.77	1.25	4.75	0.18	3.58	3.40
2-2½	2	8.94	8.25	10.50	3.62	4.17	3.98	8.50	0.22	7.25	#10	7.10	0.77	4.75	0.18	4.23	4.05
3-3½	3	11.44	10.94	12.75	—	5.65	5.03	10.75	0.34	10.25	#10	9.18	1.64	6.00	0.18	4.69	4.51
4	4	11.91	10.94	12.75	—	6.22	5.12	11.22	0.34	10.25	0.25	9.53	0.65	6.00	0.18	4.68	4.50

Class 30 2 Speed/1 Winding

Size	Figure	Outline Dimensions						Mounting Dimensions			Mounting Screw	Reset Dimensions					
		A	B	B1	B2	C	C1	D	D1	E		J	K	K1	L	M	M1
00-1½	1	7.69	7.75	10.50	3.62	3.92	3.61	7.25	0.22	7.25	#10	5.77	1.25	4.75	0.18	3.58	3.40
2-2½	5	9.19	14.55	16.30	—	3.94	3.85	8.75	0.22	13.00	#10	7.33	0.77	5.75	0.18	4.23	4.05
3-3½	6	11.44	16.94	18.75	—	5.65	5.07	10.75	0.34	16.25	#10	9.18	1.64	6.00	0.18	4.68	4.50
4	7	11.91	16.94	17.75	—	6.22	5.12	10.75	0.82	16.25	#10	9.06	1.64	6.00	0.18	4.68	4.50

Note: Dimensions for reference, not for construction.
Contact sales office for dimensions not listed.
Dimensions are in inches (mm).

Heavy Duty Contactors

Class 40

Dimensions

Full Voltage Open Type NEMA Contactor Size 00-8

Figure 1

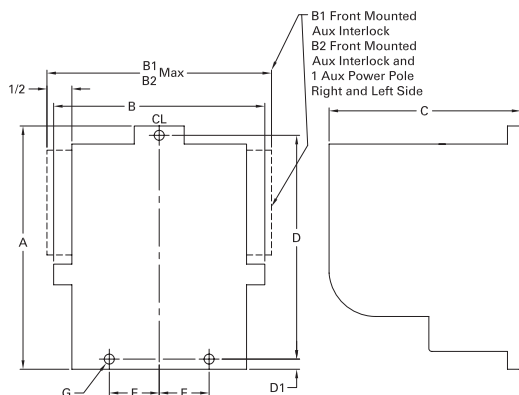


Figure 2

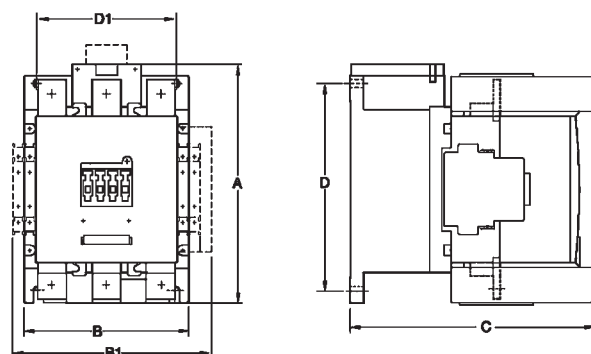


Figure 3

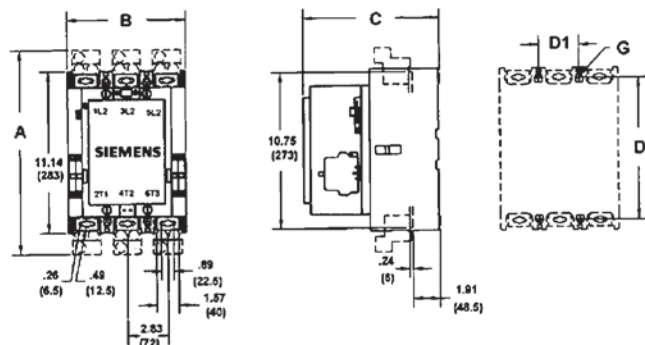
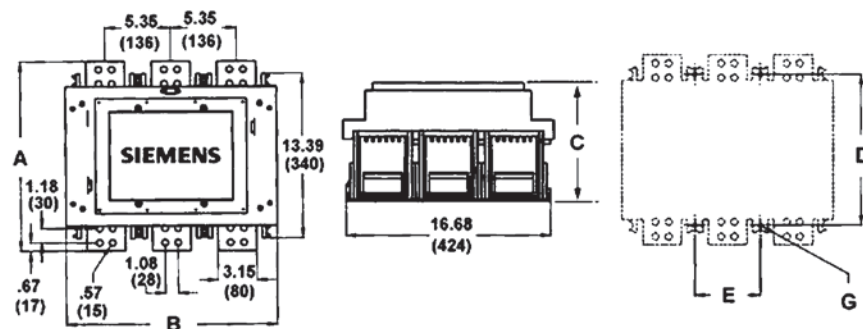


Figure 4



Open Type

Size	3rd Character of Catalog No. ①	Outline Dimensions						Mounting Dimensions			Mounting Screw
		Fig	A	B	B1	B2	C	D	D1	E	
00-1½	C, D, E	1	4.31 (110)	3.94 (100)	4.25 (108)	4.75 (121)	3.75 (70)	3.94 (100)	0.19 (5)	1.00 (25)	#10
2-2½	F, G	1	4.88 (124)	3.94 (100)	4.25 (108)	—	4.00 (102)	4.50 (114)	0.19 (5)	1.00 (25)	#10
3-3½	H, I	1	6.13 (156)	5.13 (130)	5.50 (140)	—	5.06 (129)	5.63 (143)	0.25 (6)	0.75 (19)	0.25 (6)
4	J	1	7.81 (198)	5.19 (132)	5.50 (140)	—	5.75 (146)	6.56 (167)	0.81 (21)	0.75 (19)	0.5 (13)
5	L	2	8.27 (210)	5.71 (145)	6.89 (175)	—	8.54 (217)	7.09 (180)	4.72 (120)	—	0.35 (9)
6	M	2	8.43 (214)	6.3 (160)	7.48 (190)	—	9.29 (236)	7.09 (180)	5.12 (130)	—	0.35 (9)
7	N	3	14.05 (357)	8.27 (210)	—	—	9.53 (242)	9.80 (249)	2.83 (72)	—	0.25 (6)
8	P	4	15.41 (392)	17.23 (438)	—	—	10.56 (268)	12.28 (312)	—	5.35 (136)	0.35 (9)

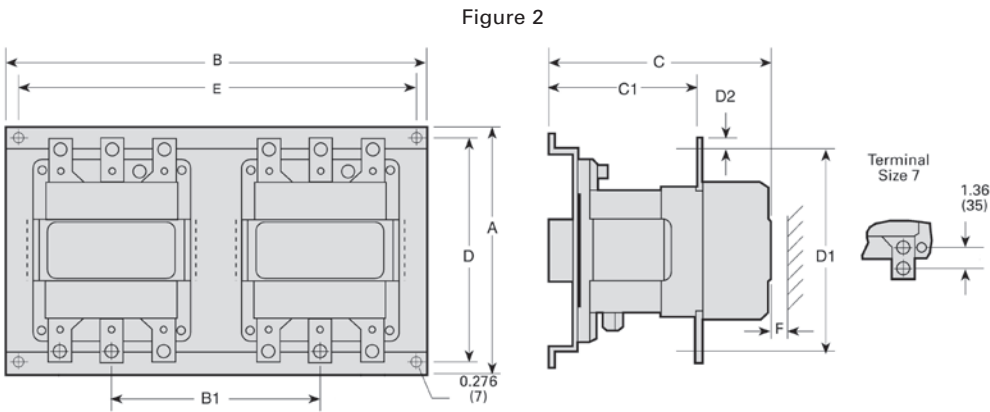
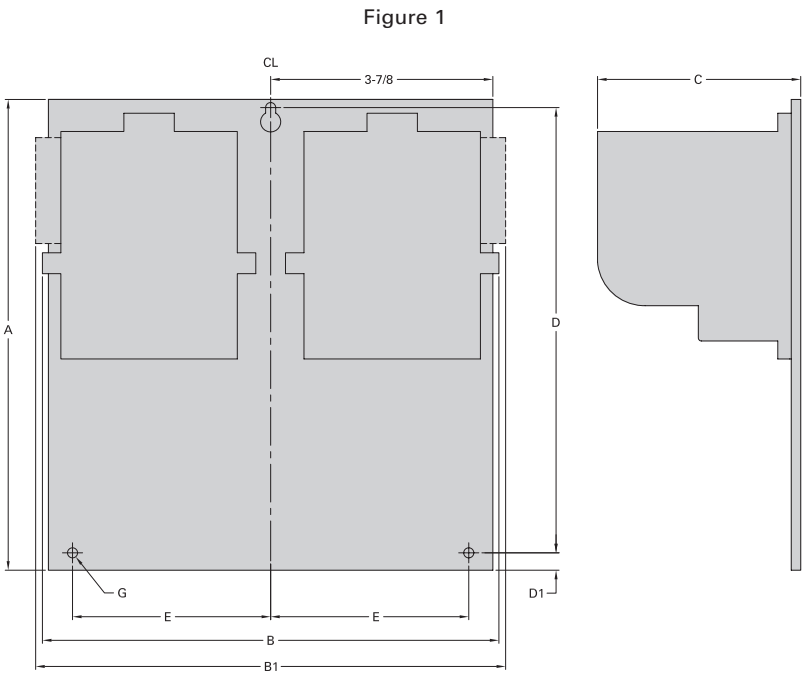
Note: Dimensions for reference, not for construction.
Contact sales office for dimensions not listed.
Dimensions are in inches (mm).

① 3rd character of catalog number identifies contactor rating.

Magnetic Reversing Contactors

Class 43

Dimensions



Open Type Horizontal Mounted

Size	Fig.	Outline Dimensions					Mounting Dimensions				Mounting Screw
		A	B	B1	C	C1	D	D1	E	F	
00-1 1/4	1	7.69 (195)	7.75 (197)	9.25 (235)	3.88 (98)	—	7.25 (184)	0.25 (6)	3.63 (92)	—	#10
2, 2 1/2	1	8.94 (227)	7.75 (197)	9.25 (235)	4.56 (116)	—	8.5 (216)	0.25 (6)	3.63 (92)	—	#10
3-3 1/2	1	11.44 (291)	10.94 (278)	11.50 (292)	5.19 (132)	—	10.75 (273)	0.38 (6)	5.13 (130)	—	0.25
4	1	8.50 (216)	10.94 (278)	11.50 (292)	6.25 (159)	—	7.81 (198)	0.38 (6)	5.13 (130)	—	0.25
5	2	18.07 (459)	14.20 (361)	—	9.44 (240)	—	17.20 (437)	—	9.61 (244)	—	—
6	2	11.61 (295)	18.88 (480)	9.45 (240)	10.85 (276)	7.44 (189)	10.44 (265)	10.71 (272)	17.72 (450)	1.18 (30)	—

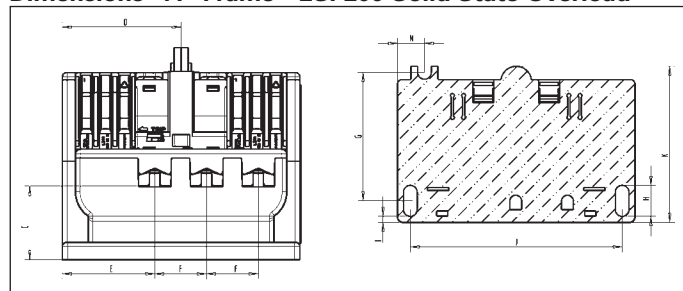
Note: Dimensions for reference, not for construction.
Contact sales office for dimensions not listed.
Dimensions are in inches (mm).

Overload Relays & Current Transformers

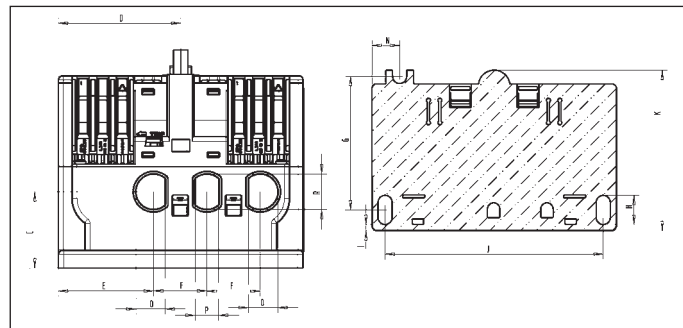
Solid State Overload

Dimensions

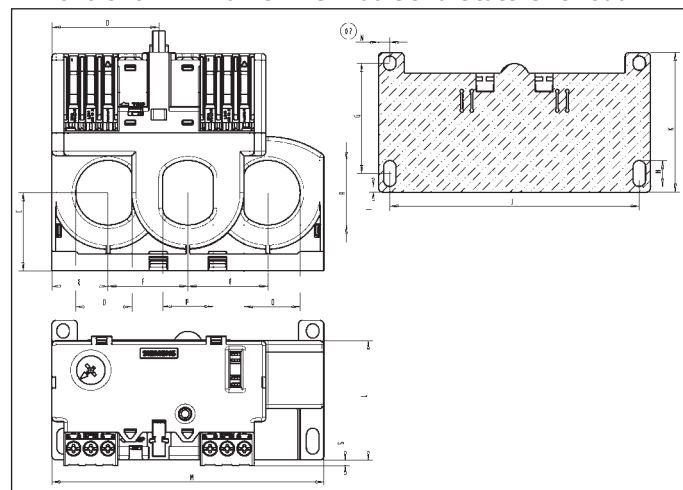
Dimensions "A" Frame—ESP200 Solid State Overload



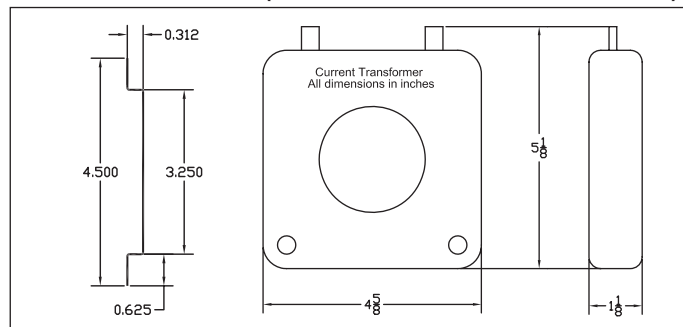
Dimensions "A1" Frame—ESP200 Solid State Overload



Dimensions "B" Frame—ESP200 Solid State Overload

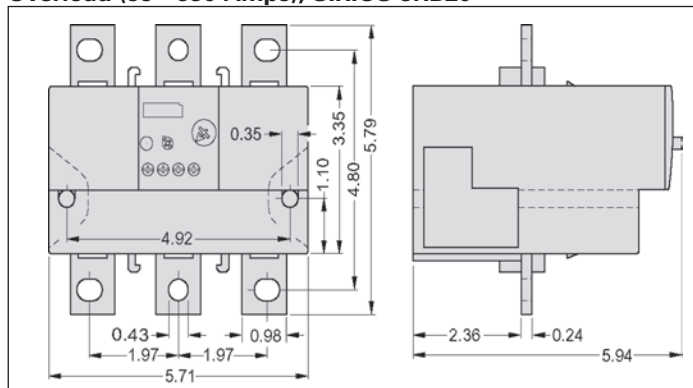


Current Transformers (all CT's have the same dimensions)



Note: When mounted on a plate, torque screws to 11 lb.in. (1.2 Nm).

Overload (55 - 630 Amps), SIRIUS 3RB20



Dimensions	Frame Size A		Frame Size A1		Frame Size B	
	mm	in.	mm	in.	mm	in.
A	80	3.15	80	3.15	100.4	3.95
B	12.6	0.5	12.6	0.5	8.6	0.34
C	27.7	1.1	28	1.10	32.6	1.28
D	44.85	1.77	44.85	1.77	44.85	1.77
E	34.9	1.37	34.9	1.37	23.5	0.93
F	19.6	0.77	19.6	.077	33.5	1.32
G	48.95	1.93	48.95	1.93	46.23	1.82
H	10.7	0.42	10.7	0.42	10.9	0.43
I	2.3	0.09	2.3	0.09	2.4	0.09
J	80	3.15	80	3.15	104.6	4.12
K	53.9	2.12	53.9	2.12	58.6	2.31
L	66.0	2.6	55.9	2.20	50	1.97
M	89.7	3.53	89.7	3.53	114	4.49
N	10.18	0.40	10.18	0.40	4.7	0.19
O	—	—	10.77	0.42	23.6	0.93
P	—	—	8.62	0.34	21.1	0.83
R	—	—	12.9	0.51	27.1	1.07
S	9.5	0.37	—	—	2.45	0.1
T	5.2	0.21	5.2	0.21	5.2	0.21

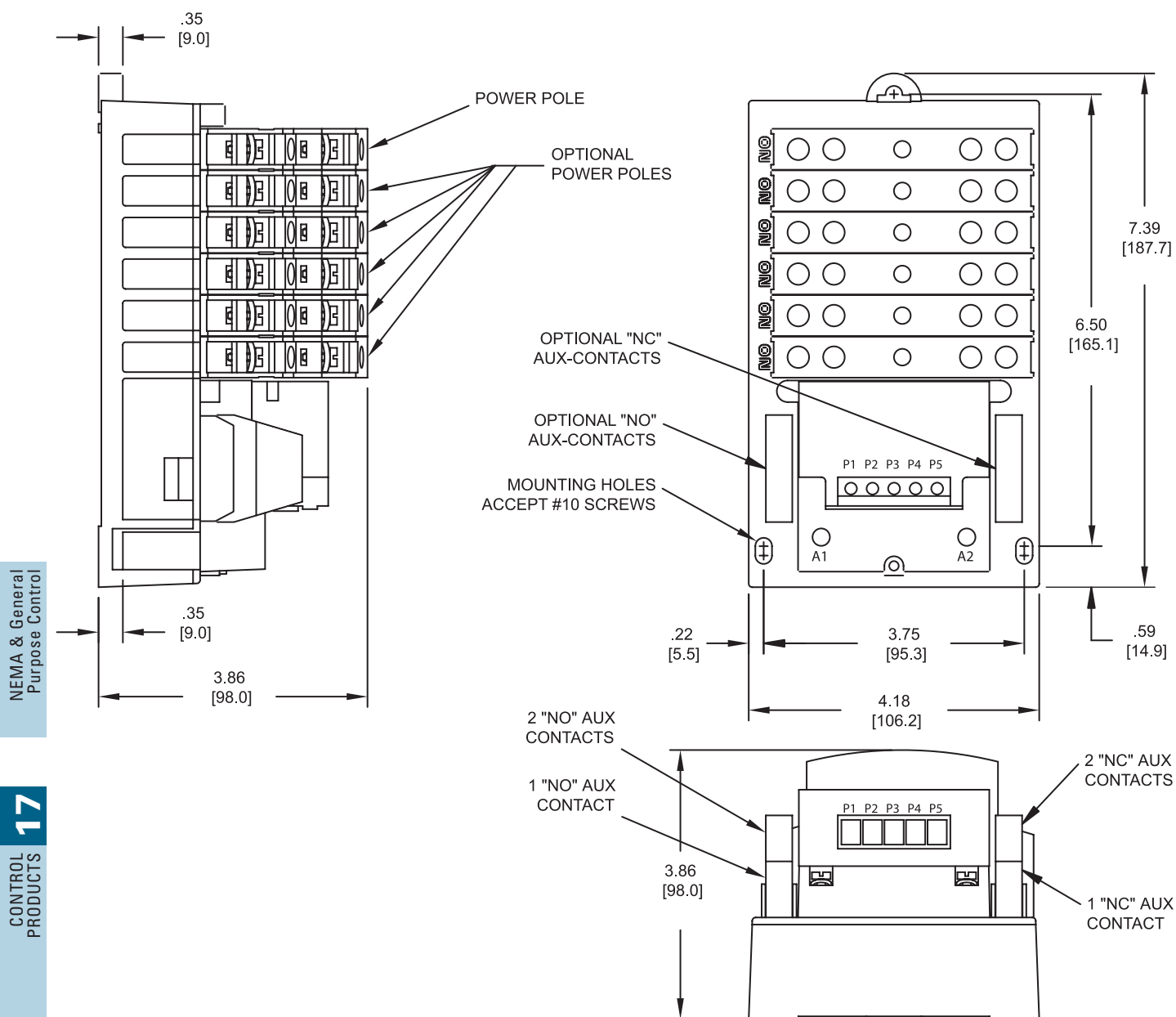
NEMA & General
Purpose Control

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Lighting & Heating Contactors

Class LC Open Contactors

Dimensions



Note:

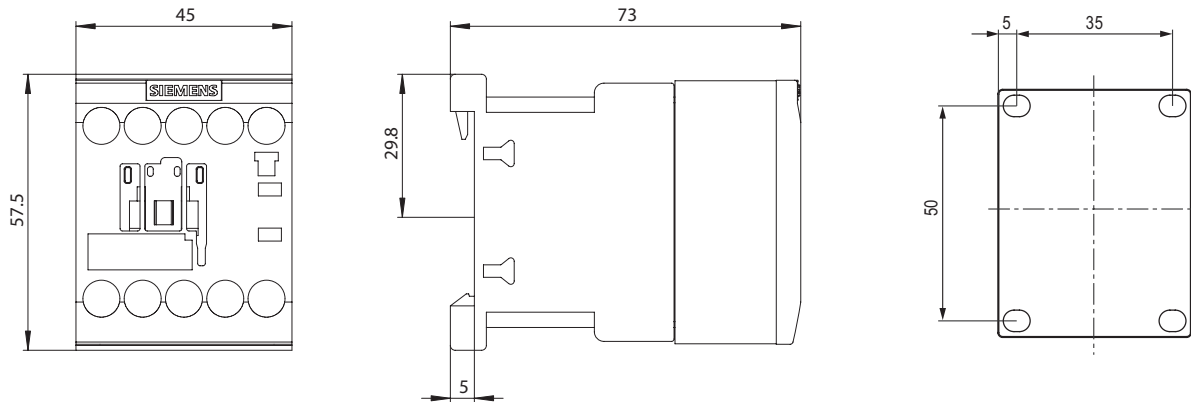
- 1) Mounting Dimensions remain the same for 1 to 12 Poles
- 2) Line and Load terminals are inter-changeable
- 3) Up to 2NO and 2NC auxiliary contacts can be added onto the base product
- 4) Same Power Pole can be configured as NO type or NC type

Lighting & Heating Contactors

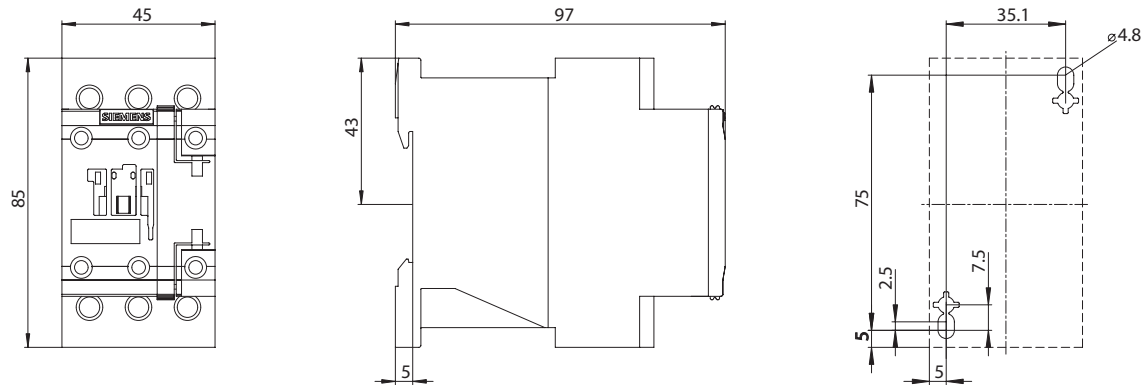
Open Contactors, Class LE

Dimensions

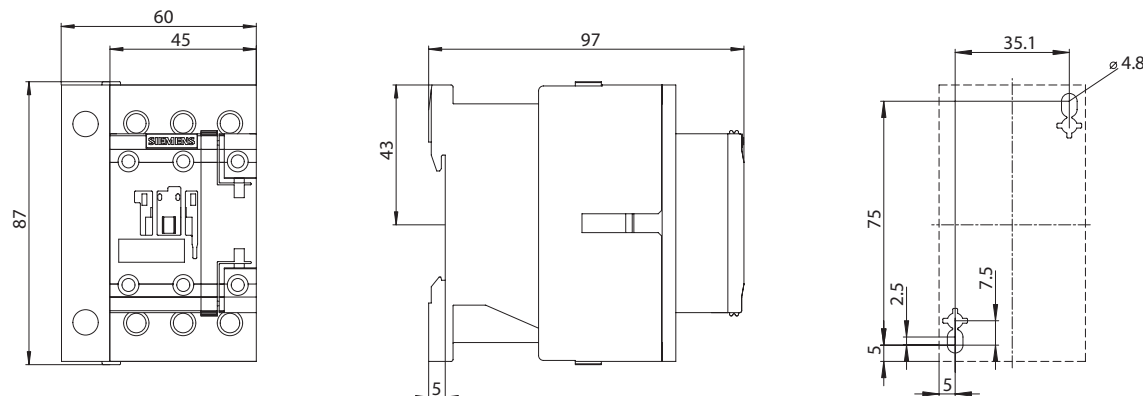
LEN00B (20A 3 Pole and 4 Pole)



LEN00C003 (30A 3 Pole)



LEN00C004 (30A 4 Pole)



NEMA & General
Purpose Control

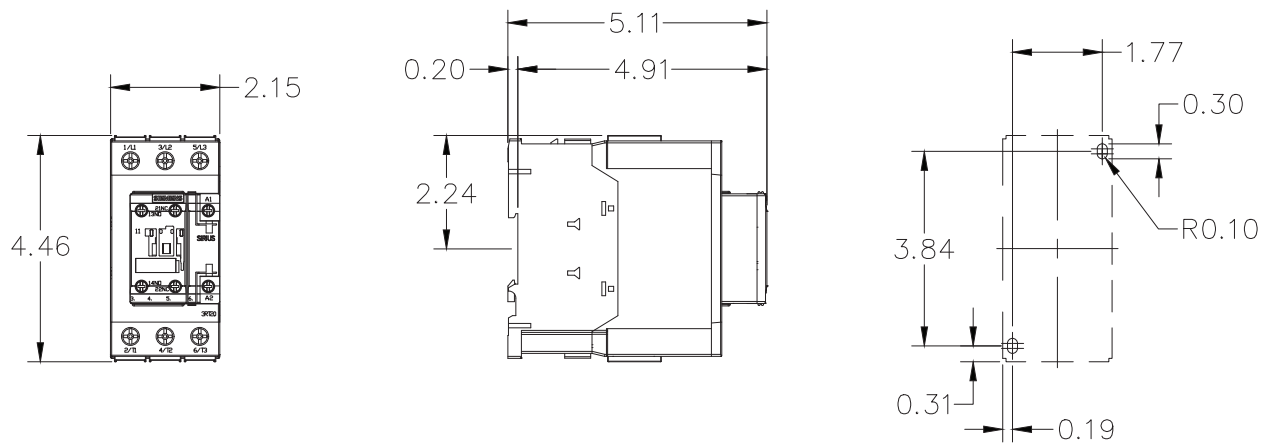
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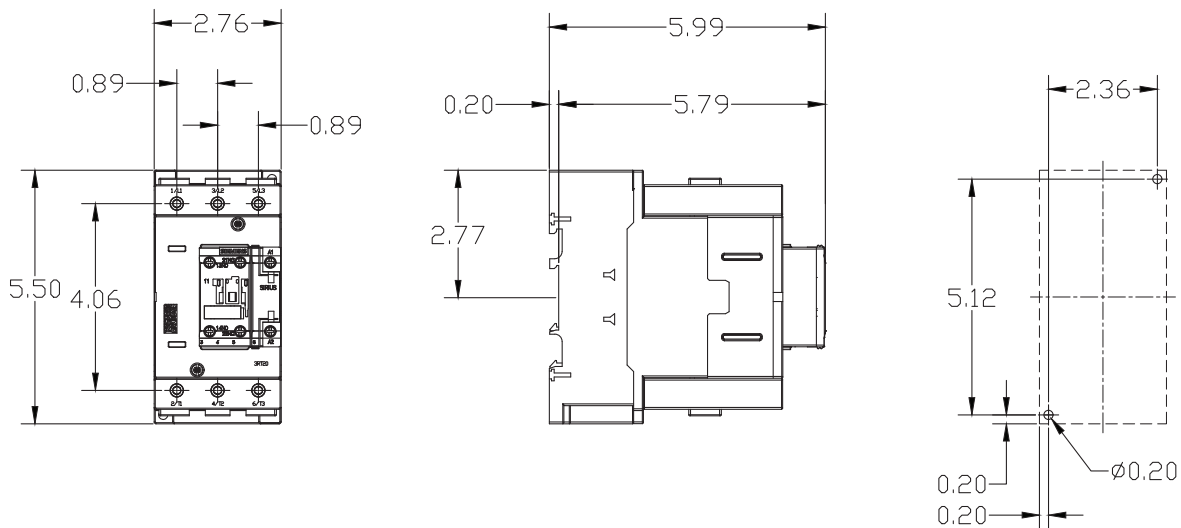
Open Contactors, Class LE

Dimensions

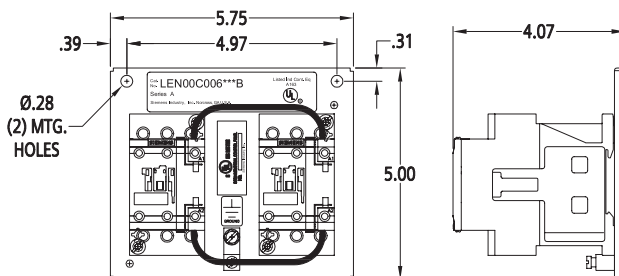
LEN00D003 (60A 3 Pole)



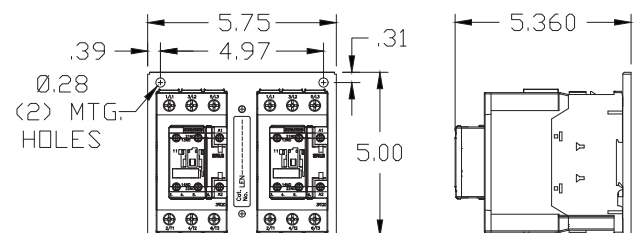
LEN00E003 (100A 3 Pole)



LEN00C006 (30A 6 Pole)



LEN00D006 (60A 6 Pole)



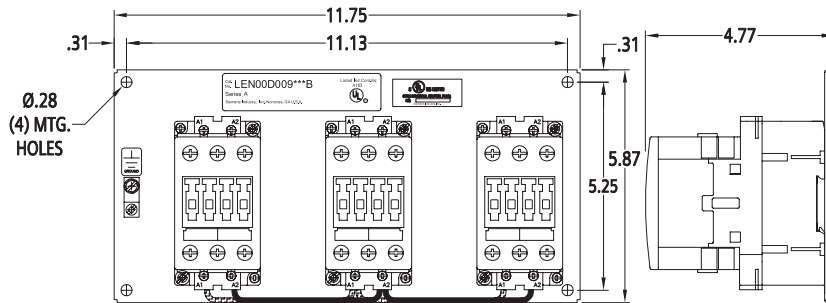
Dimensions in inches.

Lighting & Heating Contactors

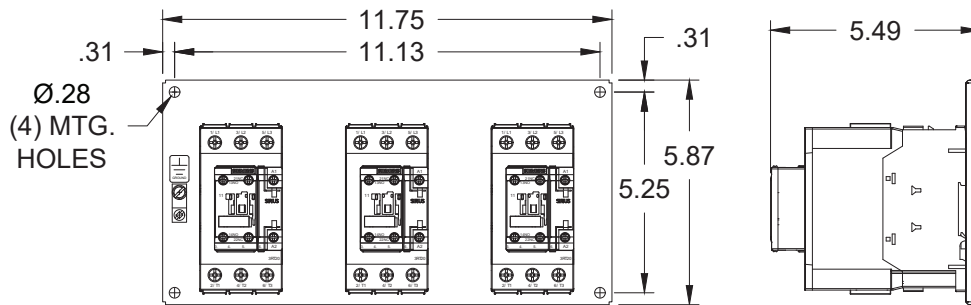
Open Contactors, Class LE

Dimensions

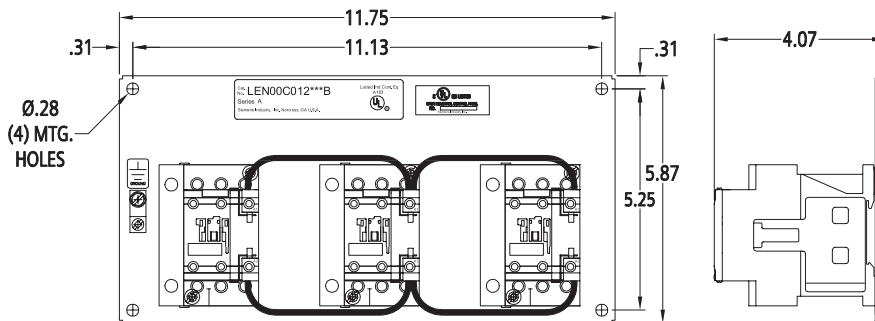
LEN00C009 (30A 9 Pole)



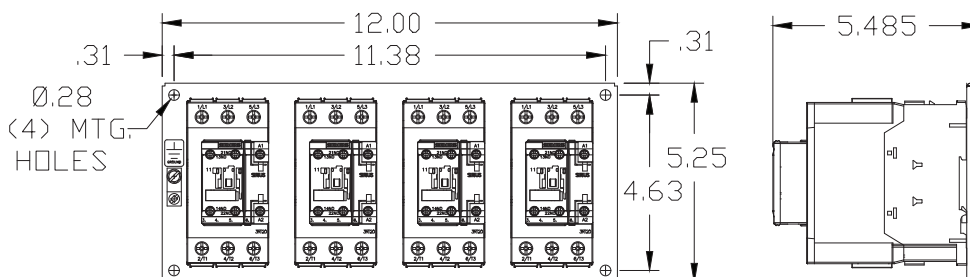
LEN00D009 (60A 9 Pole)



LEN00C012 (30A 12 Pole)



LEN00D012 (60A 12 Pole)

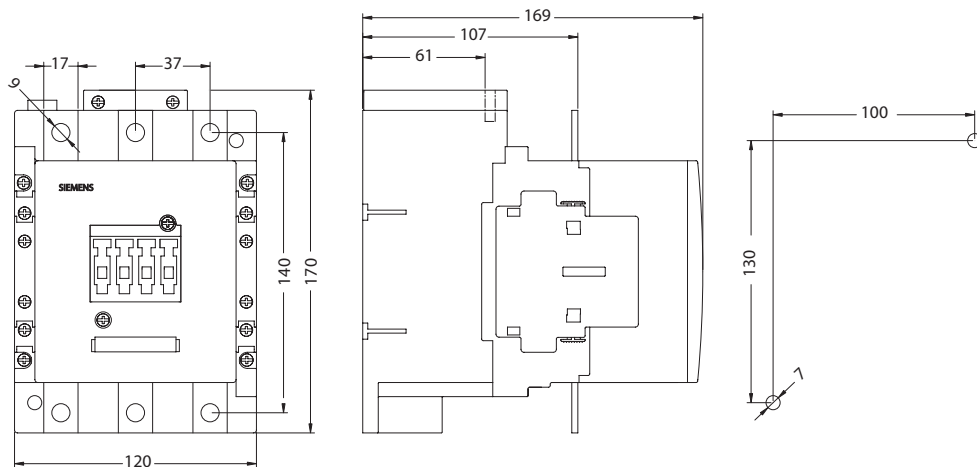
NEMA & General
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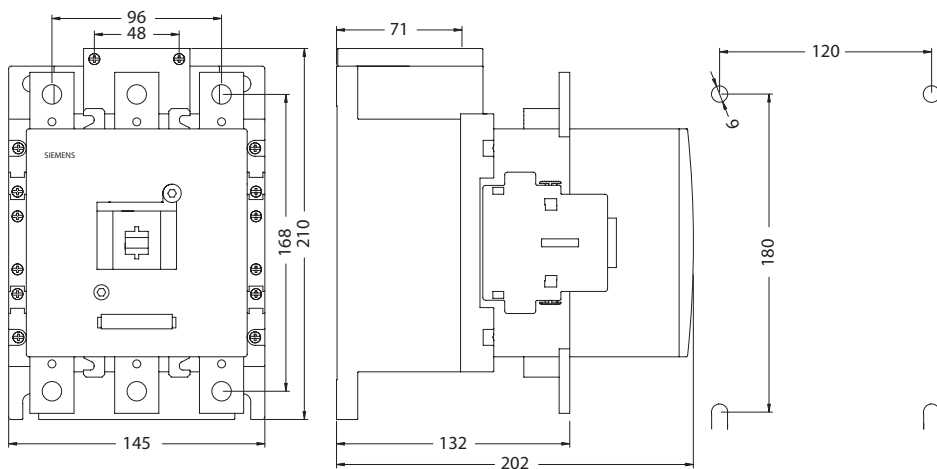
Open Contactors, Class LE

Dimensions

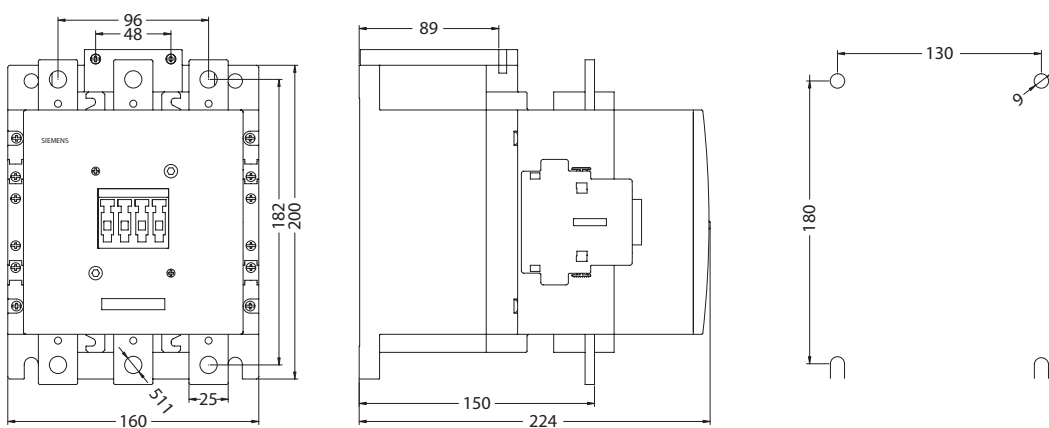
LEN00F003 (200A 3 Pole)



LEN00G003 (300A 3 Pole)



LEN00H003 (400A 3 Pole)



Lighting & Heating Contactors

Mechanically / Magnetically Held Lighting Contactors, Class CLM

Dimensions

CLM Contactor, 20 Amp

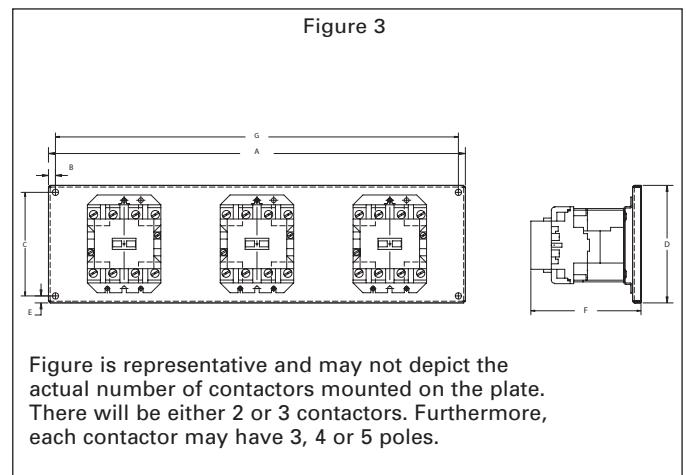
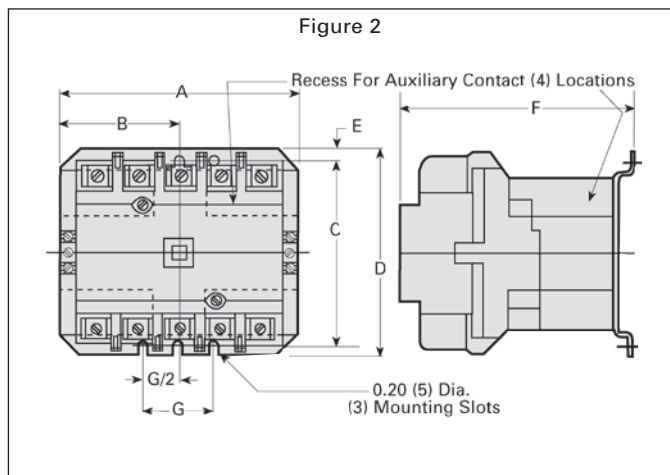
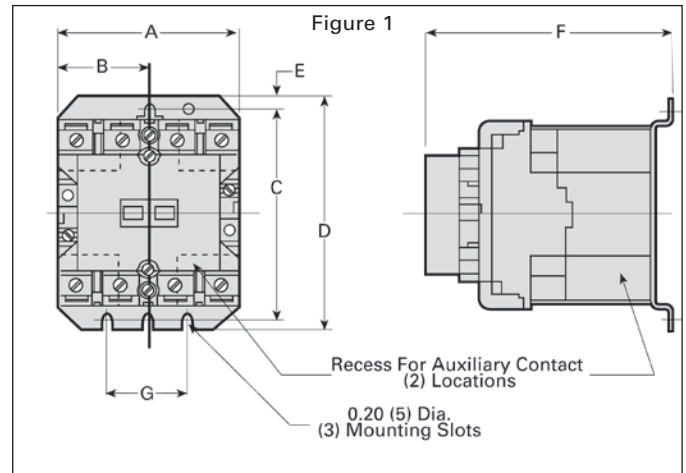
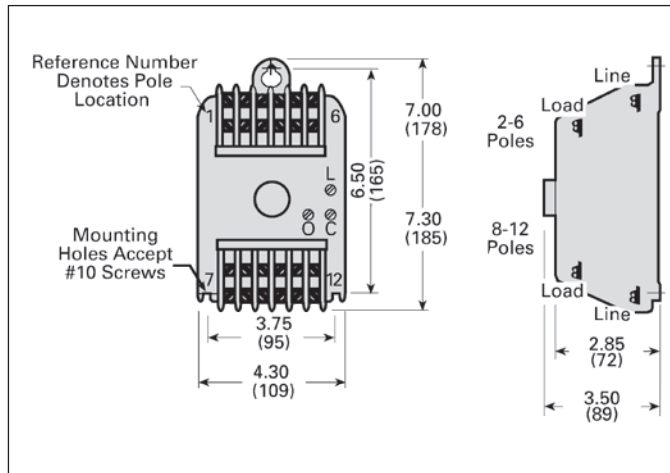


Figure is representative and may not depict the actual number of contactors mounted on the plate. There will be either 2 or 3 contactors. Furthermore, each contactor may have 3, 4 or 5 poles.

Open Type Lighting and Heating Contactors

Class	Figure Number	Amp Rating	Number of Poles	A	B	C	D	E	F	G
CLM	1	30	2-4	3.31 (84)	1.65 (42)	3.95 (100)	4.38 (111)	0.23 (6)	4.61 (117)	1.50 (38)
		30	5	4.19 (106)	2.09 (53)	3.95 (100)	4.38 (111)	0.23 (6)	4.61 (117)	1.50 (38)
	2	60	2, 3	3.31 (84)	1.65 (42)	3.95 (100)	4.38 (111)	0.23 (6)	4.94 (125)	1.50 (38)
		60	4, 5	5.06 (129)	2.53 (64)	3.95 (100)	4.38 (111)	0.23 (6)	4.94 (125)	1.50 (38)
		100	2, 3	4.62 (117)	2.31 (59)	6.00 (152)	6.62 (168)	0.38 (10)	6.75 (171)	1.88 (48)
		100	4, 5	7.25 (184)	3.62 (92)	6.00 (152)	6.62 (168)	0.38 (10)	6.75 (171)	1.88 (48)
		200	2, 3	4.62 (117)	2.31 (59)	6.00 (152)	6.62 (168)	0.38 (10)	6.75 (171)	1.88 (48)
		200	4, 5	7.25 (184)	3.62 (92)	6.00 (152)	6.62 (168)	0.38 (10)	6.75 (171)	1.88 (48)
	3	30	6, 8	8.00 (196)	0.31 (8)	5.25 (129)	5.87 (144)	0.31 (8)	4.86 (119)	7.38 (181)
		30	9, 10, 12	11.75 (289)	0.31 (8)	5.25 (129)	5.87 (144)	0.31 (8)	4.86 (119)	11.13 (273)
		60	6	8.00 (196)	0.31 (8)	5.25 (129)	5.87 (144)	0.31 (8)	5.19 (127)	7.38 (181)
		60	8, 9, 10	11.75 (289)	0.31 (8)	5.25 (129)	5.87 (144)	0.31 (8)	5.19 (127)	11.13 (273)
		60	12	16.75 (410)	0.31 (8)	5.25 (129)	5.87 (144)	0.31 (8)	5.19 (127)	16.13 (395)
		60	12	16.75 (410)	0.31 (8)	5.25 (129)	5.87 (144)	0.31 (8)	5.19 (127)	16.13 (395)

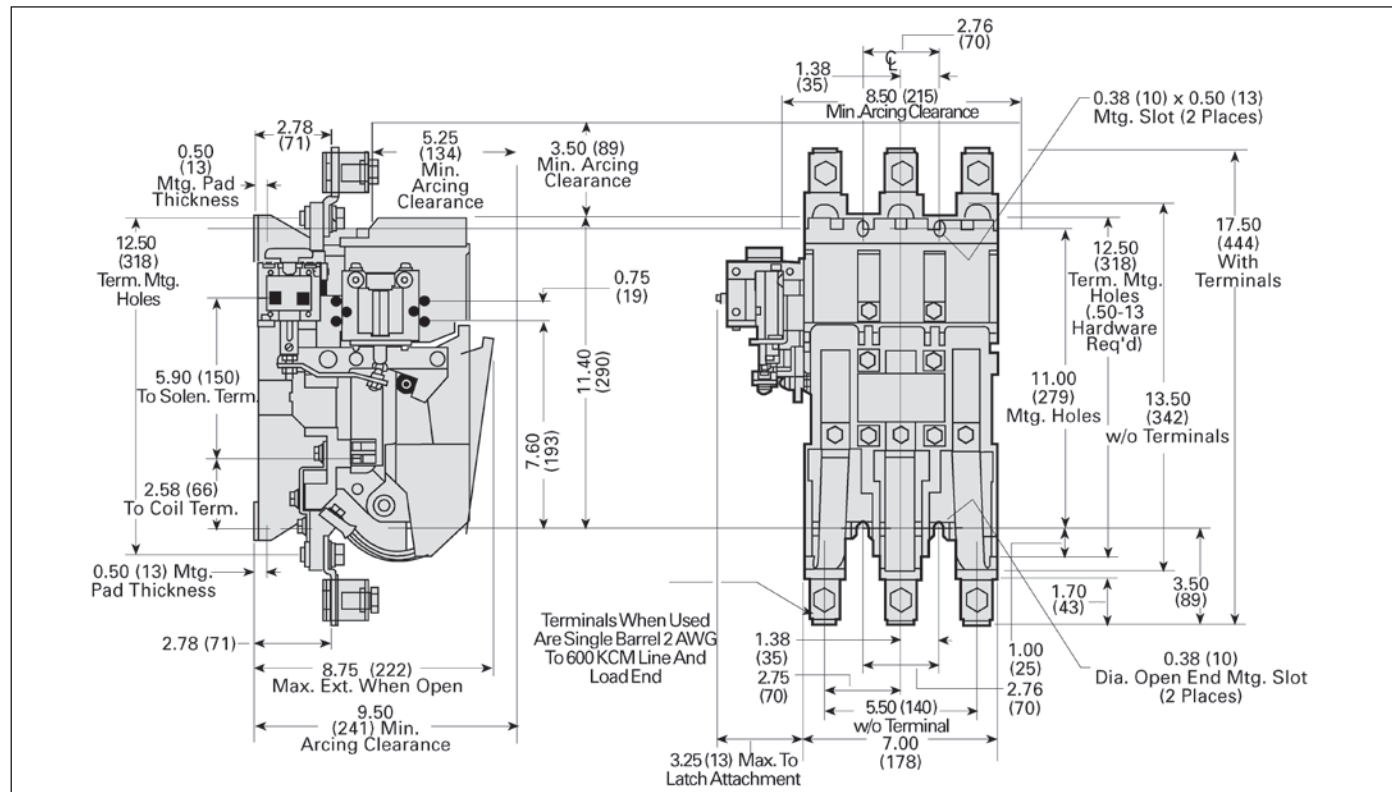
Note: Dimensions for reference, not for construction.
Dimensions in inches (mm).

Lighting Control

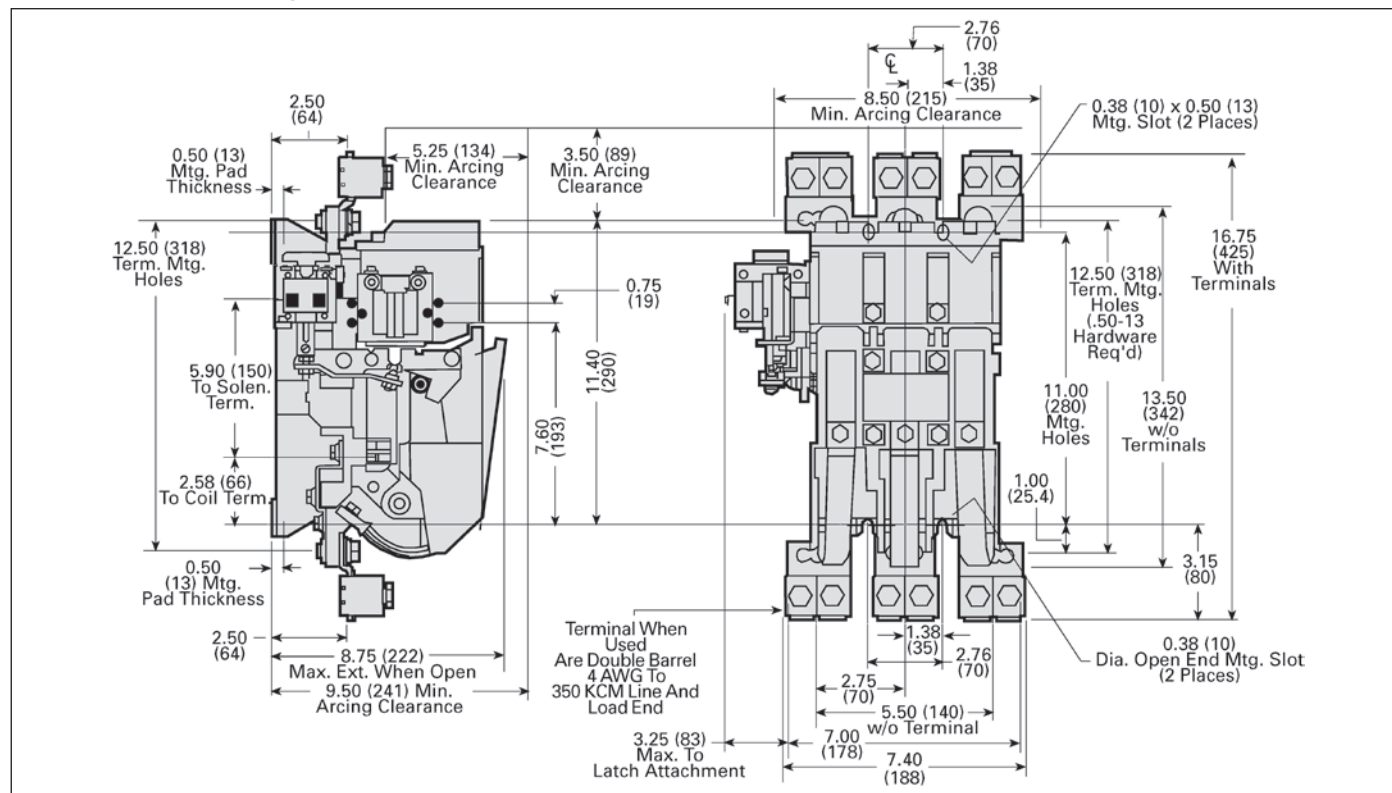
Mechanically Latched 300 and 400 Amps, Class CLM

Dimensions

CLM Contactors 300 Amp



CLM Contactors 400 Amp



Note: Dimensions for reference, not for construction.
Dimensions in inches (mm).

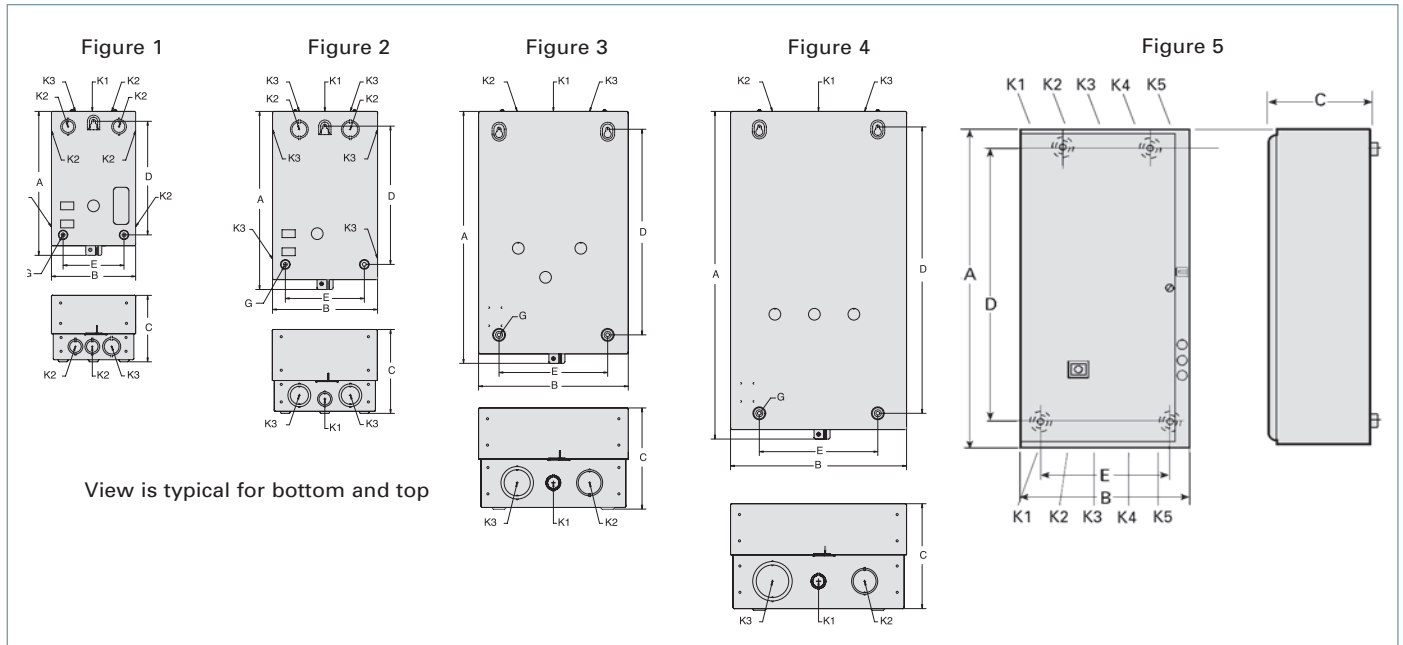
NEMA & General
Purpose Control

CONTROL
PRODUCTS
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Heavy Duty Motor Starters & Contactors

Enclosed, Class 14, 40

Dimensions



Enclosure Type	Size	Fig. ②	Outline Dimensions			Mounting		G ①	Conduit Size					Approx. Ship Wt Lbs	Reference Drawing
			A	B	C	D	E		K1	K2	K3	K4	K5		
1 (Standard width for use with or without CPT)	00-1 3/4 (w/o CPT)	1	11.00	6.41	5.00	8.22	4.63	0.25	0.5	0.5-0.75	0.75-1	—	—	10	D68870
	2-2 1/2 (w/o CPT)	2	13.53	8.00	6.38	10.25	6.00	0.25	0.5-0.75	0.75-1	1-1.25	—	—	15	D68870
	3-3 1/2	3	19.13	11.38	7.69	15.63	8.25	0.25	0.5-0.75	1-1.25	1.5-2	—	—	26	D68870
	4	4	24.88	13.38	8.13	21.75	9.00	0.25	0.5-0.75	1.25-1.5	2-2.5	—	—	37	D68870
	5	5	48.00	24.00	12.00	49.56	22.50	0.38	2-3					135	
	6, 7	5	48.00	24.00	12.00	49.56	22.50	0.38	2-2.5					150	
	8	5	60.00	38.00	16.00	61.56	36.50	0.38						275	
1 (Extra wide for use with CPT)	00-2 1/2	3	19.13	11.38	7.69	15.63	8.25	0.25	0.5-0.75	1-1.25	1.5-2	—	—	26	D68870
	3-3 1/2	4	24.88	13.38	8.13	21.75	9.00	0.25	0.5-0.75	1.25-1.5	2-2.5	—	—	37	D68870

Note: Dimensions are in inches.

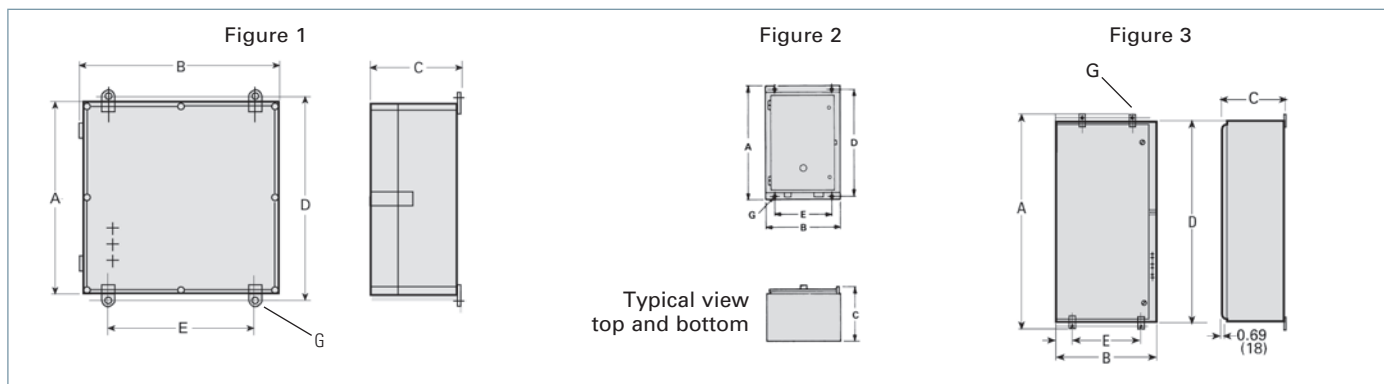
① G designates mounting screw size.

② Enclosures shown in figures 1 - 4 have lift-off covers.
Enclosures shown in figure 5 have hinged covers.

Heavy Duty Motor Starters & Contactors

Enclosed, Class 14, 40

Dimensions



Enclosure Type	Size	Fig.	Outline Dimensions			Mounting		G ^①	Conduit Size			Approx. Ship Wt Lbs	Reference Drawing
			A	B	C	D	E		K1	K2	K3		
4/4X Fiberglass (Standard width for use with or without CPT)	0-1 3/4	1	13.00	7.75	5.44	12.25	5.00	0.375	—	—	—	12	D41547
	2-2 1/2	1	16.00	8.13	6.06	15.25	5.00	0.375	—	—	—	18	D41547
	3-4	1	26.00	13.13	7.56	25.25	10.00	0.375	—	—	—	49	D41552
3/3R/4/12 (Standard width for use without CPT)	0-1 3/4	2	13.00	7.75	5.44	12.25	5.00	0.25	—	—	—	12	D41547
	2-2 1/2	2	16.00	8.13	6.06	15.25	5.00	0.25	—	—	—	18	D41547
	3-4	2	26.00	13.13	7.56	25.25	10.00	0.25	—	—	—	49	D41552
3/3R/4/12 (Extra wide for use with CPT)	0-1 3/4	2	13.00	12.63	5.38	12.25	10.00	0.25	—	—	—	30	D17150
	2-2 1/2	2	16.00	13.25	6.13	15.25	11.00	0.25	—	—	—	33	D17150
	3-3 1/2	2	24.00	20.00	8.00	25.56	18.50	0.375	—	—	—	49	D41552
	4	2	30.00	24.00	10.00	31.56	22.50	0.375	—	—	—	64	D17150
	5	3	48.00	24.00	12.00	49.56	22.50	0.375	—	—	—		D65608007
	6, 7	3	48.00	24.00	12.00	49.56	22.50	0.375	—	—	—		D65608009
	8	3	60.00	38.00	16.00	61.56	36.50	0.375	—	—	—	275	D65632006
4/4X Stainless Steel (Standard width for use without CPT)	0-1 3/4	2	13.00	7.75	5.44	12.25	5.00	0.25	—	—	—	18	D41546
	2-2 1/2	2	16.00	8.13	6.06	15.25	5.00	0.25	—	—	—	36	D41546
	3-4	2	26.00	13.13	7.56	25.25	10.00	0.25	—	—	—	67	D41551
4/4X Stainless Steel (Extra wide for use with CPT)	0-1 3/4	2	13.00	12.63	5.38	12.25	10.00	0.25	—	—	—	30	D41917
	2-2 1/2	2	16.00	13.25	6.13	15.25	11.00	0.25	—	—	—	33	D42935
	3-3 1/2	2	24.00	20.00	8.00	25.56	18.50	0.375	—	—	—	64	D41551
	4	2	30.00	24.00	10.00	31.56	22.50	0.375	—	—	—	67	D43292
	5 (Painted)	3	48.00	24.00	12.00	49.56	22.50	0.375	—	—	—		D65608007
	6, 7 (Painted)	3	48.00	24.00	12.00	49.56	22.50	0.375	—	—	—		D65608009
	8	3	60.00	38.00	16.00	61.56	26.50	0.375	—	—	—	275	D65632006

Note: Dimensions are in inches.

① G designates mounting screw size.

Combination Heavy Duty Starters

Enclosed, Class 17, 18

Dimensions

Figure 1

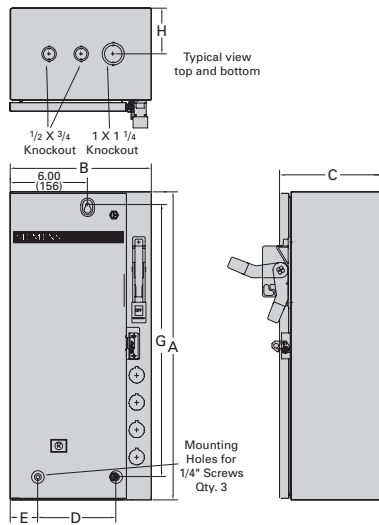


Figure 2

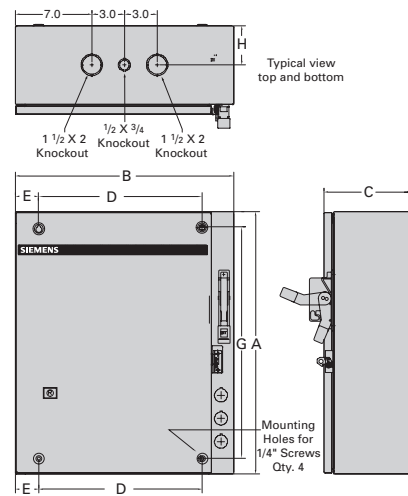


Figure 3

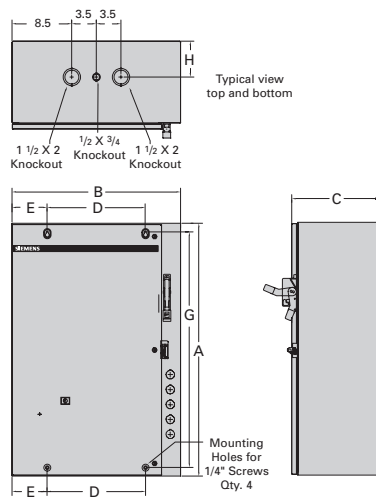
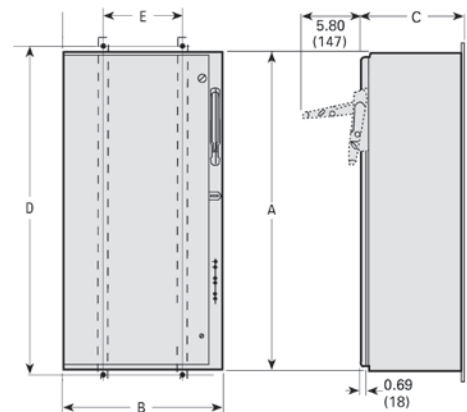


Figure 4



Enclosure Type	Size	Fig.	Outline Dimensions			Mounting Dimensions				Approx. Ship Wt Lbs	Reference Drawing
			A	B	C	D	E	G	H		
1 (Standard width)	0-2	1	24.00	11.00	8.00	6.13	2.13	21.00	3.50	35	D68774001
	2 1/2, 3 (except 200A Disc.)	2	24.00	20.00	8.00	15.00	2.13	21.00	3.50	48	D68774002
	3 (200A Disc.), 3 1/2, 4	3	36.00	24.00	8.00	14.00	5.00	33.50	5.00	101	D68774003
	5	4	72.16	20.00	11.03	71.00	16.00	—	—	250	D56032005
	6	4	60.00	38.00	12.00	36.50	0.75	61.56	—	275	D56032006
1 (Extra wide)	0-2	2	24.00	20.00	8.00	15.00	2.13	21.00	3.50	48	D68774002
	2 1/2, 3	3	36.00	24.00	8.00	14.00	5.00	33.50	5.00	101	D68774003

Note: Dimensions are in inches.

Combination Heavy Duty Starters

Enclosed, Class 17, 18

Dimensions

Figure 1

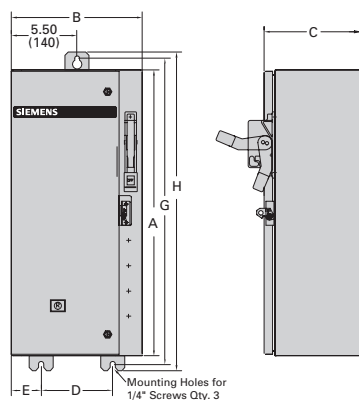


Figure 2

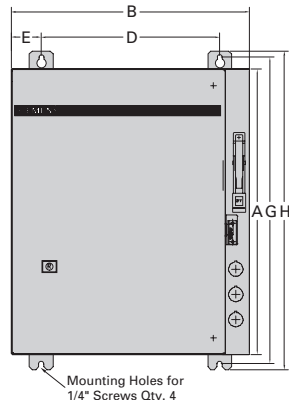


Figure 3

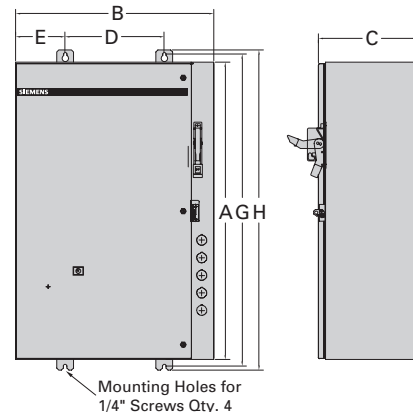


Figure 4

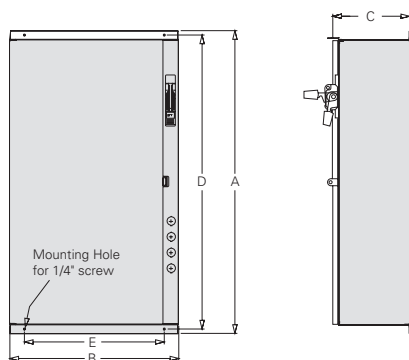
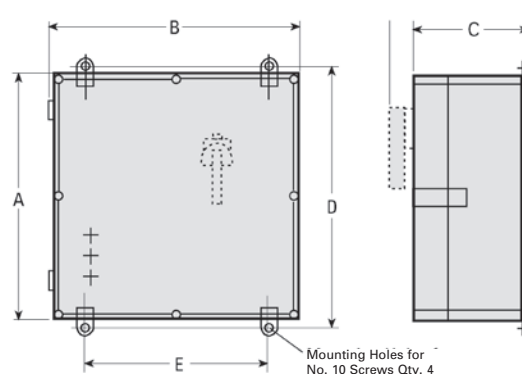


Figure 5

NEMA & General
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Enclosure Type	Size	Fig.	Outline Dimensions			Mounting Dimensions				Approx. Ship Wt Lbs	Reference Drawing
			A	B	C	D	E	G	H		
3/3R/4/4X/12 (Standard width)	0-2	1	24.00	11.00	8.00	6.00	2.50	25.75	26.75	35	D56033
	2 1/2, 3 (except 200A Disc.)	2	24.00	20.00	8.00	15.00	2.50	25.75	26.75	48	D56033
	3 (200A Disc.), 3 1/2, 4	3	36.00	24.00	8.00	12.00	6.00	37.75	38.75	101	D56033
	5 (Painted)	4	72.16	20.00	11.03	71.00	16.00	—	—	250	D56032005
	6 (Painted)	4	60.00	38.00	12.00	36.50	0.75	61.56	63.10	275	D56032006
3/3R/4/4X/12 (Extra wide)	0-2	2	24.00	20.00	8.00	15.00	2.50	25.75	26.75	48	D56033
	2 1/2, 3	3	36.00	24.00	8.00	12.00	6.00	37.75	38.75	101	D56033
4/4X Fiberglass (Standard width)	0-1 3/4	5	23.75	14.62	7.12	24.09	12.20	—	—	42	
	2-3 1/2	5	23.75	23.75	8.50	24.06	21.30	—	—	44	
	4	5	39.37	29.52	12.20	40.94	27.95	—	—	55	

Note: Dimensions are in inches.

Reversing Heavy Duty Starters & Contactors

Enclosed, Class 22, 43

Dimensions

Figure 1

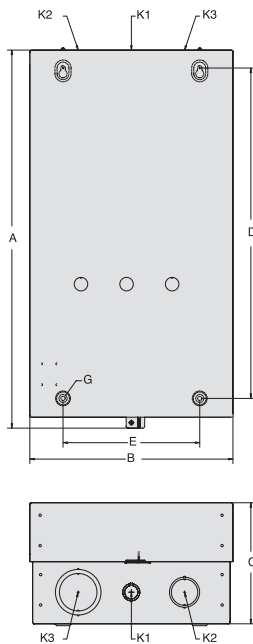


Figure 2

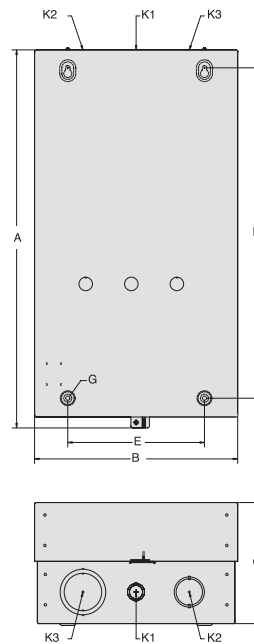
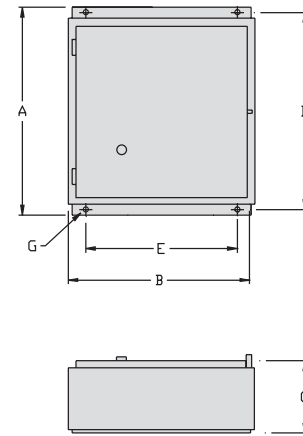


Figure 3



View is typical for bottom and top

Enclosure Type	Size	Fig. ③	Outline Dimensions			Mounting		G ①	Conduit Size				Approx. Ship Wt Lbs	Reference Drawing
			A	B	C	D	E		K1	K2	K3	K4		
1 (Standard width for use with or without CPT)	00-2 1/2	1	19.12	11.38	7.69	15.62	8.25	0.25	0.5-1.25	1-1.25	1.5-2	—	30	D68870
	3-4	2	24.88	13.38	8.12	21.75	9.00	0.25	1.25-1.5	1.25-1.5	2-2.5	—	52	D68870
	5	3	48.00	24.00	12.00	49.56	22.50	0.38	1.25-1.5	1.25-1.5	0.5-0.75	1.25-1.5	135	D65608
	6, 7	3	48.00	24.00	12.00	49.56	22.50	0.38	1.25-1.5	1.25-1.5	0.5-0.75	1.25-1.5	150	D65608013
4/4X Stainless Steel (Standard width for use without CPT)	0-1 3/4	3	12.00	12.00	6.00	12.75	8.00	0.38	—	—	—	—	30	D41917
	2-2 1/2	3	16.00	14.00	6.00	16.75	12.00	0.38	—	—	—	—	33	D42935
	3-3 1/2 (w/o CPT)	3	24.00	20.00	8.00	25.56	18.50	0.38	—	—	—	—	53	D17423
	3-3 1/2 (w/ CPT), 4	3	30.00	24.00	10.00	31.56	22.50	0.38	—	—	—	—	64	D43292
	5 ②	3	48.00	24.00	12.00	49.56	22.50	0.38	—	—	—	—		D65608007
	6, 7 ②	3	48.00	24.00	12.00	49.56	22.50	0.38	—	—	—	—		65608009

Note: Dimensions are in inches.

① G designates mounting screw size.

② Type 4 painted enclosure.

③ Enclosures shown in figures 1 and 2 have lift-off covers. Enclosures shown in figure 3 have hinged covers.

Reversing Heavy Duty Starters & Contactors

Enclosed, Class 22, 43

Dimensions

Figure 5

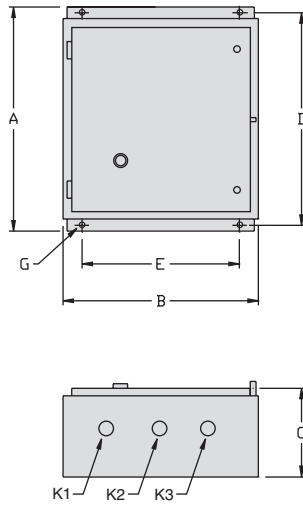


Figure 6

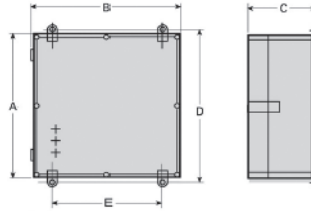
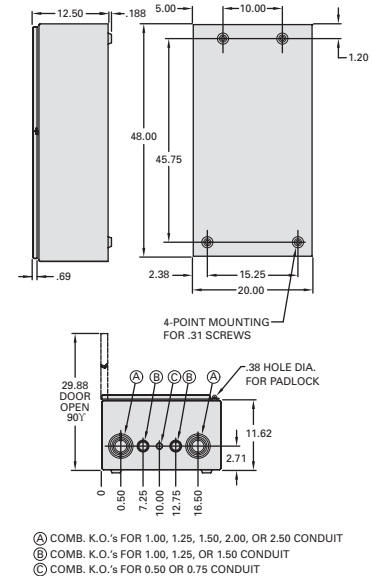


Figure 7



View is typical for bottom and top

Enclosure Type	Size	Fig.	Outline Dimensions			Mounting		G ^①	Conduit Size			Approx. Ship Wt Lbs	Reference Drawing
			A	B	C	D	E		K1	K2	K3		
3/3R/4/12 (Standard width for use with or without CPT)	0-1 3/4	5	13.00	12.63	5.63	12.25	10.00	0.25	—	—	—	30	D17150
	2-2 1/2	5	16.00	13.25	6.13	15.25	11.00	0.25	—	—	—	33	D17150
	3-3 1/2 (w/o CPT)	5	24.00	20.00	8.00	25.56	18.50	0.380	—	—	—	53	D17150
	3-4 (w/ CPT)	5	30.00	24.00	10.00	31.56	22.50	0.380	—	—	—	64	D17150
	5	7	48.00	24.00	12.00	49.56	22.50	0.375	—	—	—		D65608007
	6	7	48.00	24.00	12.00	49.56	22.50	0.375	—	—	—		
4/4X Fiberglass (Standard width for use with or without CPT)	0-2 1/2	6	24.00	20.00	8.00	25.56	18.50	0.380	—	—	—	35	
	3-4	6	30.00	24.00	10.00	31.56	22.50	0.380	—	—	—	38	

Note: Dimensions are in inches.

① G designates mounting screw size.

Combination Reversing Heavy Duty Starters

Enclosed, Class 25, 26

Dimensions

Figure 1

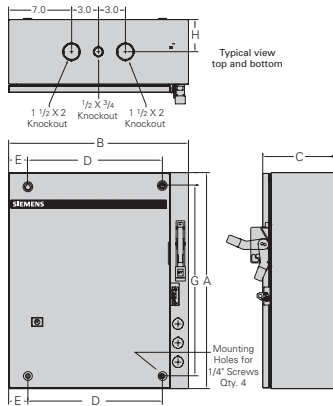


Figure 2

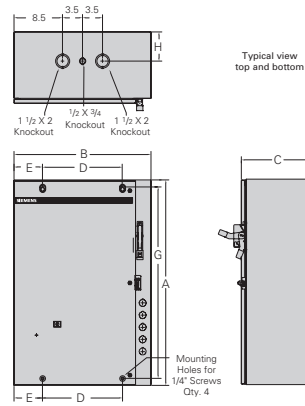


Figure 3

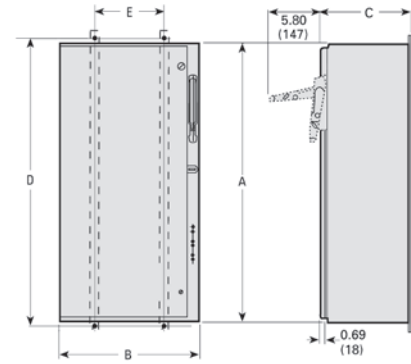


Figure 4

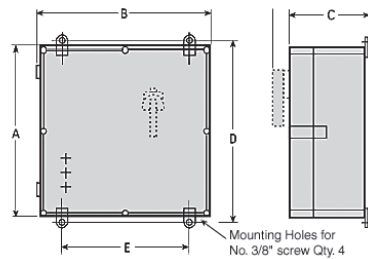
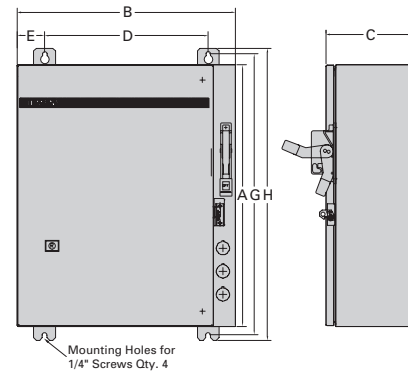


Figure 5



Enclosure Type	Size	Fig.	Outline Dimensions			Mounting Dimensions				Approx. Ship Wt Lbs	Reference Drawing
			A	B	C	D	E	G	H		
1 (Standard width)	0-2 1/2	1	24.00	20.00	8.00	15.00	2.13	21.00	3.50	60	D68774002
	3-4	2	36.00	24.00	8.00	14.00	5.00	33.50	5.00	121	D68774003
	5	3	72.16	20.00	11.03	71.00	16.00	—	—	250	D56032005
	6	3	72.10	40.20	18.10	78.00	18.00	—	—	275	D56032006
3/3R/4/4X/12 (Standard width)	0-2 1/2	5	24.00	20.00	8.00	15.00	3.50	25.75	26.75	63	D68774005
	3-4	5	36.00	24.00	8.00	14.00	6.00	37.75	38.75	124	D68774006
	5(Painted)	3	72.16	20.00	11.03	71.00	16.00	—	—	250	D56032005
	6(Painted)	3	72.10	40.20	18.10	78.00	18.00	—	—	275	D56032006

Enclosure Type	Size	Fig.	Outline Dimensions			Mounting		G ^①	Conduit Size			Approx. Ship Wt Lbs	Reference Drawing
			A	B	C	D	E		K1	K2	K3		
4/4X Fg (Standard width)	0-2 1/2	4	24.00	20.00	8.00	25.56	18.50	0.38	—	—	—	18	24-139-861-001
	3-4	4	30.00	24.00	10.00	31.56	22.50	0.38	—	—	—	28	24-139-861-003

Note: Dimensions are in inches.

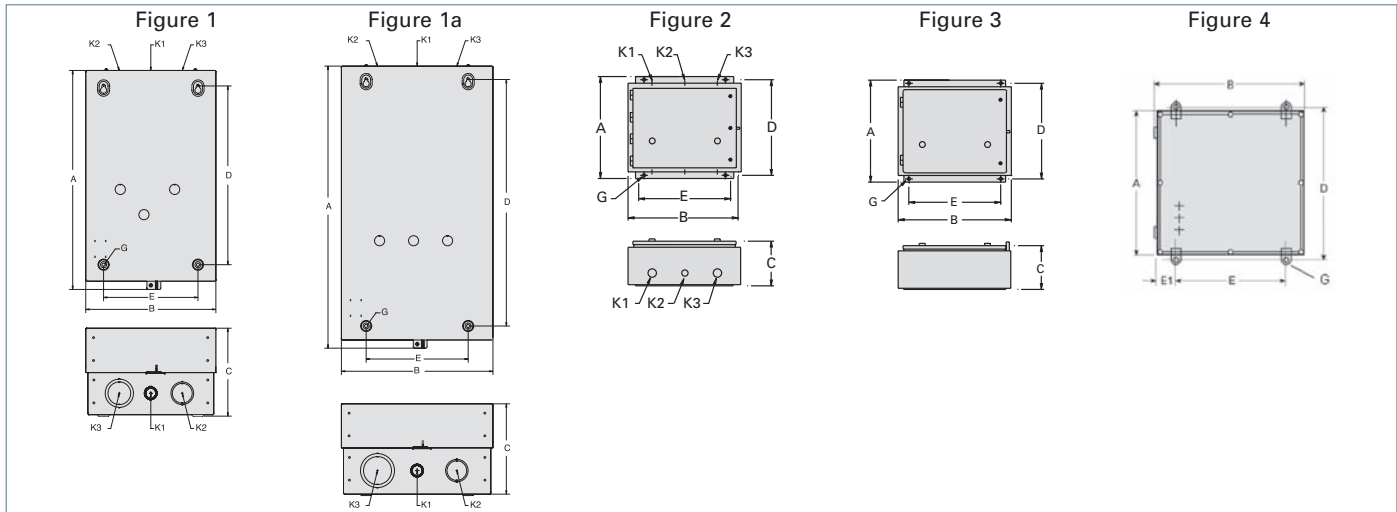
① G designates mounting screw size.

NEMA & General
Purpose Control17
CONTROL
PRODUCTS

Two Speed Heavy Duty Starters

Enclosed, Class 30

Dimensions



Starter Type (Enclosure Type)	Size	Fig. ②	Outline Dimensions			Mounting			Conduit Size			Approx. Ship Wt Lbs	Reference Drawing
			A	B	C	D	E	G ①	K1	K2	K3		
2 Speed 1 Winding (Type 1 for use with or without CPT)	0-1 3/4 w/o CPT	1	19.13	11.38	7.69	15.63	8.25	0.25	0.5-0.75	1.0-1.25	1.5-2	26	D68870
	0-1 3/4 w/ CPT	1a	24.88	13.38	8.13	21.75	9.00	0.25	0.5-0.75	1.25-1.5	2-2.5	52	D68870
	2-2 1/2	2	16.00	17.13	7.63	15.25	14.00	0.25	0.5-0.75	1.25-1.5	1.25-1.5	39	D42932001
	3-3 1/2	2	24.88	13.38	8.13	21.75	9.00	0.25	0.5-0.75	1.25-1.5	2-2.5	60	D72956002
2 Speed 1 Winding (Type 4/4X Stainless Steel for use with or without CPT)	4	3	24.88	13.38	8.13	21.75	9.00	0.25	0.5-0.75	1.25-1.5	2-2.5	61	D43292001
	0-1 3/4 w/o CPT	3	12.00	12.00	6.00	12.75	10.00	0.38	—	—	—	34	D41917000
	0-1 3/4 w/ CPT	3	16.00	16.00	8.00	17.60	14.50	0.38	—	—	—	47	
	2-2 1/2 w/o CPT	3	16.00	16.00	8.00	17.60	14.50	0.38	—	—	—	47	
2 Speed 1 Winding (Type 3/3R/4/12 for use with or without CPT)	2-2 1/2 w/ CPT	3	30.00	24.00	10.00	31.56	22.50	0.38	—	—	—	55	
	3-3 1/2	3	30.00	24.00	10.00	31.56	22.50	0.38	—	—	—	61	D43292001
	4	3	30.00	24.00	10.00	31.56	22.50	0.38	—	—	—	61	D43292001
	0-1 3/4 w/o CPT	3	13.00	12.63	5.38	12.25	10.00	0.25	—	—	—	34	
2 Speed 1 Winding (Type 4/4X Fg. for use w/ or w/o CPT)	0-1 3/4 w/ CPT	3	16.00	17.13	7.63	15.25	14.00	0.25	—	—	—	47	D17150010
	2-2 1/2 w/o CPT	3	16.00	17.13	7.63	15.25	14.00	0.25	—	—	—	47	D17150010
	2-2 1/2 w/ CPT	3	24.00	20.00	8.00	25.56	18.50	0.38	—	—	—	55	
	3-4	3	30.00	24.00	10.00	31.56	22.50	0.38	—	—	—	61	D19673000
2 Speed 2 Winding (Type 1 for use with or without CPT)	0-2 1/2	4	23.78	23.78	6.89	—	—	0.25	—	—	—	28	24139861003
	3-4	4	39.38	29.53	12.60	—	—	—	—	—	—		24139861004
2 Speed 2 Winding (Type 4/4X Stainless Steel for use with or without CPT)	0-2 1/2 w/o CPT	1	19.13	11.38	7.69	15.63	8.25	0.25	0.5-0.75	1.0-1.25	1.5-2	30	D68870
	0-2 1/2 w/ CPT	1a	24.88	13.38	8.13	21.75	9.00	0.25	0.5-0.75	1.25-1.5	2-2.5	52	D68870
	3-4 w/o CPT	1a	24.88	13.38	8.13	21.75	9.00	0.25	0.5-0.75	1.25-1.5	2-2.5	52	D68870
	0-1 3/4 w/o CPT	3	12.00	12.00	6.00	12.75	10.00	0.38	—	—	—	34	
2 Speed 2 Winding (Type 3/3R/4/12 for use with or without CPT)	0-1 3/4 w/ CPT	3	16.00	16.00	8.00	17.60	14.50	0.38	—	—	—	41	
	2-2 1/2 w/o CPT	3	16.00	16.00	8.00	17.60	14.50	0.38	—	—	—	41	
	2-2 1/2 w/ CPT	3	16.00	16.00	8.00	17.60	14.50	0.38	—	—	—	41	
	3-3 1/2 w/o CPT	3	30.00	24.00	10.00	31.56	22.50	0.38	—	—	—	55	
2 Speed 2 Winding (Type 4/4X Fg. for use w/ or w/o CPT)	3-3 1/2 w/ CPT	3	30.00	24.00	10.00	31.56	22.50	0.38	—	—	—	61	D43292001
	4	3	30.00	24.00	10.00	31.56	22.50	0.38	—	—	—	61	D43292001
	0-1 3/4 w/o CPT	3	13.00	12.63	5.38	12.25	10.00	0.25	—	—	—	34	
	0-1 3/4 w/ CPT	3	16.00	17.13	7.63	15.25	14.00	0.25	—	—	—	41	D17150010
2 Speed 2 Winding (Type 3/3R/4/12 for use with or without CPT)	2-2 1/2 w/o CPT	3	16.00	13.25	6.13	15.25	11.00	0.25	—	—	—	41	
	2-2 1/2 w/ CPT	3	16.00	17.13	7.63	15.25	14.00	0.25	—	—	—	41	D17150010
	3-3 1/2 w/o CPT	3	24.00	20.00	8.00	25.56	18.50	0.38	—	—	—	55	
	3-4 w/CPT	3	30.00	24.00	10.00	31.56	22.50	0.38	—	—	—	61	D19673000
2 Speed 2 Winding (Type 4/4X Fg. for use w/ or w/o CPT)	0-2 1/2	4	23.78	23.78	6.89	—	—	0.25	—	—	—	28	24139861003
	3-4	4	39.38	29.53	12.60	—	—	—	—	—	—		24139861004

Note: Dimensions are in inches.

① G designates mounting screw size.

② Enclosures shown in figures 1 and 1a have lift-off covers.
Enclosures shown in figures 2, 3 and 4 have hinged covers.

Combination Two Speed Heavy Duty Starters

Enclosed, Class 32

Dimensions

Figure 1

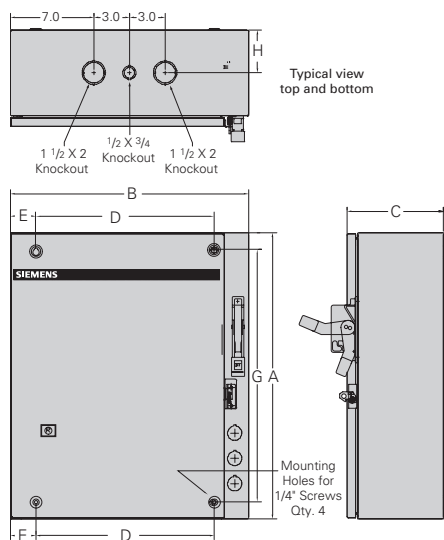


Figure 2

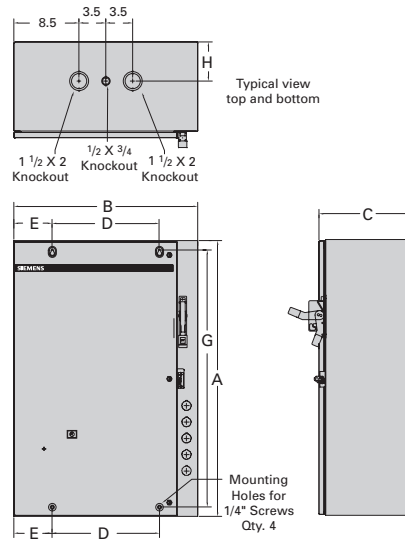


Figure 3

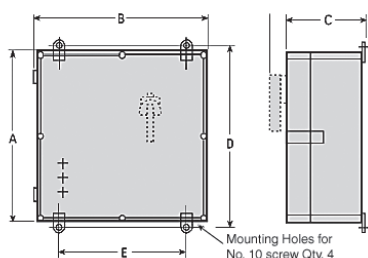
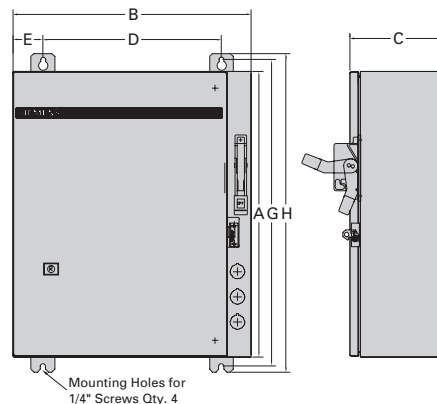


Figure 4



NEMA 1 Standard Width 0-4

Size	Figure	Outline Dimensions			Mounting Dimensions				Approx Ship Wt Lbs (Kg)	Ref Dwg
		A	B	C	D	E	G	H		
0-1 1/4 (1 Winding)	1	24 (610)	20 (508)	8 (203)	15.00 (381)	2.125 (54)	21.00 (533)	3.50 (90)	68 (31)	D68774
2-4 (1 Winding)	2	36 (914)	24 (610)	8 (203)	14.00 (356)	5.00 (127)	33.50 (851)	3.50 (90)	71 (32)	D68774
0-2 1/2 (2 Winding)	1	24 (610)	20 (508)	8 (203)	15.00 (381)	2.125 (54)	21.00 (533)	3.50 (90)	135 (61)	D68774
3-4 (2 Winding)	2	36 (914)	24 (610)	8 (203)	14.00 (356)	5.00 (127)	33.50 (851)	3.50 (90)	138 (63)	D68774

NEMA 12/3/3R/4 (Painted), 4/4X Stainless Standard Width 0-4

0-1 1/4 (1 Winding)	4	24 (610)	20 (508)	8 (203)	15.00 (381)	2.50 (64)	25.75 (654)	26.75 (680)	68 (31)	D68774
2-4 (1 Winding)	4	36 (914)	24 (610)	8 (203)	12 (305)	6.00 (152)	37.75 (959)	38.75 (984)	71 (32)	D68774
0-2 1/2 (2 Winding)	4	24 (610)	20 (508)	8 (203)	15.00 (381)	2.50 (64)	25.75 (654)	26.75 (680)	135 (61)	D68774
3-4 (2 Winding)	4	36 (914)	24 (610)	8 (203)	12 (305)	6.00 (152)	37.75 (959)	38.75 (984)	138 (63)	D68774

Nema 4X Fiberglass 0-4

Size	Figure	Outline Dimensions			Mounting Dimensions		Mtg Screw	Conduit Size			Approx Ship Wt Lbs (Kg)	Ref Dwg
		A	B	C	D	E		K1	K2	K3		
0-1 1/4	3	23.780 (604)	14.680 (373)	6.890 (175)	24.125 (613)	12.250 (311)	1/4	—	—	—	18 (8)	—
2-4	3	23.780 (604)	23.780 (604)	6.890 (175)	24.125 (613)	21.250 (540)	1/4	—	—	—	28 (13)	—

Note: Dimensions in inches (mm).

Dimensions for reference, not for construction.

Contact sales office for dimensions not listed.

NEMA & General
Purpose Control

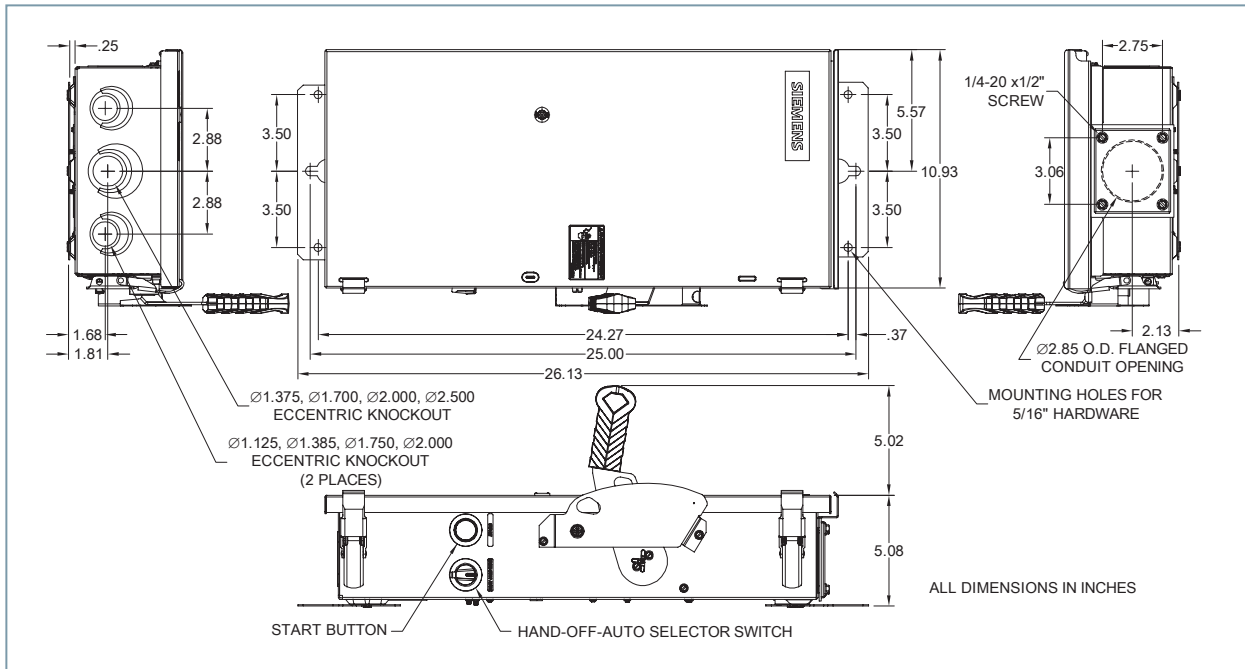
17
CONTROL
PRODUCTS

Reduced Voltage Starters

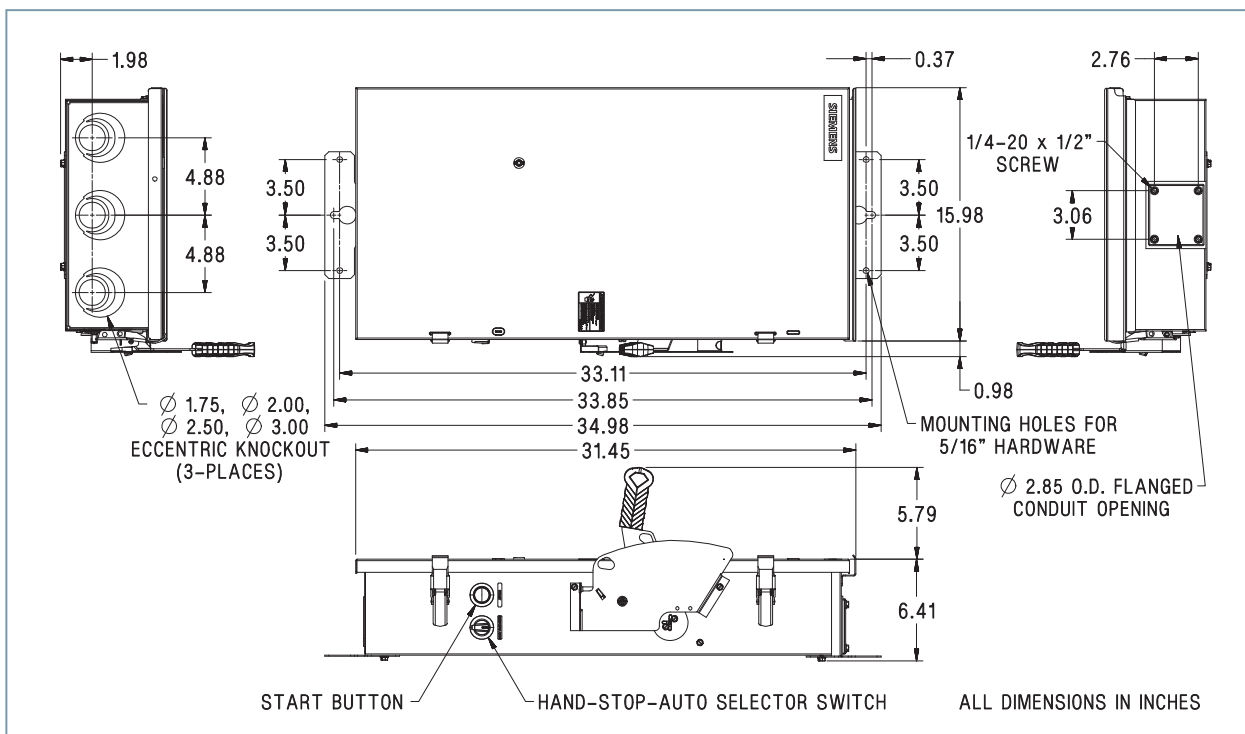
Class 82

Dimensions

Class 82 size 1



Class 82 Size 1 (over-sized), 2

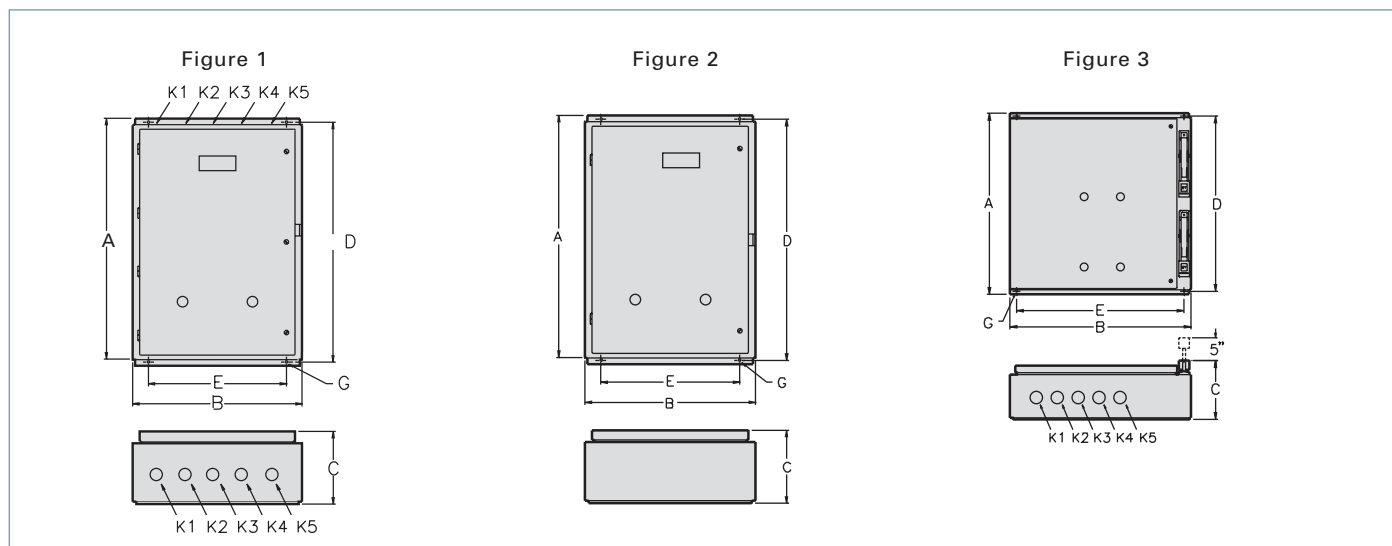


Note: Dimensions are in inches.

