

SIRIUS HP Rated Magnetic Starters

12



12/1	Selection
12/3	Full Voltage Non-Reversing
12/4	General
12/5	Non - Combination
12/6	Circuit Breaker Combination
12/6	Fusible Switch Combination and Non-Fusible Starter
	Full Voltage Reversing
12/7	General
12/8	Non - Combination
12/9	Circuit Breaker Combination
12/10	Fusible Switch Combination and Non-Fusible Starter
	Two Speed Staters
12/11	General
	<u>Two Speed Two Windings.</u>
	<u>Constant or Variable Torque</u>
12/12	Non - Combination
12/13	Circuit Breaker Combination
12/14	Fusible Switch Combination and Non-Fusible Starter
	<u>Two Speed Single Winding.</u>
	<u>Constant or Variable Torque</u>
12/15	Non - Combination
12/16	Circuit Breaker Combination
12/17	Fusible Switch Combination and Non-Fusible Starter
12/18	Overload Relay Chart
	Factory Modifications
12/19	Selection
12/25	SIRIUS Pre - assembled Starter Packages
12/28	Dimensions

SIRIUS HP Rated Magnetic Starters

Selection

Catalogue Number Selection Guide						
Starter Series	Disconnect Type	Starter Type	Enclosure Type	Contactor Ref. Number	Coil Voltage	Overload Relay Setting Range
page 12/3 through 12/18						page 12/18
V SIRIUS IEC HP rated Starter	1 Non-combination	A FVNR	B CSA type 1 EEMAC type 1 general purpose	15 3RT1015	C 24V/60Hz 24V/50Hz	0A to 4M Standard Class 10 bimetal overload relay
	2 Circuit breaker combination	B FVR	C CSA type 5 EEMAC type 12 dust tight industrial use	16 3RT1016	K 120V/60 Hz 110V/50Hz	RB Optional Class 20 electronic overload relay
	3 Non-fusible type	N 2S1W constant or variable torque	D CSA type 4 EEMAC type 4 watertight	17 3RT1017	M 208V/60Hz	00 Provision for field mounting of overload relay
	4 Fusible combination	R 2S1W constant horsepower	F CSA type 4x EEMAC type 4x watertight corrosion resistant	25 3RT1025	P 240V/60Hz 220V/50Hz	
		U 2S2W constant horsepower		26 3RT1026	V 460V/60Hz 380V/50Hz	
		W 2S2W constant or variable torque		33 3RT1033	T 600V/60Hz	
				34 3RT1034	Z Others Specify	
				35 3RT1035		
				36 3RT1036		
				44 3RT1044		
				45 3RT1045		
				46 3RT1046		



Catalogue Number Selection Guide

Power Line Voltage	Control Circuit	Additional Auxiliary Contacts	Pilot Devices				
			Operators		Indicators		
			Operators Type	Legend Plate(s)	Indicator Type	Functions	Colour Choice
page 12/19		page 12/20	pages 12/20-12/21		page 12/21	page 12/22	
6 600V Max. Distributor Stock	0 Separate control circuit, unfused	0 None	0 none	0 none	0 none	0 none	0 none
1 120V/1Ph/60Hz	N Separate control circuit, fused max 250V	E 4 N.O.	1 or 2 1 push button extended head red	A EMERGENCY STOP	1 or 2 Full Voltage 120V c/w legend plate(s)	1 to 5 1 indicator for 1 function	C to F Colour choice for 1 indicator
2 208V/3Ph/60Hz	F 1 N.O. + 1 N.C.	F 1 N.O. + 1 N.C.	3 or 4 1 twist lock mushroom red	B STOP	3 or 4 Full Voltage 24V c/w legend plate(s)	6 to 8 and A to E 2 indicators for 2 functions	1 to 6 Colour choice for 2 indicators
3 230V/3Ph/60Hz	P One control fuse for 120V 1 ph.	J 3 N.O. + 1 N.C.	5 or 6 2 push buttons 1-red, 1-green	C START STOP	5 or 6 Full Voltage 120V LED c/w legend plate(s)	F to R 3 indicators for 3 functions	K to P Colour choice for 3 indicators
4 460V/3Ph/60Hz	R Standard control transformer c/w 2 prim. & 1 sec. 120V fuse	K 2 N.C.	7 or 8 3 push buttons 1-red, 2-black	D ON OFF	7 or 8 Full Voltage 24V LED c/w legend plate(s)	9 Other Specify each function per colour	9 Other Specify each colour per function
5 575V/3Ph/60Hz	U Extra 50VA capacity Control Transformer	L 2 N.O.	A or B 2 pos. selector switch	E to J 3 legend plates for 3 push button	A Full Voltage 120V w/o legend plate(s)		
7 230V/1Ph/60Hz	W Extra 100VA capacity Control Transformer	M 2 N.O. + 2 N.C.	C or D 2 pos. selector switch spring return	K to T 1 legend plate for 2 pos. selector switch	B Full Voltage 24V w/o legend plate(s)		
8 208V/3Ph/60Hz with 4 wires (+Neutral)	9 Other Specify	9 Other Specify	E or F 2 pos. selector switch key operated	1 to 8 1 legend plate for 3 pos. selector switch	C Full Voltage 120V LED w/o legend plate(s)		
			G or H 3 pos. selector switch	X 3 legend plates for 3 pos. selector switch and START STOP push button	D Full Voltage 24V LED w/o legend plate(s)		
			J or K 3 pos. selector switch spring return	9 Other Specify	9 Other Specify		
			L or M 3 pos. selector switch key operated				
			N or P 3 pos. selector switch spring return key operated				
			T or U 3 pos. selector switch and 2 push buttons START STOP for hand operation				
			9 Other Specify				