Duplex Heavy Duty Controllers

Class 83, 84

Dimensions



Class 83 Non-Combination Type

Enclosure Type	Size	Fig.	Outline Dimensions			Mounting		G ^①	Conduit Size					Approx. Ship Wt Lbs	Reference Drawing
			A	B	C	D	E		K1	K2	K3	K4	K5		
1	0-1 3/4	1	20.00	20.00	6.00	21.60	18.50	0.38	—	—	—	—	—	20	
	2, 2 1/2	1	24.00	20.00	8.00	25.60	18.50	0.38	—	—	—	—	—	57	
	3-4	1	30.00	24.00	10.00	31.60	22.50	0.38	—	—	—	—	—	93	
3R/4/12	0-1 3/4	2	20.00	20.00	6.00	21.60	18.50	0.38	—	—	—	—	—	20	
	2, 2 1/2	2	24.00	20.00	8.00	25.60	18.50	0.38	—	—	—	—	—	57	
	3-4	2	30.00	24.00	10.00	31.60	22.50	0.38	—	—	—	—	—	93	
4X Stainless Steel	0-1 3/4	2	20.00	16.00	6.00	21.60	14.50	0.38	—	—	—	—	—	20	
	2, 2 1/2	2	24.00	20.00	8.00	25.60	18.50	0.38	—	—	—	—	—	57	
	3-4	2	30.00	24.00	10.00	31.60	22.50	0.38	—	—	—	—	—	93	

Class 84 Combination Type

Enclosure Type	Size	Fig.	Outline Dimensions			Mounting		G ^①	Conduit Size					Approx. Ship Wt Lbs	Reference Drawing
			A	B	C	D	E		K1	K2	K3	K4	K5		
1, 3R/4/12	0-2	3	34.13	24.63	7.56	33.00	20.00	0.38	0.88-1.13	0.88-1.13	1.13-1.36	1.13-1.36	1.36-1.72	70	
	2 1/2-4	3	48.00	36.00	10.00	49.60	34.50	0.38	—	—	—	—	—	106	
4X Stainless Steel	0-2	3	36.00	24.00	10.00	37.60	22.50	0.38	—	—	—	—	—	70	
	2 1/2-4	3	48.00	36.00	12.00	49.60	34.50	0.38	—	—	—	—	—	106	

Note: Dimensions are in inches.

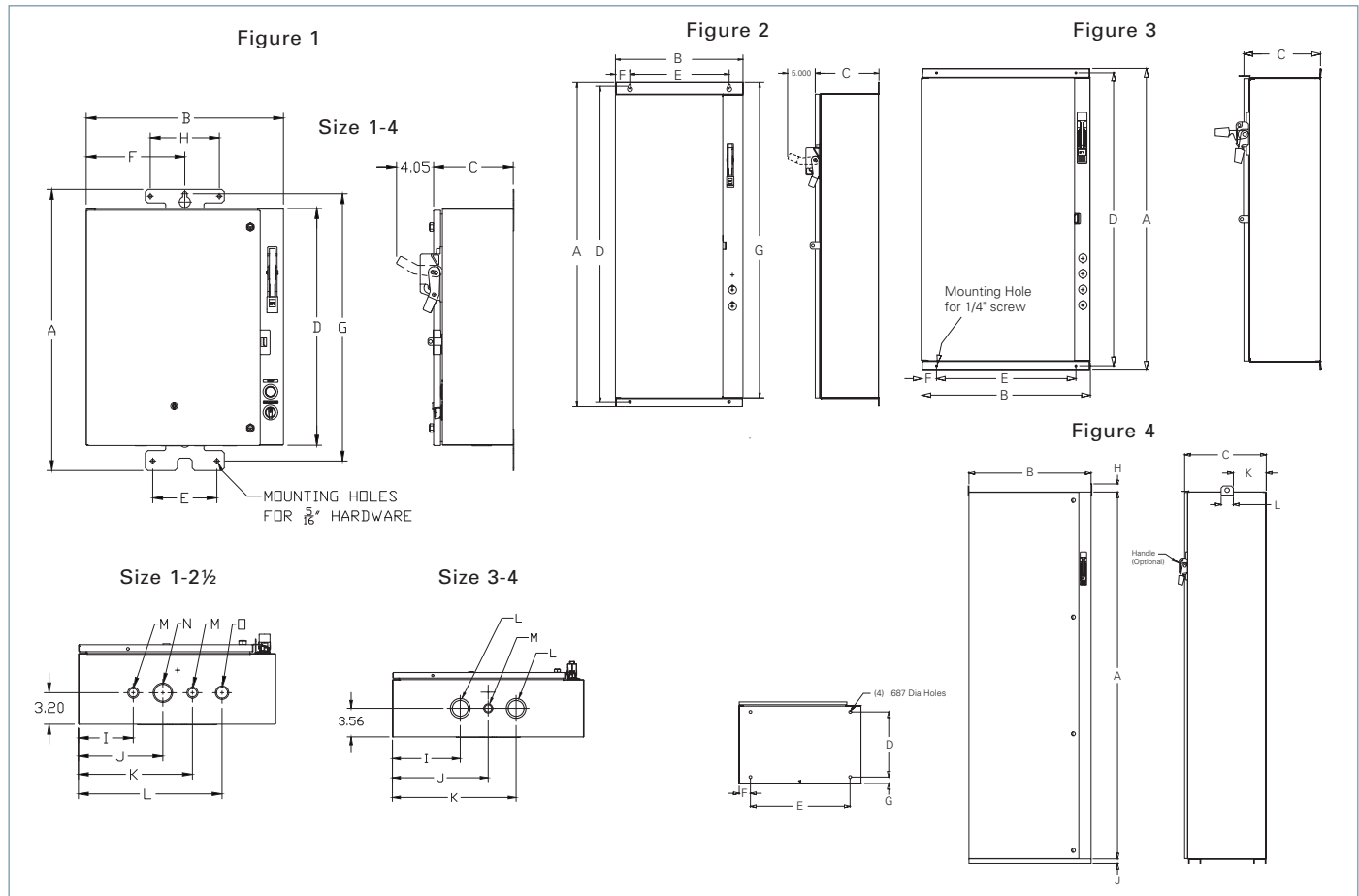
① G designates mounting screw size.

Pump Control Panels

Class 3RE48, 87, 88

Dimensions

Outline Drawings



Open air contacts (Class 3RE48 and 87)

Size	Fig.	Outline Dimensions			Mounting Dimensions					Conduit Knockout							Reference Drawing
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1-2 1/2	1	28.50	20.00	8.06	24.00	6.50	10.00	27.10	7.00	5.50	8.50	11.50	14.50	1.12-.875	1.96-1.71	1.35-1.12	
3-4	1	40.20	24.00	8.06	36.00	6.50	12.00	38.80	7.00	8.50	12.00	15.50	2.46-1.96	1.12-.875	—	—	
5	2	72.16	20.00	10.00	71.00	16.00	2.13	70.91	—	—	—	—	—	—	—	—	
6	2	60.00	38.00	16.00	61.60	36.50	0.75	—	—	—	—	—	—	—	—	—	

Vacuum contacts (Class 87)

Size	Fig.	Outline Dimensions			Mounting Dimensions					Conduit Knockout				Reference Drawing
		A	B	C	D	E	F	G	H	I	J	K	L	
4	2	55.97	24.38	9.69	54.81	20.25	2.13	54.72	26.19	—	—	—	—	
5	2	72.16	20.00	10.00	71.00	16.00	2.13	70.91	—	—	—	—	—	
6	2	60.00	38.00	16.00	61.60	36.50	0.75	—	—	—	—	—	—	

Reduced voltage (Class 88)

Size			Fig.	Outline Dimensions					Reference Drawing
AutoTransformer	Part Winding & Wye Delta								
Disc. & MCP Type	Disc. Type	MCP Type							
2-2 1/2	1-2	1-2 1/2	3	42.00	32.00	12.00	43.60	30.50	
3-3 1/2	2 1/2-3 1/2	3-3 1/2	3	48.00	38.00	12.00	49.60	36.50	
4	4	4	3	60.00	38.00	16.00	61.60	36.50	
5, 6	5, 6	5, 6	4	90.00	30.00	20.00	16.00	24.44	

Note: Dimensions are in inches.
All enclosures are Type 3R

Lighting Contactors

Enclosed Contactors, Class LC and LE

Dimensions

Figure 1

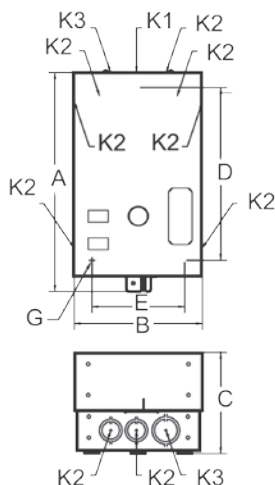


Figure 2

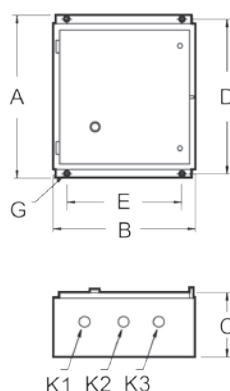
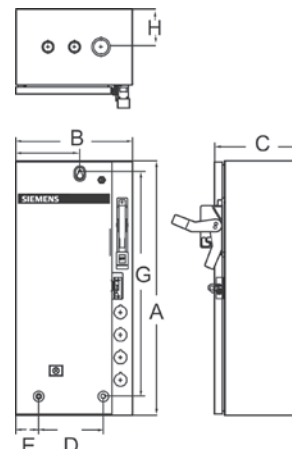


Figure 3



Class LC and LE Non-combo

Enclosure Type	Contactor Rating	Fig.	Outline Dimensions			Mounting ^①		Conduit Size					Reference Drawing
			A	B	C	D	E	K1	K2	K3	K4	K5	
1 without CPT	LE 20/30A 3-4P	1	10.97	6.41	5.03	8.22	4.62	0.5	0.50–0.75	0.75–1	—	—	
	LC 30A 2-12P, LE 60A 3P	1	13.53	7.97	6.38	10.25	6	0.50–0.75	0.75–1	1–1.25	—	—	
	LE 30/60A 6-12P, LE 100A 3P	1	19.12	11.38	7.69	15.62	8.25	0.50–0.75	1–1.25	1.5–2	—	—	
	LE 200-400A 3P	2	26	17.62	12.5	25.19	15.5	0.50–0.75	1.25–1.5	1.25–1.5	—	—	
1 with CPT	LC 30A 2-12P, LE 20A 3-4P, LE 30A 3-9P, LE 60A 3-9P, LE 100A 3P	1	19.12	11.38	7.69	15.62	8.25	0.50–0.75	1–1.25	1.5–2	—	—	
	LE 30/60A 12P	1	24.88	13.38	8.12	21.75	9	0.50–0.75	1.25–1.5	2–2.5	—	—	
	LE 200-400A 3P	2	26	17.62	12.5	25.19	15.5	—	1.25–1.5	1.25–1.5	—	—	
3/3R/4/12 without CPT	LE 20A 3-4P, LE 30/60A 3-9P, LC 30A 2-12P	2	16	13.25	6.12	15.25	11	—	—	—	—	—	
	LE 30/60A 12P	2	26	13.12	7.56	25.25	10	—	—	—	—	—	
	LE 100A 3P	2	26	13.12	7.56	25.25	10	—	—	—	—	—	
	LE 200-400A 3P	2	26	17.62	12.5	25.19	15.5	—	—	—	—	—	
4/4X without CPT	LE 20A 3-4P, LE 30/60A 3-9P, LC 30A 2-12P	2	16	14	6.02	16.75	12	—	—	—	—	—	
	LE 30/60A, 12P	2	24	16	8.76	22.5	14.5	—	—	—	—	—	
	LE 100A 3P	2	24	16	8.76	22.5	14.5	—	—	—	—	—	
	LE 200-400A, 3P	2	24	20	10	22.5	18.5	—	—	—	—	—	
3/3R/4/12 with CPT	LE 20A 3-4P, LE 30/60A 3-9P, LC 30A 2-12P	2	16	13.25	6.12	15.25	11	—	—	—	—	—	
	LE 30/60A, 12P	2	26	13.12	7.56	25.25	10	—	—	—	—	—	
	LE 100A 3P	2	26	13.12	7.56	25.25	10	—	—	—	—	—	
	LE 200-400A, 3P	2	26	17.62	12.5	25.19	15.5	—	—	—	—	—	
4/4X with CPT	LE 20A 3-4P, LE 30/60A 3-9P, LC 30A 2-12P	2	16	14	6.02	16.75	12	—	—	—	—	—	
	LE 30/60A, 12P	2	24	16	8.76	22.5	14.5	—	—	—	—	—	
	LE 100A 3P	2	24	16	8.76	22.5	14.5	—	—	—	—	—	
	LE 200-400A, 3P	2	24	20	10	22.5	18.5	—	—	—	—	—	

Class LE Combo

Enclosure Type	Type	Contactor Rating	Fig.	Outline Dimensions			Reference Drawing
				A	B	C	
1, 12/3R & 4/4X with & without CPT	Fusible and Non-fusible Disconnect	20–60A	3	24	11	8	
		100A	3	24	20	8	
		200A	3	46	20	10	
		300A	3	76	22	13	
	Circuit Breaker	20–100A	3	24	11	8	

Note: Dimensions are in inches.

① Mounting screw G size is 0.25".

Lighting Contactors

Enclosed Contactors, Class CLM, CM

Dimensions

Figure 1

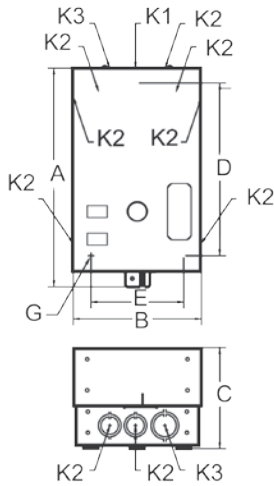


Figure 2

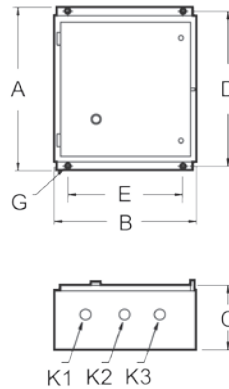
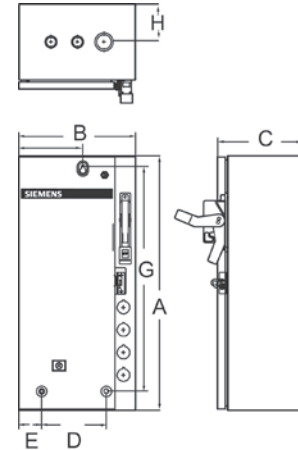


Figure 3



Class CLM Non-combo

Enclosure Type	Contactor Rating (Class CLM)	Fig.	Outline Dimensions			Mounting ^①		Conduit Size					Reference Drawing
			A	B	C	D	E	K1	K2	K3	K4	K5	
1 without CPT	30A (2-5p)	1	10.97	6.41	5.03	8.22	4.62	0.5	0.50-0.75	0.75-1	—	—	
	20A (2-12p), 60A (2-5p)	1	13.53	7.97	6.38	10.25	6.00	0.50-0.75	0.75-1	1-1.25	—	—	
	30-60A (6-12p)	2	16.00	17.12	7.62	15.25	14.00	0.50-0.75	1.25-1.5	1.25-1.5	—	—	
	100A (2-5p)	1	19.12	11.38	7.69	15.62	8.25	0.50-0.75	1-1.25	1.5-2	—	—	
	200A (2-5p)	1	24.88	13.38	8.12	21.75	9.00	0.50-0.75	1.25-1.5	2.5	—	—	
1 with CPT	300-400A (2-5p)	2	48.00	24.00	12.00	46.50	22.50	—	—	—	—	—	
	20A (2-12p), 30A (2-5p)	1	19.12	11.38	7.69	15.62	8.25	0.50-0.75	1-1.25	1.5-2	—	—	
	30-60A (6-12p)	2	16.00	17.12	7.62	15.25	14.00	0.50-0.75	1.25-1.5	1.25-1.5	—	—	
	100-200A (2-5p)	2	26.00	17.62	12.50	25.19	15.50	—	1.25-1.5	1.25-1.5	—	—	
	300-400A (2-5p)	2	48.00	24.00	12.00	46.50	22.50	—	—	—	—	—	
3/3R/4/12 without CPT	20A (2-12p), 30A (2-12p), 60A (2-10p)	2	16.00	13.25	6.12	15.25	11.00	—	—	—	—	—	
	100A (2-5p)	2	16.00	13.00	9.50	15.12	11.00	—	—	—	—	—	
	60A (12p)	2	19.00	22.00	8.00	—	—	—	—	—	—	—	
	200A (2-5p)	2	26.00	17.62	12.50	23.19	15.50	—	—	—	—	—	
	300A-400A (3p)	2	48.00	24.00	12.00	46.50	22.50	—	—	—	—	—	
3/3R/4/12 with CPT	20A (2-12p), 30A (2-5p)	2	16.00	13.25	6.12	15.25	11.00	—	—	—	—	—	
	30A (6-12p)	2	16.00	17.12	7.62	15.25	14.00	—	—	—	—	—	
	60-100A (2-5p)	2	16.00	13.00	9.50	15.12	11.00	—	—	—	—	—	
	60A (6-12p)	2	19.00	22.00	8.00	—	—	—	—	—	—	—	
	200A (3p)	2	26.00	17.62	12.50	25.19	15.50	—	—	—	—	—	
4/4X without CPT	300-400A (3p)	2	48.00	24.00	12.00	46.50	22.50	—	—	—	—	—	
	20A (2-12p), 30A (2-12p), 60A (2-10p)	2	16.00	14.00	6.02	16.75	12.00	—	—	—	—	—	
	100A (2-5p)	2	16.00	16.00	10.00	14.50	14.50	—	—	—	—	—	
	60A (12p)	2	19.00	22.00	8.00	—	—	—	—	—	—	—	
	200A (2-5p)	2	24.00	20.00	10.00	22.50	18.50	—	—	—	—	—	
4/4X with CPT	300A-400A (3p)	2	48.00	20.00	12.50	49.00	10.00	—	—	—	—	—	
	20A (2-12p), 30A (2-5p)	2	16.00	14.00	6.02	16.75	12.00	—	—	—	—	—	
	30A (6-12p)	2	16.00	20.00	8.00	14.50	18.50	—	—	—	—	—	
	60-100A (2-5p)	2	16.00	16.00	10.00	14.50	14.50	—	—	—	—	—	
	60A (6-12p)	2	24.00	20.00	8.00	22.50	18.50	—	—	—	—	—	
	200A (3p)	2	24.00	20.00	10.00	22.50	18.50	—	—	—	—	—	
	300-400A (3p)	2	48.00	20.00	12.50	49.00	10.00	—	—	—	—	—	

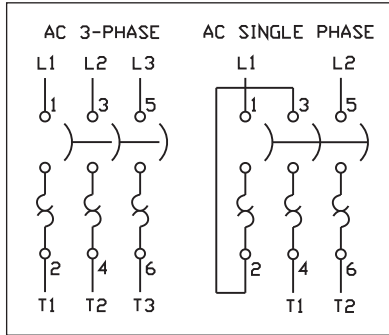
Class CM Combo

Enclosure Type	Type	Contactor Rating	Fig.	Outline Dimensions			Reference Drawing
				A	B	C	
1, 12/3R & 4/4X with & without CPT	Fusible and Non-fusible Disconnect	20-60A	3	24	11	8	
		100A	3	24	20	8	
		200A	3	42	30	12	
		300A	3	60	38	12	
	Circuit Breaker	20-100A	3	24	11	8	

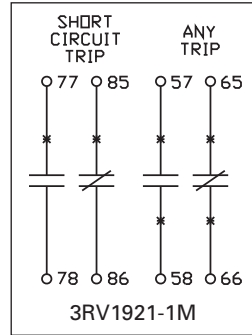
Note: Dimensions are in inches.

① Mounting screw G size is 0.25".

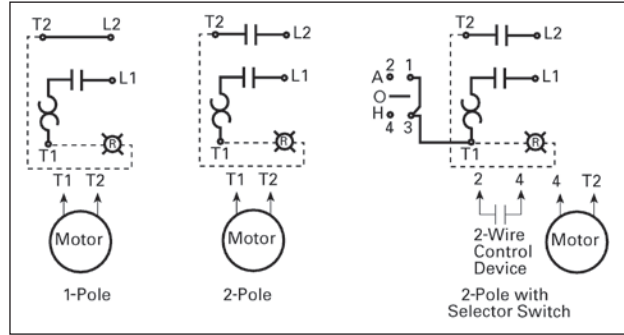
Class 11 - 3RV



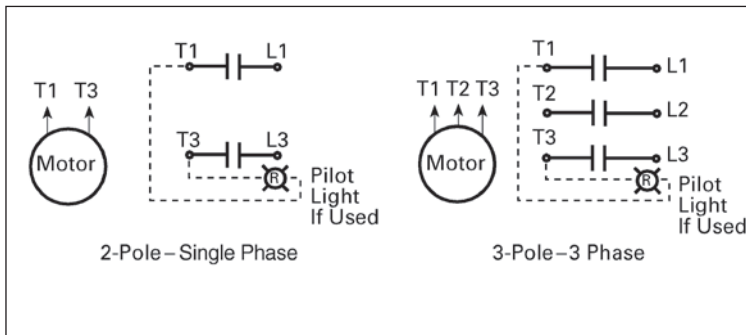
Signaling Contact for Class 11 - 3RV



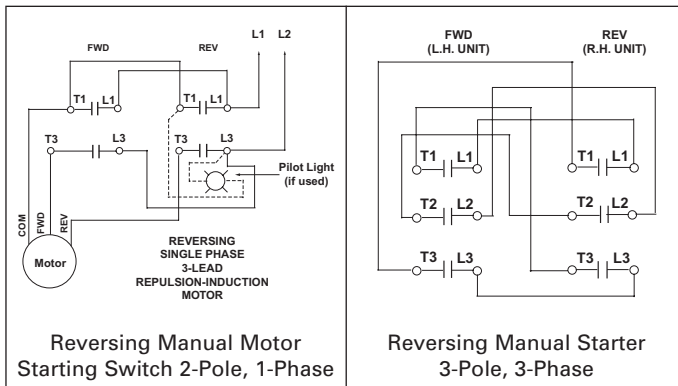
Typical Wiring Diagrams—Class SMF



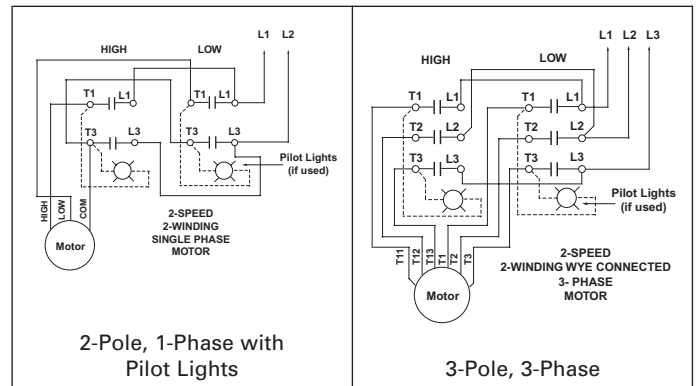
Typical Wiring Diagrams—MMS



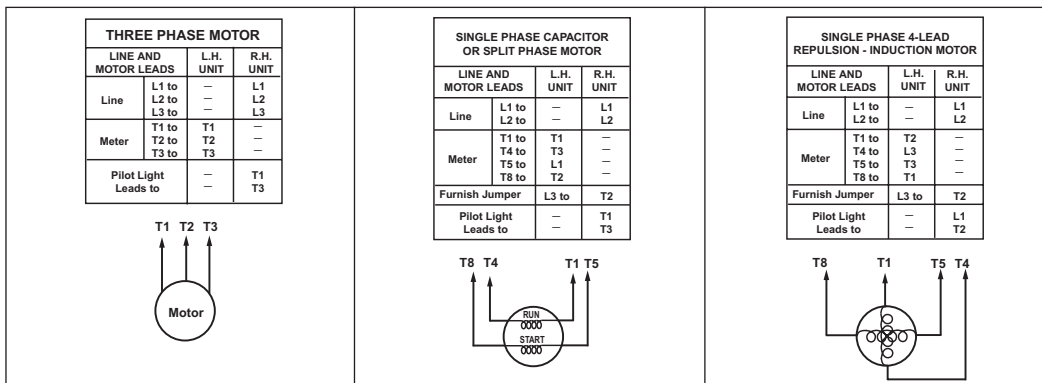
AC Reversing Manual Starter and Manual Motor Starting Switches



AC 2-Speed Manual Motor Starting Switches

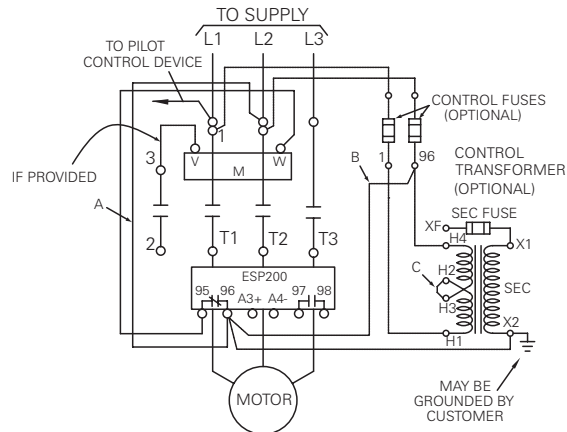


3-Pole Reversing Switches

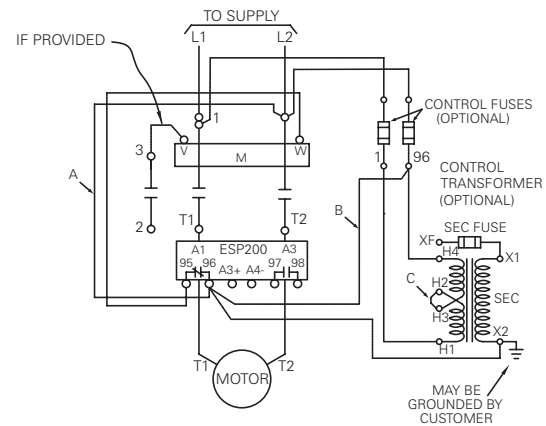


3-Phase and Single Phase Magnetic Starters

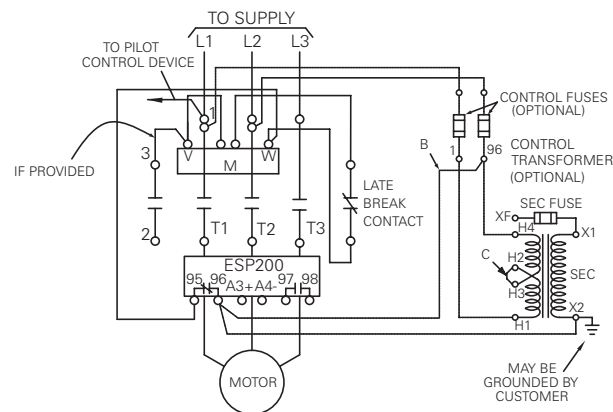
Three Phase Magnetic Starter, Size 00-4



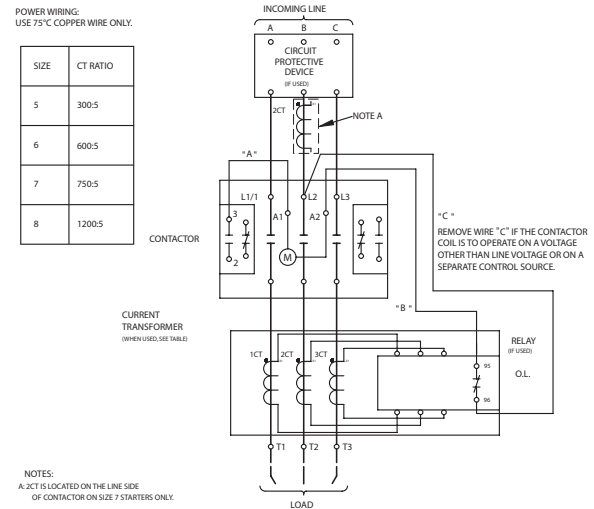
Single Phase Magnetic Starter^{①②}



Three Phase Magnetic Starter with DC Coil, Sizes 00-4



Solid State Overload 3-Phase Sizes 5-8



① **Warning:** The ESP200 Starter and Single Phase Motor must be wired as shown above. For L1, L2 do not use the middle terminal or hole.

② Full Load Amps (FLA): Adjustment of the ESP200 solid state overload relay accommodates the single phase motor.

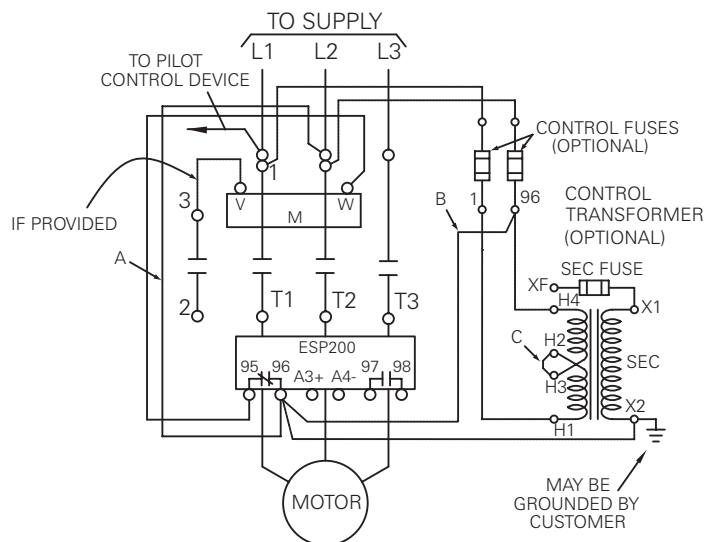
Combination Heavy Duty Starters

Class 17, 18

Wiring Diagrams

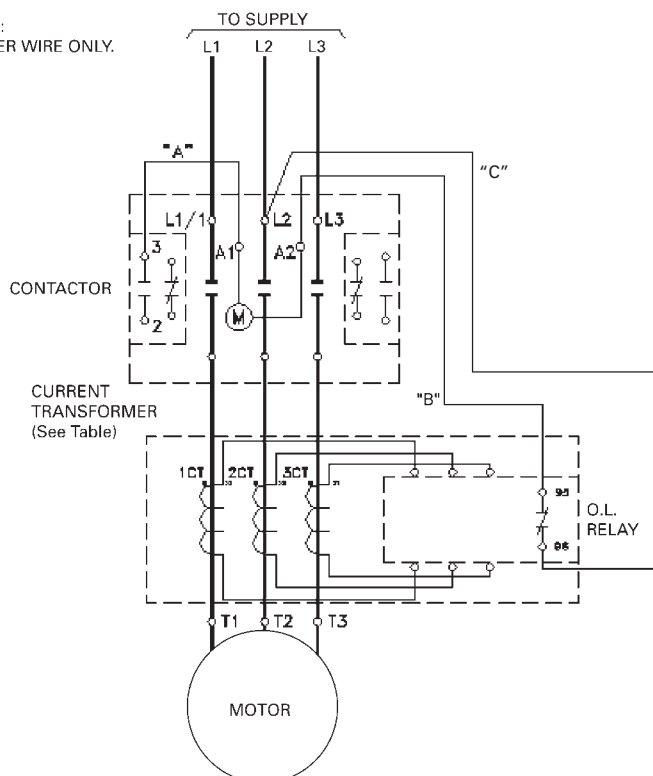
3-Phase

Size 00-4①

Size 5-8^②

POWER WIRING:
USE 75°C COPPER WIRE ONLY.

SIZE	CT RATIO
5	300:5
6	600:5
7	750:5
8	1200:5



① Remove wire "C" if control transformer is used. For separate control voltage source, remove jumpers "A" and "B" and connect source to control fuse line terminals.

② Remove wire "C" if the contactor coil is to operate on a voltage other than line voltage or in a separate control source.

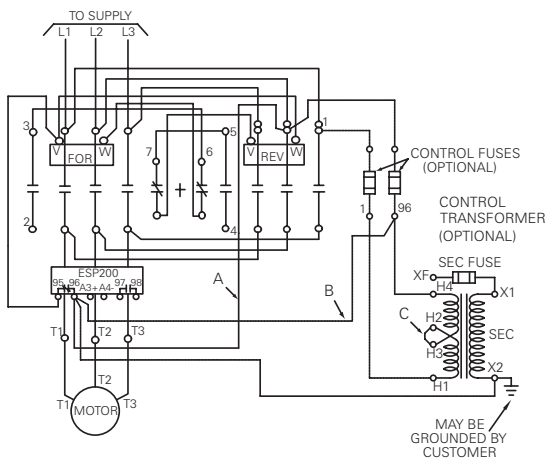
Reversing Heavy Duty Starters

Class 22

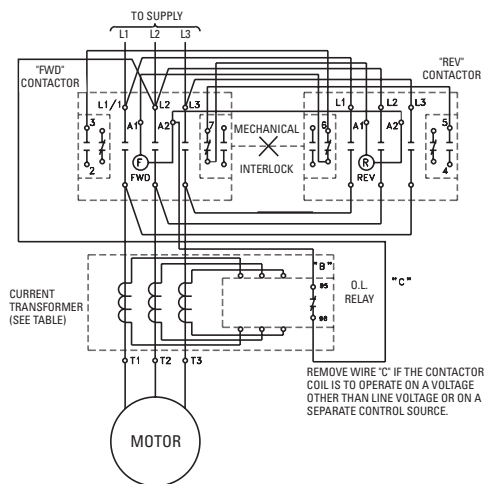
Wiring Diagrams

3-Phase Solid State Overload

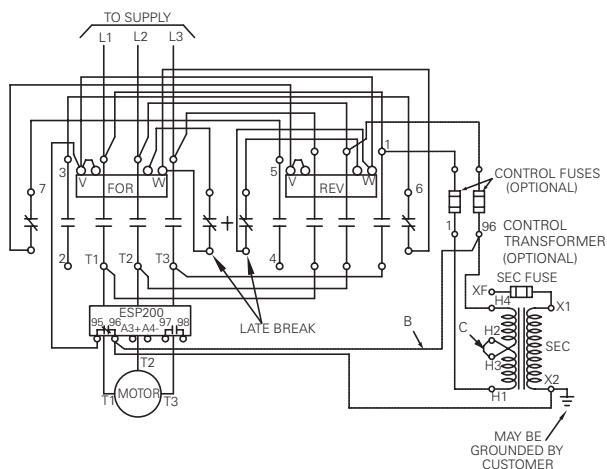
3-Phase Reversing Magnetic Starter Sizes 00-1 $\frac{3}{4}$



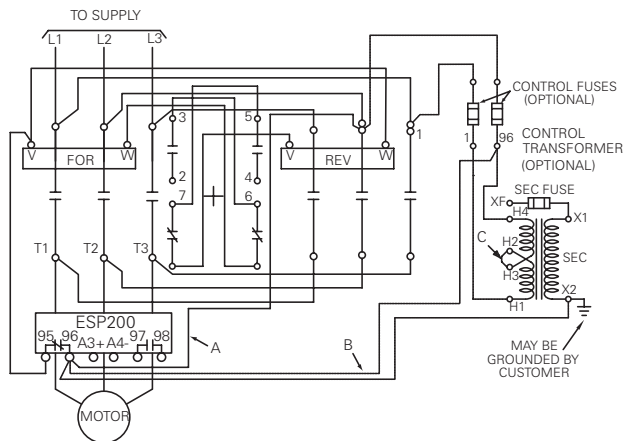
Solid State Overload Sizes 5-6



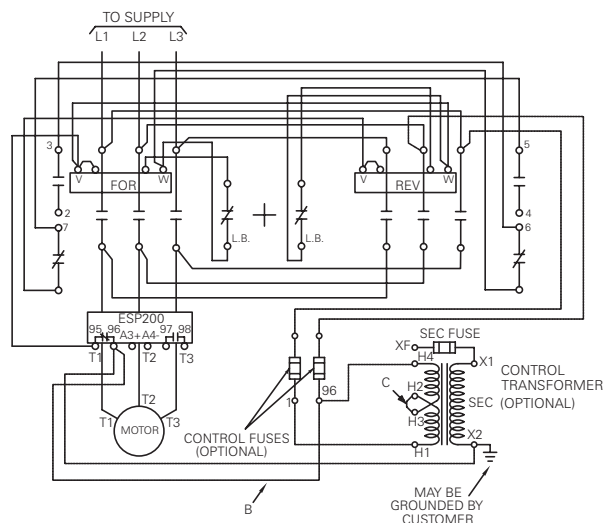
3-Phase Reversing Magnetic Starter with DC Coil, Sizes 00-1 $\frac{3}{4}$



3-Phase Reversing Magnetic Starter Sizes 2-4



3-Phase Reversing Magnetic Starter with DC Coil, Sizes 2-4



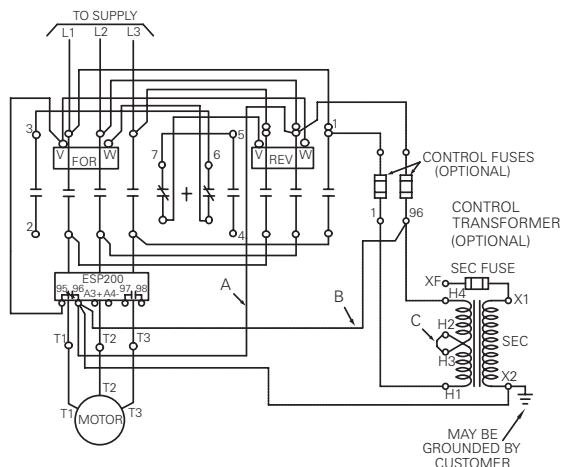
Combination Reversing Heavy Duty Starters

Class 25, 26

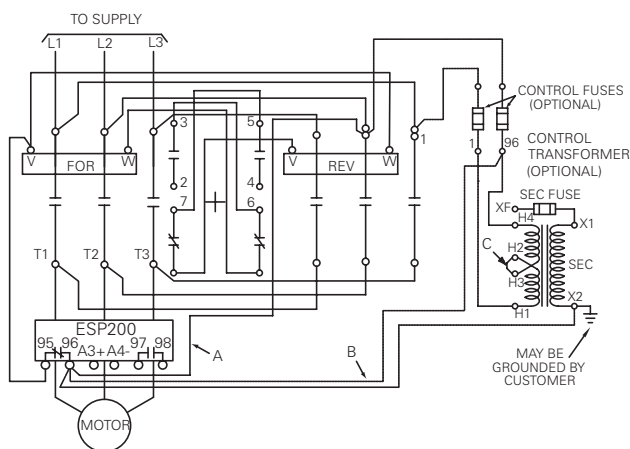
Wiring Diagrams

3-Phase

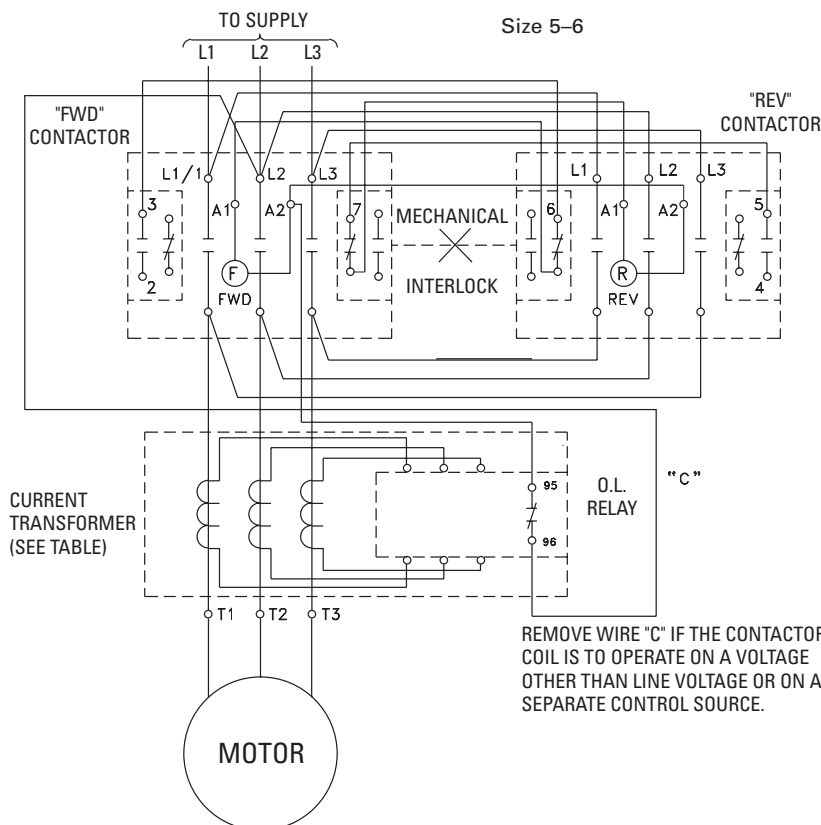
3-Phase Reversing Magnetic Starter
Sizes 00-1 $\frac{3}{4}$



3-Phase Reversing Magnetic Starter
Sizes 2-4



Size 5-6



SIZE	CT RATIO
5	300:5
6	600:5

REMOVE WIRE "C" IF THE CONTACTOR COIL IS TO OPERATE ON A VOLTAGE OTHER THAN LINE VOLTAGE OR ON A SEPARATE CONTROL SOURCE.

NEMA & General
Purpose Control

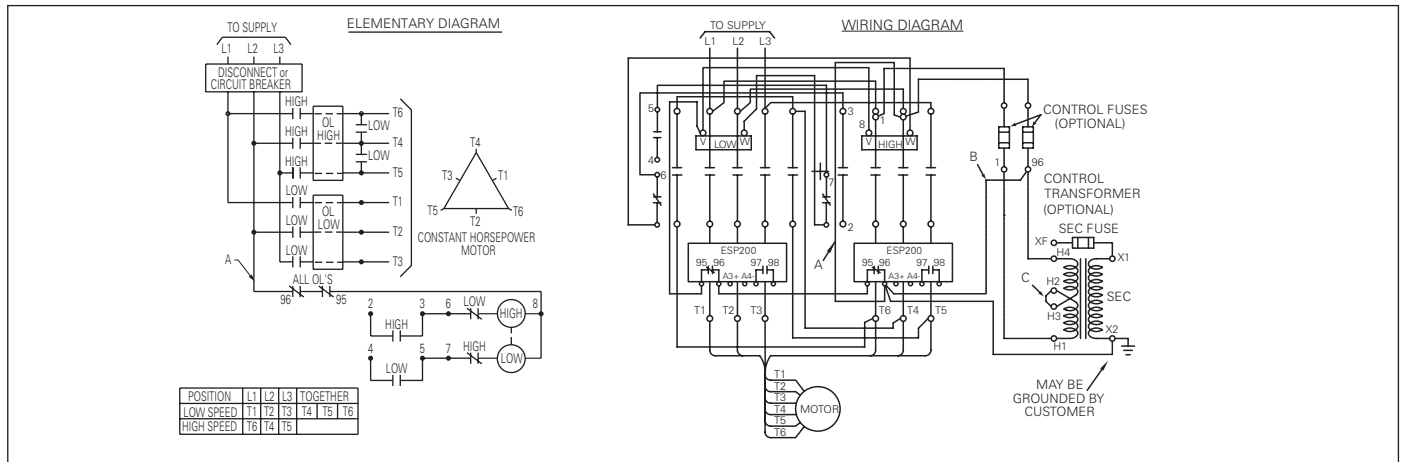
17
CONTROL
PRODUCTS

Two Speed Heavy Duty Starters

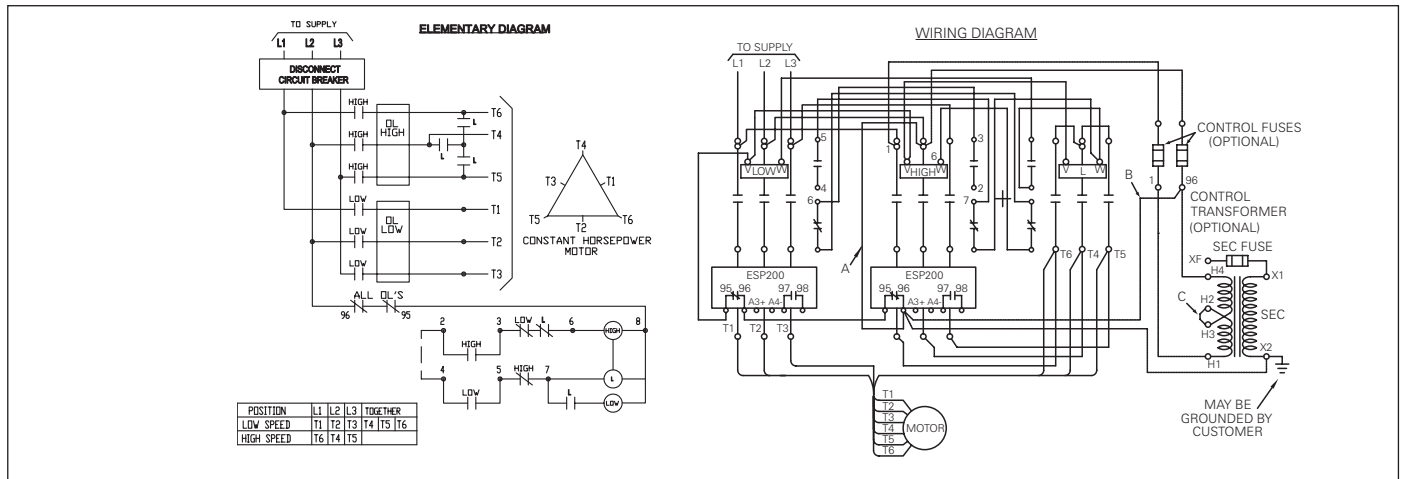
Class 30 & 32 Non-Combination and Combination Starters

Wiring Diagrams

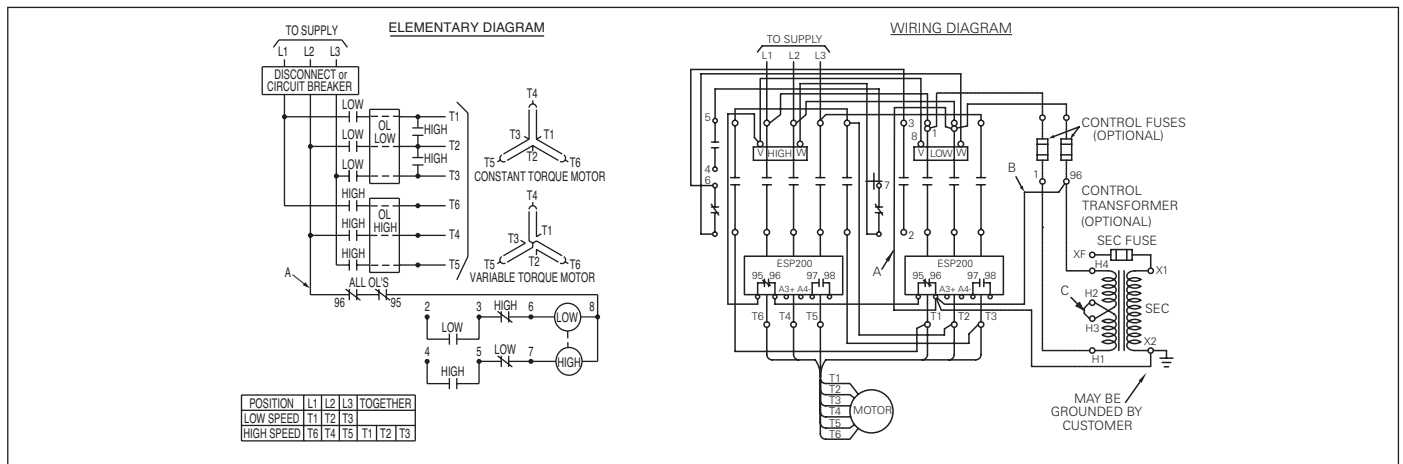
1 Winding Constant Horsepower Size 0-1³/₄



1 Winding Constant Horsepower Size 2-4



1 Winding Constant or Variable Torque Size 0-1³/₄



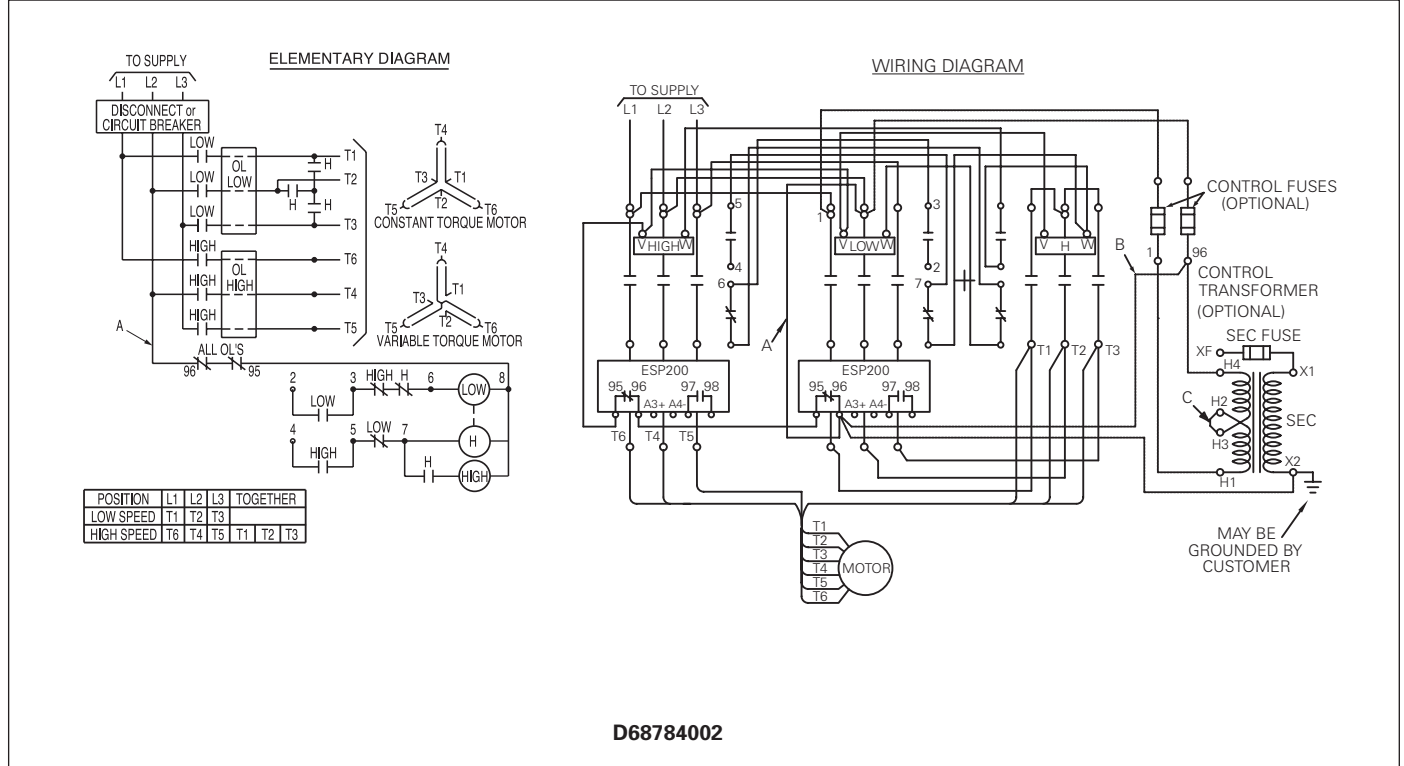
Note: For separate control voltage source, remove jumpers "A" and "B" and connect source to control fuse terminal. Remove jumper "C" if control transformer is used.

Two Speed Heavy Duty Starters

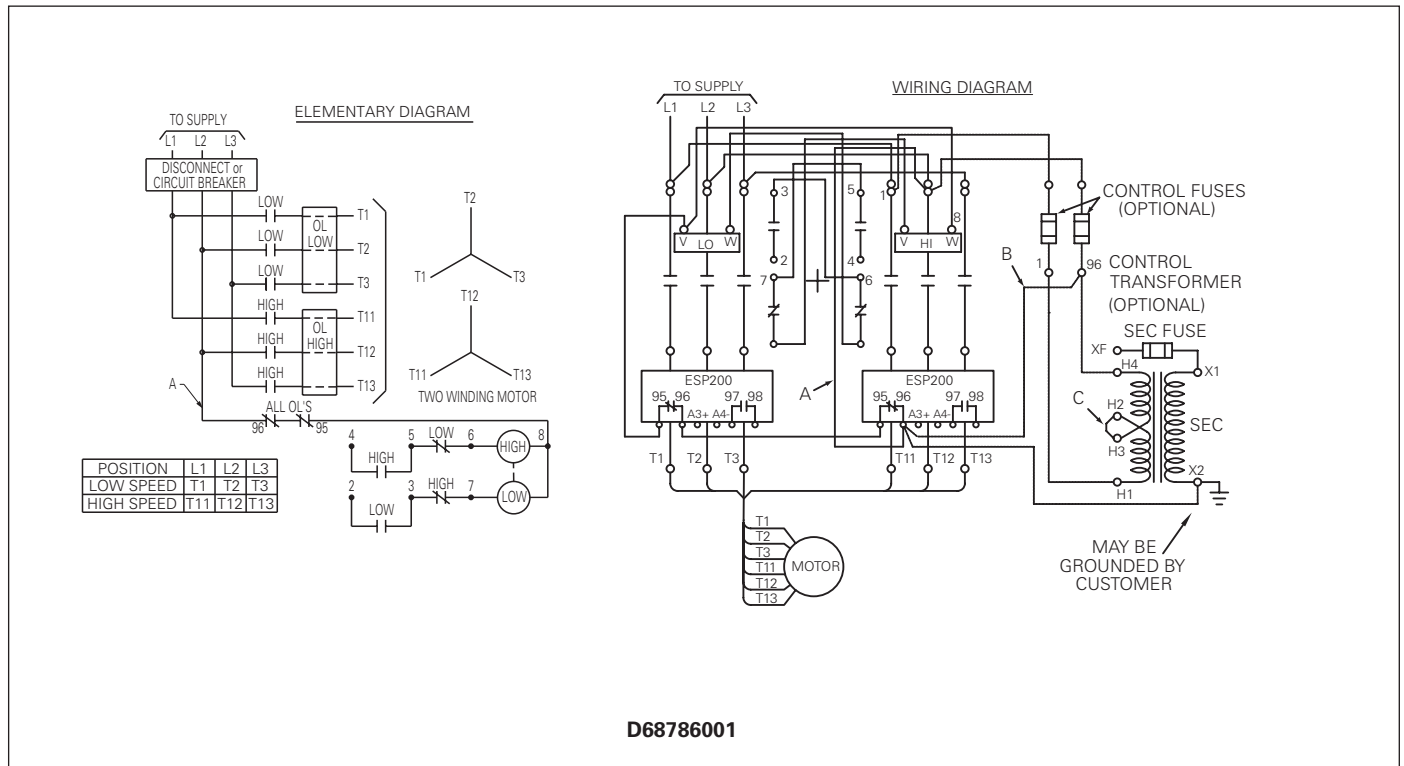
Class 30 & 32 Non-Combination and Combination Starters

Wiring Diagrams

1 Winding Constant or Variable Torque Size 2-4



2 Winding Constant Horsepower & 2 Winding Constant or Variable Torque Size 0-4



Note: For separate control voltage source, remove jumpers "A" and "B" and connect source to control fuse terminal. Remove jumper "C" if control transformer is used.

NEMA & General
Purpose Control

17
CONTROL
PRODUCTS

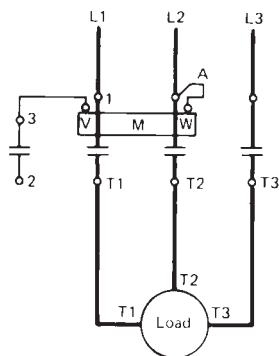
Heavy Duty Contactors and Reversing Contactors

Class 40, 43

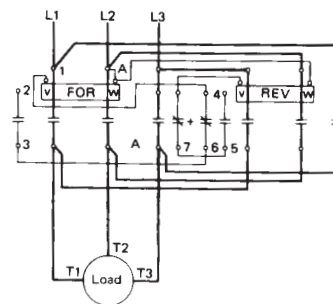
Wiring Diagrams

3-Phase Magnetic Contactors and Reversing Contactors

3-Phase Contactors—Size 00–4

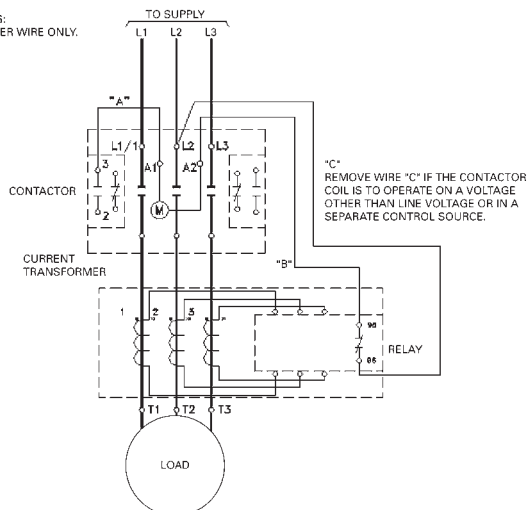


3-Phase Reversing Contactors—Size 00–4

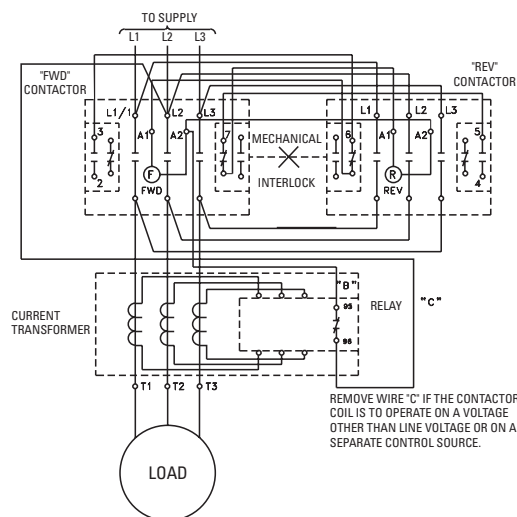


3-Phase Contactors—Size 5, 6

POWER WIRING:
USE 75°C COPPER WIRE ONLY.



3-Phase Reversing Contactors—Size 5, 6

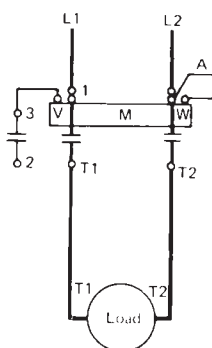


NEMA & General
Purpose Control

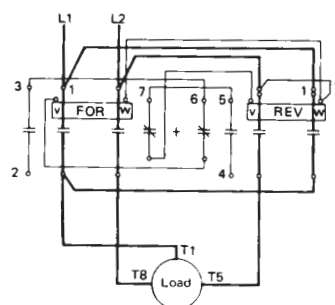
17
CONTROL
PRODUCTS

Single Phase Magnetic Contactors and Reversing Contactors

Single Phase Contactors—Size 00–4

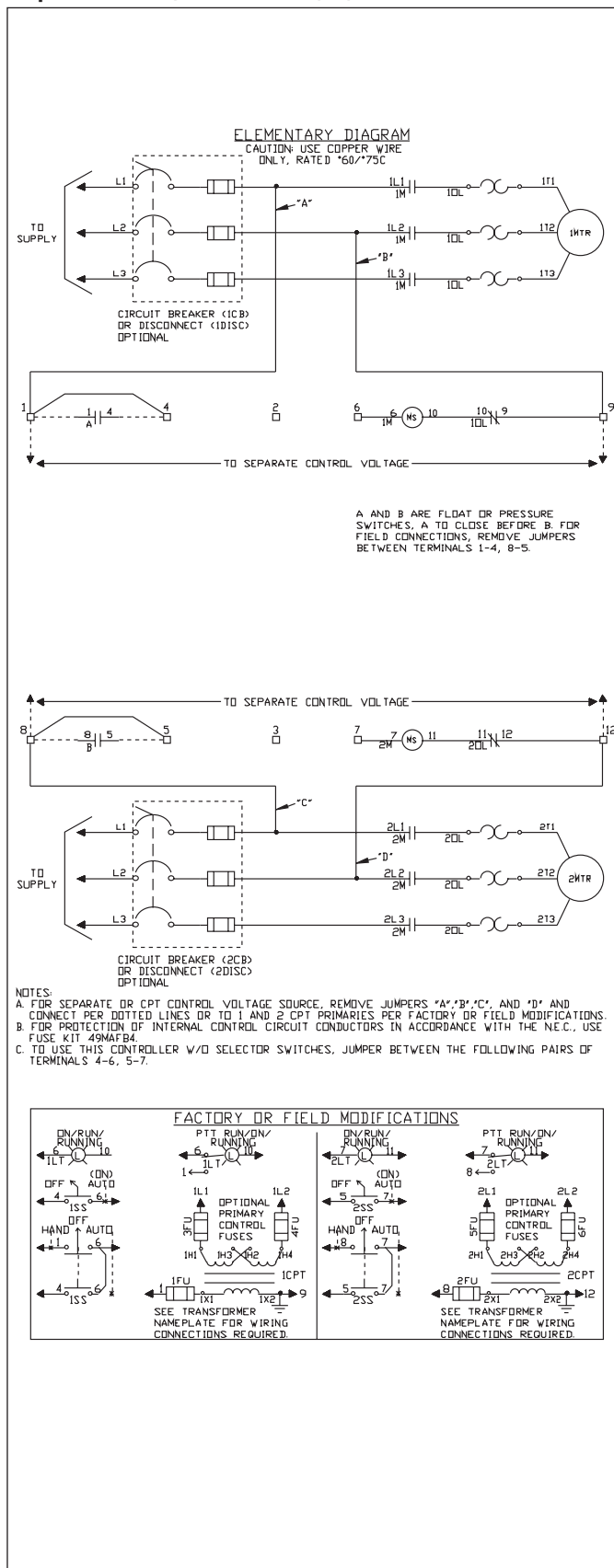


Single Phase Reversing Contactors—Size 00–1P



Wiring Diagrams

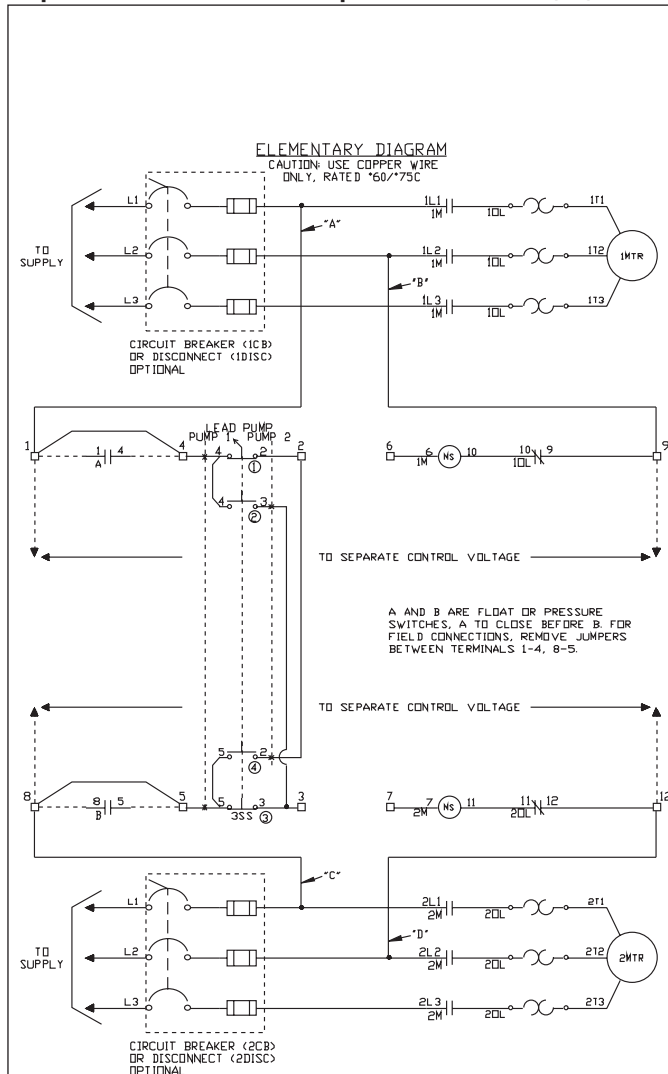
Duplex Panel w/o alternator (95)



CONTROL PRODUCTS

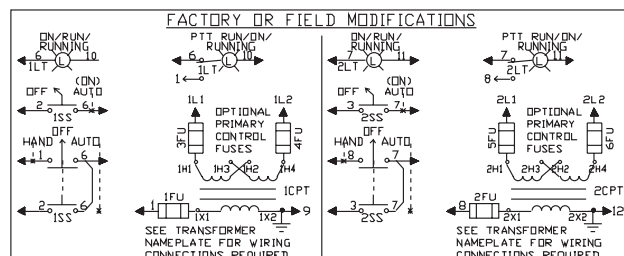
Wiring Diagrams

Duplex Panel with Lead Pump Transfer Switch (94)



NOTES:

- FOR SEPARATE OR CPT CONTROL VOLTAGE SOURCE, REMOVE JUMPERS "A","B","C", AND "D" AND CONNECT PER DOTTED LINES OR TO 1 AND 2 CPT PRIMARIES PER FACTORY OR FIELD MODIFICATIONS
- FOR PROTECTION OF INTERNAL CONTROL CIRCUIT CONDUCTORS IN ACCORDANCE WITH THE N.E.C., USE FUSE KIT 49MFA84
- TO USE THIS CONTROLLER W/O SELECTOR SWITCHES, JUMPER BETWEEN THE FOLLOWING PAIRS OF TERMINALS 2-6, 3-7.
- Ⓢ = SELECTOR SWITCH CONTACT LOCATION

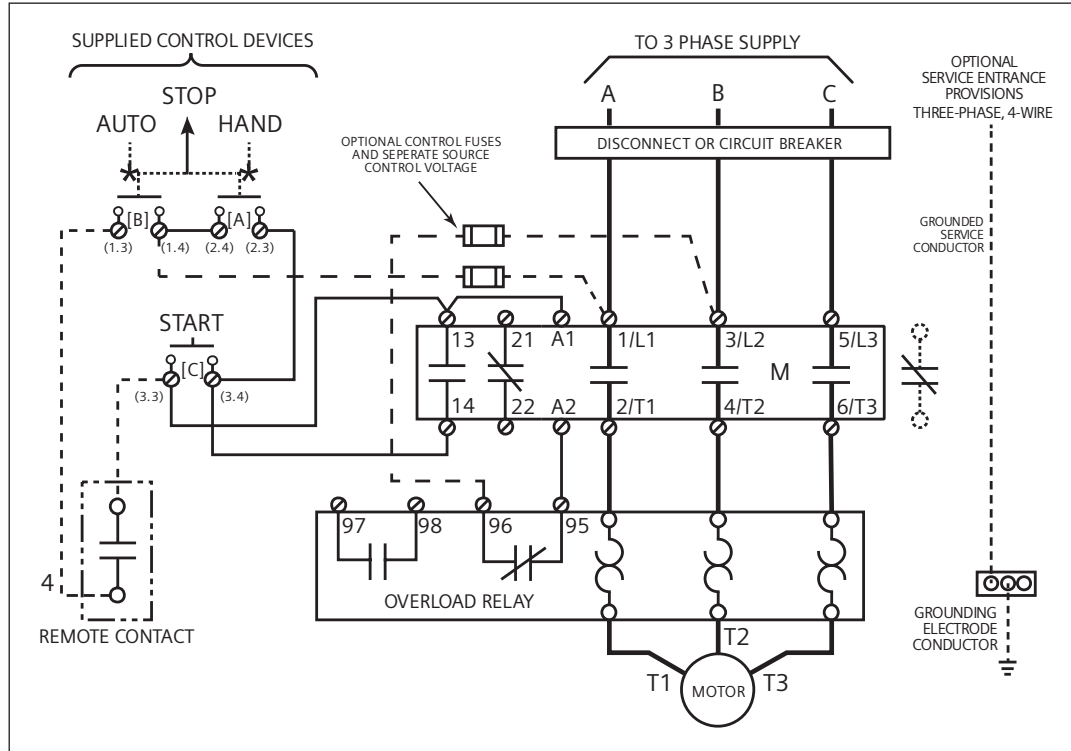


Standard & Irrigation Pump Panels

3RE48

Wiring Diagrams

3RE48 Pump Panel

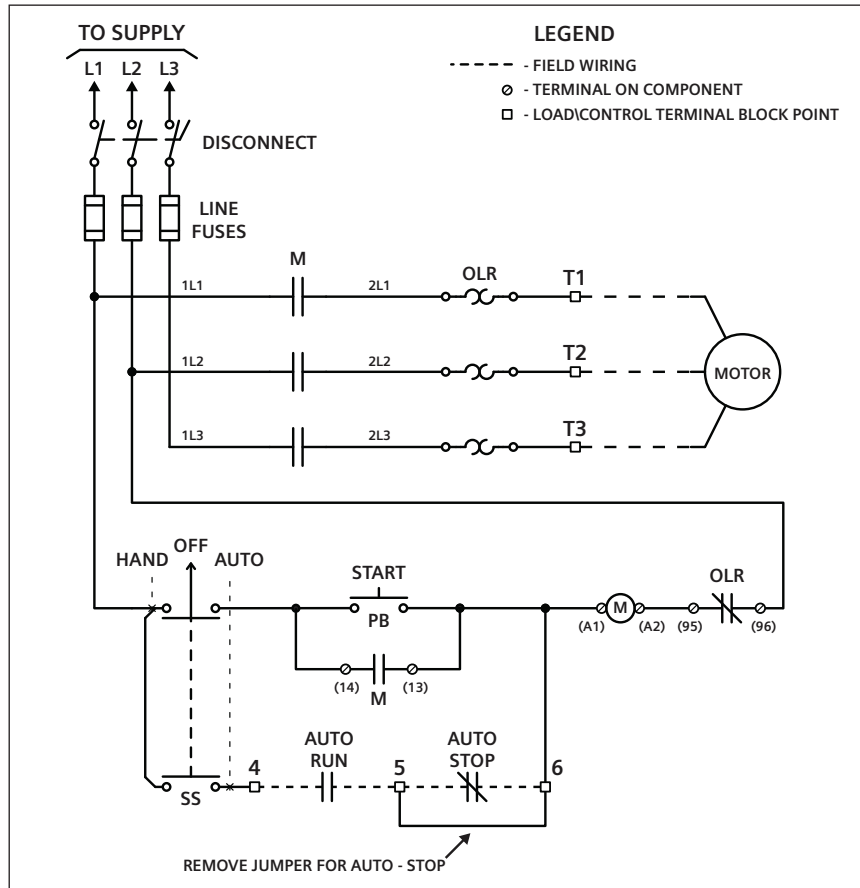
NEMA & General
Purpose Control17
CONTROL
PRODUCTS

Standard & Irrigation Pump Panels

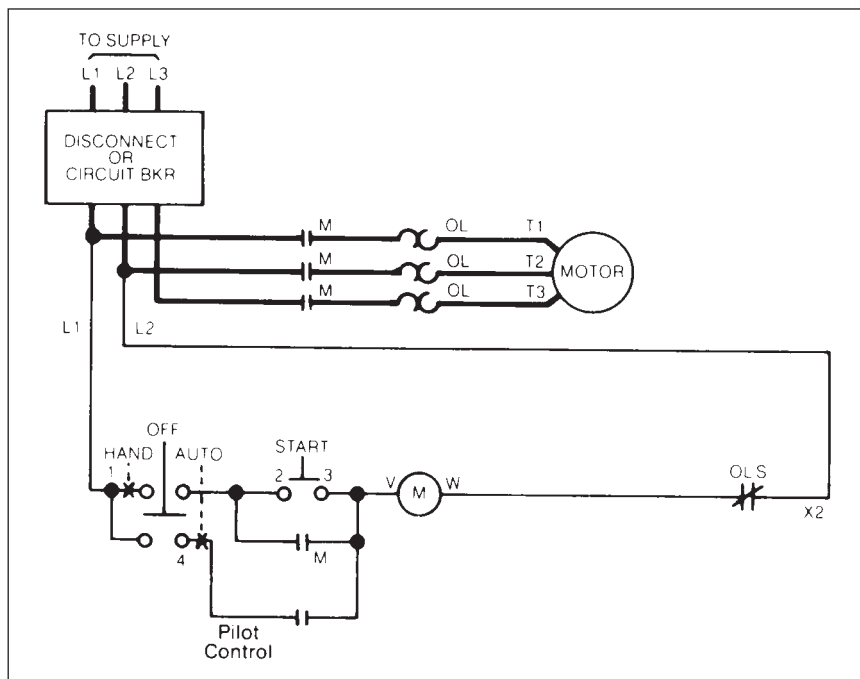
Class 82, 87

Wiring Diagrams

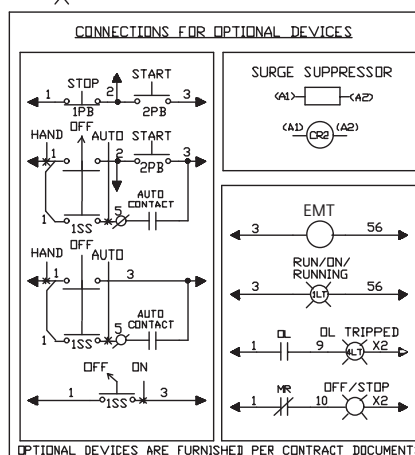
Class 82 Pump Panel



Standard Class 87 Pump Panel



Part Winding



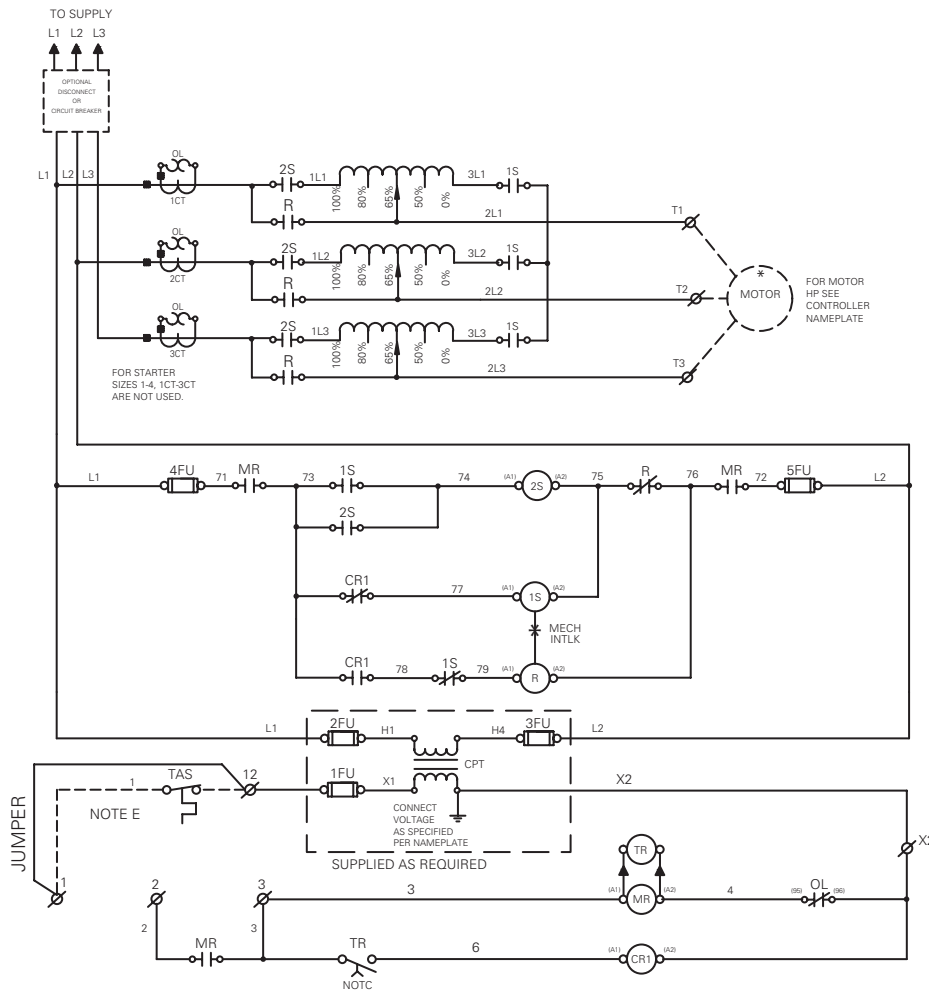
17 CONTROL PRODUCTS

Reduced Voltage Pump Panels

Class 88

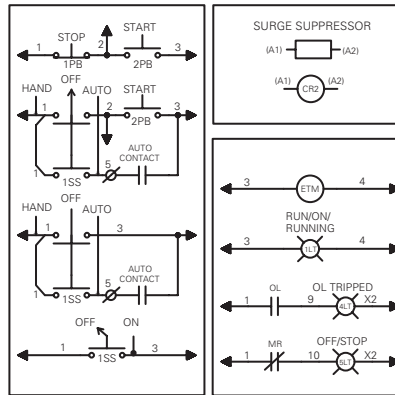
Wiring Diagrams

Auto Transformer



Note E:
Remove jumper if thermal protection switch is provided.

CONNECTIONS FOR OPTIONAL DEVICES

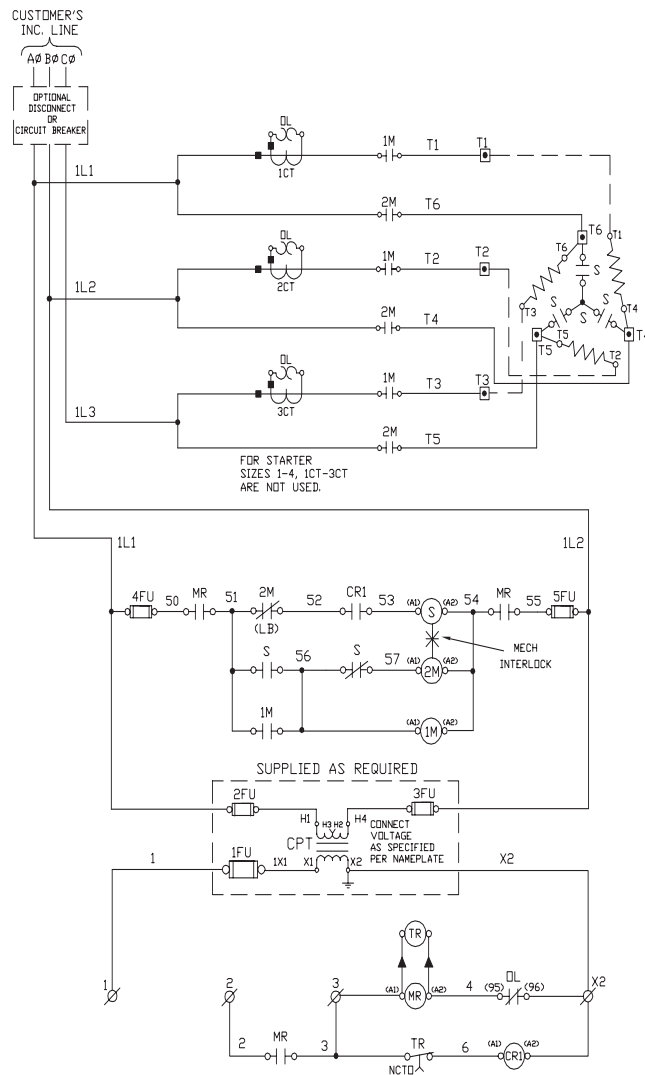


OPTIONAL DEVICES ARE FURNISHED PER CONTRACT DOCUMENTS

Reduced Voltage Pump Panels

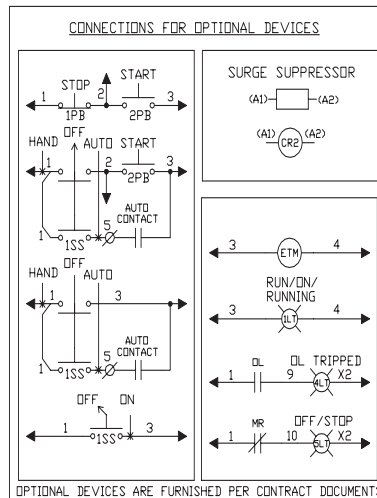
Class 88

Wiring Diagrams

NEMA & General
Purpose Control17
CONTROL
PRODUCTS

LEGEND:

- Ø CUSTOMER CONNECTION POINT
- 1M FIRST MAIN CONTACTOR
- 2M SECOND MAIN CONTACTOR
- S SHORTING CONTACTOR
- MR MASTER CONTROL RELAY
- CR1 TIME DELAYED RELAY
- CR2 RELAY
- TR TIMER
- DL MAIN STARTER O/L RELAY
- (#) DEVICE TERMINATION POINT

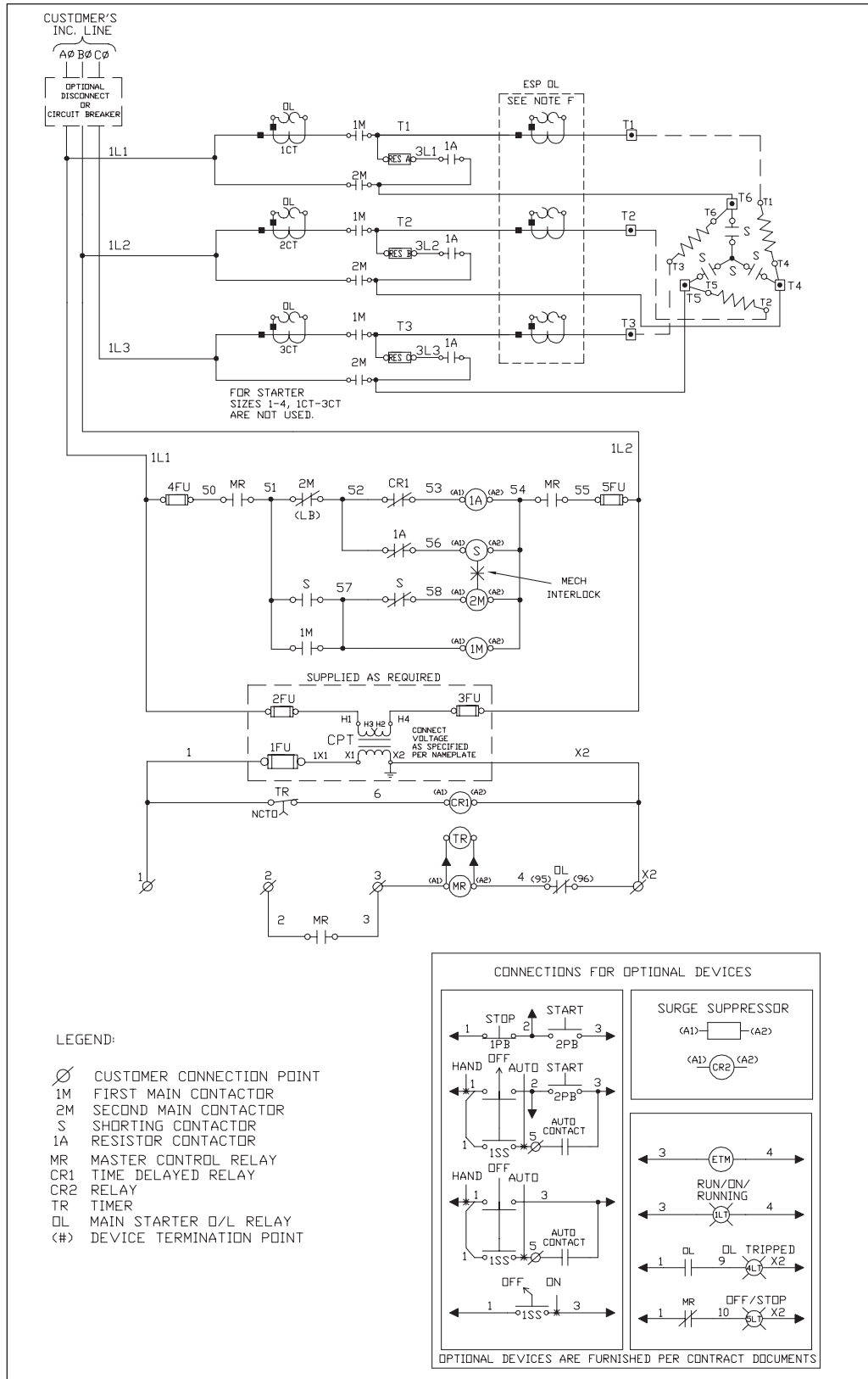


Reduced Voltage Pump Panels

Class 88

Wiring Diagrams

Wye Delta (Closed Transition)

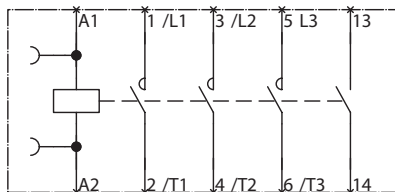


Duplex Heavy Duty Controllers

Class LC and LE Electrically Held Contactors

Wiring Diagrams

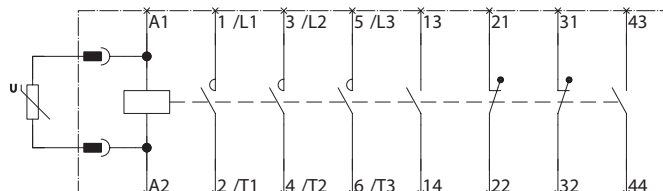
LEN00B003 (20A 3 Pole)



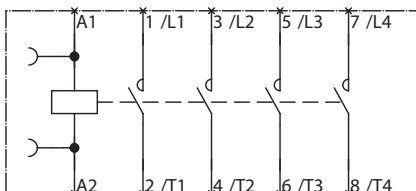
LEN00F003 (200A 3 Pole)

LEN00G003 (300A 3 Pole)

LEN00H003 (400A 3 Pole)



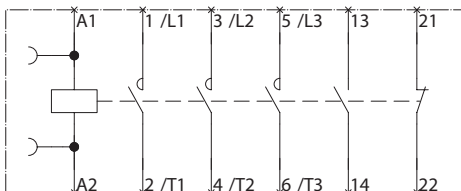
LEN00B004 (20A 4 Pole)



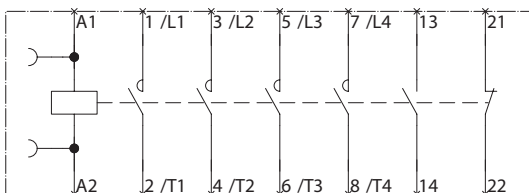
LEN00C003 (30A 3 Pole)

LEN00D003 (60A 3 Pole)

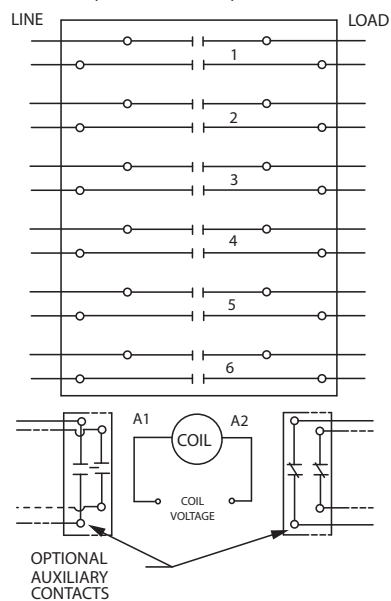
LEN00E003 (100A 3 Pole)



LEN00C004 (30A 4 Pole)



LCE00C (30A 2-12 Pole)

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PRODUCTS

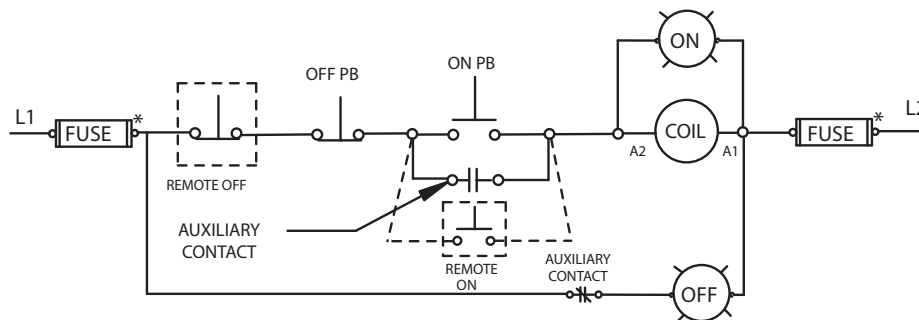
Duplex Heavy Duty Controllers

Class LC and LE Electrically Held Contactors

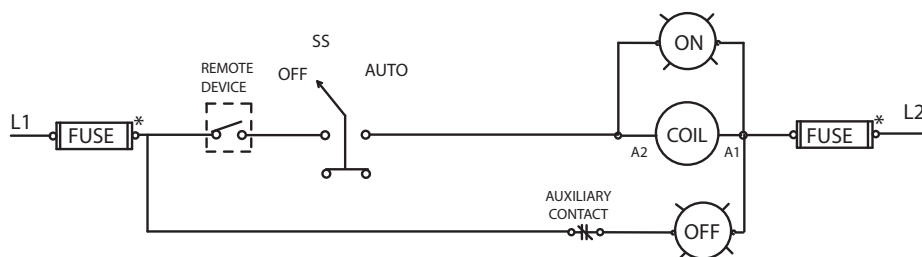
Wiring Diagrams

Optional Pilot Devices for Electrically Held Contactor

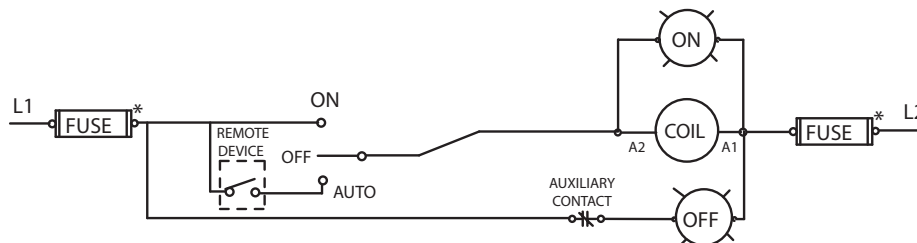
ON and OFF
Push buttons



OFF-ON or
OFF-AUTO
Selector
Switch



OFF-ON-AUTO
HAND-OFF-AUTO
Selector
Switch

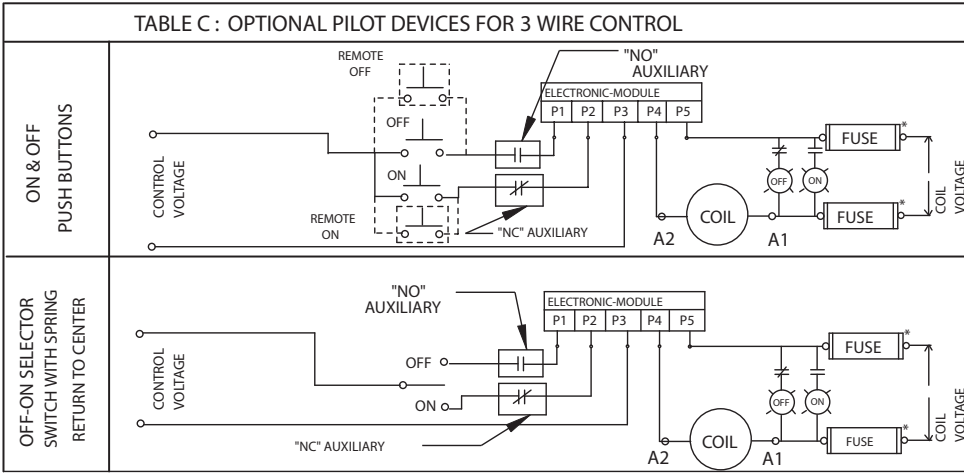
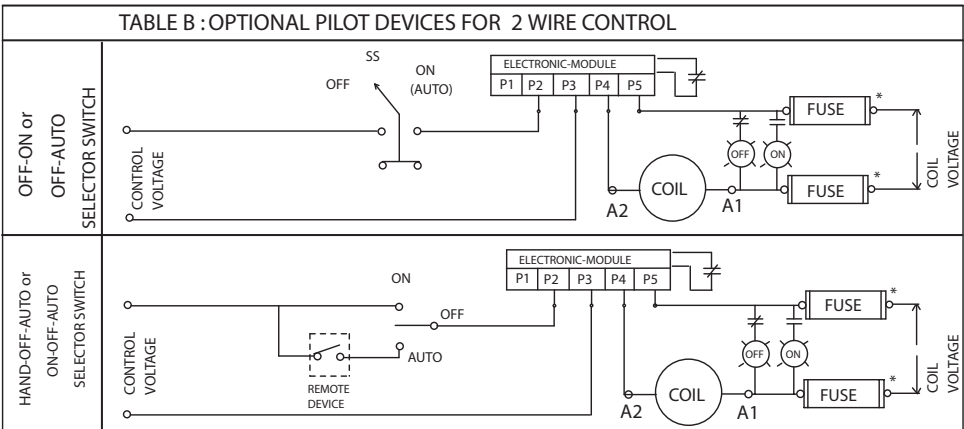
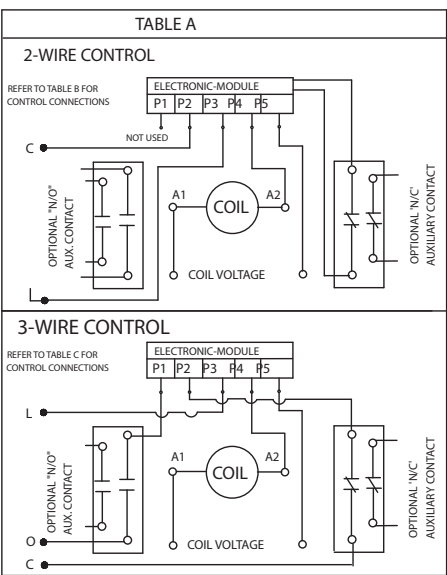
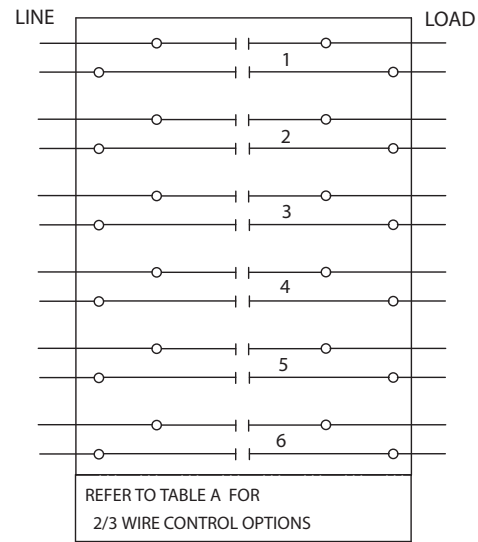


* -- IF USED

Lighting and Heating Contactors

Class LC (converted to mechanically held)

Wiring Diagrams



* -- IF USED

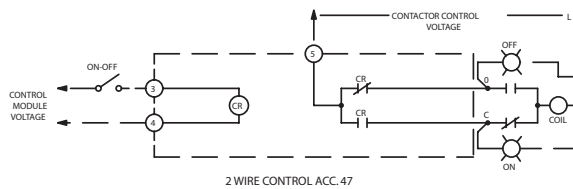
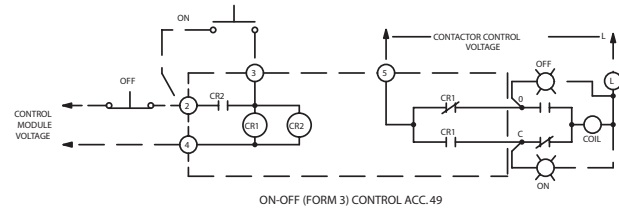
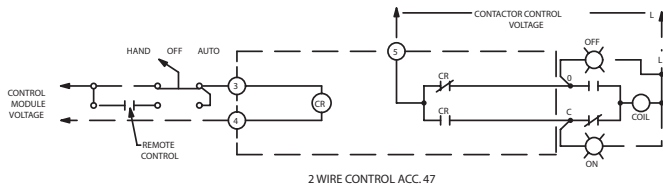
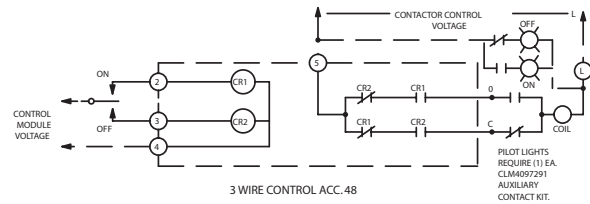
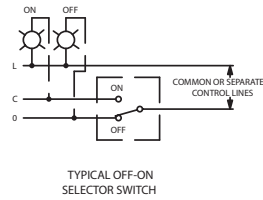
NEMA & General Purpose Control

17 CONTROL PRODUCTS

Lighting and Heating Contactors

Mechanically Latched 20 Amp, Class CLM

Wiring Diagrams



CONNECTIONS TO CONTROL MODULES	
MODULE TERMINAL	CONNECT TO:
1	NOT USED
2	CONT. STATION FOR ACC. 48 & 49
3	CONT. STATION FOR ACC. 47, 48 & 49
4	MODULE CONTROL VOLTAGE *
5	CONTACTOR CONTROL VOLTAGE
O	TERMINAL O ON CONTACTOR
C	TERMINAL C ON CONTACTOR

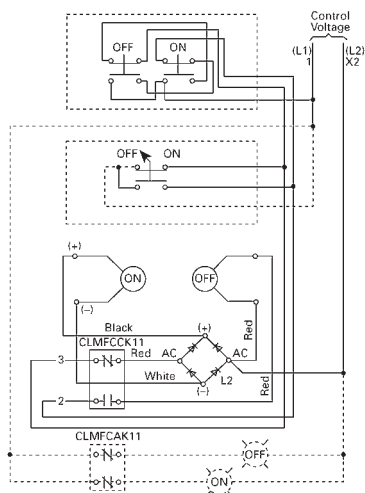
* FOR 24 VDC CONTROL MODULES
CONNECT TERMINAL 4 TO NEGATIVE (-)

Lighting and Heating Contactors

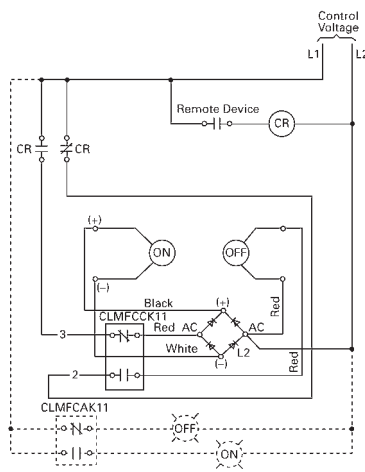
Mechanically Latched 30-400 Amps, Class CLM

Wiring Diagrams

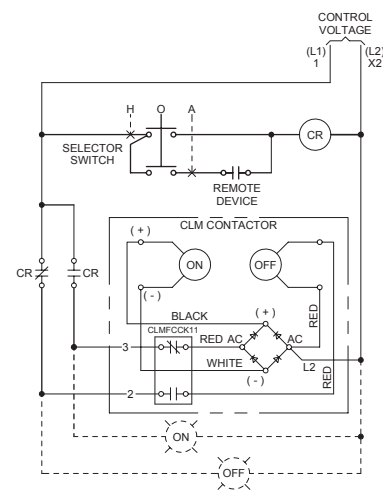
Mechanically Latched, CLM 30–200 Amps^①



Connection Diagram for Common/Separate Control with Momentary Pushbutton or ON-OFF Selector Switch **CLMOC**, **CLMOD**, **CLMOE**, and **CLMOF**

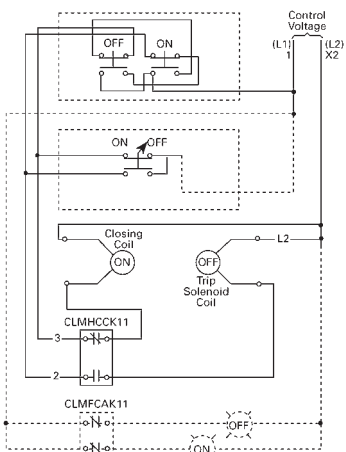


Connection for 2-Wire Control **CLMOC**, **CLMOD**, **CLMOE**, and **CLMOF**

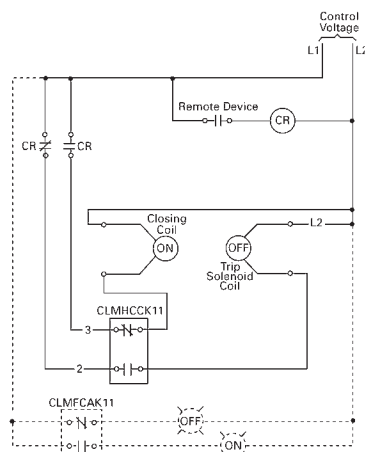


Connection for Hand/Off/Auto Control **CLMOC**, **CLMOD**, **CLMOE**, and **CLMOF**

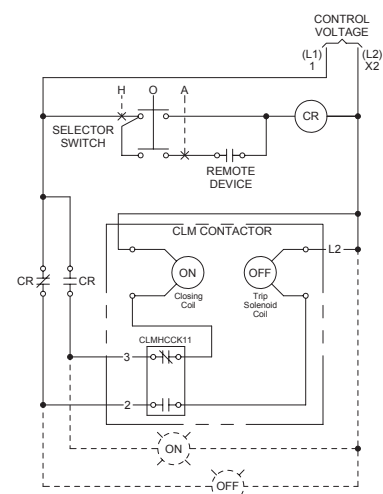
Mechanically Latched Type CLM 300 and 400 Amp^①



Connection Diagram for Common/Separate Control with Momentary Pushbutton or ON-OFF Selector Switch **CLMOG** and **CLMOH**



Connection for 2-Wire Control **CLMOG** and **CLMOH**



Connection for Hand/Off/Auto Control **CLMOG** and **CLMOH**

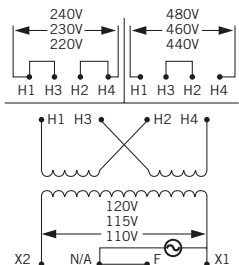
^① Control relay is required for 2-wire and Hand/Off/Auto Control, as shown in diagram.

Industrial Control Power Transformers

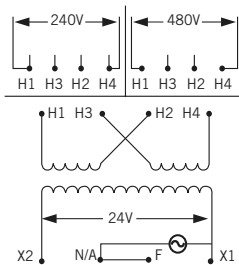
Class MT, MTG

Wiring Diagrams

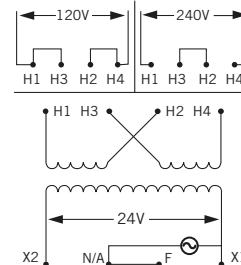
Voltage Letter A^{①③}



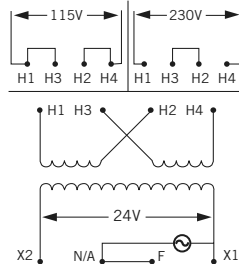
Voltage Letter B^{②③}



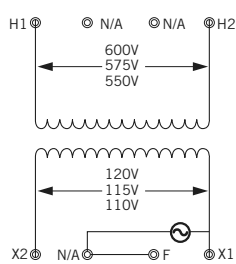
Voltage Letter C^{②③}



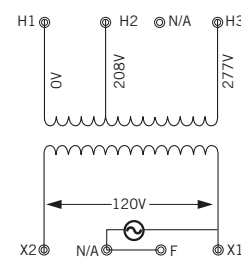
Voltage Letter D^②



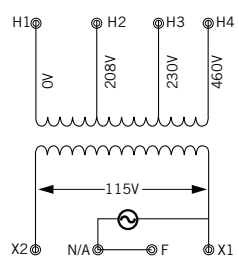
Voltage Letter E^{①③}



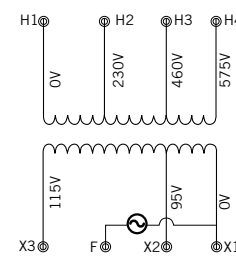
Voltage Letter F^①



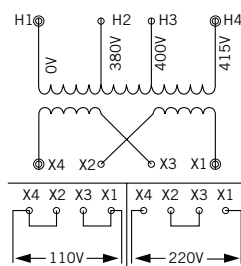
Voltage Letter G^①



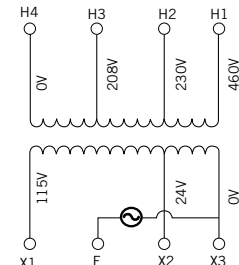
Voltage Letter H



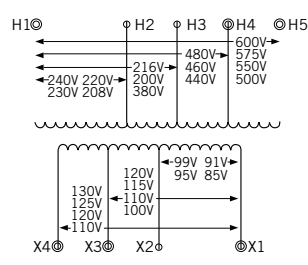
Voltage Letter I



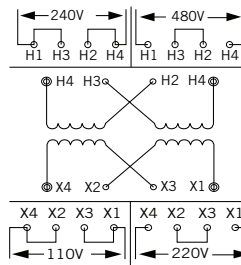
Voltage Letter J^{②③}



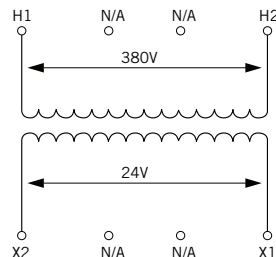
Voltage Letter L



Voltage Letter M^①



Voltage Letter P



- ① Includes secondary fuse clips on sizes 50-750VA
- ② Includes secondary fuse clips on sizes 50-500VA
- ③ Secondary fuse clips are not included on MTG transformers.

Enclosed IEC Controls

3RE4 IEC Controllers

General information

3RE4 Enclosed IEC Controllers

Product overview

3RE4 Enclosed IEC motor controllers are well suited for both industrial and commercial applications. They are durable and dependable, particularly when it comes to motor protection. Protecting the performance of motors is a critical priority and the 3RE4 enclosed starters are offered with either thermal or solid-state overload relays to maximize your motor protection.



Controller Features

General

- UL motor horsepower rated
- From fractional up to 60 Hp at 575 V
- Non-combination type starters and contactors
- Reversing and non-reversing controllers
- Single phase and 3-phase loads
- Thermal and solid-state overload relays
- NEMA Type enclosures 1, 3/3R/4/12 and 4X 304 stainless steel
- Standard size and extra larger enclosures
- RoHS compliant
- Standards: UL 60947-4-1
- Certifications: cULus

Contactor

- Horsepower rated per UL
- High contact reliability
- NO and NC auxiliary contacts included as standard
- Permanently secured with screws on mounting panel
- Screw type terminal connections

Overload Relay Features

Thermal overload relays

- Trip Class 10
- Phase failure sensitivity
- UL for Single and three phase loads
- Includes NC trip contact and NO alarm contact
- Manual and automatic RESET (selectable)
- Switch position indicator
- TEST function
- STOP button
- Sealable cover (optional)
- Screw-type terminals

Solid-state overload relays

- Selectable Trip Class 5, 10, 20 and 30
- Overload, phase failure and unbalance protection
- Internal ground fault detection (selectable)
- Internal power supply
- Includes NC trip contact and NO alarm contact
- Manual and automatic RESET (selectable)
- Electrical remote RESET integrated
- Switch position indicator
- TEST function and self-monitoring
- Sealable cover (optional)
- Screw-type terminals

Available Factory Mods, Field Kits, Accessories

Factory modifications

- Push buttons
- Selector switches
- Pilot lights
- Control power transformers

Field kits and accessories

- Push buttons
- Selector switches
- Pilot lights
- Auxiliary contacts
- Control power transformers
- Control relays and timers
- Control circuit fuse block
- Terminal blocks
- etc.

Enclosed IEC Controls

3RE4 IEC Controllers

Catalog Numbering System

Catalog Numbering System

3RE4 Nomenclature

Non-Combination Controllers

3RE4 1 2 2 - 3 A A 3 1 - 1 H Y 0

Controller Type

- 11 = Non-combination non-reversing starter, 1-phase, 2-pole
- 12 = Non-combination non-reversing starter, 3-phase, 3-pole
- 14 = Non-combination reversing starter, 3-phase, 3-pole
- 16 = Non-combination non-reversing contactor
- 18 = Non-combination reversing contactor

Frame Size: UL60947-4-1 Hp Rating

- 15 = S00: 1-Ph Hp (0.25@115V, 0.5@208V, 0.75@230V), 3-Ph Hp (1.5@208V, 2@230V, 3@460V, 5@575V)
- 17 = S00: 1-Ph Hp (0.5@115V, 1.5@208V, 2@230V), 3-Ph Hp (3@208V, 3@230V, 7.5@460V, 10@575V)
- 23 = S0: 1-Ph Hp (1@115V, 1@208V, 1@230V), 3-Ph Hp (2@208V, 3@230V, 5@460V, 7.5@575V)
- 24 = S0: 1-Ph Hp (1@115V, 2@208V, 2@230V), 3-Ph Hp (3@208V, 3@230V, 7.5@460V, 10@575V)
- 25 = S0: 1-Ph Hp (1@115V, 2@208V, 3@230V), 3-Ph Hp (5@208V, 5@230V, 10@460V, 15@575V)
- 26 = S0: 1-Ph Hp (2@115V, 3@208V, 3@230V), 3-Ph Hp (7.5@208V, 7.5@230V, 15@460V, 20@575V)
- 27 = S0: 1-Ph Hp (2@115V, 5@208V, 5@230V), 3-Ph Hp (10@208V, 10@230V, 20@460V, 25@575V)
- 28 = S0: 1-Ph Hp (3@115V, 5@208V, 5@230V), 3-Ph Hp (10@208V, 10@230V, 25@460V, 25@575V)
- 35 = S2: 1-Ph Hp (3@115V, 5@208V, 7.5@230V), 3-Ph Hp (10@208V, 15@230V, 30@460V, 40@575V)
- 36 = S2: 1-Ph Hp (3@115V, 7.5@208V, 10@230V), 3-Ph Hp (15@208V, 15@230V, 40@460V, 50@575V)
- 37 = S2: 1-Ph Hp (5@115V, 10@208V, 10@230V), 3-Ph Hp (20@208V, 20@230V, 50@460V, 50@575V)
- 38 = S2: 1-Ph Hp (5@115V, 10@208V, 15@230V), 3-Ph Hp (20@208V, 25@230V, 50@460V, 60@575V)

Enclosure Type and Size

- A = NEMA Type 1 - standard size
- B = NEMA Type 1 - large size^①
- C = NEMA Type 3/3R/4/12 - standard size
- E = NEMA Type 4X 304 SS - standard size

Disconnect Type

- A = None

Nominal Coil Voltage

- 1 = 24 V AC 50/60Hz
- 2 = 24 V DC
- 3 = 110/120 V AC 50/60Hz
- 4 = 208 V AC 50/60Hz
- 5 = 220/240 V AC 50/60Hz
- 6 = 277 V AC 60Hz
- 7 = 480 V AC 60Hz
- 8 = 600 V AC 60Hz

Overload Relay Type

- 0 = (none)
- 1 = Thermal fixed trip Class 10
- 5 = Solid-state selectable trip Class 5-10-20-30

Overload Relay Amp Range

- 0Y = No overload relay (contactor)
- See amp range selection on page 4/15.

Special

- Y0 = (none)
- Factory modifications (See selection starting on page 4/47.)

^① Large size enclosures are not applicable for some configurations.
Refer to product selection tables for specifics.

Enclosed IEC Controls

3RE4 Non-Reversing Starter, 3-Phase, 3-Pole, Thermal or Solid-State Overload Relay

Selection



Ordering Information

- Replace the (●) with the code from the coil table on this page.
- Replace the (□) with the overload relay (OLR) code from this page.
- Replace the (◆◆) with the OLR current adjustment range from pg. 17-172.
- For factory modifications, see page 17-173 – 17-175.
- For accessories, see page 17-176 – 17-177.
- For replacement parts, see page 17-177.
- For dimensions, see page 17-178.
- For wiring diagrams, see page 17-179 – 17-181.

Coil Selection (●)^①

Nominal Voltage	Code
24 VAC 50/60 Hz	1
24 VDC	2
110/120 VAC 50/60 Hz	3
208 VAC 50/60 Hz	4
220/240 VAC 50/60 Hz	5
277 VAC 60 Hz	6
480 VAC 60 Hz	7
600 VAC 60 Hz	8

Non-Reversing Starter, 3-Phase, 3-Pole, Thermal or Solid-State Overload Relay, Standard Enclosure

3-Phase Motor Hp Rating per UL				NEMA Type Enclosure (Standard Size)			Unused Auxiliary Contacts		Frame Size	Contactor (for ref. only)
208 V	230 V	460 V	575 V	Type 1 General Purpose, Indoor only	Type 3/3R/4/12 Weatherproof, Watertight, Dust-tight	Type 4X 304 Stain. Steel Watertight, Dust-tight, Corrosion Resistant	NO	NC		
1.5	2	3	5	Catalog Number	Catalog Number	Catalog Number				
				3RE4121-5AA●□-◆◆Y0	3RE4121-5CA●□-◆◆Y0	3RE4121-5EA●□-◆◆Y0	1	0	S00	3RT2015
3	3	7.5	10	3RE4121-7AA●□-◆◆Y0	3RE4121-7CA●□-◆◆Y0	3RE4121-7EA●□-◆◆Y0	1	0	S00	3RT2017
2	3	5	7.5	3RE4122-3AA●□-◆◆Y0	3RE4122-3CA●□-◆◆Y0	3RE4122-3EA●□-◆◆Y0	1	1	S0	3RT2023
3	3	7.5	10	3RE4122-4AA●□-◆◆Y0	3RE4122-4CA●□-◆◆Y0	3RE4122-4EA●□-◆◆Y0	1	1	S0	3RT2024
5	5	10	15	3RE4122-5AA●□-◆◆Y0	3RE4122-5CA●□-◆◆Y0	3RE4122-5EA●□-◆◆Y0	1	1	S0	3RT2025
7.5	7.5	15	20	3RE4122-6AA●□-◆◆Y0	3RE4122-6CA●□-◆◆Y0	3RE4122-6EA●□-◆◆Y0	1	1	S0	3RT2026
10	10	20	25	3RE4122-7AA●□-◆◆Y0	3RE4122-7CA●□-◆◆Y0	3RE4122-7EA●□-◆◆Y0	1	1	S0	3RT2027
10	10	25	25	3RE4122-8AA●□-◆◆Y0	3RE4122-8CA●□-◆◆Y0	3RE4122-8EA●□-◆◆Y0	1	1	S0	3RT2028
10	15	30	40	3RE4123-5AA●□-◆◆Y0	3RE4123-5CA●□-◆◆Y0	3RE4123-5EA●□-◆◆Y0	1	1	S2	3RT2035
15	15	40	50	3RE4123-6AA●□-◆◆Y0	3RE4123-6CA●□-◆◆Y0	3RE4123-6EA●□-◆◆Y0	1	1	S2	3RT2036
20	20	50	50	3RE4123-7AA●□-◆◆Y0	3RE4123-7CA●□-◆◆Y0	3RE4123-7EA●□-◆◆Y0	1	1	S2	3RT2037
20	25	50	60	3RE4123-8AA●□-◆◆Y0	3RE4123-8CA●□-◆◆Y0	3RE4123-8EA●□-◆◆Y0	1	1	S2	3RT2038

□
Thermal overload relay Class 10 = 1
Solid-state overload relay selectable Class = 5

□
1
5

□
1
5

Non-Reversing Starter, 3-Phase, 3-Pole, Thermal or Solid-State Overload Relay, Large Enclosure

3-Phase Motor Hp Rating per UL				NEMA Type Enclosure (Large Size)			Unused Auxiliary Contacts		Frame Size	Contactor (for ref. only)
208 V	230 V	460 V	575 V	Type 1 General Purpose, Indoor only	Type 3/3R/4/12 Weatherproof, Watertight, Dust-tight	Type 4X 304 Stain. Steel Watertight, Dust-tight, Corrosion Resistant	NO	NC		
1.5	2	3	5	Catalog Number	Catalog Number	Catalog Number				
				3RE4121-5BA●□-◆◆Y0	Not applicable — Standard enclosure includes extra mounting space for accessories.		1	0	S00	3RT2015
3	3	7.5	10	3RE4121-7BA●□-◆◆Y0			1	0	S00	3RT2017
2	3	5	7.5	3RE4122-3BA●□-◆◆Y0			1	1	S0	3RT2023
3	3	7.5	10	3RE4122-4BA●□-◆◆Y0			1	1	S0	3RT2024
5	5	10	15	3RE4122-5BA●□-◆◆Y0			1	1	S0	3RT2025
7.5	7.5	15	20	3RE4122-6BA●□-◆◆Y0			1	1	S0	3RT2026
10	10	20	25	3RE4122-7BA●□-◆◆Y0			1	1	S0	3RT2027
10	10	25	25	3RE4122-8BA●□-◆◆Y0			1	1	S0	3RT2028

□
Thermal overload relay Class 10 = 1
Solid-state overload relay selectable Class = 5

① For 3-phase controllers, 208 - 600 V coils will be wired for incoming voltage. 24 and 120 V coils will be wired as separate source or control power transformer

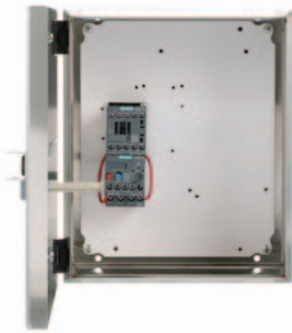
secondary (if ordered). For single phase controllers, 120 and 240 V coils will be wired for incoming voltage. 24 V coils will be wired as separate source or control

power transformer secondary (if ordered). 277 - 600 V coils do not apply.

Enclosed IEC Controls

3RE4 Non-Reversing Starter, 1-Phase, 2-Pole, Thermal Overload Relay

Selection



Ordering Information

- Replace the (●) with the code from the coil table on this page.
- Replace the (□) with the overload relay (OLR) code from this page.
- Replace the (◆◆) with the OLR current adjustment range from pg. 17-172.
- For factory modifications, see page 17-173 – 17-175.
- For accessories, see page 17-176 – 17-177.
- For replacement parts, see page 17-177.
- For dimensions, see page 17-178.
- For wiring diagrams, see page 17-179 – 17-181.

Coil Selection (●)^①

Nominal Voltage	Code
24 VAC 50/60 Hz	1
24 VDC	2
110/120 VAC 50/60 Hz	3
208 VAC 50/60 Hz	4
220/240 VAC 50/60 Hz	5
277 VAC 60 Hz	6
480 VAC 60 Hz	7
600 VAC 60 Hz	8

Soft Starter
Control

Non-Reversing Starter, Single Phase, 2-Pole, Thermal Overload Relay, Standard Enclosure

1-Phase Motor Hp Rating per UL			NEMA Type Enclosure (Standard Size)			Unused Auxiliary Contacts		Frame Size	Contactor (for ref. only)
115 V	208 V	230 V	Type 1 General Purpose, Indoor only	Type 3/3R/4/12 Weatherproof, Watertight, Dust-tight	Type 4X 304 Stain. Steel Watertight, Dust-tight, Corrosion Resistant	NO	NC		
0.25	0.5	0.75	3RE4111-5AA●1-◆◆Y0	3RE4111-5CA●1-◆◆Y0	3RE4111-5EA●1-◆◆Y0	1	0	S00	3RT2015
0.5	1.5	2	3RE4111-7AA●1-◆◆Y0	3RE4111-7CA●1-◆◆Y0	3RE4111-7EA●1-◆◆Y0	1	0	S00	3RT2017
1	1	1	3RE4112-3AA●1-◆◆Y0	3RE4112-3CA●1-◆◆Y0	3RE4112-3EA●1-◆◆Y0	1	1	S0	3RT2023
1	2	2	3RE4112-4AA●1-◆◆Y0	3RE4112-4CA●1-◆◆Y0	3RE4112-4EA●1-◆◆Y0	1	1	S0	3RT2024
1	2	3	3RE4112-5AA●1-◆◆Y0	3RE4112-5CA●1-◆◆Y0	3RE4112-5EA●1-◆◆Y0	1	1	S0	3RT2025
2	3	3	3RE4112-6AA●1-◆◆Y0	3RE4112-6CA●1-◆◆Y0	3RE4112-6EA●1-◆◆Y0	1	1	S0	3RT2026
2	5	5	3RE4112-7AA●1-◆◆Y0	3RE4112-7CA●1-◆◆Y0	3RE4112-7EA●1-◆◆Y0	1	1	S0	3RT2027
3	5	5	3RE4112-8AA●1-◆◆Y0	3RE4112-8CA●1-◆◆Y0	3RE4112-8EA●1-◆◆Y0	1	1	S0	3RT2028
3	5	7.5	3RE4113-5AA●1-◆◆Y0	3RE4113-5CA●1-◆◆Y0	3RE4113-5EA●1-◆◆Y0	1	1	S2	3RT2035
3	7	10	3RE4113-6AA●1-◆◆Y0	3RE4113-6CA●1-◆◆Y0	3RE4113-6EA●1-◆◆Y0	1	1	S2	3RT2036
5	10	10	3RE4113-7AA●1-◆◆Y0	3RE4113-7CA●1-◆◆Y0	3RE4113-7EA●1-◆◆Y0	1	1	S2	3RT2037
5	10	15	3RE4113-8AA●1-◆◆Y0	3RE4113-8CA●1-◆◆Y0	3RE4113-8EA●1-◆◆Y0	1	1	S2	3RT2038

CONTROL
PRODUCTS
17

Non-Reversing Starter, Single Phase, 2-Pole, Thermal Overload Relay, Large Enclosure

1-Phase Motor Hp Rating per UL			NEMA Type Enclosure (Large Size)			Unused Auxiliary Contacts		Frame Size	Contactor (for ref. only)
115 V	208 V	230 V	Type 1 General Purpose, Indoor only	Type 3/3R/4/12 Weatherproof, Watertight, Dust-tight	Type 4X 304 Stain. Steel Watertight, Dust-tight, Corrosion Resistant	NO	NC		
0.25	0.5	0.75	3RE4111-5BA●1-◆◆Y0	Not applicable — Standard enclosure includes extra mounting space for accessories.		1	0	S00	3RT2015
0.5	1.5	2	3RE4111-7BA●1-◆◆Y0			1	0	S00	3RT2017
1	1	1	3RE4112-3BA●1-◆◆Y0			1	1	S0	3RT2023
1	2	2	3RE4112-4BA●1-◆◆Y0			1	1	S0	3RT2024
1	2	3	3RE4112-5BA●1-◆◆Y0			1	1	S0	3RT2025
2	3	3	3RE4112-6BA●1-◆◆Y0			1	1	S0	3RT2026
2	5	5	3RE4112-7BA●1-◆◆Y0			1	1	S0	3RT2027
3	5	5	3RE4112-8BA●1-◆◆Y0			1	1	S0	3RT2028

① For 3-phase controllers, 208 - 600 V coils will be wired for incoming voltage. 24 and 120 V coils will be wired as separate source or control power transformer

secondary (if ordered). For single phase controllers, 120 and 240 V coils will be wired for incoming voltage. 24 V coils will be wired as separate source or control

power transformer secondary (if ordered). 277 - 600 V coils do not apply.

Enclosed IEC Controls

3RE4 Reversing Starter, 3-Phase, 3-Pole, Thermal or Solid-State Overload Relay

Selection



Ordering Information

- Replace the (●) with the code from the coil table on this page.
- Replace the (□) with the overload relay (OLR) code from this page.
- Replace the (◆◆) with the OLR current adjustment range from pg. 17-172.
- For factory modifications, see page 17-173 – 17-175.
- For accessories, see page 17-176 – 17-177.
- For replacement parts, see page 17-177.
- For dimensions, see page 17-178.
- For wiring diagrams, see page 17-179 – 17-181.

Coil Selection (●)^①

Nominal Voltage	Code
24 VAC 50/60 Hz	1
24 VDC	2
110/120 VAC 50/60 Hz	3
208 VAC 50/60 Hz	4
220/240 VAC 50/60 Hz	5
277 VAC 60 Hz	6
480 VAC 60 Hz	7
600 VAC 60 Hz	8

Reversing Starter, 3-Phase, 3-Pole, Thermal or Solid-State Overload Relay, Standard Enclosure

3-Phase Motor Hp Rating per UL				NEMA Type Enclosure (Standard Size)			Unused Auxiliary Contacts		Frame Size	Contactor (for ref. only)
208 V	230 V	460 V	575 V	Type 1 General Purpose, Indoor only	Type 3/3R/4/12 Weatherproof, Watertight, Dust-tight	Type 4X 304 Stain. Steel Watertight, Dust-tight, Corrosion Resistant	NO	NC		
Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	NO	NC	Frame Size	Contactor (for ref. only)
1.5	2	3	5	3RE4141-5AA●□-◆◆Y0	3RE4141-5CA●□-◆◆Y0	3RE4141-5EA●□-◆◆Y0	2	2	S00	3RA2315
3	3	7.5	10	3RE4141-7AA●□-◆◆Y0	3RE4141-7CA●□-◆◆Y0	3RE4141-7EA●□-◆◆Y0	2	2	S00	3RA2317
2	3	5	7.5	3RE4142-3AA●□-◆◆Y0	3RE4142-3CA●□-◆◆Y0	3RE4142-3EA●□-◆◆Y0	2	0	S0	3RA2323
3	3	7.5	10	3RE4142-4AA●□-◆◆Y0	3RE4142-4CA●□-◆◆Y0	3RE4142-4EA●□-◆◆Y0	2	0	S0	3RA2324
5	5	10	15	3RE4142-5AA●□-◆◆Y0	3RE4142-5CA●□-◆◆Y0	3RE4142-5EA●□-◆◆Y0	2	0	S0	3RA2325
7.5	7.5	15	20	3RE4142-6AA●□-◆◆Y0	3RE4142-6CA●□-◆◆Y0	3RE4142-6EA●□-◆◆Y0	2	0	S0	3RA2326
10	10	20	25	3RE4142-7AA●□-◆◆Y0	3RE4142-7CA●□-◆◆Y0	3RE4142-7EA●□-◆◆Y0	2	0	S0	3RA2327
10	10	25	25	3RE4142-8AA●□-◆◆Y0	3RE4142-8CA●□-◆◆Y0	3RE4142-8EA●□-◆◆Y0	2	0	S0	3RA2328
10	15	30	40	3RE4143-5AA●□-◆◆Y0	3RE4143-5CA●□-◆◆Y0	3RE4143-5EA●□-◆◆Y0	2	0	S2	3RA2335
15	15	40	50	3RE4143-6AA●□-◆◆Y0	3RE4143-6CA●□-◆◆Y0	3RE4143-6EA●□-◆◆Y0	2	0	S2	3RA2336
20	20	50	50	3RE4143-7AA●□-◆◆Y0	3RE4143-7CA●□-◆◆Y0	3RE4143-7EA●□-◆◆Y0	2	0	S2	3RA2337
20	25	50	60	3RE4143-8AA●□-◆◆Y0	3RE4143-8CA●□-◆◆Y0	3RE4143-8EA●□-◆◆Y0	2	0	S2	3RA2338

□
Thermal overload relay Class 10 = 1
Solid-state overload relay selectable Class = 5

□
1
5

□
1
5

Reversing Starter, 3-Phase, 3-Pole, Thermal or Solid-State Overload Relay, Large Enclosure

3-Phase Motor Hp Rating per UL				NEMA Type Enclosure (Large Size)			Unused Auxiliary Contacts		Frame Size	Contactor (for ref. only)
208 V	230 V	460 V	575 V	Type 1 General Purpose, Indoor only	Type 3/3R/4/12 Weatherproof, Watertight, Dust-tight	Type 4X 304 Stain. Steel Watertight, Dust-tight, Corrosion Resistant	NO	NC	Frame Size	Contactor (for ref. only)
Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	Catalog Number	NO	NC	Frame Size	Contactor (for ref. only)
1.5	2	3	5	3RE4141-5BA●□-◆◆Y0	Not applicable — Standard enclosure includes extra mounting space for accessories.		2	0	S00	3RA2315
3	3	7.5	10	3RE4141-7BA●□-◆◆Y0			2	0	S00	3RA2317
2	3	5	7.5	3RE4142-3BA●□-◆◆Y0			2	0	S0	3RA2323
3	3	7.5	10	3RE4142-4BA●□-◆◆Y0			2	0	S0	3RA2324
5	5	10	15	3RE4142-5BA●□-◆◆Y0			2	0	S0	3RA2325
7.5	7.5	15	20	3RE4142-6BA●□-◆◆Y0			2	0	S0	3RA2326
10	10	20	25	3RE4142-7BA●□-◆◆Y0			2	0	S0	3RA2327
10	10	25	25	3RE4142-8BA●□-◆◆Y0			2	0	S0	3RA2328

□
Thermal overload relay Class 10 = 1
Solid-state overload relay selectable Class = 5

① For 3-phase controllers, 208 - 600 V coils will be wired for incoming voltage. 24 and 120 V coils will be wired as separate source or control power transformer

secondary (if ordered). For single phase controllers, 120 and 240 V coils will be wired for incoming voltage. 24 V coils will be wired as separate source or control

power transformer secondary (if ordered). 277 - 600 V coils do not apply.

Enclosed IEC Controls

3RE4 Non-Reversing Contactor, 3-Pole (for both 1-Phase and 3-Phase)

Selection



Ordering Information

- Replace the (●) with the code from the coil table on this page.
- For factory modifications, see page 17-173 – 17-175.
- For accessories, see page 17-176 – 17-177.
- For replacement parts, see page 17-177.
- For dimensions, see page 17-178.
- For wiring diagrams, see page 17-179 – 17-181.

Coil Selection (●)^①

Nominal Voltage	Code
24 VAC 50/60 Hz	1
24 VDC	2
110/120 VAC 50/60 Hz	3
208 VAC 50/60 Hz	4
220/240 VAC 50/60 Hz	5
277 VAC 60 Hz	6
480 VAC 60 Hz	7
600 VAC 60 Hz	8

Non-Reversing Contactor, 3-Pole (for both 1-Phase and 3-Phase), Standard Enclosure

1-Phase Motor Hp Rating per UL			3-Phase Motor Hp Rating per UL				NEMA Type Enclosure (Standard Size)			Unused Auxiliary Contacts		Frame Size	Contactor (for ref. only)
							Type 1 General Purpose, Indoor only	Type 3/3R/4/12 Weatherproof, Watertight, Dust-tight	Type 4X 304 Stain. Steel Watertight, Dust-tight, Corrosion Resistant				
115V	208V	230V	208V	230V	460V	575V	Catalog Number	Catalog Number	Catalog Number	NO	NC		
0.25	0.5	0.75	1.5	2	3	5	3RE4161-5AA●0-0YY0	3RE4161-5CA●0-0YY0	3RE4161-5EA●0-0YY0	1	0	S00	3RT2015
0.5	1.5	2	3	3	7.5	10	3RE4161-7AA●0-0YY0	3RE4161-7CA●0-0YY0	3RE4161-7EA●0-0YY0	1	0	S00	3RT2017
1	1	1	2	3	5	7.5	3RE4162-3AA●0-0YY0	3RE4162-3CA●0-0YY0	3RE4162-3EA●0-0YY0	1	1	S0	3RT2023
1	2	2	3	3	7.5	10	3RE4162-4AA●0-0YY0	3RE4162-4CA●0-0YY0	3RE4162-4EA●0-0YY0	1	1	S0	3RT2024
1	2	3	5	5	10	15	3RE4162-5AA●0-0YY0	3RE4162-5CA●0-0YY0	3RE4162-5EA●0-0YY0	1	1	S0	3RT2025
2	3	3	7.5	7.5	15	20	3RE4162-6AA●0-0YY0	3RE4162-6CA●0-0YY0	3RE4162-6EA●0-0YY0	1	1	S0	3RT2026
2	5	5	10	10	20	25	3RE4162-7AA●0-0YY0	3RE4162-7CA●0-0YY0	3RE4162-7EA●0-0YY0	1	1	S0	3RT2027
3	5	5	10	10	25	25	3RE4162-8AA●0-0YY0	3RE4162-8CA●0-0YY0	3RE4162-8EA●0-0YY0	1	1	S0	3RT2028
3	5	7.5	10	15	30	40	3RE4163-5AA●0-0YY0	3RE4163-5CA●0-0YY0	3RE4163-5EA●0-0YY0	1	1	S2	3RT2035
3	7	10	15	15	40	50	3RE4163-6AA●0-0YY0	3RE4163-6CA●0-0YY0	3RE4163-6EA●0-0YY0	1	1	S2	3RT2036
5	10	10	20	20	50	50	3RE4163-7AA●0-0YY0	3RE4163-7CA●0-0YY0	3RE4163-7EA●0-0YY0	1	1	S2	3RT2037
5	10	15	20	25	50	60	3RE4163-8AA●0-0YY0	3RE4163-8CA●0-0YY0	3RE4163-8EA●0-0YY0	1	1	S2	3RT2038

Non-Reversing Contactor, 3-Pole (for both 1-Phase and 3-Phase), Large Enclosure

1-Phase Motor Hp Rating per UL			3-Phase Motor Hp Rating per UL				NEMA Type Enclosure (Large Size)			Unused Auxiliary Contacts		Frame Size	Contactor (for ref. only)
							Type 1 General Purpose, Indoor only	Type 3/3R/4/12 Weatherproof, Watertight, Dust-tight	Type 4X 304 Stain. Steel Watertight, Dust-tight, Corrosion Resistant				
115V	208V	230V	208V	230V	460V	575V	Catalog Number	Catalog Number	Catalog Number	NO	NC		
0.25	0.5	0.75	1.5	2	3	5	3RE4161-5BA●0-0YY0	Not applicable — Standard enclosure includes extra mounting space for accessories.		1	0	S00	3RT2015
0.5	1.5	2	3	3	7.5	10	3RE4161-7BA●0-0YY0			1	0	S00	3RT2017
1	1	1	2	3	5	7.5	3RE4162-3BA●0-0YY0			1	1	S0	3RT2023
1	2	2	3	3	7.5	10	3RE4162-4BA●0-0YY0			1	1	S0	3RT2024
1	2	3	5	5	10	15	3RE4162-5BA●0-0YY0			1	1	S0	3RT2025
2	3	3	7.5	7.5	15	20	3RE4162-6BA●0-0YY0			1	1	S0	3RT2026
2	5	5	10	10	20	25	3RE4162-7BA●0-0YY0			1	1	S0	3RT2027
3	5	5	10	10	25	25	3RE4162-8BA●0-0YY0			1	1	S0	3RT2028

① For 3-phase controllers, 208 - 600 V coils will be wired for incoming voltage. 24 and 120 V coils will be wired as separate source or control power transformer

secondary (if ordered). For single phase controllers, 120 and 240 V coils will be wired for incoming voltage. 24 V coils will be wired as separate source or control

power transformer secondary (if ordered). 277 - 600 V coils do not apply.

Enclosed IEC Controls

3RE4 Reversing Contactor, 3-Pole (for both 1-Phase and 3-Phase)

Selection



Ordering Information

- Replace the (●) with the code from the coil table on this page.
- For factory modifications, see page 17-173 – 17-175.
- For accessories, see page 17-176 – 17-177.
- For replacement parts, see page 17-177.
- For dimensions, see page 17-178.
- For wiring diagrams, see page 17-179 – 17-181.

Coil Selection (●)^①

Nominal Voltage	Code
24 VAC 50/60 Hz	1
24 VDC	2
110/120 VAC 50/60 Hz	3
208 VAC 50/60 Hz	4
220/240 VAC 50/60 Hz	5
277 VAC 60 Hz	6
480 VAC 60 Hz	7
600 VAC 60 Hz	8

Reversing Contactor, 3-Pole (for both 1-Phase and 3-Phase), Standard Enclosure

1-Phase Motor Hp Rating per UL		3-Phase Motor Hp Rating per UL				NEMA Type Enclosure (Standard Size)			Unused Auxiliary Contacts		Frame Size	Contactor (for ref. only)
						Type 1 General Purpose, Indoor only	Type 3/3R/4/12 Weatherproof, Watertight, Dust-tight	Type 4X 304 Stain. Steel Watertight, Dust-tight, Corrosion Resistant				
115V	230V	208V	230V	460V	575V	Catalog Number	Catalog Number	Catalog Number	NO	NC		
0.25	0.75	1.5	2	3	5	3RE4181-5AA●0-0YY0	3RE4181-5CA●0-0YY0	3RE4181-5EA●0-0YY0	2	2	S00	3RA2315
0.5	2	3	3	7.5	10	3RE4181-7AA●0-0YY0	3RE4181-7CA●0-0YY0	3RE4181-7EA●0-0YY0	2	0	S00	3RA2317
1	1	2	3	5	7.5	3RE4182-3AA●0-0YY0	3RE4182-3CA●0-0YY0	3RE4182-3EA●0-0YY0	2	0	S0	3RA2323
1	2	3	3	7.5	10	3RE4182-4AA●0-0YY0	3RE4182-4CA●0-0YY0	3RE4182-4EA●0-0YY0	2	0	S0	3RA2324
1	3	5	5	10	15	3RE4182-5AA●0-0YY0	3RE4182-5CA●0-0YY0	3RE4182-5EA●0-0YY0	2	0	S0	3RA2325
2	3	7.5	7.5	15	20	3RE4182-6AA●0-0YY0	3RE4182-6CA●0-0YY0	3RE4182-6EA●0-0YY0	2	0	S0	3RA2326
2	5	10	10	20	25	3RE4182-7AA●0-0YY0	3RE4182-7CA●0-0YY0	3RE4182-7EA●0-0YY0	2	0	S0	3RA2327
3	5	10	10	25	25	3RE4182-8AA●0-0YY0	3RE4182-8CA●0-0YY0	3RE4182-8EA●0-0YY0	2	0	S0	3RA2328
3	7.5	10	15	30	40	3RE4183-5AA●0-0YY0	3RE4183-5CA●0-0YY0	3RE4183-5EA●0-0YY0	2	0	S2	3RA2335
3	10	15	15	40	50	3RE4183-6AA●0-0YY0	3RE4183-6CA●0-0YY0	3RE4183-6EA●0-0YY0	2	0	S2	3RA2336
5	10	20	20	50	50	3RE4183-7AA●0-0YY0	3RE4183-7CA●0-0YY0	3RE4183-7EA●0-0YY0	2	0	S2	3RA2337
5	15	20	25	50	60	3RE4183-8AA●0-0YY0	3RE4183-8CA●0-0YY0	3RE4183-8EA●0-0YY0	2	0	S2	3RA2338

Reversing Contactor, 3-Pole (for both 1-Phase and 3-Phase), Large Enclosure

1-Phase Motor Hp Rating per UL		3-Phase Motor Hp Rating per UL				NEMA Type Enclosure (Large Size)			Unused Auxiliary Contacts		Frame Size	Contactor (for ref. only)
						Type 1 General Purpose, Indoor only	Type 3/3R/4/12 Weatherproof, Watertight, Dust-tight	Type 4X 304 Stain. Steel Watertight, Dust-tight, Corrosion Resistant				
115V	230V	208V	230V	460V	575V	Catalog Number	Catalog Number	Catalog Number	NO	NC		
0.25	0.75	1.5	2	3	5	3RE4181-5BA●0-0YY0	Not applicable — Standard enclosure includes extra mounting space for accessories.		2	0	S00	3RA2315
0.5	2	3	3	7.5	10	3RE4181-7BA●0-0YY0			2	0	S00	3RA2317
1	1	2	3	5	7.5	3RE4182-3BA●0-0YY0			2	0	S0	3RA2323
1	2	3	3	7.5	10	3RE4182-4BA●0-0YY0			2	0	S0	3RA2324
1	3	5	5	10	15	3RE4182-5BA●0-0YY0			2	0	S0	3RA2325
2	3	7.5	7.5	15	20	3RE4182-6BA●0-0YY0			2	0	S0	3RA2326
2	5	10	10	20	25	3RE4182-7BA●0-0YY0			2	0	S0	3RA2327
3	5	10	10	25	25	3RE4182-8BA●0-0YY0			2	0	S0	3RA2328

① For 3-phase controllers, 208 - 600 V coils will be wired for incoming voltage. 24 and 120 V coils will be wired as separate source or control power transformer

secondary (if ordered). For single phase controllers, 120 and 240 V coils will be wired for incoming voltage. 24 V coils will be wired as separate source or control

power transformer secondary (if ordered). 277 - 600 V coils do not apply.

Enclosed IEC Controls

Selection Tables for 3RE4 Overload Relays

Selection

Selection Tables for 3RE4 Overload Relays

 Thermal Overload Relay		Selection Information
 Solid-State Overload Relay		▶ Replace the (◆◆) within the incomplete 3RE4 catalog number with a code selected from the tables below. The frame size must match that of the 3RE4 product.

Thermal Overload Relays, Trip Class 10, Single and Three Phase

Features and technical characteristics:

- Phase failure sensitivity
- Includes NC trip contact and NO alarm contact
- Manual and automatic RESET (selectable)
- Switch position indicator
- TEST function
- STOP button
- Sealable cover (optional)
- Screw-type terminals

Current Adjustment Range (Amp)	Code ◆◆	Thermal Overload Relay (reference only)
Frame Size S00		
0.7 - 1	0J	3RU2116-0JB0
0.9 - 1.25	0K	3RU2116-0KB0
1.1 - 1.6	1A	3RU2116-1AB0
1.4 - 2	1B	3RU2116-1BB0
1.8 - 2.5	1C	3RU2116-1CB0
2.2 - 3.2	1D	3RU2116-1DB0
2.8 - 4	1E	3RU2116-1EB0
3.5 - 5	1F	3RU2116-1FB0
4.5 - 6.3	1G	3RU2116-1GB0
5.5 - 8	1H	3RU2116-1HB0
7 - 10	1J	3RU2116-1JB0
9 - 12.5	1K	3RU2116-1KB0
11 - 16	4A	3RU2116-4AB0

Current Adjustment Range (Amp)	Code ◆◆	Thermal Overload Relay (reference only)
Frame Size S0		
1.8 - 2.5	1C	3RU2126-1CB0
2.2 - 3.2	1D	3RU2126-1DB0
2.8 - 4	1E	3RU2126-1EB0
3.5 - 5	1F	3RU2126-1FB0
4.5 - 6.3	1G	3RU2126-1GB0
5.5 - 8	1H	3RU2126-1HB0
7 - 10	1J	3RU2126-1JB0
9 - 12.5	1K	3RU2126-1KB0
11 - 16	4A	3RU2126-4AB0
14 - 20	4B	3RU2126-4BB0
17 - 22	4C	3RU2126-4CB0
20 - 25	4D	3RU2126-4DB0
23 - 28	4N	3RU2126-4NB0
27 - 32	4E	3RU2126-4EB0
30 - 36	4P	3RU2126-4PB0
34 - 40	4F	3RU2126-4FB0

Current Adjustment Range (Amp)	Code ◆◆	Thermal Overload Relay (reference only)
Frame Size S2		
22 - 32	4E	3RU2136-4EB0
28 - 40	4F	3RU2136-4FB0
36 - 45	4G	3RU2136-4GB0
40 - 50	4H	3RU2136-4HB0
47 - 57	4Q	3RU2136-4QB0
54 - 65	4J	3RU2136-4JB0
62 - 73	4K	3RU2136-4KB0
70 - 80	4R	3RU2136-4RB0

Solid-State Overload Relays, Selectable Trip Class 5, 10, 20 and 30, Three Phase Only

Features and technical characteristics:

- Overload, phase failure and unbalance protection
- Internal ground fault detection (selectable)
- Internal power supply
- Includes NC trip contact and NO alarm contact
- Manual and automatic RESET (selectable)
- Electrical remote RESET integrated
- Switch position indicator
- TEST function and self-monitoring
- Sealable cover (optional)
- Screw-type terminals

Current Adjustment Range (Amp)	Code ◆◆	Solid-State Overload Relay (reference only)
Frame Size S00		
0.32 - 1.25	4N	3RB3113-4NB0
1 - 4	4P	3RB3113-4PB0
3 - 12	4S	3RB3113-4SB0
4 - 16	4T	3RB3113-4TB0

Current Adjustment Range (Amp)	Code ◆◆	Solid-State Overload Relay (reference only)
Frame Size S0		
0.32 - 1.25	4N	3RB3123-4NB0
1 - 4	4P	3RB3123-4PB0
3 - 12	4S	3RB3123-4SB0
6 - 25	4Q	3RB3123-4QB0
10 - 40	4V	3RB3123-4VB0

Current Adjustment Range (Amp)	Code ◆◆	Solid-State Overload Relay (reference only)
Frame Size S2		
12 - 50	4U	3RB3133-4UB0
20 - 80	4W	3RB3133-4WB0

Enclosed IEC Controls

3RE4 Factory Modifications

Selection

Selection Information

- These tables apply to 3RE4 products.
- Replace the last two characters of the 3RE4 catalog number (Y0), with a code selected from the tables below.

Start-Stop Push Button Combinations

Description	Code (Y0)	Restrictions
(No modifications included)	Y0	—
Start-Stop Push Buttons	B0	1
Start-Stop Push Buttons, Red On Pilot Light	B1	1
Start-Stop Push Buttons, Red On Pilot Light, Green Off Pilot Light	B2	1
Start-Stop Push Buttons, CPT Std Capacity ^① 208:120V	B3	1 and 2
Start-Stop Push Buttons, CPT Std Capacity ^① 208:120V, Red On Pilot Light	B4	1 and 2
Start-Stop Push Buttons, CPT Std Capacity ^① 208:120V, Red On Pilot Light, Green Off Pilot Light	B5	1 and 2
Start-Stop Push Buttons, CPT Std Capacity ^① 208:24V	B6	1 and 2
Start-Stop Push Buttons, CPT Std Capacity ^① 208:24V, Red On Pilot Light	B7	1 and 2
Start-Stop Push Buttons, CPT Std Capacity ^① 208:24V, Red On Pilot Light, Green Off Pilot Light	B8	1 and 2
Start-Stop Push Buttons, CPT Std Capacity ^① 240:120V	C0	1 and 2
Start-Stop Push Buttons, CPT Std Capacity ^① 240:120V, Red On Pilot Light	C1	1 and 2
Start-Stop Push Buttons, CPT Std Capacity ^① 240:120V, Red On Pilot Light, Green Off Pilot Light	C2	1 and 2
Start-Stop Push Buttons, CPT Std Capacity ^① 240:24V	C3	1 and 3
Start-Stop Push Buttons, CPT Std Capacity ^① 240:24V, Red On Pilot Light	C4	1 and 3
Start-Stop Push Buttons, CPT Std Capacity ^① 240:24V, Red On Pilot Light, Green Off Pilot Light	C5	1 and 3
Start-Stop Push Buttons, CPT Std Capacity ^① 480/240:120V	C6	1, 2 and 4
Start-Stop Push Buttons, CPT Std Capacity ^① 480/240:120V, Red On Pilot Light	C7	1, 2 and 4
Start-Stop Push Buttons, CPT Std Capacity ^① 480/240:120V, Red On Pilot Light, Green Off Pilot Light	C8	1, 2 and 4
Start-Stop Push Buttons, CPT Std Capacity ^① 480/240:24V	D0	1, 3 and 4
Start-Stop Push Buttons, CPT Std Capacity ^① 480/240:24V, Red On Pilot Light	D1	1, 3 and 4
Start-Stop Push Buttons, CPT Std Capacity ^① 480/240:24V, Red On Pilot Light, Green Off Pilot Light	D2	1, 3 and 4
Start-Stop Push Buttons, CPT Std Capacity ^① 600:120V, Red On Pilot Light	P0	1, 2 and 4

Fwd-Rev-Stop Push Button Combinations

Description	Code (Y0)	Restrictions
(No modifications included)	Y0	—
Fwd-Rev-Stop Push Buttons	D3	5
Fwd-Rev-Stop Push Buttons, Red On Pilot Light	D4	5
Fwd-Rev-Stop Push Buttons, Red On Pilot Light, Green Off Pilot Light	D5	5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 208:120V	D6	2 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 208:120V, Red On Pilot Light	D7	2 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 208:120V, Red On Pilot Light, Green Off Pilot Light	D8	2 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 208:24V	E0	3 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 208:24V, Red On Pilot Light	E1	3 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 208:24V, Red On Pilot Light, Green Off Pilot Light	E2	3 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 240:120V	E3	2 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 240:120V, Red On Pilot Light	E4	2 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 240:120V, Red On Pilot Light, Green Off Pilot Light	E5	2 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 240:24V	E6	3 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 240:24V, Red On Pilot Light	E7	3 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 240:24V, Red On Pilot Light, Green Off Pilot Light	E8	3 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 480/240:120V	F0	2, 4 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 480/240:120V, Red On Pilot Light	F1	2, 4 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 480/240:120V, Red On Pilot Light, Green Off Pilot Light	F2	2, 4 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 480/240:24V	F3	3, 4 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 480/240:24V, Red On Pilot Light	F4	3, 4 and 5
Fwd-Rev-Stop Push Buttons, CPT Std Capacity ^① 480/240:24V, Red On Pilot Light, Green Off Pilot Light	F5	3, 4 and 5

Restrictions:

1. Valid only with non-reversing controllers.
2. Valid only with 120 V coil.
3. Valid only with 24 VAC coil.
4. Not valid with single-phase controllers.
5. Not valid in NEMA Type 1 enclosures.

^① A CPT in a NEMA type 1 enclosure with a size S00 or S0 controller requires a large size enclosure. A CPT in a NEMA type 1 enclosure with a size S2 controller requires a standard size enclosure. All other enclosure types may be standard size.

Enclosed IEC Controls

3RE4 Factory Modifications

Selection

Selection Information

- ▶ These tables apply to 3RE4 products.
- ▶ Replace the last two characters of the 3RE4 catalog number (Y0), with a code selected from the tables below.

Hand-Off-Auto Selector Switch Combinations

Description	Code (Y0)	Restrictions
(No modifications included)	Y0	—
Hand-Off-Auto Selector Switch	F6	1
Hand-Off-Auto Selector Switch, Red On Pilot Light	F7	1
Hand-Off-Auto Selector Switch, Red On Pilot Light, Green Off Pilot Light	F8	1
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 208:120V	G0	1 and 2
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 208:120V, Red On Pilot Light	G1	1 and 2
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 208:120V, Red On Pilot Light, Green Off Pilot Light	G2	1 and 2
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 208:24V	G3	1 and 3
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 208:24V, Red On Pilot Light	G4	1 and 3
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 208:24V, Red On Pilot Light, Green Off Pilot Light	G5	1 and 3
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 240:120V	G6	1 and 2
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 240:120V, Red On Pilot Light	G7	1 and 2
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 240:120V, Red On Pilot Light, Green Off Pilot Light	G8	1 and 2
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 240:24V	H0	1 and 3
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 240:24V, Red On Pilot Light	H1	1 and 3
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 240:24V, Red On Pilot Light, Green Off Pilot Light	H2	1 and 3
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 480/240:120V	H3	1, 2 and 4
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 480/240:120V, Red On Pilot Light	H4	1, 2 and 4
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 480/240:120V, Red On Pilot Light, Green Off Pilot Light	H5	1, 2 and 4
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 480/240:24V	H6	1, 3 and 4
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 480/240:24V, Red On Pilot Light	H7	1, 3 and 4
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 480/240:24V, Red On Pilot Light, Green Off Pilot Light	H8	1, 3 and 4
Hand-Off-Auto Selector Switch, CPT Std Capacity ^① 600:120V, Red On Pilot Light	P1	1, 2 and 4

On-Off Selector Switch Combinations

Description	Code (Y0)	Restrictions
(No modifications included)	Y0	—
On-Off Selector Switch	J0	1
On-Off Selector Switch, Red On Pilot Light	J1	1
On-Off Selector Switch, Red On Pilot Light, Green Off Pilot Light	J2	1
On-Off Selector Switch, CPT Std Capacity ^① 208:120V	J3	1 and 2
On-Off Selector Switch, CPT Std Capacity ^① 208:120V, Red On Pilot Light	J4	1 and 2
On-Off Selector Switch, CPT Std Capacity ^① 208:120V, Red On Pilot Light, Green Off Pilot Light	J5	1 and 2
On-Off Selector Switch, CPT Std Capacity ^① 208:24V	J6	1 and 3
On-Off Selector Switch, CPT Std Capacity ^① 208:24V, Red On Pilot Light	J7	1 and 3
On-Off Selector Switch, CPT Std Capacity ^① 208:24V, Red On Pilot Light, Green Off Pilot Light	J8	1 and 3
On-Off Selector Switch, CPT Std Capacity ^① 240:120V	K0	1 and 2
On-Off Selector Switch, CPT Std Capacity ^① 240:120V, Red On Pilot Light	K1	1 and 2
On-Off Selector Switch, CPT Std Capacity ^① 240:120V, Red On Pilot Light, Green Off Pilot Light	K2	1 and 2
On-Off Selector Switch, CPT Std Capacity ^① 240:24V	K3	1 and 3
On-Off Selector Switch, CPT Std Capacity ^① 240:24V, Red On Pilot Light	K4	1 and 3
On-Off Selector Switch, CPT Std Capacity ^① 240:24V, Red On Pilot Light, Green Off Pilot Light	K5	1 and 3
On-Off Selector Switch, CPT Std Capacity ^① 480/240:120V	K6	1, 2 and 4
On-Off Selector Switch, CPT Std Capacity ^① 480/240:120V, Red On Pilot Light	K7	1, 2 and 4
On-Off Selector Switch, CPT Std Capacity ^① 480/240:120V, Red On Pilot Light, Green Off Pilot Light	K8	1, 2 and 4
On-Off Selector Switch, CPT Std Capacity ^① 480/240:24V	L0	1, 3 and 4
On-Off Selector Switch, CPT Std Capacity ^① 480/240:24V, Red On Pilot Light	L1	1, 3 and 4
On-Off Selector Switch, CPT Std Capacity ^① 480/240:24V, Red On Pilot Light, Green Off Pilot Light	L2	1, 3 and 4

Restrictions:

1. Valid only with non-reversing controllers.
2. Valid only with 120 V coil.
3. Valid only with 24 VAC coil.
4. Not valid with single-phase controllers.

^① A CPT in a NEMA type 1 enclosure with a size S00 or S0 controller requires a large size enclosure. A CPT in a NEMA type 1 enclosure with a size S2 controller requires a standard size enclosure. All other enclosure types may be standard size.

Enclosed IEC Controls

3RE4 Factory Modifications

Selection

Selection Information

- These tables apply to 3RE4 products.
- Replace the last two characters of the 3RE4 catalog number (Y0), with a code selected from the tables below.

Fwd-Off-Rev Selector Switch Combinations

Description	Code (Y0)	Restrictions
(No modifications included)	Y0	—
Fwd-Off-Rev Selector Switch	L3	—
Fwd-Off-Rev Selector Switch, Red On Pilot Light	L4	—
Fwd-Off-Rev Selector Switch, Red On Pilot Light, Green Off Pilot Light	L5	—
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 208:120V	L6	1
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 208:120V, Red On Pilot Light	L7	1
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 208:120V, Red On Pilot Light, Green Off Pilot Light	L8	1
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 208:24V	M0	2
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 208:24V, Red On Pilot Light	M1	2
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 208:24V, Red On Pilot Light, Green Off Pilot Light	M2	2
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 240:120V	M3	1
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 240:120V, Red On Pilot Light	M4	1
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 240:120V, Red On Pilot Light, Green Off Pilot Light	M5	1
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 240:24V	M6	2
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 240:24V, Red On Pilot Light	M7	2
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 240:24V, Red On Pilot Light, Green Off Pilot Light	M8	2
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 480/240:120V	N0	1 and 3
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 480/240:120V, Red On Pilot Light	N1	1 and 3
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 480/240:120V, Red On Pilot Light, Green Off Pilot Light	N2	1 and 3
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 480/240:24V	N3	2 and 3
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 480/240:24V, Red On Pilot Light	N4	2 and 3
Fwd-Off-Rev Selector Switch, CPT Std Capacity ^① 480/240:24V, Red On Pilot Light, Green Off Pilot Light	N5	2 and 3

Restrictions:

1. Valid only with 120 V coil.
2. Valid only with 24 VAC coil.
3. Not valid with single-phase controllers.

^① A CPT in a NEMA type 1 enclosure with a size S00 or S0 controller requires a large size enclosure. A CPT in a NEMA type 1 enclosure with a size S2 controller requires a standard size enclosure. All other enclosure types may be standard size.

Enclosed IEC Controls

3RE4 Field Modifications and Accessories

Selection

Pilot Devices

	Device ^①	Enclosure NEMA Type	Catalog Number
 49SDPB5 49SDSBJ 49SDSB4 Start Push Button Stop Push Button 2-Position Selector Switch 3-Position Selector Switch	Start-Stop Push Buttons, momentary ^②	1	49SDPB5
		3/3R/4/12 & 4X	49SDP05
	Fwd-Rev-Stop Push Buttons, momentary ^②	1	NA
		3/3R/4/12 & 4X	49SDP02
	Hand-Off-Auto Selector Switch	1	49SDSBJ
		3/3R/4/12 & 4X	49SDS01
	On-Off Selector Switch	1	49SDSB4
		3/3R/4/12 & 4X	49SDS04
	Fwd-Off-Rev Selector Switch	1	49SDSBJ
		3/3R/4/12 & 4X	49SDS02

Pilot Lights

	Device ^①	Enclosure NEMA Type	Voltage	Catalog Number
	Light module and lens color: RED, GREEN, and AMBER. Legends include: ON, RUN, OFF ^③ , OLR TRIPPED ^④	1	24 to 240 V AC/DC	49SDLBU
			277 V AC	49SDLBL
	Red FORWARD, Red REVERSE	1	24 to 240 V AC/DC	49SDLB7RU
			277 V AC	49SDLB7RL
		3/3R/4/12 & 4X 3/3R/4/12 & 4X	24 to 240 V AC/DC	49SDL07RU
			277 V AC	49SDL07RL
	Green FORWARD, Green REVERSE	1	24 to 240 V AC/DC	49SDLB7GU
			277 V AC	49SDLB7GL
		3/3R/4/12 & 4X 3/3R/4/12 & 4X	24 to 240 V AC/DC	49SDL07GU
			277 V AC	49SDL07GL
	Red ON	3/3R/4/12 & 4X 3/3R/4/12 & 4X	24 to 240 V AC/DC	49SDL0BRU
	Red OFF ^③	3/3R/4/12 & 4X 3/3R/4/12 & 4X	24 to 240 V AC/DC	49SDL0BRL
			277 V AC	49SDL0ARU
	Green ON	3/3R/4/12 & 4X 3/3R/4/12 & 4X	24 to 240 V AC/DC	49SDL0BGU
			277 V AC	49SDL0BGL
	Green OFF ^③	3/3R/4/12 & 4X 3/3R/4/12 & 4X	24 to 240 V AC/DC	49SDL0AGU
			277 V AC	49SDL0AGL

Auxiliary Contacts

	Device	Frame Size	Catalog Number
	1 NO & 1 NC laterally mounted, screw terminals	S00	3RH2911-1DA11
		S0 and S2	3RH2921-1DA11
	2 NO laterally mounted, screw terminals	S00	NA
		S0 and S2	3RH2921-1DA20
	2 NC laterally mounted, screw terminals	S00	3RH2911-1DA02
		S0 and S2	3RH2921-1DA02

① 3SU 22 mm devices. Pilot lights include LED bulbs.

② Each contactor must have a normally open (NO) auxiliary contact available for seal-in circuit. Order separately as needed.

③ To use as an OFF indicator, the contactor must have a normally closed (NC) auxiliary contact available for the circuit. Order separately as needed.

④ To use as an overload relay (OLR) trip indicator, the OLR must have a normally open (NO) auxiliary contact available for the circuit.

Enclosed IEC Controls

3RE4 Field Modifications, Accessories, and Replacement Parts

Selection

Control Power Transformers^①

	Device	Frame Size	Catalog Number	Transformer Table		
				Primary Volts	Secondary Volts	Code
	45 VA, 1-secondary fuse	S00	KT*050	120	24	1
	75 VA, 2-primary and 1-secondary fuses	S0 & S2	KT*075	208	24	G
				208	120	H
				240/480	24	4
				240/480	120	8
				277	24	5
				277	120	7
				600	24	6
				600	120	9
	▶ Replace * with code from Transformer Table. ▶ 45VA CPT does not require primary fuses per NEC.					

Control Relays and Timers^{①②}

	Device	Catalog Number	Coil Voltage Table	
			Voltage	Code
	Control relay, 4 NO / 0 NC	3RH2140-1●●●●0	24 VAC 50/60 Hz	AB0
	Control relay, 3 NO / 1 NC	3RH2131-1●●●●0	24 VDC	BB4
	Control relay, 2 NO / 2 NC	3RH2122-1●●●●0	110/120 VAC 50/60 Hz	AK6
	ON-delay timer, 0.05 sec. – 100 hr., 24 – 240V AC/DC	3RP2525-1BW30	208 VAC 50/60 Hz	AM2
	OFF-delay timer, 0.05 sec. – 100 hr., 24 – 240V AC/DC	3RP2535-1AW30	220/240 VAC 50/60 Hz	AP6
			277 VAC 60 Hz	—
			480 VAC 60 Hz	AV6
			600 VAC 60 Hz	—
▶ Replace ●●● with code from Coil Voltage Table. ▶ Relays and timers include screw terminals.				

Miscellaneous

	Device	Catalog Number
	1-pole fuse block for control circuit, 600V / 30A, DIN rail mounted, CC fuses (not included)	3NW7513-0HG
	2-pole fuse block for control circuit, 600V / 30A, DIN rail mounted, CC fuses (not included)	3NW7523-0HG
	Ground Lug, 3 Conductor, 2-14 AWG AL/CU Wire	75D28182001
	Terminal block, 1-point unwired, DIN rail mounted, 6mm, 26A ^②	8WA10111DF11
	End retainer for DIN rail ^②	8WA1808
	DIN rail kit, 35mm x 5 in, for mounting optional accessories ^①	MTR5
	Sealable cover for rotary dial on overload relay (10 per package)	3RV29 08-0P

Replacement Parts

	Device	Catalog Number
	Contactor parts (Obtain Cat. No. from device and refer to Industrial Control Catalog).	—
	Overload relay (Obtain Cat. No. from device and refer to Industrial Control Catalog).	—
	Overload Relay Reset Operator for all NEMA Type enclosures	49MBRS

Enclosure Kits

	Controller Frame Size & Type NR = Non-Reversing R = Reversing	Type 1	Type 1	Type 3/3R/4/12	Type 4X 304 S.S.
		Standard Size	Large Size ^⑤	Standard Size ^⑥	Standard Size ^⑥
		Catalog Number	Catalog Number	Catalog Number	Catalog Number
	S00 NR, S0 NR	49EC14EB110705R	49EC14GB140807R ^③	49EFN121006XRX	49EFW121006XRX
	S00 R, S0 R	49EC14GB140807R ^③	49EC14IB201208R ^④	49EFN121006XRX	49EFW121006XRX
	S2 NR, S2 R	49EC14IB201208R ^{④⑤}	—	49EFN141208XRX	49EFW141208XRX

① The accessory in a NEMA type 1 enclosure requires a large size enclosure. All other enclosure types may be standard size.
 ② Requires DIN rail kit or equivalent.

③ Enclosure 49EC14GB140807R requires mounting adaptor plate 49EFA070500XXA which is sold separately.
 ④ Enclosure 49EC14IB201208R requires mounting adaptor plate 49EFA060800XXA which is sold separately.

⑤ These large enclosures are required for certain accessories as indicated in the Field Modification pages.
 ⑥ These standard size enclosures include extra mounting space for accessories.

Enclosed IEC Controls

3RE4 Outline Diagrams

Technical information

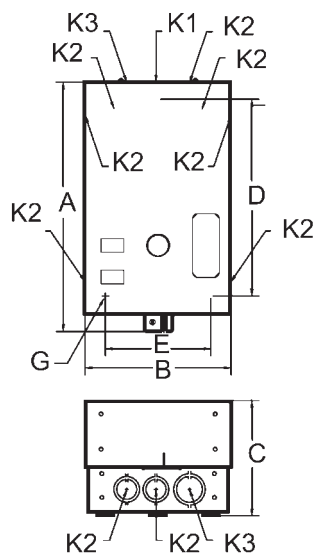


Figure 1

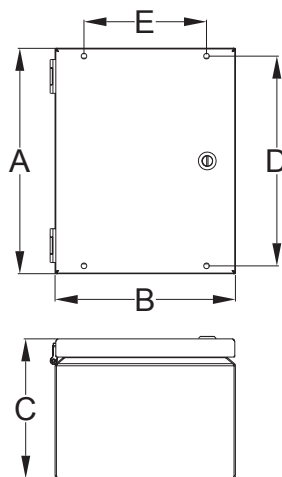


Figure 2

3RE4 Non-Combination Type Controllers

Enclosure Type	Contactor Rating	Fig.	Outline Dimensions			Mounting		Conduit Size		
			A	B	C	D	E	K1	K2	K3
1 (standard size)	S00 NR, S0 NR	1	10.97	6.41	5.03	8.22	4.62	0.5	0.50-0.75	0.75-1
	S00 R, S0 R	1	13.53	7.97	6.38	10.25	6.00	0.50-0.75	0.75-1	1-1.25
	S2 NR, S2 R	1	19.12	11.38	7.69	15.62	8.25	0.50-0.75	1-1.25	1.5-2
1 (large size)	S00 NR, S0 NR	1	13.53	7.97	6.38	10.25	6.00	0.50-0.75	0.75-1	1-1.25
	S00 R, S0 R	1	19.12	11.38	7.69	15.62	8.25	0.50-0.75	1-1.25	1.5-2
3/3R/4/12 & 4X 304 SS	S00 NR, S00 R, S0 NR, S0 R	2	12.00	10.00	6.00	11.30	7.44	—	—	—
	S2 NR, S2 R	2	14.00	12.00	8.00	13.30	9.44	—	—	—

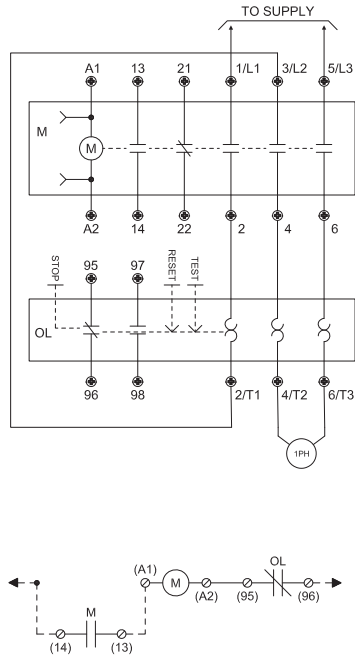
Sxx = Frame size; NR = Non-reversing; R = Reversing
 Mounting screw G is 0.25".
 Dimensions are in inches.

Enclosed IEC Controls

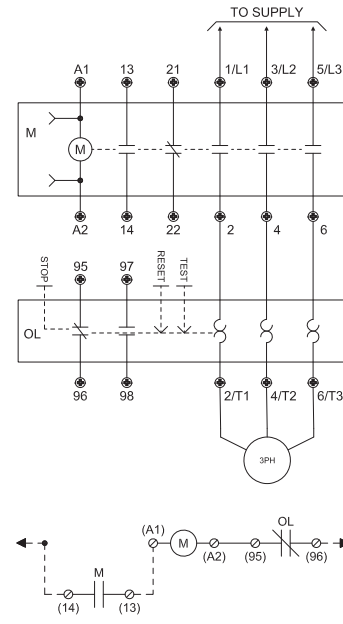
3RE4 Wiring Diagrams

Technical information

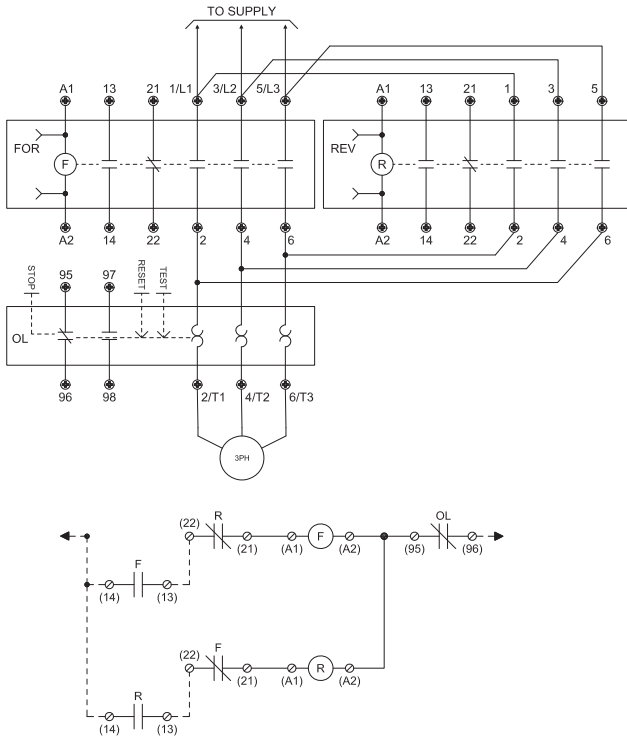
Non-combination non-reversing starter, 1-phase, 2-pole



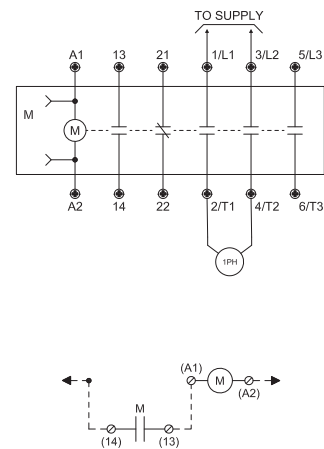
Non-combination non-reversing starter, 3-phase, 3-pole



Non-combination reversing starter, 3-phase, 3-pole



Non-combination non-reversing contactor, 1-phase, 2-pole


Soft Starter
Control

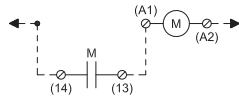
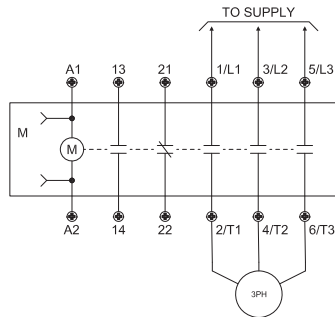
17
CONTROL
PRODUCTS

Enclosed IEC Controls

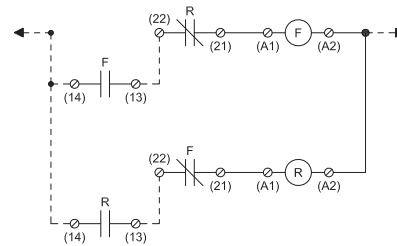
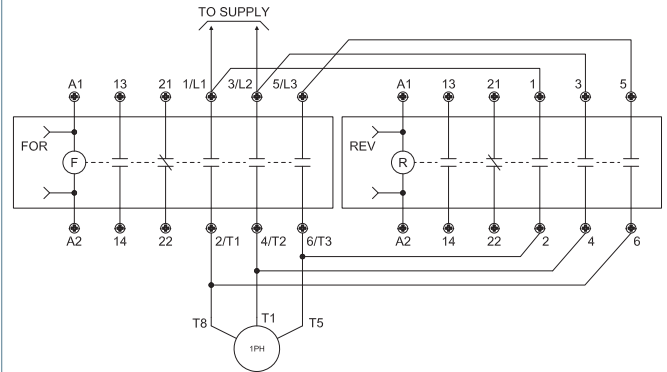
3RE4 Wiring Diagrams

Technical information

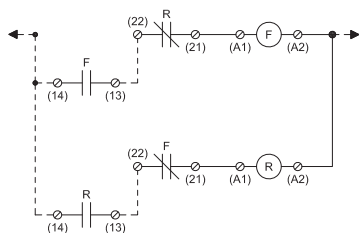
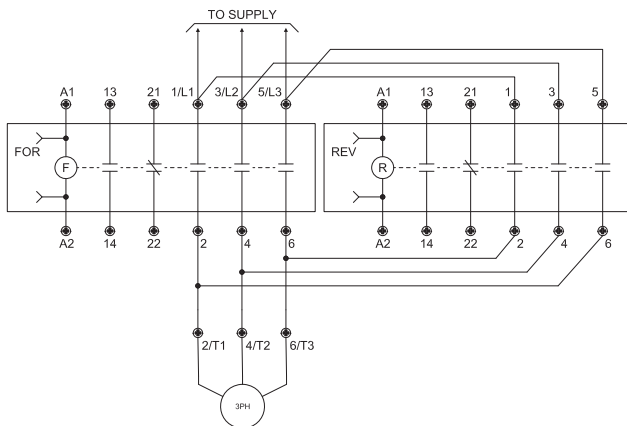
**Non-combination non-reversing
contactor, 3-phase, 3-pole**



**Non-combination reversing contactor,
1-phase, 3-wire, 2-pole**



**Non-combination reversing contactor,
3-phase, 3-pole**

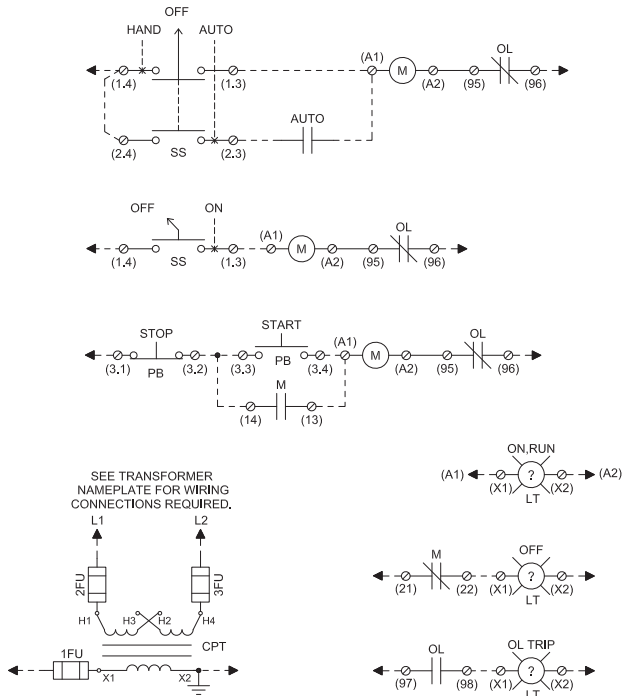


Enclosed IEC Controls

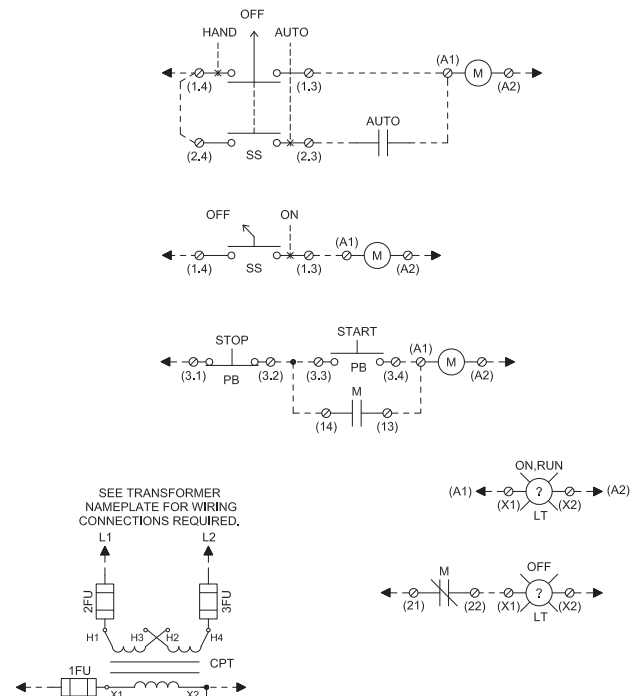
3RE4 Wiring Diagrams

Technical information

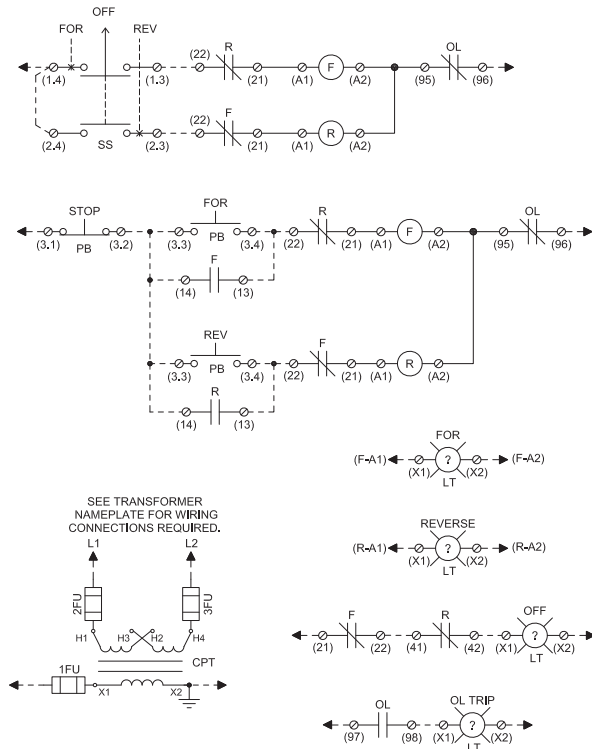
Control options for non-reversing starters



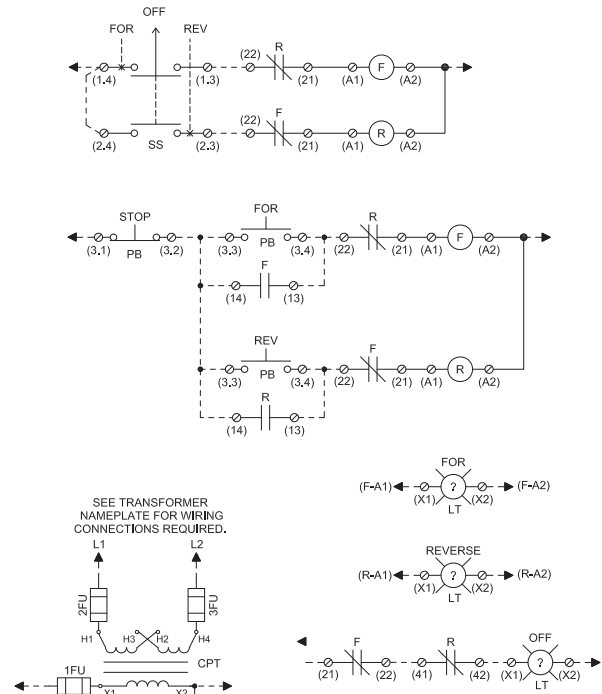
Control options for non-reversing contactors



Control options for reversing starters



Control options for reversing contactors



Soft Starter
Control

17
CONTROL
PRODUCTS

Soft Starters

Introduction

Overview

More information

Homepage, see www.usa.siemens.com/soft-starter
 Industry Mall, see www.siemens.com/product?3RW
 TIA Selection Tool Cloud (TST Cloud), see
<https://www.siemens.com/tstcloud/?node=Sirius3rwFolder>

Industry Online Support (SIOS) topic page, see
<https://support.industry.siemens.com/cs/ww/en/view/109747404>
 Simulation Tool for Soft Starters (STS), see page 6/8 or
<https://support.industry.siemens.com/cs/ww/en/view/101494917>



3RW55



3RW55 Failsafe



3RW52



3RW50



3RW40



3RW30

Page

3RW soft starters

High Performance soft starters

3RW55 soft starters

- TIA integration optional
- Plug-in communication modules for PROFINET, PROFIBUS, EtherNet/IP and Modbus
- Removable HMI module with color display, local interface and slot for a micro SD memory card
- Extended protection functions
- Up to 1000HP @ 480V (600V and 690V ratings also available)
- Automatic parameterization for simple commissioning and reliability even under changing load conditions
- Hybrid switching devices for minimum power loss and three-phase motor control for optimum/symmetrical motor control
- Pump stop for reduced mechanical loading and optimum pump stop control
- ATEX/IECEx certification

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3RW55 Failsafe soft starters

- TIA integration optional
- Plug-in communication modules for PROFINET, PROFIBUS, EtherNet/IP and Modbus
- Removable HMI module with color display, local interface and slot for a micro SD memory card
- Extended protection functions
- Up to 400HP @ 480V
- SIL 1 - PL c / STO without additional components
- SIL 3 - PL e / STO with additional contactor and safety relay
- Hybrid switching devices for minimum power loss and three-phase motor control for optimum/symmetrical motor control
- Pump stop for reduced mechanical loading and optimum pump stop control
- ATEX/IECEx certification

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General Performance soft starters

3RW52 soft starters

- TIA integration optional
- Plug-in communication modules for PROFINET, PROFIBUS, EtherNet/IP and Modbus
- HMI modules optional
- Soft starting and stopping
- Current limiting
- Motor overload protection (optionally with thermistor motor protection)
- Analog output (optional)
- Up to 400HP @ 480V (600V ratings also available)
- Hybrid switching devices for minimum power loss and three-phase motor control for optimum/symmetrical motor control
- Soft Torque for reduced mechanical loading and optimum pump stop
- Parameterization using potentiometers

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Soft Starters

Introduction



3RW55



3RW55 Failsafe



3RW52



3RW50



3RW40



3RW30

Page

3RW soft starters

Basic Performance soft starters

3RW50 soft starters

- TIA integration optional
- Communication modules for PROFINET, PROFIBUS, EtherNet/IP and Modbus
- HMI modules optional
- Soft starting and stopping
- Current limiting
- Motor overload protection (optionally with thermistor motor protection)
- Analog output (optional)
- Up to 400HP @ 480V (600V ratings also available)
- Hybrid switching devices for minimum power loss and two-phase motor control
- Soft Torque for reduced mechanical loading and optimum pump stop
- Parameterization using potentiometers
- ATEX/IECEx certification

17-251

3RW40 soft starters

- Soft starting and stopping
- Current limiting
- Motor overload protection (optionally with thermistor motor protection)
- Up to 75HP @ 480V 600V ratings also available)
- Hybrid switching devices for minimum power loss and two-phase motor control
- ATEX certification

17-263

3RW30 soft starters

- Soft starting with voltage ramp
- Up to 75HP @ 480V

17-274

For enclosed applications

Enclosures in NEMA 1, 3, 4, & 12 types UL/CSA listed

- Complete starter includes 3RW40 or 3RW44 and CPT
- Performance Range of up to 600 Hp (at 460 V)
- Combination options include circuit breaker or fusible disconnect
- Application areas:
 - Compressors
 - Pumps
 - Stamping presses
 - Cooling towers
 - Molding and extruding
 - Chippers and debarkers
 - Lumber processing
 - Pulp & paper processing
 - Conveyors
 - Textiles
 - HVAC

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Use of soft starters in conjunction with IE3/IE4 motors

Note:

For the use of SIRIUS 3RW soft starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, [see Application Manual](#).

Soft Starters

SIRIUS 3RW Soft Starters

General data

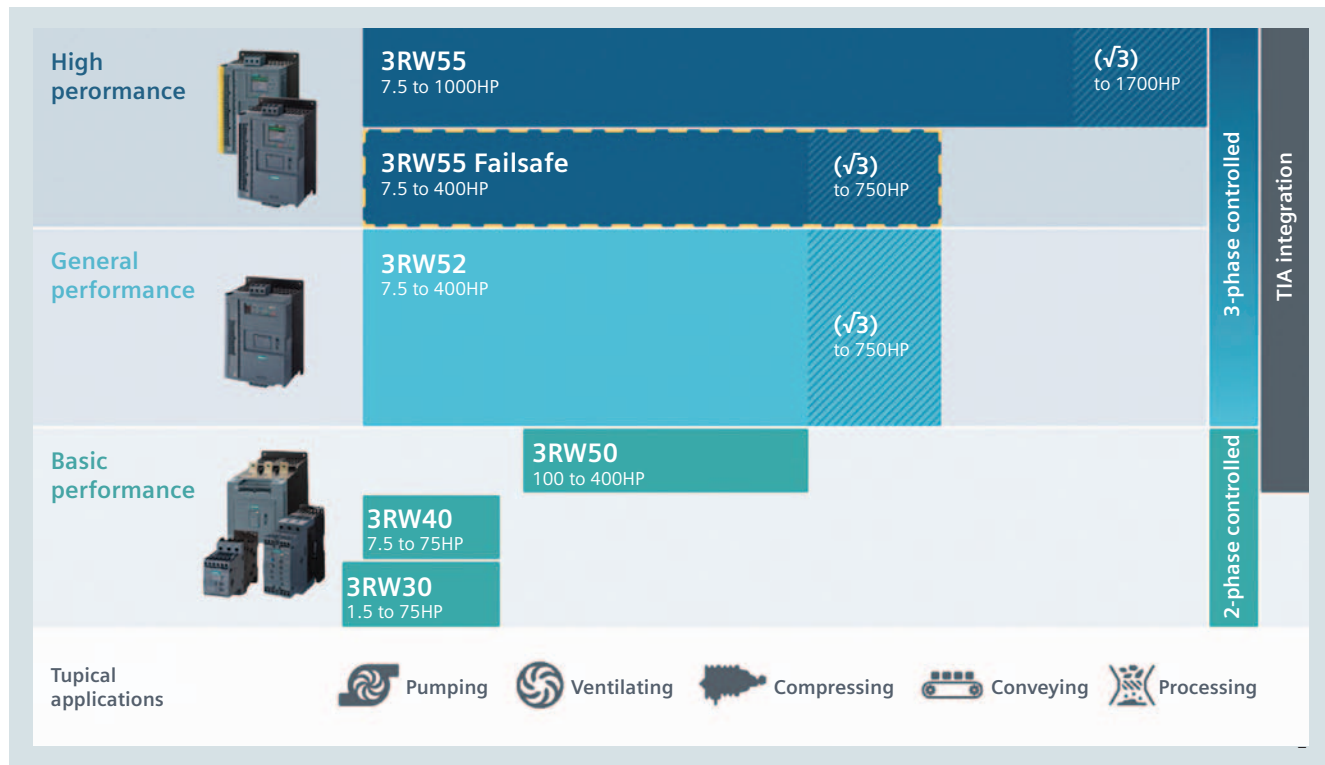
Overview

More information

Homepage, see www.usa.siemens.com/soft-starter
 Industry Mall, see www.siemens.com/product?3RW
 TIA Selection Tool Cloud (TST Cloud), see
<https://www.siemens.com/tstcloud/?node=Sirius3rwFolder>

Industry Online Support (SIOS) topic page, see
<https://support.industry.siemens.com/cs/ww/en/view/109747404>
 Simulation Tool for Soft Starters (STS), see page 17-187 or
<https://support.industry.siemens.com/cs/ww/en/view/101494917>

SIRIUS 3RW soft starters – as versatile as your application



Soft Starters

SIRIUS 3RW Soft Starters

General data



Applications	High Performance	General Performance	Basic Performance		
SIRIUS soft starters	3RW55/3RW55-F	3RW52	3RW50	3RW40	3RW30

Selection aid for soft starters

Normal starting (CLASS 10)

Pumps	●	●	●	●	●
Pumps with special pump stop (to prevent water hammer)	●	○	○		
Heat pumps	●	●	●	●	●
Hydraulic pumps	●	●	●	●	○
Presses	●	●	●	●	○
Conveyor belts	●	●	●	●	○
Roller conveyors	●	●	●	●	○
Screw conveyors	●	●	●	●	○
Escalators	●	●	●	●	
Piston compressors	●	●	●	●	
Screw compressors	●	●	●	●	
Small fans ¹⁾	●	●	●	●	
Centrifugal blowers	●	●	●	●	
Bow thrusters	●	●	●	●	

Heavy starting (CLASS 20)

Stirrers	●	○	○	○	
Extruders	●	○	○	○	
Lathes	●	○	○	○	
Milling machines	●	○	○	○	

Heavy starting (CLASS 30)

Large fans ²⁾	●				
Circular saws/bandsaws	●				
Centrifuges	●				
Mills	●				
Crushers	●				

● Recommended soft starter

○ Possible soft starter

¹⁾ The mass inertia of the fan is <10 times the mass inertia of the motor.²⁾ The mass inertia of the fan is ≥10 times the mass inertia of the motor.

Soft Starters

SIRIUS 3RW Soft Starters

General data



Applications		High Performance		General Performance	Basic Performance		
SIRIUS soft starters		3RW55	3RW55-F	3RW52	3RW50	3RW40	3RW30
General technical specifications							
Operational current at 40 °C	A	13 ... 2 217	13 ... 987	13 ... 987	143 ... 570	12.5 ... 106	3 ... 106
Operational voltage	V	200 ... 690 ¹⁾	200 ... 480	200 ... 600	200 ... 600	200 ... 600	200 ... 480
Operating power for three-phase motors							
• At 400 V, at 40 °C	- Inline circuit	kW	5.5 ... 710	5.5 ... 315	5.5 ... 315	5.5 ... 55	1.5 ... 55
	- Inside-delta circuit	kW	11 ... 1 200	11 ... 560	--	--	--
• At 460/480 V at 50 °C	- Inline circuit	hp	7.5 ... 1 000	7.5 ... 400	100 ... 400	7.5 ... 75	1.5 ... 75
	- Inside-delta circuit	hp	10 ... 1 700	10 ... 750	--	--	--
Ambient temperature ²⁾	°C	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60
Soft starting/ramp-down		✓	✓	✓	✓	✓	✓ ³⁾
Voltage ramp		✓	✓	✓	✓	✓	✓
Starting voltage	%	20 ... 100	20 ... 100	30 ... 100	30 ... 100	40 ... 100	40 ... 100
Ramp-up and ramp-down time	s	0 ... 360	0 ... 360	0 ... 20	0 ... 20	0 ... 20	0 ... 20 ³⁾
Pump stop (torque control) ⁴⁾		✓	✓	--	--	--	--
• Starting torque	%	10 ... 100	10 ... 100	--	--	--	--
• Torque limit	%	20 ... 200	20 ... 200	--	--	--	--
Soft Torque (torque limit)		--	--	✓	✓	--	--
Integral bypass contact system		✓	✓	✓	✓	✓	✓
Intrinsic device protection		✓	✓	✓	✓	✓	--
Motor overload protection		✓ ⁵⁾	✓ ⁵⁾	✓	✓ ⁵⁾	✓ ⁵⁾	--
Thermistor motor protection evaluation		✓	✓	✓ ⁶⁾	✓ ⁶⁾	✓ ⁶⁾	--
Analog output		✓	✓	✓ ⁶⁾	✓ ⁶⁾	--	--
Remote RESET		✓	✓	✓	✓	✓	--
Adjustable current limiting		✓	✓	✓	✓	✓	--
Inside-delta circuit ¹⁾		✓	✓	✓	--	--	--
Breakaway pulse		✓	✓	--	--	--	--
Automatic parameterization		✓	✓	--	--	--	--
Pump cleaning		✓	✓	--	--	--	--
Condition monitoring		✓	✓	--	--	--	--
User account administration ⁸⁾		✓	✓	--	--	--	--
Creep speed in both directions of rotation		✓	--	--	--	--	--
Reversing duty		✓	✓	--	--	--	--
Reversing DC braking ⁴⁾⁷⁾		✓	--	--	--	--	--
DC braking ⁴⁾⁷⁾		✓	--	--	--	--	--
Dynamic DC braking ⁴⁾⁷⁾		✓	--	--	--	--	--
Motor heating		✓	--	--	--	--	--
Communication function ⁹⁾		✓	✓	✓	✓	--	--
HMI module installable in the cabinet door		✓	✓	✓ ⁹⁾	✓ ⁹⁾	--	--
Operating measured value display		✓	✓	✓ ⁹⁾	✓ ⁹⁾	--	--
Logbooks		✓	✓	✓ ⁹⁾	✓ ⁹⁾	--	--
Statistical data and slave pointer function		✓	✓	✓ ⁹⁾	✓ ⁹⁾	--	--
Trace function ⁸⁾		✓	✓	--	--	--	--
Programmable control inputs and outputs		✓	✓	--	--	--	--
Number of parameter sets		3	3	1	1	1	1
Parameterizable via software ⁸⁾		✓	✓	--	--	--	--
Number of controlled phases		3	3	3	2	2	2
Heavy starting CLASS 30 ⁴⁾		✓	✓	--	--	--	--

✓ Function available
-- Function not available

¹⁾ Inside-delta circuit only up to operational voltage 600 V.

²⁾ Note derating above 40 °C.

³⁾ Only soft starting available for 3RW30.

⁴⁾ Calculate soft starter and motor with size allowance where required.

⁵⁾ When using the motor overload protection according to ATEX/IECEx, an upstream contactor may be required, [see page 17-190](#).

⁶⁾ Special device versions only.

⁷⁾ Not possible in inside-delta circuit.

⁸⁾ With software Soft Starter ES (TIA Portal).

⁹⁾ Only in conjunction with special accessories.

Soft Starters

SIRIUS 3RW Soft Starters

General data

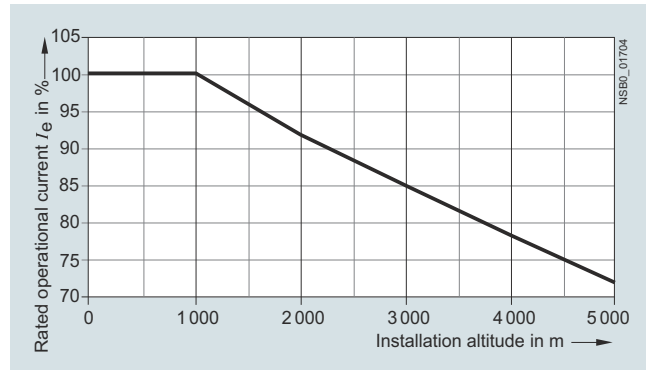
Constraints

The 3RW soft starters should always be designed on the basis of the required rated operational current of the motor.

The motor ratings listed in the selection and ordering data are rough guide values and designed for basic starting conditions (CLASS 10). For other starting conditions we recommend the Simulation Tool for Soft Starters (STS).

Motor rating data in kW and hp is based on IEC 60947-4-1.

At an installation altitude above 2 000 m, max. permissible operational voltage is reduced to 480 V.



Installation altitude for SIRIUS 3RW soft starters

The selection and ordering data were determined for the following constraints (stand-alone installation without auxiliary fan)



Applications		High Performance	General Performance	Basic Performance		
SIRIUS soft starters		3RW55/3RW55-F	3RW52	3RW50	3RW40	3RW30
Constraints						
Maximum starting time	s	20	10			3
Maximum starting current in % of motor current	I_e	300				
Maximum number of starts per hour	1/h	5				20

Simulation Tool for Soft Starters (STS)

The Simulation Tool for Soft Starters (STS) provides a convenient means of designing soft starters using a simple, quick and easy-to-use interface.

Entering the motor and load data will simulate the application and prompt suggestions for suitable soft starters.

Link to the free download of the [Simulation Tool for Soft Starters \(STS\)](#).

- Simple, quick and user-friendly interface
- Detailed and up-to-date Siemens motor database, including IE3/IE4 motors.
- Simulation of heavy starting up to CLASS 30
- Update-capable (e.g. motors, load types, functions)
- Fast simulations with minimum input data
- Immediate, graphical curve charts of start operations with limit values
- Table view of suitable soft starters for the application



Everything at a glance: Simulation and results list

Soft Starters

SIRIUS 3RW Soft Starters

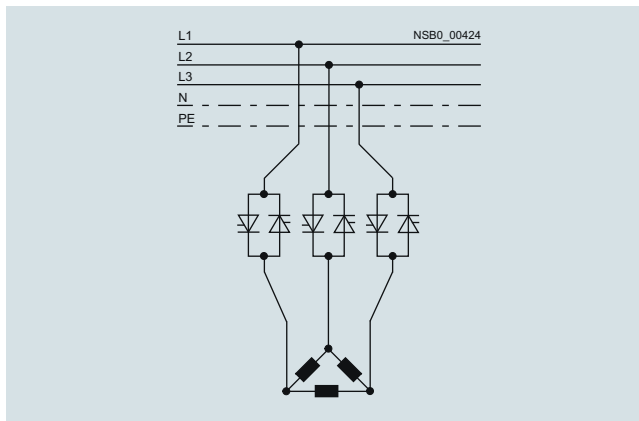
General data

Circuit concept

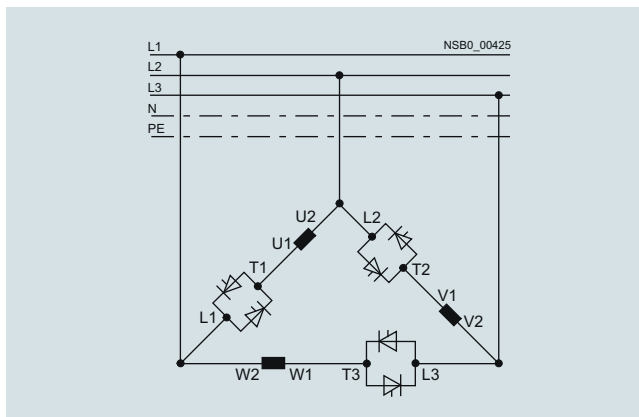
Three-phase controlled SIRIUS 3RW soft starters can be operated in two different types of circuit:

- **Inline circuit**
The controls for isolating and protecting the motor are simply connected in series with the soft starter. The motor is connected to the soft starter with three leads.
- **Inside-delta circuit**
The wiring is similar to that of wye-delta starters. The phases of the soft starter are connected in series with the individual motor windings. The soft starter then only has to carry the phase current, amounting to about 58% of the rated motor current (conductor current).

Comparison of the types of circuit



Inline circuit: Rated current I_e corresponds to the rated motor current I_n , three cables to the motor



Inside-delta circuit: Rated current I_e corresponds to approx. 58% of the rated motor current I_n , six cables to the motor (as for wye-delta starters)

Which circuit?

Using the inline circuit involves the lowest wiring outlay. If the soft starter to motor connections are long, this circuit is preferable.

The wiring complexity is twice as high when using the inside-delta circuit, but a smaller device can be used with the same rating. Thanks to the choice of operating mode between the inline circuit and inside-delta circuit, it is always possible to select the most favorable solution.

The braking function is possible only in the inline circuit. The inside-delta circuit cannot be used in 690 V line supplies.

Configuration

The solid-state 3RW soft starters are designed for normal starting. In case of heavy starting or increased starting frequency, a larger unit must be selected. The 3RW52 soft starters may be used in isolated supply networks (IT systems) up to 600 V AC and the 3RW55 soft starters even up to 690 V.

For long starting times it is recommended to have a PTC sensor or temperature switch in the motor. This also applies for the ramp-down modes torque control, pump stop and DC braking, because during the ramp-down time in these modes, an additional current loading applies in contrast to free ramp-down.

No capacitive elements are permitted in the motor feeder between the SIRIUS 3RW soft starter and the motor (e.g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during starting and ramp-down of the soft starter. This is important to prevent faults arising on the compensation equipment and/or the soft starter.

All elements of the main circuit (such as fuses and controls) should be dimensioned for direct-on-line starting, following the local short-circuit conditions. Fuses and switching devices must be ordered separately. The harmonic component load for starting currents must be taken into consideration for the selection of motor starter protectors (selection of release). Please observe the maximum switching frequencies specified in the technical specifications.

Notes:

When three-phase motors are switched on, voltage drops occur as a rule on starters of all types (direct-on-line starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed transformer is dimensioned with only a small margin, it is best for the control voltage to be supplied from a separate circuit (independently of the main voltage) in order to avoid the potential switching off of the soft starter.

For dimensioning soft starters, we recommend our Simulation Tool for Soft Starters (STS), see page 17-187 or our Technical Support:
<https://support.industry.siemens.com/My/ww/en/requests>.

Recommended parameters for the initial commissioning of our SIRIUS 3RW soft starters are listed in every report of our Simulation Tool for Soft Starters (STS). In addition, our High Performance soft starters provide support by means of their commissioning wizards.

Soft Starters

SIRIUS 3RW Soft Starters

General data

Motor feeders with soft starters

The type of coordination according to which the motor feeder with soft starter is mounted depends on the application-specific requirements. Normally, fuseless mounting (combination of motor starter protector and soft starter) is sufficient.

If type of coordination "2" is to be fulfilled, then semiconductor fuses must be fitted in the motor feeder.

TOC
1

Type of coordination "1" according to IEC 60947-4-1: After a short-circuit incident, the unit is defective and therefore unsuitable for further use (protection of persons and system guaranteed).

TOC
2

Type of coordination "2" according to IEC 60947-4-1: After a short-circuit incident the unit is suitable for further use (protection of persons and system guaranteed).

The type of coordination refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

The types of coordination are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Feeder tests and events

To keep the scope of feeder tests with SIRIUS 3RW soft starters within economically reasonable limits, tests were conducted with feeder components (motor starter protectors/circuit breakers, fuses) that cover the greatest number of use cases (different soft starter versions depending on, for example, line voltage, type of circuit, or necessary overdimensioning). For the combined tests that were conducted, the values for the short-circuit breaking capacity I_q in kA were determined and documented.

If the short-circuit breaking capacity is the same, of course, smaller circuit breakers or fuses can also be used for the selected soft starter provided the dimensioning of the short-circuit components is suitable for the connected three-phase motor and the line protection for the cables used. For type of coordination "2" (with semiconductor protection), it is also necessary to compare the characteristics because the protection function would no longer be completely ensured if too small a fuse were selected. If the soft starter does not have a motor protection function, the motor protection must also be dimensioned appropriately.

Setting the motor current

If circuit breakers with an overload release are used (e.g. SIRIUS 3RV20 motor starter protector), we recommend activating the motor protection function of the SIRIUS 3RW soft starter to protect the motor and setting the soft starter to the rated operational current I_e of the motor. We recommend setting the circuit breaker in such a way that it provides line protection but does not usually trip before the soft starter when a motor overload occurs.