SIRIUS HP Rated Magnetic Starters

Full Voltage Non-Reversing

Selection

General



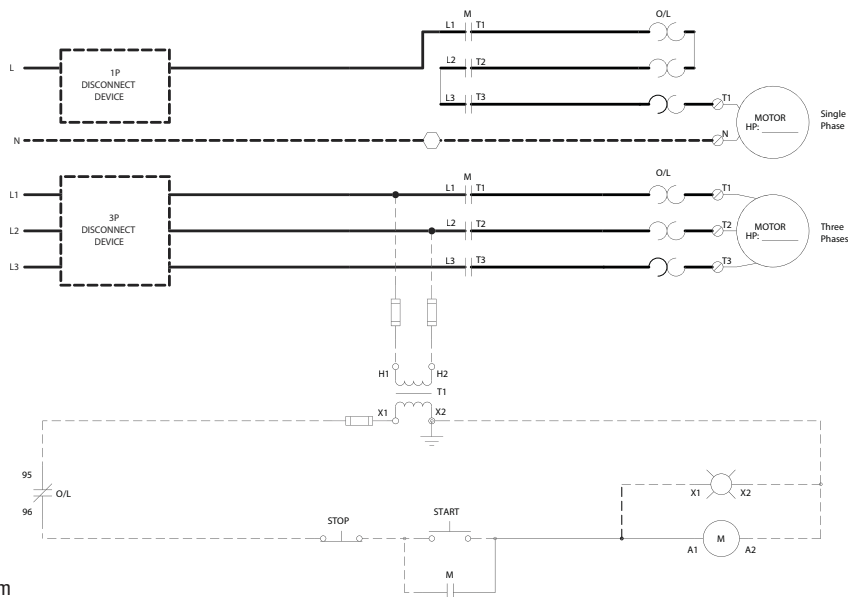
Description

Siemens full voltage non-reversing type starters are designed for full voltage across-the-line starting of single or 3-phase squirrel cage motors. They also can be used as the primary control of wound rotor motors.

Combined with short circuit protection, FVNR starters are also offered as combination starters.

- Fusible disconnect type complete with Form II, Class C fuse clips, or as an option, Form I, Class J fuse clips.
- Circuit breaker type or as Non-Fusible Controller.

FVNR starters are available up to 100HP, 600V AC, EEMAC type 1 or 12 sheet metal enclosed. They are an assembly of the proven 3RT contactors and the exclusive 3RU bimetal overload relays.



FVNR Typical Wiring Diagram

Catalogue No.:

HP Rated Starter

V 1 A B 1 5 K Z . .

Disconnect Type

Starter Type

Enclosure Type

Contactor Ref.