Line protection and motor protection

Line protection and motor protection are not ensured in all operating cases, depending on:

- How the motor feeder is constructed (e.g. with fuses or motor starter protectors)
- Whether the SIRIUS 3RW soft starters are operated within the specification relevant for the tests (IEC 60947-4-2)
- Or whether the documented constraints (see page 17-187) have been observed.

There are operating states of the thyristors (caused, for example, by high starting frequencies or heavy starting) that do not permit an overload to be disconnected by the SIRIUS 3RW soft starter. These cases are very rare but can not be ruled out in all cases.

In accordance with IEC 60947-4-2, the SIRIUS 3RW soft starters are dimensioned and checked for operation with up to 8 times the rated operational current I_e . For currents larger than this, reliable disconnection of an overcurrent by the SIRIUS 3RW soft starter is not ensured. Such large overcurrents have to be disconnected by a switching device at a higher level (e.g. by a circuit breaker or a fuse in conjunction with an optional line contactor).

Motor protection by the SIRIUS 3RW soft starter is ensured for currents up to 8 times the rated operational current I_e in any case. Line protection is covered by the line-side motor starter protector/circuit breaker or fuse. These motor feeder components must be dimensioned accordingly and the cable cross-sections must be chosen to match.

Line protection

Line protection in motor feeders with soft starters is always covered by a fuse or a circuit breaker both in case of an overload and in case of a short circuit. The circuit breaker must have an overload release. That is the case for motor starter protectors (e.g. SIRIUS 3RV20).

Circuit breakers without an overload release (e.g. SIRIUS 3RV23 motor starter protectors) must not be used because they do not provide overload protection. The feeder tests for these were therefore not performed. If the motor feeder with SIRIUS 3RW soft starters is configured without a fuse, motor starter protectors must be used that ensure tripping on an overload.

Motor protection

If fuses are used to provide protection against overload and short circuit of the cables, the motor is protected by the SIRIUS 3RW soft starter. If the constraints (simple starting conditions CLASS 10, listed maximum values for starting current, starting time and number of starts per hour) of page 17-187 are observed, the motor feeders can be configured according to IEC as described in the section about soft starters (an optional line contactor is not required). If these preconditions are met, the SIRIUS 3RW soft starters are able to trip on overloads to protect the motor in any case.

In other starting conditions and on heavy starting, the following must be considered:

Trip classes

Tested fuseless switchgear assemblies comprising SIRIUS 3RW soft starters and motor starter protectors only comply with CLASS 10.

To configure tested motor feeders, for example, for CLASS 20 or CLASS 30, fuses must be used together with SIRIUS 3RW soft starters.

Line contactor

In applications with high starting frequencies or heavy starting as of CLASS 20, we recommend combining fuses with the use of a line contactor on the line side so that a motor overload is disconnected by the fault signaling contact of the soft starter in any case (that is, even in rare cases in which disconnection by the SIRIUS 3RW soft starter is no longer possible due to the operating state of the thyristors).

Soft Starters

SIRIUS 3RW Soft Starters

General data

ATEX/IECEx-certified motor overload protection

Ambient temperature during operation

The SIRIUS 3RW soft starters are approved for operation in a temperature range of -25 to +60 °C.

Please take into account derating of the rated operational current for ambient temperatures above 40 °C.

For more information, see [Equipment Manual and the technical data sheet of the selected soft starter](#).

Trip class (electronic overload protection)

The motor and cables must be dimensioned for the selected trip class.

The rated data of the soft starters refers to normal starting (CLASS 10). For heavy starting (> CLASS 10), the soft starter may need to be oversized as only a rated motor current that is lower than the soft starter rated current can be set.

Short-circuit protection

The SIRIUS 3RW soft starter does not have short-circuit protection. Short-circuit protection must be ensured.

Line protection

Avoid impermissibly high cable surface temperatures by correctly dimensioning the cross-sections.

The cable cross-section must be adequately dimensioned.

Line contactor or additional undervoltage release on the motor starter protector

In many ATEX/IECEx applications no additional measures (e.g. the use of a line contactor) are necessary with regard to the motor feeder configuration.

The operation of the selected soft starter may, depending on the amplitude of the line voltage and the type of motor connection (inline circuit or inside-delta circuit), result in the loss of the certified motor overload protection according to ATEX/IECEx if one of the two remedial measures listed below is not implemented.

Remedial measures

- An additional line contactor in the main circuit
- An additional undervoltage release for a motor feeder configuration with a motor starter protector

The line contactor or the undervoltage release are connected to error outputs 95, 96 and 98 of the selected soft starter

Note:

For ATEX/IECEx applications, the accompanying information on parameterization and commissioning must be observed in the ATEX/IECEx chapters of the [Equipment Manual](#) for the selected soft starter.

Article No. scheme

Product versions		Article number					
Device type	High Performance soft starters	3RW55	☐	☐	-	☐	☐
	General Performance soft starters	3RW52	☐	☐	-	☐	☐
	Basic Performance soft starters	3RW50	☐	☐	-	☐	☐
		3RW40	☐	☐	-	☐	☐
		3RW30	☐	☐	-	☐	☐
Size/rated operational current I_o	e.g. 15 = 25 A in size S1		☐	☐			
Connection type	e.g. 1 = screw terminal					☐	
Soft starter functionality	e.g. AC = with bypass and analog output, three-phase controlled					☐	☐
Rated control supply voltage U_s	e.g. 0 = 24 V AC/DC						☐
Rated operational voltage U_o	e.g. 4 = 200 ... 480 V AC						☐
Example		3RW52	1	5	-	1	A C 0 4

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Soft Starters

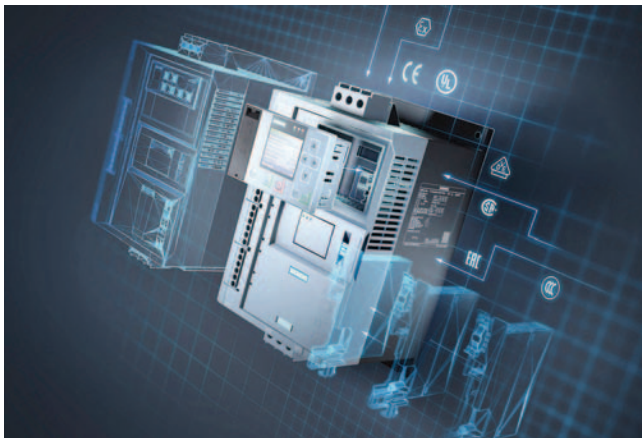
SIRIUS 3RW Soft Starters

General data

Benefits

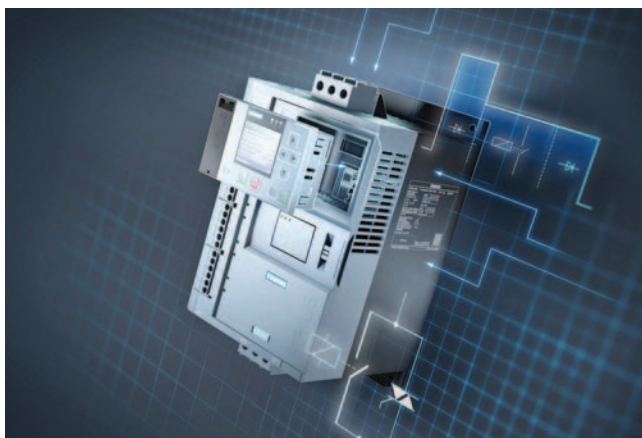
Can be flexibly deployed in many applications

Strong portfolio:
comprehensive, coordinated soft starter portfolio



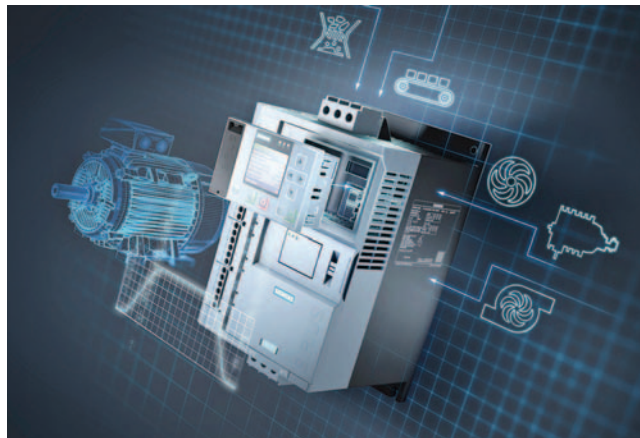
- The right hardware for all requirements, soft starters for tasks ranging from simple to demanding starting in Basic, General and High Performance versions
- Extensive portfolio for individual expansion: Optional HMI for installation in the device or mounting on the control cabinet door
- Communication via PROFINET, PROFIBUS, EtherNet/IP and Modbus
- Design enclosure with removable terminals, space-saving thanks to compact design and rugged thanks to coated printed circuit boards
- Can be used worldwide thanks to numerous certificates and approvals: IEC, UL, CSA, CCC, ATEX/IECEx, shipbuilding

Efficient switching:
hybrid switching technology on board



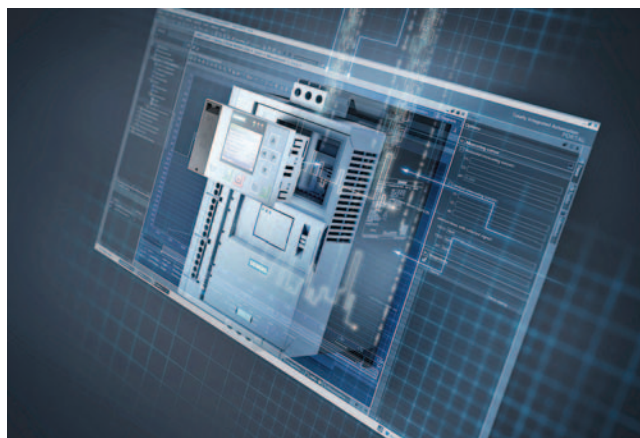
- Energy-efficient switching and mechanical protection of the drive train thanks to soft starters with hybrid switching technology
- Low-wear switching extends the service life of the devices
- Soft starting prevents current peaks, thereby increasing the network stability
- Protection against disturbances in the application. Mechanical protection for the drive train

Intelligent operation:
concentrated, application-specific functionality



- Can be used in a wide variety of applications: Pumping, ventilating, compressing, moving and processing
- Integrated, self-learning automatic parameterization depending on motor starting conditions
- Application-specific functionality such as pump cleaning and pump stop
- Condition monitoring: Current and power monitoring with warning and alarm limits, starting time monitoring

Ready for a digital future:
data available whenever and wherever needed



- Support from tools and data during engineering
- Simulation Tool for Soft Starters for support during product selection
- Very simple, standardized commissioning and configuration via Soft Starter ES in TIA Portal
- Integration in the automation system via communication interfaces
- Data availability and analysis: large volumes of data at any time and anywhere, even into MindSphere

High Performance Soft Starters

3RW55 Soft Starters

General data

Overview

More information

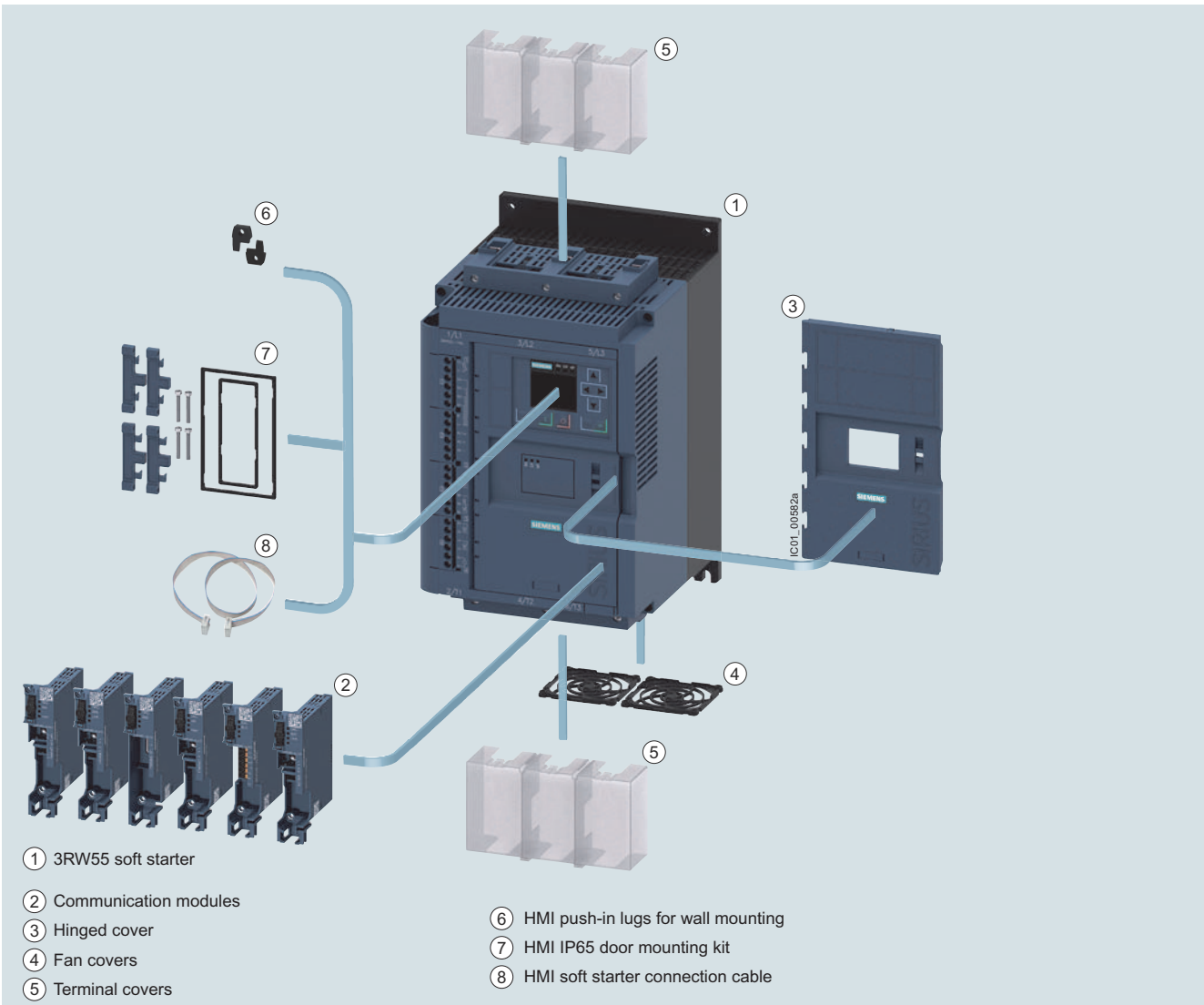
Homepage, see www.usa.siemens.com/soft-starter
 Industry Mall, see www.siemens.com/product?3RW
 TIA Selection Tool Cloud (TST Cloud), see
<https://www.siemens.com/tstcloud/?node=Sirius3rwFolder>

Industry Online Support (SIOS) topic page, see
<https://support.industry.siemens.com/cs/ww/en/view/109747404>
 Simulation Tool for Soft Starters (STS), see page 17-187 or
<https://support.industry.siemens.com/cs/ww/en/view/101494917>
 SIRIUS Soft Starter ES (TIA Portal), see page 14/2



Equipped with the utmost functionality, the SIRIUS 3RW55 High Performance soft starters confidently handle even difficult starting and stopping operations. Thanks to innovative torque control, the device can be used for drives with an output of between 7.5 to 1000HP @ 480V.

The functions have been specially designed to offer maximum user friendliness. The HMI (with color display, local interface and a slot for micro SD memory card) and plug-in communication modules (PROFINET, PROFIBUS, EtherNet/IP and Modbus) ensure maximum flexibility. With their modern hybrid switching technology, the SIRIUS 3RW55 soft starters offer efficient switching for long-term, energy-saving use.



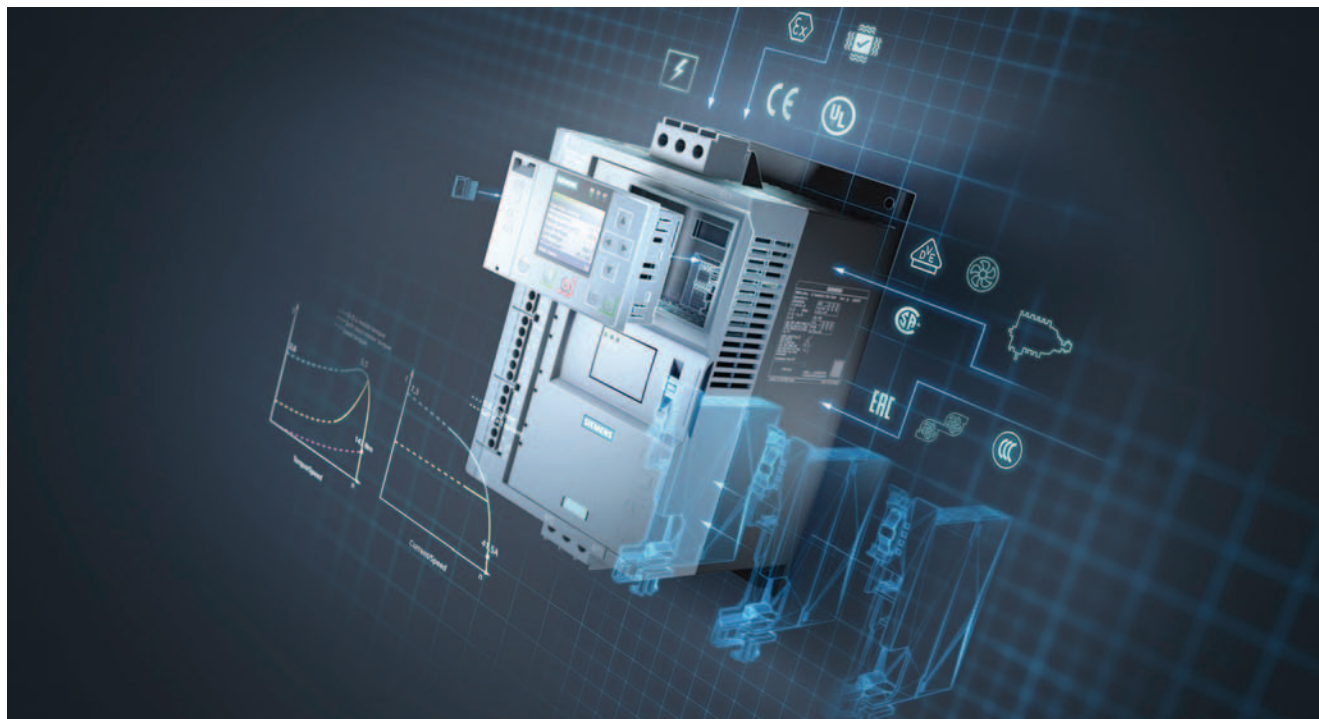
3RW55 High Performance soft starters with accessories, see page 17-215.

High Performance Soft Starters

3RW55 Soft Starters

General data

Benefits



Product characteristics / function	Performance features / benefits
Automatic parameterization	Extremely easy commissioning and reliability even under changing load conditions
Hybrid switching devices and three-phase motor control	Minimum power loss and optimum/symmetrical motor control
Integration into TIA Portal – communication modules optional	Efficient configuration and maximum flexibility in automation engineering
Removable HMI with color display, local interface, slot for micro SD memory card	Maximum flexibility with regard to user interface and intuitive menu guidance
Pump stop and torque control	Reduced mechanical loading and optimum pump stop control
Certified according to ATEX/IECEx directive	Suitable for the starting of explosion-proof motors

Soft Starter
Control17
CONTROL
PRODUCTS

High Performance Soft Starters

3RW55 Soft Starters

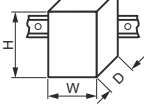
General data

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/25099/td>
Equipment Manual "SIRIUS 3RW55 Soft Starter", see <https://support.industry.siemens.com/cs/ww/en/view/109753752>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/25099/faq>
Simulation Tool for Soft Starters (STS), see page 17-187 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>

Type		3RW551.-HA.4 3RW551.-HA.5	3RW552.-HA.6 3RW553.-HA.6	3RW552.-HA.4 3RW553.-HA.4	3RW554.-HA.4	3RW554.-HA.6	3RW555.-HA.4	3RW555.-HA.6
Installation/fixing/ dimensions								
Width x height x depth		mm	170 × 275 × 152	185 × 306 × 203	210 × 393 × 203		478 × 764 × 241	
								
Type of mounting			Screw fixing					
Mounting position			Vertical (can be rotated +/- 90° and tilted +/- 22.5° forward or backward)					
Distance to be maintained with side-by-side mounting								
• Above	mm	100						
• At the side	mm	5						
• Below	mm	75						
Maximum installation altitude above sea level ¹⁾		m	5 000	2 000	5 000	2 000	5 000	2 000
Degree of protection			IP00					
Ambient conditions								
Ambient temperature								
• During operation ²⁾	°C	-25 ... +60						
• During storage and transport	°C	-40 ... +80						
Environmental category according to IEC 60721								
• During operation			3K6 (no ice formation, no condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6					
• During storage			1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not enter the devices), 1M4					
• During transport			2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m)					

¹⁾ Derating from 1 000 m, see [characteristic curve on page 17-187](#).

²⁾ Note derating above 40 °C.

High Performance Soft Starters

3RW55 Soft Starters

General data

Type		3RW55...-HA0.	3RW55...-HA1.
Control circuit/control			
Control supply voltage			
• At AC/DC, rated value	V	24/24	--/--
• At AC	V	--	110 ... 250
• Relative negative tolerance/relative positive tolerance with AC	%	-20/20	-15/10
• Relative negative tolerance/relative positive tolerance with DC	%	-20/20	--/--
Frequency of the control supply voltage			
• Relative negative tolerance/relative positive tolerance	Hz	50 ... 60	
	%	-10/10	
Type of overvoltage protection		Varistors	
Type of short-circuit protection for control circuit¹⁾		Fuse 4 A gG ($I_{cu} = 1$ kA), fuse 6 A quick-response ($I_{cu} = 1$ kA), MCB C1 ($I_{cu} = 600$ A), MCB C6 ($I_{cu} = 300$ A)	

¹⁾ Not included in scope of supply

Type		3RW55...-HA.4	3RW55...-HA.5	3RW55...-HA.6
Power electronics				
Operational voltage, rated value				
• Relative negative tolerance/relative positive tolerance	V	200 ... 480	200 ... 600	200 ... 690
	%	-15/10		
Operational voltage for inside-delta circuit, rated value				
• Relative negative tolerance/relative positive tolerance	V	200 ... 480	200 ... 600	
	%	-15/10		
Operating frequency, rated value				
• Relative negative tolerance/relative positive tolerance	Hz	50 ... 60		
	%	-10/10		
Minimum load [% of I_M]¹⁾		10		
Maximum cable length between soft starter and motor		m		
		800		

¹⁾ Relative to set I_{θ} .

High Performance Soft Starters

3RW55 Soft Starters

General data

Type		3RW5513	3RW5514	3RW5515	3RW5516	3RW5517
Rated operational current I_e	A	13	18	25	32	38
Power electronics						
Load rating with rated operational current I_e						
IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a		13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
Permissible rated motor current and starts/h						
Normal starting (CLASS 10A)						
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
• 300% I_M						
- Start-up time 5 s	1/h	43	43	43	43	43
- Start-up time 10 s	1/h	18	18	18	18	18
• 350% I_M						
- Start-up time 5 s	1/h	28	28	28	28	28
- Start-up time 10 s	1/h	10	10	10	10	10
Normal starting (CLASS 10E)						
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
• 300% I_M						
- Start-up time 5 s	1/h	21	21	21	21	21
- Start-up time 10 s	1/h	8	8	8	8	8
• 350% I_M						
- Start-up time 5 s	1/h	13	13	13	13	13
- Start-up time 10 s	1/h	4	4	4	4	4
Heavy starting (CLASS 20E)						
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	29.6/27.2/23.6	33.5/30.5/27.5
• 300% I_M						
- Start-up time 20 s	1/h	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4
• 350% I_M						
- Start-up time 20 s	1/h	7	7	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5	2.5	2.5
Heavy starting (CLASS 30E)						
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	26/23.6/21.2	29/26/23
• 300% I_M						
- Start-up time 20 s	1/h	7	7	7	7	7
- Start-up time 40 s	1/h	3	3	3	3	3
• 350% I_M						
- Start-up time 20 s	1/h	4	4	4	4	4
- Start-up time 40 s	1/h	1.8	1.8	1.8	1.8	1.8
Adjustable rated motor current I_M						
• Minimum/maximum	A	2.5/13	3.5/18	5/25	6.5/32	7.5/38
• Minimum/maximum in inside-delta circuits	A	4.3/22.5	6.1/31.1	8.7/43.3	11.3/55.4	13/65.8

High Performance Soft Starters

3RW55 Soft Starters

General data

Type		3RW5521	3RW5524	3RW5525	3RW5526	3RW5527
Rated operational current I_e	A	25	47	63	77	93
Power electronics						
Load rating with rated operational current I_e						
IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a		25/22.3/19.6	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
Permissible rated motor current and starts/h						
Normal starting (CLASS 10A)						
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	25/22.3/19.6	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M						
- Start-up time 5 s	1/h	43	43	43	43	43
- Start-up time 10 s	1/h	18	18	18	18	18
• 350% I_M						
- Start-up time 5 s	1/h	28	28	28	28	28
- Start-up time 10 s	1/h	10	10	10	10	10
Normal starting (CLASS 10E)						
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	25/22.3/19.6	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M						
- Start-up time 5 s	1/h	21	21	21	21	21
- Start-up time 10 s	1/h	8	8	8	8	8
• 350% I_M						
- Start-up time 5 s	1/h	13	13	13	13	13
- Start-up time 10 s	1/h	4	4	4	4	4
Heavy starting (CLASS 20E)						
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	25/22.3/19.6	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M						
- Start-up time 20 s	1/h	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4
• 350% I_M						
- Start-up time 20 s	1/h	7	7	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5	2.5	2.5
Heavy starting (CLASS 30E)						
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	25/22.3/19.6	43.4/38/34.4	53/48/43	68/62/56	82.5/75.5/65
• 300% I_M						
- Start-up time 20 s	1/h	7	7	7	7	7
- Start-up time 40 s	1/h	3	3	3	3	3
• 350% I_M						
- Start-up time 20 s	1/h	4	4	4	4	4
- Start-up time 40 s	1/h	1.8	1.8	1.8	1.8	1.8
Adjustable rated motor current I_M						
• Minimum/maximum	A	5/25	10/47	13/63	16/77	19/93
• Minimum/maximum in inside-delta circuits	A	8.7/43.3	17.3/81.4	22.5/109	27.7/133	32.9/161

High Performance Soft Starters

3RW55 Soft Starters

General data

Type		3RW5534	3RW5535	3RW5536
Rated operational current I_e	A	113	143	171
Power electronics				
Load rating with rated operational current I_e				
IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a		113/101/89	143/128/118	171/153/141
Permissible rated motor current and starts/h				
Normal starting (CLASS 10A)				
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	113/101/89	143/128/118	171/153/141
• 300% I_M				
- Start-up time 5 s	1/h	43	43	43
- Start-up time 10 s	1/h	18	18	18
• 350% I_M				
- Start-up time 5 s	1/h	28	28	28
- Start-up time 10 s	1/h	10	10	10
Normal starting (CLASS 10E)				
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	113/101/89	143/128/118	171/153/141
• 300% I_M				
- Start-up time 5 s	1/h	21	21	21
- Start-up time 10 s	1/h	8	8	8
• 350% I_M				
- Start-up time 5 s	1/h	13	13	13
- Start-up time 10 s	1/h	4	4	4
Heavy starting (CLASS 20E)				
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	109/97/85	128/113/103	141/129/117
• 300% I_M				
- Start-up time 20 s	1/h	10	10	10
- Start-up time 40 s	1/h	4	4	4
• 350% I_M				
- Start-up time 20 s	1/h	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5
Heavy starting (CLASS 30E)				
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	89/81/74	108/98/88	117/105/93
• 300% I_M				
- Start-up time 20 s	1/h	7	7	7
- Start-up time 40 s	1/h	3	3	3
• 350% I_M				
- Start-up time 20 s	1/h	4	4	4
- Start-up time 40 s	1/h	1.8	1.8	1.8
Adjustable rated motor current I_M				
• Minimum/maximum	A	23/113	29/143	34/171
• Minimum/maximum in inside-delta circuits	A	39.8/195	50.2/247	58.9/296

High Performance Soft Starters

3RW55 Soft Starters

General data

Type		3RW5543	3RW5544	3RW5545	3RW5546	3RW5547	3RW5548
Rated operational current I_e	A	210	250	315	370	470	570
Power electronics							
Load rating with rated operational current I_e							
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
Permissible rated motor current and starts/h							
Normal starting (CLASS 10A)							
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
• 300% I_M - Start-up time 5 s - Start-up time 10 s	1/h 1/h	43 18	43 18	43 18	43 18	40 17	20 6
• 350% I_M - Start-up time 5 s - Start-up time 10 s	1/h 1/h	28 10	28 10	28 10	28 10	26 10	9 1
Normal starting (CLASS 10E)							
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	551/490/445
• 300% I_M - Start-up time 5 s - Start-up time 10 s	1/h 1/h	21 8	21 8	21 8	21 8	17 6	8 1
• 350% I_M - Start-up time 5 s - Start-up time 10 s	1/h 1/h	13 4	13 4	13 4	13 4	10 2	2 --
Heavy starting (CLASS 20E)							
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	162/146/130	200/180/160	231/207/183	258/230/202	272/254/236	284/262/240
• 300% I_M - Start-up time 20 s - Start-up time 40 s	1/h 1/h	10 4	10 4	10 4	10 4	10 4	10 4
• 350% I_M - Start-up time 20 s - Start-up time 40 s	1/h 1/h	7 2.5	7 2.5	7 2.5	7 2.5	7 2.5	7 2.5
Heavy starting (CLASS 30E)							
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	138/122/106	160/140/120	183/159/135	202/174/160	210/190/170	220/200/180
• 300% I_M - Start-up time 20 s - Start-up time 40 s	1/h 1/h	7 3	7 3	7 3	7 3	7 3	7 3
• 350% I_M - Start-up time 20 s - Start-up time 40 s	1/h 1/h	4 1.8	4 1.8	4 1.8	4 1.8	4 1.8	4 1.8
Adjustable rated motor current I_M							
• Minimum/maximum	A	42/210	50/250	63/315	74/370	94/470	114/570
• Minimum/maximum in inside-delta circuits	A	72.7/363	86.6/433	109.1/545	128.2/640	162.8/814	197.5/987

High Performance Soft Starters

3RW55 Soft Starters

General data

Type		3RW5552	3RW5553	3RW5554	3RW5556	3RW5558
Rated operational current I_e	A	630	720	840	1 100	1 280
Power electronics						
Load rating with rated operational current I_e						
IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a						
		630/561/510	720/641/580	840/748/670	1 100/979/890	1 280/1 139/1 030
Permissible rated motor current and starts/h						
Normal starting (CLASS 10A)						
Rated motor current I_M , $T_u = 40/50/60$ °C						
ON period = 70%; motor protection activated						
	A	630/561/510	720/641/580	840/748/670	1 100/979/890	1 280/1 139/1 030
• 300% I_M						
- Start-up time 5 s	1/h	43	43	42	43	32
- Start-up time 10 s	1/h	18	18	18	18	12
• 350% I_M						
- Start-up time 5 s	1/h	28	28	25	27	17
- Start-up time 10 s	1/h	10	10	10	9	4
Normal starting (CLASS 10E)						
Rated motor current I_M , $T_u = 40/50/60$ °C						
ON period = 70%; motor protection activated						
	A	630/561/510	720/641/580	840/748/670	1 100/979/890	1 225/1 130/1 030
• 300% I_M						
- Start-up time 5 s	1/h	21	21	19	18	15
- Start-up time 10 s	1/h	8	8	7	7	5
• 350% I_M						
- Start-up time 5 s	1/h	13	13	10	9	1
- Start-up time 10 s	1/h	4	4	2	2	1
Heavy starting (CLASS 20E)						
Rated motor current I_M , $T_u = 40/50/60$ °C						
ON period = 70%; motor protection activated						
	A	500/450/400	520/470/420	570/520/470	920/840/760	980/900/810
• 300% I_M						
- Start-up time 20 s	1/h	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4
• 350% I_M						
- Start-up time 20 s	1/h	7	7	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5	2.5	2.5
Heavy starting (CLASS 30E)						
Rated motor current I_M , $T_u = 40/50/60$ °C						
ON period = 70%; motor protection activated						
	A	380/340/300	400/360/320	420/380/340	740/670/600	790/720/650
• 300% I_M						
- Start-up time 20 s	1/h	7	7	7	7	7
- Start-up time 40 s	1/h	3	3	3	3	3
• 350% I_M						
- Start-up time 20 s	1/h	4	4	4	4	4
- Start-up time 40 s	1/h	1.8	1.8	1.8	1.8	1.8
Adjustable rated motor current I_M						
• Minimum/maximum	A	114/630	144/720	168/840	220/1 100	258/1 280
• Minimum/maximum in inside-delta circuits	A	197.5/987	249.4/1 247	291/1 454	381.1/1 905	446.9/2 217

High Performance Soft Starters

3RW55 Soft Starters

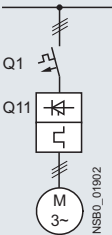
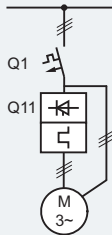
General data

Motor feeders according to IEC with 3RV2/3VA motor starter protectors/circuit breakers (without semiconductor protection)

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, [see table](#)

Note:

For general recommendations for constructing motor feeders
with soft starters, [see page 17-189](#).

				
Soft starters	Motor starter protectors		Motor starter protectors	
	for 400 V systems		for 500 V systems	
Q11	Q1	I_q	Q1	I_q
Type	Type	kA	Type	kA
Type of coordination "1"	Inline circuit		Inside-delta circuit	
3RW5513	3RV2032-4TA10	65	3RV2032-4TA10	18
3RW5514	3RV2032-4DA10	65	3RV2032-4DA10	15
3RW5515	3RV2032-4EA10	65	3RV2032-4EA10	15
3RW5516	3RV2032-4VA10	65	3RV2032-4VA10	10
3RW5517	3RV2032-4WA10	65	3RV2032-4WA10	10
3RW5521	--	--	3RV2032-4JA10	--
3RW5524	3RV2032-4JA10	65	3RV2032-4RA10	65
3RW5525	3VA2163-7MN32-0AA0	65	3VA2110-7MN32-0AA0	65
3RW5526	3VA2110-7MN32-0AA0	65	3VA2216-7MN32-0AA0	65
3RW5527	3VA2216-7MN32-0AA0	15	3VA2220-7MN32-0AA0	15
3RW5534	3VA2216-7MN32-0AA0	65	3VA2220-7MN32-0AA0	65
3RW5535	3VA2220-7MN32-0AA0	65	3VA2325-7MN32-0AA0	65
3RW5536	3VA2325-7MN32-0AA0	30	3VA2440-7MN32-0AA0	30
3RW5543	3VA2325-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65
3RW5544	3VA2440-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65
3RW5545	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5546	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5547	3VA2450-7MN32-0AA0	65	3VA2510-6HN32-0AA0	65
3RW5548	3VA2580-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65
3RW5552	3VA2580-6HN32-0AA0	65	3VA2716-7AB05-0AA0	65
3RW5553	3VA2510-6HN32-0AA0	65	3VA2716-7AB05-0AA0	65
3RW5554	3VA2510-6HN32-0AA0	65	3VA2716-7AB05-0AA0	65
3RW5556	3VA2716-7AB05-0AA0	65	--	--
3RW5558	3VA2716-7AB05-0AA0	65	--	--

Note:

The service factor or measurement inaccuracies have been taken into account, for example, for the selection of the specified motor starter protectors/circuit breakers; the specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

In 690 V systems, in motor feeder tests with soft starters demonstrable short-circuit breaking capacities can only be achieved with the use of fuses ($I_q > 5$ to 10 kA).

High Performance Soft Starters

3RW55 Soft Starters

General data

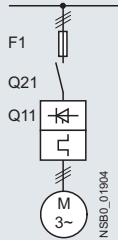
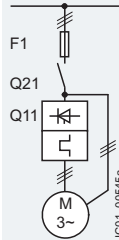
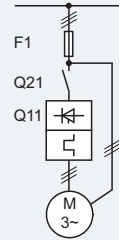
Motor feeders according to IEC with 3NA3 fuses

gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

Type of coordination "1",
short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).

								
	Soft starters	gG class fuse for systems up to 690 V	Line contactor (optional) for systems up to 480 V for systems up to 690 V	gG class fuse for systems up to 600 V	Line contactor (optional) for systems up to 480 V in the supply cable for systems up to 600 V in the supply cable		for systems up to 480 V in the delta	for systems up to 600 V in the delta
Q11	F1	Q21	Q21	F1	Q21		Q21	Q21
Type	Type	Type	Type	Type	Type		Type	Type
Type of coordination "1"	Inline circuit			Inside-delta circuit				
3RW5513	3NA3820-6	3RT2025	3RT2025	3NA3820-6	3RT2027	3RT2035	3RT2025	3RT2025
3RW5514	3NA3820-6	3RT2026	3RT2027	3NA3820-6	3RT2027	3RT2037	3RT2026	3RT2027
3RW5515	3NA3822-6	3RT2027	3RT2037	3NA3822-6	3RT2036	3RT2037	3RT2027	3RT2037
3RW5516	3NA3824-6	3RT2035	3RT2037	3NA3824-6	3RT2037	3RT2038	3RT2035	3RT2037
3RW5517	3NA3824-6	3RT2035	3RT2037	3NA3824-6	3RT2038	3RT2046	3RT2035	3RT2037
3RW5521	3NA3824-6	3RT2027	3RT2037	3NA3824-6	3RT2036	3RT2037	3RT2027	3RT2037
3RW5524	3NA3824-6	3RT2036	3RT2037	3NA3824-6	3RT2046	3RT2047	3RT2036	3RT2037
3RW5525	3NA3830-6	3RT2037	3RT2046	3NA3830-6	3RT2047	3RT1054	3RT2037	3RT2046
3RW5526	3NA3132-6	3RT2038	3RT2046	3NA3132-6	3RT1055	3RT1055	3RT2038	3RT2046
3RW5527	3NA3136-6	3RT2046	3RT2047	3NA3136-6	3RT1056	3RT1056	3RT2046	3RT2047
3RW5534	3NA3244-6	3RT1054	3RT1054	3NA3244-6	3RT1064	3RT1064	3RT1054	3RT1054
3RW5535	3NA3244-6	3RT1055	3RT1055	3NA3244-6	3RT1065	3RT1065	3RT1055	3RT1055
3RW5536	3NA3365-6	3RT1056	3RT1064	3NA3365-6	3RT1066	3RT1075	3RT1056	3RT1064
3RW5543	2 x 3NA3354-6	3RT1064	3RT1064	2 x 3NA3354-6	3RT1075	3RT1075	3RT1064	3RT1064
3RW5544	2 x 3NA3354-6	3RT1065	3RT1065	2 x 3NA3354-6	3RT1076	3RT1076	3RT1065	3RT1065
3RW5545	2 x 3NA3365-6	3RT1075	3RT1075	2 x 3NA3365-6	3TF68	3TF68	3RT1075	3RT1075
3RW5546	2 x 3NA3365-6	3RT1075	3RT1075	2 x 3NA3365-6	3TF69	3TF69	3RT1075	3RT1075
3RW5547	2 x 3NA3365-6	3RT1076	3RT1276	2 x 3NA3365-6	3TF69	3TF69	3RT1076	3RT1276
3RW5548	2 x 3NA3365-6	3TF68	3TF68	2 x 3NA3365-6	--	--	3TF68	3TF68
3RW5552	2 x 3NA3365-6	3TF68	3TF69	--	--	--	3TF68	3TF69
3RW5553	2 x 3NA3365-6	3TF69	3TF69	--	--	--	3TF69	3TF69
3RW5554	2 x 3NA3365-6	--	--	--	--	--	--	--
3RW5556	3 x 3NA3365-6	--	--	--	--	--	--	--
3RW5558	3 x 3NA3365-6	--	--	--	--	--	--	--

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

In inside-delta circuits, motor feeders with soft starters can only be operated in systems with up to 600 V.

High Performance Soft Starters

3RW55 Soft Starters

General data

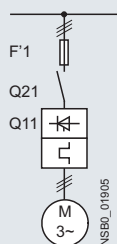
Motor feeders according to IEC with 3NE1/3NB3 SITOP fuses

gR class full-range fuses for semiconductor protection, cable and line protection

Type of coordination "2",
short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).



Soft starters	gG class fuse	Line contactor (optional)	
Q11	for systems up to 690 V	for systems up to 480 V	for systems up to 690 V
Type	F'1	Q21	Q21
Type of coordination "2"	Type	Type	Type
Type of coordination "2" ^{TCC 2} Inline circuit			
3RW5513	3NE1815-0	3RT2025	3RT2025
3RW5514	3NE1802-0	3RT2026	3RT2027
3RW5515	3NE1817-0	3RT2027	3RT2037
3RW5516	3NE1818-0	3RT2035	3RT2037
3RW5517	3NE1820-0	3RT2035	3RT2037
3RW5521	3NE1817-0	3RT2027	3RT2037
3RW5524	3NE1021-2	3RT2036	3RT2037
3RW5525	3NE1022-0	3RT2037	3RT2046
3RW5526	3NE1224-0	3RT2038	3RT2046
3RW5527	3NE1224-0	3RT2046	3RT2047
3RW5534	3NE1225-0	3RT1054	3RT1054
3RW5535	3NE1227-0	3RT1055	3RT1055
3RW5536	3NE1230-0	3RT1056	3RT1064
3RW5543	3NE1230-2 ¹⁾	3RT1064	3RT1064
3RW5544	3NE1331-0	3RT1065	3RT1065
3RW5545	3NE1334-2	3RT1075	3RT1075
3RW5546	3NE1334-2	3RT1075	3RT1075
3RW5547	3NE1436-2	3RT1076	3RT1276
3RW5548	3NE1437-2	3TF68	3TF68
3RW5552	3NB3350-1KK26	3TF68	3TF69
3RW5553	3NB3351-1KK26	3TF69	3TF69
3RW5554	3NB3351-1KK26	--	--
3RW5556	3NB3354-1KK26	--	--
3RW5558	3NB3357-1KK26	--	--

¹⁾ For systems up to 500 V.

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

In inside-delta circuits, a gR class full-range fuse could not provide the semiconductor protection of the delta-connected soft starter with a short-circuit breaking capacity that is adequate for practical use. In this case, we recommend using aR class partial-range fuses for semiconductor protection for type of coordination "2" ([see page 17-204](#)).

High Performance Soft Starters

3RW55 Soft Starters

General data

Motor feeders according to IEC with 3NE8 / 3NE3 / 3NC3 fuses

aR class partial-range fuses for semiconductor protection

Type of coordination "2",
short-circuit breaking capacity $I_{qk} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).

	 NSB0...01906	 IC01...00546a	 IC01...0066b							
Soft starters	gG class fuse	aR class fuse	Line contactor (optional)		gG class fuse	aR class fuse	Line contactor (optional)			
	for systems up to 690 V	for systems up to 690 V	for systems up to 480 V	for systems up to 690 V	for systems up to 600 V	for systems up to 600 V	for systems up to 480 V in the supply cable	for systems up to 600 V in the supply cable	for systems up to 480 V in the delta	for systems up to 600 V in the delta
Q11	F1	F3	Q21	Q21	F1	F3	Q21	Q21	Q21	Q21
Type	Type	Type	Type	Type	Type	Type	Type	Type	Type	Type
Type of coordination "2"	Inline circuit				Inside-delta circuit					
3RW5513	3NA3820-6	3NE8017-1	3RT2025	3RT2025	3NA3820-6	3NE8017-1	3RT2027	3RT2035	3RT2025	3RT2025
3RW5514	3NA3820-6	3NE8020-1	3RT2026	3RT2027	3NA3820-6	3NE8020-1	3RT2027	3RT2037	3RT2027	3RT2027
3RW5515	3NA3822-6	3NE8021-1	3RT2027	3RT2037	3NA3822-6	3NE8021-1	3RT2036	3RT2037	3RT2027	3RT2037
3RW5516	3NA3824-6	3NE8022-1	3RT2035	3RT2037	3NA3824-6	3NE8022-1	3RT2037	3RT2038	3RT2035	3RT2037
3RW5517	3NA3824-6	3NE8024-1	3RT2035	3RT2037	3NA3824-6	3NE8024-1	3RT2038	3RT2046	3RT2035	3RT2037
3RW5521	3NA3824-6	3NE8021-1	3RT2027	3RT2037	3NA3824-6	3NE8021-1	3RT2036	3RT2037	3RT2027	3RT2037
3RW5524	3NA3824-6	3NE8024-1	3RT2036	3RT2037	3NA3824-6	3NE8024-1	3RT2046	3RT2047	3RT2036	3RT2037
3RW5525	3NA3830-6	3NE3227	3RT2037	3RT2046	3NA3830-6	3NE3227	3RT2047	3RT1054	3RT2037	3RT2046
3RW5526	3NA3132-6	3NE3227	3RT2038	3RT2046	3NA3132-6	3NE3227	3RT1055	3RT1055	3RT2038	3RT2046
3RW5527	3NA3136-6	3NE3227	3RT2046	3RT2047	3NA3136-6	3NE3227	3RT1056	3RT1056	3RT2046	3RT2047
3RW5534	3NA3244-6	3NE3231	3RT1054	3RT1054	3NA3244-6	3NE3231	3RT1064	3RT1064	3RT1054	3RT1054
3RW5535	3NA3244-6	3NE3233	3RT1055	3RT1055	3NA3244-6	3NE3233	3RT1065	3RT1065	3RT1055	3RT1055
3RW5536	3NA3365-6	3NE3334-0B	3RT1056	3RT1064	3NA3365-6	3NE3334-0B	3RT1066	3RT1075	3RT1056	3RT1064
3RW5543	2 x 3NA3354-6	3NE3333	3RT1064	3RT1064	2 x 3NA3354-6	3NE3333	3RT1075	3RT1075	3RT1064	3RT1064
3RW5544	2 x 3NA3354-6	3NE3335	3RT1065	3RT1065	2 x 3NA3354-6	3NE3335	3RT1076	3RT1076	3RT1065	3RT1065
3RW5545	2 x 3NA3365-6	--	3RT1075	3RT1075	2 x 3NA3365-6	--	3TF68	3TF68	3RT1075	3RT1075
3RW5546	2 x 3NA3365-6	--	3RT1075	3RT1075	2 x 3NA3365-6	--	3TF69	3TF69	3RT1075	3RT1075
3RW5547	2 x 3NA3365-6	3NE3340-8	3RT1076	3RT1276	2 x 3NA3365-6	3NE3340-8	3TF69	3TF69	3RT1076	3RT1276
3RW5548	2 x 3NA3365-6	3NC3342-1U	3TF68	3TF68	2 x 3NA3365-6	3NC3342-1U	--	--	3TF68	3TF68
3RW5552	2 x 3NA3365-6	3NC3343-1U	3TF68	3TF69	--	3NC3343-1U	--	--	3TF68	3TF69
3RW5553	2 x 3NA3365-6	3NC3343-1U	3TF69	3TF69	--	3NC3343-1U	--	--	3TF69	3TF69
3RW5554	2 x 3NA3365-6	3NC3343-1U	--	--	--	3NC3343-1U	--	--	--	--
3RW5556	3 x 3NA3365-6	3 x 3NE3340-8	--	--	--	3 x 3NE3340-8	--	--	--	--
3RW5558	3 x 3NA3365-6	3 x 3NE3340-8	--	--	--	3 x 3NE3340-8	--	--	--	--

Note:

The specified short-circuit breaking capacities I_{qk} in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2/3VA motor starter protectors/circuit breakers can also be used, possibly with reduced short-circuit breaking capacity ([see page 17-201](#)). In these cases, optional line contactors can be dispensed with.

In inside-delta circuits, motor feeders with soft starters can only be operated in systems with up to 600 V.

High Performance Soft Starters

3RW55 Soft Starters

General data

Reversing operation with reversing contactors

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).

(For an example circuit, [see 3RW55 Equipment Manual, Appendix A.3](#))

Soft starters	Reversing contactor assembly		For reversing contactor	
	for systems up to 480 V	for systems up to 690 V	for systems up to 480 V	for systems up to 690 V
Q11	Q21 / Q22	Q21 / Q22	Q21 / Q22	Q21 / Q22
Type	Type	Type	Type	Type
3RW5513	3RA2325	3RA2325	3RT2025	3RT2025
3RW5514	3RA2326	3RA2327	3RT2026	3RT2027
3RW5515	3RA2327	3RA2337	3RT2027	3RT2037
3RW5516	3RA2335	3RA2337	3RT2035	3RT2037
3RW5517	3RA2335	3RA2337	3RT2035	3RT2037
3RW5521	3RA2327	3RA2337	3RT2027	3RT2037
3RW5524	3RA2336	3RA2337	3RT2036	3RT2037
3RW5525	3RA2337	3RA2346	3RT2037	3RT2046
3RW5526	3RA2338	3RA2346	3RT2038	3RT2046
3RW5527	3RA2346	3RA2347	3RT2046	3RT2047
3RW5534	--	--	3RT1054	3RT1054
3RW5535	--	--	3RT1055	3RT1055
3RW5536	--	--	3RT1056	3RT1064
3RW5543	--	--	3RT1064	3RT1064
3RW5544	--	--	3RT1065	3RT1065
3RW5545	--	--	3RT1075	3RT1075
3RW5546	--	--	3RT1075	3RT1075
3RW5547	--	--	3RT1076	3RT1276
3RW5548	--	--	3TF68	3TF68
3RW5552	--	--	3TF68	3TF69
3RW5553	--	--	3TF69	3TF69
3RW5554	--	--	--	--
3RW5556	--	--	--	--
3RW5558	--	--	--	--

DC braking with braking contactors

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).

(For an example circuit, [see 3RW55 Equipment Manual, Appendix A.3](#))

Soft starters	DC braking contactor	DC braking contactor assembly			
	for systems up to 400 V	for systems up to 480 V		for systems up to 690 V	
Q11	with 2 NC contacts + 2 NO contacts parallel	with 3 NO contacts parallel	with 3 NO contacts parallel	with 3 NO contacts parallel	with 3 NO contacts parallel
Type	Type	Q91	Q92	Q91	Q92
3RW5513	3RT2517	3RT2015	3RT2016	3RT2015	3RT2016
3RW5514	3RT2518	3RT2015	3RT2017	3RT2015	3RT2023
3RW5515	3RT2526	3RT2015	3RT2025	3RT2015	3RT2025
3RW5516	3RT2526	3RT2015	3RT2025	3RT2015	3RT2027
3RW5517	3RT2535	3RT2015	3RT2027	3RT2015	3RT2027
3RW5521	3RT2526	3RT2015	3RT2025	3RT2015	3RT2025
3RW5524	3RT2535	3RT2016	3RT2027	3RT2016	3RT2035
3RW5525	--	3RT2024	3RT2027	3RT2024	3RT2037
3RW5526	--	3RT2025	3RT2035	3RT2025	3RT2037
3RW5527	--	3RT2027	3RT2036	3RT2027	3RT2037
3RW5534	--	3RT2035	3RT2037	3RT2035	3RT2038
3RW5535	--	3RT2036	3RT2038	3RT2036	3RT2046
3RW5536	--	3RT2037	3RT2046	3RT2037	3RT2047
3RW5543	--	3RT2045	3RT2047	3RT2045	3RT1054
3RW5544	--	3RT2045	3RT1055	3RT2045	3RT1055
3RW5545	--	3RT2446	3RT1056	3RT2446	3RT1056
3RW5546	--	3RT1055	3RT1056	3RT1055	3RT1064
3RW5547	--	3RT1456	3RT1065	3RT1456	3RT1065
3RW5548	--	3RT1456	3RT1066	3RT1456	3RT1075
3RW5552	--	3RT1065	3RT1075	3RT1065	3RT1075
3RW5553	--	3RT1065	3RT1075	3RT1065	3RT1075
3RW5554	--	3RT1466	3RT1076	3RT1466	3RT1076
3RW5556	--	3RT1476	3TF68	3RT1476	3TF68
3RW5558	--	3RT1476	3TF69	3RT1476	3TF69

High Performance Soft Starters

3RW55 Soft Starters > Inline circuit **IE3/IE4 ready**
Selection
Selection and ordering data
For normal starting (CLASS 10E)


3RW551.



3RW552.

At 40 °C					At 50 °C					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Operational current	Operating power for three-phase motors				Operational current	Rating [hp] for three-phase motors								
	At 230 V	At 400 V	At 500 V	At 690 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V					
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d				
Operational voltage 200 ... 480 V														
13	3	5.5	--	--	11.5	2	3	7.5	--	5	3RW5513-□HA□4		1	1 unit
18	4	7.5	--	--	15.9	3	5	10	--	5	3RW5514-□HA□4		1	1 unit
25	5.5	11	--	--	22.3	5	7.5	15	--	5	3RW5515-□HA□4		1	1 unit
32	7.5	15	--	--	28.4	7.5	10	20	--	5	3RW5516-□HA□4		1	1 unit
38	11	18.5	--	--	33.5	10	10	20	--	5	3RW5517-□HA□4		1	1 unit
47	11	22	--	--	41.6	10	10	30	--	5	3RW5524-□HA□4		1	1 unit
63	18.5	30	--	--	55.5	15	20	40	--	5	3RW5525-□HA□4		1	1 unit
77	22	37	--	--	68	20	25	50	--	5	3RW5526-□HA□4		1	1 unit
93	22	45	--	--	82.5	25	30	60	--	5	3RW5527-□HA□4		1	1 unit

Type of electrical connection for the control circuit

Screw terminals

Spring-loaded terminals

Control supply voltage

24 V AC/DC

110 ... 250 V AC

¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

 For the constraints for the motor outputs specified here,
[see page 17-187](#).

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3

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1

High Performance Soft Starters

3RW55 Soft Starters > Inline circuit **IE3/IE4 ready**
Selection
For normal starting (CLASS 10E)


3RW553.



3RW554.



3RW555.

At 40 °C					At 50 °C					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*				
Operational current	Operating power for three-phase motors				Operational current	Rating [hp] for three-phase motors												
	At 230 V	At 400 V	At 500 V	At 690 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V									
	A	kW	kW	kW		kW	A	hp	hp						hp	hp	d	
Operational voltage 200 ... 480 V																		
113	30	55	--	--	101	30	30	75	--	5					3RW5534-□HA□4		1	1 unit
143	37	75	--	--	128	40	40	100	--	5	3RW5535-□HA□4		1	1 unit				
171	45	90	--	--	153	50	50	100	--	5	3RW5536-□HA□4		1	1 unit				
210	55	110	--	--	186	50	60	150	--	5	3RW5543-□HA□4		1	1 unit				
250	75	132	--	--	220	60	75	150	--	5	3RW5544-□HA□4		1	1 unit				
315	90	160	--	--	279	75	100	200	--	5	3RW5545-□HA□4		1	1 unit				
370	110	200	--	--	328	100	125	250	--	5	3RW5546-□HA□4		1	1 unit				
470	132	250	--	--	416	150	150	350	--	5	3RW5547-□HA□4		1	1 unit				
570	160	315	--	--	504	150	200	400	--	5	3RW5548-□HA□4		1	1 unit				
630	200	355	--	--	561	200	200	450	--	15	3RW5552-□HA□4		1	1 unit				
720	200	400	--	--	641	200	250	500	--	15	3RW5553-□HA□4		1	1 unit				
840	250	450	--	--	748	250	300	600	--	15	3RW5554-□HA□4		1	1 unit				
1 100	315	560	--	--	979	350	400	850	--	15	3RW5556-□HA□4		1	1 unit				
1 280	400	710	--	--	1 139	400	450	1 000	--	15	3RW5558-□HA□4		1	1 unit				

Type of electrical connection for the control circuit

 Spring-loaded terminals
 Screw terminals

Control supply voltage

 24 V AC/DC
 110 ... 250 V AC

¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 480 V:
 Standard delivery time SD = 1 day (d).

Note:

 For the constraints for the motor outputs specified here,
[see page 17-187](#).

 Soft Starter
Control

 17
CONTROL
PRODUCTS

High Performance Soft Starters

3RW55 Soft Starters > Inline circuit **IE3/IE4 ready**
Selection
For normal starting (CLASS 10E)


3RW551.



3RW552.

At 40 °C					At 50 °C					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*			
Operational current	Operating power for three-phase motors				Operational current	Rating [hp] for three-phase motors											
	At 230 V	At 400 V	At 500 V	At 690 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V								
	A	kW	kW	kW		kW	A	hp	hp						hp	hp	d
Operational voltage 200 ... 600 V																	
13	3	5.5	7.5	--	11.5	2	3	7.5	10	5	3RW5513-□HA□5					1	1 unit
18	4	7.5	11	--	15.9	3	5	10	10	5	3RW5514-□HA□5		1	1 unit			
25	5.5	11	15	--	22.3	5	7.5	15	20	5	3RW5515-□HA□5		1	1 unit			
32	7.5	15	18.5	--	28.4	7.5	10	20	25	5	3RW5516-□HA□5		1	1 unit			
38	11	18.5	22	--	33.5	10	10	20	30	5	3RW5517-□HA□5		1	1 unit			
Operational voltage 200 ... 690 V																	
25	5.5	11	15	22	22.3	5	7.5	15	20	5	3RW5521-□HA□6		1	1 unit			
47	11	22	30	45	41.6	10	10	30	40	5	3RW5524-□HA□6		1	1 unit			
63	18.5	30	37	55	55.5	15	20	40	50	5	3RW5525-□HA□6		1	1 unit			
77	22	37	45	75	68	20	25	50	60	5	3RW5526-□HA□6		1	1 unit			
93	22	45	55	90	82.5	25	30	60	75	5	3RW5527-□HA□6		1	1 unit			

Type of electrical connection for the control circuit

Screw terminals

Spring-loaded terminals

Control supply voltage

24 V AC/DC

110 ... 250 V AC

¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 690 V:
Standard delivery time SD = 2 days (d).

Note:

 For the constraints for the motor outputs specified here,
see [page 17-187](#).

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High Performance Soft Starters

3RW55 Soft Starters > Inline circuit **IE3/IE4 ready**
Selection
For normal starting (CLASS 10E)

3RW553.

3RW554.

3RW555.

At 40 °C					At 50 °C					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Operational current	Operating power for three-phase motors				Operational current	Rating [hp] for three-phase motors								
	At 230 V	At 400 V	At 500 V	At 690 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V					
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d				
Operational voltage 200 ... 690 V														
113	30	55	75	110	101	30	30	75	100	5	3RW5534-□HA□6		1	1 unit
143	37	75	90	132	128	40	40	100	125	5	3RW5535-□HA□6		1	1 unit
171	45	90	110	160	153	50	50	100	150	5	3RW5536-□HA□6		1	1 unit
210	55	110	132	200	186	60	60	150	150	5	3RW5543-□HA□6		1	1 unit
250	75	132	160	250	220	60	75	150	200	5	3RW5544-□HA□6		1	1 unit
315	90	160	200	315	279	75	100	200	250	5	3RW5545-□HA□6		1	1 unit
370	110	200	250	355	328	100	125	250	300	5	3RW5546-□HA□6		1	1 unit
470	132	250	315	400	416	150	150	350	450	5	3RW5547-□HA□6		1	1 unit
570	160	315	355	560	504	150	200	400	500	5	3RW5548-□HA□6		1	1 unit
630	200	355	400	630	561	200	200	450	600	15	3RW5552-□HA□6		1	1 unit
720	200	400	500	710	641	200	250	500	700	15	3RW5553-□HA□6		1	1 unit
840	250	450	560	800	748	250	300	600	800	15	3RW5554-□HA□6		1	1 unit
1 100	215	560	710	1 000	979	350	400	850	1 100	15	3RW5556-□HA□6		1	1 unit
1 280	400	710	900	1 200	1 139	400	450	1 000	1 250	15	3RW5558-□HA□6		1	1 unit

Type of electrical connection for the control circuit

 Spring-loaded terminals
 Screw terminals

Control supply voltage

 24 V AC/DC
 110 ... 250 V AC

- ¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 690 V:
- Sizes 3 and 4: Standard delivery time SD = 2 days (d).
 - Size 5: Standard delivery time SD = 5 days (d).

Note:

 For the constraints for the motor outputs specified here, see [page 17-187](#).

High Performance Soft Starters

3RW55 Soft Starters > Inside-delta circuit **IE3/IE4 ready**
Selection
Selection and ordering data
For normal starting (CLASS 10E)


3RW551.



3RW552.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V						
A	kW	kW	kW	A	hp	hp	hp	hp	d					
Operational voltage 200 ... 480 V														
22.5	5.5	11	--	19.9	5	5	10	--	5	3RW5513-□HA□4		1	1 unit	
31.5	7.5	15	--	28	7.5	7.5	20	--	5	3RW5514-□HA□4		1	1 unit	
43.3	11	18.5	--	39	10	10	25	--	5	3RW5515-□HA□4		1	1 unit	
55.4	15	22	--	49	15	15	30	--	5	3RW5516-□HA□4		1	1 unit	
65.8	18.5	30	--	58	15	20	40	--	5	3RW5517-□HA□4		1	1 unit	
81.4	22	45	--	72	20	25	50	--	5	3RW5524-□HA□4		1	1 unit	
109	30	55	--	96	30	30	75	--	5	3RW5525-□HA□4		1	1 unit	
133	37	75	--	118	30	40	75	--	5	3RW5526-□HA□4		1	1 unit	
161	45	90	--	143	40	50	100	--	5	3RW5527-□HA□4		1	1 unit	

Type of electrical connection for the control circuit

Screw terminals

Spring-loaded terminals

Control supply voltage

24 V AC/DC

110 ... 250 V AC

¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

 For the constraints for the motor outputs specified here,
[see page 17-187](#).

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High Performance Soft Starters

3RW55 Soft Starters > Inside-delta circuit **IE3/IE4 ready**
Selection
For normal starting (CLASS 10E)

3RW553.

3RW554.

3RW555.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V						
A	kW	kW	kW	A	hp	hp	hp	hp	d					
Operational voltage 200 ... 480 V														
196	55	110	--	175	50	60	125	--	5	3RW5534-□HA□4		1	1 unit	
248	75	132	--	222	75	75	150	--	5	3RW5535-□HA□4		1	1 unit	
296	90	160	--	265	75	100	200	--	5	3RW5536-□HA□4		1	1 unit	
364	110	200	--	322	100	125	250	--	5	3RW5543-□HA□4		1	1 unit	
433	132	250	--	381	125	150	300	--	5	3RW5544-□HA□4		1	1 unit	
546	160	315	--	483	150	200	400	--	5	3RW5545-□HA□4		1	1 unit	
641	200	355	--	568	200	200	450	--	5	3RW5546-□HA□4		1	1 unit	
814	250	400	--	721	250	250	600	--	5	3RW5547-□HA□4		1	1 unit	
987	315	560	--	873	300	350	750	--	5	3RW5548-□HA□4		1	1 unit	
1 091	355	630	--	972	350	400	850	--	15	3RW5552-□HA□4		1	1 unit	
1 247	400	710	--	1 110	400	450	950	--	15	3RW5553-□HA□4		1	1 unit	
1 454	450	800	--	1 295	450	550	1 150	--	15	3RW5554-□HA□4		1	1 unit	
1 905	560	1 000	--	1 695	600	700	1 500	--	15	3RW5556-□HA□4		1	1 unit	
2 217	710	1 200	--	1 973	700	850	1 700	--	15	3RW5558-□HA□4		1	1 unit	

Type of electrical connection for the control circuit

 Spring-loaded terminals
 Screw terminals

Control supply voltage

 24 V AC/DC
 110 ... 250 V AC

¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 480 V:
 Standard delivery time SD = 1 day (d).

Note:

 For the constraints for the motor outputs specified here,
[see page 17-187.](#)

 Soft Starter
 Control

 17
 CONTROL
 PRODUCTS

High Performance Soft Starters

3RW55 Soft Starters > Inside-delta circuit **IE3/IE4 ready**
Selection
For normal starting (CLASS 10E)


3RW551.



3RW552.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit						SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V						
A	kW	kW	kW	A	hp	hp	hp	hp	d					
Operational voltage 200 ... 600 V														
22.5	5.5	11	15	19.9	5	5	10	15	5	3RW5513-□HA□5			1	1 unit
31.5	7.5	15	18.5	28	7.5	7.5	20	25	5	3RW5514-□HA□5			1	1 unit
43.3	11	18.5	22	39	10	10	25	30	5	3RW5515-□HA□5			1	1 unit
55.4	15	22	30	49	15	15	30	40	5	3RW5516-□HA□5			1	1 unit
65.8	18.5	30	37	58	15	20	40	50	5	3RW5517-□HA□5			1	1 unit
43.3	11	18.5	22	39	10	10	25	30	5	3RW5521-□HA□6			1	1 unit
81.4	22	45	45	72	20	25	50	60	5	3RW5524-□HA□6			1	1 unit
109	30	55	55	96	30	30	75	75	5	3RW5525-□HA□6			1	1 unit
133	37	75	90	118	30	40	75	100	5	3RW5526-□HA□6			1	1 unit
161	45	90	110	143	40	50	100	125	5	3RW5527-□HA□6			1	1 unit

Type of electrical connection for the control circuit

Screw terminals

Spring-loaded terminals

Control supply voltage

24 V AC/DC

110 ... 250 V AC

¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 600 V:
Standard delivery time SD = 2 days (d).

Note:

 For the constraints for the motor outputs specified here,
[see page 17-187](#).

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High Performance Soft Starters

3RW55 Soft Starters > Inside-delta circuit **IE3/IE4 ready**
Selection
For normal starting (CLASS 10E)

3RW553.

3RW554.

3RW555.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors								
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V						At 575/600 V
A	kW	kW	kW	A	hp	hp	hp	hp	d				
Operational voltage 200 ... 600 V													
196	55	110	132	175	50	60	125	150	5	3RW5534-□HA□6	1	1 unit	
248	75	132	160	222	75	75	150	200	5	3RW5535-□HA□6	1	1 unit	
296	90	160	200	265	75	100	200	250	5	3RW5536-□HA□6	1	1 unit	
364	110	200	250	322	100	125	250	300	5	3RW5543-□HA□6	1	1 unit	
433	132	250	315	381	125	150	300	350	5	3RW5544-□HA□6	1	1 unit	
546	160	315	355	483	150	200	400	500	5	3RW5545-□HA□6	1	1 unit	
641	200	355	450	568	200	200	450	600	5	3RW5546-□HA□6	1	1 unit	
814	250	400	500	721	250	250	600	800	5	3RW5547-□HA□6	1	1 unit	
987	315	560	630	873	300	350	750	950	5	3RW5548-□HA□6	1	1 unit	
1 091	355	630	710	972	350	400	850	1 050	15	3RW5552-□HA□6	1	1 unit	
1 247	400	710	800	1 110	400	450	950	1 250	15	3RW5553-□HA□6	1	1 unit	
1 454	450	800	900	1 295	450	550	1 150	1 450	15	3RW5554-□HA□6	1	1 unit	
1 905	560	1 000	1 200	1 695	600	700	1 500	1 900	15	3RW5556-□HA□6	1	1 unit	
2 217	710	1 200	1 500	1 973	700	850	1 700	2 200	15	3RW5558-□HA□6	1	1 unit	

Type of electrical connection for the control circuit

 Spring-loaded terminals
 Screw terminals

Control supply voltage

 24 V AC/DC
 110 ... 250 V AC

- ¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 600 V:
- Sizes 3 and 4: Standard delivery time SD = 2 days (d).
 - Size 5: Standard delivery time SD = 5 days (d).

Note:

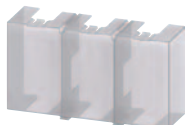
 For the constraints for the motor outputs specified here, see [page 17-187](#).

High Performance Soft Starters

3RW55 Soft Starters > Accessories

Selection

Selection and ordering data

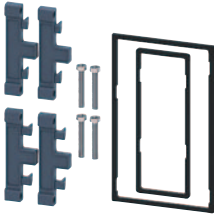
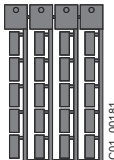
	Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Fan covers									
	Fan cover	3RW551 (1x), 3RW552 (2x), 3RW553 (2x)	--	--	▶	3RW5983-0FC00		1	1 unit
		3RW554 (1x)	--	--	▶	3RW5984-0FC00		1	1 unit
		3RW555 (3x)	--	--	▶	3RW5985-0FC00		1	1 unit
Terminal covers									
	Terminal cover	3RW552 (2x), 3RW553 (2x)	--	--	▶	3RW5983-0TC20		1	1 unit
		3RW554 (2x)	--	--	▶	3RW5984-0TC20		1	1 unit
Enclosure components									
	Hinged cover	3RW55	Without cutout	--	▶	3RW5950-0GL20		1	1 unit
Communication modules									
	Communication module	3RW55	PROFINET High Feature with integral switch	--	▶	3RW5950-0CH00		1	1 unit
			PROFINET Standard	--	▶	3RW5980-0CS00		1	1 unit
			PROFIBUS	--	▶	3RW5980-0CP00		1	1 unit
			EtherNet/IP	--	▶	3RW5980-0CE00		1	1 unit
			Modbus RTU	--	▶	3RW5980-0CR00		1	1 unit
			Modbus TCP	--	▶	3RW5980-0CT00		1	1 unit

Soft Starter
Control17
CONTROL
PRODUCTS

High Performance Soft Starters

3RW55 Soft Starters > Accessories

Selection

Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
					d			
HMI modules								
	IP65 door mounting kit for HMI modules	3RW55	IP65	For HMI modules	▶ 3RW5980-0HD00		1	1 unit
3RW5980-0HD00								
Connecting cables								
	HMI connection cable	3RW55	5 m, round	For door mounting	▶ 3RW5980-0HC60		1	1 unit
			2.5 m, round		▶ 3UF7933-0BA00-0		1	1 unit
			1.0 m, round		▶ 3UF7937-0BA00-0		1	1 unit
			0.5 m, round		▶ 3UF7932-0BA00-0		1	1 unit
			3UF793.-0BA00-0					
Further accessories								
	Push-in lugs for wall mounting	--	Two lugs are required per device	For HMI modules and communication modules	2 3ZY1311-0AA00		1	10 units
3ZY1311-0AA00								
Blank labels								
	Unit labeling plates ¹⁾		20 mm x 7 mm, titanium gray	For SIRIUS devices	20 3RT2900-1SB20		100	340 units
3RT2900-1SB20								
3RW55 starter kit								
	SIRIUS 3RW55 starter kit	--	Including 3RW55 soft starter 13 A, 200 ... 480 V, 24 V AC/DC Soft Starter ES V15.1, 24 V power supply unit, connecting cable and RJ45 network cable	5	3RW5951-1ES04		1	1 unit
3RW5951-1ES04								

¹⁾ PC labeling systems for individual inscription of unit labeling plates are available from: murrplastik Systemtechnik GmbH (see page 16/15).

High Performance Soft Starters

3RW55 Failsafe soft starters **NEW**

General data

Overview

More information

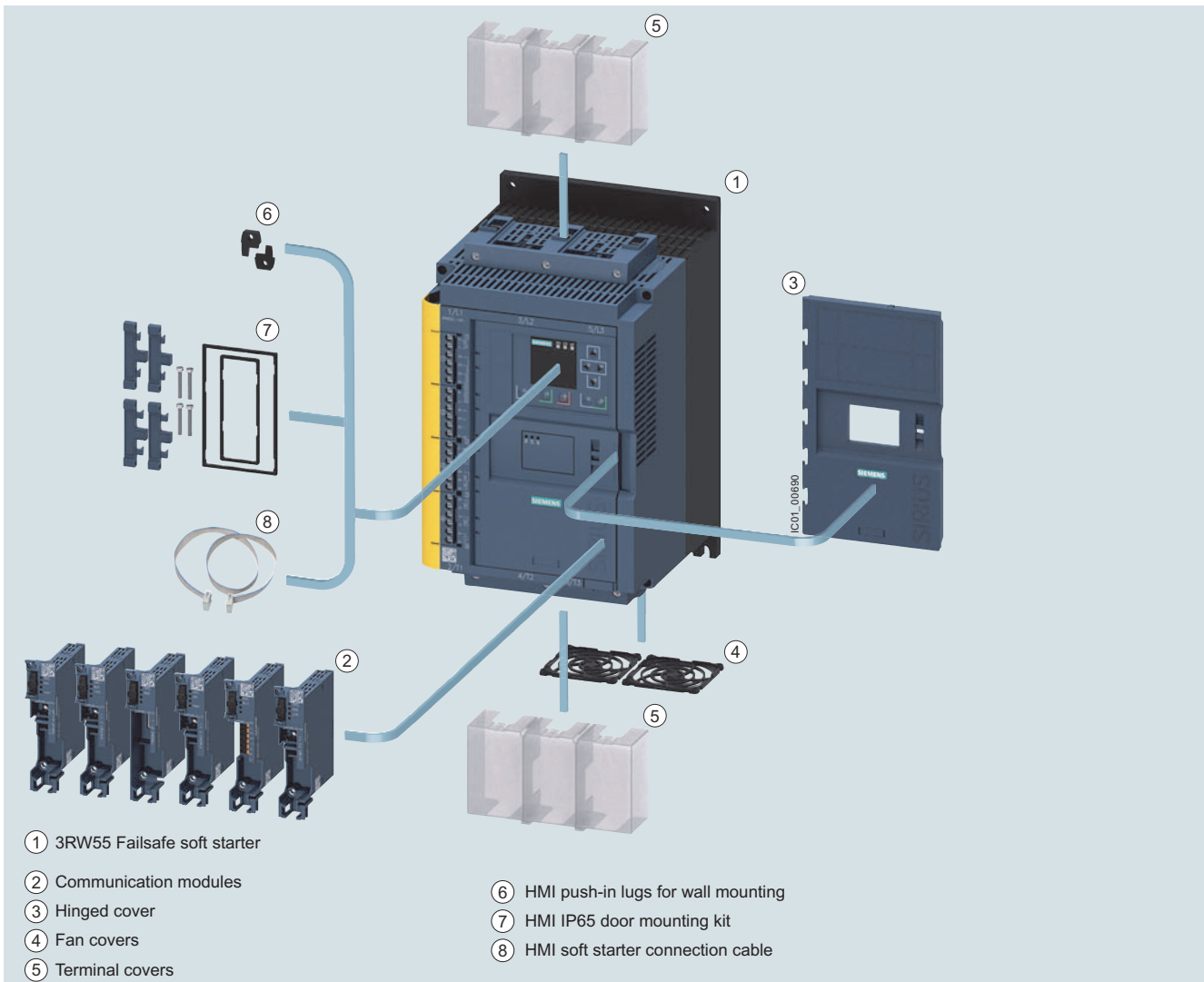
Homepage, see www.usa.siemens.com/soft-starter
 Industry Mall, see www.siemens.com/product?3RW
 Industry Online Support (SIOS) topic page, see <https://support.industry.siemens.com/cs/ww/en/view/109747404>

Simulation Tool for Soft Starters (STS), see page 17-187 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>
 SIRIUS Soft Starter ES (TIA Portal), see page 14/2



Equipped with the utmost functionality, the SIRIUS 3RW55 Failsafe High Performance soft starters confidently handle even difficult starting and stopping operations. Thanks to innovative torque control, the device can be used for drives with an output of between 7.5 to 400HP @ 480V.

The innovative 3RW55 Failsafe soft starter features an integrated fail-safe digital input for directly connecting the EMERGENCY STOP, and thus covers SIL 1 STO applications. The HMI (with color display, local interface and a slot for micro SD memory card) and plug-in communication modules (PROFINET, PROFIBUS, EtherNet/IP and Modbus) ensure maximum flexibility. With their modern hybrid switching technology, the 3RW55 Failsafe soft starters offer efficient switching for long-term, energy-saving use.



3RW55 Failsafe High Performance soft starters with accessories, see page 17-231.

High Performance Soft Starters

3RW55 Failsafe soft starters **NEW**

General data

Benefits



Product characteristics / function	Performance features / benefits
Automatic parameterization	Extremely easy commissioning and reliability even under changing load conditions
Hybrid switching devices and three-phase motor control	Minimum power loss and optimum/symmetrical motor control
Integration into TIA Portal – communication modules optional	Efficient configuration and maximum flexibility in automation engineering
Removable HMI with color display, local interface, slot for micro SD memory card	Maximum flexibility with regard to user interface and intuitive menu guidance
Pump stop and torque control	Reduced mechanical loading and optimum pump stop control
Certified according to ATEX/IECEx directive	Suitable for the starting of explosion-proof motors
Fail-safe disconnection up to SIL 3 - PL e / STO	Reduced costs and space requirements thanks to direct wiring of the EMERGENCY STOP mushroom pushbutton to the soft starter for SIL 1

High Performance Soft Starters

3RW55 Failsafe soft starters **NEW**

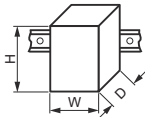
General data

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/25776/td>
Equipment Manual "SIRIUS 3RW55 Soft Starter", see <https://support.industry.siemens.com/cs/ww/en/view/109753752>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/25776/faq>
Simulation Tool for Soft Starters (STS), see page 17-187 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>

Type	3RW551.-.HF.4		3RW552.-.HF.4 3RW553.-.HF.4	3RW554.-.HF.4
Installation/fixing/dimensions				
Width x height x depth		mm	170 × 275 × 152	185 × 306 × 203 210 × 393 × 203
Type of mounting			Screw fixing	
Mounting position			Vertical (can be rotated +/- 90° and tilted +/- 22.5° forward or backward)	
Distance to be maintained with side-by-side mounting				
• Above	mm	100		
• At the side	mm	5		
• Below	mm	75		
Maximum installation altitude above sea level ¹⁾			m	2 000
Degree of protection			IP00	
Ambient conditions				
Ambient temperature				
• During operation ²⁾	°C	-25 ... +60		
• During storage and transport	°C	-40 ... +80		
Environmental category according to IEC 60721				
• During operation	3K6 (no ice formation, no condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6			
• During storage	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not enter the devices), 1M4			
• During transport	2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m)			

¹⁾ Derating from 1 000 m, see characteristic curve on page 17-187.

²⁾ Note derating above 40 °C.

High Performance Soft Starters

3RW55 Failsafe soft starters **NEW**

General data

Type		3RW55...-HF0.	3RW55...-HF1.
Control circuit/control			
Control supply voltage			
• At AC/DC, rated value	V	24/24	--/--
• At AC	V	--	110 ... 250
• Relative negative tolerance/relative positive tolerance with AC	%	-20/20	-15/10
• Relative negative tolerance/relative positive tolerance with DC	%	-20/20	--/--
Frequency of the control supply voltage			
• Relative negative tolerance/relative positive tolerance	Hz	50 ... 60	
	%	-10/10	
Type of overvoltage protection		Varistors	
Type of short-circuit protection for control circuit¹⁾		Fuse 4 A gG ($I_{cu} = 1$ kA), fuse 6 A quick-response ($I_{cu} = 1$ kA), MCB C1 ($I_{cu} = 600$ A), MCB C6 ($I_{cu} = 300$ A)	

¹⁾ Not included in scope of supply

Type		3RW55...-HF.4
Power electronics		
Operational voltage, rated value		
• Relative negative tolerance/relative positive tolerance	V	200 ... 480
	%	-15/10
Operational voltage for inside-delta circuit, rated value		
• Relative negative tolerance/relative positive tolerance	V	200 ... 480
	%	-15/10
Operating frequency, rated value		
• Relative negative tolerance/relative positive tolerance	Hz	50 ... 60
	%	-10/10
Minimum load [% of I_M]¹⁾		% 10
Maximum cable length between soft starter and motor		m 800

¹⁾ Relative to set I_{θ} .

High Performance Soft Starters

3RW55 Failsafe soft starters **NEW**

General data

Type		3RW5513	3RW5514	3RW5515	3RW5516	3RW5517
Rated operational current I_e	A	13	18	25	32	38
Power electronics						
Load rating with rated operational current I_e						
IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a		13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	25/22.3/19.6	38/33.5/30.5
Permissible rated motor current and starts/h						
Normal starting (CLASS 10A)						
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
• 300% I_M						
- Start-up time 5 s	1/h	43	43	43	43	43
- Start-up time 10 s	1/h	18	18	18	18	18
• 350% I_M						
- Start-up time 5 s	1/h	28	28	28	28	28
- Start-up time 10 s	1/h	10	10	10	10	10
Normal starting (CLASS 10E)						
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
• 300% I_M						
- Start-up time 5 s	1/h	21	21	21	21	21
- Start-up time 10 s	1/h	8	8	8	8	8
• 350% I_M						
- Start-up time 5 s	1/h	13	13	13	13	13
- Start-up time 10 s	1/h	4	4	4	4	4
Heavy starting (CLASS 20E)						
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	29.6/27.2/23.6	33.5/30.5/27.5
• 300% I_M						
- Start-up time 20 s	1/h	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4
• 350% I_M						
- Start-up time 20 s	1/h	7	7	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5	2.5	2.5
Heavy starting (CLASS 30E)						
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	26/23.6/21.2	29/26/23
• 300% I_M						
- Start-up time 20 s	1/h	7	7	7	7	7
- Start-up time 40 s	1/h	3	3	3	3	3
• 350% I_M						
- Start-up time 20 s	1/h	4	4	4	4	4
- Start-up time 40 s	1/h	1.8	1.8	1.8	1.8	1.8
Adjustable rated motor current I_M						
• Minimum/maximum	A	2.5/13	3.5/18	5/25	6.5/32	7.5/38
• Minimum/maximum in inside-delta circuits	A	4.3/22.5	6.1/31.1	8.7/43.3	11.3/55.4	13/65.8

High Performance Soft Starters

3RW55 Failsafe soft starters **NEW**

General data

Type		3RW5524	3RW5525	3RW5526	3RW5527
Rated operational current I_e	A	47	63	77	93
Power electronics					
Load rating with rated operational current I_e					
IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a		47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
Permissible rated motor current and starts/h					
Normal starting (CLASS 10A)					
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M					
- Start-up time 5 s	1/h	43	43	43	43
- Start-up time 10 s	1/h	18	18	18	18
• 350% I_M					
- Start-up time 5 s	1/h	28	28	28	28
- Start-up time 10 s	1/h	10	10	10	10
Normal starting (CLASS 10E)					
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M					
- Start-up time 5 s	1/h	21	21	21	21
- Start-up time 10 s	1/h	8	8	8	8
• 350% I_M					
- Start-up time 5 s	1/h	13	13	13	13
- Start-up time 10 s	1/h	4	4	4	4
Heavy starting (CLASS 20E)					
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M					
- Start-up time 20 s	1/h	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4
• 350% I_M					
- Start-up time 20 s	1/h	7	7	7	7
- Start-up time 40 s	1/h	2.5	0	0	0
Heavy starting (CLASS 30E)					
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	43.4/38/34.4	53/48/43	68/62/56	82.5/75.5/65
• 300% I_M					
- Start-up time 20 s	1/h	7	7	7	7
- Start-up time 40 s	1/h	3	3	3	3
• 350% I_M					
- Start-up time 20 s	1/h	4	4	4	4
- Start-up time 40 s	1/h	1.8	1.8	1.8	1.8
Adjustable rated motor current I_M					
• Minimum/maximum	A	10/47	13/63	16/77	19/93
• Minimum/maximum in inside-delta circuits	A	17.3/81.4	22.5/109	27.7/133	32.9/161

High Performance Soft Starters

3RW55 Failsafe soft starters **NEW**

General data

Type		3RW5534	3RW5535	3RW5536
Rated operational current I_e	A	113	143	171
Power electronics				
Load rating with rated operational current I_e				
IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a		113/101/89	143/128/118	171/153/141
Permissible rated motor current and starts/h				
Normal starting (CLASS 10A)				
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	113/101/89	143/128/118	171/153/141
• 300% I_M				
- Start-up time 5 s	1/h	43	43	35
- Start-up time 10 s	1/h	18	18	13
• 350% I_M				
- Start-up time 5 s	1/h	28	17	10
- Start-up time 10 s	1/h	10	4	0
Normal starting (CLASS 10E)				
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	113/101/89	143/128/118	171/153/141
• 300% I_M				
- Start-up time 5 s	1/h	21	21	14
- Start-up time 10 s	1/h	8	7	4
• 350% I_M				
- Start-up time 5 s	1/h	13	4	0
- Start-up time 10 s	1/h	4	0	0
Heavy starting (CLASS 20E)				
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	109/97/85	128/113/103	141/129/117
• 300% I_M				
- Start-up time 20 s	1/h	10	10	10
- Start-up time 40 s	1/h	4	4	4
• 350% I_M				
- Start-up time 20 s	1/h	7	6	6
- Start-up time 40 s	1/h	0	0	0
Heavy starting (CLASS 30E)				
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	89/81/74	108/98/88	117/105/93
• 300% I_M				
- Start-up time 20 s	1/h	7	7	7
- Start-up time 40 s	1/h	3	3	3
• 350% I_M				
- Start-up time 20 s	1/h	4	4	4
- Start-up time 40 s	1/h	1.8	1.8	1.8
Adjustable rated motor current I_M				
• Minimum/maximum	A	23/113	29/143	34/171
• Minimum/maximum in inside-delta circuits	A	39.8/195	50.2/247	58.9/296

High Performance Soft Starters

3RW55 Failsafe soft starters **NEW**

General data

Type		3RW5543	3RW5544	3RW5545	3RW5546	3RW5547	3RW5548
Rated operational current I_e	A	210	250	315	370	470	570
Power electronics							
Load rating with rated operational current I_e							
IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a		210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
Permissible rated motor current and starts/h							
Normal starting (CLASS 10A)							
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
• 300% I_M							
- Start-up time 5 s	1/h	43	43	38	43	32	13
- Start-up time 10 s	1/h	13	18	14	18	13	3
• 350% I_M							
- Start-up time 5 s	1/h	14	28	19	28	19	4
- Start-up time 10 s	1/h	0	10	5	10	6	0.4
Normal starting (CLASS 10E)							
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	551/490/445
• 300% I_M							
- Start-up time 5 s	1/h	13	21	14	20	13	5
- Start-up time 10 s	1/h	2	8	4	8	3	--
• 350% I_M							
- Start-up time 5 s	1/h	0	13	5	12	6	1
- Start-up time 10 s	1/h	0	4	0	3	0.4	--
Heavy starting (CLASS 20E)							
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	162/146/130	200/180/160	231/207/183	258/230/202	272/254/236	284/262/240
• 300% I_M							
- Start-up time 20 s	1/h	10	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4	4
• 350% I_M							
- Start-up time 20 s	1/h	7	7	7	7	7	7
- Start-up time 40 s	1/h	2	2.5	2.5	2.5	2.5	2.5
Heavy starting (CLASS 30E)							
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	138/122/106	160/140/120	183/159/135	202/174/160	210/190/170	220/200/180
• 300% I_M							
- Start-up time 20 s	1/h	7	7	7	7	7	7
- Start-up time 40 s	1/h	3	3	3	3	3	3
• 350% I_M							
- Start-up time 20 s	1/h	4	4	4	4	4	4
- Start-up time 40 s	1/h	1.8	1.8	1.8	1.8	1.8	1.8
Adjustable rated motor current I_M							
• Minimum/maximum	A	42/210	50/250	63/315	74/370	94/470	114/570
• Minimum/maximum in inside-delta circuits	A	72.7/363	86.6/433	109.1/545	128.2/640	162.8/814	197.5/987

High Performance Soft Starters

3RW55 Failsafe soft starters **NEW**

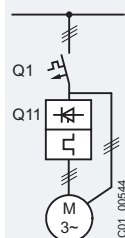
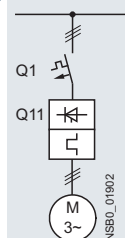
General data

Motor feeders according to IEC with 3RV2/3VA motor starter protectors/circuit breakers (without semiconductor protection)

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, [see table](#)

Note:

For general recommendations for constructing motor feeders
with soft starters, [see page 17-189](#).



Soft starters	Motor starter protectors				Motor starter protectors			
	for 400 V systems		for 480 V systems		for 400 V systems		for 480 V systems	
Q11	Q1	I_q	Q1	I_q	Q1	I_q	Q1	I_q
Type	Type	kA	Type	kA	Type	kA	Type	kA
Type of coordination "1"	Inline circuit				Inside-delta circuit			
3RW5513	3RV2032-4TA10	65	3RV2032-4TA10	18	3RV2032-4DA10	65	3RV2032-4DA10	18
3RW5514	3RV2032-4DA10	65	3RV2032-4DA10	15	3RV2032-4EA10	65	3RV2032-4EA10	15
3RW5515	3RV2032-4EA10	65	3RV2032-4EA10	15	3RV2032-4VA10	65	3RV2032-4VA10	15
3RW5516	3RV2032-4VA10	65	3RV2032-4VA10	10	3RV2032-4JA10	65	3RV2032-4JA10	10
3RW5517	3RV2032-4WA10	65	3RV2032-4WA10	10	3RV2032-4RA10	65	3RV2032-4RA10	10
3RW5524	3RV2032-4JA10	65	3RV2032-4JA10	10	3RV2032-4RA10	65	3RV2032-4RA10	10
3RW5525	3VA2163-7MN32-0AA0	65	3VA2163-7MN32-0AA0	20	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	20
3RW5526	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	20	3VA2216-7MN32-0AA0	65	3VA2216-7MN32-0AA0	20
3RW5527	3VA2216-7MN32-0AA0	15	3VA2216-7MN32-0AA0	10	3VA2220-7MN32-0AA0	15	3VA2220-7MN32-0AA0	10
3RW5534	3VA2216-7MN32-0AA0	65	--	--	3VA2220-7MN32-0AA0	65	--	--
3RW5535	3VA2220-7MN32-0AA0	65	--	--	3VA2325-7MN32-0AA0	65	--	--
3RW5536	3VA2325-7MN32-0AA0	30	3VA2325-7MN32-0AA0	10	3VA2440-7MN32-0AA0	30	3VA2440-7MN32-0AA0	10
3RW5543	3VA2325-7MN32-0AA0	65	3VA2325-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65
3RW5544	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65
3RW5545	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5546	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5547	3VA2450-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65
3RW5548	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65

Note:

The service factor or measurement inaccuracies have been taken into account, for example, for the selection of the specified motor starter protectors/circuit breakers; the specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

High Performance Soft Starters

3RW55 Failsafe soft starters **NEW**

General data

Motor feeders according to IEC with 3NA3 fuses

gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

Type of coordination "1",
short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).

Soft starters	gG class fuse	Line contactor (optional)	gG class fuse	Line contactor (optional)	Line contactor (optional)
	for systems up to 480 V	for systems up to 480 V	for systems up to 480 V	for systems up to 480 V in the supply cable	for systems up to 480 V in the delta
Q11	F1	Q21	F1	Q21	Q21
Type	Type	Type	Type	Type	Type
Type of coordination "1"	Inline circuit		Inside-delta circuit		
3RW5513	3NA3820-6	3RT2025	3NA3820-6	3RT2027	3RT2025
3RW5514	3NA3820-6	3RT2026	3NA3820-6	3RT2027	3RT2026
3RW5515	3NA3822-6	3RT2027	3NA3822-6	3RT2036	3RT2027
3RW5516	3NA3824-6	3RT2035	3NA3824-6	3RT2037	3RT2035
3RW5517	3NA3824-6	3RT2035	3NA3824-6	3RT2038	3RT2035
3RW5524	3NA3824-6	3RT2036	3NA3824-6	3RT2046	3RT2036
3RW5525	3NA3830-6	3RT2037	3NA3830-6	3RT2047	3RT2037
3RW5526	3NA3132-6	3RT2038	3NA3132-6	3RT1055	3RT2038
3RW5527	3NA3136-6	3RT2046	3NA3136-6	3RT1056	3RT2046
3RW5534	3NA3244-6	3RT1054	3NA3244-6	3RT1064	3RT1054
3RW5535	3NA3244-6	3RT1055	3NA3244-6	3RT1065	3RT1055
3RW5536	3NA3365-6	3RT1056	3NA3365-6	3RT1066	3RT1056
3RW5543	2 x 3NA3354-6	3RT1064	2 x 3NA3354-6	3RT1075	3RT1064
3RW5544	2 x 3NA3354-6	3RT1065	2 x 3NA3354-6	3RT1076	3RT1065
3RW5545	2 x 3NA3365-6	3RT1075	2 x 3NA3365-6	3TF68	3RT1075
3RW5546	2 x 3NA3365-6	3RT1075	2 x 3NA3365-6	3TF69	3RT1075
3RW5547	2 x 3NA3365-6	3RT1076	2 x 3NA3365-6	3TF69	3RT1076
3RW5548	2 x 3NA3365-6	3TF68	2 x 3NA3365-6	--	3TF68

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

High Performance Soft Starters

3RW55 Failsafe soft starters **NEW**

General data

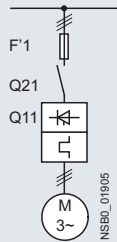
Motor feeders according to IEC with 3NE1 SITOP fuses

gR class full-range fuses for semiconductor protection, cable and line protection

Type of coordination "2",
short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).



Soft starters	gG class fuse	Line contactor (optional)
Q11	for systems up to 480 V	for systems up to 480 V
Type	F'1	Q21
Type	Type	Type
Type of coordination "2"	Inline circuit	
3RW5513	3NE1815-0	3RT2025
3RW5514	3NE1802-0	3RT2026
3RW5515	3NE1817-0	3RT2027
3RW5516	3NE1818-0	3RT2035
3RW5517	3NE1820-0	3RT2035
3RW5524	3NE1021-2	3RT2036
3RW5525	3NE1022-0	3RT2037
3RW5526	3NE1224-0	3RT2038
3RW5527	3NE1224-0	3RT2046
3RW5534	3NE1225-0	3RT1054
3RW5535	3NE1227-0	3RT1055
3RW5536	3NE1230-0	3RT1056
3RW5543	3NE1230-2	3RT1064
3RW5544	3NE1331-0	3RT1065
3RW5545	3NE1334-2	3RT1075
3RW5546	3NE1334-2	3RT1075
3RW5547	3NE1436-2	3RT1076
3RW5548	3NE1437-2	3TF68

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

In inside-delta circuits, a gR class full-range fuse could not provide the semiconductor protection of the delta-connected soft starter with a short-circuit breaking capacity that is adequate for practical use. In this case, we recommend using aR class partial-range fuses for semiconductor protection for type of coordination "2" ([see page 17-227](#)).

High Performance Soft Starters

3RW55 Failsafe soft starters **NEW**

General data

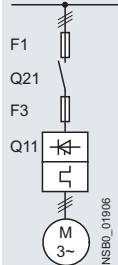
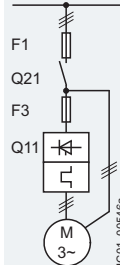
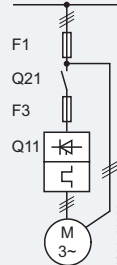
Motor feeders according to IEC with 3NE8 / 3NE3 / 3NC3 fuses

aR class partial-range fuses for semiconductor protection

Type of coordination "2",
short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).

															
Soft starters		gG class fuse		aR class fuse		Line contactor (optional)		gG class fuse		aR class fuse		Line contactor (optional)			
		for systems up to 480 V		for systems up to 480 V		for systems up to 480 V		for systems up to 480 V		for systems up to 480 V		for systems up to 480 V in the supply cable		for systems up to 480 V in the delta	
Q11 Type		F1 Type		F3 Type		Q21 Type		F1 Type		F3 Type		Q21 Type		Q21 Type	
Type of coordination "2"		Inline circuit						Inside-delta circuit							
3RW5513		3NA3820-6		3NE8017-1		3RT2025		3NA3820-6		3NE8017-1		3RT2027		3RT2025	
3RW5514		3NA3820-6		3NE8020-1		3RT2026		3NA3820-6		3NE8020-1		3RT2027		3RT2026	
3RW5515		3NA3822-6		3NE8021-1		3RT2027		3NA3822-6		3NE8021-1		3RT2036		3RT2027	
3RW5516		3NA3824-6		3NE8022-1		3RT2035		3NA3824-6		3NE8022-1		3RT2037		3RT2035	
3RW5517		3NA3824-6		3NE8024-1		3RT2035		3NA3824-6		3NE8024-1		3RT2038		3RT2035	
3RW5524		3NA3824-6		3NE8024-1		3RT2036		3NA3824-6		3NE8024-1		3RT2046		3RT2036	
3RW5525		3NA3830-6		3NE3227		3RT2037		3NA3830-6		3NE3227		3RT2047		3RT2037	
3RW5526		3NA3132-6		3NE3227		3RT2038		3NA3132-6		3NE3227		3RT1055		3RT2038	
3RW5527		3NA3136-6		3NE3227		3RT2046		3NA3136-6		3NE3227		3RT1056		3RT2046	
3RW5534		3NA3244-6		3NE3231		3RT1054		3NA3244-6		3NE3231		3RT1064		3RT1054	
3RW5535		3NA3244-6		3NE3233		3RT1055		3NA3244-6		3NE3233		3RT1065		3RT1055	
3RW5536		3NA3365-6		3NE3334-0B		3RT1056		3NA3365-6		3NE3334-0B		3RT1066		3RT1056	
3RW5543		2 x 3NA3354-6		3NE3333		3RT1064		2 x 3NA3354-6		3NE3333		3RT1075		3RT1064	
3RW5544		2 x 3NA3354-6		3NE3335		3RT1065		2 x 3NA3354-6		3NE3335		3RT1076		3RT1065	
3RW5545		2 x 3NA3365-6		--		3RT1075		2 x 3NA3365-6		--		3TF68		3RT1075	
3RW5546		2 x 3NA3365-6		--		3RT1075		2 x 3NA3365-6		--		3TF69		3RT1075	
3RW5547		2 x 3NA3365-6		3NE3340-8		3RT1076		2 x 3NA3365-6		3NE3340-8		3TF69		3RT1076	
3RW5548		2 x 3NA3365-6		3NC3342-1U		3TF68		2 x 3NA3365-6		3NC3342-1U		--		3TF68	

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2/3VA motor starter protectors/circuit breakers can also be used, possibly with reduced short-circuit breaking capacity ([see page 17-224](#)). In these cases, optional line contactors can be dispensed with.

High Performance Soft Starters

3RW55 Failsafe soft starters **NEW**

General data

Reversing operation with reversing contactors

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).

(For an example circuit, [see 3RW55 Equipment Manual, Appendix A.3](#))

Soft starters	Reversing contactor assembly for systems up to 480 V Q21 / Q22	For reversing contactor for systems up to 480 V Q21 / Q22
Type	Type	Type
3RW5513	3RA2325	3RT2025
3RW5514	3RA2326	3RT2026
3RW5515	3RA2327	3RT2027
3RW5516	3RA2335	3RT2035
3RW5517	3RA2335	3RT2035
3RW5524	3RA2336	3RT2036
3RW5525	3RA2337	3RT2037
3RW5526	3RA2338	3RT2038
3RW5527	3RA2346	3RT2046
3RW5534	--	3RT1054
3RW5535	--	3RT1055
3RW5536	--	3RT1056
3RW5543	--	3RT1064
3RW5544	--	3RT1065
3RW5545	--	3RT1075
3RW5546	--	3RT1075
3RW5547	--	3RT1076
3RW5548	--	3TF68

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High Performance Soft Starters

3RW55 Failsafe soft starters > Inline circuit

IE3/IE4 ready

NEW

Selection

Selection and ordering data

For normal starting (CLASS 10E)



3RW551.



3RW552.



3RW553.



3RW554.

At 40 °C			At 50 °C				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Operational current	Operating power for three-phase motors		Operational current	Rating [hp] for three-phase motors							
	At 230 V	At 400 V		At 200/208 V	At 220/230 V	At 460/480 V					
A	kW	kW	A	hp	hp	hp	d				
Operational voltage 200 ... 480 V											
13	3	5.5	11.5	2	3	7.5	5	3RW5513-□HF□4		1	1 unit
18	4	7.5	15.9	3	5	10	5	3RW5514-□HF□4		1	1 unit
25	5.5	11	22.3	5	7.5	15	5	3RW5515-□HF□4		1	1 unit
32	7.5	15	28.4	7.5	10	20	5	3RW5516-□HF□4		1	1 unit
38	11	18.5	33.5	10	10	20	5	3RW5517-□HF□4		1	1 unit
47	11	22	41.6	10	10	30	5	3RW5524-□HF□4		1	1 unit
63	18.5	30	55.5	15	20	40	5	3RW5525-□HF□4		1	1 unit
77	22	37	68	20	25	50	5	3RW5526-□HF□4		1	1 unit
93	22	45	82.5	25	30	60	5	3RW5527-□HF□4		1	1 unit

Type of electrical connection for the control circuit

Screw terminals

Spring-loaded terminals

Control supply voltage

24 V AC/DC

110 ... 250 V AC

1
3

0
1

- ¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here,
see page 17-187.

At 40 °C			At 50 °C				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Operational current	Operating power for three-phase motors		Operational current	Rating [hp] for three-phase motors							
	At 230 V	At 400 V		At 200/208 V	At 220/230 V	At 460/480 V					
A	kW	kW	A	hp	hp	hp	d				
Operational voltage 200 ... 480 V											
113	30	55	101	30	30	75	5	3RW5534-□HF□4 3RW5535-□HF□4 3RW5536-□HF□4		1	1 unit
143	37	75	128	40	40	100	5			1	1 unit
171	45	90	153	50	50	100	5			1	1 unit
210	55	110	186	50	60	150	5	3RW5543-□HF□4 3RW5544-□HF□4 3RW5545-□HF□4		1	1 unit
250	75	132	220	60	75	150	5			1	1 unit
315	90	160	279	75	100	200	5			1	1 unit
370	110	200	328	100	125	250	5	3RW5546-□HF□4 3RW5547-□HF□4 3RW5548-□HF□4		1	1 unit
470	132	250	416	150	150	350	5			1	1 unit
570	160	315	504	150	200	400	5			1	1 unit

Type of electrical connection for the control circuit

Spring-loaded terminals

Screw terminals

Control supply voltage

24 V AC/DC

110 ... 250 V AC

2
6

0
1

- ¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here,
see page 17-187.

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High Performance Soft Starters

3RW55 Failsafe soft starters > Inside-delta circuit

IE3/IE4 ready

NEW

Selection

Selection and ordering data

For normal starting (CLASS 10E)



3RW551.



3RW552.



3RW553.



3RW554.

At 40 °C for inside-delta circuit			At 50 °C for inside-delta circuit				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Operational current	Operating power for three-phase motors		Operational current	Rating [hp] for three-phase motors							
	At 230 V	At 400 V		At 200/208 V	At 220/230 V	At 460/480 V					
A	kW	kW	A	hp	hp	hp	d				
Operational voltage 200 ... 480 V											
22.5	5.5	11	19.9	5	5	10	5	3RW5513-□HF□4		1	1 unit
31.5	7.5	15	28	7.5	7.5	20	5	3RW5514-□HF□4		1	1 unit
43.3	11	18.5	39	10	10	25	5	3RW5515-□HF□4		1	1 unit
55.4	15	22	49	15	15	30	5	3RW5516-□HF□4		1	1 unit
65.8	18.5	30	58	15	20	40	5	3RW5517-□HF□4		1	1 unit
81.4	22	45	72	20	25	50	5	3RW5524-□HF□4		1	1 unit
109	30	55	96	30	30	75	5	3RW5525-□HF□4		1	1 unit
133	37	75	118	30	40	75	5	3RW5526-□HF□4		1	1 unit
161	45	90	143	40	50	100	5	3RW5527-□HF□4		1	1 unit

Type of electrical connection for the control circuit

Screw terminals

Spring-loaded terminals

Control supply voltage

24 V AC/DC

110 ... 250 V AC

- ¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here,
see page 17-187.

At 40 °C for inside-delta circuit			At 50 °C for inside-delta circuit				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Operational current	Operating power for three-phase motors		Operational current	Rating [hp] for three-phase motors							
	At 230 V	At 400 V		At 200/208 V	At 220/230 V	At 460/480 V					
A	kW	kW	A	hp	hp	hp	d				
Operational voltage 200 ... 480 V											
196	55	110	175	50	60	125	5	3RW5534-□HF□4		1	1 unit
248	75	132	222	75	75	150	5	3RW5535-□HF□4		1	1 unit
296	90	160	265	75	100	200	5	3RW5536-□HF□4		1	1 unit
364	110	200	322	100	125	250	5	3RW5543-□HF□4		1	1 unit
433	132	250	381	125	150	300	5	3RW5544-□HF□4		1	1 unit
546	160	315	483	150	200	400	5	3RW5545-□HF□4		1	1 unit
641	200	355	568	200	200	450	5	3RW5546-□HF□4		1	1 unit
814	250	400	721	250	250	600	5	3RW5547-□HF□4		1	1 unit
987	315	560	873	300	350	750	5	3RW5548-□HF□4		1	1 unit

Type of electrical connection for the control circuit

Spring-loaded terminals

Screw terminals

Control supply voltage

24 V AC/DC

110 ... 250 V AC

- ¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

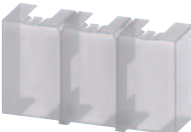
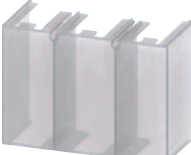
For the constraints for the motor outputs specified here,
see page 17-187.

High Performance Soft Starters

3RW55 Failsafe soft starters > Accessories

Selection

Selection and ordering data

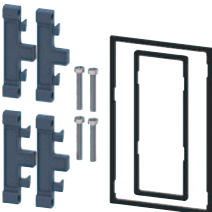
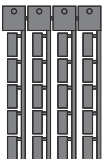
	Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
d									
Fan covers									
 3RW5983-0FC00	Fan cover	3RW551 (1x), 3RW552 (2x), 3RW553 (2x)	--	--	▶	3RW5983-0FC00		1	1 unit
		3RW554 (1x)	--	--	▶	3RW5984-0FC00		1	1 unit
Terminal covers									
 3RW5983-0TC20	Terminal cover	3RW552 (2x), 3RW553 (2x)	--	--	▶	3RW5983-0TC20		1	1 unit
		3RW554 (2x)	--	--	▶	3RW5984-0TC20		1	1 unit
 3RW5984-0TC20									
Enclosure components									
 3RW5950-0GL20	Hinged cover	3RW55	Without cutout	--	▶	3RW5950-0GL20		1	1 unit
Communication modules									
 3RW5980-0CS00	Communication module	3RW55	PROFINET High Feature with integral switch	--	▶	3RW5950-0CH00		1	1 unit
			PROFINET Standard	--	▶	3RW5980-0CS00		1	1 unit
			PROFIBUS	--	▶	3RW5980-0CP00		1	1 unit
 3RW5980-0CE00			EtherNet/IP	--	▶	3RW5980-0CE00		1	1 unit
 3RW5980-0CR00			Modbus RTU	--	▶	3RW5980-0CR00		1	1 unit
			Modbus TCP	--	▶	3RW5980-0CT00		1	1 unit

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High Performance Soft Starters

3RW55 Failsafe soft starters > Accessories

Selection

Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
d								
HMI modules								
	IP65 door mounting kit for HMI modules	3RW55	IP65	For HMI modules	▶	3RW5980-0HD00	1	1 unit
3RW5980-0HD00								
Connecting cables								
	HMI connection cable	3RW55	5 m, round	For door mounting	▶	3RW5980-0HC60	1	1 unit
			2.5 m, round		▶	3UF7933-0BA00-0	1	1 unit
			1.0 m, round		▶	3UF7937-0BA00-0	1	1 unit
			0.5 m, round		▶	3UF7932-0BA00-0	1	1 unit
3UF793.-0BA00-0								
Further accessories								
	Push-in lugs for wall mounting	--	Two lugs are required per device	For HMI modules and communication modules	2	3ZY1311-0AA00	1	10 units
3ZY1311-0AA00								
Blank labels								
	Unit labeling plates ¹⁾	--	20 mm x 7 mm, titanium gray	For SIRIUS devices	20	3RT2900-1SB20	100	340 units
3RT2900-1SB20								

¹⁾ PC labeling systems for individual inscription of unit labeling plates are available from: murrplastik Systemtechnik GmbH (see page 16/15).

General Performance Soft Starters

3RW52 Soft starters

General data

Overview

More information

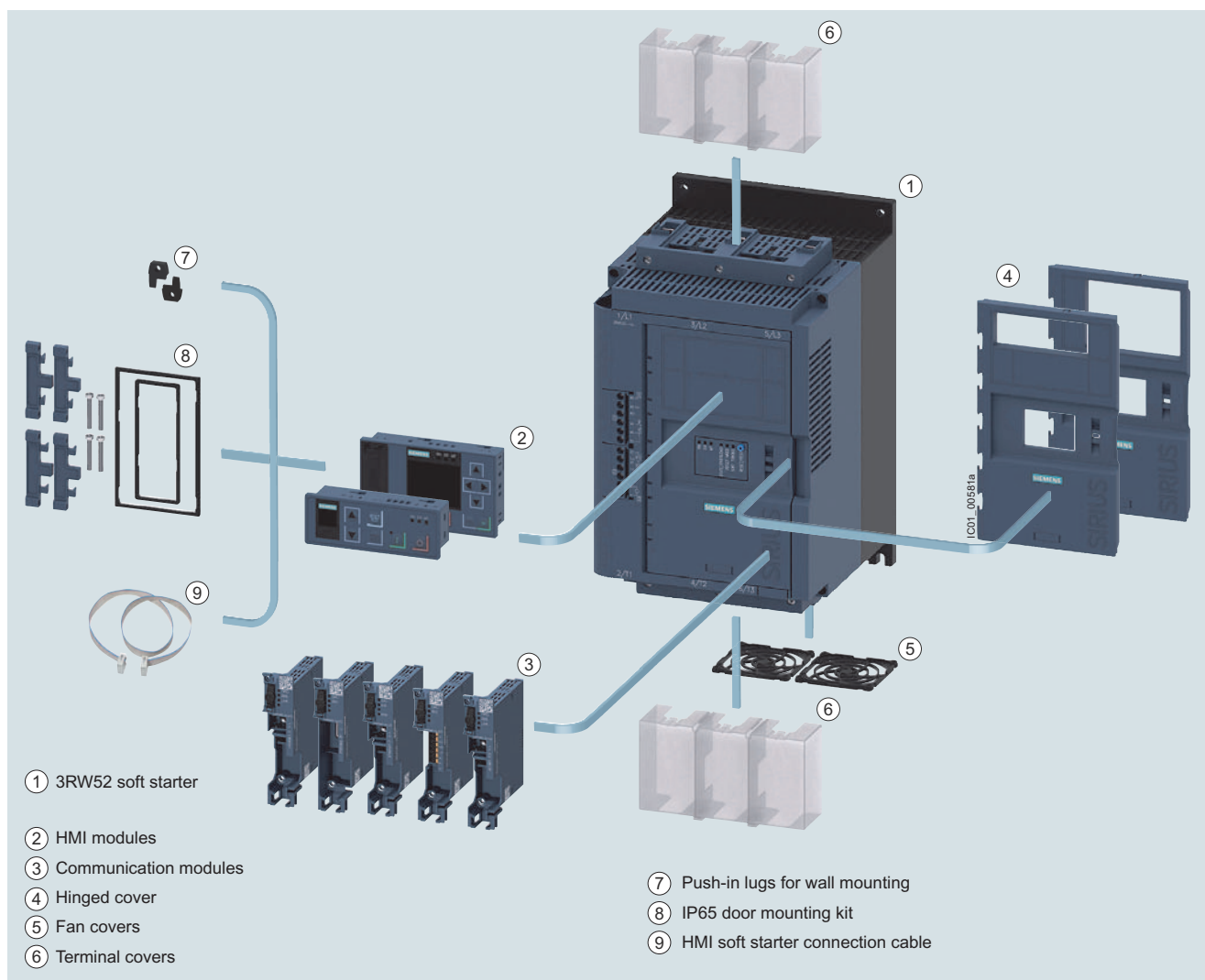
Homepage, see www.usa.siemens.com/soft-starter
 Industry Mall, see www.siemens.com/product?3RW52
 TIA Selection Tool Cloud (TST Cloud), see
<https://www.siemens.com/tstcloud/?node=3rw52>

Industry Online Support (SIOS) topic page, see
<https://support.industry.siemens.com/cs/ww/en/view/109747404>
 Simulation Tool for Soft Starters (STS), see page 17-187 or
<https://support.industry.siemens.com/cs/ww/en/view/101494917>
 SIRIUS Soft Starter ES (TIA Portal), see page 14/5



SIRIUS 3RW52 General Performance soft starters are the ideal solution for standard applications. With ideal three-phase motor control, they cover the performance range from 7.5 to 400HP @ 480V.

Optional HMI modules, plug-in communication modules (PROFINET, PROFIBUS, EtherNet/IP and Modbus) and either an analog output or thermistor motor protection ensure maximum flexibility. With their modern hybrid switching technology, the SIRIUS 3RW52 soft starters offer efficient switching for long-term, energy-saving use.



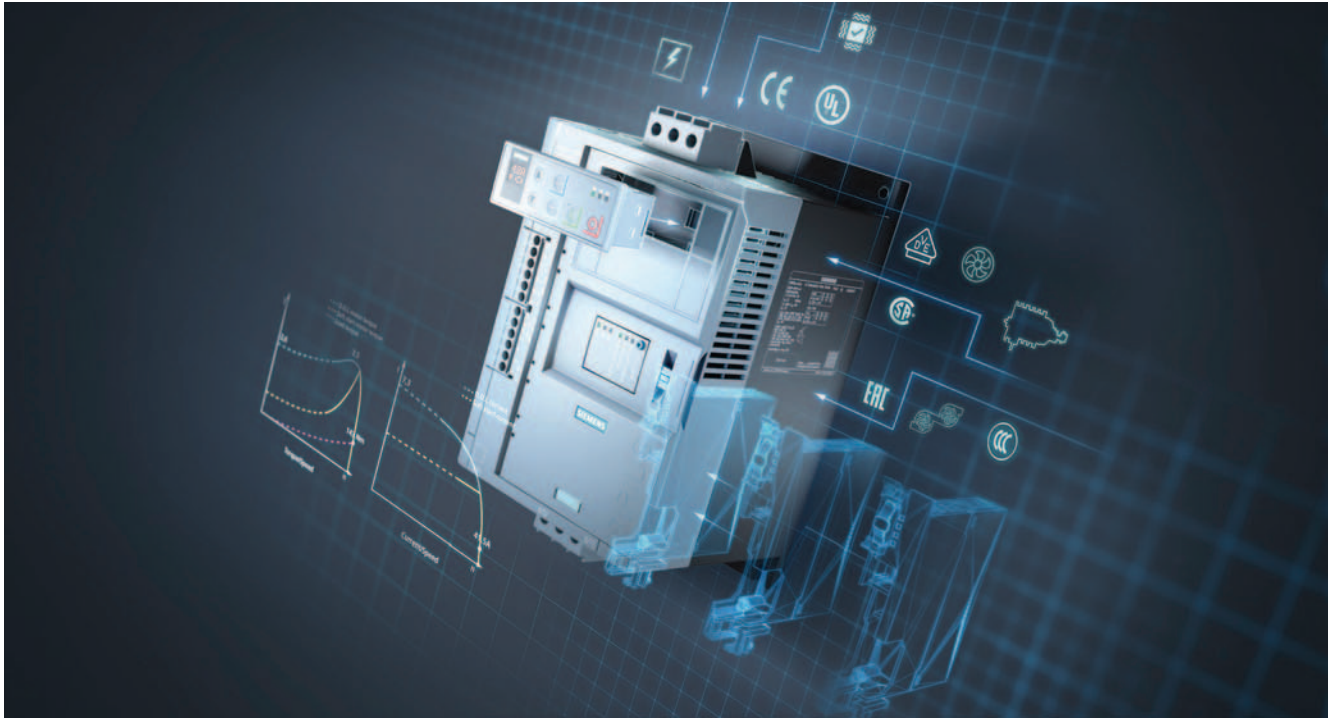
3RW52 General Performance soft starters with accessories (see page 17-249), for expansion with HMI module or communication module

General Performance Soft Starters

3RW52 Soft starters

General data

Benefits



Product characteristics / function	Performance features / benefits
Hybrid switching devices and three-phase motor control	Minimum power loss and optimum/symmetrical motor control
TIA-Integration – communication modules and HMI modules optional	Efficient configuration and maximum flexibility in automation engineering
Soft Torque	Reduced mechanical loading and optimum pump stop
Parameterization using potentiometers	Simple and fast commissioning
Wide range for control supply and main voltage	Low variance, high system availability even with weak supply networks

General Performance Soft Starters

3RW52 Soft starters

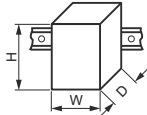
General data

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/25100/td>
Equipment Manual "SIRIUS 3RW52 Soft Starter", see <https://support.industry.siemens.com/cs/ww/en/view/109753751>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/25100/faq>
Simulation Tool for Soft Starters (STS), see page 17-187 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>

Type	3RW5213 3RW5214 3RW5215		3RW5216 3RW5217	3RW5224 3RW5225	3RW5226 3RW5227 3RW5234 3RW5235 3RW5236	3RW5243 3RW5244 3RW5245 3RW5246 3RW5247 3RW5248
Installation/fixing/dimensions						
Width x height x depth		mm	170 × 275 × 152	185 × 306 × 203		210 × 393 × 203
Type of mounting			Screw fixing			
Mounting position			For vertical mounting surface can be rotated +/- 10° and tilted forward or backward	For vertical mounting surface can be rotated +/- 90°, for vertical mounting surface can be tilted +/- 22.5° forward or backward	For vertical mounting surface can be rotated +/- 10° and tilted forward or backward	For vertical mounting surface can be rotated +/- 90°, for vertical mounting surface can be tilted +/- 22.5° forward or backward
Distance to be maintained with side-by-side mounting						
• Above	mm	100				
• At the side	mm	5				
• Below	mm	75				
Maximum installation altitude above sea level ¹⁾			m	5 000		
Degree of protection			IP00			
Ambient conditions						
Ambient temperature						
• During operation ²⁾	°C	-25 ... +60				
• During storage and transport	°C	-40 ... +80				
Environmental category according to IEC 60721						
• During operation			3K6 (no ice formation, no condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6			
• During storage			1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not enter the devices), 1M4			
• During transport			2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m)			

¹⁾ Derating from 1 000 m, see [characteristic curve on page 17-187](#).

²⁾ Note derating above 40 °C.

General Performance Soft Starters

3RW52 Soft starters

General data

Type		3RW52...C0.	3RW52...C1.
Control circuit/control			
Control supply voltage			
• At AC/DC, rated value	V	24/24	--/--
• At AC	V	--	110 ... 250
• Relative negative tolerance/relative positive tolerance with AC	%	-20/20	-15/10
• Relative negative tolerance/relative positive tolerance with DC	%	-20/20	--/--
Frequency of the control supply voltage			
• Relative negative tolerance/relative positive tolerance	Hz	50 ... 60	
	%	-10/10	
Type of overvoltage protection		Varistors	
Type of short-circuit protection for control circuit¹⁾		Fuse 4 A gG ($I_{cu} = 1$ kA), fuse 6 A quick-response ($I_{cu} = 1$ kA), MCB C1 ($I_{cu} = 600$ A), MCB C6 ($I_{cu} = 300$ A)	

¹⁾ Not included in scope of supply

Type		3RW52...C.4	3RW52...C.5
Power electronics			
Operational voltage, rated value			
• Relative negative tolerance/relative positive tolerance	V	200 ... 480	200 ... 600
	%	-15/10	
Operational voltage for inside-delta circuit, rated value			
• Relative negative tolerance/relative positive tolerance	V	200 ... 480	200 ... 600
	%	-15/10	
Operating frequency, rated value			
• Relative negative tolerance/relative positive tolerance	Hz	50 ... 60	
	%	-10/10	
Minimum load [% of I_M]¹⁾		15	
Maximum cable length between soft starter and motor		m	
		800	

¹⁾ Relative to the smallest adjustable I_e .

General Performance Soft Starters

3RW52 Soft starters

General data

Type		3RW5213	3RW5214	3RW5215	3RW5216	3RW5217
Rated operational current I_e	A	13	18	25	32	38
Power electronics						
Load rating with rated operational current I_e						
IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a						
		13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
Permissible rated motor current and starts/h						
Normal starting (CLASS 10A)						
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated						
	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
• 300% I_M						
- Start-up time 5 s	1/h	43	43	43	43	43
- Start-up time 10 s	1/h	18	18	18	18	18
• 350% I_M						
- Start-up time 5 s	1/h	28	28	28	28	28
- Start-up time 10 s	1/h	10	10	10	10	10
Normal starting (CLASS 10E)						
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated						
	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	32/28.4/26	38/33.5/30.5
• 300% I_M						
- Start-up time 20 s	1/h	21	21	21	21	21
- Start-up time 40 s	1/h	8	8	8	8	8
• 350% I_M						
- Start-up time 20 s	1/h	13	13	13	13	13
- Start-up time 40 s	1/h	4	4	4	4	4
Heavy starting (CLASS 20E)						
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated						
	A	13/11.5/10.5	18/15.9/13.8	25/22.3/19.6	29.6/27.2/23.6	33.5/30.5/27.5
• 300% I_M						
- Start-up time 20 s	1/h	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4
• 350% I_M						
- Start-up time 20 s	1/h	7	7	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5	2.5	2.5
Adjustable rated motor current I_M						
• Minimum/maximum	A	5.5/13	7.5/18	11.5/25	14/32	15.5/38
• Minimum/maximum in inside-delta circuits	A	9.5/22.5	13/31.2	19.9/43.3	24.2/55.4	26.8/65.8

General Performance Soft Starters

3RW52 Soft starters

General data

Type		3RW5224	3RW5225	3RW5226	3RW5227
Rated operational current I_e	A	47	63	77	93
Power electronics					
Load rating with rated operational current I_e					
IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a		47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
Permissible rated motor current and starts/h					
Normal starting (CLASS 10A)					
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M					
- Start-up time 5 s	1/h	43	43	43	43
- Start-up time 10 s	1/h	18	18	18	18
• 350% I_M					
- Start-up time 5 s	1/h	28	28	28	28
- Start-up time 10 s	1/h	10	10	10	10
Normal starting (CLASS 10E)					
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	47/41.6/36.2	63/55.5/50.5	77/68/62	93/82.5/75.5
• 300% I_M					
- Start-up time 20 s	1/h	21	21	21	21
- Start-up time 40 s	1/h	8	8	8	8
• 350% I_M					
- Start-up time 20 s	1/h	13	13	13	13
- Start-up time 40 s	1/h	4	4	4	4
Heavy starting (CLASS 20E)					
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	47/41.6/36.2	63/55.5/50.5	65/59/53	93/82.5/75.5
• 300% I_M					
- Start-up time 20 s	1/h	10	10	10	10
- Start-up time 40 s	1/h	4	3	4	4
• 350% I_M					
- Start-up time 20 s	1/h	7	4	7	7
- Start-up time 40 s	1/h	2	0	2.5	2.5
Adjustable rated motor current I_M					
• Minimum/maximum	A	20/47	25.5/63	32/77	40.5/93
• Minimum/maximum in inside-delta circuits	A	34.6/81.4	44.2/109	55.4/133	70.1/161

General Performance Soft Starters

3RW52 Soft starters

General data

Type		3RW5234	3RW5235	3RW5236
Rated operational current I_e	A	113	143	171
Power electronics				
Load rating with rated operational current I_e				
IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	113/101/89	143/128/118	171/153/141
Permissible rated motor current and starts/h				
Normal starting (CLASS 10A)				
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	113/101/89	143/128/118	171/153/141
• 300% I_M				
- Start-up time 5 s	1/h	43	43	43
- Start-up time 10 s	1/h	18	18	18
• 350% I_M				
- Start-up time 5 s	1/h	28	27	20
- Start-up time 10 s	1/h	10	8	4
Normal starting (CLASS 10E)				
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	113/101/89	139/127/116	158/146/129
• 300% I_M				
- Start-up time 20 s	1/h	21	21	21
- Start-up time 40 s	1/h	8	8	8
• 350% I_M				
- Start-up time 20 s	1/h	13	12	12
- Start-up time 40 s	1/h	4	1	1
Heavy starting (CLASS 20E)				
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated	A	109/97/85	113/103/93	129/117/105
• 300% I_M				
- Start-up time 20 s	1/h	10	10	10
- Start-up time 40 s	1/h	4	4	4
• 350% I_M				
- Start-up time 20 s	1/h	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5
Adjustable rated motor current I_M				
• Minimum/maximum	A	53/113	68/143	81/171
• Minimum/maximum in inside-delta circuits	A	91.8/196	118/248	140/296

General Performance Soft Starters

3RW52 Soft starters

General data

Type		3RW5243	3RW5244	3RW5245	3RW5246	3RW5247	3RW5248
Rated operational current I_e	A	210	250	315	370	470	570
Power electronics							
Load rating with rated operational current I_e							
IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a		210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
Permissible rated motor current and starts/h							
Normal starting (CLASS 10A)							
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated		210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
• 300% I_M - Start-up time 5 s - Start-up time 10 s	1/h	43	43	43	43	30	20
	1/h	18	18	14	18	11	6
• 350% I_M - Start-up time 5 s - Start-up time 10 s	1/h	28	28	16	28	17	9
	1/h	5	10	4	10	5	1
Normal starting (CLASS 10E)							
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated		197/184/170	250/220/200	279/255/231	370/328/300	398/362/326	460/416/372
• 300% I_M - Start-up time 20 s - Start-up time 40 s	1/h	21	21	21	21	21	18
	1/h	8	8	8	8	8	7
• 350% I_M - Start-up time 20 s - Start-up time 40 s	1/h	12	13	12	13	13	11
	1/h	1	4	3	4	4	2
Heavy starting (CLASS 20E)							
Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated		162/146/130	200/180/160	195/171/147	258/230/202	272/236/218	284/262/240
• 300% I_M - Start-up time 20 s - Start-up time 40 s	1/h	10	10	10	10	10	10
	1/h	4	4	4	4	4	4
• 350% I_M - Start-up time 20 s - Start-up time 40 s	1/h	7	7	7	7	7	7
	1/h	2.5	2.5	2.5	2.5	2.5	2.5
Adjustable rated motor current I_M							
• Minimum/maximum		A 90/210	100/250	135/315	160/370	200/470	240/570
• Minimum/maximum in inside-delta circuits		A 156/364	173/433	234/546	277/641	346/814	416/987

General Performance Soft Starters

3RW52 Soft starters

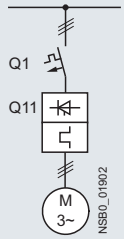
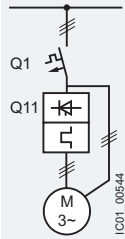
General data

Motor feeders according to IEC with 3RV2/3VA motor starter protectors/circuit breakers (without semiconductor protection)

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, [see table](#)

Note:

For general recommendations for constructing motor feeders
with soft starters, [see page 17-189](#).

									
Soft starters		Motor starter protectors for 400 V systems				Motor starter protectors for 500 V systems			
Q11		Q1	I_q	Q1	I_q	Q1	I_q	Q1	I_q
Type		Type	kA	Type	kA	Type	kA	Type	kA
Type of coordination "1"	ToC 1	Inline circuit				Inside-delta circuit			
3RW5213		3RV2032-4TA10	65	3RV2032-4TA10	18	3RV2032-4DA10	65	3RV2032-4DA10	18
3RW5214		3RV2032-4DA10	65	3RV2032-4DA10	15	3RV2032-4EA10	65	3RV2032-4EA10	15
3RW5215		3RV2032-4EA10	65	3RV2032-4EA10	15	3RV2032-4VA10	65	3RV2032-4VA10	15
3RW5216		3RV2032-4VA10	65	3RV2032-4VA10	10	3RV2032-4JA10	65	3RV2032-4JA10	10
3RW5217		3RV2032-4WA10	65	3RV2032-4WA10	10	3RV2032-4RA10	65	3RV2032-4RA10	10
3RW5224		3RV2032-4JA10	65	3RV2032-4JA10	10	3RV2032-4RA10	65	3RV2032-4RA10	10
3RW5225		3VA2163-7MN32-0AA0	65	3VA2163-7MN32-0AA0	20	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	20
3RW5226		3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	20	3VA2216-7MN32-0AA0	65	3VA2216-7MN32-0AA0	20
3RW5227		3VA2216-7MN32-0AA0	15	3VA2216-7MN32-0AA0	10	3VA2220-7MN32-0AA0	15	3VA2220-7MN32-0AA0	10
3RW5234		3VA2216-7MN32-0AA0	65	--	--	3VA2220-7MN32-0AA0	65	--	--
3RW5235		3VA2220-7MN32-0AA0	65	--	--	3VA2325-7MN32-0AA0	65	--	--
3RW5236		3VA2325-7MN32-0AA0	30	3VA2325-7MN32-0AA0	10	3VA2440-7MN32-0AA0	30	3VA2440-7MN32-0AA0	10
3RW5243		3VA2325-7MN32-0AA0	65	3VA2325-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65
3RW5244		3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65
3RW5245		3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5246		3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5247		3VA2450-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65
3RW5248		3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65

Note:

The service factor or measurement inaccuracies have been taken into account, for example, for the selection of the specified motor starter protectors/circuit breakers; the specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

General Performance Soft Starters

3RW52 Soft starters

General data

Motor feeders according to IEC with 3NA3 fuses

gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

Type of coordination "1",
short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).

Soft starters	gG class fuse for systems up to 600 V	Line contactor (optional) for systems up to 480 V for systems up to 600 V		gG class fuse for systems up to 600 V	Line contactor (optional) for systems up to 480 V in the supply cable for systems up to 600 V in the supply cable		for systems up to 480 V in the delta	for systems up to 600 V in the delta	
Q11	F1	Q21	Q21	F1	Q21	Q21	Q21	Q21	
Type	Type	Type	Type	Type	Type	Type	Type	Type	
Type of coordination "1"	Inline circuit			Inside-delta circuit					
3RW5213	3NA3820-6	3RT2025	3RT2025	3NA3820-6	3RT2027	3RT2035	3RT2025	3RT2025	
3RW5214	3NA3820-6	3RT2026	3RT2027	3NA3820-6	3RT2027	3RT2037	3RT2026	3RT2027	
3RW5215	3NA3822-6	3RT2027	3RT2037	3NA3822-6	3RT2036	3RT2037	3RT2027	3RT2037	
3RW5216	3NA3824-6	3RT2035	3RT2037	3NA3824-6	3RT2037	3RT2038	3RT2035	3RT2037	
3RW5217	3NA3824-6	3RT2035	3RT2037	3NA3824-6	3RT2038	3RT2046	3RT2035	3RT2037	
3RW5224	3NA3824-6	3RT2036	3RT2037	3NA3824-6	3RT2046	3RT2047	3RT2036	3RT2037	
3RW5225	3NA3830-6	3RT2037	3RT2046	3NA3830-6	3RT2047	3RT1054	3RT2037	3RT2046	
3RW5226	3NA3132-6	3RT2038	3RT2046	3NA3132-6	3RT1055	3RT1055	3RT2038	3RT2046	
3RW5227	3NA3136-6	3RT2046	3RT2047	3NA3136-6	3RT1056	3RT1056	3RT2046	3RT2047	
3RW5234	3NA3244-6	3RT1054	3RT1054	3NA3244-6	3RT1064	3RT1064	3RT1054	3RT1054	
3RW5235	3NA3244-6	3RT1055	3RT1055	3NA3244-6	3RT1065	3RT1065	3RT1055	3RT1055	
3RW5236	3NA3365-6	3RT1056	3RT1064	3NA3365-6	3RT1066	3RT1075	3RT1056	3RT1064	
3RW5243	2 x 3NA3354-6	3RT1064	3RT1064	2 x 3NA3354-6	3RT1075	3RT1075	3RT1064	3RT1064	
3RW5244	2 x 3NA3354-6	3RT1065	3RT1065	2 x 3NA3354-6	3RT1076	3RT1076	3RT1065	3RT1065	
3RW5245	2 x 3NA3365-6	3RT1075	3RT1075	2 x 3NA3365-6	3TF68	3TF68	3RT1075	3RT1075	
3RW5246	2 x 3NA3365-6	3RT1075	3RT1075	2 x 3NA3365-6	3TF69	3TF69	3RT1075	3RT1075	
3RW5247	2 x 3NA3365-6	3RT1076	3RT1276	2 x 3NA3365-6	3TF69	3TF69	3RT1076	3RT1276	
3RW5248	2 x 3NA3365-6	3TF68	3TF68	2 x 3NA3365-6	--	--	3TF68	3TF68	

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

General Performance Soft Starters

3RW52 Soft starters

General data

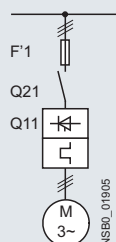
Motor feeders according to IEC with 3NE1 SITOP fuses

gR class full-range fuses for semiconductor protection, cable and line protection

Type of coordination "2",
short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).



Soft starters	gG class fuse	Line contactor (optional)	
	for systems up to 600 V	for systems up to 480 V	for systems up to 600 V
Q11	F'1	Q21	Q21
Type	Type	Type	Type
Type of coordination "2"	Inline circuit		
3RW5213	3NE1815-0	3RT2025	3RT2025
3RW5214	3NE1802-0	3RT2026	3RT2027
3RW5215	3NE1817-0	3RT2027	3RT2037
3RW5216	3NE1818-0	3RT2035	3RT2037
3RW5217	3NE1820-0	3RT2035	3RT2037
3RW5224	3NE1021-2	3RT2036	3RT2037
3RW5225	3NE1022-0	3RT2037	3RT2046
3RW5226	3NE1224-0	3RT2038	3RT2046
3RW5227	3NE1224-0	3RT2046	3RT2047
3RW5234	3NE1225-0	3RT1054	3RT1054
3RW5235	3NE1227-0	3RT1055	3RT1055
3RW5236	3NE1230-0	3RT1056	3RT1064
3RW5243	3NE1230-2 ¹⁾	3RT1064	3RT1064
3RW5244	3NE1331-0	3RT1065	3RT1065
3RW5245	3NE1334-2	3RT1075	3RT1075
3RW5246	3NE1334-2	3RT1075	3RT1075
3RW5247	3NE1436-2	3RT1076	3RT1276
3RW5248	3NE1437-2	3TF68	3TF68

¹⁾ For systems up to 500 V.

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

In inside-delta circuits, a gR class full-range fuse could not provide the semiconductor protection of the delta-connected soft starter with a short-circuit breaking capacity that is adequate for practical use. In this case, we recommend using aR class partial-range fuses for semiconductor protection for type of coordination "2" ([see page 17-244](#)).

General Performance Soft Starters

3RW52 Soft starters

General data

Motor feeders according to IEC with fuses 3NE8 / 3NE4 / 3NE3

aR class partial-range fuses for semiconductor protection

Type of coordination "2",
short-circuit breaking capacity $I_{q1} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).

Soft starters		gG class fuse	aR class fuse	Line contactor (optional)		gG class fuse	aR class fuse	Line contactor (optional)				
		for systems up to 600 V	for systems up to 500 V	for systems up to 480 V	for systems up to 600 V	for systems up to 600 V	for systems up to 600 V	for systems up to 480 V in the supply cable	for systems up to 600 V in the supply cable	for systems up to 480 V in the delta	for systems up to 600 V in the delta	
Q11		F1	F3	Q21	Q21	F1	F3	Q21	Q21	Q21	Q21	
Type		Type	Type	Type	Type	Type	Type	Type	Type	Type	Type	
Type of coordination "2"		Inline circuit				Inside-delta circuit						
3RW5213		3NA3820-6	3NE8017-1	3RT2025	3RT2025	3NA3820-6	3NE8017-1	3RT2027	3RT2035	3RT2025	3RT2025	
3RW5214		3NA3820-6	3NE8020-1	3RT2026	3RT2027	3NA3820-6	3NE8020-1	3RT2027	3RT2037	3RT2026	3RT2027	
3RW5215		3NA3822-6	3NE8021-1	3RT2027	3RT2037	3NA3822-6	3NE8021-1	3RT2036	3RT2037	3RT2027	3RT2037	
3RW5216		3NA3824-6	3NE8022-1	3RT2035	3RT2037	3NA3824-6	3NE8022-1	3RT2037	3RT2038	3RT2035	3RT2037	
3RW5217		3NA3824-6	3NE8024-1	3RT2035	3RT2037	3NA3824-6	3NE8024-1	3RT2038	3RT2046	3RT2035	3RT2037	
3RW5224		3NA3824-6	3NE8024-1	3RT2036	3RT2037	3NA3824-6	3NE8024-1	3RT2046	3RT2047	3RT2036	3RT2037	
3RW5225		3NA3830-6	3NE8024-1	3RT2037	3RT2046	3NA3830-6	3NE8024-1	3RT2047	3RT1054	3RT2037	3RT2046	
3RW5226		3NA3132-6	3NE8024-1	3RT2038	3RT2046	3NA3132-6	3NE8024-1	3RT1055	3RT1055	3RT2038	3RT2046	
3RW5227		3NA3136-6	3NE4124	3RT2046	3RT2047	3NA3136-6	3NE4124	3RT1056	3RT1056	3RT2046	3RT2047	
3RW5234		3NA3244-6	3NE3332-0B	3RT1054	3RT1054	3NA3244-6	3NE3332-0B	3RT1064	3RT1064	3RT1054	3RT1054	
3RW5235		3NA3244-6	3NE3334-0B	3RT1055	3RT1055	3NA3244-6	3NE3334-0B	3RT1065	3RT1065	3RT1055	3RT1055	
3RW5236		3NA3365-6	3NE3335	3RT1056	3RT1064	3NA3365-6	3NE3335	3RT1066	3RT1075	3RT1056	3RT1064	
3RW5243		2 x 3NA3354-6	3NE3333	3RT1064	3RT1064	2 x 3NA3354-6	3NE3333	3RT1075	3RT1075	3RT1064	3RT1064	
3RW5244		2 x 3NA3354-6	3NE3336	3RT1065	3RT1065	2 x 3NA3354-6	3NE3336	3RT1076	3RT1076	3RT1065	3RT1065	
3RW5245		2 x 3NA3365-6	3NE3336	3RT1075	3RT1075	2 x 3NA3365-6	3NE3336	3TF68	3TF68	3RT1075	3RT1075	
3RW5246		2 x 3NA3365-6	3NE3336	3RT1075	3RT1075	2 x 3NA3365-6	3NE3336	3TF69	3TF69	3RT1075	3RT1075	
3RW5247		2 x 3NA3365-6	3NE3340-8	3RT1076	3RT1276	2 x 3NA3365-6	3NE3340-8	3TF69	3TF69	3RT1076	3RT1276	
3RW5248		2 x 3NA3365-6	3NE3340-8	3TF68	3TF68	2 x 3NA3365-6	3NE3340-8	--	--	3TF68	3TF68	

Note:

The specified short-circuit breaking capacities I_{q1} in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2/3VA motor starter protectors/circuit breakers can also be used, possibly with reduced short-circuit breaking capacity ([see page 17-241](#)). In these cases, optional line contactors can be dispensed with.

General Performance Soft Starters

3RW52 soft starters > Inline circuit **IE3/IE4 ready**

Selection

Selection and ordering data

For normal starting (CLASS 10A)



3RW521.



3RW522.



3RW523.



3RW524.

At 40 °C				At 50 °C					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors								
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp	d				
Operational voltage 200 ... 480 V													
13	3	5.5	--	11.5	2	3	7.5	--	5	3RW5213-□□C□4		1	1 unit
18	4	7.5	--	15.9	3	5	10	--	5	3RW5214-□□C□4		1	1 unit
25	5.5	11	--	22.3	5	7.5	15	--	5	3RW5215-□□C□4		1	1 unit
32	7.5	15	--	28.4	7.5	10	20	--	5	3RW5216-□□C□4		1	1 unit
38	11	18.5	--	33.5	10	10	20	--	5	3RW5217-□□C□4		1	1 unit
47	11	22	--	41.6	10	10	30	--	5	3RW5224-□□C□4		1	1 unit
63	18.5	30	--	55.5	15	20	40	--	5	3RW5225-□□C□4		1	1 unit
77	22	37	--	68	20	25	50	--	5	3RW5226-□□C□4		1	1 unit
93	22	45	--	82.5	25	30	60	--	5	3RW5227-□□C□4		1	1 unit

Type of electrical connection for the control circuit

Screw terminals

Spring-loaded terminals

Product function

Analog output

Thermistor motor protection

Control supply voltage

24 V AC/DC

110 ... 250 V AC

- ¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here,
see page 17-187.

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At 40 °C				At 50 °C					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors								
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp	d				
Operational voltage 200 ... 480 V													
113	30	55	--	101	30	30	75	--	5	3RW5234-□□□□4		1	1 unit
143	37	75	--	128	40	40	100	--	5	3RW5235-□□□□4		1	1 unit
171	45	90	--	153	50	50	100	--	5	3RW5236-□□□□4		1	1 unit
210	55	110	--	186	60	60	150	--	5	3RW5243-□□□□4		1	1 unit
250	75	132	--	220	60	75	150	--	5	3RW5244-□□□□4		1	1 unit
315	90	160	--	279	75	100	200	--	5	3RW5245-□□□□4		1	1 unit
370	110	200	--	328	100	125	250	--	5	3RW5246-□□□□4		1	1 unit
470	132	250	--	416	150	150	350	--	5	3RW5247-□□□□4		1	1 unit
570	160	315	--	504	150	200	400	--	5	3RW5248-□□□□4		1	1 unit

Type of electrical connection for the control circuit

Spring-loaded terminals

Screw terminals

Product function

Analog output

Thermistor motor protection

Control supply voltage

24 V AC/DC

110 ... 250 V AC

- ¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here,
see page 17-187.

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Soft Starter
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PRODUCTS

General Performance Soft Starters

3RW52 soft starters > Inline circuit **IE3/IE4 ready**
Selection
For normal starting (CLASS 10A)


3RW521.



3RW522.



3RW523.



3RW524.

At 40 °C				At 50 °C					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors								
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp	d				
Operational voltage 200 ... 600 V													
13	3	5.5	7.5	11.5	2	3	7.5	10	5	3RW5213-□□C□5		1	1 unit
18	4	7.5	11	15.9	3	5	10	10	5	3RW5214-□□C□5		1	1 unit
25	5.5	11	15	22.3	5	7.5	15	20	5	3RW5215-□□C□5		1	1 unit
32	7.5	15	18.5	28.4	7.5	10	20	25	5	3RW5216-□□C□5		1	1 unit
38	11	18.5	22	33.5	10	10	20	30	5	3RW5217-□□C□5		1	1 unit
47	11	22	30	41.6	10	10	30	40	5	3RW5224-□□C□5		1	1 unit
63	18.5	30	37	55.5	15	20	40	50	5	3RW5225-□□C□5		1	1 unit
77	22	37	45	68	20	25	50	60	5	3RW5226-□□C□5		1	1 unit
93	22	45	55	82.5	25	30	60	75	5	3RW5227-□□C□5		1	1 unit

Type of electrical connection for the control circuit

Screw terminals

Spring-loaded terminals

Product function

Analog output

Thermistor motor protection

Control supply voltage

24 V AC/DC

110 ... 250 V AC

Note:

- ¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 600 V:
Standard delivery time SD = 2 days (d).

For the constraints for the motor outputs specified here,
[see page 17-187.](#)

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At 40 °C				At 50 °C					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors								
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp	d				
Operational voltage 200 ... 600 V													
113	30	55	75	101	30	30	75	100	5	3RW5234-□□C□5		1	1 unit
143	37	75	90	128	40	40	100	125	5	3RW5235-□□C□5		1	1 unit
171	45	90	110	153	50	50	100	150	5	3RW5236-□□C□5		1	1 unit
210	55	110	132	186	60	60	150	150	5	3RW5243-□□C□5		1	1 unit
250	75	132	160	220	60	75	150	200	5	3RW5244-□□C□5		1	1 unit
315	90	160	200	279	75	100	200	250	5	3RW5245-□□C□5		1	1 unit
370	110	200	250	328	100	125	250	300	5	3RW5246-□□C□5		1	1 unit
470	132	250	315	416	150	150	350	450	5	3RW5247-□□C□5		1	1 unit
570	160	315	355	504	150	200	400	500	5	3RW5248-□□C□5		1	1 unit

Type of electrical connection for the control circuit

Spring-loaded terminals

Screw terminals

Product function

Analog output

Thermistor motor protection

Control supply voltage

24 V AC/DC

110 ... 250 V AC

Note:

- ¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 600 V:
Standard delivery time SD = 2 days (d).

For the constraints for the motor outputs specified here,
[see page 17-187.](#)

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General Performance Soft Starters

3RW52 soft starters > Inside-delta circuit **IE3/IE4 ready**
Selection
Selection and ordering data
For normal starting (CLASS 10A)


3RW521.



3RW522.



3RW523.



3RW524.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors								
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp	d				
Operational voltage 200 ... 480 V													
22.5	5.5	11	--	19.9	5	5	10	--	5	3RW5213-□□□□4		1	1 unit
31.5	7.5	15	--	28	7.5	7.5	20	--	5	3RW5214-□□□□4		1	1 unit
43.3	11	18.5	--	39	10	10	25	--	5	3RW5215-□□□□4		1	1 unit
55.4	15	22	--	49	15	15	30	--	5	3RW5216-□□□□4		1	1 unit
65.8	18.5	30	--	58	15	20	40	--	5	3RW5217-□□□□4		1	1 unit
81.4	22	45	--	72	20	25	50	--	5	3RW5224-□□□□4		1	1 unit
109	30	55	--	96	30	30	75	--	5	3RW5225-□□□□4		1	1 unit
133	37	75	--	118	30	40	75	--	5	3RW5226-□□□□4		1	1 unit
161	45	90	--	143	40	50	100	--	5	3RW5227-□□□□4		1	1 unit

Type of electrical connection for the control circuit

Screw terminals

Spring-loaded terminals

Product function

Analog output

Thermistor motor protection

Control supply voltage

24 V AC/DC

110 ... 250 V AC

- ¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here, see page 17-187.



At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V						
A	kW	kW	kW	A	hp	hp	hp	hp	d					
Operational voltage 200 ... 480 V														
196	55	110	--	175	50	60	125	--	5	3RW5234-□□C□4		1	1 unit	
248	75	132	--	222	75	75	150	--	5	3RW5235-□□C□4		1	1 unit	
296	90	160	--	265	75	100	200	--	5	3RW5236-□□C□4		1	1 unit	
364	110	200	--	322	100	125	250	--	5	3RW5243-□□C□4		1	1 unit	
433	132	250	--	381	125	150	300	--	5	3RW5244-□□C□4		1	1 unit	
546	160	315	--	483	150	200	400	--	5	3RW5245-□□C□4		1	1 unit	
641	200	355	--	568	200	200	450	--	5	3RW5246-□□C□4		1	1 unit	
814	250	400	--	721	250	250	600	--	5	3RW5247-□□C□4		1	1 unit	
987	315	560	--	873	300	350	750	--	5	3RW5248-□□C□4		1	1 unit	

Type of electrical connection for the control circuit

Spring-loaded terminals

Screw terminals

Product function

Analog output

Thermistor motor protection

Control supply voltage

24 V AC/DC

110 ... 250 V AC

- ¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here, see page 17-187.


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General Performance Soft Starters

3RW52 soft starters > Inside-delta circuit **IE3/IE4 ready**
Selection
For normal starting (CLASS 10A)


3RW521.



3RW522.



3RW523.



3RW524.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V						
A	kW	kW	kW	A	hp	hp	hp	hp	d					
Operational voltage 200 ... 600 V														
22.5	5.5	11	15	19.9	5	5	10	15	5	3RW5213-□□C□5		1	1 unit	
31.5	7.5	15	18.5	28	7.5	7.5	20	25	5	3RW5214-□□C□5		1	1 unit	
43.3	11	18.5	22	39	10	10	25	30	5	3RW5215-□□C□5		1	1 unit	
55.4	15	22	30	49	15	15	30	40	5	3RW5216-□□C□5		1	1 unit	
65.8	18.5	30	37	58	15	20	40	50	5	3RW5217-□□C□5		1	1 unit	
81.4	22	45	45	72	20	25	50	60	5	3RW5224-□□C□5		1	1 unit	
109	30	55	55	96	30	30	75	75	5	3RW5225-□□C□5		1	1 unit	
133	37	75	90	118	30	40	75	100	5	3RW5226-□□C□5		1	1 unit	
161	45	90	110	143	40	50	100	125	5	3RW5227-□□C□5		1	1 unit	

Type of electrical connection for the control circuit

Screw terminals

Spring-loaded terminals

Product function

Analog output

Thermistor motor protection

Control supply voltage

24 V AC/DC

110 ... 250 V AC

Note:

- ¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 600 V:
Standard delivery time SD = 2 days (d).

For the constraints for the motor outputs specified here,
[see page 17-187.](#)



At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V						
A	kW	kW	kW	A	hp	hp	hp	hp	d					
Operational voltage 200 ... 600 V														
196	55	110	132	175	50	60	125	150	5	3RW5234-□□C□5		1	1 unit	
248	75	132	160	222	75	75	150	200	5	3RW5235-□□C□5		1	1 unit	
296	90	160	200	265	75	100	200	250	5	3RW5236-□□C□5		1	1 unit	
364	110	200	250	322	100	125	250	300	5	3RW5243-□□C□5		1	1 unit	
433	132	250	315	381	125	150	300	350	5	3RW5244-□□C□5		1	1 unit	
546	160	315	355	483	150	200	400	500	5	3RW5245-□□C□5		1	1 unit	
641	200	355	450	568	200	200	450	600	5	3RW5246-□□C□5		1	1 unit	
814	250	400	500	721	250	250	600	800	5	3RW5247-□□C□5		1	1 unit	
987	315	560	630	873	300	350	750	950	5	3RW5248-□□C□5		1	1 unit	

Type of electrical connection for the control circuit

Spring-loaded terminals

Screw terminals

Product function

Analog output

Thermistor motor protection

Control supply voltage

24 V AC/DC

110 ... 250 V AC

Note:

- ¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 600 V:
Standard delivery time SD = 2 days (d).

For the constraints for the motor outputs specified here,
[see page 17-187.](#)

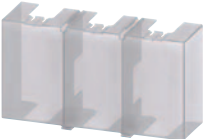


General Performance Soft Starters

3RW52 soft starters > Accessories

Selection

Selection and ordering data

Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
					d			
Fan covers								
	Fan cover	3RW5216/17 (1x), 3RW5226/27 (2x), 3RW523 (2x)	--	--	▶	3RW5983-0FC00	1	1 unit
		3RW524 (1x)	--	--	▶	3RW5984-0FC00	1	1 unit
Terminal covers								
	Terminal cover	3RW522 (2x), 3RW523 (2x)	--	--	▶	3RW5983-0TC20	1	1 unit
		3RW524 (2x)	--	--	▶	3RW5984-0TC20	1	1 unit
Enclosure components								
	Hinged cover	3RW52	With cutout for High Feature HMI module	--	▶	3RW5950-0GL30	1	1 unit
			With cutout for Standard HMI module	--	▶	3RW5950-0GL40	1	1 unit
Communication modules								
	Communication module	3RW52	PROFINET Standard	--	▶	3RW5980-0CS00	1	1 unit
			PROFIBUS	--	▶	3RW5980-0CP00	1	1 unit
			EtherNet/IP	--	▶	3RW5980-0CE00	1	1 unit
			Modbus RTU	--	▶	3RW5980-0CR00	1	1 unit
			Modbus TCP	--	▶	3RW5980-0CT00	1	1 unit

Soft Starter
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General Performance Soft Starters

3RW52 soft starters > Accessories

Selection

Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
---------------------	--	-----------------	-------------	----	-------------	--------------	-------------------	-----

HMI modules



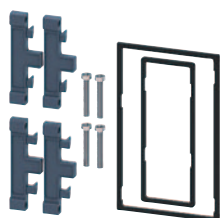
3RW5980-0HF00

HMI module	3RW52	High Feature	--	▶	3RW5980-0HF00		1	1 unit
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3RW5980-0HS00

		Standard	--	▶	3RW5980-0HS00		1	1 unit
--	--	----------	----	---	----------------------	--	---	--------



3RW5980-0HD00

IP65 door mounting kit for HMI modules	3RW52	IP65	For HMI modules	▶	3RW5980-0HD00		1	1 unit
---	-------	------	-----------------	---	----------------------	--	---	--------

Connecting cables



3UF793.-0BA00-0

HMI connection cable	3RW52	5 m, round	For door mounting	▶	3RW5980-0HC60		1	1 unit
		2.5 m, round		▶	3UF7933-0BA00-0		1	1 unit
		1.0 m, round		▶	3UF7937-0BA00-0		1	1 unit
		0.5 m, round		▶	3UF7932-0BA00-0		1	1 unit



3UF7931-0AA00-0

		0.1 m, flat	for mounting in the device	▶	3UF7931-0AA00-0		1	1 unit
--	--	-------------	----------------------------	---	------------------------	--	---	--------

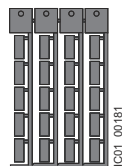
Further accessories



3ZY1311-0AA00

Push-in lugs for wall mounting	--	Two lugs are required per device	For HMI modules and communication modules	2	3ZY1311-0AA00		1	10 units
---------------------------------------	----	----------------------------------	---	---	----------------------	--	---	----------

Blank labels



3RT2900-1SB20

Unit labeling plates¹⁾	--	20 mm x 7 mm, titanium gray	For SIRIUS devices	20	3RT2900-1SB20		100	340 units
--	----	-----------------------------	--------------------	----	----------------------	--	-----	-----------

¹⁾ PC labeling systems for individual inscription of unit labeling plates are available from: murrplastik Systemtechnik GmbH (see page 16/15).

Basic Performance Soft Starters

3RW50 Soft starters **NEW**

General data

Overview

More information

Homepage, see www.usa.siemens.com/soft-starter
 Industry Mall, see www.siemens.com/product?3RW50
 TIA Selection Tool Cloud (TST Cloud), see <https://support.industry.siemens.com/cs/ww/en/view/109747404>

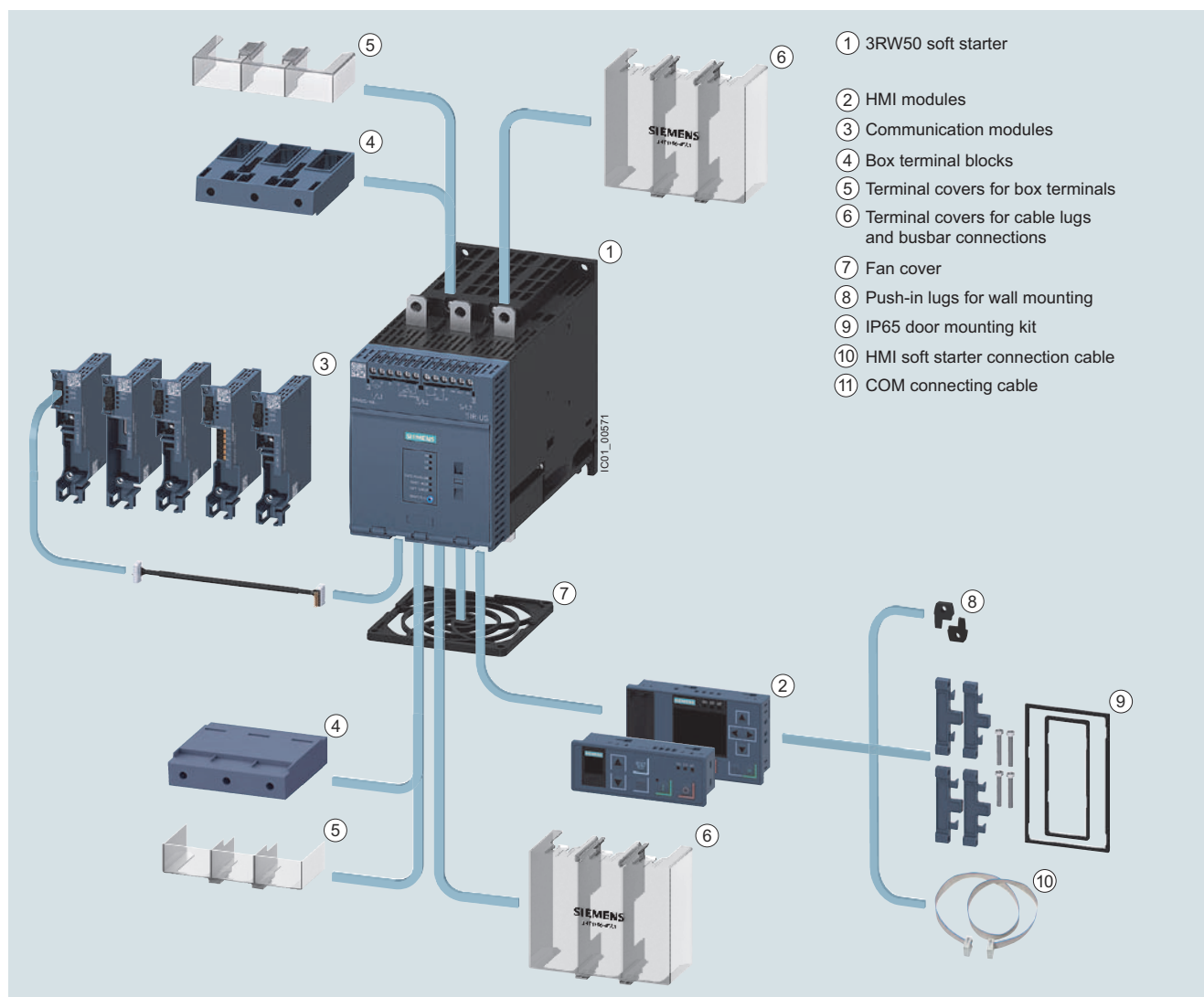
Simulation Tool for Soft Starters (STS), see page 17-187 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>

SIRIUS Soft Starter ES (TIA Portal), see page 14/5



SIRIUS 3RW50 Basic Performance soft starters are the compact solution for standard applications. With two-phase motor control, they cover the performance range from 75 to 300HP @ 480V.

Optional HMI modules for installation in the control cabinet door, laterally mountable communication modules (PROFINET, PROFIBUS, EtherNet/IP and Modbus) and either an analog output or thermistor motor protection ensure maximum flexibility. With their modern hybrid switching technology, the SIRIUS 3RW50 soft starters offer efficient switching for long-term, energy-saving use.



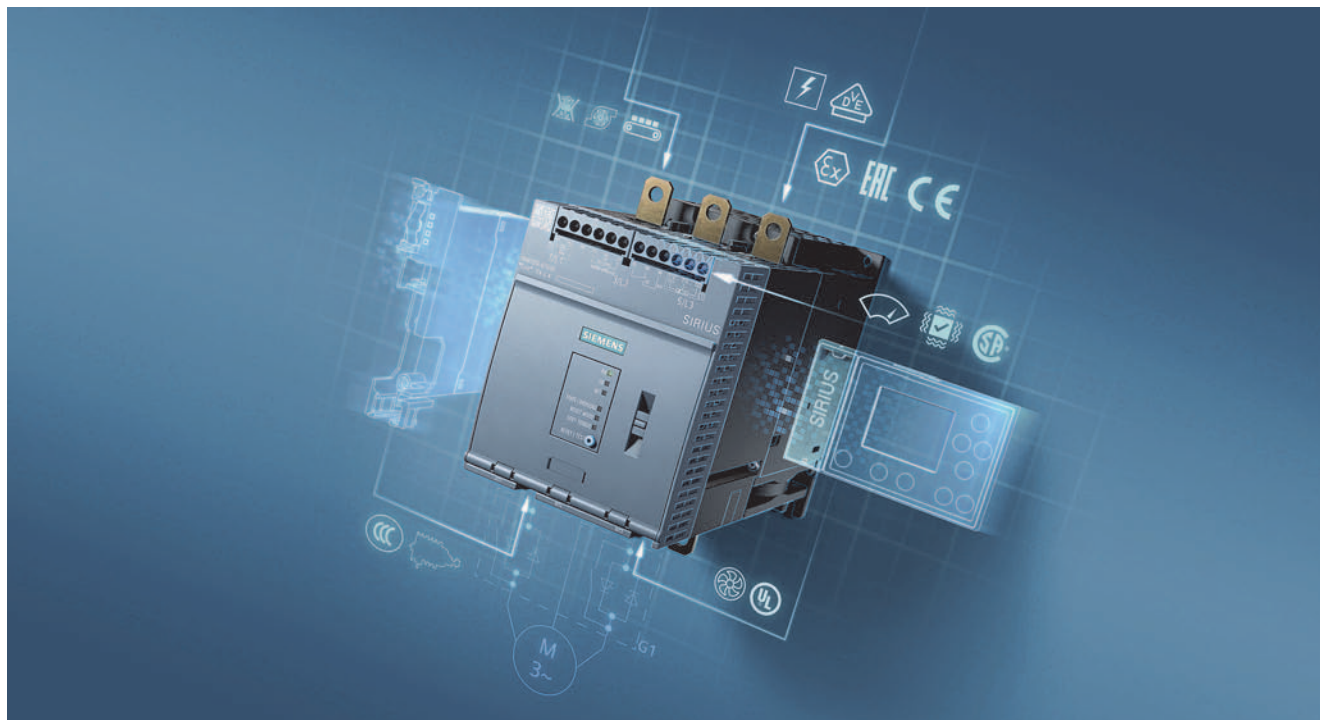
3RW50 Basic Performance soft starters with accessories (see page 17-261), for expansion with HMI module or communication module

Basic Performance Soft Starters

3RW50 Soft starters **NEW**

General data

Benefits



Product characteristics / function	Performance features / benefits
Hybrid switching devices and two-phase motor control	Minimum power loss and optimized motor control by avoiding DC components
Small and compact design	Space-saving, clearly arranged control panel layout
TIA-Integration – communication modules and HMI modules optional	Efficient configuration and maximum flexibility in automation engineering
Motor overload and intrinsic device protection without additional wiring	Adjustable trip classes, integrated diagnostics functions
Soft Torque	Reduced mechanical loading and optimum pump stop
Parameterization using potentiometers	Simple and fast commissioning
Wide range for control supply and main voltage	Low variance, high system availability even with weak supply networks
Certified according to ATEX/IECEx directive	Suitable for the starting of explosion-proof motors with "increased safety" type of protection

Basic Performance Soft Starters

3RW50 Soft starters **NEW**

General data

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/25252/td>
Equipment Manual "SIRIUS 3RW50 Soft Starter", see <https://support.industry.siemens.com/cs/ww/en/view/109753750>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/25252/faq>
Simulation Tool for Soft Starters (STS), see page 17-187 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>

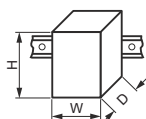
Type

3RW5055
3RW5056

3RW5072
3RW5073
3RW5074
3RW5075
3RW5076
3RW5077

Installation/fixing/dimensions

Width x height x depth



mm

120 × 198 × 249

160 × 230 × 282

Type of mounting

Screw fixing

Mounting position

For vertical mounting surface can be rotated $\pm 90^\circ$,
for vertical mounting surface can be tilted $\pm 22.5^\circ$ forward or backward

Distance to be maintained with side-by-side mounting

- Above mm 100
- At the side mm 5
- Below mm 75

Maximum installation altitude above sea level¹⁾ m 5 000

Degree of protection

IP00

Ambient conditions

Ambient temperature

- During operation²⁾ °C -25 ... +60
- During storage and transport °C -40 ... +80

Environmental category according to IEC 60721

- During operation 3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6
- During storage 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not enter the devices), 1M4
- During transport 2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m)

¹⁾ Derating from 1 000 m, see characteristic curve on page 17-187.

²⁾ Note derating above 40 °C.

Basic Performance Soft Starters

3RW50 Soft starters **NEW**

General data

Type		3RW50...-B0.	3RW50...-B1.
Control circuit/control			
Control supply voltage			
• At AC/DC, rated value	V	24/24	--/--
• At AC	V	--	110 ... 250
• Relative negative tolerance/relative positive tolerance with AC	%	-20/20	-15/10
• Relative negative tolerance/relative positive tolerance with DC	%	-20/20	--/--
Frequency of the control supply voltage			
• Relative negative tolerance/relative positive tolerance	Hz	50 ... 60	
	%	-10/10	
Type of overvoltage protection		Varistors	
Type of short-circuit protection for control circuit¹⁾		Fuse 4 A gG ($I_{cu} = 1$ kA), fuse 6 A quick-response ($I_{cu} = 1$ kA), MCB C1 ($I_{cu} = 600$ A), MCB C6 ($I_{cu} = 300$ A)	

¹⁾ Not included in scope of supply

Type		3RW50...-B.4	3RW50...-B.5
Power electronics			
Operational voltage, rated value			
• Relative negative tolerance/relative positive tolerance	V	200 ... 480	200 ... 600
	%	-15/10	
Operating frequency, rated value			
• Relative negative tolerance/relative positive tolerance	Hz	50 ... 60	
	%	-10/10	
Minimum load [% of I_M]¹⁾		15	
Maximum cable length between soft starter and motor		m	
		800	

¹⁾ Relative to the smallest adjustable I_G .

Basic Performance Soft Starters

3RW50 Soft starters **NEW**

General data

Type		3RW5055	3RW5056
Rated operational current I_e	A	143	171
Power electronics			
Load rating with rated operational current I_e			
IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a		143/128/118	171/153/141
Permissible rated motor current and starts/h			
Normal starting (CLASS 10A)			
Rated motor current I_M , $T_u = 40/50/60$ °C	A	143/128/118	171/153/141
ON period = 70%; motor protection activated			
• 300% I_M - Start-up time 5 s	1/h	43	43
- Start-up time 10 s	1/h	18	18
• 350% I_M - Start-up time 5 s	1/h	28	28
- Start-up time 10 s	1/h	10	9
Normal starting (CLASS 10E)			
Rated motor current I_M , $T_u = 40/50/60$ °C	A	143/128/118	171/153/141
ON period = 70%; motor protection activated			
• 300% I_M - Start-up time 20 s	1/h	21	21
- Start-up time 40 s	1/h	8	8
• 350% I_M - Start-up time 20 s	1/h	12	9
- Start-up time 40 s	1/h	4	--
Heavy starting (CLASS 20E)			
Rated motor current I_M , $T_u = 40/50/60$ °C	A	108/98/88	135/123/111
ON period = 70%; motor protection activated			
• 300% I_M - Start-up time 20 s	1/h	10	10
- Start-up time 40 s	1/h	4	4
• 350% I_M - Start-up time 20 s	1/h	7	7
- Start-up time 40 s	1/h	2.5	2.5
Adjustable rated motor current I_M			
• Minimum/maximum	A	68/143	81/117

Type		3RW5072	3RW5073	3RW5074	3RW5075	3RW5076	3RW5077
Rated operational current I_e	A	210	250	315	370	470	570
Power electronics							
Load rating with rated operational current I_e							
IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a		210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
Permissible rated motor current and starts/h							
Normal starting (CLASS 10A)							
Rated motor current I_M , $T_u = 40/50/60$ °C	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
ON period = 70%; motor protection activated							
• 300% I_M - Start-up time 5 s	1/h	43	43	43	43	43	28
- Start-up time 10 s	1/h	18	18	18	18	18	11
• 350% I_M - Start-up time 5 s	1/h	28	28	28	28	28	16
- Start-up time 10 s	1/h	8	10	10	10	10	4
Normal starting (CLASS 10E)							
Rated motor current I_M , $T_u = 40/50/60$ °C	A	210/186/170	250/220/200	315/279/255	370/328/300	470/416/380	570/504/460
ON period = 70%; motor protection activated							
• 300% I_M - Start-up time 20 s	1/h	21	21	21	21	20	21
- Start-up time 40 s	1/h	8	8	8	8	7	8
• 350% I_M - Start-up time 20 s	1/h	8	13	12	13	12	13
- Start-up time 40 s	1/h	--	4	4	4	2	4
Heavy starting (CLASS 20E)							
Rated motor current I_M , $T_u = 40/50/60$ °C	A	162/146/130	200/180/160	219/195/171	258/230/202	272/254/218	284/262/240
ON period = 70%; motor protection activated							
• 300% I_M - Start-up time 20 s	1/h	10	10	10	10	10	10
- Start-up time 40 s	1/h	4	4	4	4	4	4
• 350% I_M - Start-up time 20 s	1/h	7	7	7	7	7	7
- Start-up time 40 s	1/h	2.5	2.5	2.5	2.5	2.5	2.5
Adjustable rated motor current I_M							
• Minimum/maximum	A	90/210	100/250	135/315	160/370	200/470	240/570

Basic Performance Soft Starters

3RW50 Soft starters **NEW**

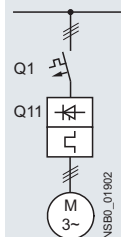
General data

Motor feeders according to IEC with 3VA motor starter protectors/circuit breakers (without semiconductor protection)

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, [see table](#)

Note:

For general recommendations for constructing motor feeders
with soft starters, [see page 17-189](#).



Soft starters		Motor starter protectors			
Q11		for 400 V systems		for 500 V systems	
Type		Q1	I_q kA	Q1	I_q kA
Type of coordination "1"	TOC 1	Inline circuit			
3RW5055		3VA2220-7MN32-0AA0	20	3VA2220-7MN32-0AA0	20
3RW5056		3VA2220-7MN32-0AA0	20	3VA2220-7MN32-0AA0	20
3RW5072		3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65
3RW5073		3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65
3RW5074		3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65
3RW5075		3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5076		3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5077		3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65

Note:

The service factor or measurement inaccuracies have been taken into account, for example, for the selection of the specified motor starter protectors/circuit breakers; the specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

Basic Performance Soft Starters

3RW50 Soft starters **NEW**

General data

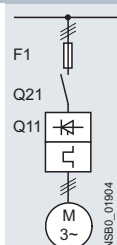
Motor feeders according to IEC with 3NA3 fuses

gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

Type of coordination "1",
short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).



Soft starters	gG class fuse	Line contactor (optional)	
		for systems up to 480 V	for systems up to 600 V
Q11	F1	Q21	Q21
Type	Type	Type	Type
Type of coordination "1"	Inline circuit		
3RW5055	3NA3244-6	3RT1055	3RT1055
3RW5056	3NA3244-6	3RT1056	3RT1064
3RW5072	2 x 3NA3354-6	3RT1064	3RT1064
3RW5073	2 x 3NA3354-6	3RT1065	3RT1065
3RW5074	2 x 3NA3365-6	3RT1075	3RT1075
3RW5075	2 x 3NA3365-6	3RT1075	3RT1075
3RW5076	2 x 3NA3365-6	3RT1076	3RT1076
3RW5077	2 x 3NA3365-6	3TF68	3TF68

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

Basic Performance Soft Starters

3RW50 Soft starters **NEW**

General data

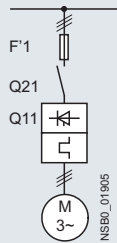
Motor feeders according to IEC with 3NE1 SITOP fuses

gR class full-range fuses for semiconductor protection, cable and line protection

Type of coordination "2",
short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).



Soft starters	gG class fuse		Line contactor (optional)	
	for systems up to 600 V	for systems up to 480 V	for systems up to 600 V	for systems up to 480 V
Q11	F'1	Q21	Q21	Q21
Type	Type	Type	Type	Type
Type of coordination "2"	Type of coordination "2"			
3RW5055	3NE1227-0	3RT1055	3RT1055	3RT1055
3RW5056	3NE1230-0	3RT1056	3RT1056	3RT1064
3RW5072	3NE1230-2	3RT1064	3RT1064	3RT1064
3RW5073	3NE1331-0	3RT1065	3RT1065	3RT1065
3RW5074	3NE1333-2	3RT1075	3RT1075	3RT1075
3RW5075	3NE1334-2	3RT1075	3RT1075	3RT1075
3RW5076	3NE1436-2	3RT1076	3RT1076	3RT1076
3RW5077	3NE1437-2	3TF68	3TF68	3TF68

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

Basic Performance Soft Starters

3RW50 Soft starters **NEW**

General data

Motor feeders according to IEC with 3NE3 fuses

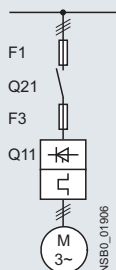
aR class partial-range fuses for semiconductor protection

Type of coordination "2",

short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, see page 17-189.



Soft starters	gG class fuse	aR class fuse	Line contactor (optional)	
	for systems up to 600 V	for systems up to 600 V	for systems up to 480 V	for systems up to 600 V
Q11	F1	F3	Q21	Q21
Type	Type	Type	Type	Type
Type of coordination "2"	ToC 2 Inline circuit			
3RW5055	3NA3244-6	3NE3334-0B	3RT1055	3RT1055
3RW5056	3NA3244-6	3NE3335	3RT1056	3RT1064
3RW5072	2 x 3NA3354-6	3NE3333	3RT1064	3RT1064
3RW5073	2 x 3NA3354-6	3NE3335	3RT1065	3RT1065
3RW5074	2 x 3NA3365-6	3NE3335	3RT1075	3RT1075
3RW5075	2 x 3NA3365-6	3NE3336	3RT1075	3RT1075
3RW5076	2 x 3NA3365-6	3NE3340-8	3RT1076	3RT1076
3RW5077	2 x 3NA3365-6	3NE3340-8	3TF68	3TF68

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3VA circuit breakers can also be used, possibly with reduced short-circuit breaking capacity (see page 17-256). In these cases optional line contactors can be dispensed with.

Basic Performance Soft Starters

3RW50 Soft starters > Inline circuit

IE3/IE4 ready

NEW

Selection

Selection and ordering data

For normal starting (CLASS 10E)



3RW5055



3RW5075

At 40 °C				At 50 °C				Size	SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V						
A	kW	kW	kW	A	hp	hp	hp	hp	d					
Operational voltage 200 ... 480 V														
143	37	75	90	128	30	30	100	--	S6	5	3RW5055-□□B□4		1	1 unit
171	45	90	110	153	30	40	100	--	S6	5	3RW5056-□□B□4		1	1 unit
210	55	110	132	186	40	50	150	--	S12	5	3RW5072-□□B□4		1	1 unit
250	75	132	160	220	50	60	150	--	S12	5	3RW5073-□□B□4		1	1 unit
315	90	160	200	279	60	75	200	--	S12	5	3RW5074-□□B□4		1	1 unit
370	110	200	250	328	75	100	250	--	S12	5	3RW5075-□□B□4		1	1 unit
470	132	250	315	416	100	125	350	--	S12	5	3RW5076-□□B□4		1	1 unit
570	160	315	355	504	125	150	400	--	S12	5	3RW5077-□□B□4		1	1 unit

Type of electrical connection for the control circuit

Spring-loaded terminals
Screw terminals

Product function

Analog output
Thermistor motor protection

Control supply voltage

24 V AC/DC
110 ... 250 V AC

¹⁾ 3RW50 soft starter with screw terminals for operational voltage up to 480 V.
Standard delivery time SD = 1 day (d).

Note: For the constraints for the motor outputs specified here, see page 17-187.

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At 40 °C				At 50 °C				Size	SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors								
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V					
A	kW	kW	kW	A	hp	hp	hp	hp	d				
Operational voltage 200 ... 600 V													
143	37	75	90	128	30	30	100	75	S6	5	3RW5055-□□B□5	1	1 unit
171	45	90	110	153	30	40	100	100	S6	5	3RW5056-□□B□5	1	1 unit
210	55	110	132	186	40	50	150	125	S12	5	3RW5072-□□B□5	1	1 unit
250	75	132	160	220	50	60	150	150	S12	5	3RW5073-□□B□5	1	1 unit
315	90	160	200	279	60	75	200	200	S12	5	3RW5074-□□B□5	1	1 unit
370	110	200	250	328	75	100	250	250	S12	5	3RW5075-□□B□5	1	1 unit
470	132	250	315	416	100	125	350	300	S12	5	3RW5076-□□B□5	1	1 unit
570	160	315	355	504	125	150	400	400	S12	5	3RW5077-□□B□5	1	1 unit

Type of electrical connection for the control circuit

Spring-loaded terminals
Screw terminals

Product function

Analog output
Thermistor motor protection

Control supply voltage

24 V AC/DC
110 ... 250 V AC

¹⁾ 3RW50 soft starter with screw terminals for operational voltage up to 600 V.
Standard delivery time SD = 2 days (d).

Note: For the constraints for the motor outputs specified here, see page 17-187.

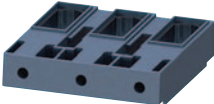
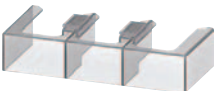
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Basic Performance Soft Starters

3RW50 Soft starters > Accessories

Selection

Selection and ordering data

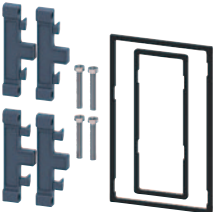
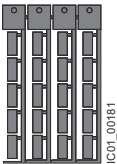
	Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
						d				
Fan covers										
	Fan cover	3RW50 (1x)	--	--	▶	3RW5985-0FC00		1	1 unit	42S
3RW5985-0FC00										
Box terminal block										
	Box terminal block for round and ribbon cables	3RW505 (2x)	Up to 70 mm ²	--	▶	3RT1955-4G		1	1 unit	41B
			Up to 120 mm ²	--	▶	3RT1956-4G		1	1 unit	41B
		3RW507 (2x)	Up to 240 mm ² (with auxiliary conductor connection)	▶	3RT1966-4G		1	1 unit	41B	
3RT1956-4G										
Terminal covers										
	Covers for box terminals	3RW505 (2x)	--	--	▶	3RT1956-4EA2		1	1 unit	41B
		3RW507 (2x)	--	--	2	3RT1966-4EA2		1	1 unit	41B
3RT1956-4EA2										
	Covers for cable lugs and busbar connections	3RW505 (2x)	--	--	▶	3RT1956-4EA1		1	1 unit	41B
		3RW507 (2x)	--	--	2	3RT1966-4EA1		1	1 unit	41B
3RT1956-4EA1										
Communication modules										
	Communication module	3RW50	PROFINET Standard	--	▶	3RW5980-0CS00		1	1 unit	42S
			PROFIBUS		▶	3RW5980-0CP00		1	1 unit	42S
			EtherNet/IP		▶	3RW5980-0CE00		1	1 unit	42S
			Modbus RTU		▶	3RW5980-0CR00		1	1 unit	42S
			Modbus TCP		▶	3RW5980-0CT00		1	1 unit	42S
3RW5980-0CS00										
	COM connection cable	3RW50	0.3 m	--	▶	3RW5900-0CC00		1	1 unit	42S
3RW5900-0CC00										
For mounting laterally on the device										

Soft Starter
Control17
CONTROL
PRODUCTS

Basic Performance Soft Starters

3RW50 Soft starters > Accessories

Selection

	Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
						d					
HMI modules											
	HMI module	3RW50	High Feature	--	▶	3RW5980-0HF00		1	1 unit	42S	
			Standard	--	▶						3RW5980-0HS00
											
3RW5980-0HS00											
	IP65 door mounting kit for HMI modules	3RW50	IP65	For HMI modules	▶	3RW5980-0HD00		1	1 unit	42S	
											
3RW5980-0HD00											
Connecting cables											
	HMI connection cable	3RW50	5 m, round	For door mounting	▶	3RW5980-0HC60		1	1 unit	42S	
			2.5 m, round		▶	3UF7933-0BA00-0		1	1 unit	42J	
			1.0 m, round		▶	3UF7937-0BA00-0		1	1 unit	42J	
			0.5 m, round		▶	3UF7932-0BA00-0		1	1 unit	42J	
											
3UF793-0BA00-0											
Further accessories											
	Push-in lugs for wall mounting	--	Two lugs are required per device	For HMI modules and communication modules	2	3ZY1311-0AA00		1	10 units	41L	
3ZY1311-0AA00											
Blank labels											
	Unit labeling plates ¹⁾	--	20 mm x 7 mm, titanium gray	For SIRIUS devices	20	3RT2900-1SB20		100	340 units	41B	
											
3RT2900-1SB20											

¹⁾ PC labeling systems for individual inscription of unit labeling plates are available from: murrplastik Systemtechnik GmbH (see page 16/15).

Basic Performance Soft Starters

3RW40 Soft starters

General data

Overview

More information

Homepage, see www.usa.siemens.com/soft-starter
 Industry Mall, see www.siemens.com/product?3RW40

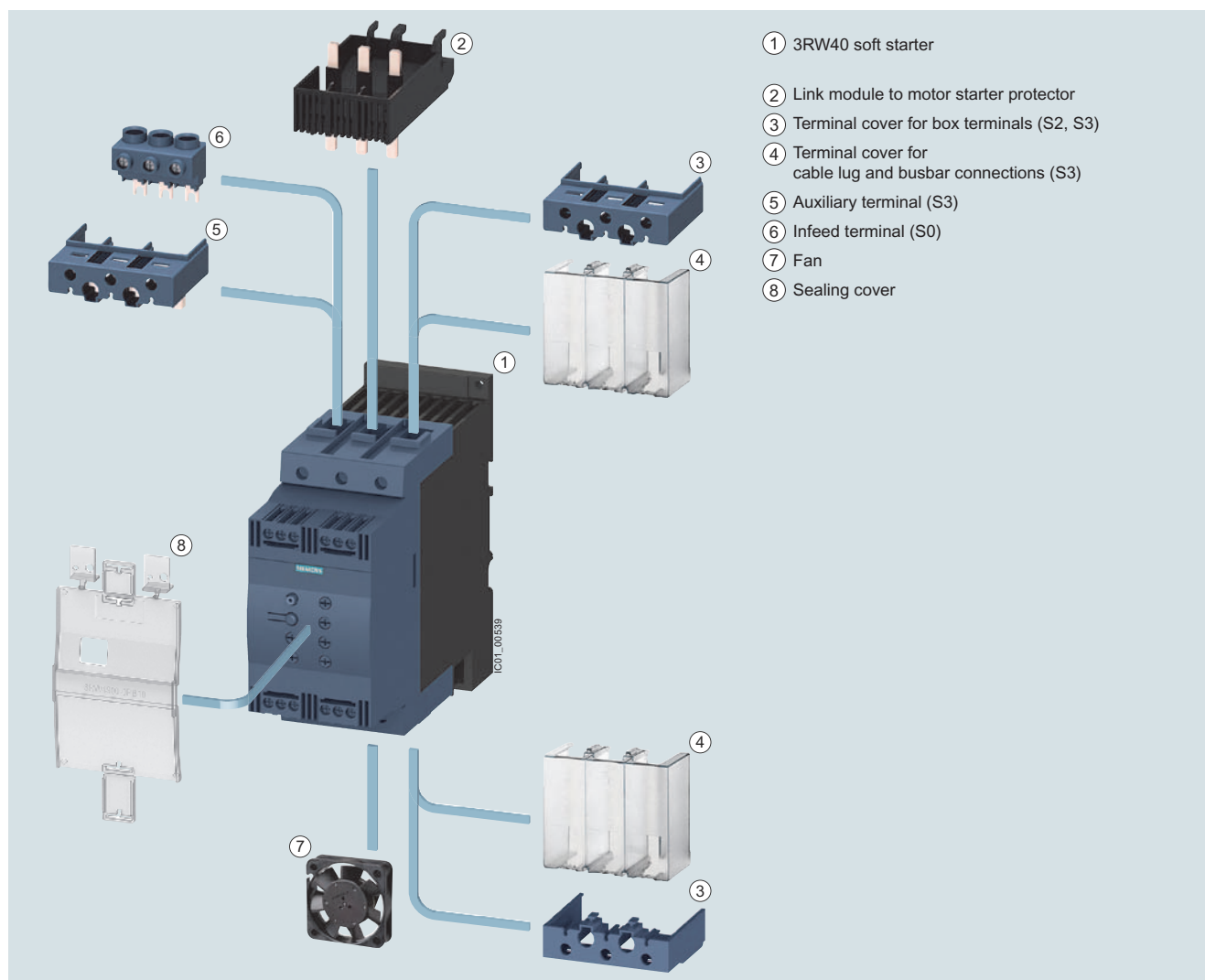
TIA Selection Tool Cloud (TST Cloud), see <https://www.siemens.com/tstcloud/?node=3rw40>
 Simulation Tool for Soft Starters (STS), see page 17-187 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>



The SIRIUS 3RW40 Basic Performance soft starters are suitable for soft starting and stopping of three-phase asynchronous motors.

Thanks to two-phase control, not only is the current kept at minimum values in all three phases throughout the entire starting time, but disturbing direct current components are also eliminated. This not only enables the two-phase starting of motors from 7.5 to 75HP @ 480V but also avoids the current and torque peaks which occur e.g. with wye-delta starters.

The SIRIUS 3RW40 soft starters are suitable for the starting of explosion-proof motors with "increased safety" type of protection EEx e according to ATEX Directive 94/9/EC.



3RW40 Basic Performance soft starters with accessories (see page 17-272)

Basic Performance Soft Starters

3RW40 Soft starters

General data

Benefits



3RW402.



3RW403.



3RW404.

Product characteristics / function	Performance features / benefits
Small and compact design	Space-saving, clearly arranged control panel layout
Motor overload and intrinsic device protection without additional wiring	Adjustable trip classes, integrated diagnostics functions
Integrated in the SIRIUS modular system	Link modules to motor starter protectors
Hybrid switching devices and two-phase motor control	Minimum power loss and optimized motor control by avoiding DC components
Certified according to ATEX Directive 94/9/EC	Suitable for the starting of explosion-proof motors with "increased safety" type of protection EEx e.
Optional thermistor motor protection	Full motor protection

Basic Performance Soft Starters

3RW40 Soft starters

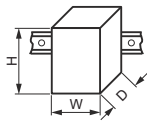
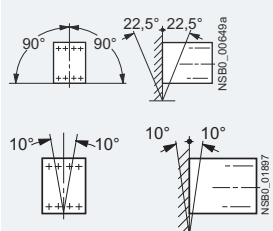
General data

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/25252/td>
Equipment Manual "SIRIUS 3RW30/3RW40 Soft Starter", see <https://support.industry.siemens.com/cs/ww/en/view/38752095>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/25251/faq>
Simulation Tool for Soft Starters (STS), see page 17-187 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>

Type			3RW402.	3RW403.	3RW404.
Mechanics and environment					
Mounting dimensions (W x H x D) - Screw terminals - Spring-loaded terminals					
			45 x 125 x 154 45 x 150 x 154	55 x 144 x 170 55 x 144 x 170	70 x 160 x 188 70 x 160 x 188
Permissible ambient temperature					
During operation			°C	-25 ... +60; (derating from +40)	
During storage			°C	-40 ... +80	
Weight			kg	0.77	1.35 1.9
Permissible mounting position ¹⁾ - With auxiliary fan (for 3RW402. 3RW404.) - Without auxiliary fan (for 3RW402. 3RW404.)					
Installation type ¹⁾			Stand-alone installation		
Permissible installation altitude			m	5 000 (Derating from 1 000, see characteristic curve on page 17-187)	
Degree of protection			IP00		
¹⁾ In the case of deviations, please observe derating, see Equipment Manual in the chapter "Configuring" .					
Type	Terminal	3RW402., 3RW403., 3RW404.			
Control electronics					
Rated values					
Rated control supply voltage Tolerance	A1/A2	V	24 AC/DC ± 20	110 ... 230 AC/DC -15/+10	
Rated frequency Tolerance		Hz	50/60 ± 10		
Type			3RW402...B.4, 3RW403...B.4, 3RW404...B.4		3RW402...B.5, 3RW403...B.5, 3RW404...B.5
Power electronics					
Rated operational voltage Tolerance		V AC %	200 ... 480 -15/+10	400 ... 600	
Maximum blocking voltage (thyristor)		V AC	1 600		
Rated frequency Tolerance		Hz %	50/60 ± 10		
Uninterrupted duty at 40 °C (% of I _e)		%	115		
Minimum load (% of smallest adjustable rated motor current I _M)		%	20 (at least 2 A)		
Maximum cable length between soft starter and motor		m	300		

Basic Performance Soft Starters

3RW40 Soft starters

General data

Type		3RW4024	3RW4026	3RW4027	3RW4028
Power electronics					
Load rating with rated operational current I_e					
• According to IEC and UL/CSA ¹⁾ , individual mounting at 40/50/60 °C, AC-53a	A	12.5/11/10	25.3/23/21	32.2/29/26	38/34/31
Smallest adjustable rated motor current I_M					
For the motor overload protection	A	5	10	17	23
Power loss					
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	2	8	13	19
• During starting with current limiting set to 300% I_M (40 °C)	W	68	188	220	256
Permissible rated motor current and starts per hour					
• For normal starting (CLASS 10) at 40/50 °C					
- Rated motor current $I_M^{(2)}$, start-up time 3 s	A	12.5/11	25/23	32/29	38/34
- Starts per hour ³⁾	1/h	50/50	23/23	23/23	19/19
- Rated motor current $I_M^{(2)}$, start-up time 4 s	A	12.5/11	25/23	32/29	38/34
- Starts per hour ³⁾	1/h	36/36	15/15	16/16	12/12
• For heavy starting (CLASS 20) at 40/50 °C					
- Rated motor current $I_M^{(2)}$, start-up time 6 s	A	10/9	21/19	27/24	31/28
- Starts per hour ³⁾	1/h	47/47	21/21	20/20	18/18
- Rated motor current $I_M^{(2)}$, start-up time 8 s	A	10/9	21/19	27/24	31/28
- Starts per hour ³⁾	1/h	34/34	15/15	14/14	13/13

¹⁾ Measurement at 60 °C according to UL/CSA not required.

²⁾ Current limiting on soft starter set to 300% I_M , $T_u = 40/50$ °C. Maximum adjustable rated motor current I_M dependent on CLASS setting.

³⁾ For intermittent duty S4 with ON period = 30%, $T_u = 40/50$ °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode. Factors for permissible switching frequency in other mounting position, direct mounting, side-by-side mounting, and implementation of optional auxiliary fan, see Equipment Manual in the chapter "Configuring".

Type		3RW4036	3RW4037	3RW4038	3RW4046	3RW4047
Power electronics						
Load rating with rated operational current I_e						
• According to IEC and UL/CSA ¹⁾ , individual mounting at 40/50/60 °C, AC-53a	A	45/42/39	63/58/53	72/62.1/60	80/73/66	106/98/90
Smallest adjustable rated motor current I_M						
For the motor overload protection	A	23	26	35	43	46
Power loss						
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	6	12	15	12	21
• During starting with current limiting set to 300% I_M (40 °C)	W	316	444	500	576	768
Permissible rated motor current and starts per hour						
• For normal starting (CLASS 10) at 40/50 °C						
- Rated motor current $I_M^{(2)}$, start-up time 3 s	A	45/42	63/58	72/62	80/73	106/98
- Starts per hour ³⁾	1/h	38/38	23/23	22/22	22/22	15/15
- Rated motor current $I_M^{(2)}$, start-up time 4 s	A	45/42	63/58	72/62	80/73	106/98
- Starts per hour ³⁾	1/h	26/26	15/15	15/15	15/15	10/10
• For heavy starting (CLASS 20) at 40/50 °C						
- Rated motor current $I_M^{(2)}$, start-up time 6 s	A	38/34	46/42	50/46	64/58	77/70
- Starts per hour ³⁾	1/h	30/30	31/31	34/34	23/23	23/23
- Rated motor current $I_M^{(2)}$, start-up time 8 s	A	38/34	46/42	50/46	64/58	77/70
- Starts per hour ³⁾	1/h	21/21	22/22	24/24	16/16	16/16

¹⁾ Measurement at 60 °C according to UL/CSA not required.

²⁾ Current limiting on soft starter set to 300% I_M , $T_u = 40/50$ °C. Maximum adjustable rated motor current I_M dependent on CLASS setting.

³⁾ For intermittent duty S4 with ON period = 30%, $T_u = 40/50$ °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode. Factors for permissible switching frequency in other mounting position, direct mounting, side-by-side mounting, and implementation of optional auxiliary fan, see Equipment Manual in the chapter "Configuring".

Basic Performance Soft Starters

3RW40 Soft starters

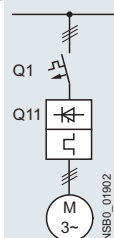
General data

Motor feeders according to IEC with 3RV2 motor starter protectors (without semiconductor protection)

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, [see table](#)

Note:

For general recommendations for constructing motor feeders
with soft starters, [see page 17-189](#).



Soft starters		Motor starter protectors			
		for 400 V systems		for 500 V systems	
Q11		Q1	I_q	Q1	I_q
Type		Type	kA	Type	kA
Type of coordination "1"	ToC 1	Inline circuit			
3RW4024		3RV2021-4AA10	55	3RV2021-4AA10	10
3RW4026		3RV2021-4DA10	55	3RV2021-4DA10	10
3RW4027		3RV2021-4EA10	55	3RV2021-4EA10	10
3RW4028		3RV2021-4FA10	55	3RV2021-4FA10	10
3RW4036		3RV2031-4WA10	10	3RV2031-4WA10	10
3RW4037		3RV2031-4JA10	10	3RV2031-4JA10	5
3RW4038		3RV2031-4KA10	10	3RV2031-4KA10	5
3RW4046		3RV2041-4RA10	11	3RV2041-4YA10	5
3RW4047		3RV2041-4MA10	11	3RV2041-4MA10	5

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

Basic Performance Soft Starters

3RW40 Soft starters

General data

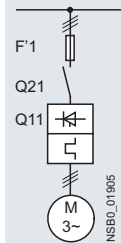
Motor feeders according to IEC with 3NE1 SITOP fuses

gR class full-range fuses for semiconductor protection, cable and line protection

Type of coordination "2",
short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).



Soft starters	gG class fuse for systems up to 600 V	Line contactor (optional)		
		for systems up to 400 V	for systems up to 480 V	for systems up to 600 V
Q11	F'1	Q21	Q21	Q21
Type	Type	Type	Type	Type
Type of coordination "2"	Type of coordination "2"			
3RW4024	3NE1814-0	3RT2025	3RT2025/ 3RT2018 (in size S00)	3RT2025
3RW4026	3NE1803-0	3RT2026	3RT2027	3RT2037
3RW4027	3NE1020-2	3RT2027	3RT2028	3RT2037
3RW4028	3NE1020-2	3RT2028	3RT2035	3RT2037
3RW4036	3NE1020-2	3RT2036	3RT2036	3RT2038
3RW4037	3NE1820-0	3RT2037	3RT2037	3RT2046
3RW4038	3NE1820-0	3RT2038	3RT2038	3RT2046
3RW4046	3NE1021-0	3RT2045	3RT2045	3RT2047
3RW4047	3NE1022-0	3RT2047	3RT2047	3RT1054

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

Basic Performance Soft Starters

3RW40 Soft starters

General data

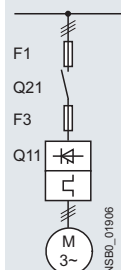
Motor feeders according to IEC with 3NE8 / 3NE4 / 3NE3 / 3NC fuses

aR class partial-range fuses for semiconductor protection

Type of coordination "2",
short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).



Soft starters	gG class fuse	aR class fuse				Cylindrical fuses	Line contactor (optional)		
	for systems up to 600 V	for systems up to 600 V	for systems up to 600 V	for systems up to 600 V	for systems up to 600 V	for systems up to 480 V	for systems up to 400 V	for systems up to 480 V	for systems up to 600 V
Q11	F1	F3	F3	F3	F3	F3	Q21	Q21	Q21
Type	Type	Type	Type	Type	Type	Type	Type	Type	Type
Type of coordination "2"	Toc 2 Inline circuit								
3RW4024	3NA3820-6	--	3NE4101	3NE8015-1	3NC2240	3RT2025	3RT2025/3RT2018 (in size S00)	3RT2025	
3RW4026	3NA3822-6	--	3NE4102	3NE8017-1	3NC2263	3RT2026	3RT2027	3RT2037	
3RW4027	3NA3824-6	--	3NE4118	3NE8018-1	3NC2280	3RT2027	3RT2028	3RT2037	
3RW4028	3NA3824-6	--	3NE4118	3NE8020-1	3NC2280	3RT2028	3RT2035	3RT2037	
3RW4036	3NA3130-6	--	3NE4120	3NE8020-1	3NC2280	3RT2036	3RT2036	3RT2038	
3RW4037	3NA3132-6	--	3NE4121	3NE8021-1	--	3RT2037	3RT2037	3RT2046	
3RW4038	3NA3132-6	3NE3221	--	3NE8022-1	--	3RT2038	3RT2038	3RT2046	
3RW4046	3NA3136-6	3NE3222	--	3NE8022-1	--	3RT2045	3RT2045	3RT2047	
3RW4047	3NA3136-6	3NE3224	--	3NE8024-1	--	3RT2047	3RT2047	3RT1054	

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2 motor starter protectors can also be used, possibly with reduced short-circuit breaking capacity ([see page 17-267](#)). In these cases, optional line contactors can be dispensed with.

Basic Performance Soft Starters

3RW40 Soft starters > Inline circuit **IE3/IE4 ready**

Selection

Selection and ordering data

For normal starting (CLASS 10)


3RW402.



3RW403.



3RW404.

3RW ambient temperature 40 °C				3RW ambient temperature 50 °C				Size	SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Rated values of three-phase motors				Rated values of three-phase motors									
Operational current I_e	Rating at operational voltage U_e			Operational current I_e	Rating at operational voltage U_e								
	230 V	400 V	500 V		200 V	230 V	460 V						
A	kW	kW	kW	A	hp	hp	hp	hp	d				
Rated operational voltage U_e 200 ... 480 V													
12.5	3	5.5	--	11	3	3	7.5	--	S0	2	3RW4024-□BB□4	1	1 unit
25	5.5	11	--	23	5	5	15	--	S0	2	3RW4026-□BB□4	1	1 unit
32	7.5	15	--	29	7.5	7.5	20	--	S0	2	3RW4027-□BB□4	1	1 unit
38	11	18.5	--	34	10	10	25	--	S0	2	3RW4028-□BB□4	1	1 unit
45	11	22	--	42	10	15	30	--	S2	2	3RW4036-□BB□4	1	1 unit
63	18.5	30	--	58	15	20	40	--	S2	2	3RW4037-□BB□4	1	1 unit
72	22	37	--	62	20	20	40	--	S2	2	3RW4038-□BB□4	1	1 unit
80	22	45	--	73	20	25	50	--	S3	2	3RW4046-□BB□4	1	1 unit
106	30	55	--	98	30	30	75	--	S3	2	3RW4047-□BB□4	1	1 unit
Rated operational voltage U_e 400 ... 600 V													
12.5	--	5.5	7.5	11	--	--	7.5	10	S0	5	3RW4024-□BB□5	1	1 unit
25	--	11	15	23	--	--	15	20	S0	5	3RW4026-□BB□5	1	1 unit
32	--	15	18.5	29	--	--	20	25	S0	5	3RW4027-□BB□5	1	1 unit
38	--	18.5	22	34	--	--	25	30	S0	5	3RW4028-□BB□5	1	1 unit
45	--	22	30	42	--	--	30	40	S2	5	3RW4036-□BB□5	1	1 unit
63	--	30	37	58	--	--	40	50	S2	5	3RW4037-□BB□5	1	1 unit
72	--	37	45	62	--	--	40	60	S2	5	3RW4038-□BB□5	1	1 unit
80	--	45	55	73	--	--	50	60	S3	5	3RW4046-□BB□5	1	1 unit
106	--	55	75	98	--	--	75	75	S3	5	3RW4047-□BB□5	1	1 unit

Article No. supplement for connection types

- Screw terminals
- Spring-loaded terminals²⁾

Control supply voltage

- 24 V AC/DC
- 110 ... 230 V AC/DC

¹⁾ Soft starter U_e 200 to 480 V with screw terminals:
Standard delivery time SD = 1 day (d).

²⁾ Main connection from size S2: screw terminals.

Note:

For the constraints for the motor outputs specified here, see page 17-187.

1
2

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1

Basic Performance Soft Starters

3RW40 Soft starters > Inline circuit **IE3/IE4 ready**
Selection
For normal starting (CLASS 10)


3RW402.



3RW403.



3RW404.

3RW ambient temperature 40 °C				3RW ambient temperature 50 °C					Size	SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	
Rated values of three-phase motors				Rated values of three-phase motors											
Operational current I_e	Rating at operational voltage U_e			Operational current I_e	Rating at operational voltage U_e										
	230 V	400 V	500 V		200 V	230 V	460 V	575 V							
A	kW	kW	kW	A	hp	hp	hp	hp		d					
Rated operational voltage U_e 200 ... 480 V, with thermistor motor protection, rated control supply voltage U_s 24 V AC/DC															
12.5	3	5.5	--	11	3	3	7.5	--	S0	5	3RW4024-□TB04		1	1 unit	
25	5.5	11	--	23	5	5	15	--	S0	5	3RW4026-□TB04		1	1 unit	
32	7.5	15	--	29	7.5	7.5	20	--	S0	5	3RW4027-□TB04		1	1 unit	
38	11	18.5	--	34	10	10	25	--	S0	5	3RW4028-□TB04		1	1 unit	
45	11	22	--	42	10	15	30	--	S2	5	3RW4036-□TB04		1	1 unit	
63	18.5	30	--	58	15	20	40	--	S2	5	3RW4037-□TB04		1	1 unit	
72	22	37	--	62	20	20	40	--	S2	5	3RW4038-□TB04		1	1 unit	
80	22	45	--	73	20	25	50	--	S3	5	3RW4046-□TB04		1	1 unit	
106	30	55	--	98	30	30	75	--	S3	5	3RW4047-□TB04		1	1 unit	
Rated operational voltage U_e 400 ... 600 V, with thermistor motor protection, rated control supply voltage U_s 24 V AC/DC															
12.5	--	5.5	7.5	11	--	--	7.5	10	S0	5	3RW4024-□TB05		1	1 unit	
25	--	11	15	23	--	--	15	20	S0	5	3RW4026-□TB05		1	1 unit	
32	--	15	18.5	29	--	--	20	25	S0	5	3RW4027-□TB05		1	1 unit	
38	--	18.5	22	34	--	--	25	30	S0	5	3RW4028-□TB05		1	1 unit	
45	--	22	30	42	--	--	30	40	S2	5	3RW4036-□TB05		1	1 unit	
63	--	30	37	58	--	--	40	50	S2	5	3RW4037-□TB05		1	1 unit	
72	--	37	45	62	--	--	40	60	S2	5	3RW4038-□TB05		1	1 unit	
80	--	45	55	73	--	--	50	60	S3	5	3RW4046-□TB05		1	1 unit	
106	--	55	75	98	--	--	75	75	S3	5	3RW4047-□TB05		1	1 unit	

Article No. supplement for connection types

- Screw terminals
- Spring-loaded terminals²⁾

¹⁾ Soft starter U_e 200 to 480 V with screw terminals:
Standard delivery time SD = 1 day (d).