Coil Voltage

Overload Relay P. 12/18

Power Line Volt. and Control Circuit P. 12/19

Additional Aux. Contacts P. 12/20

Pilot Devices Operators P. 12/21

Pilot Devices Indicators P. 12/22

Other options P. 12/23

(fuse clips, control & timing relays, metering & protective devices, etc)

Full Voltage Non-Reversing Non-Combination

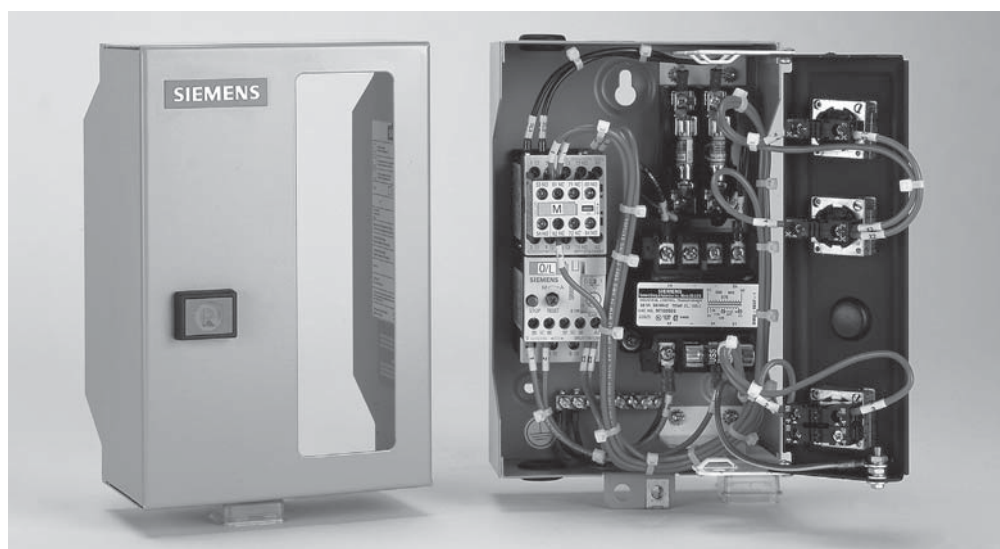
Selection

Standard Features	Ordering Information Required	Coil Voltage Codes		
▶ 1 NO auxiliary contact on all 20A enclosed, 10 HP at 600V starters ▶ 2 NO + 2NC auxiliary contacts on all other sizes ▶ Class 10 bimetal overload relays including: - Manual or Automatic reset - Phase Loss Protection - Separate Trip and Alarm contact ▶ All enclosures are designed to accept a standard sized control transformer ▶ All enclosures have provisions for up to 4 pilot devices	▶ Select basic type nr. from table below. ▶ Add suffix for overload relay setting range from page 12/18 ▶ Add suffix for factory modification from page 12/19 to 12/23	ACV 60 Hz.	ACV 50 Hz	Coil Suffix
		24 120 208 240 460 600	20 110 — 220 380 —	C K M P V T
		other voltages and frequencies are available upon request		

All prices in the table below include a standard Class 10 bimetal overload relay.

The type numbers in the selection table specify a 120V 60 Hz coil. If a different coil voltage is required, change the "K" (7 digit) as per Coil Suffix Table above.

Non-Combination													
Enclosed Amps	CSA MAXIMUM HP RATING						Contactor reference number	Aux, Contacts supplied as standard per contactor		Enclosure Sheet Metal			
	1 phase		3 phase							CSA / EEMAC Type 1 General Purpose Enclosure		CSA Type 5 / EEMAC Type 12 Industrial Use	
	115V	230V	200V	230V	460V	575V		NO	NC	Catalogue No.	Encl. Fig.	Catalogue No.	Encl. Fig.
20	¼	¾	1½	2	3	5	15	1	–	V1AB15K..	V0	V1AC15K..	S
20	⅓	1	2	3	5	7½	16	1	–	V1AB16K..	V0	V1AC16K..	S
20	½	2	3	3	7½	10	17	1	–	V1AB17K..	V0	V1AC17K..	S
35	1	3	5	5	10	15	25	2	2	V1AB25K..	V1	V1AC25K..	S
35	2	3	7½	7½	15	20	26	2	2	V1AB26K..	V1	V1AC26K..	S
35	2	5	7½	10	20	25	33	2	2	V1AB33K..	V1	V1AC33K..	S
45	2	5	10	10	25	30	34	2	2	V1AB34K..	V1	V1AC34K..	S
55	3	7½	10	15	30	40	35	2	2	V1AB35K..	V1	V1AC35K..	S
55	3	10	15	15	40	50	36	2	2	V1AB36K..	V1	V1AC36K..	S
90	5	15	20	25	50	60	44	2	2	V1AB44K..	V2	V1AC44K..	H2
105	7½	15	25	30	60	75	45	2	2	V1AB45K..	V2	V1AC45K..	H2
105	10	–	30	30	75	100	46	2	2	V1AB46K..	V2	V1AC46K..	H2