²⁾ Main connection from size S2: screw terminals.

Note:

For the constraints for the motor outputs specified here, see page 17-187.

 Soft Starter
Control

 17
CONTROL
PRODUCTS

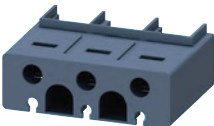
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2

Basic Performance Soft Starters

3RW40 Soft starters > Accessories

Selection

Selection and ordering data

Conductor cross-section		Tightening torque	For soft starters size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Solid or stranded	Finely stranded with end sleeve							
mm²	mm²	AWG	Nm	d				
Three-phase infeed terminals								
	2.5 ... 25	2.5 ... 16	10 ... 4	3 ... 4	S0 (3RW402.) ▶	3RV2925-5AB	1	1 unit
3RV2925-5AB								
For soft starters		Version		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Type	Size			d				
Auxiliary terminals								
	Auxiliary terminals, 3-pole			5	3RT2946-4F		1	1 unit
3RW404.	S3	For connection of auxiliary and control cables (0.5 ... 2.5 mm²) to the main conductor terminals						
3RT2946-4F								
Covers for soft starters								
	Terminal covers for box terminals			▶	3RT2936-4EA2		1	1 unit
3RW403.	S2	Additional touch protection to be fitted at the box terminals						
	3RW404.	S3	(two units required per device) ▶		3RT2946-4EA2		1	1 unit
3RT2936-4EA2								
	Terminal covers for cable lugs and busbar connections			5	3RT1946-4EA1		1	1 unit
3RW404.	S3	For complying with the voltage clearances and as touch protection if box terminal is removed (two units required per device)						
3RT1946-4EA1								
	Sealing covers			5	3RW4900-0PB10		1	1 unit
3RW402. to 3RW404.	S0, S2, S3	--						
3RW4900-0PB10								

Basic Performance Soft Starters

3RW40 Soft starters > Accessories

Selection

For motor starter protectors	For soft starters	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Size	Size		d				

Standard mounting rail adapters



3RA2932-1CA00

S2	S2	For mechanical fixing of motor starter protector and soft starter; for snapping onto standard mounting rail or for screw fixing Single-unit packaging	2	3RA2932-1CA00		1	1 unit
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For soft starters	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Type	Size				
	d				

Fans (to increase switching frequency and for device mounting in positions different to the standard position)



3RW49...-8VB00

3RW402.	S0	▶	3RW4928-8VB00	1	1 unit
3RW403., 3RW404.	S2, S3	▶	3RW4947-8VB00	1	1 unit

For soft starters		Motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Type	Size	Size					
			d				

Link modules to motor starter protectors¹⁾



3RA2921-1BA00



3RA2921-2GA00

3RW402.	S0	S00/S0	2	3RA2921-1BA00	1	1 unit
3RW4036	S2	S2	▶	3RA2931-1AA00	1	1 unit
3RW404.	S3	S3	▶	3RA1941-1AA00	1	1 unit

3RW402.	S0	S0	2	3RA2921-2GA00	1	1 unit
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Screw terminals



Spring-loaded terminals



- ¹⁾ Can be used in size S0 up to 32 A.
Can be used in size S2 up to 65 A in combination with 3RA2932-1CA00 standard mounting rail adapter (specially for soft starters).
Can be used in size S3 only with mounting plate.

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
	d				

Tools for opening spring-loaded terminals in sizes S00 and S0



3RA2908-1A

Screwdrivers

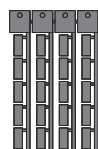
For all SIRIUS devices with spring-loaded terminals
Length approx. 200 mm, 3.0 mm x 0.5 mm,
titanium gray/black, partially insulated

Spring-loaded terminals



3RA2908-1A	1	1 unit
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Blank labels



3RT2900-1SB20

Unit labeling plates¹⁾

For SIRIUS devices
20 mm x 7 mm, titanium gray

3RT2900-1SB20	100	340 units
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- ¹⁾ PC labeling systems for individual inscription of unit labeling plates are available from: murrplastik Systemtechnik GmbH (see page 16/14).

Basic Performance Soft Starters

3RW30 Soft starters

General data

Overview

More information

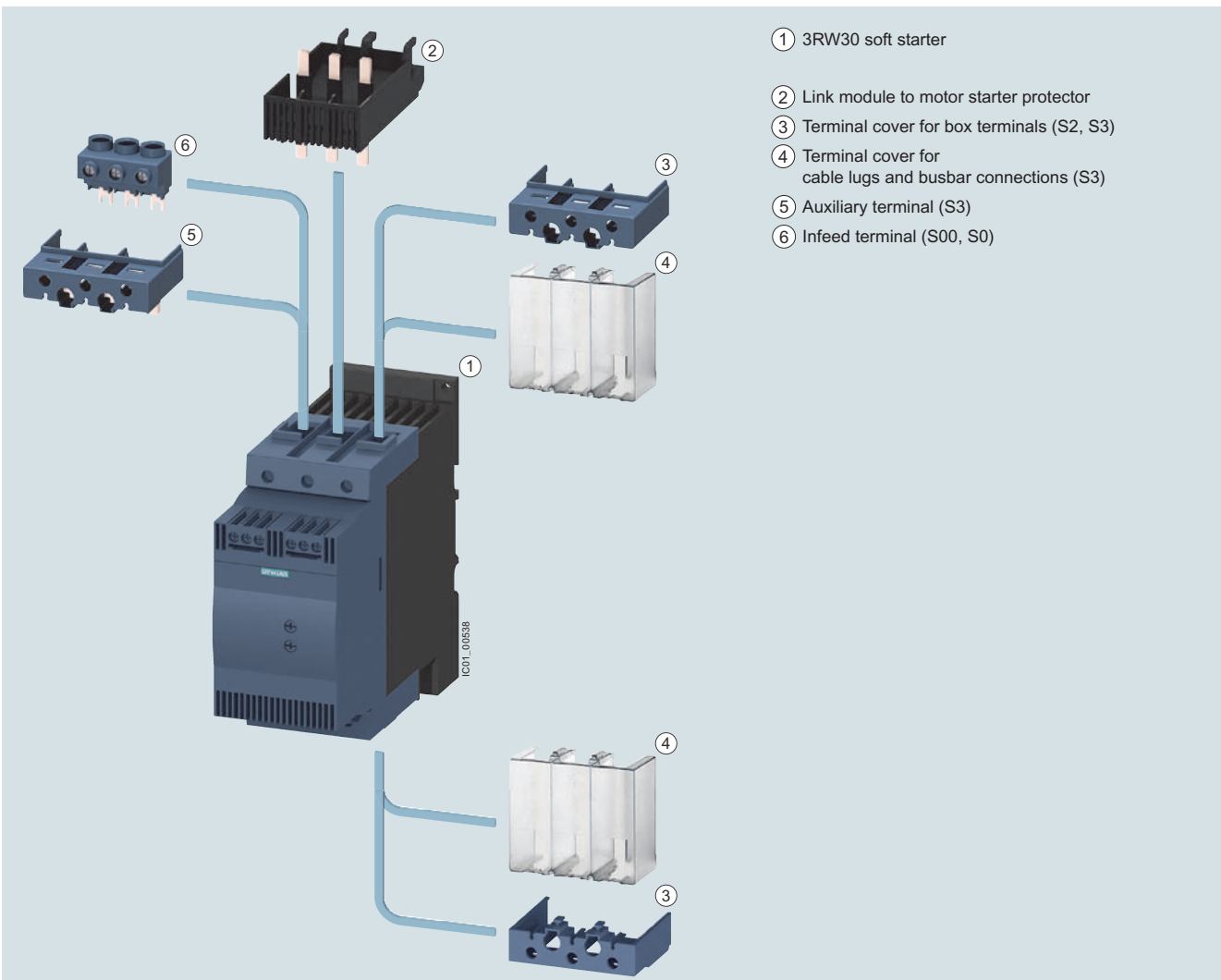
Homepage, see www.usa.siemens.com/soft-starter
 Industry Mall, see www.siemens.com/product?3RW
 TIA Selection Tool Cloud (TST Cloud), see
<https://www.siemens.com/tstcloud/?node=3rw30>

Simulation Tool for Soft Starters (STS), see page 17-187 or
<https://support.industry.siemens.com/cs/ww/en/view/101494917>
 SIRIUS Soft Starter ES (TIA Portal), see page 14/5



The SIRIUS 3RW30 Basic Performance soft starters are suitable for soft starting of three-phase asynchronous motors.

Thanks to two-phase control, not only is the current kept at minimum values in all three phases throughout the entire starting time, but disturbing direct current components are also eliminated. This not only enables the two-phase starting of motors from 1.5 to 75HP @ 480V but also avoids the current and torque peaks which occur e.g. with wye-delta starters.



3RW30 Basic Performance soft starters with accessories (see page 17-283)

Basic Performance Soft Starters

3RW30 Soft starters

General data

Benefits



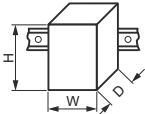
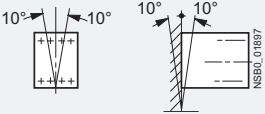
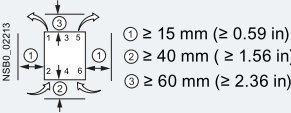
Product characteristics / function	Performance features / benefits
Small and compact design	Space-saving, clearly arranged control panel layout
Parameterization using potentiometers	Simple and fast commissioning
Integrated in the SIRIUS modular system	Link modules to motor starter protectors
Hybrid switching devices and two-phase motor control	Minimum power loss and optimized motor control by avoiding DC components

Technical specifications

More information

Equipment Manual "SIRIUS 3RW30/3RW40 Soft Starters", see <https://support.industry.siemens.com/cs/ww/en/view/38752095>
FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16213/faq>

Catalog LV 10, see www.siemens.com/lowvoltage/lv10

Type			3RW301.	3RW302.	3RW303.	3RW304.		
Mechanics and environment								
Mounting dimensions (W x H x D) • Screw terminals • Spring-loaded terminals				mm mm	45 x 95 x 151 45 x 117 x 151	45 x 125 x 151 45 x 150 x 151	55 x 144 x 168 55 x 144 x 168	70 x 160 x 186 70 x 160 x 186
Permissible ambient temperature During operation During storage			°C °C	-25 ... +60; (derating from +40) -40 ... +80				
Weight			kg	0.58	0.69	1.20	1.71	
Permissible mounting position¹⁾ (auxiliary fan not possible)								
Installation type¹⁾ Stand-alone installation			 ① ≥ 15 mm (≥ 0.59 in) ② ≥ 40 mm (≥ 1.56 in) ③ ≥ 60 mm (≥ 2.36 in) ① ≥ 30 mm (≥ 1.18 in) ② ≥ 40 mm (≥ 1.56 in) ③ ≥ 60 mm (≥ 2.36 in)					
Permissible installation altitude			m	5 000 (Derating from 1 000, see characteristic curve on page 17-187)				
Degree of protection			IP00					

¹⁾ In the case of deviations, please observe derating, see [Equipment Manual](#) in the chapter "Configuring".

Basic Performance Soft Starters

3RW30 Soft starters

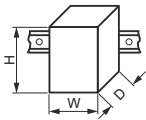
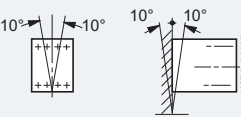
General data

Type	Terminal	3RW301., 3RW302.		3RW303., 3RW304.		
Control electronics						
Rated values						
Rated control supply voltage	A1/A2	V	24	110 ... 230	24	110 ... 230
• Tolerance		%	20	-15/+10	20	-15/+10
Rated frequency		Hz	50/60			
• Tolerance		%	± 10			
Type		3RW301.	3RW302.	3RW303.	3RW304.	
Power electronics						
Rated operational voltage		V AC	200 ... 480			
Tolerance		%	-15/+10			
Rated frequency		Hz	50/60			
Tolerance		%	10			
Uninterrupted duty at 40 °C (% of I _e)		%	115			
Minimum load (% of I _e)		%	10 (at least 1 A)			
Maximum cable length between soft starter and motor		m	300			
Type		3RW3013	3RW3014	3RW3016	3RW3017	3RW3018
Power electronics						
Load rating with rated operational current I _e						
• According to IEC and UL/CSA ¹⁾ , individual mounting at 40/50/60 °C, AC-53a A		3.6/3.3/3	6.5/6/5.5	9/8/7	12.5/12/11	17.6/17/14
Power loss						
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	0.25	0.5	1	2	4
• During starting with 300% I _M (40 °C)	W	24	52	80	80	116
Permissible rated motor current and starts per hour						
• For normal starting (CLASS 10) at 40/50 °C						
- Rated motor current I _M ⁽²⁾ , start-up time 3 s	A	3.6/3.3	6.5/6.0	9/8	12.5/12.0	17.6/17.0
- Starts per hour ³⁾	1/h	200/150	87/60	50/50	85/70	62/46
- Rated motor current I _M ⁽²⁾ , start-up time 4 s	A	3.6/3.3	6.5/6.0	9/8	12.5/12.0	17.6/17.0
- Starts per hour ³⁾	1/h	150/100	64/46	35/35	62/47	45/32
¹⁾ Measurement at 60 °C according to UL/CSA not required.						
²⁾ At 300% I _M , T _U = 40/50 °C.						
³⁾ For intermittent duty S4 with ON period = 30%, T _U = 40/50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.						
Type		3RW3026	3RW3027	3RW3028		
Power electronics						
Load rating with rated operational current I _e						
• According to IEC and UL/CSA ¹⁾ , individual mounting at 40/50/60 °C, AC-53a A		25.3/23/21	32.2/29/26	38/34/31		
Power loss						
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	8	13	19		
• During starting with 300% I _M (40 °C)	W	188	220	256		
Permissible rated motor current and starts per hour						
• For normal starting (CLASS 10) at 40/50 °C						
- Rated motor current I _M ⁽²⁾ , start-up time 3 s	A	25/23	32/29	38/34		
- Starts per hour ³⁾	1/h	23/23	23/23	19/19		
- Rated motor current I _M ⁽²⁾ , start-up time 4 s	A	25/23	32/29	38/34		
- Starts per hour ³⁾	1/h	15/15	16/16	12/12		
¹⁾ Measurement at 60 °C according to UL/CSA not required.						
²⁾ At 300% I _M , T _U = 40/50 °C.						
³⁾ For intermittent duty S4 with ON period = 30%, T _U = 40/50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode. Factors for permissible switching frequency with deviating mounting position, direct mounting, side-by-side mounting, see Equipment Manual in the chapter "Configuring".						
Type		3RW3036	3RW3037	3RW3038	3RW3046	3RW3047
Power electronics						
Load rating with rated operational current I _e						
• According to IEC and UL/CSA ¹⁾ , individual mounting at 40/50/60 °C, AC-53a A		45/42/39	65/58/53	72/62.1/60	80/73/66	106/98/90
Power loss						
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	6	12	15	12	21
• During starting with 300% I _M (40 °C)	W	316	444	500	576	768
Permissible rated motor current and starts per hour						
• For normal starting (CLASS 10) at 40/50 °C						
- Rated motor current I _M ⁽²⁾ , start-up time 3 s	A	45/42	63/58	72/62	80/73	106/108
- Starts per hour ³⁾	1/h	38/38	23/23	22/22	22/22	15/15
- Rated motor current I _M ⁽²⁾ , start-up time 4 s	A	45/42	63/58	72/62	80/73	106/98
- Starts per hour ³⁾	1/h	26/26	15/15	15/15	15/15	10/10
¹⁾ Measurement at 60 °C according to UL/CSA not required.						
²⁾ At 300% I _M , T _U = 40/50 °C.						
³⁾ For intermittent duty S4 with ON period = 30%, T _U = 40/50 °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.						

Basic Performance Soft Starters

3RW30 Soft starters

General data

Type	3RW3003-1CB54		3RW3003-2CB54
Mechanics and environment			
Mounting dimensions (W x H x D) • Screw terminals • Spring-loaded terminals	 mm mm	22.5 x 100 x 120 --	-- 22.5 x 101.6 x 120
Permissible ambient temperature			
During operation	°C	-25 ... +60; (derating from +40)	
During storage	°C	-40 ... +80	
Weight	kg	0.207	0.188
Permissible mounting position			
Permissible installation altitude	m	5 000 (Derating from 1 000, see characteristic curve on page 17-187)	
Degree of protection acc. to IEC 60529		IP00	
Control electronics			
Rated values			
Rated control supply voltage	V	24 ... 230 AC/DC	
• Tolerance	%	± 10	
Rated frequency at AC	Hz	50/60	
• Tolerance	%	± 10	
Power electronics			
Rated operational voltage	V AC	200 ... 400	
Tolerance	%	± 10	
Rated frequency	Hz	50/60	
Tolerance	%	± 10	
Uninterrupted duty (% of I _e)	%	100	
Minimum load ¹⁾ (% of I _e); at 40 °C	%	9	
Maximum conductor length between soft starter and motor	m	100 ²⁾	
Load rating with rated operational current I _e			
• According to IEC and UL/CSA, individual mounting at 40/50/60 °C, AC-53a	A	3/2.6/2.2	
• According to IEC and UL/CSA, side-by-side mounting at 40/50/60 °C, AC-53a	A	2.6/2.2/1.8	
Power loss			
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	6.5	
• With utilization of maximum switching frequency	W	3	
Permissible starts per hour (cannot be increased by using a fan)			
• For intermittent duty S4 T _u = 40 °C, stand-alone installation vertical	1/h	1 500	
• ON period = 70% for 300% I _e	1/s	0.2	
Dead time after uninterrupted duty with I _e before restart	s	0	

¹⁾ The rated motor current (specified on the motor's name plate) should at least amount to the specified percentage of the SIRIUS soft starter unit's rated operational current I_e .

²⁾ If this value is exceeded, problems with line capacities may arise, which can result in false firing.

Basic Performance Soft Starters

3RW30 Soft starters

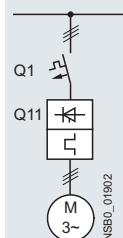
General data

Motor feeders according to IEC with 3RV2 motor starter protectors (without semiconductor protection)

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, [see table](#)

Note:

For general recommendations for constructing motor feeders
with soft starters, [see page 17-189](#).



Soft starters		Motor starter protectors	
		for 400 V systems	
Q11		Q1	I_q
Type		Type	kA
Type of coordination "1"	ToC 1	Inline circuit	
3RW3003		3RV2011-1EA10	50
3RW3013		3RV2011-1FA10	5
3RW3014		3RV2011-1HA10	5
3RW3016		3RV2011-1JA10	5
3RW3017		3RV2011-1KA10	5
3RW3018		3RV2021-4BA10	5
3RW3026		3RV2021-4DA10	55
3RW3027		3RV2021-4EA10	55
3RW3028		3RV2021-4FA10	55
3RW3036		3RV2031-4WA10	10
3RW3037		3RV2031-4JA10	10
3RW3038		3RV2031-4KA10	10
3RW3046		3RV2041-4RA10	11
3RW3047		3RV2041-4MA10	11

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

Basic Performance Soft Starters

3RW30 Soft starters

General data

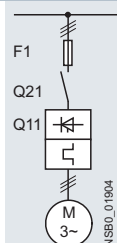
Motor feeders according to IEC with 3NA3 fuses

gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

Type of coordination "1",
short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 17-189](#).



Soft starters	gG class fuse	Line contactor (optional)	
Q11	for systems up to 480 V	for systems up to 400 V	for systems up to 480 V
Type	F1	Q21	Q21
Type	Type	Type	Type
Type of coordination "1"	Inline circuit		
3RW3003 ¹⁾	3NA3805 ²⁾	3RT2015	3RT2015
3RW3013	3NA3803-6	3RT2015	3RT2015
3RW3014	3NA3805-6	3RT2015	3RT2016
3RW3016	3NA3807-6	3RT2016	3RT2017
3RW3017	3NA3810-6	3RT2018	3RT2025
3RW3018	3NA3814-6	3RT2026	3RT2026
3RW3026	3NA3822-6	3RT2026	3RT2027
3RW3027	3NA3824-6	3RT2027	3RT2028
3RW3028	3NA3824-6	3RT2028	3RT2035
3RW3036	3NA3130-6	3RT2036	3RT2036
3RW3037	3NA3132-6	3RT2037	3RT2037
3RW3038	3NA3132-6	3RT2038	3RT2038
3RW3046	3NA3136-6	3RT2045	3RT2045
3RW3047	3NA3136-6	3RT2047	3RT2047

¹⁾ $I_q = 50 \text{ kA}$ at 400 V.

²⁾ 3NA3805-1 (NH00), 5SB261 (DIAZED), 5SE2201-6 (NEOZED).

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

Basic Performance Soft Starters

3RW30 Soft starters

General data

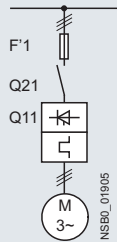
Motor feeders according to IEC with 3NE1 SITOR fuses

gR class full-range fuses for semiconductor protection, cable and line protection

Type of coordination "2",
short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, see page 17-189.



Soft starters	gG class fuse	Line contactor (optional)	
Q11	F'1	for systems up to 400 V	for systems up to 480 V
Type	Type	Type	Type
Type of coordination "2"	Inline circuit		
3RW3003 ¹⁾	3NE1813-0 ²⁾	3RT2015	3RT2015
3RW3013	3NE1813-0	3RT2015	3RT2015
3RW3014	3NE1813-0	3RT2015	3RT2016
3RW3016	3NE1813-0	3RT2016	3RT2017
3RW3017	3NE1813-0	3RT2018	3RT2025
3RW3018	3NE1814-0	3RT2026	3RT2026
3RW3026	3NE1803-0	3RT2026	3RT2027
3RW3027	3NE1020-2	3RT2027	3RT2028
3RW3028	3NE1020-2	3RT2028	3RT2035
3RW3036	3NE1020-2	3RT2036	3RT2036
3RW3037	3NE1820-0	3RT2037	3RT2037
3RW3038	3NE1820-0	3RT2038	3RT2038
3RW3046	3NE1021-0	3RT2045	3RT2045
3RW3047	3NE1022-0	3RT2047	3RT2047

¹⁾ $I_q = 50 \text{ kA}$ at 400 V.

²⁾ No SITOR fuse required!
Alternatively: 3NA3803 (NH00), 5SB221 (DIAZED), 5SE2206 (NEOZED).

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

Basic Performance Soft Starters

3RW30 Soft starters

General data

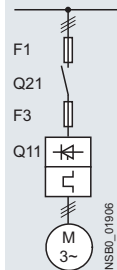
Motor feeders according to IEC with 3NE8 / 3NE4 / 3NE3 / 3NC fuses

aR class partial-range fuses for semiconductor protection

Type of coordination "2",
short-circuit breaking capacity $I_q = 65$ kA

Note:

For general recommendations for constructing motor feeders with soft starters, see page 17-189.



Soft starters	gG class fuse	aR class fuse			Cylindrical fuses	Line contactor (optional)	
Q11	for systems up to 480 V	for systems up to 480 V	for systems up to 480 V	for systems up to 480 V	for systems up to 480 V	for systems up to 400 V	for systems up to 480 V
Type	F1	F3	F3	F3	F3	Q21	Q21
Type	Type	Type	Type	Type	Type	Type	Type
Type of coordination "2"	Inline circuit						
3RW3003 ¹⁾	3NA3805 ²⁾	--	--	3NE8015-1	3NC1010	3RT2015	3RT2015
3RW3013	3NA3803-6	--	3NE4101	3NE8015-1	3NC2220	3RT2015	3RT2015
3RW3014	3NA3805-6	--	3NE4101	3NE8015-1	3NC2220	3RT2015	3RT2016
3RW3016	3NA3807-6	--	3NE4101	3NE8015-1	3NC2220	3RT2016	3RT2017
3RW3017	3NA3810-6	--	3NE4101	3NE8015-1	3NC2250	3RT2018	3RT2025
3RW3018	3NA3814-6	--	3NE4101	3NE8003-1	3NC2263	3RT2026	3RT2026
3RW3026	3NA3822-6	--	3NE4102	3NE8017-1	3NC2263	3RT2026	3RT2027
3RW3027	3NA3824-6	--	3NE4118	3NE8018-1	3NC2280	3RT2027	3RT2028
3RW3028	3NA3824-6	--	3NE4118	3NE8020-1	3NC2280	3RT2028	3RT2035
3RW3036	3NA3130-6	--	3NE4120	3NE8020-1	3NC2280	3RT2036	3RT2036
3RW3037	3NA3132-6	--	3NE4121	3NE8021-1	--	3RT2037	3RT2037
3RW3038	3NA3132-6	3NE3221	--	3NE8022-1	--	3RT2038	3RT2038
3RW3046	3NA3136-6	3NE3222	--	3NE8022-1	--	3RT2045	3RT2045
3RW3047	3NA3136-6	3NE3224	--	3NE8024-1	--	3RT2047	3RT2047

¹⁾ $I_q = 50$ kA at 400 V.

²⁾ 3NA3805-1 (NH00), 5SB261 (DIAZED).

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2 motor starter protectors/circuit breakers can also be used, possibly with reduced short-circuit breaking capacity (see page 17-278). In these cases, optional line contactors can be dispensed with.

Basic Performance Soft Starters

3RW30 Soft starters > Inline circuit **IE3/IE4 ready**

Selection

Selection and ordering data

For simple starting conditions


3RW301.



3RW302.



3RW303.



3RW304.

3RW ambient temperature 40 °C				3RW ambient temperature 50 °C					Size	SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	
Rated values of three-phase motors				Rated values of three-phase motors											
Opera- tional current I_e	Rating at operational voltage U_e			Opera- tional current I_e	Rating at operational voltage U_e										
	230 V	400 V	500 V		200 V	230 V	460 V	575 V							
A	kW	kW	kW	A	hp	hp	hp	hp		d					
Rated operational voltage U_e 200 ... 480 V															
3.6	0.75	1.5	--	3	0.5	0.5	1.5	--	S00	2	3RW3013-□BB□4		1	1 unit	
6.5	1.5	3	--	6	1	1	3	--	S00	2		1	1 unit		
9	2.2	4	--	8	2	2	5	--	S00	2		1	1 unit		
12.5	3	5.5	--	12	3	3	7.5	--	S00	2	3RW3017-□BB□4		1	1 unit	
17.6	4	7.5	--	17	3	3	10	--	S00	2		1	1 unit		
25	5.5	11	--	23	5	5	15	--	S0	2	3RW3026-□BB□4		1	1 unit	
32	7.5	15	--	29	7.5	7.5	20	--	S0	2		1	1 unit		
38	11	18.5	--	34	10	10	25	--	S0	2		1	1 unit		
45	11	22	--	42	10	15	30	--	S2	2	3RW3036-□BB□4		1	1 unit	
63	18.5	30	--	58	15	20	40	--	S2	2		1	1 unit		
72	22	37	--	62	20	20	40	--	S2	2		1	1 unit		
80	22	45	--	73	20	25	50	--	S3	2	3RW3046-□BB□4		1	1 unit	
106	30	55	--	98	30	30	75	--	S3	2		1	1 unit		

Article No. supplement for connection types

- Screw terminals
- Spring-loaded terminals²⁾

Control supply voltage U_s

- 24 V AC/DC
- 110 ... 230 V AC/DC

Soft starters for easy starting conditions and high switching frequency, rated operational voltage U_e 200 ... 400 V, rated control supply voltage U_s 24 ... 230 V AC/DC

3	0.55	1.1	--	A	0.5	0.5	--	--	22.5 mm				
• With screw terminals • With spring-loaded terminals										▶	3RW3003-1CB54	1	1 unit
										▶	3RW3003-2CB54	1	1 unit

- ¹⁾ Soft starter U_e 200 to 480 V with screw terminals:
Standard delivery time SD = 1 day (d).

- ²⁾ Main connection from size S2: screw terminals.

Note:

For the constraints for the motor outputs specified here, see page 17-187.

Basic Performance Soft Starters

3RW30 Soft starters > Accessories

Selection

Selection and ordering data

More information

Equipment Manual "SIRIUS 3RW30/3RW40 Soft Starters", see <https://support.industry.siemens.com/cs/ww/en/view/38752095>

Conductor cross-section		AWG cables, solid or stranded	Tightening torque	For soft starters size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Solid or stranded	Finely stranded with end sleeve								
mm ²	mm ²	AWG	Nm		d				
Three-phase infeed terminals									
	2.5 ... 25	2.5 ... 16	10 ... 4	3 ... 4	S00 (3RW301.), S0 (3RW302.)	3RV2925-5AB		1	1 unit
Auxiliary terminals									
Auxiliary terminals, 3-pole									
	3RW304.	S3			5	3RT2946-4F		1	1 unit
Covers for soft starters									
Terminal covers for box terminals									
Additional touch protection to be fitted at the box terminals (two units required per device)									
	3RW303.	S2				3RT2936-4EA2		1	1 unit
	3RW304.	S3				3RT2946-4EA2		1	1 unit
Terminal covers for cable lugs and busbar connections									
For complying with the voltage clearances and as touch protection if box terminal is removed (two units required per device)									
	3RW304.	S3			5	3RT1946-4EA1		1	1 unit
Mounting rails for mounting contactors for the customer assembly of 3RA21 load feeders with busbar adapters for 60 mm systems									
	--	S0			2	8US1998-7CB45		1	10 units
Standard mounting rail adapters									
	S2	S2			2	3RA2932-1CA00		1	1 unit

Soft Starter
Control17
CONTROL
PRODUCTS

Basic Performance Soft Starters

3RW30 Soft starters > Accessories

Selection

For soft starters Type	Size	Motor starter protectors Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
			d				

Link modules to motor starter protectors¹⁾



3RA2921-1BA00

3RW301.	S00	S00	2
3RW302.	S0	S00/S0	2
3RW3036	S2	S2	▶
3RW304.	S3	S3	▶

Screw terminals



3RA2921-1BA00	1	1 unit
3RA2921-1BA00	1	1 unit
3RA2931-1AA00	1	1 unit
3RA1941-1AA00	1	1 unit



3RA2921-2GA00

3RW301.	S00	S00	2
3RW302.	S0	S0	2

Spring-loaded terminals



3RA2911-2GA00	1	1 unit
3RA2921-2GA00	1	1 unit

- ¹⁾ Can be used in size S0 up to 32 A.
Can be used in size S2 up to 65 A in combination with 3RA2932-1CA00 standard mounting rail adapter (specially for soft starters).
Can be used in size S3 only on mounting plate.

Version	Functionality Functions	Use	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
			d				

Covers and push-in lugs (only for 3RW3003)



3RP1902



3RP1903

Sealable covers	For securing against unauthorized adjustment of setting knobs	For devices with 1 or 2 CO contacts	5	3RP1902		1	5 units
Push-in lugs for screw fixing	--	For devices with 1 or 2 CO contacts	5	3RP1903		1	10 units

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
	d				

Tools for opening spring-loaded terminals in sizes S00 and S0



3RA2908-1A

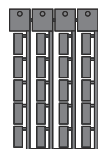
Screwdrivers	For all SIRIUS devices with spring-loaded terminals Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	2
---------------------	---	---

Spring-loaded terminals



3RA2908-1A	1	1 unit
-------------------	---	--------

Blank labels



3RT2900-1SB20

Unit labeling plates¹⁾	For SIRIUS devices 20 mm x 7 mm, titanium gray	20
--	---	----

3RT2900-1SB20

100 340 units

- ¹⁾ PC labeling systems for individual inscription of unit labeling plates are available from: murrplastik Systemtechnik GmbH (see page 16/15).

Basic Performance Soft Starters

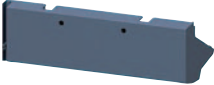
3RW55/3RW55 Failsafe > Accessories

Selection

Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
d					
SIRIUS Soft Starter ES V16 Basic					
Basic Function Including Professional Trial License Engineering software, Software download 6 languages (English, German, French, Italian, Spanish, Chinese) Online functions via system interface No cost to download: https://support.industry.siemens.com/cs/document/109771657					
SIRIUS Soft Starter ES V16 Professional					
 3ZS1320-6CC12-0YA5	Floating License for one User Engineering software, Software and documentation on DVD 6 languages (English, German, French, Italian, Spanish, Chinese) Online functions via system interface or PROFIBUS/PROFINET • License Key on USB flash drive, includes DVD • License Key download, without DVD				
	5	3ZS1320-6CC12-0YA5		1	1 unit
	▶	3ZS1320-6CE12-0YB5		1	1 unit
Upgrade for Soft Starter ES 2007 Premium Floating License for one User Engineering software, Software and documentation on DVD License Key on USB flash drive 6 languages (English, German, French, Italian, Spanish, Chinese) Online functions via system interface or PROFIBUS/PROFINET	5	3ZS1320-6CC12-0YE5		1	1 unit

Hints:

Licenses from Soft Starter ES Standard and Premium V14 to V15.1 can also be used for Soft Starter ES V16 Professional

Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
				d			
Fans							
	Fan	3RW551 (1x), 3RW552 (2x), 3RW553 (2x)	--	▶	3RW5983-0FF00	1	1 unit
		3RW554 (1x)	--	▶	3RW5984-0FF00	1	1 unit
		3RW555 (3x)	--	▶	3RW5985-0FF00	1	1 unit
3RW5983-0FF00							
Terminals and terminal covers							
	Box terminal block	3RW552 (2x)	--	▶	3RW5982-0TB00	1	1 unit
	Removable control terminals	3RW551.-1H... (2x), 3RW552.-1H... (2x), 3RW553.-6H... (2x), 3RW554.-6H... (2x), 3RW555.-6H... (2x)	contains 2 blocks each with 6 terminals	▶	Screw terminals 	1	1 unit
					3RW5980-1TR00		
					Spring-loaded terminals 	1	1 unit
					3RW5980-2TR00		
3RW5980-1TR00							
	Terminal cover	3RW555	--	▶	3RW5955-0TC20	1	1 unit
3RW5955-0TC20							

Soft Starter
Control17
CONTROL
PRODUCTS

Basic Performance Soft Starters

3RW55/3RW55 Failsafe > Accessories
Selection

Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Enclosure components							
 3RW5950-0GD20	Cover for control cable duct	3RW55...-HA..	Titanium gray	▶	3RW5950-0GD20	1	1 unit
		3RW55...-HF..	Yellow NEW	▶	3RW5950-0GD30	1	1 unit
 3RW5950-0GL30	Hinged cover	3RW55	With cutout for High Feature HMI module	▶	3RW5950-0GL30	1	1 unit

 Soft Starter
Control

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 CONTROL
PRODUCTS

Basic Performance Soft Starters

3RW55/3RW55 Failsafe > Accessories

Selection

Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
HMI modules							
 3RW5980-0HF00	HMI module	3RW55	High Feature ▶	3RW5980-0HF00		1	1 unit
	Interface cover	3RW55	-- ▶	3RW5980-0HL00		1	1 unit
 3RW5980-0HL00							
Connection cable for installing the HMI module in the soft starter							
 3UF7931-0AA00-0	Connection cable	--	0.1 m, flat ▶	3UF7931-0AA00-0		1	1 unit
Transport packaging							
 3RW5953-0VY00	Transport packaging	3RW551	-- ▶	3RW5951-0VY00		1	1 unit
		3RW552, 3RW553	-- ▶	3RW5953-0VY00		1	1 unit
		3RW554	-- ▶	3RW5954-0VY00		1	1 unit
		3RW555	-- ▶	3RW5955-0VY00		1	1 unit

Basic Performance Soft Starters

3RW52 > Accessories

Selection

	Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
					d			
Fans								
	Fans	3RW5216/17 (1x), 3RW5226/27 (2x), 3RW523 (2x)	--	▶	3RW5983-0FF00		1	1 unit
		3RW524 (1x)	--	▶	3RW5984-0FF00		1	1 unit
3RW5983-0FF00								
Terminals								
	Box terminal block	3RW522 (2x)	--	▶	3RW5982-0TB00		1	1 unit
	Removable control terminals	3RW521.-1.C., 3RW522.-1.C., 3RW523.-6.C., 3RW524.-6.C..	contains 2 blocks each with 6 terminals	▶	3RW5980-1TR00		1	1 unit
		3RW521.-3.C., 3RW522.-3.C., 3RW523.-2.C., 3RW524.-2.C..	contains 2 blocks each with 6 terminals	▶	3RW5980-2TR00		1	1 unit
3RW5980-1TR00								
Enclosure components								
	Enclosure base	3RW522, 3RW523	--	▶	3RW5953-0GB00		1	1 unit
		3RW524	--	▶	3RW5954-0GB00		1	1 unit
3RW5953-0GB00								
	Cover for control cable duct	3RW52	Titanium gray	▶	3RW5950-0GD20		1	1 unit
3RW5950-0GD20								

Soft Starter
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PRODUCTS

Basic Performance Soft Starters

3RW52 > Accessories

Selection

Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
Enclosure components							
 3RW5950-0GL20	Hinged cover	3RW52	Without cutout ▶	3RW5950-0GL20		1	1 unit
Transport packaging							
 3RW5953-0VY00	Transport packaging	3RW521	-- ▶	3RW5951-0VY00		1	1 unit
		3RW522, 3RW523	-- ▶	3RW5953-0VY00		1	1 unit
		3RW524	-- ▶	3RW5954-0VY00		1	1 unit

Soft Starter
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PRODUCTS

Basic Performance Soft Starters

3RW50 > Accessories **NEW**

Selection

	Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*
					d			
Fan								
	Fan	3RW505 (1x)	--	▶	3RW5905-0FF00		1	1 unit
		3RW507 (1x)	--	▶	3RW5907-0FF00		1	1 unit
3RW5905-0FF00								
Terminals								
	Removable control terminals	3RW50...-6.B..	contains 2 blocks each with 6 terminals	▶	Screw terminals 		1	1 unit
					3RW5980-1TR00			
		3RW50...-2.B..	contains 2 blocks each with 6 terminals	▶	Spring-loaded terminals 		1	1 unit
					3RW5980-2TR00			
3RW5980-1TR00								
Enclosure components								
	Hinged cover	3RW50	--	▶	3RW5900-0GL00		1	1 unit
3RW5900-0GL00								
Transport packaging								
	Transport packaging	3RW505	--	▶	3RW5905-0VY00		1	1 unit
		3RW507	--	▶	3RW5907-0VY00		1	1 unit
3RW5905-0VY00								

Soft Starter
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PRODUCTS

Class 73/74 Enclosed soft starters

3RW40/44 Soft Starters

Soft starters for enclosed applications

Overview

The family of 3RW40 and 3RW44 softstarters are available in stand alone enclosed control designs for smooth starting and stopping of standard NEMA design B three phase inductive motors, thus eliminating physical stresses to the system and load while minimizing starting current. These pre-engineered enclosed designs offer convenience and flexibility in and UL/CSA certified offering. Enclosed styles are available in combination and non-combination configurations through 600HP and system voltages of 200V, 230V, 480V, and 600V.

The Class 73 offers either the 3RW40 or 3RW44 in a non-combination style offering. These non-combination styles come standard with a choice of Type 1, 3R, 12, 4 NEMA rated enclosure, a control transformer, Sirius softstarter with built-in overload and bypass, line side power terminal block, and a reset pushbutton. The enclosed offering can be powerfully matched with a wide variety of factory modified options such as pushbutton control, pilot lights, metering and other control options such as isolation contactors and emergency start bypass starters. 3RW44 enclosed styles are also available with optional through the door keypad and Profibus communication.

The Class 74 offering includes all of the features of the Class 73 in a combination style design. Standard options are either a circuit breaker or fusible disconnect providing short circuit protection and soft starting in one package.

Application

The Class 73/74 product is a fully enclosed solid state reduced voltage starter designed for a wide variety of industrial applications. The enclosed softstarter offerings are ideal for new as well as existing applications where total motor controls is required.

Proper selection based on application data is made simple following these easy steps:

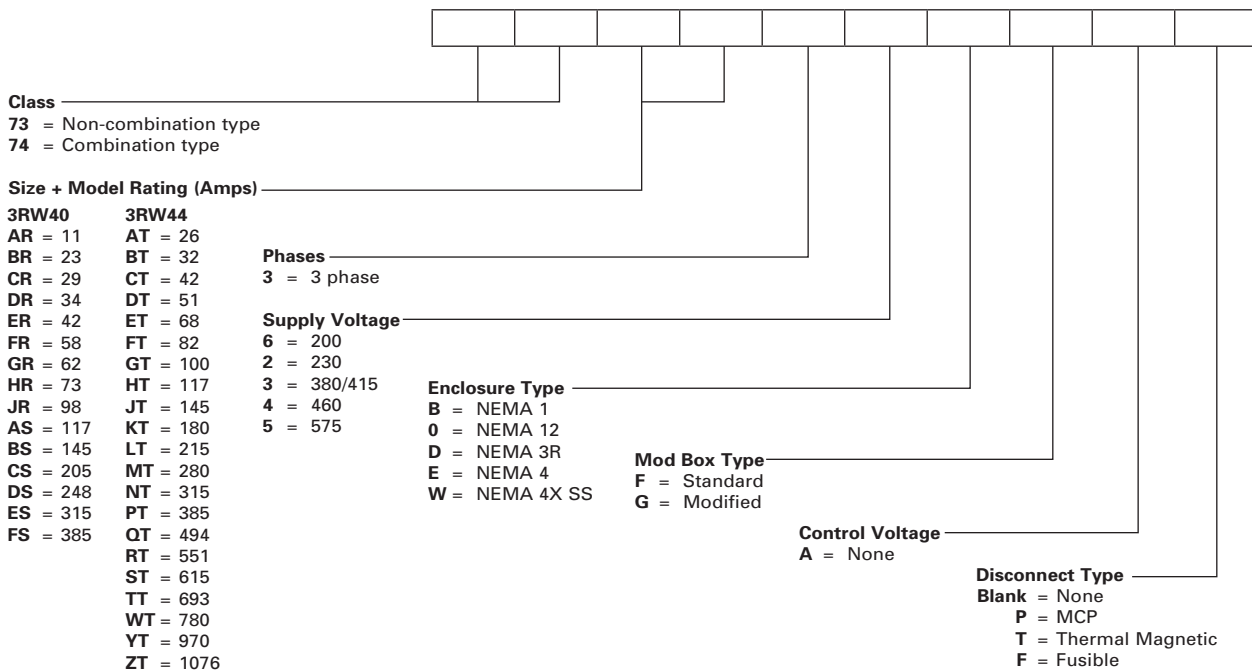
- Select proper RVSS by application
 - Select the 3RW40 versus the 3RW44 using the application info provided in the open section of the catalog
- Select the rating chart for normal starting or sever duty starting
 - Normal starting is rated at 350% of rated motor current IM for 10 seconds and based on starts per hour – representative of a class 20 application.
 - Severe starting is rated at 350% of rated motor current Im for 20 seconds and based on starts per hour – representative of a Class 20 application
- Select model using Motor nameplate data
 - Identify correct motor voltage column
 - Select rate current or HP row
 - Find ordering number under desired enclosure type column (e.g. NEMA 1)
 - Select appropriate system voltage
- Select factory modification on page 6/40¹⁾

Example:
3RW44, N12, CB disconnect, 460V, 200HP with a start/stop and red run light

Order No.
74MT34BFAP A1 FC

Product Nomenclature

Class 73 and 74 Enclosed Soft Starters



¹⁾ Some modifications will require a larger 'Modified' box than the standard box e.g. Isolation contactor, space heater, etc. See page 17-304 for instructions.

Class 73/74 Enclosed soft starters

3RW40 Size S0-S3 Non-Combo

Selection and ordering



3RW40 Enclosed features:

- Available in NEMA 1,12,3R,4, and 4 stainless steel
- Compact size
- Built-in Bypass contactor
- Voltage ramp up and ramp down
- Current limit adjustment of 125 - 550 %
- Internal overload class 10,15,or 20
- Internal self protection
- Fault monitoring
- Isolation Contactor

Ordering Information

- ▶ Enclosed devices should be ordered by the FLA of the motor.
- ▶ The 3RW40 is designed for normal starting applications.
- ▶ For factory modifications see page 17-304.
- ▶ For dimensional drawings see page 17-305.

Class 73 non-combination starters include:

- NEMA rated enclosure
- 3RW40 Sirius softstarter with built-in OL and bypass
- Control Circuit Transformer
- Line side power terminal block
- Reset button
- Isolation Contactor

Ideal applications for 3RW40 enclosed softstarters

- Fans
- Pumps
- Easy starting loads starting in less than 10 seconds

Class 73 starters are built to UL and CSA standards

3RW40 for Standard Applications

Enclosed Non-Combination (Starter Only)

Rated Operating Current	MAX HP ^①				KW	Class 10 Light Duty (350% * Ie for 10s) ^②										
	200V	230V	460V	575V		OPEN Style (Starter Only)		List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel	List Price \$
11	3	3	7.5	—	6	3RW4024-1BB14	73AR3_BFA		73AR3_DFA		73AR3_OFA		73AR3_EFA		73AR3_WFA	
23	5	7.5	15	—	13	3RW4026-1BB14	73BR3_BFA		73BR3_DFA		73BR3_OFA		73BR3_EFA		73BR3_WFA	
29	7.5	10	20	—	16	3RW4027-1BB14	73CR3_BFA		73CR3_DFA		73CR3_OFA		73CR3_EFA		73CR3_WFA	
34	10	10	25	—	18	3RW4028-1BB14	73DR3_BFA		73DR3_DFA		73DR3_OFA		73DR3_EFA		73DR3_WFA	
42	10	15	30	—	23	3RW4036-1BB14	73ER3_BFA		73ER3_DFA		73ER3_OFA		73ER3_EFA		73ER3_WFA	
58	15	20	40	—	31	3RW4037-1BB14	73FR3_BFA		73FR3_DFA		73FR3_OFA		73FR3_EFA		73FR3_WFA	
62	20	20	40	—	33	3RW4038-1BB14	73GR3_BFA		73GR3_DFA		73GR3_OFA		73GR3_EFA		73GR3_WFA	
73	20	25	50	—	39	3RW4046-1BB14	73HR3_BFA		73HR3_DFA		73HR3_OFA		73HR3_EFA		73HR3_WFA	
98	30	30	75	—	52	3RW4047-1BB14	73JR3_BFA		73JR3_DFA		73JR3_OFA		73JR3_EFA		73JR3_WFA	
						200V	6		6		6		6		6	
						230V	2		2		2		2		2	
						380V	3		3		3		3		3	
						460V	4		4		4		4		4	

① Starter size is dependent on the nameplate Full Load Amps (FLA) rating of the motor. HPs are for reference only. Enclosed ratings are at 40°C

② Starter selection is dependent on type of application. Ie = FLA rating of motor

Class 73/74 Enclosed soft starters

Enclosed 3RW40

Selection and ordering



3RW40 Enclosed features:

- Available in NEMA 1, 12, 3R, 4, and 4 stainless steel
- Compact size
- Built-in bypass contactor
- Voltage ramp up and ramp down
- Current limit adjustment of 125 - 550%
- Internal overload class 10, 15, or 20
- Internal self protection
- Fault monitoring

Ordering Information

- Enclosed devices should be ordered by the FLA of the motor.
- The 3RW40 is designed for normal starting applications (Class 10 applications).
- For factory modifications see page 17-304.
- For dimensional drawings see page 17-305.

Class 73 non-combination starters include:

- NEMA rated enclosure
- 3RW40 Sirius softstarter with built-in OL and bypass
- Control circuit transformer
- Line side power terminal block
- Reset button

Ideal applications for 3RW40 enclosed softstarters:

- Fans
- Pumps
- Building/construction machines
- Presses
- Escalators
- Transport systems
- Air conditioning systems
- Ventilators
- Assembly lines

Class 73 starters are built to UL and CSA standards.

For all technical information, please consult the 2006 Industrial Controls Catalog or contact your local sales support center.

3RW40 for Standard Applications

Enclosed Non-Combination (Starter Only)

Rated Operating Current	MAX HP ^①				KW	Class 10 Light Duty (350% * Im for 10s) ^②											
	200V	230V	460V	575V		380V	OPEN Style (Starter Only)	NEMA 1	List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel	List Price \$
117	30	40	75	—	56	3RW4055-6BB34	73AS3_BFA		73AS3_DFA		73AS3_0FA		73AS3_EFA		73AS3_WFA		
145	40	50	100	—	75	3RW4056-6BB34	73BS3_BFA		73BS3_DFA		73BS3_0FA		73BS3_EFA		73BS3_WFA		
205	60	75	150	—	112	3RW4073-6BB34	73CS3_BFA		73CS3_DFA		73CS3_0FA		73CS3_EFA		73CS3_WFA		
248	75	100	200	—	149	3RW4074-6BB34	73DS3_BFA		73DS3_DFA		73DS3_0FA		73DS3_EFA		73DS3_WFA		
315	100	125	250	—	186	3RW4075-6BB34	73ES3_BFA		73ES3_DFA		73ES3_0FA		73ES3_EFA		73ES3_WFA		
385	125	150	300	—	224	3RW4076-6BB34	73FS3_BFA		73FS3_DFA		73FS3_0FA		73FS3_EFA		73FS3_WFA		
						200V	6		6		6		6		6		
						230V	2		2		2		2		2		
						380V	3		3		3		3		3		
						460V	4		4		4		4		4		
117	—	—	75	100	—	3RW4055-6BB35	73AS35BFA		73AS35DFA		73AS350FA		73AS35EFA		73AS35WFA		
145	—	—	100	150	—	3RW4056-6BB35	73BS35BFA		73BS35DFA		73BS350FA		73BS35EFA		73BS35WFA		
205	—	—	150	200	—	3RW4073-6BB35	73CS35BFA		73CS35DFA		73CS350FA		73CS35EFA		73CS35WFA		
248	—	—	200	250	—	3RW4074-6BB35	73DS35BFA		73DS35DFA		73DS350FA		73DS35EFA		73DS35WFA		
315	—	—	250	300	—	3RW4075-6BB35	73ES35BFA		73ES35DFA		73ES350FA		73ES35EFA		73ES35WFA		
385	—	—	300	400	—	3RW4076-6BB35	73FS35BFA		73FS35DFA		73FS350FA		73FS35EFA		73FS35WFA		

Enclosed Non-Combination (Starter Only)

Rated Operating Current	MAX HP ^①				KW	Class 20 Severe Duty (350% * Ie for 20s) ^②											
	200V	230V	460V	575V		380V	OPEN Style (Starter Only)	NEMA 1	List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel	List Price \$
112	30	40	75	—	56	3RW4055-6BB34	73AS3_BFA		73AS3_DFA		73AS3_0FA		73AS3_EFA		73AS3_WFA		
132	40	50	100	—	75	3RW4056-6BB34	73BS3_BFA		73BS3_DFA		73BS3_0FA		73BS3_EFA		73BS3_WFA		
185	60	60	125	—	93	3RW4073-6BB34	73CS3_BFA		73CS3_DFA		73CS3_0FA		73CS3_EFA		73CS3_WFA		
205	60	75	150	—	112	3RW4074-6BB34	73DS3_BFA		73DS3_DFA		73DS3_0FA		73DS3_EFA		73DS3_WFA		
280	75	100	200	—	149	3RW4075-6BB34	73ES3_BFA		73ES3_DFA		73ES3_0FA		73ES3_EFA		73ES3_WFA		
340	100	125	250	—	186	3RW4076-6BB34	73FS3_BFA		73FS3_DFA		73FS3_0FA		73FS3_EFA		73FS3_WFA		
						200V	6		6		6		6		6		
						230V	2		2		2		2		2		
						380V	3		3		3		3		3		
						460V	4		4		4		4		4		
112	—	—	75	75	—	3RW4055-6BB35	73AS35BFA		73AS35DFA		73AS350FA		73AS35EFA		73AS35WFA		
132	—	—	100	125	—	3RW4056-6BB35	73BS35BFA		73BS35DFA		73BS350FA		73BS35EFA		73BS35WFA		
185	—	—	125	150	—	3RW4073-6BB35	73CS35BFA		73CS35DFA		73CS350FA		73CS35EFA		73CS35WFA		
205	—	—	150	200	—	3RW4074-6BB35	73DS35BFA		73DS35DFA		73DS350FA		73DS35EFA		73DS35WFA		
280	—	—	200	250	—	3RW4075-6BB35	73ES35BFA		73ES35DFA		73ES350FA		73ES35EFA		73ES35WFA		
340	—	—	250	300	—	3RW4076-6BB35	73FS35BFA		73FS35DFA		73FS350FA		73FS35EFA		73FS35WFA		

① Starter size is dependent on the nameplate Full Load Amps (FLA) rating of the motor.
HPs are for reference only. Enclosed ratings are at 40°C.

② Starter selection is dependent on type of application. Im = FLA rating of motor.

Class 73/74 Enclosed soft starters

3RW40 Size S0-S3 Circuit Breaker

Selection and ordering



3RW40 Enclosed features:

- Available in NEMA 1, 12, 3R, 4, and 4 stainless steel
- Compact size
- Built-in Bypass contactor
- Voltage ramp up and ramp down
- Current limit adjustment of 125 - 550%
- Internal overload class 10, 15, or 20
- Internal self protection
- Fault monitoring
- Isolation Contactor

Ordering Information

- ▶ Enclosed devices should be ordered by the FLA of the motor.
- ▶ The 3RW40 is designed for normal starting applications.
- ▶ For factory modifications see page 17-304.
- ▶ For dimensional drawings see page 17-305.

Class 74 non-combination starters include:

- NEMA rated enclosure
- Circuit Breaker disconnect with shunt trip
- 3RW40 Sirius softstarter with built-in OL and bypass
- Control Circuit Transformer
- Isolation Contactor

Ideal applications for 3RW40 enclosed softstarters

- Fans
- Pumps
- Easy starting loads starting in less than 10 seconds

Class 74 starters are built to UL and CSA standards

3RW40 for Standard Applications

Enclosed Circuit Breaker Combination (Starter With Circuit Breaker Disconnect)

Rated Operating Current	MAX HP ^①				KW	Class 10 Light Duty (350% * Ie for 10s) ^②											
	200V	230V	460V	575V		380V	OPEN Style (Starter Only)	NEMA 1	List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel	List Price \$
11	3	3	7.5	—	6	3RW4024-1BB14	74AR3_BFAP		74AR3_DFAP		74AR3_OFAP		74AR3_EFAP		74AR3_WFAP		
23	5	7.5	15	—	13	3RW4026-1BB14	74BR3_BFAP		74BR3_DFAP		74BR3_OFAP		74BR3_EFAP		74BR3_WFAP		
29	7.5	10	20	—	16	3RW4027-1BB14	74CR3_BFAP		74CR3_DFAP		74CR3_OFAP		74CR3_EFAP		74CR3_WFAP		
34	10	10	25	—	18	3RW4028-1BB14	74DR3_BFAP		74DR3_DFAP		74DR3_OFAP		74DR3_EFAP		74DR3_WFAP		
42	10	15	30	—	23	3RW4036-1BB14	74ER3_BFAP		74ER3_DFAP		74ER3_OFAP		74ER3_EFAP		74ER3_WFAP		
58	15	20	40	—	31	3RW4037-1BB14	74FR3_BFAP		74FR3_DFAP		74FR3_OFAP		74FR3_EFAP		74FR3_WFAP		
62	20	20	40	—	33	3RW4038-1BB14	74GR3_BFAP		74GR3_DFAP		74GR3_OFAP		74GR3_EFAP		74GR3_WFAP		
73	20	25	50	—	39	3RW4046-1BB14	74HR3_BFAP		74HR3_DFAP		74HR3_OFAP		74HR3_EFAP		74HR3_WFAP		
98	30	30	75	—	52	3RW4047-1BB14	74JR3_BFAP		74JR3_DFAP		74JR3_OFAP		74JR3_EFAP		74JR3_WFAP		
						200V	6		6		6		6		6		
						230V	2		2		2		2		2		
						380V	3		3		3		3		3		
						460V	4		4		4		4		4		

① Starter size is dependent on the nameplate Full Load Amps (FLA) rating of the motor. HPs are for reference only. Enclosed ratings are at 40°C

② Starter selection is dependent on type of application. Ie = FLA rating of motor

Class 73/74 Enclosed soft starters

Enclosed 3RW40

Selection and ordering



3RW40 Enclosed features:

- Available in NEMA 1, 12, 3R, 4, and 4 stainless steel
- Compact size
- Built-in bypass contactor
- Voltage ramp up and ramp down
- Current limit adjustment of 125 - 550%
- Internal overload class 10, 15, or 20
- Internal self protection
- Fault monitoring

Ordering Information

- Enclosed devices should be ordered by the FLA of the motor.
- The 3RW40 is designed for normal starting applications (Class 10 applications).
- For factory modifications see page 17-304.
- For dimensional drawings see page 17-305.

Class 74 non-combination starters include:

- NEMA rated enclosure
- Circuit breaker disconnect with shunt trip
- 3RW40 Sirius softstarter with built-in OL and bypass
- Control circuit transformer

Ideal applications for 3RW40 enclosed softstarters:

- Fans
- Pumps
- Building/construction machines
- Presses
- Escalators
- Transport systems
- Air conditioning systems
- Ventilators
- Assembly lines

Class 74 starters are built to UL and CSA standards.

For all technical information, please consult the 2006 Industrial Controls Catalog or contact your local sales support center.

3RW40 for Standard Applications

Enclosed Circuit Breaker Combination (Starter with Circuit Breaker Disconnect)

Rated Operating Current	MAX HP ^①				KW	Class 10 Light Duty (350% * Im for 10s) ^②										
	200V	230V	460V	575V		380V	OPEN Style (Starter Only)	NEMA 1	List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel
117	30	40	75	—	56	3RW4055-6BB34	74AS3_BFAP		74AS3_DFAP		74AS3_OFAP		74AS3_EFAP		74AS3_WFAP	
145	40	50	100	—	75	3RW4056-6BB34	74BS3_BFAP		74BS3_DFAP		74BS3_OFAP		74BS3_EFAP		74BS3_WFAP	
205	60	75	150	—	112	3RW4073-6BB34	74CS3_BFAP		74CS3_DFAP		74CS3_OFAP		74CS3_EFAP			
248	75	100	200	—	149	3RW4074-6BB34	74DS3_BFAP		74DS3_DFAP		74DS3_OFAP		74DS3_EFAP			
315	100	125	250	—	186	3RW4075-6BB34	74ES3_BFAP		74ES3_DFAP		74ES3_OFAP		74ES3_EFAP			
385	125	150	300	—	224	3RW4076-6BB34	74FS3_BFAP		74FS3_DFAP		74FS3_OFAP		74FS3_EFAP			
						200V	6		6		6		6		6	
						230V	2		2		2		2		2	
						380V	3		3		3		3		3	
						460V	4		4		4		4		4	
117	—	—	75	100	—	3RW4055-6BB35	74AS35BFAP		74AS35DFAP		74AS35OFAP		74AS35EFAP		74AS35WFAP	
145	—	—	100	150	—	3RW4056-6BB35	74BS35BFAP		74BS35DFAP		74BS35OFAP		74BS35EFAP		74BS35WFAP	
205	—	—	150	200	—	3RW4073-6BB35	74CS35BFAP		74CS35DFAP		74CS35OFAP		74CS35EFAP			
248	—	—	200	250	—	3RW4074-6BB35	74DS35BFAP		74DS35DFAP		74DS35OFAP		74DS35EFAP			
315	—	—	250	300	—	3RW4075-6BB35	74ES35BFAP		74ES35DFAP		74ES35OFAP		74ES35EFAP			
385	—	—	300	400	—	3RW4076-6BB35	74FS35BFAP		74FS35DFAP		74FS35OFAP		74FS35EFAP			

Enclosed Circuit Breaker Combination (Starter with Circuit Breaker Disconnect)

Rated Operating Current	MAX HP ^①				KW	Class 20 Severe Duty (350% * Ie for 20s) ^②											
	200V	230V	460V	575V		380V	OPEN Style (Starter Only)	NEMA 1	List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel	List Price \$
112	30	40	75	—	56	3RW4055-6BB34	74AS3_BFAP		74AS3_DFAP		74AS3_OFAP		74AS3_EFAP		74AS3_WFAP		
132	40	50	100	—	75	3RW4056-6BB34	74BS3_BFAP		74BS3_DFAP		74BS3_OFAP		74BS3_EFAP		74BS3_WFAP		
185	60	60	125	—	93	3RW4073-6BB34	74CS3_BFAP		74CS3_DFAP		74CS3_OFAP		74CS3_EFAP				
205	60	75	150	—	112	3RW4074-6BB34	74DS3_BFAP		74DS3_DFAP		74DS3_OFAP		74DS3_EFAP				
280	75	100	200	—	149	3RW4075-6BB34	74ES3_BFAP		74ES3_DFAP		74ES3_OFAP		74ES3_EFAP				
340	100	125	250	—	186	3RW4076-6BB34	74FS3_BFAP		74FS3_DFAP		74FS3_OFAP		74FS3_EFAP				
						200V	6		6		6		6		6		
						230V	2		2		2		2		2		
						380V	3		3		3		3		3		
						460V	4		4		4		4		4		
112	—	—	75	75	—	3RW4055-6BB35	74AS35BFAP		74AS35DFAP		74AS35OFAP		74AS35EFAP		74AS35WFAP		
132	—	—	100	125	—	3RW4056-6BB35	74BS35BFAP		74BS35DFAP		74BS35OFAP		74BS35EFAP		74BS35WFAP		
185	—	—	125	150	—	3RW4073-6BB35	74CS35BFAP		74CS35DFAP		74CS35OFAP		74CS35EFAP				
205	—	—	150	200	—	3RW4074-6BB35	74DS35BFAP		74DS35DFAP		74DS35OFAP		74DS35EFAP				
280	—	—	200	250	—	3RW4075-6BB35	74ES35BFAP		74ES35DFAP		74ES35OFAP		74ES35EFAP				
340	—	—	250	300	—	3RW4076-6BB35	74FS35BFAP		74FS35DFAP		74FS35OFAP		74FS35EFAP				

① Starter size is dependent on the nameplate Full Load Amps (FLA) rating of the motor. HPs are for reference only. Enclosed ratings are at 40°C.

② Starter selection is dependent on type of application. Im = FLA rating of motor.

Class 73/74 Enclosed soft starters

3RW40 Size S0-S3 Fusible

Selection and ordering



3RW40 Enclosed features:

- Available in NEMA 1, 12, 3R, 4, and 4 stainless steel
- Compact size
- Built-in Bypass contactor
- Voltage ramp up and ramp down
- Current limit adjustment of 125 - 550%
- Internal overload class 10,15,or 20
- Internal self protection
- Fault monitoring
- Isolation Contactor

Ordering Information

- ▶ Enclosed devices should be ordered by the FLA of the motor.
- ▶ The 3RW40 is designed for normal starting applications.
- ▶ For factory modifications see page 17-304.
- ▶ For dimensional drawings see page 17-305.

Class 73 non-combination starters include:

- NEMA rated enclosure
- Fusible Disconnect
- 3RW40 Sirius softstarter with built-in OL and bypass
- Control Circuit Transformer
- Isolation Contactor

Ideal applications for 3RW40 enclosed softstarters

- Fans
- Pumps
- Easy starting loads starting in less than 10 seconds

Class 74 starters are built to UL and CSA standards

3RW40 for Standard Applications

Enclosed Fusible Combination (Starter With Fusible Disconnect)

Rated Operating Current	MAX HP ^①				KW	Class 10 Light Duty (350% * I _e for 10s) ^②										
	200V	230V	460V	575V		380V	OPEN Style (Starter Only)	NEMA 1	List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel
11	3	3	7.5	—	6	3RW4024-1BB14	74AR3_BFAF		74AR3_DFAF		74AR3_OFAF		74AR3_EFAF		74AR3_WFAF	
23	5	7.5	15	—	13	3RW4026-1BB14	74BR3_BFAF		74BR3_DFAF		74BR3_OFAF		74BR3_EFAF		74BR3_WFAF	
29	7.5	10	20	—	16	3RW4027-1BB14	74CR3_BFAF		74CR3_DFAF		74CR3_OFAF		74CR3_EFAF		74CR3_WFAF	
34	10	10	25	—	18	3RW4028-1BB14	74DR3_BFAF		74DR3_DFAF		74DR3_OFAF		74DR3_EFAF		74DR3_WFAF	
42	10	15	30	—	23	3RW4036-1BB14	74ER3_BFAF		74ER3_DFAF		74ER3_OFAF		74ER3_EFAF		74ER3_WFAF	
58	15	20	40	—	31	3RW4037-1BB14	74FR3_BFAF		74FR3_DFAF		74FR3_OFAF		74FR3_EFAF		74FR3_WFAF	
62	20	20	40	—	33	3RW4038-1BB14	74GR3_BFAF		74GR3_DFAF		74GR3_OFAF		74GR3_EFAF		74GR3_WFAF	
73	20	25	50	—	39	3RW4046-1BB14	74HR3_BFAF		74HR3_DFAF		74HR3_OFAF		74HR3_EFAF		74HR3_WFAF	
98	30	30	75	—	52	3RW4047-1BB14	74JR3_BFAF		74JR3_DFAF		74JR3_OFAF		74JR3_EFAF		74JR3_WFAF	
						200V	6		6		6		6		6	
						230V	2		2		2		2		2	
						380V	3		3		3		3		3	
						460V	4		4		4		4		4	

^① Starter size is dependent on the nameplate Full Load Amps (FLA) rating of the motor. HPs are for reference only. Enclosed ratings are at 40°C

^② Starter selection is dependent on type of application. I_e = FLA rating of motor

Class 73/74 Enclosed soft starters

Enclosed 3RW40

Selection and ordering



3RW40 Enclosed features:

- Available in NEMA 1, 12, 3R, 4, and 4 stainless steel
- Compact size
- Built-in bypass contactor
- Voltage ramp up and ramp down
- Current limit adjustment of 125 - 550%
- Internal overload class 10, 15, or 20
- Internal self protection
- Fault monitoring

Ordering Information

- Enclosed devices should be ordered by the FLA of the motor.
- The 3RW40 is designed for normal starting applications (Class 10 applications).
- For factory modifications see page 17-304.
- For dimensional drawings see page 17-305.

Class 74 combination starters include:

- NEMA rated enclosure
- Fusible disconnect
- 3RW40 Sirius softstarter with built-in OL and bypass
- Control circuit transformer

Ideal applications for 3RW40 enclosed softstarters:

- Fans
- Pumps
- Building/construction machines
- Presses
- Escalators
- Transport systems
- Air conditioning systems
- Ventilators
- Assembly lines

Class 74 starters are built to UL and CSA standards.

For all technical information, please consult the 2006 Industrial Controls Catalog or contact your local sales support center.

3RW40 for Standard Applications

Enclosed Fusible Combination (Starter with Fusible Disconnect)

Rated Operating Current	MAX HP ^①				KW	Class 10 Light Duty (350% * Im for 10s) ^②										
	200V	230V	460V	575V		OPEN Style (Starter Only)		List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel	List Price \$
117	30	40	75	—	56	3RW4055-6BB34	74AS3_BFAF		74AS3_DFAF		74AS3_0FAF		74AS3_EFAF		74AS3_WFAF	
145	40	50	100	—	75	3RW4056-6BB34	74BS3_BFAF		74BS3_DFAF		74BS3_0FAF		74BS3_EFAF		74BS3_WFAF	
205	60	75	150	—	112	3RW4073-6BB34	74CS3_BFAF		74CS3_DFAF		74CS3_0FAF		74CS3_EFAF			
248	75	100	200	—	149	3RW4074-6BB34	74DS3_BFAF		74DS3_DFAF		74DS3_0FAF		74DS3_EFAF			
315	100	125	250	—	186	3RW4075-6BB34	74ES3_BFAF		74ES3_DFAF		74ES3_0FAF		74ES3_EFAF			
385	125	150	300	—	224	3RW4076-6BB34	74FS3_BFAF		74FS3_DFAF		74FS3_0FAF		74FS3_EFAF			
						200V	6		6		6		6		6	
						230V	2		2		2		2		2	
						380V	3		3		3		3		3	
						460V	4		4		4		4		4	
117	—	—	75	100	—	3RW4055-6BB35	74AS35BFAF		74AS35DFAF		74AS350FAF		74AS35EFAF		74AS35WFAF	
145	—	—	100	150	—	3RW4056-6BB35	74BS35BFAF		74BS35DFAF		74BS350FAF		74BS35EFAF		74BS35WFAF	
205	—	—	150	200	—	3RW4073-6BB35	74CS35BFAF		74CS35DFAF		74CS350FAF		74CS35EFAF			
248	—	—	200	250	—	3RW4074-6BB35	74DS35BFAF		74DS35DFAF		74DS350FAF		74DS35EFAF			
315	—	—	250	300	—	3RW4075-6BB35	74ES35BFAF		74ES35DFAF		74ES350FAF		74ES35EFAF			
385	—	—	300	400	—	3RW4076-6BB35	74FS35BFAF		74FS35DFAF		74FS350FAF		74FS35EFAF			

Enclosed Fusible Combination (Starter with Fusible Disconnect)

Rated Operating Current	MAX HP ^①				KW	Class 20 Severe Duty (350% * Ie for 20s) ^②										
	200V	230V	460V	575V		OPEN Style (Starter Only)		List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel	List Price \$
112	30	40	75	—	56	3RW4055-6BB34	74AS3_BFAF		74AS3_DFAF		74AS3_0FAF		74AS3_EFAF		74AS3_WFAF	
132	40	50	100	—	75	3RW4056-6BB34	74BS3_BFAF		74BS3_DFAF		74BS3_0FAF		74BS3_EFAF		74BS3_WFAF	
185	60	60	125	—	93	3RW4073-6BB34	74CS3_BFAF		74CS3_DFAF		74CS3_0FAF		74CS3_EFAF			
205	60	75	150	—	112	3RW4074-6BB34	74DS3_BFAF		74DS3_DFAF		74DS3_0FAF		74DS3_EFAF			
280	75	100	200	—	149	3RW4075-6BB34	74ES3_BFAF		74ES3_DFAF		74ES3_0FAF		74ES3_EFAF			
340	100	125	250	—	186	3RW4076-6BB34	74FS3_BFAF		74FS3_DFAF		74FS3_0FAF		74FS3_EFAF			
						200V	6		6		6		6		6	
						230V	2		2		2		2		2	
						380V	3		3		3		3		3	
						460V	4		4		4		4		4	
112	—	—	75	75	—	3RW4055-6BB35	74AS35BFAF		74AS35DFAF		74AS350FAF		74AS35EFAF		74AS35WFAF	
132	—	—	100	125	—	3RW4056-6BB35	74BS35BFAF		74BS35DFAF		74BS350FAF		74BS35EFAF		74BS35WFAF	
185	—	—	125	150	—	3RW4073-6BB35	74CS35BFAF		74CS35DFAF		74CS350FAF		74CS35EFAF			
205	—	—	150	200	—	3RW4074-6BB35	74DS35BFAF		74DS35DFAF		74DS350FAF		74DS35EFAF			
280	—	—	200	250	—	3RW4075-6BB35	74ES35BFAF		74ES35DFAF		74ES350FAF		74ES35EFAF			
340	—	—	250	300	—	3RW4076-6BB35	74FS35BFAF		74FS35DFAF		74FS350FAF		74FS35EFAF			

① Starter size is dependent on the nameplate Full Load Amps (FLA) rating of the motor. HPs are for reference only. Enclosed ratings are at 40°C.

② Starter selection is dependent on type of application. Im = FLA rating of motor.

Class 73/74 Enclosed soft starters

Enclosed 3RW44

Selection and ordering



3RW44 Enclosed features:

- Available in NEMA 1, 12, 3R, 4, and 4 stainless steel
- Compact size
- Built-in bypass contactor
- Multiple starting/stopping techniques including torque control
- Internal overload class 5, 10, 15, 20, or 30
- Built-in graphical LCD keypad
- Internal self protection
- Fault monitoring
- 3 parameter sets
- Communication capable via opt. Profibus module
- Programmable inputs and outputs
- External keypad available

Ordering Information

- Enclosed devices should be ordered by the FLA of the motor.
- The 3RW44 is designed for normal starting applications.
- For factory modifications see page 17-304.
- For dimensional drawings see page 17-305.

Class 74 non-combination starters include:

- NEMA rated enclosure
- 3RW44 Sirius softstarter with built-in OL and bypass
- Circuit breaker with disconnect
- Control circuit transformer
- Reset button

Ideal applications for 3RW44 enclosed softstarters:

- Fans
- Pumps
- Conveying systems and lifts
- Hydraulics
- Machine tools
- Mills saws
- Crushers and grinders
- Mixers
- HVAC systems

The 3RW44 severe duty rating table should be applied for high inertia applications such rock crushers, chippers, screw compressors, ect.

Class 74 starters are built to UL and CSA standards.

3RW44 For High Feature Applications

Enclosed Combination with Circuit Breaker Disconnect

Rated Operating Current	MAX HP ^①				KW	Class 10 Light Duty (350% * Im for 10s) ^②										
	200V	230V	460V	575V		OPEN Style (Starter Only)	NEMA 1	List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel	List Price \$
26	7.5	7.5	15	—	12	3RW4422-1BC34	74AT3_BFAP		74AT3_DFAP		74AT3_OFAP		74AT3_EFAP		74AT3_WFAP	
32	10	10	20	—	15	3RW4423-1BC34	74BT3_BFAP		74BT3_DFAP		74BT3_OFAP		74BT3_EFAP		74BT3_WFAP	
42	10	15	25	—	19	3RW4424-1BC34	74CT3_BFAP		74CT3_DFAP		74CT3_OFAP		74CT3_EFAP		74CT3_WFAP	
51	15	15	30	—	22	3RW4425-1BC34	74DT3_BFAP		74DT3_DFAP		74DT3_OFAP		74DT3_EFAP		74DT3_WFAP	
68	20	25	50	—	37	3RW4426-1BC34	74ET3_BFAP		74ET3_DFAP		74ET3_OFAP		74ET3_EFAP		74ET3_WFAP	
82	25	30	60	—	45	3RW4427-1BC34	74FT3_BFAP		74FT3_DFAP		74FT3_OFAP		74FT3_EFAP		74FT3_WFAP	
100	30	30	75	—	56	3RW4434-6BC34	74GT3_BFAP		74GT3_DFAP		74GT3_OFAP		74GT3_EFAP		74GT3_WFAP	
117	30	40	75	—	56	3RW4435-6BC34	74HT3_BFAP		74HT3_DFAP		74HT3_OFAP		74HT3_EFAP		74HT3_WFAP	
145	40	50	100	—	75	3RW4436-6BC34	74JT3_BFAP		74JT3_DFAP		74JT3_OFAP		74JT3_EFAP		74JT3_WFAP	
180	60	60	125	—	93	3RW4443-6BC34	74KT3_BFAP		74KT3_DFAP		74KT3_OFAP		74KT3_EFAP		74KT3_WFAP	
215	60	75	150	—	112	3RW4444-6BC34	74LT3_BFAP		74LT3_DFAP		74LT3_OFAP		74LT3_EFAP		74LT3_WFAP	
280	75	100	200	—	149	3RW4445-6BC34	74MT3_BFAP		74MT3_DFAP		74MT3_OFAP		74MT3_EFAP		74MT3_WFAP	
315	100	125	250	—	186	3RW4446-6BC34	74NT3_BFAP		74NT3_DFAP		74NT3_OFAP		74NT3_EFAP		74NT3_WFAP	
385	125	150	300	—	224	3RW4447-6BC34	74PT3_BFAP		74PT3_DFAP		74PT3_OFAP		74PT3_EFAP		74PT3_WFAP	
494	150	200	400	—	298	3RW4453-6BC34	74QT3_BFAT		74QT3_DFAT		74QT3_OFAT		74QT3_EFAT		74QT3_WFAT	
551	150	200	450	—	336	3RW4454-6BC34	74RT3_BFAT		74RT3_DFAT		74RT3_OFAT		74RT3_EFAT		74RT3_WFAT	
615	200	250	500	—	373	3RW4455-6BC34	74ST3_BFAT		74ST3_DFAT		74ST3_OFAT		74ST3_EFAT		74ST3_WFAT	
693	200	250	550	—	410	3RW4456-6BC34	74TT3_BFAT		74TT3_DFAT		74TT3_OFAT		74TT3_EFAT		74TT3_WFAT	
780	200	250	600	—	447	3RW4457-6BC34	74WT3_BFAT		74WT3_DFAT		74WT3_OFAT		74WT3_EFAT		74WT3_WFAT	
970	350	350	800	—	597	3RW4465-6BC34	74YT3_BFAT		74YT3_DFAT		74YT3_OFAT		74YT3_EFAT		74YT3_WFAT	
1076	350	400	900	—	672	3RW4466-6BC34	74ZT3_BFAT		74ZT3_DFAT		74ZT3_OFAT		74ZT3_EFAT		74ZT3_WFAT	
						200V	6		6		6		6		6	
						230V	2		2		2		2		2	
						380V	3		3		3		3		3	
						460V	4		4		4		4		4	
26	—	—	15	20	—	3RW4422-1BC35	74AT35BFAP		74AT35DFAP		74AT35OFAP		74AT35EFAP		74AT35WFAP	
32	—	—	20	25	—	3RW4423-1BC35	74BT35BFAP		74BT35DFAP		74BT35OFAP		74BT35EFAP		74BT35WFAP	
42	—	—	25	30	—	3RW4424-1BC35	74CT35BFAP		74CT35DFAP		74CT35OFAP		74CT35EFAP		74CT35WFAP	
51	—	—	30	40	—	3RW4425-1BC35	74DT35BFAP		74DT35DFAP		74DT35OFAP		74DT35EFAP		74DT35WFAP	
68	—	—	50	50	—	3RW4426-1BC35	74ET35BFAP		74ET35DFAP		74ET35OFAP		74ET35EFAP		74ET35WFAP	
82	—	—	60	75	—	3RW4427-1BC35	74FT35BFAP		74FT35DFAP		74FT35OFAP		74FT35EFAP		74FT35WFAP	
100	—	—	75	75	—	3RW4434-6BC35	74GT35BFAP		74GT35DFAP		74GT35OFAP		74GT35EFAP		74GT35WFAP	
117	—	—	75	100	—	3RW4435-6BC35	74HT35BFAP		74HT35DFAP		74HT35OFAP		74HT35EFAP		74HT35WFAP	
145	—	—	100	125	—	3RW4436-6BC35	74JT35BFAP		74JT35DFAP		74JT35OFAP		74JT35EFAP		74JT35WFAP	
180	—	—	125	150	—	3RW4443-6BC35	74KT35BFAP		74KT35DFAP		74KT35OFAP		74KT35EFAP		74KT35WFAP	
215	—	—	150	200	—	3RW4444-6BC35	74LT35BFAP		74LT35DFAP		74LT35OFAP		74LT35EFAP		74LT35WFAP	
280	—	—	200	250	—	3RW4445-6BC35	74MT35BFAP		74MT35DFAP		74MT35OFAP		74MT35EFAP		74MT35WFAP	
315	—	—	250	300	—	3RW4446-6BC35	74NT35BFAP		74NT35DFAP		74NT35OFAP		74NT35EFAP		74NT35WFAP	
385	—	—	300	400	—	3RW4447-6BC35	74PT35BFAP		74PT35DFAP		74PT35OFAP		74PT35EFAP		74PT35WFAP	
494	—	—	400	500	—	3RW4453-6BC35	74QT35BFAT		74QT35DFAT		74QT35OFAT		74QT35EFAT		74QT35WFAT	
551	—	—	450	600	—	3RW4454-6BC35	74RT35BFAT		74RT35DFAT		74RT35OFAT		74RT35EFAT		74RT35WFAT	
615	—	—	500	700	—	3RW4455-6BC35	74ST35BFAT		74ST35DFAT		74ST35OFAT		74ST35EFAT		74ST35WFAT	
693	—	—	550	750	—	3RW4456-6BC35	74TT35BFAT		74TT35DFAT		74TT35OFAT		74TT35EFAT		74TT35WFAT	
780	—	—	600	850	—	3RW4457-6BC35	74WT35BFAT		74WT35DFAT		74WT35OFAT		74WT35EFAT		74WT35WFAT	
970	—	—	800	1000	—	3RW4465-6BC35	74YT35BFAT		74YT35DFAT		74YT35OFAT		74YT35EFAT		74YT35WFAT	
1076	—	—	900	1100	—	3RW4466-6BC35	74ZT35BFAT		74ZT35DFAT		74ZT35OFAT		74ZT35EFAT		74ZT35WFAT	

① Starter size is dependent on the nameplate Full Load Amps (FLA) rating of the motor. HPs are for reference only. Enclosed ratings are at 40°C.

② Starter selection is dependent on type of application. Im = FLA rating of motor.

Class 73/74 Enclosed soft starters

Enclosed 3RW44

Selection and ordering



3RW44 Enclosed features:

- Available in NEMA 1, 12, 3R, 4, and 4 stainless steel
- Compact size
- Built-in bypass contactor
- Multiple starting/stopping techniques including torque control
- Internal overload class 5, 10, 15, 20, or 30
- Built-in graphical LCD keypad
- Internal self protection
- Fault monitoring
- 3 parameter sets
- Communication capable via opt. Profibus module
- Programmable inputs and outputs
- External keypad available

Ordering Information

- Enclosed devices should be ordered by the FLA of the motor.
- The 3RW44 is designed for normal starting applications.
- For factory modifications see page 17-304.
- For dimensional drawings see page 17-305.

Class 74 non-combination starters include:

- NEMA rated enclosure
- 3RW44 Sirius softstarter with built-in OL and bypass
- Circuit breaker with disconnect
- Control circuit transformer
- Reset button

Ideal applications for 3RW44 enclosed softstarters:

- Fans
- Pumps
- Conveying systems and lifts
- Hydraulics
- Machine tools
- Mills saws
- Crushers and grinders
- Mixers
- HVAC systems

The 3RW44 severe duty rating table should be applied for high inertia applications such rock crushers, chippers, screw compressors, ect.

Class 74 starters are built to UL and CSA standards.

3RW44 For High Feature Applications

Enclosed Combination with Circuit Breaker Disconnect

Rated Operating Current	MAX HP ^①				KW	Class 20 Severe Duty (350% * Im for 20s) ^②											
	200V	230V	460V	575V		OPEN Style (Starter Only)		List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel	List Price \$	
26	7.5	7.5	15	—	12	3RW4422-1BC34	74AT3_BFAP		74AT3_DFAP		74AT3_OFAP		74AT3_EFAP		74AT3_WFAP		
32	10	10	20	—	15	3RW4423-1BC34	74BT3_BFAP		74BT3_DFAP		74BT3_OFAP		74BT3_EFAP		74BT3_WFAP		
42	10	15	25	—	19	3RW4424-1BC34	74CT3_BFAP		74CT3_DFAP		74CT3_OFAP		74CT3_EFAP		74CT3_WFAP		
51	15	15	30	—	22	3RW4425-1BC34	74DT3_BFAP		74DT3_DFAP		74DT3_OFAP		74DT3_EFAP		74DT3_WFAP		
68	20	25	50	—	37	3RW4426-1BC34	74ET3_BFAP		74ET3_DFAP		74ET3_OFAP		74ET3_EFAP		74ET3_WFAP		
82	25	30	60	—	45	3RW4427-1BC34	74FT3_BFAP		74FT3_DFAP		74FT3_OFAP		74FT3_EFAP		74FT3_WFAP		
97	30	30	60	—	45	3RW4434-6BC34	74GT3_BFAP		74GT3_DFAP		74GT3_OFAP		74GT3_EFAP		74GT3_WFAP		
113	30	40	75	—	56	3RW4435-6BC34	74HT3_BFAP		74HT3_DFAP		74HT3_OFAP		74HT3_EFAP		74HT3_WFAP		
134	40	50	75	—	56	3RW4436-6BC34	74JT3_BFAP		74JT3_DFAP		74JT3_OFAP		74JT3_EFAP		74JT3_WFAP		
175	50	60	100	—	75	3RW4443-6BC34	74KT3_BFAP		74KT3_DFAP		74KT3_OFAP		74KT3_EFAP				
195	60	75	125	—	93	3RW4444-6BC34	74LT3_BFAP		74LT3_DFAP		74LT3_OFAP		74LT3_EFAP				
243	75	75	150	—	112	3RW4445-6BC34	74MT3_BFAP		74MT3_DFAP		74MT3_OFAP		74MT3_EFAP				
263	75	100	200	—	149	3RW4446-6BC34	74NT3_BFAP		74NT3_DFAP		74NT3_OFAP		74NT3_EFAP				
326	100	125	250	—	186	3RW4447-6BC34	74PT3_BFAP		74PT3_DFAP		74PT3_OFAP		74PT3_EFAP				
494	150	150	400	—	224	3RW4453-6BC34	74QT3_BFAT		74QT3_DFAT		74QT3_OFAT		74QT3_EFAT				
551	150	200	450	—	298	3RW4454-6BC34	74RT3_BFAT		74RT3_DFAT		74RT3_OFAT		74RT3_EFAT				
615	200	200	500	—	336	3RW4455-6BC34	74ST3_BFAT		74ST3_DFAT		74ST3_OFAT		74ST3_EFAT				
634	200	250	500	—	373	3RW4456-6BC34	74TT3_BFAT		74TT3_DFAT		74TT3_OFAT		74TT3_EFAT				
650	200	250	550	—	410	3RW4457-6BC34	74WT3_BFAT		74WT3_DFAT		74WT3_OFAT		74WT3_EFAT				
880	300	350	700	—	522	3RW4465-6BC34	74YT3_BFAT				74YT3_OFAT						
940	300	350	750	—	559	3RW4466-6BC34	74ZT3_BFAT				74ZT3_OFAT						
						200V	6				6				6		
						230V	2				2				2		
						380V	3				3				3		
						460V	4				4				4		
26	—	—	15	20	—	3RW4422-1BC35	74AT35BFAP		74AT35DFAP		74AT35OFAP		74AT35EFAP		74AT35WFAP		
32	—	—	20	25	—	3RW4423-1BC35	74BT35BFAP		74BT35DFAP		74BT35OFAP		74BT35EFAP		74BT35WFAP		
42	—	—	25	30	—	3RW4424-1BC35	74CT35BFAP		74CT35DFAP		74CT35OFAP		74CT35EFAP		74CT35WFAP		
51	—	—	30	40	—	3RW4425-1BC35	74DT35BFAP		74DT35DFAP		74DT35OFAP		74DT35EFAP		74DT35WFAP		
68	—	—	50	50	—	3RW4426-1BC35	74ET35BFAP		74ET35DFAP		74ET35OFAP		74ET35EFAP		74ET35WFAP		
82	—	—	60	75	—	3RW4427-1BC35	74FT35BFAP		74FT35DFAP		74FT35OFAP		74FT35EFAP		74FT35WFAP		
97	—	—	60	75	—	3RW4434-6BC35	74GT35BFAP		74GT35DFAP		74GT35OFAP		74GT35EFAP		74GT35WFAP		
113	—	—	75	100	—	3RW4435-6BC35	74HT35BFAP		74HT35DFAP		74HT35OFAP		74HT35EFAP		74HT35WFAP		
134	—	—	75	125	—	3RW4436-6BC35	74JT35BFAP		74JT35DFAP		74JT35OFAP		74JT35EFAP		74JT35WFAP		
175	—	—	100	150	—	3RW4443-6BC35	74KT35BFAP		74KT35DFAP		74KT35OFAP		74KT35EFAP				
195	—	—	125	200	—	3RW4444-6BC35	74LT35BFAP		74LT35DFAP		74LT35OFAP		74LT35EFAP				
243	—	—	150	200	—	3RW4445-6BC35	74MT35BFAP		74MT35DFAP		74MT35OFAP		74MT35EFAP				
263	—	—	200	250	—	3RW4446-6BC35	74NT35BFAP		74NT35DFAP		74NT35OFAP		74NT35EFAP				
326	—	—	250	300	—	3RW4447-6BC35	74PT35BFAP		74PT35DFAP		74PT35OFAP		74PT35EFAP				
494	—	—	400	500	—	3RW4453-6BC35	74QT35BFAT		74QT35DFAT		74QT35OFAT		74QT35EFAT				
551	—	—	450	550	—	3RW4454-6BC35	74RT35BFAT		74RT35DFAT		74RT35OFAT		74RT35EFAT				
615	—	—	500	600	—	3RW4455-6BC35	74ST35BFAT		74ST35DFAT		74ST35OFAT		74ST35EFAT				
693	—	—	500	650	—	3RW4456-6BC35	74TT35BFAT		74TT35DFAT		74TT35OFAT		74TT35EFAT				
780	—	—	550	700	—	3RW4457-6BC35	74WT35BFAT		74WT35DFAT		74WT35OFAT		74WT35EFAT				
880	—	—	700	850	—	3RW4465-6BC35	74YT35BFAT				74YT35OFAT						
940	—	—	750	900	—	3RW4466-6BC35	74ZT35BFAT				74ZT35OFAT						

① Starter size is dependent on the nameplate Full Load Amps (FLA) rating of the motor.
HPs are for reference only. Enclosed ratings are at 40°C.

② Starter selection is dependent on type of application. Im = FLA rating of motor.

Class 73/74 Enclosed soft starters

Enclosed 3RW44

Selection and ordering



3RW44 Enclosed features:

- Available in NEMA 1, 12, 3R, 4, and 4 stainless steel
- Compact size
- Built-in bypass contactor
- Multiple starting/stopping techniques including torque control
- Internal overload class 5, 10, 15, 20, or 30
- Built-in graphical LCD keypad
- Internal self protection
- Fault monitoring
- 3 parameter sets
- Communication capable via opt. Profibus module
- Programmable inputs and outputs
- External keypad available

Ordering Information

- Enclosed devices should be ordered by the FLA of the motor.
- The 3RW44 is designed for normal starting applications.
- For factory modifications see page 17-304.
- For dimensional drawings see page 17-305.

Class 74 non-combination starters include:

- NEMA rated enclosure
- 3RW44 Sirius softstarter with built-in OL and bypass
- Fusible disconnect
- Control circuit transformer
- Reset button

Ideal applications for 3RW44 enclosed softstarters:

- Fans
- Pumps
- Conveying systems and lifts
- Hydraulics
- Machine tools
- Mills saws
- Crushers and grinders
- Mixers
- HVAC systems

The 3RW44 severe duty rating table should be applied for high inertia applications such rock crushers, chippers, screw compressors, ect.

Class 74 starters are built to UL and CSA standards.

For all technical information, please consult the 2006 Industrial Controls Catalog or contact your local sales support center.

3RW44 For High Feature Applications

Enclosed Combination with Fusible Disconnect

Rated Operating Current	MAX HP ^①				KW	Class 10 Light Duty ^② (350% * Im for 10s)									
	200V	230V	460V	575V		OPEN Style (Starter Only)	NEMA 1	List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel
26	7.5	7.5	15	—	12	3RW4422-1BC34	74AT3_BFAF		74AT3_DFAF		74AT3_OFAF		74AT3_EFAF		74AT3_WFAF
32	10	10	20	—	15	3RW4423-1BC34	74BT3_BFAF		74BT3_DFAF		74BT3_OFAF		74BT3_EFAF		74BT3_WFAF
42	10	15	25	—	19	3RW4424-1BC34	74CT3_BFAF		74CT3_DFAF		74CT3_OFAF		74CT3_EFAF		74CT3_WFAF
51	15	15	30	—	22	3RW4425-1BC34	74DT3_BFAF		74DT3_DFAF		74DT3_OFAF		74DT3_EFAF		74DT3_WFAF
68	20	25	50	—	37	3RW4426-1BC34	74ET3_BFAF		74ET3_DFAF		74ET3_OFAF		74ET3_EFAF		74ET3_WFAF
82	25	30	60	—	45	3RW4427-1BC34	74FT3_BFAF		74FT3_DFAF		74FT3_OFAF		74FT3_EFAF		74FT3_WFAF
100	30	30	75	—	56	3RW4434-6BC34	74GT3_BFAF		74GT3_DFAF		74GT3_OFAF		74GT3_EFAF		74GT3_WFAF
117	30	40	75	—	56	3RW4435-6BC34	74HT3_BFAF		74HT3_DFAF		74HT3_OFAF		74HT3_EFAF		74HT3_WFAF
145	40	50	100	—	75	3RW4436-6BC34	74JT3_BFAF		74JT3_DFAF		74JT3_OFAF		74JT3_EFAF		74JT3_WFAF
180	60	60	125	—	93	3RW4443-6BC34	74KT3_BFAF		74KT3_DFAF		74KT3_OFAF		74KT3_EFAF		74KT3_WFAF
215	60	75	150	—	112	3RW4444-6BC34	74LT3_BFAF		74LT3_DFAF		74LT3_OFAF		74LT3_EFAF		74LT3_WFAF
280	75	100	200	—	149	3RW4445-6BC34	74MT3_BFAF		74MT3_DFAF		74MT3_OFAF		74MT3_EFAF		74MT3_WFAF
315	100	125	250	—	186	3RW4446-6BC34	74NT3_BFAF		74NT3_DFAF		74NT3_OFAF		74NT3_EFAF		74NT3_WFAF
385	125	150	300	—	224	3RW4447-6BC34	74PT3_BFAF		74PT3_DFAF		74PT3_OFAF		74PT3_EFAF		74PT3_WFAF
494	150	200	400	—	298	3RW4453-6BC34	74QT3_BFAF				74QT3_OFAF				
551	150	200	450	—	336	3RW4454-6BC34	74RT3_BFAF				74RT3_OFAF				
615	200	250	500	—	373	3RW4455-6BC34	74ST3_BFAF				74ST3_OFAF				
693	200	250	550	—		3RW4456-6BC34	74TT3_BFAF				74TT3_OFAF				
780	200	250	600	—	447	3RW4457-6BC34	74WT3_BFAF				74WT3_OFAF				
						200V	6		6		6		6		6
						230V	2		2		2		2		2
						380V	3		3		3		3		3
						460V	4		4		4		4		4
26	—	—	15	20	—	3RW4422-1BC35	74AT35BFAF		74AT35DFAF		74AT35OFAF		74AT35EFAF		74AT35WFAF
32	—	—	20	25	—	3RW4423-1BC35	74BT35BFAF		74BT35DFAF		74BT35OFAF		74BT35EFAF		74BT35WFAF
42	—	—	25	30	—	3RW4424-1BC35	74CT35BFAF		74CT35DFAF		74CT35OFAF		74CT35EFAF		74CT35WFAF
51	—	—	30	40	—	3RW4425-1BC35	74DT35BFAF		74DT35DFAF		74DT35OFAF		74DT35EFAF		74DT35WFAF
68	—	—	50	50	—	3RW4426-1BC35	74ET35BFAF		74ET35DFAF		74ET35OFAF		74ET35EFAF		74ET35WFAF
82	—	—	60	75	—	3RW4427-1BC35	74FT35BFAF		74FT35DFAF		74FT35OFAF		74FT35EFAF		74FT35WFAF
100	—	—	75	75	—	3RW4434-6BC35	74GT35BFAF		74GT35DFAF		74GT35OFAF		74GT35EFAF		74GT35WFAF
117	—	—	75	100	—	3RW4435-6BC35	74HT35BFAF		74HT35DFAF		74HT35OFAF		74HT35EFAF		74HT35WFAF
145	—	—	100	125	—	3RW4436-6BC35	74JT35BFAF		74JT35DFAF		74JT35OFAF		74JT35EFAF		74JT35WFAF
180	—	—	125	150	—	3RW4443-6BC35	74KT35BFAF		74KT35DFAF		74KT35OFAF		74KT35EFAF		74KT35WFAF
215	—	—	150	200	—	3RW4444-6BC35	74LT35BFAF		74LT35DFAF		74LT35OFAF		74LT35EFAF		74LT35WFAF
280	—	—	200	250	—	3RW4445-6BC35	74MT35BFAF		74MT35DFAF		74MT35OFAF		74MT35EFAF		74MT35WFAF
315	—	—	250	300	—	3RW4446-6BC35	74NT35BFAF		74NT35DFAF		74NT35OFAF		74NT35EFAF		74NT35WFAF
385	—	—	300	400	—	3RW4447-6BC35	74PT35BFAF		74PT35DFAF		74PT35OFAF		74PT35EFAF		74PT35WFAF
494	—	—	400	500	—	3RW4453-6BC35	74QT35BFAF				74QT35OFAF				
551	—	—	450	600	—	3RW4454-6BC35	74RT35BFAF				74RT35OFAF				
615	—	—	500	700	—	3RW4455-6BC35	74ST35BFAF				74ST35OFAF				
693	—	—	550	750	—	3RW4456-6BC35	74TT35BFAF				74TT35OFAF				
780	—	—	600	850	—	3RW4457-6BC35	74WT35BFAF				74WT35OFAF				

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Class 73/74 Enclosed soft starters

Enclosed 3RW44

Selection and ordering



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- Internal overload class 5, 10, 15, 20, or 30
- Built-in graphical LCD keypad
- Internal self protection
- Fault monitoring
- 3 parameter sets
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- Programmable inputs and outputs
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Class 74 non-combination starters include:

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- Control circuit transformer
- Reset button

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- Conveying systems and lifts
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- Machine tools
- Mills saws
- Crushers and grinders
- Mixers
- HVAC systems

The 3RW44 severe duty rating table should be applied for high inertia applications such rock crushers, chippers, screw compressors, ect.

Class 74 starters are built to UL and CSA standards.

For all technical information, please consult the 2006 Industrial Controls Catalog or contact your local sales support center.

3RW44 For High Feature Applications

Enclosed Combination with Fusible Disconnect

Rated Operating Current	MAX HP ^①				KW	Class 20 Severe Duty (350% * Im for 20s) ^②									
	200V	230V	460V	575V		OPEN Style (Starter Only)	NEMA 1	List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel
26	7.5	7.5	15	—	12	3RW4422-1BC34	74AT3_BFAF		74AT3_DFAF		74AT3_OFAF		74AT3_EFAF		74AT3_WFAF
32	10	10	20	—	15	3RW4423-1BC34	74BT3_BFAF		74BT3_DFAF		74BT3_OFAF		74BT3_EFAF		74BT3_WFAF
42	10	15	25	—	19	3RW4424-1BC34	74CT3_BFAF		74CT3_DFAF		74CT3_OFAF		74CT3_EFAF		74CT3_WFAF
51	15	15	30	—	22	3RW4425-1BC34	74DT3_BFAF		74DT3_DFAF		74DT3_OFAF		74DT3_EFAF		74DT3_WFAF
68	20	25	50	—	37	3RW4426-1BC34	74ET3_BFAF		74ET3_DFAF		74ET3_OFAF		74ET3_EFAF		74ET3_WFAF
82	25	30	60	—	45	3RW4427-1BC34	74FT3_BFAF		74FT3_DFAF		74FT3_OFAF		74FT3_EFAF		74FT3_WFAF
97	30	30	60	—	45	3RW4434-6BC34	74GT3_BFAF		74GT3_DFAF		74GT3_OFAF		74GT3_EFAF		74GT3_WFAF
113	30	40	75	—	56	3RW4435-6BC34	74HT3_BFAF		74HT3_DFAF		74HT3_OFAF		74HT3_EFAF		74HT3_WFAF
134	40	50	75	—	56	3RW4436-6BC34	74JT3_BFAF		74JT3_DFAF		74JT3_OFAF		74JT3_EFAF		74JT3_WFAF
175	50	60	100	—	75	3RW4443-6BC34	74KT3_BFAF		74KT3_DFAF		74KT3_OFAF		74KT3_EFAF		74KT3_WFAF
195	60	75	125	—	93	3RW4444-6BC34	74LT3_BFAF		74LT3_DFAF		74LT3_OFAF		74LT3_EFAF		74LT3_WFAF
243	75	75	150	—	112	3RW4445-6BC34	74MT3_BFAF		74MT3_DFAF		74MT3_OFAF		74MT3_EFAF		74MT3_WFAF
263	75	100	200	—	149	3RW4446-6BC34	74NT3_BFAF		74NT3_DFAF		74NT3_OFAF		74NT3_EFAF		74NT3_WFAF
326	100	125	250	—	186	3RW4447-6BC34	74PT3_BFAF		74PT3_DFAF		74PT3_OFAF		74PT3_EFAF		74PT3_WFAF
494	150	150	400	—	298	3RW4453-6BC34	74QT3_BFAF				74QT3_OFAF				
551	150	200	450	—	336	3RW4454-6BC34	74RT3_BFAF				74RT3_OFAF				
615	200	200	500	—	373	3RW4455-6BC34	74ST3_BFAF				74ST3_OFAF				
634	200	250	500	—	373	3RW4456-6BC34	74TT3_BFAF				74TT3_OFAF				
650	200	250	550	—	373	3RW4457-6BC34	74WT3_BFAF				74WT3_OFAF				
						200V	6		6		6		6		6
						230V	2		2		2		2		2
						380V	3		3		3		3		3
						460V	4		4		4		4		4
26	—	—	15	20	—	3RW4422-1BC35	74AT35BFAF		74AT35DFAF		74AT35OFAF		74AT35EFAF		74AT35WFAF
32	—	—	20	25	—	3RW4423-1BC35	74BT35BFAF		74BT35DFAF		74BT35OFAF		74BT35EFAF		74BT35WFAF
42	—	—	25	30	—	3RW4424-1BC35	74CT35BFAF		74CT35DFAF		74CT35OFAF		74CT35EFAF		74CT35WFAF
51	—	—	30	40	—	3RW4425-1BC35	74DT35BFAF		74DT35DFAF		74DT35OFAF		74DT35EFAF		74DT35WFAF
68	—	—	50	50	—	3RW4426-1BC35	74ET35BFAF		74ET35DFAF		74ET35OFAF		74ET35EFAF		74ET35WFAF
82	—	—	60	75	—	3RW4427-1BC35	74FT35BFAF		74FT35DFAF		74FT35OFAF		74FT35EFAF		74FT35WFAF
97	—	—	60	75	—	3RW4434-6BC35	74GT35BFAF		74GT35DFAF		74GT35OFAF		74GT35EFAF		74GT35WFAF
113	—	—	75	100	—	3RW4435-6BC35	74HT35BFAF		74HT35DFAF		74HT35OFAF		74HT35EFAF		74HT35WFAF
134	—	—	75	125	—	3RW4436-6BC35	74JT35BFAF		74JT35DFAF		74JT35OFAF		74JT35EFAF		74JT35WFAF
175	—	—	100	150	—	3RW4443-6BC35	74KT35BFAF		74KT35DFAF		74KT35OFAF		74KT35EFAF		74KT35WFAF
195	—	—	125	200	—	3RW4444-6BC35	74LT35BFAF		74LT35DFAF		74LT35OFAF		74LT35EFAF		74LT35WFAF
243	—	—	150	200	—	3RW4445-6BC35	74MT35BFAF		74MT35DFAF		74MT35OFAF		74MT35EFAF		74MT35WFAF
263	—	—	200	250	—	3RW4446-6BC35	74NT35BFAF		74NT35DFAF		74NT35OFAF		74NT35EFAF		74NT35WFAF
326	—	—	250	300	—	3RW4447-6BC35	74PT35BFAF		74PT35DFAF		74PT35OFAF		74PT35EFAF		74PT35WFAF
494	—	—	400	500	—	3RW4453-6BC35	74QT35BFAF				74QT35OFAF				
551	—	—	450	550	—	3RW4454-6BC35	74RT35BFAF				74RT35OFAF				
615	—	—	500	600	—	3RW4455-6BC35	74ST35BFAF				74ST35OFAF				
693	—	—	550	650	—	3RW4456-6BC35	74TT35BFAF				74TT35OFAF				
780	—	—	600	700	—	3RW4457-6BC35	74WT35BFAF				74WT35OFAF				

① Starter size is dependent on the nameplate Full Load Amps (FLA) rating of the motor. HPs are for reference only. Enclosed ratings are at 40°C.

② Starter selection is dependent on type of application. Im = FLA rating of motor.

Class 73/74 Enclosed soft starters

Enclosed 3RW44

Selection and ordering



3RW44 Enclosed features:

- Available in NEMA 1, 12, 3R, 4, and 4 stainless steel
- Compact size
- Built-in bypass contactor
- Multiple starting/stopping techniques including torque control
- Internal overload class 5, 10, 15, 20, or 30
- Built-in graphical LCD keypad
- Internal self protection
- Fault monitoring
- 3 parameter sets
- Communication capable via opt. Profibus module
- Programmable inputs and outputs
- External keypad available

Ordering Information

- Enclosed devices should be ordered by the FLA of the motor.
- The 3RW44 is designed for normal starting applications.
- For factory modifications see page 17-304.
- For dimensional drawings see page 17-305.

Class 74 non-combination starters include:

- NEMA rated enclosure
- 3RW44 Sirius softstarter with built-in OL and bypass
- Fusible disconnect
- Control circuit transformer
- Reset button

Ideal applications for 3RW44 enclosed softstarters:

- Fans
- Pumps
- Conveying systems and lifts
- Hydraulics
- Machine tools
- Mills saws
- Crushers and grinders
- Mixers
- HVAC systems

The 3RW44 severe duty rating table should be applied for high inertia applications such rock crushers, chippers, screw compressors, ect.

Class 74 starters are built to UL and CSA standards.

For all technical information, please consult the 2006 Industrial Controls Catalog or contact your local sales support center.

3RW44 For High Feature Applications

Enclosed Combination with Fusible Disconnect

Rated Operating Current	MAX HP ^①				KW	Class 10 Light Duty ^② (350% * Im for 10s)									
	200V	230V	460V	575V		OPEN Style (Starter Only)	NEMA 1	List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel
26	7.5	7.5	15	—	12	3RW4422-1BC34	74AT3_BFAF		74AT3_DFAF		74AT3_OFAF		74AT3_EFAF		74AT3_WFAF
32	10	10	20	—	15	3RW4423-1BC34	74BT3_BFAF		74BT3_DFAF		74BT3_OFAF		74BT3_EFAF		74BT3_WFAF
42	10	15	25	—	19	3RW4424-1BC34	74CT3_BFAF		74CT3_DFAF		74CT3_OFAF		74CT3_EFAF		74CT3_WFAF
51	15	15	30	—	22	3RW4425-1BC34	74DT3_BFAF		74DT3_DFAF		74DT3_OFAF		74DT3_EFAF		74DT3_WFAF
68	20	25	50	—	37	3RW4426-1BC34	74ET3_BFAF		74ET3_DFAF		74ET3_OFAF		74ET3_EFAF		74ET3_WFAF
82	25	30	60	—	45	3RW4427-1BC34	74FT3_BFAF		74FT3_DFAF		74FT3_OFAF		74FT3_EFAF		74FT3_WFAF
100	30	30	75	—	56	3RW4434-6BC34	74GT3_BFAF		74GT3_DFAF		74GT3_OFAF		74GT3_EFAF		74GT3_WFAF
117	30	40	75	—	56	3RW4435-6BC34	74HT3_BFAF		74HT3_DFAF		74HT3_OFAF		74HT3_EFAF		74HT3_WFAF
145	40	50	100	—	75	3RW4436-6BC34	74JT3_BFAF		74JT3_DFAF		74JT3_OFAF		74JT3_EFAF		74JT3_WFAF
180	60	60	125	—	93	3RW4443-6BC34	74KT3_BFAF		74KT3_DFAF		74KT3_OFAF		74KT3_EFAF		74KT3_WFAF
215	60	75	150	—	112	3RW4444-6BC34	74LT3_BFAF		74LT3_DFAF		74LT3_OFAF		74LT3_EFAF		74LT3_WFAF
280	75	100	200	—	149	3RW4445-6BC34	74MT3_BFAF		74MT3_DFAF		74MT3_OFAF		74MT3_EFAF		74MT3_WFAF
315	100	125	250	—	186	3RW4446-6BC34	74NT3_BFAF		74NT3_DFAF		74NT3_OFAF		74NT3_EFAF		74NT3_WFAF
385	125	150	300	—	224	3RW4447-6BC34	74PT3_BFAF		74PT3_DFAF		74PT3_OFAF		74PT3_EFAF		74PT3_WFAF
494	150	200	400	—	298	3RW4453-6BC34	74QT3_BFAF				74QT3_OFAF				
551	150	200	450	—	336	3RW4454-6BC34	74RT3_BFAF				74RT3_OFAF				
615	200	250	500	—	373	3RW4455-6BC34	74ST3_BFAF				74ST3_OFAF				
693	200	250	550	—		3RW4456-6BC34	74TT3_BFAF				74TT3_OFAF				
780	200	250	600	—	447	3RW4457-6BC34	74WT3_BFAF				74WT3_OFAF				
						200V	6		6		6		6		6
						230V	2		2		2		2		2
						380V	3		3		3		3		3
						460V	4		4		4		4		4
26	—	—	15	20	—	3RW4422-1BC35	74AT35BFAF		74AT35DFAF		74AT35OFAF		74AT35EFAF		74AT35WFAF
32	—	—	20	25	—	3RW4423-1BC35	74BT35BFAF		74BT35DFAF		74BT35OFAF		74BT35EFAF		74BT35WFAF
42	—	—	25	30	—	3RW4424-1BC35	74CT35BFAF		74CT35DFAF		74CT35OFAF		74CT35EFAF		74CT35WFAF
51	—	—	30	40	—	3RW4425-1BC35	74DT35BFAF		74DT35DFAF		74DT35OFAF		74DT35EFAF		74DT35WFAF
68	—	—	50	50	—	3RW4426-1BC35	74ET35BFAF		74ET35DFAF		74ET35OFAF		74ET35EFAF		74ET35WFAF
82	—	—	60	75	—	3RW4427-1BC35	74FT35BFAF		74FT35DFAF		74FT35OFAF		74FT35EFAF		74FT35WFAF
100	—	—	75	75	—	3RW4434-6BC35	74GT35BFAF		74GT35DFAF		74GT35OFAF		74GT35EFAF		74GT35WFAF
117	—	—	75	100	—	3RW4435-6BC35	74HT35BFAF		74HT35DFAF		74HT35OFAF		74HT35EFAF		74HT35WFAF
145	—	—	100	125	—	3RW4436-6BC35	74JT35BFAF		74JT35DFAF		74JT35OFAF		74JT35EFAF		74JT35WFAF
180	—	—	125	150	—	3RW4443-6BC35	74KT35BFAF		74KT35DFAF		74KT35OFAF		74KT35EFAF		74KT35WFAF
215	—	—	150	200	—	3RW4444-6BC35	74LT35BFAF		74LT35DFAF		74LT35OFAF		74LT35EFAF		74LT35WFAF
280	—	—	200	250	—	3RW4445-6BC35	74MT35BFAF		74MT35DFAF		74MT35OFAF		74MT35EFAF		74MT35WFAF
315	—	—	250	300	—	3RW4446-6BC35	74NT35BFAF		74NT35DFAF		74NT35OFAF		74NT35EFAF		74NT35WFAF
385	—	—	300	400	—	3RW4447-6BC35	74PT35BFAF		74PT35DFAF		74PT35OFAF		74PT35EFAF		74PT35WFAF
494	—	—	400	500	—	3RW4453-6BC35	74QT35BFAF				74QT35OFAF				
551	—	—	450	600	—	3RW4454-6BC35	74RT35BFAF				74RT35OFAF				
615	—	—	500	700	—	3RW4455-6BC35	74ST35BFAF				74ST35OFAF				
693	—	—	550	750	—	3RW4456-6BC35	74TT35BFAF				74TT35OFAF				
780	—	—	600	850	—	3RW4457-6BC35	74WT35BFAF				74WT35OFAF				

① Starter size is dependent on the nameplate Full Load Amps (FLA) rating of the motor. HPs are for reference only. Enclosed ratings are at 40°C.

② Starter selection is dependent on type of application. Im = FLA rating of motor.

Class 73/74 Enclosed soft starters

Enclosed 3RW44

Selection and ordering



3RW44 Enclosed features:

- Available in NEMA 1, 12, 3R, 4, and 4 stainless steel
- Compact size
- Built-in bypass contactor
- Multiple starting/stopping techniques including torque control
- Internal overload class 5, 10, 15, 20, or 30
- Built-in graphical LCD keypad
- Internal self protection
- Fault monitoring
- 3 parameter sets
- Communication capable via opt. Profibus module
- Programmable inputs and outputs
- External keypad available

Ordering Information

- Enclosed devices should be ordered by the FLA of the motor.
- The 3RW44 is designed for normal starting applications.
- For factory modifications see page 17-304.
- For dimensional drawings see page 17-305.

Class 74 non-combination starters include:

- NEMA rated enclosure
- 3RW44 Sirius softstarter with built-in OL and bypass
- Fusible disconnect
- Control circuit transformer
- Reset button

Ideal applications for 3RW44 enclosed softstarters:

- Fans
- Pumps
- Conveying systems and lifts
- Hydraulics
- Machine tools
- Mills saws
- Crushers and grinders
- Mixers
- HVAC systems

The 3RW44 severe duty rating table should be applied for high inertia applications such rock crushers, chippers, screw compressors, ect.

Class 74 starters are built to UL and CSA standards.

For all technical information, please consult the 2006 Industrial Controls Catalog or contact your local sales support center.

3RW44 For High Feature Applications

Enclosed Combination with Fusible Disconnect

Rated Operating Current	MAX HP ^①				KW	Class 20 Severe Duty (350% * Im for 20s) ^②									
	200V	230V	460V	575V		OPEN Style (Starter Only)	NEMA 1	List Price \$	NEMA 3R	List Price \$	NEMA 12	List Price \$	NEMA 4	List Price \$	NEMA 4/4X Stainless Steel
26	7.5	7.5	15	—	12	3RW4422-1BC34	74AT3_BFAF		74AT3_DFAF		74AT3_OFAF		74AT3_EFAF		74AT3_WFAF
32	10	10	20	—	15	3RW4423-1BC34	74BT3_BFAF		74BT3_DFAF		74BT3_OFAF		74BT3_EFAF		74BT3_WFAF
42	10	15	25	—	19	3RW4424-1BC34	74CT3_BFAF		74CT3_DFAF		74CT3_OFAF		74CT3_EFAF		74CT3_WFAF
51	15	15	30	—	22	3RW4425-1BC34	74DT3_BFAF		74DT3_DFAF		74DT3_OFAF		74DT3_EFAF		74DT3_WFAF
68	20	25	50	—	37	3RW4426-1BC34	74ET3_BFAF		74ET3_DFAF		74ET3_OFAF		74ET3_EFAF		74ET3_WFAF
82	25	30	60	—	45	3RW4427-1BC34	74FT3_BFAF		74FT3_DFAF		74FT3_OFAF		74FT3_EFAF		74FT3_WFAF
97	30	30	60	—	45	3RW4434-6BC34	74GT3_BFAF		74GT3_DFAF		74GT3_OFAF		74GT3_EFAF		74GT3_WFAF
113	30	40	75	—	56	3RW4435-6BC34	74HT3_BFAF		74HT3_DFAF		74HT3_OFAF		74HT3_EFAF		74HT3_WFAF
134	40	50	75	—	56	3RW4436-6BC34	74JT3_BFAF		74JT3_DFAF		74JT3_OFAF		74JT3_EFAF		74JT3_WFAF
175	50	60	100	—	75	3RW4443-6BC34	74KT3_BFAF		74KT3_DFAF		74KT3_OFAF		74KT3_EFAF		74KT3_WFAF
195	60	75	125	—	93	3RW4444-6BC34	74LT3_BFAF		74LT3_DFAF		74LT3_OFAF		74LT3_EFAF		74LT3_WFAF
243	75	75	150	—	112	3RW4445-6BC34	74MT3_BFAF		74MT3_DFAF		74MT3_OFAF		74MT3_EFAF		74MT3_WFAF
263	75	100	200	—	149	3RW4446-6BC34	74NT3_BFAF		74NT3_DFAF		74NT3_OFAF		74NT3_EFAF		74NT3_WFAF
326	100	125	250	—	186	3RW4447-6BC34	74PT3_BFAF		74PT3_DFAF		74PT3_OFAF		74PT3_EFAF		74PT3_WFAF
494	150	150	400	—	298	3RW4453-6BC34	74QT3_BFAF				74QT3_OFAF				
551	150	200	450	—	336	3RW4454-6BC34	74RT3_BFAF				74RT3_OFAF				
615	200	200	500	—	373	3RW4455-6BC34	74ST3_BFAF				74ST3_OFAF				
634	200	250	500	—	373	3RW4456-6BC34	74TT3_BFAF				74TT3_OFAF				
650	200	250	550	—	373	3RW4457-6BC34	74WT3_BFAF				74WT3_OFAF				
						200V	6		6		6		6		6
						230V	2		2		2		2		2
						380V	3		3		3		3		3
						460V	4		4		4		4		4
26	—	—	15	20	—	3RW4422-1BC35	74AT35BFAF		74AT35DFAF		74AT35OFAF		74AT35EFAF		74AT35WFAF
32	—	—	20	25	—	3RW4423-1BC35	74BT35BFAF		74BT35DFAF		74BT35OFAF		74BT35EFAF		74BT35WFAF
42	—	—	25	30	—	3RW4424-1BC35	74CT35BFAF		74CT35DFAF		74CT35OFAF		74CT35EFAF		74CT35WFAF
51	—	—	30	40	—	3RW4425-1BC35	74DT35BFAF		74DT35DFAF		74DT35OFAF		74DT35EFAF		74DT35WFAF
68	—	—	50	50	—	3RW4426-1BC35	74ET35BFAF		74ET35DFAF		74ET35OFAF		74ET35EFAF		74ET35WFAF
82	—	—	60	75	—	3RW4427-1BC35	74FT35BFAF		74FT35DFAF		74FT35OFAF		74FT35EFAF		74FT35WFAF
97	—	—	60	75	—	3RW4434-6BC35	74GT35BFAF		74GT35DFAF		74GT35OFAF		74GT35EFAF		74GT35WFAF
113	—	—	75	100	—	3RW4435-6BC35	74HT35BFAF		74HT35DFAF		74HT35OFAF		74HT35EFAF		74HT35WFAF
134	—	—	75	125	—	3RW4436-6BC35	74JT35BFAF		74JT35DFAF		74JT35OFAF		74JT35EFAF		74JT35WFAF
175	—	—	100	150	—	3RW4443-6BC35	74KT35BFAF		74KT35DFAF		74KT35OFAF		74KT35EFAF		74KT35WFAF
195	—	—	125	200	—	3RW4444-6BC35	74LT35BFAF		74LT35DFAF		74LT35OFAF		74LT35EFAF		74LT35WFAF
243	—	—	150	200	—	3RW4445-6BC35	74MT35BFAF		74MT35DFAF		74MT35OFAF		74MT35EFAF		74MT35WFAF
263	—	—	200	250	—	3RW4446-6BC35	74NT35BFAF		74NT35DFAF		74NT35OFAF		74NT35EFAF		74NT35WFAF
326	—	—	250	300	—	3RW4447-6BC35	74PT35BFAF		74PT35DFAF		74PT35OFAF		74PT35EFAF		74PT35WFAF
494	—	—	400	500	—	3RW4453-6BC35	74QT35BFAF				74QT35OFAF				
551	—	—	450	550	—	3RW4454-6BC35	74RT35BFAF				74RT35OFAF				
615	—	—	500	600	—	3RW4455-6BC35	74ST35BFAF				74ST35OFAF				
693	—	—	550	650	—	3RW4456-6BC35	74TT35BFAF				74TT35OFAF				
780	—	—	600	700	—	3RW4457-6BC35	74WT35BFAF				74WT35OFAF				

① Starter size is dependent on the nameplate Full Load Amps (FLA) rating of the motor. HPs are for reference only. Enclosed ratings are at 40°C.

② Starter selection is dependent on type of application. Im = FLA rating of motor.

Control Products

3RW40/44 Factory Modifications

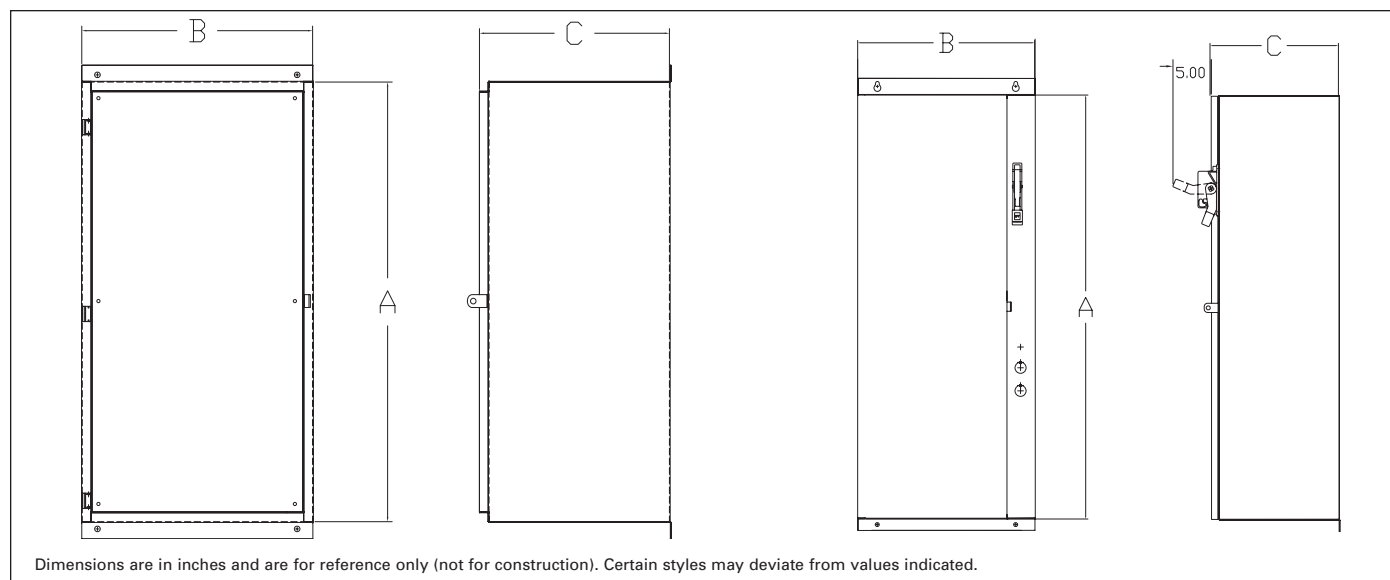
Modification Available modifications in STANDARD enclosure	3RW Version	Enclosed Style	Enclosure NEMA Type	Mod Suffix
Push Buttons				
Start/Stop	3RW40/44	73/74	ALL	A1
Emergency Stop	3RW40/44	73/74	ALL	ES
Selector Switches				
Hand-Off-Auto	3RW40/44	73/74	ALL	A3
Hand-Off-Auto w/ start pushbutton	3RW40/44	73/74	ALL	S3
Off-On	3RW40/44	73/74	ALL	A4
Pilot Light				
Red 'On'	3RW40/44	73/74	ALL	FA
Green 'On'	3RW40/44	73/74	ALL	FB
Red 'Run'	3RW40/44	73/74	ALL	FC
Green 'Run'	3RW40/44	73/74	ALL	FD
LED Bulb Upgrade ^①	3RW40/44	73/74	ALL	FE
Red 'Off'	3RW40/44	73/74	ALL	FJ
Green 'Off'	3RW40/44	73/74	ALL	FK
Amber 'Fault'	3RW40/44	73/74	ALL	FL
White 'Control Power On'	3RW40/44	73/74	ALL	FW
Red, 'On' Push-to-Test	3RW40/44	73/74	ALL	FS
Green 'On' Push-to-Test	3RW40/44	73/74	ALL	FT
Green 'Off' Push-to-Test	3RW40/44	73/74	ALL	FU
Custom pilot light (state color and nameplate text)	3RW40/44	73/74	ALL	FZ
Through the Door Metering				
External keypad for 3RW44	3RW44	73/74	1, 12	K1
Elapse time meter	3RW40/44	73/74	1, 12 (120V)	M5
Control Options				
Profibus Communication Module (installed-connection cable not supplied)	3RW44	73/74	ALL	P1
Profinet Communication Module (installed-connection cable not supplied)	3RW44	73/74	ALL	P2
Ground Lug - 1 Conductor	3RW40/44	73/74	ALL	L10
Alarm Package (horn, light, relay & push button)	3RW40/44	73/74	1, 3R, 12	M7
Electronic 8 function timing relay (.05s - 100h) 24V/100-127V supplied mounted and unwired	3RW40/44	73/74	ALL	TR
Control Relay supplied mounted and unwired (4 pole max)	3RW40/44	73/74	ALL	R04 R22 R40
Circuit Breaker Shunt Trip (included std in 3RW40 versions)	3RW44	74	ALL	L6
Function identification plate w/ marking as specified	3RW40/44	73/74	ALL	N1
Service Entrance Labeled	3RW40/44	74	ALL	N3
Terminal Block 3 point	3RW40/44	73/74	ALL	TC3
Terminal Block 6 point	3RW40/44	73/74	ALL	TC6
Terminal Block 9 point	3RW40/44	73/74	ALL	TC9
Terminal Block 12 point	3RW40/44	73/74	ALL	TC12

Emergency HP Rated Bypass Starter ^{①②}	3RW Version	Class	Enclosure NEMA Type	Mod Suffix
	3RW40/44	73/74	1/12/3R/4	A12

Available Modifications Requiring the MODIFIED OPTIONS Box Size (to be used with the selections ending in GA*)	3RW Version	Class	Enclosure NEMA Type	Mod Suffix
Isolation Contactor ^③	3RW40/44	73/74	1/12/3R/4	IC
100 VA Extra CPT Capacity	3RW40/44	73/74	ALL	CA
Space Heater (120V separate control)	3RW40/44	73/74	ALL	SH
Space Heater w/ T-stat (120V separate control)	3RW40/44	73/74	ALL	ST
Lightning Arrestor	3RW40/44	73/74	ALL	L

① (A) For sizes 73YT & 73ZT, mods IC & A12 are available individually or together;
 (B) For sizes 74YT & 74ZT (combination w/CB), mods IC & A12 are only available individually (NOT together); (C) For sizes 74YT & 74ZT (combination w/ fusible disc), mods IC & A12 are NOT available individually or together.
 ② An isolation contactor is included with the emergency HP rated bypass starter for version 3RW40 soft starters.

③ Isolation contactor IC is included as standard with version 3RW40 model R (4th character of the cat. no.) soft starters.
 ④ Pilot lights are transformer type as standard. For LED type bulbs, order suffix FE in addition to the standard device suffix(es). For example, to order red "ON" and green "OFF" pilot lights with LED bulbs, order FA, FK and FE.



Non-Combination Class 73

N1, N3R, N12, N4 Standard Enclosure

	Amps	A	B	C
3RW40new	11 - 73	25	18	13
	98	36	23	10
3RW40	117-145	36	18	15
	205-315	36	22	20
	385	54	36	20
3RW44	26 - 68	26	12.5	15
	82 - 117	36	18	15
	145 - 215	36	22	20
	280 - 385	54	36	20
	494 - 780	90	40	20
	970 - 1076	90	50	20

N4X Stainless Steel Standard Enclosure

	Amps	A	B	C
3RW40new	11- 98	55	29	11
3RW40	117	36	18	15
	145 - 205A	36	22	20
	248 - 385	54	36	20
3RW44	26 - 51	26	12.5	15
	68 - 82	36	18	15
	100 - 117	36	22	20
	145 - 385	54	36	20

N1, N3R, N12, N4 Modified Enclosure

	Amps	A	B	C
3RW40	117-385	56	36	20
3RW44	26-51	36	22	20
	68-385	54	36	20

N4X Stainless Steel Modified Enclosure

	Amps	A	B	C
3RW40	117-385	54	36	20
3RW44	26-51	36	22	20
	68-385	54	36	20

Combination Type Class 74

N1, N3R, N12, N4 Standard Enclosure

	Amps	A	B	C
3RW40new	11 - 73	36	20	11
	98	46	20	10
3RW40	117	50	25	20
	145 - 205	66	25	20
	248 - 315	90	30	20
	385	90	40	20
3RW44	26 - 68	36	23	15
	82 - 117	50	25	20
	145 - 215	66	25	20
	280	90	30	20
	315 - 384	90	40	20
	494	90	40	20
	551 - 780	90	40 ^①	20
	970 - 1076	90	50	20

N1, N12 Fusible

	Amps	A	B	C
3RW44	494-780	90	50	20

N4X Stainless Steel Standard Enclosure

	Amps	A	B	C
3RW40new	11- 98	55	29	11
3RW40	117 - 145	54	36	20
	205 - 300	90	40	20
3RW44	26 - 42	36	23	15
	51 - 100	50	25	20
	117 - 145	54	36	20
	180 - 385	90	40	20

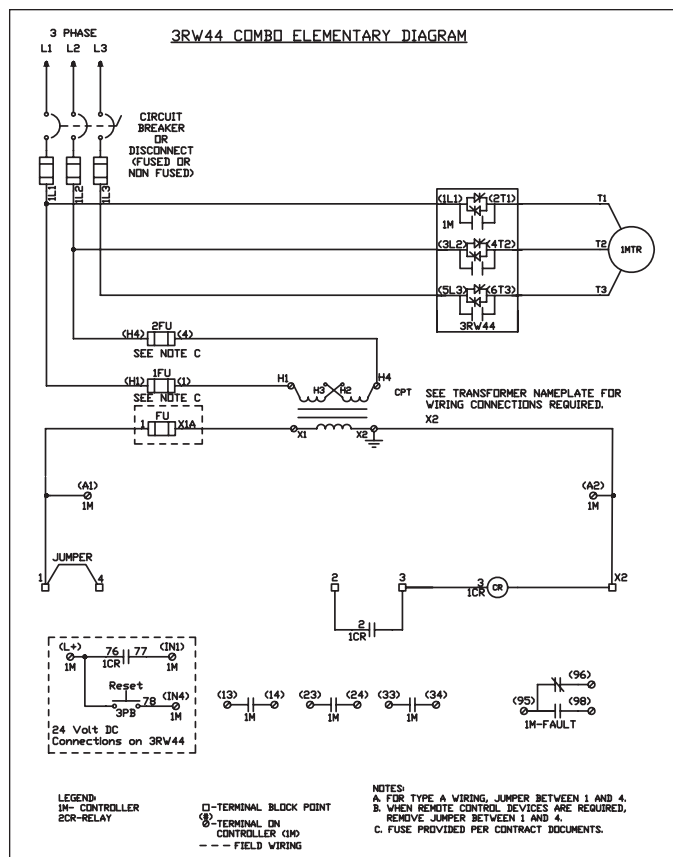
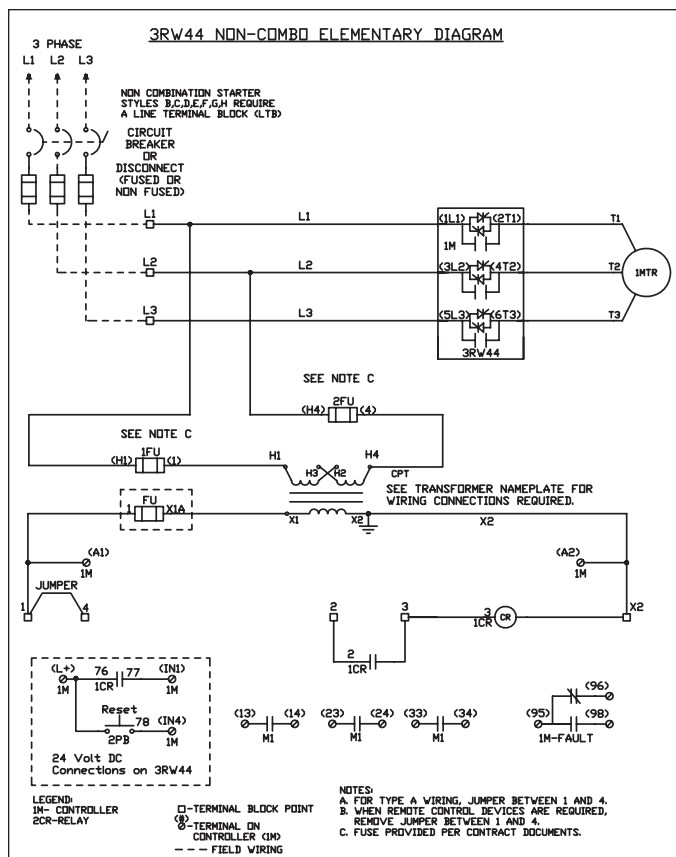
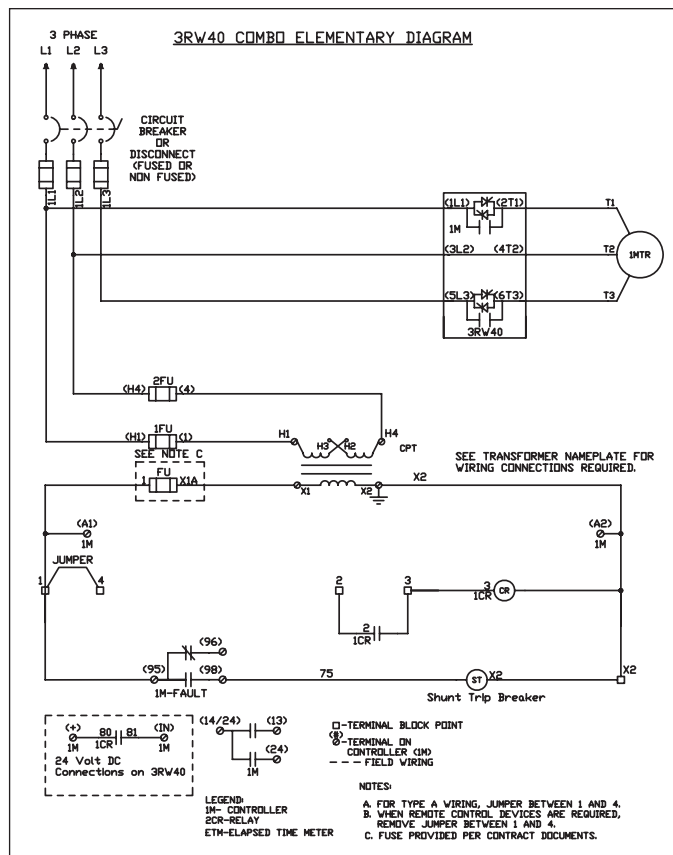
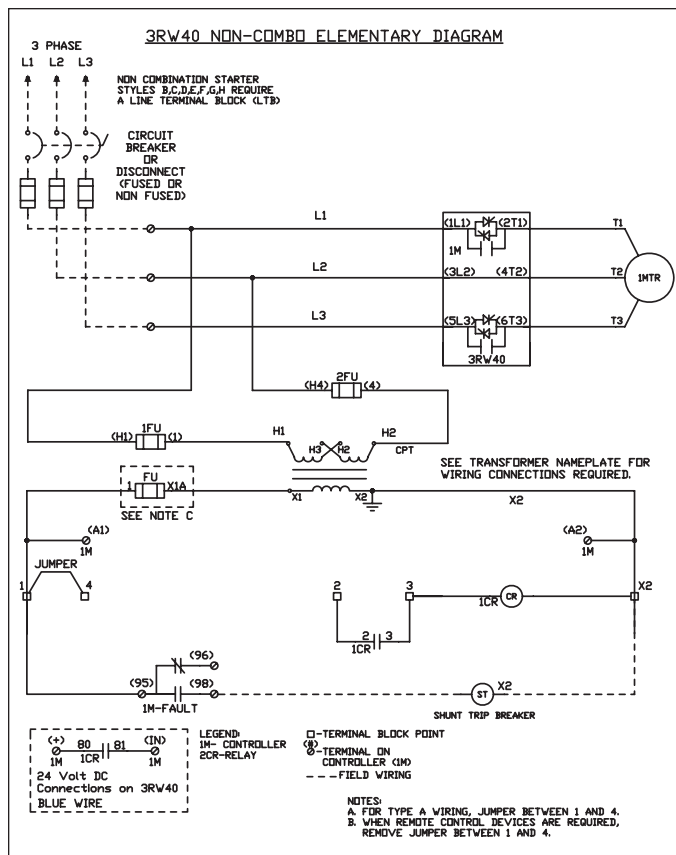
N1, N3R, N12, N4 Modified Enclosure

	Amps	A	B	C
3RW40	117 - 248	76	30	20
	315	90	30	20
	385	90	40	20
3RW44	26 - 215	76	30	20
	280	90	30	20
	315 - 385	90	40	20

N4X Stainless Steel Modified Enclosure

	Amps	A	B	C
3RW40	117-145	76	30	20
3RW44	26-145	76	30	20

① Add 4" for N4.



SINAMICS G120X

An infrastructure drive for pumps, fans and compressors

Siemens introduces an exciting new addition to the existing SINAMICS product portfolio—the G120X—an “infrastructure” drive up to 700 hp (630kW), which is targeted for pump, fan and compressor applications in the water/wastewater, HVAC, irrigation/agriculture and industrial chiller and refrigeration industries.

Seamless process for higher efficiency

SINAMICS G120X is simple, seamless, cost- and energy-efficient, robust, reliable and fit for digitalization. It integrates easily into existing applications, works with any standard motor (induction, synchronous and synchronous reluctance) and can be configured for cost-optimization and resource-saving operation which ultimately helps reduce total cost of ownership. SINAMICS G120X meets all the latest industry standards with regard to energy efficiency and product safety, and offers enhanced safety with SIL3-rated safety functions and up to 100kA short-circuit current rating according to new UL61800-5-1 design.



Soft Starter
Control

Application functions

Pump-specific			
■ Deragging or blockage protection	■ Blockage, leakage and dry-running protection		
■ Pipe filling	■ Cavitation protection		
■ Multi-pump control	■ Condensation protection		
■ Pump switchover	■ Frost protection		
■ Stop mode			
■ Service mode			
■ Cascade control mode			
Fan-specific			
■ Flying restart	■ Fire mode (essential service mode)		
■ Automatic restart	■ No load, torque and rotation (belt) monitoring with sensor		
■ Skip frequency bands			
Increase energy efficiency and system performance			
■ Eco mode	■ Bypass mode	■ Support to high efficiency motors (PMSM and SRM)	
■ Hibernation or sleep mode	■ Energy/flow calculator	■ Real time clock and programmable timer (3)	
Optimize pump and fan operation and increase system availability			
■ Keep running mode	■ PID controller	■ Dual ramp	■ Multi-speed setpoints

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CONTROL
PRODUCTS

Protection functions

- Phase-loss detection for both supply and motor
- Overvoltage controller
- Undervoltage controller
- Drive overtemperature protection
- Loss of analog input signal monitoring
- External fault and warning monitoring (up to 3)
- Motor overtemperature protection (with and without sensor)
- Motor overload monitoring and protection
- Motor short-circuit and ground fault protection
- Speed and torque monitoring
- Blocking and stalling monitoring and protection
- Detection of missing communication telegrams
- Detection of communication bus interruption

Technical data

Line voltage and output power range		
	FSA...FSF	3AC 200V (-20%)...240V (+10%) 1 hp...75 hp (0.75kW...55kW)
	FSA...FSG	3AC 380V (-20%)...480V (+10%) 1 hp...400 hp (0.75kW...250kW)
	FSH, FSJ	3AC 380V (-15%)...480V (+10%) 400 hp...700 hp (315kW...560kW)
	FSD...FSG	3AC 500V (-20%)...690V (+10%) 4 hp...250 hp (3kW...250kW)
	FSH, FSJ	3AC 500V (-15%)...690V (+10%) 350 hp...700 hp (315kW...630kW)
Output voltage	3AC 0V....line voltage x 0.97	
Input frequency	47 Hz...63 Hz	
Output frequency		
	FSA...FSG	0 Hz...550 Hz (depending upon the control mode)
	FSH, FSJ	0 Hz...150 Hz (depending upon the control mode)
Fundamental power factor (Cos φ)	0.96...0.99	
Efficiency class	IE2 (Based on power losses according to EN 50598-2 and IEC 61800-9-2)	
Efficiency (η)	98%	
Motor control	▪ V/Hz control (linear, linear with flux current control/FCC, parabolic and eco mode) ▪ Sensorless less vector control (SLVC)	
Supported motor types	▪ Asynchronous (induction) motor ▪ Permanent magnet synchronous motor (PMSM) ▪ Synchronous reluctance motor (SRM)	
Degree of protection	IP20/UL Open Type	
Operating temperature	-4° F to 113° F (-20° C to 45° C) without derating > 113° F up to 140° F (> 45° C up to 60° C) with derating For PROFINET, EtherNet/IP™ up to 55° C (131° F) with derating	
Overload		
Low Overload (LO)/Variable Torque (VT)	110% x I _L for 60s	
High Overload (HO)/Constant Torque (CT)	150% x I _H for 60s	
Communication	PROFINET, EtherNet/IP™, USS, Modbus RTU, BACnet MS/TP, PROFIBUS DP	
Functional safety	Hardware-based SIL3 Safe Torque Off (STO) function with on/off switch	
Short-circuit current rating (SCCR)	Up to 100kA according to NEW UL 61800-5-1 design	
Control inputs and outputs		
6 Digital Inputs (DI 0 ... DI 5)	24V (12–30V) electrically isolated, 4mA current, PNP/NPN switchable	
2 Digital (Relay) Outputs (DO 0...DO 1)	Type C, 250V AC, 2A/30V DC, 2A for resistive, inductive or capacitive load	
2 Analog Inputs (AI 0...AI 1)	Differential input 0V... 10V or -10V ... +10V: typical current drain: 0.1 mA, max. voltage 35V 0/4 mA ... 20 mA: 120 Ω input resistance, voltage < 10V, current < 80 mA	
1 Analog Output (AO 0)	Not isolated, switchable between voltage (0V... 10V) and current (0/4 mA ... 20 mA) via parameter setting	
1 motor temperature sensor input	PTC, KTY, PT1000, bi-metallic switch with normally closed contact	
1 failsafe digital input	STO —electrically isolated	
1 internal aux. supply voltage	24V DC, max. 250 mA 10V DC, max. 10 mA	
1 external aux. supply voltage	24V DC (20.4 ... 28.8V DC), current consumption 0.5A	
1 memory card slot	For optional SD memory cards (as a backup storage device for saving of the settings after drive commissioning, and also for a series commissioning of a several identical drives via cloning of the settings)	
Additional control inputs and outputs (With optional I/O Extension Module)		
2 Digital Inputs (DI 6...DI 7)	24V (12–30V) electrically isolated, 4mA current, PNP / NPN switchable	
4 Digital (Relay) Outputs (DO 2...DO 5)	2x Type A and 2x Type C relay outputs rated 250V AC, 2A / 30V DC, 2A for resistive, inductive or capacitive load	
1 Analog Input (AI 2)	Analog current input (0/4 mA ... 20 mA) or Temperature sensor input (Pt10000 / LG-Ni10000 / DIN-Ni1000)	
1 motor temperature sensor input (AI 3)	Temperature sensor input (Sensor Pt10000 / LG-Ni10000 / DIN-Ni1000)	
2 Analog Output (AO 1 ... AO 2)	Not isolated, switchable between voltage (0V... 10V) and current (0/4 mA ... 20 mA) via parameter setting	
User interface		
	Standard	Intelligent Operator Panel (IOP-2)—a high-resolution graphical color keypad
	Optional	Smart Access Module (SAM) Part number: 6SL3255-0AA00-5AA0—a WiFi-based web server module and engineering tool for quick setup and diagnostics using a mobile device (PC, smartphone, tablet, etc.)
		Basic Operator Panel (BOP-2)—a basic keypad
		Blank (no Operator Panel/keypad)

SINAMICS G120X

It's the simple, seamless and easy-to-use drive — right out of the box.



Digitalization

Digitalization and IoT based secured health monitoring	
SINAMICS CONNECT 300 and Analyze MyDrives	SINAMICS CONNECT 300 (Part number: 6SL3255-0AG30-0AA0) is the IoT gateway. It is designed to acquire data through the serial port of the SINAMICS G120X and synchronize the data to MindSphere (cloud-based open IoT operating system of Siemens) using the MindSphere application Analyze MyDrives (AMD). This offers users the opportunity to analyze valuable operating data gathered from the drive and enables the visualization and analysis of status information, providing users with valuable data which can be used as the basis for process optimization and maintenance strategies. For more information visit: www.siemens.com/sinamics-digitalization

Certification

Certification / marking	
	■ cULus marking according to UL61800-5-1 and CSA C22.2 No. 274 with SCCR up to 100kA ■ CE marking according to European Low-Voltage Directive 2014/35/EU and IEC/EN 61800-5-1, Machinery directive 2006/42/EC and IEC/EN 61800-5-2, EMC Directive 2014/30/EU and IEC/EN 61800-3, RoHS directive 2011/65/EU and EN 50581 ■ IE2 efficiency level based on power losses according to EN 50598-2 and IEC 61800-9-2 ■ Safe torque off (STO) SIL3 rating according to IEC/EN 61800-5-2 ■ EAC, K, RCM (formerly C-Tick), REACH, RoHS II, SEMI F47

Soft Starter Control

Dimensions and clearance distances FSA...FSJ

Frame size	Dimensions				Max. weight of frame	
	H mm (inch)	W mm (inch)	D mm (inch)	Additional depth with Operator Panel mm (inch)	No filter kg (lbs) ¹	With filter kg (lbs) ¹
FSA	232 (9.1)	73 (2.9)	209 (8.2)	9 (0.4)	3.4 (7.5)	3.6 (8)
FSB	275 (10.8)	100 (3.9)			5.8 (12.8)	6.2 (13.7)
FSC	295 (11.6)	140 (5.5)			7.11 (15.7)	7.7 (17)
FSD	472 (18.6)	200 (7.9)	239 (9.4)		18.8 (41.5)	19.5 (43)
FSE	551 (21.7)	275 (10.8)			26.7 (59)	28.7 (63.3)
FSF	709 (27.9)	305 (12)	360 (14.2)		66.5 (146.6)	71 (156.53)
FSG	999.4 (39.3)	305 (12)				120 (264.6)
FSH	1696 (66.8)	548 (21.6)	393 (15.5)	—	—	162 (357.2)
FSJ	1621 (63.8)	801 (31.5)				250 (551.16)

¹Refer to SINAMICS G120X operating instructions or rating plate information of a unit to obtain the weight specific to each rating/order number



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For additional information on SINAMICS G120X

- SINAMICS G120X Catalog: [click to download PDF](#)
- SINAMICS G120X Webpage: www.usa.siemens.com/sinamics-g120x
- For additional technical information including operating instructions please visit SINAMICS G120X Technical Reference site: <https://support.industry.siemens.com/cs/us/en/ps/25454>

SINAMICS G120X—Selection and ordering data

Voltage class 3AC 200...240V, 47...63Hz																			
Frame size	kW (200V)	hp (240V)	Rated Output Current I _L , A (240V)	Order number															
FSA	0.75	1	4.2	6	S	L	3	2	0	–	Y	C	1	0	–	U	0		
	1.1	1.5	6	6	S	L	3	2	0	–	Y	C	1	2	–	U	0		
	1.5	2	7.4	6	S	L	3	2	0	–	Y	C	1	4	–	U	0		
FSB	2	3	10.4	6	S	L	3	2	0	–	Y	C	1	6	–	U	0		
	3	4	13.6	6	S	L	3	2	0	–	Y	C	1	8	–	U	0		
	4	5.0	17.5	6	S	L	3	2	0	–	Y	C	2	0	–	U	0		
FSC	5.5	7.5	22	6	S	L	3	2	0	–	Y	C	2	2	–	U	0		
	7.5	10	28	6	S	L	3	2	0	–	Y	C	2	4	–	U	0		
FSD	11	15	42	6	S	L	3	2	0	–	Y	C	2	6	–	U	0		
	15	20	54	6	S	L	3	2	0	–	Y	C	2	8	–	U	0		
	18.5	25	68	6	S	L	3	2	0	–	Y	C	3	0	–	U	0		
FSE	22	30	80	6	S	L	3	2	0	–	Y	C	3	2	–	U	0		
	30	40	104	6	S	L	3	2	0	–	Y	C	3	4	–	U	0		
FSF	37	50	130	6	S	L	3	2	0	–	Y	C	3	6	–	U	0		
	45	60	154	6	S	L	3	2	0	–	Y	C	3	8	–	U	0		
	55	75	192	6	S	L	3	2	0	–	Y	C	4	0	–	U	0		
Special coating according to IEC/EN 60721-3-3																			
Class 3C2 (Standard)										2									
Class 3C3*										3									
User interface																			
Blank (No operator panel/keypad)										1									
BOP-2 (Basic keypad, Class 3C3*)										2									
IOP-2 (Standard—high-resolution graphical color keypad, Class 3C3*)										3									
I/O extension module																			
without I/O extension module																	0		
with I/O extension module, Class 3C3*																	1		
EMC class																			
No EMI/RFI filter																		U	
Communication interface																			
PROFINET, EtherNet/IP™ (Standard)																			F
USS, Modbus, RTU, BACnet MS/TP																			B
PROFIBUS DP																			P
*Special coating or sealing for operation in harsh/corrosive environments																			

SINAMICS G120X—Selection and ordering data

Voltage class 3AC 380...480V, 47...63Hz																			
Frame size	kW (400V)	hp (480V)	Rated Output Current I _L , A (480V)	Order number															
FSA	0.75	1	2.1	6	S	L	3	2		0	–	Y	E	1	0	–			0
	1.1	1.5	3	6	S	L	3	2		0	–	Y	E	1	2	–			0
	1.5	2	3.4	6	S	L	3	2		0	–	Y	E	1	4	–			0
	2.2	3	4.8	6	S	L	3	2		0	–	Y	E	1	6	–			0
	3	4	6.2	6	S	L	3	2		0	–	Y	E	1	8	–			0
FSB	4	5	7.6	6	S	L	3	2		0	–	Y	E	2	0	–			0
	5.5	7.5	11	6	S	L	3	2		0	–	Y	E	2	2	–			0
	7.5	10	14	6	S	L	3	2		0	–	Y	E	2	4	–			0
FSC	11	15	21	6	S	L	3	2		0	–	Y	E	2	6	–			0
	15	20	27	6	S	L	3	2		0	–	Y	E	2	8	–			0
FSD	18.5	25	34	6	S	L	3	2		0	–	Y	E	3	0	–			0
	22	30	40	6	S	L	3	2		0	–	Y	E	3	2	–			0
	30	40	52	6	S	L	3	2		0	–	Y	E	3	4	–			0
	37	50	65	6	S	L	3	2		0	–	Y	E	3	6	–			0
FSE	45	60	77	6	S	L	3	2		0	–	Y	E	3	8	–			0
	55	75	96	6	S	L	3	2		0	–	Y	E	4	0	–			0
FSF	75	100	124	6	S	L	3	2		0	–	Y	E	4	2	–			0
	90	125	156	6	S	L	3	2		0	–	Y	E	4	4	–			0
	110	150	180	6	S	L	3	2		0	–	Y	E	4	6	–			0
	132	200	240	6	S	L	3	2		0	–	Y	E	4	8	–			0
FSG	160	250	302	6	S	L	3	2		0	–	Y	E	5	0	–			0
	200	300	361	6	S	L	3	2		0	–	Y	E	5	2	–			0
	250	400	477	6	S	L	3	2		0	–	Y	E	5	4	–			0
FSH	315	400	477	6	S	L	3	2	2	0	–	Y	E	5	6	–	C		0
	355	450	515	6	S	L	3	2	2	0	–	Y	E	5	8	–	C		0
	400	500	590	6	S	L	3	2	2	0	–	Y	E	6	0	–	C		0
FSJ	450	500	663	6	S	L	3	2	2	0	–	Y	E	6	2	–	C		0
	500	600	724	6	S	L	3	2	2	0	–	Y	E	6	4	–	C		0
	560	700	830	6	S	L	3	2	2	0	–	Y	E	6	6	–	C		0
Special coating according to IEC/EN 60721-3-3																			
Class 3C2 (Standard)										2									
Class 3C3 *										3									
User interface																			
Blank (No operator panel/keypad)										1									
BOP-2 (Basic keypad, Class 3C3*)										2									
IOP-2 (Standard—high-resolution graphical color keypad, Class 3C3*)										3									
I/O extension module																			
without I/O extension module										0									
with I/O extension module, Class 3C3*										1									
EMC class																			
No filter (Standard—without integrated EMI/RFI filter) for FSA to FSF only										U									
Filter C2 (With integrated EMI/RFI filter Category C2) for FSA to FSG only, see Note 1										A									
Filter C3 (Standard—with integrated EMI/RFI filter Category C3) for FSG to FSJ only, see Note 1										C									
Communication interface																			
PROFINET, EtherNet/IP™ (Standard)										F									
USS, Modbus, RTU, BACnet MS/TP										B									
PROFIBUS DP										P									

*Special coating or sealing for operation in harsh/corrosive environments

Note 1: For frame sizes FSG, FSH and FSJ, the filter can be deactivated by removing a grounding screw/clip for applications in an ungrounded or a high-resistance grounded or a corner-grounded supply system. Please refer to the SINAMICS G120X Operating Instructions for more information.

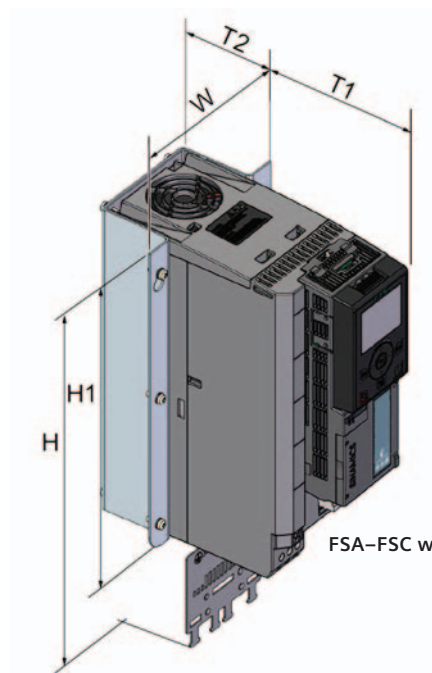
Soft Starter
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PRODUCTS

SINAMICS G120X—Selection and ordering data

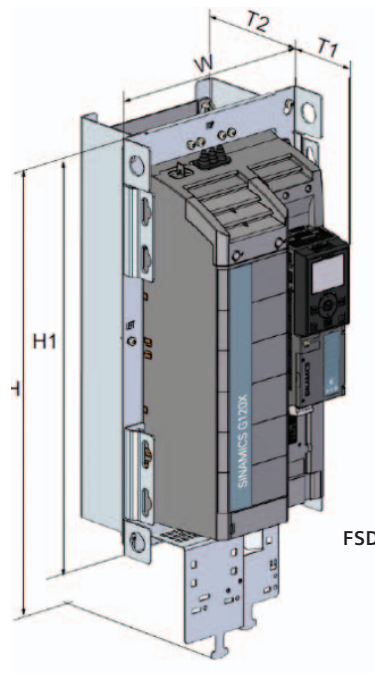
Voltage class 3AC 500...690V, 47...63Hz																			
Frame size	kW (690V)	hp (600V)	Rated Output Current I _L , A (600V)	Order number															
FSD	3	4	5	6	S	L	3	2	0	–	Y	H	1	8	–				0
	4	5	6.3	6	S	L	3	2	0	–	Y	H	2	0	–				0
	5.5	7.5	9	6	S	L	3	2	0	–	Y	H	2	2	–				0
	7.5	10	11	6	S	L	3	2	0	–	Y	H	2	4	–				0
	11	10	14	6	S	L	3	2	0	–	Y	H	2	6	–				0
	15	15	19	6	S	L	3	2	0	–	Y	H	2	8	–				0
	18.5	20	23	6	S	L	3	2	0	–	Y	H	3	0	–				0
	22	25	27	6	S	L	3	2	0	–	Y	H	3	2	–				0
	30	30	35	6	S	L	3	2	0	–	Y	H	3	4	–				0
FSE	37	40	42	6	S	L	3	2	0	–	Y	H	3	6	–				0
	45	50	52	6	S	L	3	2	0	–	Y	H	3	8	–				0
FSF	55	60	62	6	S	L	3	2	0	–	Y	H	4	0	–				0
	75	75	80	6	S	L	3	2	0	–	Y	H	4	2	–				0
	90	100	100	6	S	L	3	2	0	–	Y	H	4	4	–				0
	110	125	125	6	S	L	3	2	0	–	Y	H	4	6	–				0
FSG	132	150	144	6	S	L	3	2	0	–	Y	H	4	8	–				0
	160	150	171	6	S	L	3	2	0	–	Y	H	5	0	–		C		0
	200	200	208	6	S	L	3	2	0	–	Y	H	5	2	–		C		0
FSH	250	250	250	6	S	L	3	2	0	–	Y	H	5	4	–		C		0
	315	350	345	6	S	L	3	2	2	0	–	Y	H	5	6	–	C		0
	355	400	388	6	S	L	3	2	2	0	–	Y	H	5	8	–	C		0
	400	450	432	6	S	L	3	2	2	0	–	Y	H	6	0	–	C		0
FSJ	450	500	487	6	S	L	3	2	2	0	–	Y	H	6	2	–	C		0
	500	500	546	6	S	L	3	2	2	0	–	Y	H	6	4	–	C		0
	560	600	610	6	S	L	3	2	2	0	–	Y	H	6	6	–	C		0
	630	700	679	6	S	L	3	2	2	0	–	Y	H	6	8	–	C		0
Special coating according to IEC/EN 60721-3-3																			
Class 3C2 (Standard)									2										
Class 3C3*									3										
User interface																			
Blank (No operator panel/keypad)										1									
BOP-2 (Basic keypad, Class 3C3*)										2									
IOP-2 (Standard—high-resolution graphical color keypad, Class 3C3*)										3									
I/O extension module																			
without I/O extension module														0					
with I/O extension module, Class 3C3*														1					
EMC class																			
No filter (Standard—without integrated EMI/RFI filter) for FSD to FSF only														U					
Filter C2 (With integrated EMI/RFI filter Category C2) for FSD to FSE only														A					
Filter C3 (With integrated EMI/RFI filter Category C3) for FSF to FSJ only, standard for FSG to FSJ, see Note 1														C					
Communication interface																			
PROFINET, EtherNet/IP™ (Standard)														F					
USS, Modbus, RTU, BACnet MS/TP														B					
PROFIBUS DP														P					

*Special coating or sealing for operation in harsh/corrosive environments

Note 1: For frame sizes FSG, FSH and FSJ, the filter can be deactivated by removing a grounding screw/clip for applications in an ungrounded or a high-resistance grounded or a corner-grounded supply system. Please refer to the SINAMICS G120X Operating Instructions for more information.



FSA–FSC with PT kit



FSD–FSG with PT kit

SINAMICS G120X IP20 Push-Through kits

SINAMICS G120X	Push-Through kit (PT)	Overall dimensions of SINAMICS G120X with PT kit installed				
		Width mm (inch)	Height mm (inch)		Depth mm (inch)	
Frame size	Part number	W	H = with shield plate	H1= without shield plate	T1 = front of PT bracket	T2 = back of PT bracket
FSA	6SL3261-6GA00-0BA0	127 (5.0)	324 (12.8)	234 (9.2)	160 (6.3)	57 (2.2)
FSB	6SL3261-6GB00-0BA0	154 (6.1)	384 (15.1)	279 (11.0)	153 (6.0)	66 (2.6)
FSC	6SL3261-6GC00-0BA0	192 (7.6)	407 (16.0)	295 (11.6)	154 (6.1)	65 (2.6)
FSD	6SL3261-6GD00-0BA0	271 (10.7)	647 (25.5)	514 (20.2)	142 (5.6)	98 (3.9)
FSE	6SL3261-6GE00-0BA0	360 (14.2)	773 (30.4)	600 (23.6)	145 (5.7)	93 (3.7)
FSF	6SL3261-6GF00-0BA0	396 (15.6)	1003 (39.5)	749 (29.5)	185 (7.3)	185 (7.3)
FSG	6SL3261-6GG00-0BA0	384 (15.1)	1275 (50.2)	1026 (40.4)	184 (7.3)	188 (7.4)

SINAMICS G120X—options and features

Options	
- Special coating (Class 3C3) for operation of a drive in the harsh environments where corrosive gases for example, Hydrogen Sulfide (H₂S), Chlorine (Cl) or Ammonia (NH₃) are often present - Add-on Push-Through (PT) kit to enable UL Open Type/IP20 drive in to UL Open Type/IP20 push-through drive (up to FSG) - Input and output reactors	- Output dv/dt filter - Output Sinusoidal filter - Passive line harmonic filter - EMI/RFI filters - Communication: PROFINET, EtherNet/IP™, USS, Modbus RTU, BACnet MS/TP and PROFIBUS DP - I/O extension module

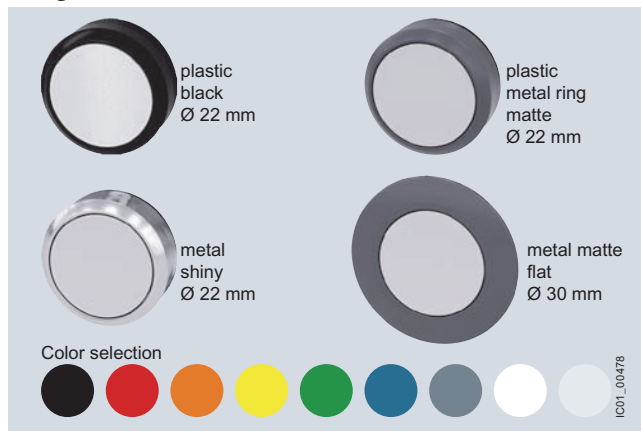
Push Button Units and Indicator Lights

SIRIUS ACT 3SU Series

Overview

Benefits

Design



SIRIUS ACT is available in four design lines.

Ruggedness



- Degree of protection IP66, IP67, IP69 (IP69K)

IP66	
6 = Protection against the ingress of dust	6 = Protection against powerful splash-water
IP67	
6 = Protection against the ingress of dust	7 = Protection against temporary immersion
IP69 (IP69K)	
6 = Protection against the ingress of dust	9/9K = Protection against water in high-pressure cleaning (approx. 80 bar) and high water jet temperatures (approx. 80 °C)

- Service life of 100 000 hours thanks to use of LEDs
- Media resistance (chemicals) thanks to solid stainless steel and high-grade plastics
- Mechanical endurance of 10×10^6 switching cycles
- Suitable for use in extreme environments
- Reliable, friction-locked fixing with just one screw
- Design stability according to use
- Simple geometry for mounting holes

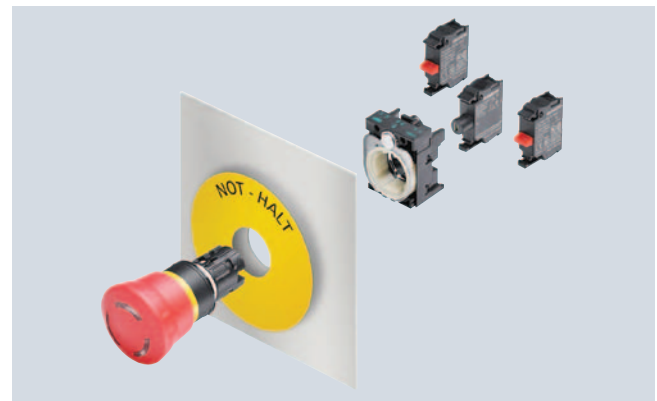
Communication



SIRIUS ACT DIGITALIZATION @ YOUR FINGERTIPS™

- Direct connection of the enclosure to AS-Interface or IO-Link
- Direct connection in the control cabinet to PROFINET, IO-Link or AS-Interface
- Can be integrated easily via the TIA Portal

Easy handling



- Self-holding function of the actuator when mounting
- Twist prevention integrated into patented holder design
- Stackable contact modules
- Self-explanatory and fast installation using one hand
- Components can be mounted with holder removed
- No special tools required, simple size 2 screwdriver (cross-tip DIN ISO 87641PZD1, flat-head DIN ISO 2380-1 A/B 1x4.5) is sufficient

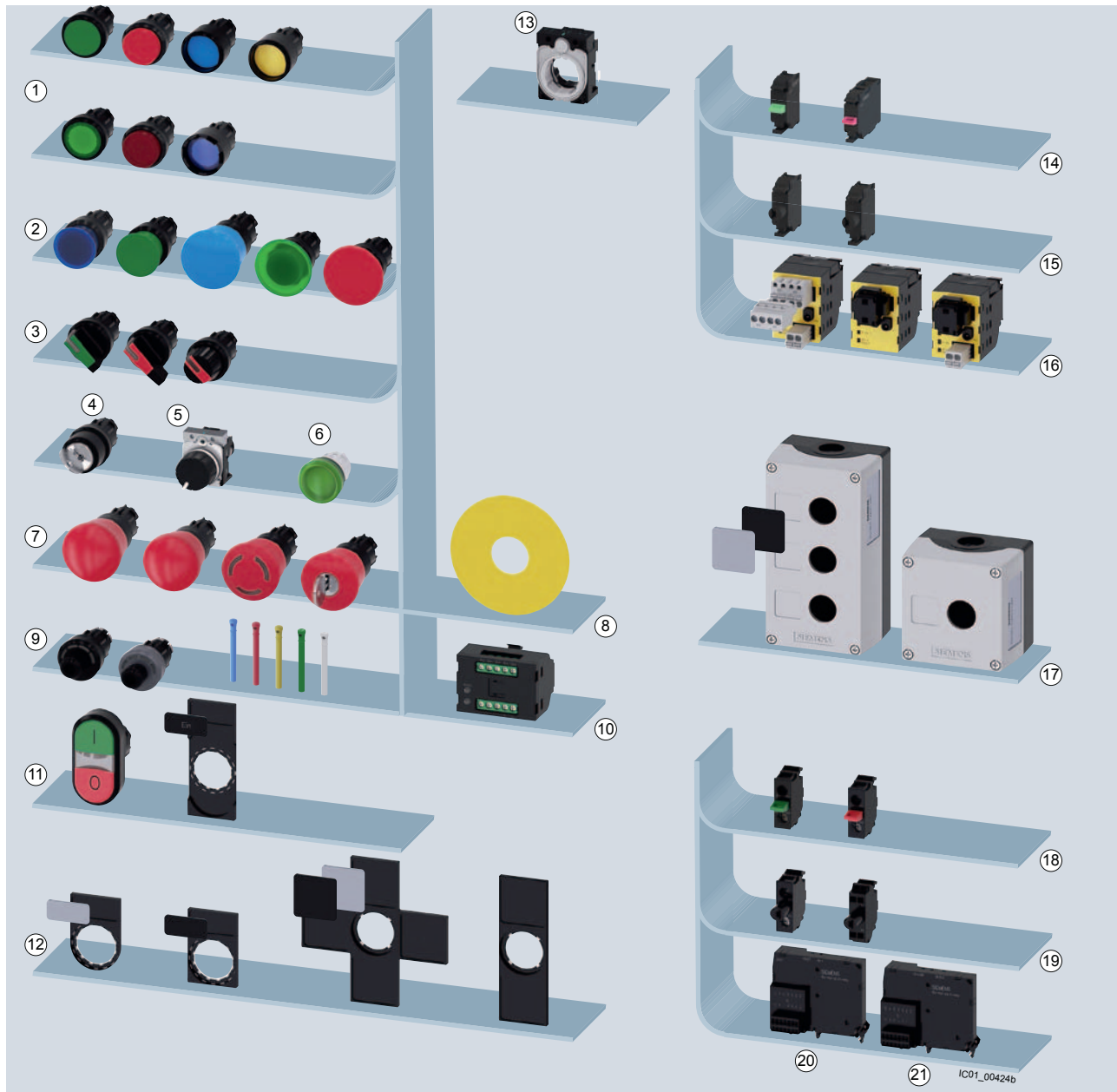
These two pages are a brief overview of the SIRIUS ACT 3SU Series. Please consult the Siemens Industrial Control products catalog for a complete listing of products or look for info online at usa.siemens.com/sirius-act

Push Button Units and Indicator Lights

SIRIUS ACT 3SU Series

Overview

Actuating and signaling elements



Pilot Devices

17
CONTROL
PRODUCTS

Actuating and signaling elements		Pages	Modules for front plate mounting		Pages
①	Pushbuttons, illuminated pushbuttons	10/39	⑭	Contact modules	10/112
②	Mushroom pushbuttons	10/41	⑮	LED modules	10/116
③	Selector switches	10/42	⑯	AS-Interface modules	10/118
④ ⑤ ⑥	Key-operated switches, potentiometers, indicator lights	10/43	Enclosures		Pages
⑦ ⑧	EMERGENCY STOP mushroom pushbuttons, backing plates	10/41	⑰	Enclosures	10/122
⑨ ⑩	ID key-operated switches, ID keys, electronic modules	10/59	Modules for base mounting		Pages
⑪	Twin pushbuttons, label holders, labeling plates	10/51	⑱	Contact modules	10/133
⑫	Label holders, labeling plates	10/138	⑲	LED modules	10/133
Holders and labels		Pages	⑳	IO-Link modules	10/136
⑬	Holders	10/138	㉑	AS-Interface modules	10/136

System overview of SIRIUS ACT pushbuttons and indicator lights from the plastic design line.
Pushbuttons and indicator lights available in 4 design lines.

Page links above reference the U.S. Industrial Controls catalog available online

Pushbutton Units and Indicator Lights

30 mm Heavy Duty, Watertight/Oiltight, Class 52

Pushbutton complete units

Features

- Octagonal Mounting Nuts
- Meets Type 1, 3, 3R, 4, 4X, 12, 13 and Automotive Standards
- Heavy Duty Rated NEMA A600/P600 Contacts
-  Positively Driven Contacts
- Positive Indexing Selectors
- Bifurcated Movable Contacts
- Attractive Chrome Plating
- Boots Not Required for Type 4
- UL Listed File # E22655
- CSA Certified File # LR6535
- Touchsafe Terminals
- Hazardous Location CL1, DIV2 Contact Blocks
- Hazardous Location CL1, DIV2 Light Modules

Application

Oil tight pilot controls and accessories are designed to provide long, trouble free service in the most demanding industrial applications. These controls are oil and dust tight and meet Type 3, 4, 4X, 12 and 13 specifications.

Rugged

Industrial control operators are durable one piece castings. Heavy duty plastic buttons resist oils and corrosion. Silver contacts carry heavy duty ratings.

Flexible

Accessories modify standard push buttons, selector switches and pilot lights. Building block construction of contact blocks makes possible many circuitry combinations.

Industrial Appearance

Pilot controls add luster to panels. Chrome plating covers exposed metal parts.

Push Button Operators

The Operator Base consists of a durable, one piece casting equipped with a heavy duty actuator with a stainless steel spring, a neoprene actuator sealing ring to prevent oil and dust from penetrating to the contact blocks, a neoprene gasket to seal operator mounting hole and a chrome plated lock nut.

Mushroom Head Push Button Operators

The Mushroom Head base construction is identical to the push button base. The actuator is molded of high impact material for either a 1 5/8 inch or 2 1/2 inch diameter molded head.

E-STOP Mushroom Head Operators according to EN 60947-5-5 Cat. No. 52BP, 52BR, 52PP, and 52PR, 2 Position, Twist-To-Release & 2 Position, Push Pull Maintained operators provided with red operating heads and 52BJK contact blocks meet the requirements of EN 60947-5-5 for Electrical Emergency Stop Device With Mechanical Latching Function (e-stop).

Contact Blocks

Standard Contact Blocks have double break bifurcated silver contacts as standard. Versions with gold flashing are available for improved contact reliability. Contact blocks are heavy duty rated NEMA A600 and suitable for applications down to 5V/1mA solid state outputs. 52BAJ and 52BJK versions offers  Positive Opening Contacts according to IEC 60947-5-1, Appendix K. Molded bodies and pushers resist arcing and tracking. All units have stainless steel springs that resist corrosion and provide strong contact pressure. Captive mounting screws speed panel assembly. New HL Series Contact Blocks are also rated for Hazardous Locations Class 1, Division 2.

Push Pull Operators

Push Pull Operators combine two or three functions in one unit. The maintained operator has two positions, typically pull to start, push to stop. The momentary operator with three positions provides spring return from both pull and push positions. In addition, a three position push maintained, pull momentary operator is available. The actuator come is 1 3/4 inch or 2 1/2 inch diameter and is available in an illuminated version.

2 Button Maintained Operator

Maintained Push Buttons consist of two push buttons and a latching assembly. When actuated the button remains depressed and is freed only by the release operator to which it is linked. The button assembly adjusts for mounting from a 1 13/16 inch to a 2 5/8 inch center.

Transformer Type Pilot Lights

Transformer Type Pilot Lights are available with a 120, 240, 480 or 600 Volt primary (50/60 Hertz) and a separate secondary winding which supplies reduced voltage to a miniature bayonet base 6 Volt lamp. These units are suitable for applications where vibration is present and long bulb life is desirable.

Full Voltage Type Pilot Lights

Full Voltage Pilot Lights are available for 6, 12, 24 and 120 Volt AC and DC applications.

Electrical Ratings

NEMA AC Ratings 50/60Hz

NEMA A600 10 Continuous Amps

Volts	Make	Break
120	60	6
240	30	3
480	15	1.5
600	12	1.2
VA	7200	720

Ordering Information

- Accessories: [pages 17-339 – 17-343](#)
- Selector Position and Contact Operation: [page 17-337 – 17-338](#).
- Legend Plates: [page 17-352](#).
- Enclosures: [page 17-353](#).
- Technical Specifications: [page 17-354](#).

Resistor Type Pilot Lights

Resistor Type Pilot Lights are available for 240 Volt AC and DC applications. The 240 Volt pilot light is supplied with a 120 Volt lamp and a voltage dropping resistor.

LED Type Pilot Lights

LED's (light emitting diodes) can be used in pilot lights instead of incandescent bulbs because of their long life (up to 10 years), resistance to vibration and ambient sensitivity. Clusted LED options are available for standard pilot lights only. Cluster LED options are not available on Push to test Pilot Lights, Illuminated Pushbuttons, Push-pull, or Twist-to-Release Operators.

Integrated LED Module Type Pilot Lights

The integrated LED module is available for 24, 120, 240 and 24-240V. LED modules are vibration resistant and have a long life (up to 10 years).

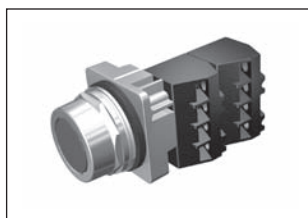
Selector Operators

Selector Operators have positive action indexing. Operators are available with either a short or long lever. The molded black lever is designed to accept a color insert. A white insert is provided as standard. Each operator is equipped with a cam to actuate plungers of contact blocks assembled behind the operator. Two, three and four position operators are available with seven different cams.

Lever color inserts are available in 8 colors.



Indicator Light



Push Button



Selector Switch



Selector Push Button

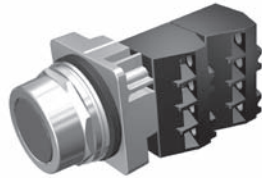
Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Push Button

Selection Guid

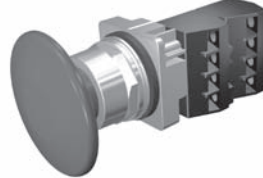
Momentary Push Button - Non-Illuminated



Flush Head



Extended Head



Large Mushroom Head 2 1/2"



Small Mushroom Head 1 3/4"

Part Number	52	a	M	c	d	e ¹
			b			

a	Code	Finish
	P	Chrome - Command 52
	B	Epoxy Coated - Black Max
b	Code	Type
	M	Momentary Push Button
c	Code	Style / Head Type
		Flush / Extended Cap
	8A	Flush
	8B	Extended
		Mushroom Head Metal
	9A	Small Mushroom Head 1 3/4" (44.5mm)
		Mushroom Head Plastic
	9W	Small Mushroom Head 1 3/4" (44.5mm)
	9V	Large Mushroom Head 2 1/2" (63.5mm)

d	Code	Plastic	Metal
	1	Black	—
	2	Red	Red
	3	Green	Green
	4	Yellow	—
	5	Blue	—
	6	Gray	—
	7	All Color Caps	—
	8	Orange	—
	C	—	Chrome
e ¹	Code	Contact Blocks ²	
	A	1 NO + 1 NC	
	B	2 NO + 2 NC	
	C	3 NO + 3 NC	
	D	4 NO + 4 NC	
	E	1 NC (LB)	
	F	2 NO	
	G	2 NC	
	H	1NO (EM)	
	J	1 NC	
	K	1 NO	

¹ For operator without contact blocks leave position e blank.

² Complete Pushbutton Operators with Contact Block Codes: A, B, F, G, J & K are available with Hazardous Location CL1, DIV2 Rated Contacts when Suffix "HL" is added to the part number.

Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Push Buttons

Selection Tables

Momentary Push Button - Non-Illuminated¹

Head Style	Contacts	Color	Finish	
			Chrome	Black Max
Flush	—	Less cap	52PM8	52BM8
		Black	52PM8A1	52BM8A1
		Red	52PM8A2	52BM8A2
		Green	52PM8A3	52BM8A3
		Yellow	52PM8A4	52BM8A4
	1 NO - 1 NC	Black	52PM8A1A	52BM8A1A
		Red	52PM8A2A	52BM8A2A
		Green	52PM8A3A	52BM8A3A
	1 NO	Black	52PM8A1K	52BM8A1K
		Red	52PM8A2K	52BM8A2K
		Green	52PM8A3K	52BM8A3K
	1 NC	Red	52PM8A2J	52BM8A2J
Extended	—	Black	52PM8B1	52BM8B1
		Red	52PM8B2	52BM8B2
		Green	52PM8B3	52BM8B3
	1 NO	Black	52PM8B1K	52BM8B1K
		Red	52PM8B2K	52BM8B2K
	1 NC	Red	52PM8B2J	52BM8B2J
Mushroom Head Plastic Ø 1 3/4"	—	Less cap	52PM9	52BM9
		Red	52PM9W2	52BM9W2
	1 NO	Green	52PM9W3K	52BM9W3K
	1 NO - 1 NC	Black	52PM9W1A	52BM9W1A
		Red	52PM9W2A	52BM9W2A
	1 NO - 1 NC	Green	52PM9W3A	52BM9W3A
		Red	52PM9V2	52BM9V2
Mushroom Head Plastic Ø 2 1/2"	1 NO - 1 NC	Black	52PM9V1A	52BM9V1A
		Red	52PM9V2A	52BM9V2A
		Green	52PM9V3A	52BM9V3A
		Red	52PM9V2A	52BM9V2A

Readily available items are in **bold**.
This is a small representation of stocked items.

¹ Complete Operators with 1 to 2 Contact Blocks are available with CL1, DIV2 Ratings when Suffix "HL" is added to the part number.

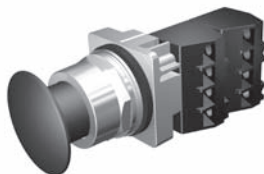
Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Non-Illuminated Push Pull

Selection Guide

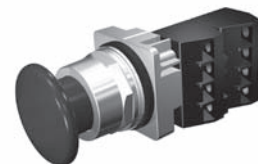
2 & 3 Position Push-Pull Mushroom Head Devices - Non-Illuminated



Mushroom Head Metal Ø 1 3/4"



Mushroom Head Plastic Ø 2 1/2"



Mushroom Head Plastic Ø 1 3/4"

Part Number	52	a	P b	c	d	e	f ³
-------------	----	---	--------	---	---	---	----------------

a	Code	Finish
	P	Chrome-Command 52
	B	Epoxy Coated-Black Max

b	Code	Type
	P	Push Pull

c	Code	Function
	2	2 positions - maintained ¹
	3	3 positions - momentary in - momentary out
	7	3 positions - maintained in - momentary out

d	Code	Style
	A	Small metal 1-3/4" (44.5 mm)
	W	Small plastic 1-3/4" (44.5 mm)
	V	Large plastic 2-1/2" (63.5 mm)

e	Code	Color
		Plastic Metal
	1	Black —
	2	Red ¹ Red ¹
	3	Green Green
	4	Yellow —
	5	Blue —
	6	Gray —
	8	Orange —
	C	— Chrome
		No Operating Head
	Z	No head

f ³	Code	Contact Blocks ⁴
		2 Position
	A	1 NO + 1 NC ¹
	B	2 NO + 2 NC ¹
	C	3 NO + 3 NC ¹
	D	4 NO + 4 NC ¹
	E	1 NC (LB)
	F	2 NO
	G	2 NC ¹
	H	1 NO (EM)
	J	1 NC ¹
	K	1 NO
	Q	1 NO - 1 NC (ELB)
		3 Position
	U	1 NO - 1 NC extra late break ²

¹ EMERGENCY-STOP control devices according to IEC 60947-5-5 when provided with red operating head and positively driven NC contact blocks. Positive opening contacts according to IEC 60947-5-1, Appendix K.

² Blocks cannot be interchanged (stop-start circuit - pull to start, push to stop).

³ For operator without contact blocks leave position f blank.

⁴ Complete Push-Pull, 2-Position Operators with Contact Block Codes: A, B, F, G, J & K are available with Hazardous Location CL1, DIV2 Rated Contacts when Suffix "HL" is added to the part number.

Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Non-Illuminated Push Pull

Selection Tables

2 & 3 Position Push-Pull Mushroom Head Devices - Non-Illuminated

		2 pos - maintained					
		Metal Ø 1 3/4"		Plastic Ø 1 3/4"		Plastic Ø 2 1/2"	
Contacts	Color	Chrome	Black Max	Chrome	Black Max	Chrome	Black Max
—	Black	—	—	52PP2W1	52BP2W1	52PP2V1	2BP2V1
	Red	52PP2A2	52BP2A2	52PP2W2	52BP2W2	52PP2V2	52BP2V2
	Green	52PP2A3	52BP2A3	52PP2W3	52BP2W3	52PP2V3	52BP2V3
	Yellow	—	—	52PP2W4	52BP2W4	52PP2V4	52BP2V4
1 NO - 1 NC	Red	52PP2A2A¹	52BP2A2A¹	52PP2W2A¹	52BP2W2A¹	52PP2V2A¹	52BP2V2A ¹
	Green	52PP2A3A	52BP2A3A	52PP2W3A	52BP2W3A	52PP2V3A	—
	Yellow	—	—	52PP2W4A	52BP2W4A	52BP2V4A	52BP2V4A
	Chrome	52PP2ACA	52BP2ACA	—	—	—	—

		3 pos - momentary in - momentary out					
		Metal Ø 1 3/4"		Plastic Ø 1 3/4"		Plastic Ø 2 1/2"	
Contacts	Color	Chrome	Black Max	Chrome	Black Max	Chrome	Black Max
—	Black	—	—	52PP3W1	52BP3W1	52PP3V1	52BP3V1
	Red	52PP3A2	52BP3A2	52PP3W2	52BP3W2	52PP3V2	52BP3V2
	Green	52PP3A3	52BP3A3	52PP3W3	52BP3W3	52PP3V3	2BP3V3
	Chrome	52PP3AC	52BP3AC	—	—	—	—
1 NO - 1 NCELB	Red	52PP3A2U	52BP3A2U	52PP3W2U	52BP3W2U	52PP3V2U	52BP3V2U
	Green	52PP3A3U	52BP3A3U	52PP3W3U	52BP3W3U	52PP3V3U	52BP3V3U

		3 pos - maintained in - momentary out					
		Metal Ø 1 3/4"		Plastic Ø 1 3/4"		Plastic Ø 2 1/2"	
Contacts	Color	Chrome	Black Max	Chrome	Black Max	Chrome	Black Max
—	Black	—	—	52PP7W1	52BP7W1	52PP7V1	52BP7V1
	Red	52PP7A2	52BP7A2	52PP7W2	52BP7W2	52PP7V2	52BP7V2
	Green	52PP7A3	52BP7A3	52PP7W3	52BP7W3	52PP7V3	52BP7V3
	Chrome	52PP7AC	52BP7AC	—	—	—	—
1 NO - 1 NCELB	Red	52PP7A2U1	52BP7A2U	52PP7W2U	52BP7W2U	52PP7V2U	52BP7V2U
	Green	52PP7A3U	52BP7A3U	52PP7W3U	52BP7W3U	52PP7V3U	52BP7V3U

Readily available items are in **bold**.

This is a small representation of stocked items.

¹ EMERGENCY-STOP control devices according to IEC 60947-5-5

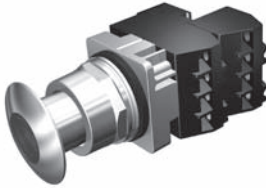
Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Illuminated Push Pull & Push Button

Selection Guide

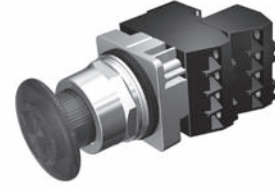
2 & 3 Position Push-Pull Mushroom Head Devices - Illuminated



Mushroom Head Metal Ø 1 3/4"



Mushroom Head Plastic Ø 2 1/2"



Mushroom Head Plastic Ø 1 3/4"

Part Number	52	a	P b	c	d	e	f	g
-------------	----	---	--------	---	---	---	---	---

a	Code	Finish
	P	Chrome-Command 52
	B	Epoxy Coated-Black Max

b	Code	Type
	P	Push Pull Operator

c	Code	Function
	2	2 positions - maintained ¹
	3	3 positions - momentary in - momentary out ²
	7	3 positions - maintained in - momentary out ²

d	Code	Operation
		Full Voltage ^{3 6} (AC/DC)
		Incandescent LED ⁴
	B	6-8V 6V
	C	12-13V —
	D	24-28V 24-28V
	E	120V 120V
		Transformer ^{3 6}
	G	120V AC
	H	240V AC
	J	480V AC
	K	600V AC
		Integrated LED Light Module ⁶
	L	6-24V AC/DC
	U	24-240V AC/DC

1 EMERGENCY-STOP control devices according to IEC 60947-5-5 when provided with red operating head and positively driven NC contact blocks.

Positive opening contacts according to IEC 60947-5-1, Appendix K,

2 Blocks cannot be interchanged (stop-start circuit - pull to start, push to stop).

3 Default bulb type is incandescent. For LED options, append field g. LED option not available on units sold "no head".

4 LED voltages apply to table g option code B and Y.

5 Not available in 120V or 240V.

6 New for January 2021, Light Modules are dual rated for UL Ordinary Location and Hazardous Location CL1, DIV2 Ratings..

7 Complete Illuminated Push-Pull, 2-Position Operators with Contact Block Codes: A, B, F, G, J & K are available with Hazardous Location CL1, DIV2 Rated Contacts when Suffix "HL" is added to the part number.

e	Code	Style / Color
		Mushroom Head Metal Ø 1 3/4" (44.5mm)
	2	Red ¹
	3	Green
	5	Blue
	9	Amber
	A	Clear
	B	White
		Mushroom Head Plastic Ø 1 3/4" (44.5 mm)
	R	Red ¹
	S	Green
	T	Amber
		Mushroom Head Plastic Ø 2 1/2" (63.5mm)
	D	Red ¹
	E	Green
	F	Amber
		No Head (full voltage & transformer only)
	Z	No head

f	Code	Contact Blocks ⁷
		2 Position
	A	1 NO + 1 NC ¹
	B	2 NO - 2 NC ¹
	F	2 NO
	G	2 NC ¹
	J	1 NC ¹
	K	1 NO
	Q	1 NO - 1 NC (ELB)
		3 Position
	U	1 NO - 1 NC extra late break ²

g	Code	Bulb Type
	Blank	Incandescent
	B	LED
	Y	Super-Bright LED ⁵

Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Illuminated Push Pull

Selection Tables

Type	Lamp Type	Voltage	Color	Contacts
Full Voltage (AC/DC)	LED	24V	Red	1 NO - 1 NC
			Green	1 NO - 1 NC
	Incandescent	24V	Red	1 NO - 1 NC
			Green	1 NO - 1 NC
		120V	Red	1 NO - 1 NC
			—	—
Transformer (AC)	LED	120V	Red	1 NO - 1 NC
			Green	1 NO - 1 NC
	Incandescent	120V	Red	1 NO - 1 NC
			Green	1 NO - 1 NC

Type	Lamp Type	Voltage	Color	Contacts
Full Voltage (AC/DC)	LED	24V	Green	1 NO - 1 NCELB
			Green	1 NO - 1 NCELB
	Incandescent	24V	Red	1 NO - 1 NCELB
			—	—
		120V	Red	1 NO - 1 NCELB
			—	—
Transformer (AC)	LED	120V	Red	1 NO - 1 NCELB
			Green	1 NO - 1 NCELB
	Incandescent	120V	Red	1 NO - 1 NCELB
			Green	1 NO - 1 NCELB

Type	Lamp Type	Voltage	Color	Contacts
Full Voltage (AC/DC)	LED	24V	Green	1 NO - 1 NCELB
			Green	1 NO - 1 NCELB
	Incandescent	24V	Red	1 NO - 1 NCELB
			—	—
		120V	Red	1 NO - 1 NCELB
			—	—
Transformer (AC)	LED	120V	Red	1 NO - 1 NCELB
			Green	1 NO - 1 NCELB
	Incandescent	120V	Red	1 NO - 1 NCELB
			Green	1 NO - 1 NCELB

Readily available items are in **bold**.
This is a small representation of stocked items.

1 EMERGENCY-STOP control devices according to IEC 60947-5-5

Operator Type

2 pos - maintained

Metal Ø 1 3/4"		Plastic Ø 1 3/4"	
Chrome	Black Max	Chrome	Black Max
52PP2D2AB¹	52BP2D2AB¹	52PP2DRAB¹	52BP2DRAB¹
52PP2D3AB	52BP2D3AB	52PP2DSAB	52BP2DSAB
52PP2D2A¹	52BP2D2A¹	52PP2DRA¹	52BP2DRA¹
52PP2D3A	52BP2D3A	52PP2DSA	52BP2DSA
52PP2E2A ¹	52BP2E2A ¹	52PP2ERA ¹	52BP2ERA ¹
52PP2E2	52BP2E2	52PP2ER	52BP2ER
52PP2G2AB¹	52BP2G2AB¹	52PP2GRAB¹	52BP2GRAB¹
52PP2G3AB	52BP2G3AB	52PP2GSAB	52BP2GSAB
52PP2G2A¹	52BP2G2A¹	52PP2GRA¹	52BP2GRA¹
52PP2G3A	52BP2G3A	52PP2GSA	52BP2GSA

Operator Type

3 pos - momentary in - momentary out

Metal Ø 1 3/4"		Plastic Ø 1 3/4"	
Chrome	Black Max	Chrome	Black Max
52PP3D3UB	52BP3D3UB	52PP3DRUB	52BP3DRUB
52PP3D3U	52BP3D3U	52PP3DSU	52BP3DSU
52PP3D2U	52BP3D2U	52PP3DRU	52BP3DRU
52PP3E2	52BP3E2	52PP3ER	52BP3ER
52PP3G2UB	52BP3G2UB	52PP3GRUB	52BP3GRUB
52PP3G3UB	52BP3G3UB	52PP3GSUB	52BP3GSUB
52PP3G2U	52BP3G2U	52PP3GRU	52BP3GRU
52PP3G3U	52BP3G3U	52PP3GRU	52BP3GRU

Operator Type

3 pos - maintained in - momentary out

Metal Ø 1 3/4"		Plastic Ø 1 3/4"	
Chrome	Black Max	Chrome	Black Max
52PP7D3UB	52BP7D3UB	52PP7DSUB	52BP7DSUB
52PP7D3U	52BP7D3U	52PP7DSU	52BP7DSU
52PP7D2U	52BP7D2U	52PP7DRU	52BP7DRU
52PP7E2	52BP7E2	52PP7ER	52BP7ER
52PP7G2UB	52BP7G2UB	52PP7GRUB	52BP7GRUB
52PP7G3UB	52BP7G3UB	52PP7GSUB	52BP7GSUB
52PP7G2U	52BP7G2U	52PP7GRU	52BP7GRU
52PP7G3U	52BP7G3U	52PP7GRU	52BP7GRU

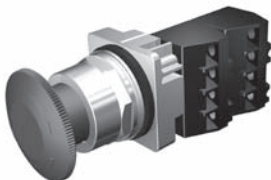
Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Non-Illuminated Twist-to-Release

Selection Guide

2 Position Twist-to-Release Devices Mushroom Head - Non-Illuminated



Plastic 1 3/4" Mushroom Head - Chrome



Plastic 1 3/4" Mushroom Head - Black Max

Part Number	52	<u>a</u>	<u>R</u> b	<u>8</u> c	<u>W</u> d	<u>e</u>	<u>f²</u>
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Finish	Function	Style	Color	Contacts	Part Number
Chrome	2 Position Twist-to-Release	Plastic 1 3/4" Mushroom Head	Red	1 NO - 1 NC	52PR8W2A
Black Max	2 Position Twist-to-Release	Plastic 1 3/4" Mushroom Head	Red	1 NO - 1 NC	52BR8W2A
Chrome	2 Position Twist-to-Release	Plastic 1 3/4" Mushroom Head	Red	None	52PR8W2

Readily available items are in **bold**.

This is a small representation of stocked items.

a	Code	Finish
	P	Chrome-Command 52
	B	Epoxy Coated-Black Max
b	Code	Function
	R	2 Position Twist-to-Release, Maintained ¹
c	Code	Style
	8	Plastic 1 3/4" Mushroom Head
d	Code	Lamp Type
	W	Non-Illuminated

e	Code	Color
	2	Red ¹
	3	Green
	4	Yellow
	Z	No head
f ²	Code	Contact Blocks ³
	A	1 NO + 1 NC ¹
	B	2 NO + 2 NC ¹
	C	3 NO + 3 NC ¹
	D	4 NO + 4 NC ¹
	E	1 NC (LB)
	F	2 NO
	G	2NC ¹
	H	1NO (EM)
	J	1 NC ¹
	K	1 NO

¹ EMERGENCY-STOP control devices according to IEC 60947-5-5 when provided with red operating head and positively driven NC contact blocks. Positive opening contacts according to IEC 60947-5-1, Appendix K.

² For operator without contact blocks leave position f blank.

³ Complete Twist release Operators with Contact Block Codes: A, B, F, G, J & K are available with Hazardous Location CL1, DIV2 Ratings when Suffix "HL" is added to the part number.

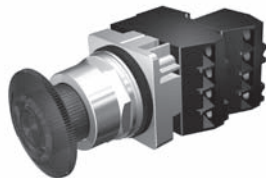
Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Illuminated Twist-to-Release

Selection Guide

2 Position Twist-to-Release Mushroom Head Devices - Illuminated



Plastic 1 3/4" Mushroom Head - Chrome



Plastic 1 3/4" Mushroom Head - Black Max

Part Number	52	a	R	8	d	e	f	g

Finish	Style	Voltage	Bulb Type	Color	Contacts	Part Number
Chrome	Plastic 1 3/4" Mushroom Head	24V	LED	Red	1 NO - 1 NC	52PR8DRAB
Chrome	Plastic 1 3/4" Mushroom Head	120V	Incandescent	Red	1 NO - 1 NC	52PR8ERA
Chrome	Plastic 1 3/4" Mushroom Head	120V	LED	Red	1 NO - 1 NC	52PR8GRAB

Readily available items are in **bold**.
This is a small representation of stocked items.

a	Code	Finish
	P	Chrome-Command 52
	B	Epoxy Coated-Black Max

b	Code	Function
	R	2 Position Twist-to-Release, Maintained

c	Code	Style
	8	Plastic 1 3/4" Mushroom Head

d	Code	Operation
		Full Voltage^{2 6} (AC/DC)
		Incandescent
		LED³
	B	6-8V
	C	12-13V
	D	24-28V
	E	120V
		Transformer^{2 6}
	G	120V AC
	H	240V AC
	J	480V AC
	K	600V AC
		Integrated LED Light Module⁶
	L	6-24V AC/DC
	U	24-240V AC/DC

e	Code	Color
	R	Red ¹
	S	Green
	T	Amber
	Z	No head

f	Code	Contact Blocks ⁵
	A	1 NO + 1 NC ¹
	B	2 NO + 2 NC ¹
	C	3 NO + 3 NC ¹
	D	4 NO + 4 NC ¹
	E	1 NC (LB)
	F	2 NO
	G	2NC ¹
	H	1NO (EM)
	J	1 NC ¹
	K	1 NO

g	Code	Bulb Type
	Blank	Incandescent
	B	LED
	Y	Super-Bright LED ⁴

1 EMERGENCY-STOP control devices according to IEC 60947-5-5 when provided with red operating head and positively driven NC contact blocks. Positive opening contacts according to IEC 60947-5-1, Appendix K, Molded bodies.

2 Default bulb type is incandescent. For LED options, append field g. LED option not available on units sold "no head."

3 LED voltages apply to table g option code B and Y.

4 Not available in 120V or 240V.

5 Complete Illuminated Twist Release Operators with Contact Block Codes: A, B, F, G, J & K are available with Hazardous Location CL1, DIV2 Ratings when Suffix "HL" is added to the part number.

6 New for January 2021, Light Modules are dual rated for UL Ordinary Location and Hazardous Location CL1, DIV2 Ratings.

Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Indicator Light

Selection Guide

Indicator Light



Plastic Lens



Glass Lens

Part Number	52	<u> </u> a	<u> </u> L b	<u> </u> c	<u> </u> d	<u> </u> e	<u> </u> f
-------------	----	------------------	-----------------------	------------------	------------------	------------------	------------------

a	Code	Finish
	P	Chrome-Command 52
	B	Epoxy Coated-Black Max

b	Code	Type
	L	Indicator Light

c	Code	Style
	4	Plastic Lens
	5	Glass Lens

d	Code	Operation
		Full Voltage ^{1 4} (AC/DC)
		Incandescent LED ²
	B	6-8V 6V
	C	12-13V —
	D	24-28V 24-28V
	E	120V 120V
		Transformer ^{1 4}
	G	120V AC
	H	240V AC
	J	480V AC
	K	600V AC
	T	277V AC
		Integrated LED Light Module ⁴
	L	6-24V AC/DC
	U	24-240V AC/DC

e	Code	Color
	2	Red
	3	Green
	5	Blue
	7	All Colors
	9	Amber
	A	Clear
	B	White
	N	No Lens

f	Code	Bulb Type
	Blank	Incandescent
	XB	LED
	XY	Super-Bright LED ³

1 Default bulb type is incandescent. For LED options, append field f.
LED option not available on units sold "No Lens".

2 LED voltages apply to table f option code XB and XY.

3 Not available in 120V or 240V.

4 New for January 2021, Light Modules are dual rated for UL Ordinary Location and Hazardous Location CL1, DIV2 Ratings.

Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Indicator Lights

Selection Tables

Indicator Light

Type	Lamp Type	Voltage	Color	Plastic Lens	
				Chrome	Black Max
Full Voltage (AC/DC)	LED	24V	Red	52PL4D2XB	52BL4D2XB
			Green	52PL4D3XB	52BL4D3XB
			Blue	52PL4D5XB	52BL4D5XB
			Amber	52PL4D9XB	52BL4D9XB
			White	52PL4DBXB	52BL4DBXB
		120V	Red	52PL4E2XB	52BL4E2XB
			Green	52PL4E3XB	52BL4E3XB
			Amber	52PL4E9XB	52BL4E9XB
	Incandescent	24V	Clear	52PL4EAXB	52BL4EAXB
			White	52PL4EBXB	52BL4EBXB
			Red	52PL4D2	52BL4D2
			Green	52PL4D3	52BL4D3
			Blue	52PL4D5	52BL4D5
			Amber	52PL4D9	52BL4D9
		120V	White	52PL4DB	52BL4DB
			No Lens	52PL4DN	52BL4DN
Transformer (AC)	LED	120V	Red	52PL4G2XB	52BL4G2XB
			Green	52PL4G3XB	52BL4G3XB
			Amber	52PL4G9XB	52BL4G9XB
			White	52PL4GBXB	52BL4GBXB
		480V	Red	52PL4J2XB	52BL4J2XB
			Green	52PL4J3XB	52BL4J3XB
			White	52PL4JBXB	52BL4JBXB
	Incandescent	120V	Red	52PL4G2	52BL4G2
			Green	52PL4G3	52BL4G3
			Amber	52PL4G9	52BL4G9
			White	52PL4GB	52BL4GB
			No Lens	52PL4GN	52BL4GN
		240V	Red	52PL4H2	52BL4H2
			Green	52PL4H3	52BL4H3
		480V	Red	52PL4J2	52BL4J2
			Green	52PL4J3	52BL4J3
			Amber	52PL4J9	52BL4J9

Readily available items are in **bold**.

This is a small representation of stocked items.

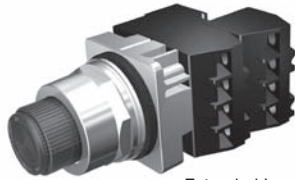
Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Illuminated Push Button & Push-to-Test

Selection Guide

Push Button & Push-to-Test - Illuminated



Extended Lens



Flush Lens

Part Number		52	a	T	c	d	e	f	g
a	Code	Finish							
	P	Chrome-Command 52							
	B	Epoxy Coated-Black Max							
b	Code	Function							
	T	Illuminated Push Button / Push-to-Test ¹							
c	Code	Style							
	6	Extended Lens							
	8	Flush Lens							
d	Code	Operation							
		Full Voltage ^{2 5} (AC/DC)							
		Incandescent	LED ³						
	B	6-8V	6V						
	C	12-13V	—						
	D	24-28V	24-28V						
	E	120V	120V						
		Transformer ^{2 5}							
	G	120V AC							
	H	240V AC							
	J	480V AC							
	K	600V AC							
		Integrated LED Light Module ⁵							
	L	6-24V AC/DC							
	U	24-240V AC/DC							
e	Code	Color							
	2	Red							
	3	Green							
	5	Blue							
	7	All Colors							
	9	Amber							
	A	Clear							
	B	White							
	N	No Lens							
f	Code	Contact Blocks ⁶							
	A	1 NO - 1 NC							
	B	2 NO + 2 NC							
	C	3 NO + 3 NC							
	D	4 NO + 4 NC							
	E	1 NC (LB)							
	F	2 NO							
	G	2 NC							
	H	1NO (EM)							
	J	1 NC							
	K	1 NO							
g	Code	Bulb Type							
	Blank	Incandescent							
	B	LED							
	Y	Super-Bright LED ⁴							

4 Not available in 120V or 240V.

1 For push-to-test functionality, wire according to wiring diagram below.

2 Default bulb type is incandescent. For LED options, append field g.
LED option not available on units sold "No Lens".

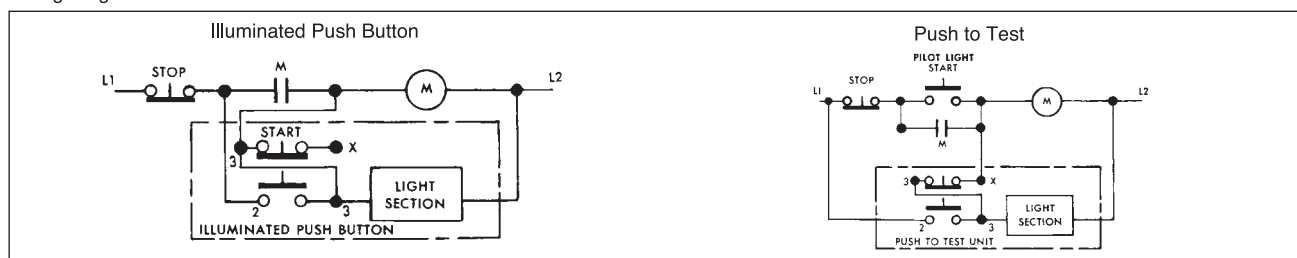
3 LED voltages apply to table g option code B and Y.