Replacement Parts

Circuit Breaker Combination

Selection

Standard Features	Ordering Information Required	Coil Voltage Codes		
▶ 1 NO auxiliary contact on all 20A enclosed, 10 HP at 600V starters ▶ 2 NO + 2NC auxiliary contacts on all other sizes ▶ Class 10 bimetal overload relays including: - Manual or Automatic reset - Phase Loss Protection - Separate Trip and Alarm contact ▶ All enclosures are designed to accept a standard sized control transformer ▶ All enclosures have provisions for up to 4 pilot devices	▶ Select basic type nr. from table below ▶ Add suffix for overload relay setting range from page 12/18 ▶ Add suffix for factory modification from page 12/19 to 12/23	ACV 60 Hz.	ACV 50 Hz	Coil Suffix
		24	20	C
		120	110	K
		208	—	M
		240	220	P
		460	380	V
		600	—	T
		other voltages and frequencies are available upon request		

All prices in the table below include a standard Class 10 bimetal overload relay.

The type numbers in the selection table specify a 120V 60 Hz coil. If a different coil voltage is required, change the "K" (7 digit) as per Coil Suffix Table above.

Circuit Breaker Combination ①															
Enclosed Amps	CSA MAXIMUM HP RATING						Contactor reference number	Aux, Contacts supplied as standard per contactor		Enclosure Sheet Metal					
	1 phase		3 phase							CSA / EEMAC Type 1 General Purpose Enclosure			CSA Type 5 / EEMAC Type 12 Industrial Use		
	115V	230V	200V	230V	460V	575V		NO	NC	Catalogue No.		Encl. Fig.	Catalogue No.		Encl. Fig.
20	¼	¾	1½	2	3	5	15	1	—	V2AB15K..	1028.	V2	V2AC15K..	1206.	H2
20	⅓	1	2	3	5	7½	16	1	—	V2AB16K..	1028.	V2	V2AC16K..	1206.	H2
20	½	2	3	3	7½	10	17	1	—	V2AB17K..	1082	V2	V2AC17K..	1262.	H2
35	1	3	5	5	10	15	25	2	2	V2AB25K..	1117.	V2	V2AC25K..	1297.	H2
35	2	3	7½	7½	15	20	26	2	2	V2AB26K..	1133.	V2	V2AC26K..	1311.	H2
35	2	5	7½	10	20	25	33	2	2	V2AB33K..	1395.	V2	V2AC33K..	1650.	H2
45	2	5	10	10	25	30	34	2	2	V2AB34K..	1395.	V2	V2AC34K..	1650.	H2
55	3	7½	10	15	30	40	35	2	2	V2AB35K..	1395.	V2	V2AC35K..	1650.	H2
55	3	10	15	15	40	50	36	2	2	V2AB36K..	1879.	V2	V2AC36K..	2252.	H2
90	5	15	20	25	50	60	44	2	2	V2AB44K..	2345.	V4	V2AC44K..	2684.	H5
105	7½	15	25	30	60	75	45	2	2	V2AB45K..	2345.	V4	V2AC45K..	2684.	H5
105	10	—	30	30	75	100	46	2	2	V2AB46K..	3759.	V4	V2AC46K..	4183.	H5

① Factory will automatically select the circuit breaker based on standard or given motor full-load current and the following:

- Continuous-current rating of a minimum 115% of motor full-load current.
- Trip-setting position is 11 times motor full load current.

Full Voltage Non-Reversing Fusible Switch Combination and Non-Fusible Starter

Selection

Standard Features	Ordering Information Required	Coil Voltage Codes		
▶ 1 NO auxiliary contact on all 20A enclosed, 10 HP at 600V starters ▶ 2 NO + 2NC auxiliary contacts on all other sizes ▶ Class 10 bimetal overload relays including: - Manual or Automatic reset - Phase Loss Protection - Separate Trip and Alarm contact ▶ All enclosures are designed to accept a standard sized control transformer ▶ All enclosures have provisions for up to 4 pilot devices	▶ Select basic type nr. from table below ▶ Add suffix for overload relay setting range from page 12/18 ▶ Add suffix for factory modification from page 12/18 to 12/23	ACV 60 Hz.	ACV 50 Hz	Coil Suffix
		24	20	C
		120	110	K
		208	—	M
		240	220	P
		460	380	V
		600	—	T
		other voltages and frequencies are available upon request		

All prices in the table below include a standard Class 10 bimetal overload relay.