4 Not available in 120V or 240V.

5 New for January 2021, Light Modules are dual rated for UL Ordinary Location and Hazardous Location CL1, DIV2 Ratings.

6 Complete PTT/Illuminated Pushbuttons with Contact Block Codes: A, B, F, G, J & K are available with Hazardous Location CL1, DIV2 Rated Contacts when Suffix "HL" is added to the part number.

Wiring Diagrams



Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Illuminated Push Buttons & Push-to-Test

Selection Tables

Push Button & Push-to-Test - Illuminated

					Extended Lens	
Type	Lamp Type	Voltage	Color	Contacts	Chrome	Black Max
Full Voltage (AC/DC)	LED	24V	Red	1 NO - 1 NC	52PT6D2AB	52BT6D2AB
			Green	1 NO - 1 NC	52PT6D3AB	52BT6D3AB
			Blue	1 NO - 1 NC	52PT6D5AB	52BT6D5AB
			Amber	1 NO - 1 NC	52PT6D9AB	52BT6D9AB
			White	1 NO - 1 NC	52PT6DBAB	52BT6DBAB
		120V	Red	1 NO - 1 NC	52PT6E2AB	52BT6E2AB
			Green	1 NO - 1 NC	52PT6E3AB	52BT6E3AB
	Incandescent	24V	Red	1 NO - 1 NC	52PT6D2A	52BT6D2A
			Green	1 NO - 1 NC	52PT6D3A	52BT6D3A
			Blue	1 NO - 1 NC	52PT6D5A	52BT6D5A
			Amber	1 NO - 1 NC	52PT6D9A	52BT6D9A
			White	1 NO - 1 NC	52PT6DBA	52BT6DBA
		120V	Red	1 NO - 1 NC	52PT6E2A	52BT6E2A
			Green	1 NO - 1 NC	52PT6E3A	52BT6E3A
Transformer (AC)	LED	120V	Red	1 NO - 1 NC	52PT6G2AB	52BT6G2AB
			Green	1 NO - 1 NC	52PT6G3AB	52BT6G3AB
			Amber	1 NO - 1 NC	52PT6G9AB	52BT6G9AB
			White	1 NO - 1 NC	52PT6GBAB	52BT6GBAB
		240V	Red	1 NO - 1 NC	52PT6H2AB	52BT6H2AB
			Green	1 NO - 1 NC	52PT6H3AB	52BT6H3AB
			Incandescent		Red	1 NO - 1 NC
	120V	Green	1 NO - 1 NC	52PT6G3A	52BT6G3A	
		Amber	1 NO - 1 NC	52PT6G9A	52BT6G9A	
		White	1 NO - 1 NC	52PT6GBA	52BT6GBA	
		No Lens	1 NO - 1 NC	52PT6GNA	52BT6GNA	
		240V	Green	1 NO - 1 NC	52PT6H3A	52BT6H3A
		480V	Clear	1 NO - 1 NC	52PT6JAA	52BT6JAA

Readily available items are in **bold**.

This is a small representation of stocked items.

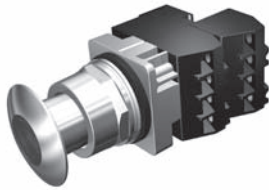
Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Illuminated Push Button

Selection Guide

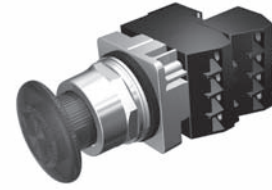
Push Button Mushroom Head Devices – Illuminated



Mushroom Head Metal Ø 1 3/4"



Mushroom Head Plastic Ø 2 1/2"



Mushroom Head Plastic Ø 1 3/4"

Part Number	52	a	T	9	d	e	f	g
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a	Code	Finish
	P	Chrome-Command 52
	B	Epoxy Coated-Black Max

b	Code	Type
	T	Push Button Operator

c	Code	Function
	9	2 positions – momentary in

d	Code	Operation
		Full Voltage ^{2 5} (AC/DC)
		Incandescent LED ³
	B	6-8V 6V
	C	12-13V —
	D	24-28V 24-28V
	E	120V 120V
		Transformer ^{2 5}
	G	120V AC
	H	240V AC
	J	480V AC
	K	600V AC
		Integrated LED Light Module ⁵
	L	6-24V AC/DC
	U	24-240V AC/DC

e	Code	Style / Color
		Mushroom Head Metal Ø 1 3/4" (44.5mm)
	2	Red ¹
	3	Green
	5	Blue
	9	Amber
	A	Clear
	B	White
		Mushroom Head Plastic Ø 1 3/4" (44.5 mm)
	R	Red
	S	Green
	T	Amber
		Mushroom Head Plastic Ø 2 1/2" (63.5mm)
	D	Red ¹
	E	Green
	F	Amber
		No Head (full voltage & transformer only)
	Z	No head

f	Code	Contact Blocks ⁶
	A	1 NO + 1 NC
	B	2 NO + 2 NC
	C	3 NO + 3 NC
	D	4 NO + 4 NC
	E	1 NC (LB)
	F	2 NO
	G	2 NC
	H	1NO (EM)
	J	1 NC
	K	1 NO

g	Code	Bulb Type
	Blank	Incandescent
	B	LED
	Y	Super-Bright LED ⁴

1 Positive opening according to IEC 60947-5-1, Appendix K.

2 Default bulb type is incandescent. For LED options, append field g. LED option not available on units sold "no head".

3 LED voltages apply to table g option code B and Y.

4 Not available in 120V or 240V.

5 New for January 2021, Light Modules are dual rated for UL Ordinary Location and Hazardous Location CL1, DIV2 Ratings.

6 Complete Illuminated Pushbuttons with Contact Block Codes: A, B, F, G, J & K are available with Hazardous Location CL1, DIV2 Rated Contacts when Suffix "HL" is added to the part number.

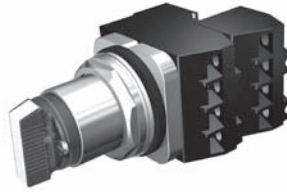
Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Illuminated Selector Switches

Selection Guide

Selector Switches – Illuminated



Short Lever – Chrome



Short Lever – Black Max

Part Number	52	$\frac{S}{a}$	$\frac{}{b}$	$\frac{7}{c}$	$\frac{}{d}$	$\frac{}{e}$	$\frac{}{f}$	$\frac{}{g}$	$\frac{}{h}$	$\frac{}{i}$
-------------	----	---------------	-------------------------	---------------	-------------------------	-------------------------	-------------------------	-------------------------	-------------------------	-------------------------

Finish	Style	Cam Type	Function	Color	Contacts	Part Number
Chrome	Maintained	2 Position: CAM A	24-28V AC/DC	No Insert	None	52SA7ADN
Chrome	Maintained	2 Position: CAM A	120V AC (Transformer)	No Insert	None	52SA7AGN
Chrome	Maintained	3 Position: CAM C	120V AC	No Insert	None	52SA7CGN

Readily available items are in **bold**.

This is a small representation of stocked items.

a	Code	Type
	S	Selector Switch

b	Code	Finish
	A	Chrome - Command 52
	X	Epoxy Coated - Black Max

c	Code	Style
	7	Maintained

d	Code	Function
	A	2 Position: CAM A
	B	3 Position: CAM B
	C	3 Position: CAM C

e	Code	Operation
		Full Voltage ¹ (AC/DC)
		Incandescent LED ²
	B	6-8V 6V
	C	12-13V —
	D	24-28V 24-28V
	E	120V 120V
		Transformer ¹
	G	120V AC
	H	240V AC
	J	480V AC
	K	600V AC
		Integrated LED Light Module
	L	6-24V AC/DC
	U	24-240V AC/DC

f	Code	Color
	2	Red
	3	Green
	5	Blue
	9	Amber
	A	Clear
	N	No Insert

g	Code	Contact Blocks
	A	1 NO - 1 NC
	E	1 NC (LB)
	H	1 NO (EM)
	J	1 NC
	K	1 NO

h	Code	Contact Quantity & Location
		A CAM & C CAM Left B CAM Right
	0	1 —
	1	— 1
	3	2 —
	4	— 2

i	Code	Bulb Type
	Blank	Incandescent
	B	LED
	Y	Super-Bright LED ³

1 Default bulb type is incandescent. For LED options, append field i.
LED option not available on units sold "no head".

2 LED voltages apply to table i option code B and Y.

3 Not available in 120V or 240V.

For CAM selection see page 17-337.

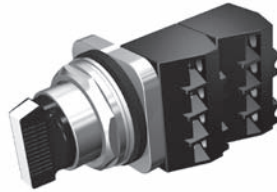
Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Non-Illuminated Selector Switch

Selection Guide

Selector Switch – Non-Illuminated



Short Lever



Long Lever

Part Number	52	S	b	2	d	e	f	g ²	h ²
		a		c					

a	Code	Type
	S	Selector Switch

b	Code	Finish
	A	Chrome - Short Lever
	B	Chrome - Long Lever
	X	BlackMax - Short Lever
	W	BlackMax - Long Lever

c	Code	Style
	2	Non-Illuminated

d	Code	Function ³
	A	2 Position: CAM A ³
	B	3 Position: CAM B
	C	3 Position: CAM C ^{1 3}
	D	3 Position: CAM D
	E	3 Position: CAM E
	G	3 Position: CAM G
	H	4 Position: CAM H

e	Code	Type
		2 Position
		Maintained Spring Return
	A	All —
	C	Left Right
		3 Position
		Maintained Spring Return
	A	All —
	B	Center, Right Left
	C	Center, Left Right
	D	Center Left, Right
		4 Position
		Maintained Position Spring Return
	A	All —

f	Code	Color
	2	Red
	3	Green
	4	Yellow
	5	Blue
	6	Gray
	8	Orange
	B	White
	N	No Insert (Black)

g ²	Code	Contact Blocks ³
	A	1 NO - 1 NC
	E	1 NC (LB)
	H	1 NO (EM)
	J	1 NC
	K	1 NO

h ²	Code	Contact Quantity & Location ³
		Left Right
	0	1 —
	1	— 1
	2	1 1
	3	2 —
	4	— 2
	5	2 1
	6	1 2
	7	2 2
	8	3 —
	9	— 3

1 C CAM on spring return selectors is limited to 4 contact blocks.

For CAM selection see page 17-337.

2 For operator without contact blocks leave positions g and h blank.

3 Non-Illuminated Selector Switches with CAM types: A or C with Contact Block Codes: A0, A1, A2, A3, A4, J0, J1, J2, J3, J4, K0, K1, K2, K3 or K4 are available with Hazardous Location CL1, DIV2 Rated Contacts when Suffix "HL" is added to the part number.

Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Non-Illuminated Selector Switch

Selector Switch, Non-Illuminated¹⁾

Contact Type	Contact	Switch Position		Type M = Maintained S = Spring Return	Chrome		Black Max	
		Left	Right		Short Lever	Long Lever	Short Lever	Long Lever
					2-Position Operator			
No Contacts	—	—	—	M M	52SA2AAB	52SB2AAB	52SX2AAB	52SW2AAB
				M<---S	52SA2ACB	52SB2ACB	52SX2ACB	52SW2ACB
1 N.O.	A	O	X	M M	52SA2AABK1	52SB2AABK1	52SX2AABK1	52SW2AABK1
				M<---S	52SA2ACBK1	52SB2ACBK1	52SX2ACBK1	52SW2ACBK1
1 N.O.	A	O	X	M M	52SA2AABA1	52SB2AABA1	52SX2AABA1	52SW2AABA1
1 N.C.	B	X	O	M<---S	52SA2ACBA1	52SB2ACBA1	52SX2ACBA1	52SW2ACBA1

Contact Type	Contact	Switch Position			Type M = Maintained S = Spring Return	Chrome		Black Max	
		Left	Center	Right		Short Lever	Long Lever	Short Lever	Long Lever
						3-Position Operator			
No Contacts	—	—	—	—	M M M	52SA2CAB	52SB2CAB	52SX2CAB	52SW2CAB
					M M M	52SA2BAB	52SB2BAB	52SX2BAB	52SW2BAB
					S--->M M	52SA2BBB	52SB2BBB	52SX2BBB	52SW2BBB
					M M<---S	52SA2BCB	52SB2BCB	52SX2BCB	52SW2BCB
					S--->M<---S	52SA2BDB	52SB2BDB	52SX2BDB	52SW2BDB
1 N.O.	A	O	O	X	M M M	52SA2CABA1	52SB2CABA1	52SX2CABA1	52SW2CABA1
					S--->M M	52SA2CBBA1	52SB2CBBA1	52SX2CBBA1	52SW2CBBA1
1 N.C.	B	X	O	O	M M<---S	52SA2CCBA1	52SB2CCBA1	52SX2CCBA1	52SW2CCBA1
					S--->M<---S	52SA2CDBA1	52SB2CDBA1	52SX2CDBA1	52SW2CDBA1
1 N.O.	A	O	O	X	M M M	52SA2CABA2	52SB2CABA2	52SX2CABA2	52SW2CABA2
1 N.C.	B	X	O	O	S--->M M	52SA2CBBA2	52SB2CBBA2	52SX2CBBA2	52SW2CBBA2
1 N.O.	C	O	O	X	M M<---S	52SA2CCBA2	52SB2CCBA2	52SX2CCBA2	52SW2CCBA2
1 N.C.	D	X	O	O	S--->M<---S	52SA2CDBA2	52SB2CDBA2	52SX2CDBA2	52SW2CDBA2
1 N.O.	A	O	O	X	M M M	52SA2GABJ2K1	52SB2GABJ2K1	52SX2GABJ2K1	52SW2GABJ2K1
1 N.C.	B	X	O	O					
1 N.C.	C	O	X	O					

Contact Type	Contact	Switch Position				Type M = Maintained S = Spring Return	Chrome		Black Max	
		Left	Center	Right	Right		Short Lever	Long Lever	Short Lever	Long Lever
							4-Position Operator			
No Contacts	—	—	—	—	—	M M M M	52SA2HAB	52SB2HAB	52SX2HAB	52SW2HAB
1 N.O.	A	X	O	O	O	M M M M	52SA2HABJ2K1	52SB2HABJ2K1	52SX2HABJ2K1	52SW2HABJ2K1
1 N.C.	B	O	X	O	O					
1 N.C.	C	O	O	X	O					
1 N.O.	A	O	O	O	X	M M M M	52SA2HABJ2K2	52SB2HABJ2K2	52SX2HABJ2K2	52SW2HABJ2K2
1 N.O.	B	X	O	O	O					
1 N.C.	C	O	X	O	O					
1 N.C.	D	O	O	X	O					

Note: X = Closed / O = Open

1) Readily available items are in **bold**.

This is a small representation of stocked items.

Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Keyed Selector Switch

Selection Guide

Keyed Selector Switch

Part Number	52	S a	C b	c	d	e	f ³	g ³	h
-------------	----	--------	--------	---	---	---	----------------	----------------	---

a	Code	Type
	S	Selector Switch

b	Code	Finish
	C	Chrome – Command 52

c	Code	Style
	5	Non-Standard Lock/Key ^{1a}
	6	Standard Lock/Key

d	Code	Function ⁴
	A	2 Position: CAM A ⁴
	B	3 Position: CAM B
	C	3 Position: CAM C ^{2,4}
	D	3 Position: CAM D
	E	3 Position: CAM E
	G	3 Position: CAM G
	H	4 Position: CAM H

e	Code	Lock Type
		2 Position
		Maintained / Spring Return
		Key Removal
		Left Right
	E	All Maintained X X
	F	All Maintained X —
	G	All Maintained — X
	X	Spring from Right X —

						3 Position
						Maintained Position
						Spring Return
						Key Removal
						Left Center Right
	E	All	—	X	X	X
	F	All	—	X	—	—
	G	All	—	—	—	X
	H	All	—	—	X	—
	J	All	—	X	—	X
	K	All	—	X	X	—
	M	All	—	—	X	X
	T	Center, Right	Left	—	X	—
	U	Left, Center	Right	—	X	—
	V	Center	Left, Right	—	X	—
	W	Center, Right	Left	—	—	X
	Y	Center, Right	Left	—	X	X
	Z	Left, Center	Right	X	X	X

						4 Position
						Maintained Position
						Key Removal
						Left Left Center Right Center Right
	E	All	X	X	X	X
	F	All	X	—	—	—
	G	All	—	—	—	X

f ³	Code	Contact Blocks ⁴
	A	1 NO - 1 NC
	J	1 NC
	K	1 NO
	E	1 NC (LB)
	H	1 NO (EM)

g ³	Code	Contact Quantity & Location ⁴
		Left Right
	0	1 —
	1	— 1
	2	1 1
	3	2 —
	4	— 2
	5	2 1
	6	1 2
	7	2 2
	8	3 —
	9	— 3

h	Code	Key Type ^{1b}
	Blank	501CH
	X298	550CH
	X299	549CH
	X300	548CH
	X301	547CH
	X302	506CH



Standard Lock/Key

1a. See page 17-335 for replacement keys, and up-to 15 additional uniquely keyed M - Series Lock Options available for use with the 52SC6 key-operated selector switches.

1b. To order the specific lock types shown in table h, simply append the corresponding "X" suffix to a standard part number (Ordering Example: 52SC6AEX298).

Note: Same list price applies as standard keyed locks.

2. C CAM on spring return selectors is limited to 4 contact blocks. For CAM selection see page 17-337.

3. For operator without contact blocks leave positions f and g blank.

4. Key-Operated Selector Switches with CAM types: A or C with Contact Block Codes: A0, A1, A2, A3, A4, J0, J1, J2, J3, J4, K0, K1, K2, K3 or K4 are available with Hazardous Location CL1, DIV2 Rated Contacts when Suffix "HL" is added to the part number.

Push Buttons & Signaling Devices

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Keyed Selector Switch

Key-operated Selector Switch, Non-Illuminated¹⁾

Contact Type	Contact	Switch Position		Type M = Maintained S = Spring Return	Key Removal	
		Left	Right		Left	Both
					2-Position Operator	
No Contacts	—	—	—	M M	52SC6AF	52SC6AE
				M<---S	52SC6AX	—
1 N.O.	A	O	X	M M	52SC6AFK1	52SC6AEK1
				M<---S	52SC6AXK1	—
1 N.O.	A	O	X	M M	52SC6AFA1	52SC6AEA1
1 N.C.	B	X	O	M<---S	52SC6AXA1	—

Contact Type	Contact	Switch Position			Type M = Maintained S = Spring Return	Key Removal						
		Left	Center	Right		Left	Right	Center	Left & Center	Left & Right	Center & Right	All Positions
						3-Position Operator						
No Contacts	—	—	—	—	M M M	52SC6CF	52SC6CG	52SC6CH	52SC6CK	52SC6CJ	52SC6CM	52SC6CE
					M M M	52SC6BF	52SC6BG	52SC6BH	52SC6BK	52SC6BJ	52SC6BM	52SC6BE
					S--->M M	—	52SC6BW	52SC6BT	—	—	52SC6BY	—
					M M<----S	—	—	52SC6BU	52SC6BZ	—	—	—
					S--->M<---S	—	—	52SC6BV	—	—	—	—
1 N.O.	A	O	O	X	M M M	52SC6CFA1	52SC6CGA1	52SC6CHA1	52SC6CKA1	52SC6CJA1	52SC6CMA1	52SC6CEA1
					S--->M M	—	52SC6CWA1	52SC6CTA1	—	—	52SC6CYA1	—
					M M<----S	—	—	52SC6CUA1	52SC6CZA1	—	—	—
1 N.C.	B	X	O	O	S--->M<---S	—	—	52SC6CVA1	—	—	—	—
1 N.O.	A	O	O	X	M M M	52SC6CFA2	52SC6CGA2	52SC6CHA2	52SC6CKA2	52SC6CJA2	52SC6CMA2	52SC6CEA2
1 N.C.	B	X	O	O	S--->M M	—	52SC6CWA2	52SC6CTA2	—	—	52SC6CYA2	—
1 N.O.	C	O	O	X	M M<----S	—	—	52SC6CUA2	52SC6CZA2	—	—	—
1 N.C.	D	X	O	O	S--->M<---S	—	—	52SC6CVA2	—	—	—	—
1 N.O.	A	O	O	X	M M M	52SC6GFJ2K1	52SC6GGJ2K1	52SC6GHJ2K1	52SC6GKJ2K1	52SC6GJJ2K1	52SC6GMJ2K1	52SC6GEJ2K1
1 N.C.	B	X	O	O								
1 N.C.	C	O	X	O								

Contact Type	Contact	Switch Position				Type M = Maintained S = Spring Return	Key Removal	
		Left	Left Center	Right Center	Right		Right	All Positions
							4-Position Operator	
No Contacts	—	—	—	—	—	M M M M	52SC6HG	52SC6HE
1 N.O.	A	X	O	O	O	M M M M	52SC6HGJ2K1	52SC6HEJ2K1
1 N.C.	B	O	X	O	O			
1 N.C.	C	O	O	X	O			
1 N.O.	A	O	O	O	X	M M M M	52SC6HGJ2K2	52SC6HEJ2K2
1 N.O.	B	X	O	O	O			
1 N.C.	C	O	X	O	O			
1 N.C.	D	O	O	X	O			

Note: X = Closed / O = Open

All Operators listed above are furnished with Lock No. 501CH

1) Readily available items are in bold.

This is a small representation of stocked items.

Push Buttons & Signaling Devices

Actuators and Indicators, Customized Designs

Special locks Switch

Options

Special locks for key-operated switches

Siemens Key-Operated Selector Switches beginning with 51SA6 or 52SC6 can be optionally ordered with the 15 uniquely keyed M-Series Locks by appending the corresponding "X" suffixes from the table below to the catalog number. (Ordering Example for Lock Number M705: 52SC6CEX705).

Note: Pricing for M - Series Locks on this page are slightly higher than standard lock types.

Suffix Code	Lock Number
X705	M705
X709	M709
X713	M713
X714	M714
X715	M715
X723	M723
X725	M725
X738	M738
X749	M749
X750	M750
X757	M757
X766	M766
X779	M779
X782	M782
X795	M795

Spare Keys for Key-Operated Selector Switches

Spare Key	Part Number
550CH (1 Key)	52KEY-550CH
549CH (1 Key)	52KEY-549CH
548CH (1 Key)	52KEY-548CH
547CH (1 Key)	52KEY-547CH
501CH (1 Key)	52KEY-501CH
506CH (1 Key)	52KEY-506CH
M703 (1 Key)	52KEY-M703
M705 (1 Key)	52KEY-M705
M706 (1 Key)	52KEY-M706
M709 (1 Key)	52KEY-M709
M712 (1 Key)	52KEY-M712
M713 (1 Key)	52KEY-M713
M714 (1 Key)	52KEY-M714
M715 (1 Key)	52KEY-M715
M716 (1 Key)	52KEY-M716
M717 (1 Key)	52KEY-M717
M723 (1 Key)	52KEY-M723
M725 (1 Key)	52KEY-M725
M728 (1 Key)	52KEY-M728
M730 (1 Key)	52KEY-M730
M735 (1 Key)	52KEY-M735
M736 (1 Key)	52KEY-M736
M738 (1 Key)	52KEY-M738
M747 (1 Key)	52KEY-M747
M749 (1 Key)	52KEY-M749
M750 (1 Key)	52KEY-M750
M752 (1 Key)	52KEY-M752
M753 (1 Key)	52KEY-M753
M756 (1 Key)	52KEY-M756
M757 (1 Key)	52KEY-M757
M759 (1 Key)	52KEY-M759
M766 (1 Key)	52KEY-M766
M769 (1 Key)	52KEY-M769
M771 (1 Key)	52KEY-M771
M779 (1 Key)	52KEY-M779
M784 (1 Key)	52KEY-M784
M790 (1 Key)	52KEY-M790
M795 (1 Key)	52KEY-M795
M700 (1 Key)	52KEY-M700
M701 (1 Key)	52KEY-M701
M702 (1 Key)	52KEY-M702
M704 (1 Key)	52KEY-M704
M705 (1 Key)	52KEY-M705
M707 (1 Key)	52KEY-M707
M711 (1 Key)	52KEY-M711
M713 (1 Key)	52KEY-M713
M715 (1 Key)	52KEY-M715
M782 (1 Key)	52KEY-M782
M795 (1 Key)	52KEY-M795

Pushbutton Units and Indicator Lights

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Special devices

Selection and ordering data

	Version	Ohms / color	Order no.	Pack
				Unit
	Potentiometer operator 2 Watts, 500 V AC/DC (NEMA Type 4)	50	52MA3B01	1
		150	52MA3B03	
		250	52MA3B04	
		500	52MA3B06	
		750	52MA3B07	
		1 K	52MA3B08	
		2.5 K	52MA3B10	
		5 K	52MA3B12	
		10 K	52MA3B14	
		15 K	52MA3B15	
		25 K	52MA3B16	
		50 K	52MA3B18	
		100 K	52MA3B20	
		150 K	52MA3B21	
		250 K	52MA3B22	
		500 K	52MA3B24	
		1 M	52MA3B26	
		1.5 M	52MA3B27	
		2 M	52MA3B28	
		5 M	52MA3B31	
	2 Button maintained operator Button remains depressed when pushed	black (flush) / red (flush)	52MP2A1A2	1
		black (flush) / red (extended)	52MP2A1B2	
		black (flush) / yellow (mushroom)	52MP2A1W4	
		green (flush) / red (flush)	52MP2A3A2	
		green (flush) / red (extended)	52MP2A3B2	
		green (flush) / red (mushroom)	52MP2A3W2	
		green (flush) / green (mushroom)	52MP2A3W3	
		less caps	52MP2	

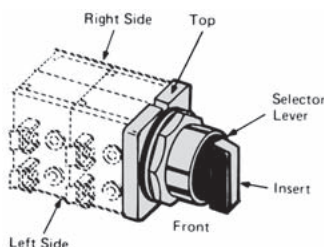
① For use with 52BAJ (NC) contact block

Pushbutton Units and Indicator Lights

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Cam selection

Selection and ordering data



Ordering Information

- Contact blocks are ordered separately, [see page 17-337](#)
- Determine which table to use based upon the type of selector (non-illum selector switch-top, illum selector switch-middle, and selector pushbutton-bottom).
- Find the correct number of selector positions (2, 3 or 4 positions).
- Select the contact operation required for each selector position. X indicates the contacts are closed, while O indicates the contacts are open. (For the selector pushbutton, N=normal and D=depressed).
- Contact block must be assembled in position shown for each circuit application.
- Identify the CAM letter required for the chosen contact operation (only 1 CAM can be used per selector switch or selector pushbutton).
- Contact blocks must be assembled in the position shown for each circuit application. The mounting position is viewed from the front of the device.

Ordering CAMs D, E or G

- CAM D, E or G may be ordered at the same price by changing the 6th character of the selector catalog number. Example: Selector with D cam **52SX2DAB**.

Size Requirements

- C CAM on spring return selectors is limited to 4 contact blocks.
- Selector operators in enclosures are limited to depth of 1 contact block. (2 blocks wide).

Non-illuminated and keyed selector switches (viewed from front)

2 Selector Positions				Contact Blocks	CAM	Mounting	
Left		Right				Left	Right
X		O		NC (52BAJ)	A	L	or R
O		X		NO (52BAK)	A	L	or R

3 Selector Positions				Contact Blocks	CAM	Mounting	
Left	Center	Right				Left	Right
X	O	O		NO (52BAK)	B		R
O	O	X		NO (52BAK)	B	L	
X	X	O		NC (52BAJ)	B	L	
O	X	X		NC (52BAJ)	B		R
X	O	X		2NO (2-52BAK)	B	L	and R
X	O	O		NC (52BAJ)	C	L	or R
O	O	X		NO (52BAK)	C	L	or R
O	X	O		NC (52BAJ)	D	L	or R
O	O	X		NO (52BAK)	D	L	or R
X	O	O		NO (52BAK)	E	L	or R
O	X	O		NC (52BAJ)	E	L	or R
X	O	O		NC (52BAJ)	G	L	
O	X	O		NC (52BAJ)	G		R
O	O	X		NO (52BAK)	G	L	or R

4 Selector Positions				Contact Blocks	CAM	Mounting	
Left	Left Center	Right Center	Right			Left	Right
X	O	O	O	NO (52BAK)	H		R
O	X	O	O	NC (52BAJ)	H	L	
O	O	X	O	NC (52BAJ)	H		R
O	O	O	X	NO (52BAK)	H	L	

Illuminated selector switches (viewed from front)

2 Selector Positions				Contact Blocks	CAM	Mounting	
Left		Right				Left	Right
X		O		NC (52BAJ)	A	L	
O		X		NO (52BAK)	A	L	

3 Selector Positions				Contact Blocks	CAM	Mounting	
Left	Center	Right				Left	Right
O	O	X		NC (52BAJ)	B		R
O	X	O		NO (52BAK)	B		R
X	O	O		NC (52BAJ)	C	L	
O	O	X		NO (52BAK)	C	L	

Selector Pushbuttons (viewed from front)

2 Selector Positions				Contact Blocks	CAM	Mounting	
Left		Right				Left	Right
N	D	N	D				
X	O	O	O	NC (52BAJ)	Q		R
X	X	O	O	NC (52BAJ)	Q	L	
O	X	O	X	NO (52BAK)	Q		R
O	O	O	X	NO (52BAK)	Q	L	
X	O	O	O	NC (52BAJ)	P	L	or R
O	X	X	X	NO (52BAK)	P	L	or R
X	X	X	O	NC (52BAJ)	R	L	
X	O	X	X	NC (52BAJ)	R		R
O	X	O	O	NO (52BAK)	R		R
O	O	O	X	NO (52BAK)	R	L	

3 Selector Positions				Contact Blocks	CAM	Mounting	
Left	Center	Right				Left	Right
N	D	N	D				
X	O	O	O	NC (52BAJ)	S	L	
X	O	X	O	NC (52BAJ)	S		R
O	X	O	O	NO (52BAK)	S		R
O	O	X	O	NO (52BAK)	S	L	

Pushbutton Units and Indicator Lights

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Custom selector switch designs

Selection and ordering data

Assembled Non-illuminated Selector Switches

- Determine contact block and location from above.
- Select block suffix. Ex: **J = 52BAJ**.
- Now select position suffix.
- **1-52BAJ** block mounted on right side, suffix will be **J 1**.
- Additional suffixes allow for multiple quantities and locations.
- Repeat process for next block if required.
- Add list price of blocks to operator list price.
- Consult factory for delivery.

Example 1:	Block Suffix	Position Suffix	
		Suffix	Quantity and Location
X O O O O X HAND-OFF-AUTO Maintained Switch Catalog No 52SA2CAB A 1 = 52A2CABA1 (52BJK block mounted on right side)	A = 1 NO - 1 NC, 52BJK E = NC Late Break, 52BAE H = NO Early Make, 52BAH J = NC, 52BAJ K = NO, 52BAK		
Example 2: X O O 52BAJ (L) O X O 52BAJ (R) O O X 52BAK (L or R) }K1 G Cam required Catalog No 52SA2GAB J2 K1 = 52SA2GABJ2K1			
		0	1 —
		1	— 1
		2	1 1
		3	2 —
		4	— 2
		5	2 1
		6	1 2
		7	2 2
		8	3 —
		9	— 3

Pushbutton Units and Indicator Lights

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Accessories and spare parts

Selection and ordering data

	Version	Suitable for	Color	Order no.
	Flush actuator lens cap The 52RC1 Screw-on style caps shown are used on the new 52BM8 & 52PM8 Pushbutton Operators.	For flush type, non-illuminated pushbuttons bag of 5 caps	black red green yellow blue gray orange kit- all colors	52RC1A1 52RC1A2 52RC1A3 52RC1A4 52RC1A5 52RC1A6 52RC1A8 52RC1AN
	Extended actuator lens cap The 52RC1 Screw-on style caps shown are used on the new 52BM8 & 52PM8 Pushbutton Operators.	For extended type, non-illuminated pushbuttons bag of 5 caps	black red green yellow blue gray orange 1 of each color cap	52RC1B1 52RC1B2 52RC1B3 52RC1B4 52RC1B5 52RC1B6 52RC1B8 52RC1BN
	Replacement Lens for Indicator Lights	For catalog numbers starting with 52PL or 52BL ^① Plastic Glass	red green blue amber clear white 1 of each color red green blue amber clear white 1 of each color	52RA4S2 52RA4S3 52RA4S5 52RA4S9 52RA4SA 52RA4SB 52RA4SN 52RA4T2 52RA4T3 52RA4T5 52RA4T9 52RA4TA 52RA4TB 52RA4TN
	Replacement Lens for Push to Test/Illuminated Pushbuttons The 52RA5S Raised lens caps shown are used on the 52BT6 & 52PT6 PTT/Illuminated Pushbutton Operators. To order Flush lens caps for the new style 52BT8 & 52PT8 PTT/Illuminated Pushbutton Operators change the 52RA5S prefix to 52RC5P (i.e. 52RC5P2).	For catalog numbers starting with 52PT or 52BT ^① Plastic	red green blue amber clear white	52RA5S2 52RA5S3 52RA5S5 52RA5S9 52RA5SA 52RA5SB

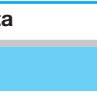
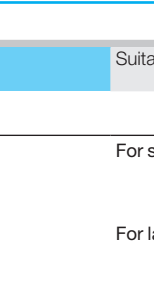
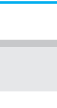
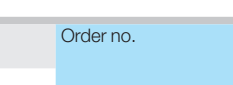
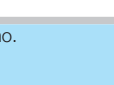
^① It is possible to retrofit catalog numbers starting with 52PA, 52PE and 52PX with the replacement lens. The new lens have concentric ribs for improved light distribution.

Pushbutton Units and Indicator Lights

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Accessories and spare parts

Selection and ordering data

	Version	Suitable for	Color	Order no.
	Mushroom head push pull illuminated plastic screw-on type	For small 1 3/4" type, push-pull units	red green amber	52RC3JR 52RC3JS 52RC3JT
		For large 2 1/2" type, push-pull units	red green amber	52RC3KR 52RC3KS 52RC3KT
		Chrome, for small 1 3/4" type, push-pull units	red green amber white	52RB3H2 52RB3H3 52RB3H9 52RB3HB
		BlackMax, for small 1 3/4" type, push-pull units	red green amber white	52RX3H2 52RX3H3 52RX3H9 52RX3HB
		For small 1 3/4" type, push-pull units (catalog numbers starting with 52PP, 52BP, 52PM9 or 52BM9)	black red green yellow blue gray orange 1 of each color	52RC3D1 52RC3D2 52RC3D3 52RC3D4 52RC3D5 52RC3D6 52RC3D8 52RC3DN
		For large 2 1/2" type, push-pull units (catalog numbers starting with 52PP, 52BP, 52PM9 or 52BM9)	black red green yellow blue gray orange 1 of each color	52RC3E1 52RC3E2 52RC3E3 52RC3E4 52RC3E5 52RC3E6 52RC3E8 52RC3EN
	Mushroom head push pull non-illuminated metal screw-on type	For small 1 3/4" type, push-pull units (catalog numbers starting with 52PP or 52BP)	red green chrome	52RC3F2 52RC3F3 52RC3FC
		For small twist to release units	red green amber	52RC3RR 52RC3RS 52RC3RT
		For small twist to release units	red green yellow	52RC3R2 52RC3R3 52RC3R4
		Replacement lens kit for illuminated selector switches (Knob with Insert)	red green blue amber clear white	52RA6P2 52RA6P3 52RA6P5 52RA6P9 52RA6PA 52RA6PB
	Lever inserts			
	Short lever		red green yellow blue gray orange white	52RA2A2 52RA2A3 52RA2A4 52RA2A5 52RA2A6 52RA2A8 52RA2AB
	Long lever		red green yellow blue gray orange white	52RA2B2 52RA2B3 52RA2B4 52RA2B5 52RA2B6 52RA2B8 52RA2BB

Pushbutton Units and Indicator Lights

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Accessories and spare parts

Selection and ordering data

	Version	Suitable for	Color	Order no.
	Protective boot Offers protection from ice and foreign substances from interfering with button operation	Flush pushbutton operations	clear black	52AABA 52AAB1
	Guards Prevents accidental operation	Non-illuminated basic pushbuttons	chrome blackmax	52AAGP 52AXGP
		1 5/8" mushroom pushbuttons, 1 3/4" push-pull units ^① , and twist to release units	chrome blackmax	52AAGM 52AXGM
		Push to test/illuminated pushbutton and indicator lights	chrome blackmax	52AAGL 52AXGL
	EMERGENCY-STOP Backing Ring	Yellow 90mm E-STOP Backing Ring		52AAR
	Locknuts Replacement front ring	Non-illuminated basic pushbuttons	chrome blackmax	52AANP 52AXNP
		Non-illuminated mushroom pushbuttons	chrome blackmax	52AANL 52AXNL
		Push-pull and twist-to-release units (only for push-pull units starting with 52PP or 52BP) ^②	chrome blackmax	52CANP 52CXNP
		Indicator Lights	blue amber	52AANL 52AXNL
		Selector switches	chrome blackmax	52AANS 52AXNS
	Mounting Accessories	Class 52 Trim Washer Kit (Set of 10 pcs) Class 52 Washer Kit (Include 2-Neoprene Gaskets, 1-Trim Washer, 1-Index Locking Ring (chrome))	chrome	52AAQ 52AAD
	Padlock attachments	Non-illuminated basic pushbuttons	flush extended	52AALA 52AALB
	EMERGENCY-STOP Lock Out	Class 52 Illuminated Mushroom Head Pushbuttons; 304 Stainless Steel	chrome (304 SS)	52AALE
	Padlock cover Lock devices in off position	Pushbuttons, selector switches, and non-illuminated mushroom heads		52AALS
	Lock nut wrench	All devices		52MAWB
	Hole plugs		corrosion resistant steel, grey stainless steel	52AAH6 52ABH6 52ABHS
	Spare keys (Kit includes 1 Key)	Class 52 Standard Keyed Selector Switch. Keyed Selector Switch ordered with Suffix X302. Keyed Selector Switch ordered with Suffix X301. Keyed Selector Switch ordered with Suffix X300. Keyed Selector Switch ordered with Suffix X299. Keyed Selector Switch ordered with Suffix X298.	501CH 506CH 547CH 548CH 549CH 550CH	52KEY-501CH 52KEY-506CH 52KEY-547CH 52KEY-548CH 52KEY-549CH 52KEY-550CH
	Grounding kit	All devices		52AL109145

① These can also be used with the 1 5/8" push-pull devices.

② For push-pull units starting with part numbers 52PA, 52PE or 52PX, replacement locknuts can be ordered using 52AANL (Chrome) and 52AXNL (BlackMax).

Pushbutton Units and Indicator Lights

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Accessories and spare parts

Selection and ordering data^④

Contact version	Number of NO contacts	NC contacts	Version	Plunger color	SD	Article No.
Touchsafe contact blocks for UL Ordinary Location only						
						Screw terminals 
 52BAK	Silver alloy	1	0	1 NO	White	52BAK
		0	1 	1 NC	Red	52BAJ ^②
		1	1 	1 NO - 1 NC	Black	52BJK ^②
		1	0	1 NO early make (closes before 52BAK)	Green	52BAH
		0	1	1 NC late break (opens after 52BAJ)	Yellow	52BAE
		0	1	1 NC extra late break (opens after 52BAE)	Blue	52BAU
	Gold-plated	1	0	1 NO	White	52BAKG
		0	1 	1 NC	Red	52BAJG ^②
		1	1 	1 NO - 1 NC	Black	52BJKG ^②
		1	0	1 NO early make (closes before 52BAKG)	Green	52BAHG
0		1	1 NC late break (opens after 52BAJG)	Yellow	52BAEG	
0		1	1 NC extra late break (opens after 52BAEG)	Blue	52BAUG	
Touchsafe contact blocks for UL Ordinary Location & UL Hazardous Location, CL1, DIV2 ^①						
 52BJKHL	Factory Sealed	1	0	1 NO	NEW	52BAKHL ^{③④}
		0	1	1 NC	NEW	52BAJHL ^{③④}
		1	1	1 NO - 1 NC	NEW	52BJKHL ^③
	Contact blocks for UL Ordinary Location & UL Hazardous Location, CL1, DIV2 ^{①⑤}					
 52BAR	Hermetically Sealed	1	1	1 NO - 1 NC Reed Switch .25A Max, 200V AC, 10 Watt max .5A Max, 200V DC, 10 Watt max	White	52BAR

① HL Series Contact Blocks and Reed Switch are UL listed, for Hazardous Location Class 1, Division 2 Applications.

②  Positive opening according to IEC 60947-5-1, Appendix K.

③ HL Series Contact Blocks are Rated ½ HP@120Vac / 1 HP@208/240/277Vac. See Instruction Sheet E87010-0524-T003-A3, for complete ratings.

④ HL Series Single-contact Blocks are rated 690Vac, 16A, 50-60Hz, See Instruction Sheet E87010-0524-T003-A3, for complete ratings.

⑤ Reed Switch Terminals are not touch safe.

⑥ See Technical Data on page 17-351

Pushbutton Units and Indicator Lights

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Accessories and spare parts

Selection and ordering data

Version	Suitable for	Lamp voltage	Color	Order no.
	Lamps with screw connection, miniature bayonet (BA 9s style)			
	Incandescent lamps,			
	Flashing, type 267 lamp (replaces 755 lamp)	51, 52	6 V	52AABNF
	6V type 755 lamp (Rated 150 mA)	51, 52	6 V	52AABN
	12V type 756 (Rated 80 mA)	51, 52	12 V	52AACN
	24V type 757 (Rated 80 mA)	51, 52	24 V	52AADN
	48V, 2W	52	48 V	3SB1902-1AP
	60V, 2W	52	60 V	3SR9424
	120V, 2.5W, type #120MB (Rated 250 mA)	52	120 V	52AAENC1
	Neon (uses resistors) type B2A (NE-51H)	52	120 V	52AAPN
Candelabra, 120V, 3W, Full voltage type 3S6/5	52 older revision styles	120 V		52AAENC
LED bulbs^①				
LED, BA9s type	Class 52	6 V AC/DC 24 V AC/DC 120 V AC/DC		52AEB□ 52AED□ 52AEE□
Super-Bright LED	Class 52	6 V AC/DC 24 V AC/DC		52AEB□7 52AED□7
LED lighting module with integrated LED^②				
Single LED	Class 52	6-24 V AC/DC 24-240V AC/DC		52AAIL□ 52AAIU□
Full voltage lighting module accessory with BA9s type lamp^③				
LED	Class 52	6 V AC/DC 24 V AC/DC 120 V AC/DC		52AAFB□B 52AAFD□B 52AAFE□B
Super-Bright LED	Class 52	6 V AC/DC 24 V AC/DC		52AAFB□Y 52AAFD□Y
Incandescent bulb	Class 52	6 V AC/DC 24 V AC/DC 120 V AC/DC		52AAFB 52AAFD 52AAFE
Transformer lighting module accessory with BA9s type lamp^③				
LED	Class 52	120 V AC 240 V AC 277 V AC 480 V AC 600 V AC		52AATG□B 52AATH□B 52AATT□B 52AATJ□B 52AATK□B
Super-Bright LED	Class 52	120 V AC 240 V AC 277 V AC 480 V AC 600 V AC		52AATG□Y 52AATH□Y 52AATT□Y 52AATJ□Y 52AATK□Y
Incandescent bulb	Class 52	120 V AC 240 V AC 277 V AC 480 V AC 600 V AC		52AATGN 52AATHN 52AATTN 52AATJN 52AATKN
Color options:			red	2
			green	3
			yellow/amber	4
			blue	5
			white/clear	B

2

3

4

5

B

① Standard LED lamps are recommended for indoor applications, Super-Bright LED Lamps are recommended for outdoor applications.

② Integrated LED Light Modules are rated, for UL Ordinary Location, UL Hazardous Location Class 1, Division 2 Applications.

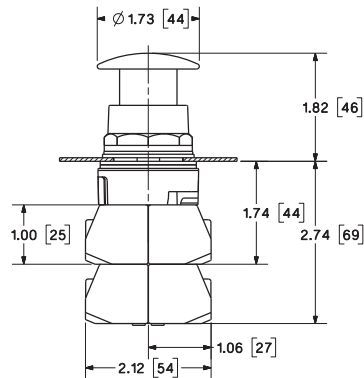
③ Light Modules with BA9s Lamp Sockets are rated, for both UL Ordinary Location and UL Hazardous Location Class 1, Division 2 Applications.

Pushbutton Units and Indicator Lights

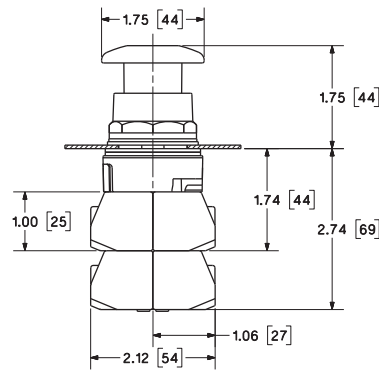
30mm Water, Oil Tight & Corrosion Resistant – Class 52

Dimensional drawings

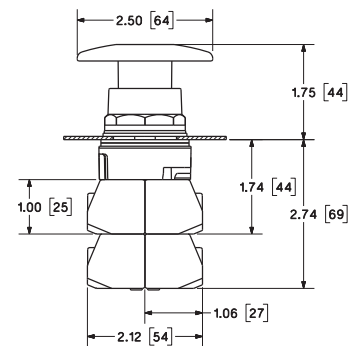
Non-Illuminated Push-Pull
Metal Mushroom Head



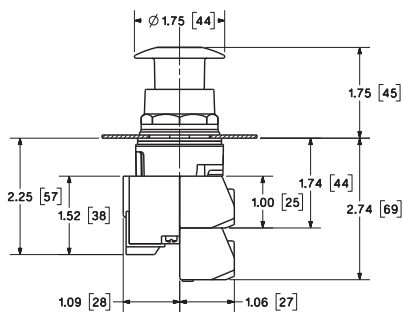
Non-Illuminated Push-Pull
Small Plastic Mushroom Head



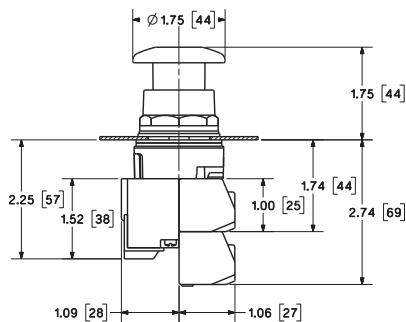
Non-Illuminated Push-Pull
Large Plastic Mushroom Head



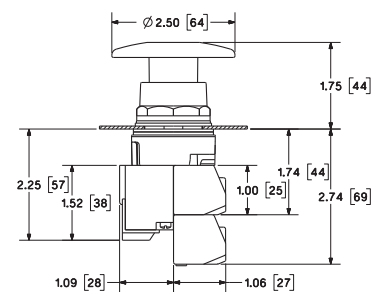
Illuminated Push-Pull
Metal Mushroom Head



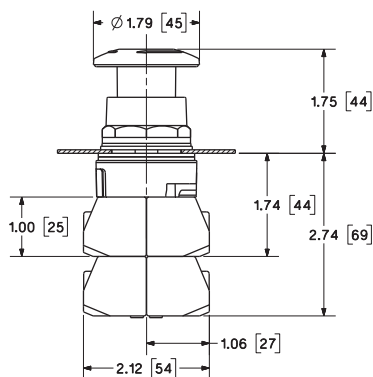
Fully Illuminated Push-Pull
Small Plastic Mushroom Head



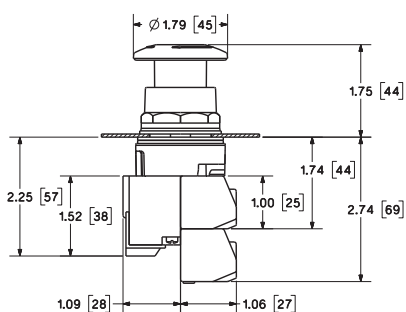
Illuminated Push-Pull
Large Plastic Mushroom Head



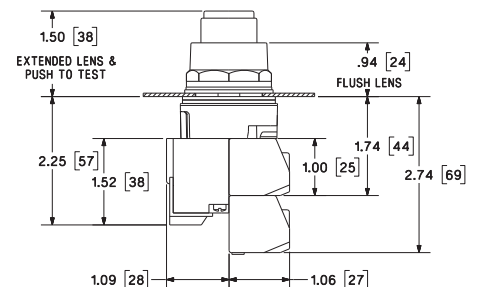
Non-Illuminated Twist Release
Plastic Mushroom Head



Illuminated Twist Release
Plastic Mushroom Head



Illuminated Pushbutton Flush Lens
Illuminated Pushbutton Extended Lens
Illuminated Push to Test

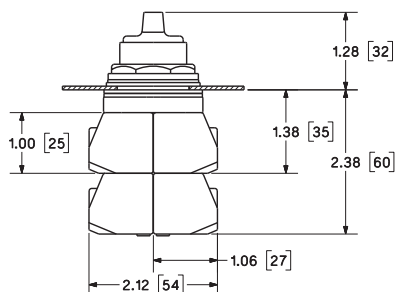


Pushbutton Units and Indicator Lights

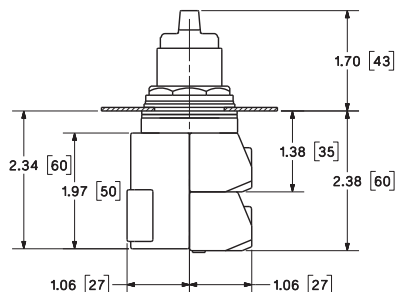
30mm Water, Oil Tight & Corrosion Resistant – Class 52

Dimensional drawings

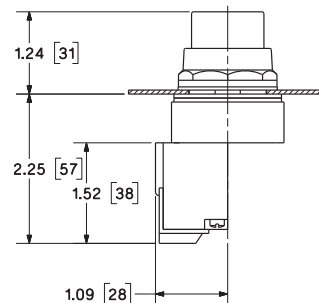
Selector Switch
Non-Illuminated



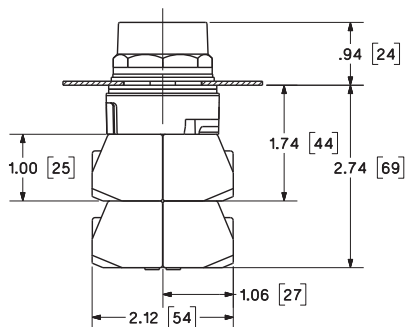
Selector Switch
Illuminated



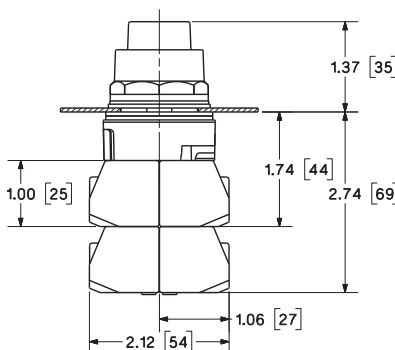
Indicator Light
Plastic Lens



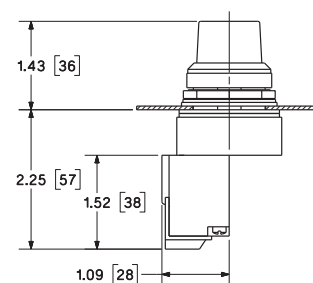
Momentary Pushbutton
Non-Illuminated Flush Cap



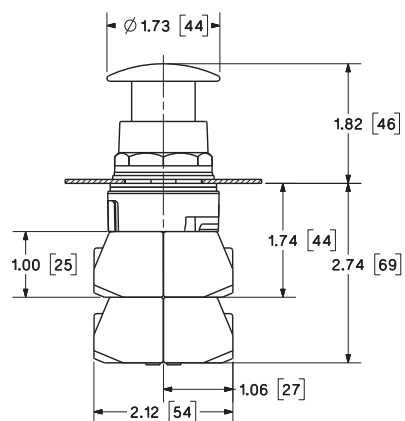
Momentary Pushbutton
Non-Illuminated Raised Cap



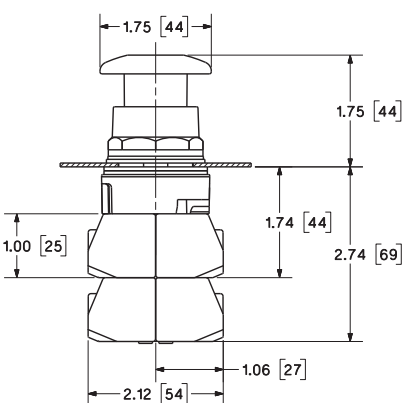
Indicator Light
Glass Lens



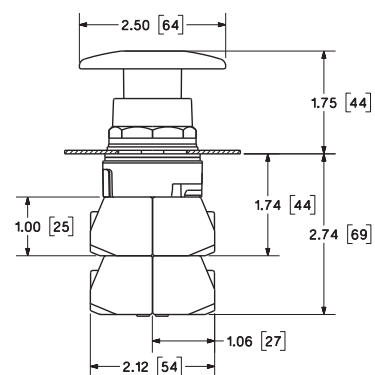
Momentary Pushbutton
Metal Mushroom Head



Momentary Pushbutton
Small Plastic Mushroom Head



Momentary Pushbutton
Large Plastic Mushroom Head

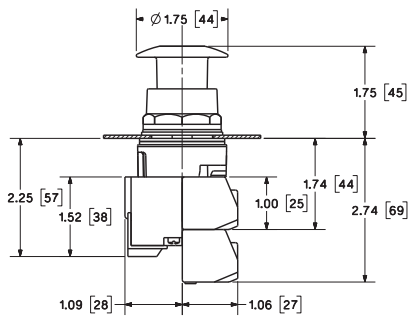


Pushbutton Units and Indicator Lights

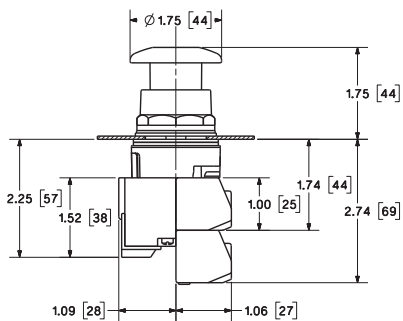
30mm Water, Oil Tight & Corrosion Resistant – Class 52

Dimensional drawings

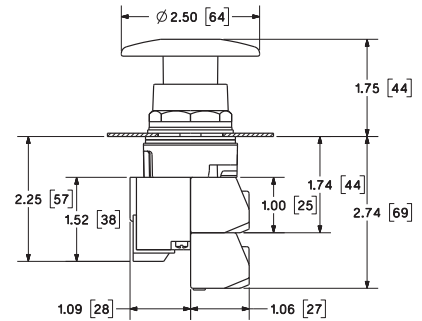
Illuminated Momentary Pushbutton
Metal Mushroom Head



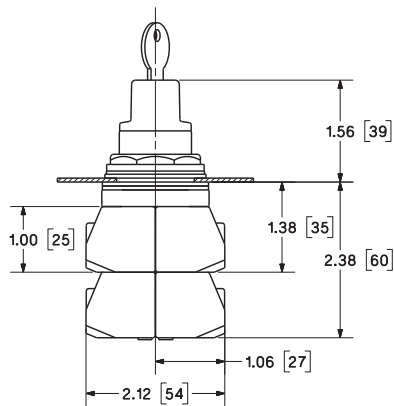
Illuminated Momentary Pushbutton
Small Plastic Mushroom Head



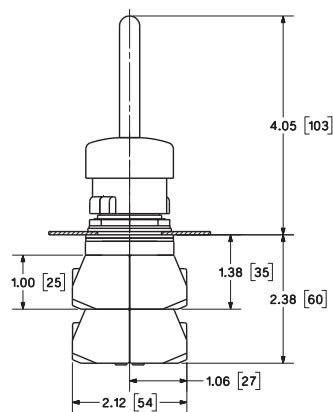
Illuminated Momentary Pushbutton
Large Plastic Mushroom Head



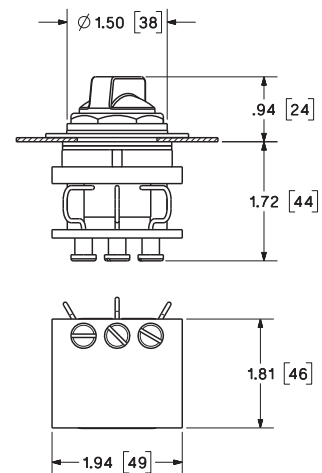
Selector Switch
Keyed



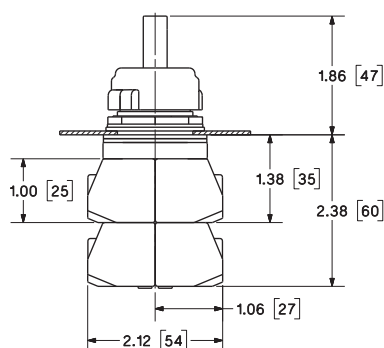
Wobble Switch



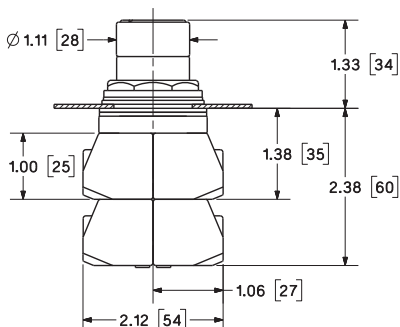
Potentiometer Switch



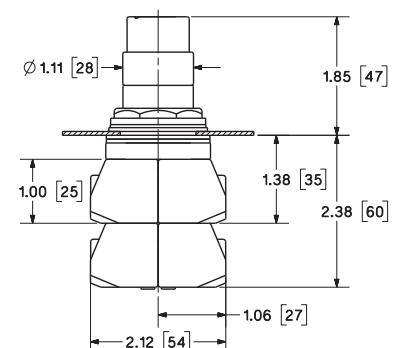
Toggle Switch



Selector Pushbutton Switch
Flush Cap



Selector Pushbutton Switch
Raised Cap

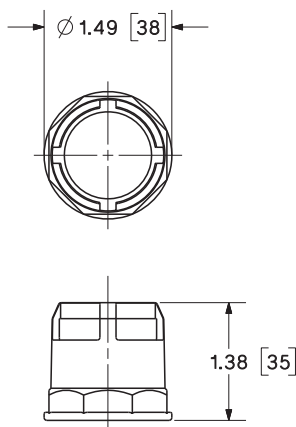


Pushbutton Units and Indicator Lights

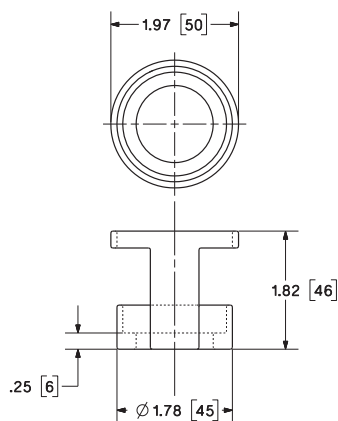
30mm Water, Oil Tight & Corrosion Resistant – Class 52

Dimensional drawings

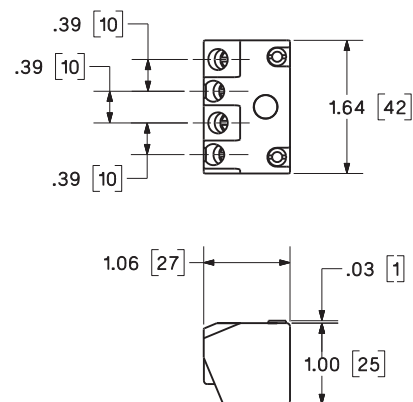
Momentary Pushbutton Guard
Illuminated Push to Test Guard



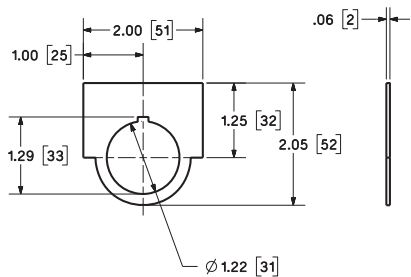
Mushroom Head Guard



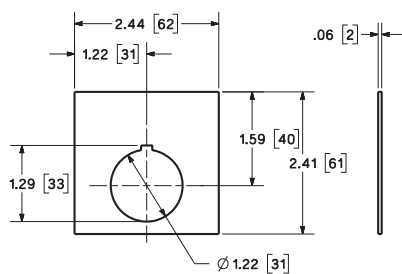
Contact Block



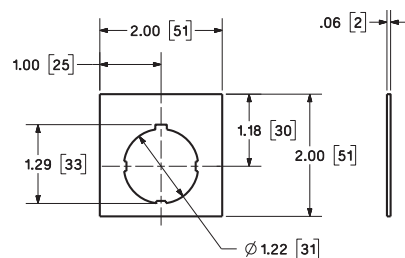
Large Metal Legend Plate



Automotive Metal Legend Plate



Large Plastic Legend Plate



Pushbutton Units and Indicator Lights

30mm Water, Oil Tight & Corrosion Resistant – Class 52

Emergency Power Off Pushbutton (EPO) Stations

Break Glass and Emergency Power Off Pushbutton (EPO) Stations

NEW

Selection and ordering data

Description	Degree of protection	Conduit Entry 3/4" NPT	No. of command points	Contact ^①	Legend Plate	Order no.
Class 52 Oiltight Pushbutton Stations ^③						
Break Glass Pushbutton Station 	NEMA 4X	Side	1	1NO-1NC	"EMERGENCY SHUT-OFF"	52G112FB
		Rear ^②			"EMERGENCY OFF"	52G113FB
					"EMERGENCY POWER OFF"	52G114FB
					"EMERGENCY GENERATOR STOP"	52G115FB
					"EMERGENCY SHUT-OFF"	52G112FR
					"EMERGENCY OFF"	52G113FR
					"EMERGENCY POWER OFF"	52G114FR
					"EMERGENCY GENERATOR STOP"	52G115FR
					"EMERGENCY SHUT-OFF"	52G112FD
		Side and Rear ^②			"EMERGENCY OFF"	52G113FD
"EMERGENCY POWER OFF"	52G114FD					
					"EMERGENCY GENERATOR STOP"	52G115FD
Emergency Power Off EPO Pushbutton Station 	NEMA 4X	Side	1	1NO-1NC	"EMERGENCY POWER OFF"	52C114EB
	NEMA 12/13	N/A	1	1NO-1NC	"EMERGENCY POWER OFF"	52C114A
Accessories						
Break Glass Pushbutton with 1NO-1NC, 4 Extra Glass Lens Inserts						52PM8AGA
Break Glass Pushbutton with 1NO-1NC, 4 Extra Glass Lens Inserts, Mallet, Chain, Clip, Mounting Screw ^④						52PM8AGAH
Replacement Glass Lens Insert Kit (5 piece pack)						52RC1AG
Break Glass Legend Plates ^⑤					"EMERGENCY SHUT-OFF"	52NL112R
					"EMERGENCY OFF"	52NL113R
					"EMERGENCY POWER OFF"	52NL114R
					"EMERGENCY GENERATOR STOP"	52NL115R
EPO Legend Plate ^⑤					"EMERGENCY POWER OFF"	52NF214R
Enclosure, NEMA 4X Aluminum with ANSI 61 Gray finish comes with one 3/4" - 14 NPT conduit entry in side of enclosure, and one Empty Command Point for fitting 30mm Round Devices.						P30EMS01EB

① Pushbutton Station comes with 1) 52BJK, 1NO-1NC contact rated NEMA A600/P600. One additional Class 52 contact block may be field installed if required.

② Versions with Conduit Entry from the Rear available February 2020.

③ All Glass Break Pushbutton Stations come with 4 Extra Glass Lens Inserts.

④ Sealant is not supplied with 52PM8AGAH kits. Note: Teflon Tape or Pipe Dope is required on the Mallet Mounting Clip Screw when field installed in a NEMA 4X Enclosure.

⑤ For a more comprehensive list of our most common legend plates, see page 17-352.

Pushbutton Units and Indicator Lights

30mm Water, Oil Tight & Corrosion Resistant - Class 52

Class 52 oiltight pushbutton stations

Pilot Devices

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CONTROL
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Selection and ordering data

	Actuator identification C = top device in station B = middle device in station A = bottom device in station	Degree of protection ^①	Contact / voltage	No. of command points	Order no.	Pack Unit
1 unit control station 	A = Momentary flush pushbutton black, label "START"	NEMA 12	1NO - 1NC	1	52C101A	
	A = Momentary raised pushbutton red, label "STOP"	NEMA 12	1NO - 1NC	1	52C103A	
	A = Momentary mushroom head red, label "STOP"	NEMA 12	1NO - 1NC	1	52C104A	
	A = Maintained metal mushroom head red, label "EMERGENCY STOP"	NEMA 12	1NO - 1NC	1	52C117A	
	A = 2 position selector switch "OFF-ON"	NEMA 12	1NO - 1NC	1	52C159A	
	A = 3 position selector switch "HAND-OFF-AUTO"	NEMA 12	1NO - 1NC	1	52C156A	
	A = Indicator light, red	NEMA 12	120V Transformer type	1	52C131A	
	A = Indicator light, green	NEMA 12	120V Transformer type	1	52C135A	
	A = Momentary flush pushbutton black, label "START"	NEMA 4X Stainless Steel	1NO - 1NC	1	52C101S	
	A = Momentary raised pushbutton red, label "STOP"	NEMA 4X Stainless Steel	1NO - 1NC	1	52C103S	
	A = Momentary mushroom head red, label "STOP"	NEMA 4X Stainless Steel	1NO - 1NC	1	52C104S	
	A = Maintained plastic mushroom head red, label "EMERGENCY STOP"	NEMA 4X Stainless Steel	1NO - 1NC	1	52C116S	
	A = 2 position selector switch "OFF-ON"	NEMA 4X Stainless Steel	1NO - 1NC	1	52C159S	
	A = 3 position selector switch "HAND-OFF-AUTO"	NEMA 4X Stainless Steel	1NO - 1NC	1	52C156S	
	A = Momentary flush pushbutton black, label "START"	NEMA 4X Fiberglass	1NO - 1NC	1	52C101X	
	A = Momentary raised pushbutton red, label "STOP"	NEMA 4X Fiberglass	1NO - 1NC	1	52C103X	
	A = Momentary mushroom head red, label "STOP"	NEMA 4X Fiberglass	1NO - 1NC	1	52C104X	
	A = Maintained plastic mushroom head red, label "EMERGENCY STOP"	NEMA 4X Fiberglass	1NO - 1NC	1	52C116X	
	A = 2 position selector switch "OFF-ON"	NEMA 4X Fiberglass	1NO - 1NC	1	52C159X	
	A = 3 position selector switch "HAND-OFF-AUTO"	NEMA 4X Fiberglass	1NO - 1NC	1	52C156X	
2 unit control station 	B = Momentary flush pushbutton black, label "START" A = Momentary raised pushbutton red, label "STOP"	NEMA 12	1NO, 1NC 1NO, 1NC	2	52C201A	
	B = Momentary flush pushbutton black, label "START" A = Momentary Mushroom head pushbutton red, label "STOP"	NEMA 12	1NO, 1NC 1NO, 1NC	2	52C202A	
	B = Momentary flush pushbutton, label "FORWARD" A = Momentary flush pushbutton, label "REVERSE"	NEMA 12	1NO, 1NC 1NO, 1NC	2	52C204A	
	B = Momentary flush pushbutton, label "UP" A = Momentary flush pushbutton, label "DOWN"	NEMA 12	1NO, 1NC 1NO, 1NC	2	52C223A	
	B = Indicator light, red, label "RUN" A = Maintained selector switch, label "HAND-OFF-AUTO"	NEMA 12	120V Transformer type	2	52C224A	
	B = Indicator light, red A = Indicator light, green	NEMA 12	120V Transformer type	2	52C230A	
	B = Momentary flush pushbutton black, label "START" A = Momentary raised pushbutton red, label "STOP"	NEMA 4X Stainless Steel	1NO, 1NC 1NO, 1NC	2	52C201S	
	B = Momentary flush pushbutton black, label "START" A = Momentary Mushroom head pushbutton red, label "STOP"	NEMA 4X Stainless Steel	1NO, 1NC 1NO, 1NC	2	52C202S	
	B = Momentary flush pushbutton, label "UP" A = Momentary flush pushbutton, label "DOWN"	NEMA 4X Stainless Steel	1NO, 1NC 1NO, 1NC	2	52C223S	
	B = Indicator light, red, label "RUN" A = Maintained selector switch, label "HAND-OFF-AUTO"	NEMA 4X Stainless Steel	120V Transformer type 1NO, 1NC	2	52C224S	
	B = Momentary flush pushbutton black, label "START" A = Momentary raised pushbutton red, label "STOP"	NEMA 4X Fiberglass	1NO, 1NC 1NO, 1NC	2	52C201X	
	B = Momentary flush pushbutton black, label "START" A = Momentary Mushroom head pushbutton red, label "STOP"	NEMA 4X Fiberglass	1NO, 1NC 1NO, 1NC	2	52C202X	
	B = Momentary flush pushbutton, label "UP" A = Momentary flush pushbutton, label "DOWN"	NEMA 4X Fiberglass	1NO, 1NC 1NO, 1NC	2	52C223X	
	B = Indicator light, red, label "RUN" A = Maintained selector switch, label "HAND-OFF-AUTO"	NEMA 4X Fiberglass	120V Transformer type 1NO, 1NC	2	52C224X	

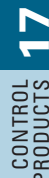
① NEMA 4X Stainless Steel Enclosure is 304 SS.

Pushbutton Units and Indicator Lights

30mm Water, Oil Tight & Corrosion Resistant - Class 52

Class 52 oiltight pushbutton stations

Selection and ordering data

	Actuator identification	Degree of protection ^①	Contact / voltage	No. of command points	Order no.	Pack
						Unit
	C = Indicator light, red	NEMA 12	120V 1NO, 1NC	3	52C307A	
	B = Momentary flush pushbutton black, label "START"		1NO, 1NC			
	A = Momentary raised pushbutton red, label "STOP"		1NO, 1NC			
	C = Momentary flush pushbutton black, label "FORWARD"	NEMA 12	1NO, 1NC	3	52C301A	
	B = Momentary flush pushbutton black, label "REVERSE"		1NO, 1NC			
	A = Momentary raised pushbutton red, label "STOP"		1NO, 1NC			
	C = Momentary flush pushbutton black, label "UP"	NEMA 12	1NO, 1NC	3	52C332A	
	B = Momentary flush pushbutton black, label "DOWN"		1NO, 1NC			
	A = Momentary raised pushbutton red, label "STOP"		1NO, 1NC			
	C = Momentary flush pushbutton black, label "OPEN"	NEMA 12	1NO, 1NC	3	52C333A	
	B = Momentary flush pushbutton black, label "CLOSE"		1NO, 1NC			
	A = Momentary raised pushbutton red, label "STOP"		1NO, 1NC			
	C = Momentary flush pushbutton black, label "HI"	NEMA 12	1NO, 1NC	3	52C334A	
	B = Momentary flush pushbutton, black label "LOW"		1NO, 1NC			
	A = Momentary raised pushbutton red, label "STOP"		1NO, 1NC			
	C = Indicator light, red	NEMA 4X Stainless Steel	120V 1NO, 1NC	3	52C307S	
	B = Momentary flush pushbutton black, label "START"		1NO, 1NC			
	A = Momentary raised pushbutton red, label "STOP"		1NO, 1NC			
	C = Momentary flush pushbutton black, label "FORWARD"	NEMA 4X Stainless Steel	1NO, 1NC	3	52C301S	
	B = Momentary flush pushbutton black, label "REVERSE"		1NO, 1NC			
	A = Momentary raised pushbutton red, label "STOP"		1NO, 1NC			
	C = Momentary flush pushbutton black, label "UP"	NEMA 4X Stainless Steel	1NO, 1NC	3	52C332S	
	B = Momentary flush pushbutton black, label "DOWN"		1NO, 1NC			
	A = Momentary raised pushbutton red, label "STOP"		1NO, 1NC			
	C = Momentary flush pushbutton black, label "OPEN"	NEMA 4X Stainless Steel	1NO, 1NC	3	52C333S	
	B = Momentary flush pushbutton black, label "CLOSE"		1NO, 1NC			
	A = Momentary raised pushbutton red, label "STOP"		1NO, 1NC			
	C = Momentary flush pushbutton black, label "HI"	NEMA 4X Stainless Steel	1NO, 1NC	3	52C334S	
	B = Momentary flush pushbutton, black label "LOW"		1NO, 1NC			
	A = Momentary raised pushbutton red, label "STOP"		1NO, 1NC			
	C = Indicator light, red	NEMA 4X Fiberglass	120V 1NO, 1NC	3	52C307X	
	B = Momentary flush pushbutton black, label "START"		1NO, 1NC			
	A = Momentary raised pushbutton red, label "STOP"		1NO, 1NC			
	C = Momentary flush pushbutton black, label "FORWARD"	NEMA 4X Fiberglass	1NO, 1NC	3	52C301X	
	B = Momentary flush pushbutton black, label "REVERSE"		1NO, 1NC			
	A = Momentary raised pushbutton red, label "STOP"		1NO, 1NC			
	C = Momentary flush pushbutton black, label "UP"	NEMA 4X Fiberglass	1NO, 1NC	3	52C332X	
	B = Momentary flush pushbutton black, label "DOWN"		1NO, 1NC			
	A = Momentary raised pushbutton red, label "STOP"		1NO, 1NC			
	C = Momentary flush pushbutton black, label "OPEN"	NEMA 4X Fiberglass	1NO, 1NC	3	52C333X	
	B = Momentary flush pushbutton black, label "CLOSE"		1NO, 1NC			
	A = Momentary raised pushbutton red, label "STOP"		1NO, 1NC			
	C = Momentary flush pushbutton black, label "HI"	NEMA 4X Fiberglass	1NO, 1NC	3	52C334X	
	B = Momentary flush pushbutton, black label "LOW"		1NO, 1NC			
	A = Momentary raised pushbutton red, label "STOP"		1NO, 1NC			

① NEMA 4X Stainless Steel Enclosure is 304 SS.

Pushbutton Units and Indicator Lights

30mm Water, Oil Tight & Corrosion Resistant - Class 52

Empty enclosures

Pilot Devices

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CONTROL
PRODUCTS

Selection and ordering data



Version	Number of command points	Degree of protection	Order No.①	Pack Unit
Standard enclosures come with 2 1/4" leg center for legend spacing. Automotive end plates require 2 1/2" spacing. For more than 2 contact blocks on the right or left, use extra deep enclosure.	1	NEMA Type 12/13	P30EMS01	
	1	NEMA Type 12/13 extra deep	P30EMS01D	
	1	NEMA Type 4/4X stainless steel	P30EMS014	
	1	NEMA Type 4/4X Fiberglass	P30EMS01X	
Mounting hole arrangement	2	NEMA Type 12/13	P30EMS02	
	2	NEMA Type 12/13 extra deep	P30EMS02D	
	2	NEMA Type 4/4X stainless steel	P30EMS024	
	2	NEMA Type 4/4X Fiberglass	P30EMS02X	
1 thru 4 are in one row	3	NEMA Type 12/13	P30EMS03	
	3	NEMA Type 12/13 extra deep	P30EMS03D	
	3	NEMA Type 4/4X stainless steel	P30EMS034	
	3	NEMA Type 4/4X Fiberglass	P30EMS03X	
6 holes are 3 down and 2 across	4	NEMA Type 12/13	P30EMS04	
	4	NEMA Type 12/13 extra deep	P30EMS04D	
	4	NEMA Type 4/4X stainless steel	P30EMS044	
	4	NEMA Type 4/4X Fiberglass	P30EMS04X	
9 holes are 3 down and 3 across	6	NEMA Type 12/13	P30EMS06	
	6	NEMA Type 12/13 extra deep	P30EMS06D	
	6	NEMA Type 4/4X stainless steel	P30EMS064	
	9	NEMA Type 12/13	P30EMS09	
12 holes are 4 down and 3 across	9	NEMA Type 12/13 extra deep	P30EMS09D	
	9	NEMA Type 4/4X stainless steel	P30EMS094	
	12	NEMA Type 12/13	P30EMS12	
	12	NEMA Type 12/13 extra deep	P30EMS12D	
16 holes are 4 down and 4 across	12	NEMA Type 4/4X stainless steel	P30EMS124	
	16	NEMA Type 12/13	P30EMS16	
	16	NEMA Type 12/13 extra deep	P30EMS16D	
	16	NEMA Type 4/4X stainless steel	P30EMS164	

Order Form

Enclosure Hole Arrangement	Ordering Information	
	To order non-standard control stations select catalog numbers from the previous pages, determine the required position in the enclosure and fill in the table below. If a special legend plate is required, specify description in the table. The combined list prices of the components is the list price of the station.	
	• Select enclosure • Vertical or Horizontal. Outline Diagram at left starting at the top left-hand corner. Example: 3 unit vertical outline location No. 1A, 2A and 3A. 3 unit horizontal outline location No. 1A, 1B, and 1C • List location No. and applicable catalog numbers in the table below. Use complete catalog numbers where possible	
	Order No./Item No. Customer Enclosure Catalog No.	

Location	Operator PB-SEL.-PL	Accessories Key Lock, Boot, Etc,	Legend Plate Legend or Blank	Special Marking

① NEMA 4X Stainless Steel Enclosure is 304 SS.

Pushbutton Units and Indicator Lights

30 mm Heavy Duty, Watertight/Oiltight, Class 52

Legend plates for Class 51 and 52

Design

The 30 mm legend plates are approved for the use with both Class 51 and Class 52 devices.
Automotive legend plates require 2 1/2" mounting centers. Plastic legend plates will have white letters ingraved.

When ordering custom engraved legend plates, specify the required inscription text.

Selection and ordering data

Inscription	Large (1 1/4" x 2")	Automotive ^① (2 7/16" x 2 7/16")	Large Plastic ^② (2 1/16" x 2")	Automotive Plastic ^{①②} (2 7/16" x 2 7/16")
	Order No.	Order No.	Order No.	Order No.
"Blank (brushed aluminum)"	52NL02	52NA02	—	—
"Blank (red)"	52NL02R	52NA02R	52ND02R	52NE02R
"Blank (Black)"	52NL02B	52NA02B	52ND02B	52NE02B
Inscribed legend plates with large brushed aluminum background				
Close	52NL18	52NA18	—	—
Down	52NL10	52NA10	—	—
Emerg Stop	52NL16	52NA16	—	—
Emerg Stop (red)	52NL16R	52NA16R	—	—
Fast-Slow	52NL33	52NA33	—	—
Forward	52NL05	52NA05	—	—
For-Off-Rev	52NL38	52NA38	—	—
For-Rev	52NL31	52NA31	—	—
Hand-Off-Auto	52NL37	52NA37	—	—
High	52NL07	52NA07	—	—
High-Low	52NL30	52NA30	—	—
High-Off-Low	52NL44	52NA44	—	—
In	52NL21	52NA21	—	—
Jog	52NL13	52NA13	—	—
Jog-Forward	52NL24	52NA24	—	—
Jog-Reverse	52NL25	52NA25	—	—
Low	52NL08	52NA08	—	—
Lower	52NL20	52NA20	—	—
Man-Auto	52NL35	52NA35	—	—
Off	52NL12	52NA12	—	—
Off-On	52NL26	52NA26	—	—
On	52NL11	52NA11	—	—
On-Off-Auto	52NL40	52NA40	—	—
Open	52NL17	52NA17	—	—
Open-Close	52NL34	52NA34	—	—
Open-Off-Close	52NL41	52NA41	—	—
Out	52NL22	52NA22	—	—
Pull to Start Push to Stop	52NL47	52NA47	—	—
Raise	52NL19	52NA19	—	—
Raise-Lower	52NL36	52NA36	—	—
Reset	52NL14	52NA14	—	—
Reverse	52NL06	52NA06	—	—
Run	52NL23	52NA23	—	—
Run-Jog	52NL29	52NA29	—	—
Safe-Run	52NL27	52NA27	—	—
Slow-Off-Fast	52NL39	52NA39	—	—
Start	52NL03	52NA03	—	—
Start-Jog	52NL28	52NA28	—	—
Start-Stop	52NL32	52NA32	—	—
Stop	52NL04	52NA04	—	—
Stop (red)	52NL04R	52NA04R	—	—
Up	52NL09	52NA09	—	—
Up-Down	52NL49	52NA49	—	—
Up-Off-Down	52NL42	52NA42	—	—
Inscription plates with custom engraving				
"Custom engraved (brushed aluminum)"	52NL02E	52NA02E	—	—
"Custom engraved (red)"	52NL02RE	52NA02RE	52ND02RE	52NE02RE
"Custom engraved (Black)"	52NL02BE	52NA02BE	52ND02BE	52NE02BE
Max. number of rows	2	2	2	2
Letter height	5/32"	1/4"	5/32"	1/4"
Characters per row	14	16	14	16

① Automotive requires 2 1/2" mounting centers

② White letters on plastic nameplate.

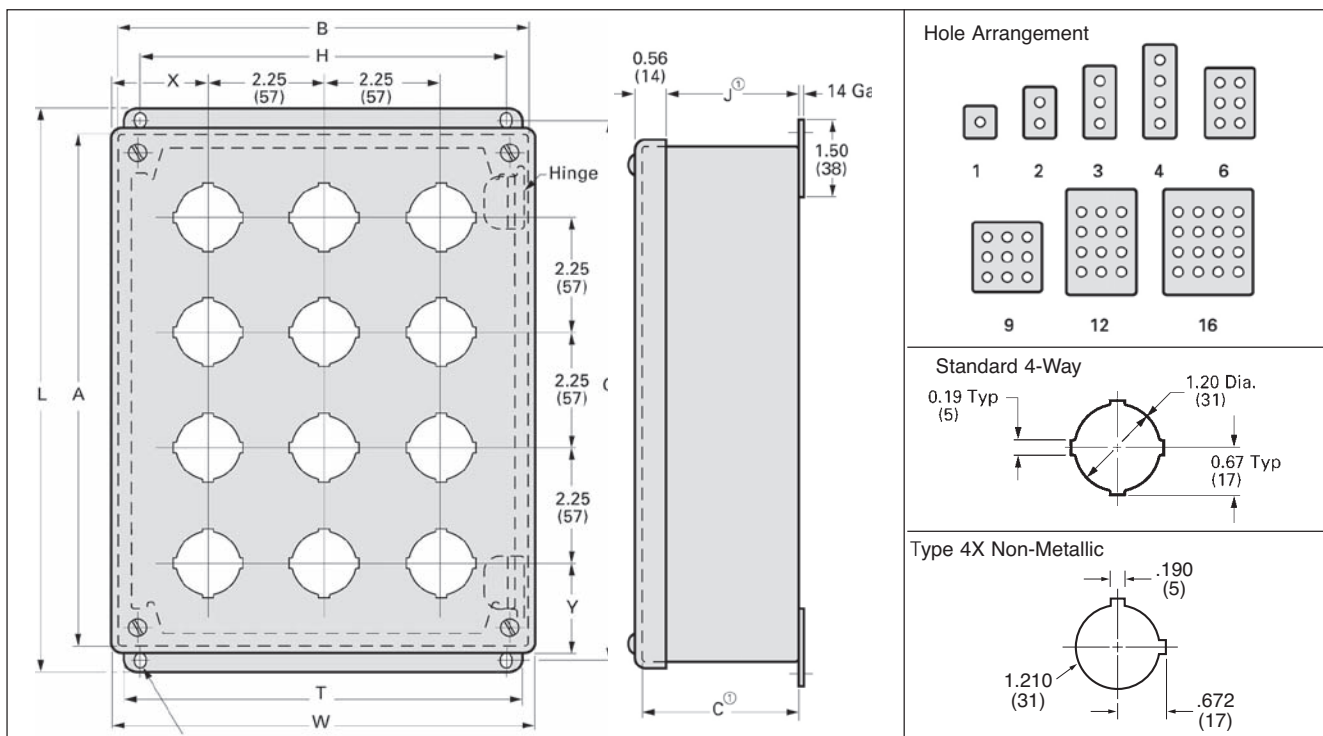
Pushbutton Units and Indicator Lights

30mm Heavy Duty, Watertight/Oiltight, Class 52

Dimensional drawings

Pilot Devices

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CONTROL
PRODUCTS



Type 12/13 and 4X Stainless Steel

Units	Enclosure Size			Mounting		Overall					
	A	B	C	G	H	L	W	J	T	X	Y
1	3.50 (89)	3.25 (83)	2.75 (70)	4.00 (102)	2.38 (60)	4.50 (114)	3.47 (88)	2.31 (59)	3.00 (76)	1.73 (44)	1.86 (47)
2	5.75 (146)	3.25 (83)	2.75 (70)	6.25 (159)	2.38 (60)	6.75 (171)	3.47 (88)	2.31 (59)	3.00 (76)	1.73 (44)	1.86 (47)
3	8.00 (203)	3.25 (83)	2.75 (70)	8.50 (216)	2.38 (60)	9.00 (229)	3.47 (88)	2.31 (59)	3.00 (76)	1.73 (44)	1.86 (47)
4	10.25 (260)	3.25 (83)	2.75 (70)	10.75 (273)	2.38 (60)	11.25 (286)	3.47 (88)	2.31 (59)	3.00 (76)	1.73 (44)	1.86 (47)
6	9.50 (241)	6.25 (159)	3.00 (76)	10.00 (254)	5.38 (137)	10.50 (267)	6.47 (164)	2.56 (65)	6.00 (152)	2.11 (54)	2.61 (66)
9	9.50 (241)	8.50 (216)	3.00 (76)	10.00 (254)	7.62 (194)	10.50 (267)	8.72 (221)	2.56 (65)	8.25 (210)	2.11 (54)	2.61 (66)
12	11.75 (298)	8.50 (216)	3.00 (76)	12.25 (311)	7.62 (194)	12.75 (324)	8.72 (221)	2.56 (65)	8.25 (210)	2.11 (54)	2.61 (66)
16 ²⁾	11.75 (298)	10.75 (273)	3.00 (76)	12.25 (311)	9.88 (251)	12.75 (324)	10.97 (279)	2.56 (65) ²⁾	10.50 (267)	2.11 (54)	2.61 (66)

Type 12/13 Extra Deep Enclosures

Units	Enclosure Size			Mounting		Overall					
	A	B	C	G	H	L	W	J	T	X	Y
1	4.00	4.00	4.75	4.50	3.12	5.00	4.22	4.31	3.75	2.11	2.11
2	6.00	4.00	4.75	6.50	3.12	7.00	4.22	4.31	3.75	2.11	1.98
3	8.00	4.00	4.75	8.50	3.12	9.00	4.22	4.31	3.75	2.11	1.86
4	10.00	4.00	4.75	10.50	3.12	11.00	4.22	4.31	3.75	2.11	1.73
6	9.50	6.25	4.75	10.00	5.38	10.50	6.47	4.31	6.00	2.11	2.61
9	9.50	8.50	4.75	10.00	7.62	10.50	8.72	4.31	8.25	2.11	2.61
12	11.75	8.50	4.75	12.25	7.62	12.75	8.72	4.31	8.25	2.11	2.61
16 ²⁾	11.75	10.75	4.75	12.25	9.88	12.75	10.97	4.31	10.50	2.11	2.61

Type 4X Non-Metallic

Units	Enclosure Size			Mounting		Overall	
	A	B	C	G	H	L	W
1	6.00	3.19	3.63	4.88	2.94	6.63	3.81
2	6.00	3.19	3.63	4.88	2.94	6.63	3.81
3	8.26	3.19	3.63	7.13	2.94	8.88	3.81
4	10.51	3.19	3.63	9.37	2.94	11.13	3.81

All dimensions shown in inches and (millimeters). For reference purposes only. Not to be used for design or construction purposes.

- 1) Grounding stud in body of enclosure.
- 2) For stainless steel add 1.75 (45) to depth.

Pushbutton Units and Indicator Lights

30 mm Pilot Devices

Technical Specifications

Standards	UL Listed File # E22655	CSA Certified File # LR6535
Utilization	Category NEMA	A600/P600
Degree of Protection	52B, 52P-, 52S-, 52M- Operators	NEMA: 1, 3, 3R, 4, 4X, 12 and 13 IEC 529; IP10, IP11, IP14, IP52, IP54, IP56 and IP66

Rated Operational Current

NEMA A600 – 10 Continuous Amps			NEMA P600 – Rating Codes for DC Control Circuit Application	
Voltage AC	Make Amps	Break Amps	Thermal Continuous Test Current Amps	5.0
120V	60	6	Maximum Make or Break; Current / Amps	
240V	30	3	125V	1.10
480V	15	1.5	250V	0.55
600V	12	1.2	301-600V	0.20
Total VA	7200	720	Maximum Make or Break Volt amperes at 300V or Less	138

Contact Blocks	52BAK, -BAJ®, -BAH, -BAU, -BJK® 52BAR	600VAC Maximum, Heavy Duty 200VAC .25 Amp, 10 Watt Maximum 200VDC .50 Amp, 10 Watt Maximum
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® Positively driven contacts. Contact blocks are suitable for applications down to 5V/1MA low voltage applications as found in PLCs. 52BAR are Class 1; Division 2 Compliant

Pilot Light	Full Voltage	52PL4/52PL5	-B (6-8V), -C (12V), -D (24V), -E (120V), -F (240V)	240V AC/DC Max.
	LED Module	or	-L (24V), -M (120V) -N (240V)	240V AC Max.
	Transformer Type	52BL4/52BL5	-G (120V), -H (240V), -J (480V), -K (600V)	600V AC Max., 50/60 Hz
Push-to-Test	Full Voltage	52PT6	-B (6-8V), -C (12V), -D (24V), -E (120V), -F (240V)	240V AC/DC Max.
	LED Module	or	-L (24V), -M (120V), -N (240V)	240V AC Max.
	Transformer Type	52BT6	-G (120V), -H (240V), -J (480V), -K (600V)	600VAC Max., 50/60 Hz
Illuminated Push-Pull	Full Voltage	52PP2(3,7)	-B (6-8V), -C (12V), -D (24V), -E (120V), -F (240V)	240V AC/DC Max.
	LED Module	or	-L (24V), -M (120V), -N (240V)	240V AC Max.
	Transformer	52BP2(3,7)	-G (120V), -H (240V), -J (480V), -K (600V)	600VAC Max., 50/60 Hz
Twist-to-Release	Full Voltage	52BR8	-B (6-8V), -C (12V), -D (24V), -E (120V), -F (240V)	240V AC/DC Max.
	LED Module	or	-L (24V), -M (120V), -N (240V)	240V AC Max.
	Transformer	52PR8	-G (120V), -H (240V), -J (480V), -K (600V)	600VAC Max., 50/60 Hz
Illuminated Selector Switch	Full Voltage	52SA7(A,B,C)	-B (6-8V), -C (12V), -D (24V), -E (120V), -F (240V)	240V AC/DC Max.
	Transformer	or 52SX7(A,B,C)	-G (120V), -H (240V), -J (480V), -K (600V)	600V AC Max., 50/60 Hz

Dielectric Strength 2200V for one minute

Mechanical Design Life Cycles

Vibration	Frequency 5 - 60Hz.; Disp. .030 inches, sweep 5 minutes for a duration of 30 minutes on each axis. Not to exceed 5.5 G's for maximum of 1 minute.	
Pushbuttons	Momentary, Non-illuminated	5,000,000 Operating Cycles
	Momentary, Illuminated	300,000 Operating Cycles
Push-Pull	Maintained	300,000 Operating Cycles
	Momentary	2,000,000 Operating Cycles
Twist-to-Release		300,000 Operating Cycles
Selector Switches	Non-illuminated	2,000,000 Operating Cycles
	Illuminated, Key-operated	2,000,000 Operating Cycles
Contact Operation	Standard Contact Black Logic Reed	
Wire Gauge	#18-12 AWG	
Terminal Screw Torque	2-10 lb-in / 20 lb-in max; 8 lb-in recommended	
Locknut Torque	15 ft. lbs. max	
Temperature Range	Operating	31F to +158F (-35C to +70C)
	Storage	40F to +185F (-40C to +85C)

All parts are designed and manufactured of corrosion resistant material or are plated or painted as corrosion protection. All contact block contacts are gold flashed as a standard offering. Internal return spring mechanisms of operators and contact blocks of stainless steel. RoHS Compliant.

Declaration of Conformity — The products listed below, to which this declaration relates, are in conformity with the following standards, following the provisions of the Low Voltage Directive (LVD) (73/23/EEC), and the Electromagnetic Compatibility Directive (89/336/EEC.)

Products: Contact Blocks: Cat Nos. 52BAE, 52BAH, 52BAJ, 52BAK, 52BAR, 52BAU and 52BJK, with suffixes. Pilot Lights: Cat Nos 52P, with suffixes. Operators: Cat Nos 52S or 52P, with suffixes.

Applicable Standards: EN 60947-5-1 Low-Voltage Switchgear and controlgear. Enclosed devices meet the requirements of environmental ratings of IP10, IP11, IP14, IP52, IP54, and IP56. Open devices, when mounted as instructed, in environmental type IP10, IP11, IP14, IP52, IP54 or IP56 enclosures, maintain the environmental requirements for those enclosure types. Cat. No. 52BP, 52BR, 52PP, and 52PR, 2 Position, Twist-To-Release and 2 Position, Push Pull Maintained operators provided with red operating heads and 52BJK contact blocks meet the requirements of EN 60947-5-5 for Electrical Emergency Stop Device With Mechanical Latching Function (e-stop).

Push Button Units and Indicator Lights

30.5mm Pilot Device

Class 52 convenience center

Complete convenience center

Catalog number: POP2020

Complete point-of-purchase convenience center

This starter kit features all of the devices and stand required for you to start selling Siemens.

Includes point-of-purchase components:

- (12) Pilot light: Red, Integrated LED Light Module with Multi-Voltage Input 24-240V AC/DC
- (8) Basic pushbutton: Red extended, 1NC
- (4) Basic pushbutton: Green flat, 1NO
- (4) Push-Pull E-STOP: Red mushroom head
- (4) Twist-to-Release E-STOP: Red Mushroom Head
- (4) Selector switch: 3-pos, maintained
- (4) Selector switch: 2-pos, maintained
- (8) Illum. pushbutton: Red, Integrated LED Light Module with Multi-Voltage Input 24-240V AC/DC
- (4) Contact Block: Qty. 3, 52BJK with 1NO-1NC Contact in each POP Kit
- (4) 30mm pushbutton station: 1 hole
- (2) 30mm pushbutton station: 2 hole
- (2) 30mm pushbutton station: 3 hole
- (1) Point-of-purchase display stand

- 52PL4U2P
- 52PM8B2JP
- 52PM8A3KP
- 52PP2W2AP
- 52PR8W2AP
- 52SA2CABA1P
- 52SA2AABA1P
- 52PT6U2AP
- 52BJKP
- P30EMS01P
- P30EMS02P
- P30EMS03P
- 52STANDPOP



Swivel stand features products on both sides of the display board.

Siemens POP2020 convenience center is more flexible than ever.

All Pilot Lights and Illuminated Pushbuttons are provided with the new Multi-Voltage Integrated LED Light Modules suitable for voltages ranging from 24–240V AC/DC. Due to the wide voltage range of the new Integrated LED Light Modules, you can cover more applications with fewer part numbers and less inventory. Additionally, the POP2020 comes with POP Kits containing additional Contact Blocks with 1NC-1NO Contacts, for those applications that require additional control circuits on the pushbuttons or selector switches.

Pilot lights

Catalog number:
52PL4U2P



Pilot light: Red, 24-240V AC/DC with Multi-Voltage Integrated LED Light Module; two extra lenses in green and amber; and two legend plates: "On" and "Stop."

Includes components:

- (1) Red, 24-240V AC/DC Pilot light, Integrated LED 52PL4U2
- (1) Green lens 52RA4S3
- (1) Amber lens 52RA4S9
- (1) "On" legend 52NL11
- (1) "Stop" legend 52NL04

Enclosures

Catalog number:
P30EMS01P



30mm pushbutton station: 1 hole
NEMA 12/13 (IP52/54) standard enclosure

Catalog number:
P30EMS02P



30mm pushbutton station: 2 hole
NEMA 12/13 (IP52/54) standard enclosure

Catalog number:
P30EMS03P



30mm pushbutton station: 3 hole
NEMA 12/13 (IP52/54) standard enclosure

Pilot Devices

17
CONTROL
PRODUCTS

Push Button Units and Indicator Lights

30.5mm Pilot Device

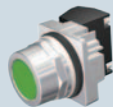
Class 52 convenience center

Pilot Devices

17
CONTROL
PRODUCTS

Pushbuttons

Catalog number:
52PM8A3KP

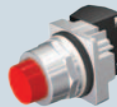


Basic pushbutton: Green flat
momentary with 1NO. Includes extra caps in black, red, yellow and blue and two legend plates: "On" and "Start."

Includes components:

- | | |
|--|----------|
| (1) Green, momentary pushbutton with 1NO | 52PM8A3K |
| (1) Black cap | 52RC1A1 |
| (1) Red cap | 52RC1A2 |
| (1) Yellow cap | 52RC1A4 |
| (1) Blue cap | 52RC1A5 |
| (1) "On" legend | 52NL11 |
| (1) "Start" legend | 52NL03 |

Catalog number:
52PM8B2JP



Basic pushbutton: Red extended
momentary with 1NC. Includes extra caps in black and green and two legend plates: "Stop" and "Off."

Includes components:

- | | |
|--|----------|
| (1) Red, momentary extended head pushbutton with 1NC | 52PM8B2J |
| (1) Black cap | 52RC1B1 |
| (1) Green cap | 52RC1B3 |
| (1) "Stop" legend, red | 52NL04R |
| (1) "Off" legend | 52NL12 |

Emergency stop

Catalog number:
52PP2W2AP



Push-pull: Red mushroom head
2-Pos, maintained, 1 3/4" mushroom head, 1NO-1NC, includes extra 2 1/2" mushroom head, two "Stop" legends, and a 90mm ring inscribed with "Emergency Stop."

Includes components:

- | | |
|---|----------|
| (1) Red, E-STOP with 1 3/4" mushroom head, 2-pos, mntd, 1NO-1NC | 52PP2W2A |
| (1) 2 1/2" mushroom head | 52RC3E2 |
| (1) "Stop" legend, red | 52NL04R |
| (1) "Stop" legend | 52NL04 |
| (1) E-STOP ring legend | 52AAR |

Pushbuttons

Catalog number:
52PT6U2AP



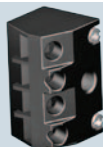
Illuminated pushbutton: Red
24-240V AC/DC with Multi-Voltage Integrated LED Light Module; 1NC-1NO includes extra lenses in green and amber, and two blank legend plates.

Includes components:

- | | |
|--|----------|
| (1) 24-240V AC/DC with Multi-Voltage Integrated LED Light Module; with 1NC-1NO | 52PT6U2A |
| (1) Green lens | 52RA5S3 |
| (1) Amber lens | 52RA5S9 |
| (1) Blank legend | 52NL02 |

Contact Blocks

Catalog number:
52BJKP



Contact Block:
Contact Block, 1NC-1NO, Heavy Duty NEMA A600/P600 rating. Bifurcated movable contacts with touch safe terminals. Positive opening according to IEC 60947-5-1, Annex K.

Includes components:

- | | |
|---|-------|
| (3) Contact Blocks with 1NC-1NO Contact | 52BJK |
|---|-------|

Emergency stop

Catalog number:
52PR8W2AP



Twist-to-release: Red mushroom head
2-Pos, maintained, 1 3/4" mushroom head, 1NO-1NC, two "Stop" legends, and a 90mm ring inscribed with "Emergency Stop."

Includes components:

- | | |
|--|----------|
| (1) Red, E-STOP with 1 3/4" mushroom head, 2pos, mntd, 1NO-1NC | 52PR8W2A |
| (1) "Stop" legend, red | 52NL04R |
| (1) "Stop" legend | 52NL04 |
| (1) E-STOP ring legend | 52AAR |

Selector switch

Catalog number:
52SA2CABA1P



Selector switch:

3 Position maintained, short lever, 1NO-1NC, with two legend plates: "Hand-Off-Auto" and "For-Off-Rev."

Includes components:

- | | |
|--|------------|
| (1) 3-Position maintained short lever selector switch with 1NO-1NC | 52SA2CABA1 |
| (1) "Hand-Off-Auto" legend | 52NL37 |
| (1) "For-Off-Rev" legend | 52NL38 |

Catalog Number:
52SA2AABA1P



Selector switch:

2 Position maintained, short lever, 1NO-1NC, with two legend plates: "Forward-Reversing" and "Off-On."

Includes components:

- | | |
|--|------------|
| (1) 2-Position maintained short lever selector switch with 1NO-1NC | 52SA2AABA1 |
| (1) "Forward-Reversing" legend | 52NL31 |
| (1) "Off-On" legend | 52NL26 |

Display stand

Catalog number:
52STANDPOP

Point-of-purchase display stand
Two side swivel display stand.

POP Stand

52STANDPOP