The type numbers in the selection table specify a 120V 60 Hz coil. If a different coil voltage is required, change the "K" (7 digit) as per Coil Suffix Table above.

Fusible Switch Combinations and Non-Fusible Starters																
En- closed Amps	CSA MAXIMUM HP RATING						FUSE ^① CLIPS Type IIC Amps	Contactor reference number	Aux, Contacts supplied as standard per contactor		Enclosure Sheet Metal					
											CSA / EEMAC Type 1 General Purpose Enclosure				CSA Type 5 / EEMAC Type 12 Industrial Use	
	1 phase		3 phase						Catalogue No.	Encl. Fig.	Catalogue No.	Encl. Fig.				
	115V	230V	200V	230V	460V	575V										
20	1/4	3/4	1 1/2	2	3	5	NONE 30	15	1	—	V3AB15K... 655.	V2	V3AC15K... 833.	H2		
											V4AB15K... 680.	V2	V4AC15K... 858.	H2		
20	1/3	1	2	3	5	7 1/2	NONE 30	16	1	—	V3AB16K... 655.	V2	V3AC16K... 833.	H2		
											V4AB16K... 680.	V2	V4AC16K... 858.	H2		
20	1/2	2	3	3	7 1/2	10	NONE 30	17	1	—	V3AB17K... 721.	V2	V3AC17K... 908.	H2		
											V4AB17K... 747.	V2	V4AC17K... 933.	H2		
35	1	3	5	5	10	15	NONE 30 60	25	2	2	V3AB25K... 746.	V2	V3AC25K... 924.	H2		
											V4AB25K... 771.	V2	V4AC25K... 949.	H2		
											V4AB25K... 771.	V2	V4AC25K... 949.	H2		
35	2	3	7 1/2	7 1/2	15	20	NONE 30 60	26	2	2	V3AB26K... 759.	V2	V3AC26K... 938.	H2		
											V4AB26K... 785.	V2	V4AC26K... 963.	H2		
											V4AB26K... 785.	V2	V4AC26K... 963.	H2		
35	2	5	7 1/2	10	20	25	NONE 30 60	33	2	2	V3AB33K... 988.	V2	V3AC33K... 1243.	H2		
											V4AB33K... 1099.	V2	V4AC33K... 1353.	H2		
											V4AB33K... 1099.	V2	V4AC33K... 1353.	H2		
45	2	5	10	10	25	30	NONE 30 60	34	2	2	V3AB34K... 988.	V2	V3AC34K... 1243.	H2		
											V4AB34K... 1099.	V2	V4AC34K... 1353.	H2		
											V4AB34K... 1099.	V2	V4AC34K... 1353.	H2		
55	3	7 1/2	10	15	30	40	NONE 30 60	35	2	2	V3AB35K... 988.	V2	V3AC35K... 1243.	H2		
											V4AB35K... 1099.	V2	V4AC35K... 1353.	H2		
											V4AB35K... 1099.	V2	V4AC35K... 1353.	H2		
55	3	10	15	15	40	50	NONE 30 60 100	36	2	2	V3AB36K... 1489.	V2	V3AC36K... 1743.	H2		
											V4AB36K... 1540.	V2	V4AC36K... 1794.	H2		
											V4AB36K... 1540.	V2	V4AC36K... 1794.	H2		
											V4AB36K... 1540.	V2	V4AC36K... 1794.	H2		
90	5	15	20	25	50	60	NONE 30 60 100	44	2	2	V3AB44K... 1981.	V4	V3AC44K... 2511.	H5		
											V4AB44K... 2193.	V4	V4AC44K... 2723.	H5		
											V4AB44K... 2193.	V4	V4AC44K... 2723.	H5		
											V4AB44K... 2532.	V4	V4AC44K... 3062.	H5		
105	7 1/2	15	25	30	60	75	NONE 60 100 200	45	2	2	V3AB45K... 1981.	V4	V3AC45K... 2511.	H5		
											V4AB45K... 2193.	V4	V4AC45K... 2723.	H5		
											V4AB45K... 2193.	V4	V4AC45K... 2723.	H5		
											V4AB45K... 2532.	V4	V4AC45K... 3062.	H5		
105	10	—	30	30	75	100	NONE 200	46	2	2	V3AB46K... 2411.	V4	V3AC46K... 3090.	H5		
											V4AB46K... 2631.	V4	V4AC46K... 3310.	H5		

① Starters are suitable for HRC IIC Fuses. Refer to page 12/23 for HRC IJ Fuse Clips.