SDN-C Performance DIN Rail Series

E61379 E137632 E234790

High performance specifications and extensive international certifications ensure that the SolaHD SDN-C is suitable for the most extreme environments, including hazardous locations and off-shore applications. Features like wide operating temperature range, power boost capability, and adjustable output voltage ensure reliable operation in the harshest industrial environments. Parallel operation, extensive LED diagnostics, and universal AC or DC input voltage simplify installation and maintenance. For added reliability, the SDN-C power supplies can be used with the SolaHD Redundancy modules to provide redundant power supply operation.

Applications

- Industrial Automation
- Process Control
- Material Handling and Conveyors
- Hazardous Locations
- Marine Applications

Features

- Extensive international hazardous location certifications, including Class I, Zone 2, ATEX, IECEx, ExEAC. Hazardous location temperature code (T-Code) rating of T4.
- International off-shore certifications, including ABS and DNV-GL
- PowerBoost™ enables short duration overload capability, to start loads with high inrush current
- Three LEDs provide extensive diagnostics
- Dual output terminals for convenience in wiring
- DC OK relay to provide diagnostic information to a PLC, controller, or monitoring system
- Universal AC and DC input voltages to accommodate global requirements
- Wide operating temperature range accommodates both extreme hot and extreme cold environments
- Active Power Factor Correction on most models
- Parallel operation capability standard
- Supports redundant power supply operation using optional SDN™ Redundancy modules
- 5-year limited warranty

* Refer to user manual for installation requirements when used in hazardous locations.

Certifications and Compliances *

All Models

- c UL us Listed, Ind. Control Equipment, E61379
  - UL 508, CSA C22.2 No. 107.1
- c TÜV us UL Recognized Component, ITE, E137632
  - UL 60950-1/CSA C22.2 No. 60950-1, 2nd Edition
- c TÜV us UL Recognized Component, Class I, Div 2; Class I Zone 2; T4 E234790
- CE - Low Voltage Directive
  - IEC/EN60950-1, 2nd Edition
- RoHS Compliant

Models SDN 5-24-100C, SDN 10-24-100C, SDN 16-12-100C, SDN 20-24-100C, SDN 40-24-100C, SDN 5-24-480C, SDN 10-24-480C, SDN 20-24-480CD

- c TÜV us UL Recognized Component, Haz. Loc., E234790
  - UL60079-0/CSA E60079-0, UL 60079-15, CSA E60079-15
  - Class I, Zone 2, AEx nA nC IIC, Ex nA nC IIC
- ATEX Directive
  - EN60079-0, EN60079-7, EN60079-15
  - II 3 G, Ex ec nC IIC Gc
- ***IECEx*** Certified
  - IEC 60079-0, IEC 60079-7, IEC 60079-15
  - Ex ec nC IIC Gc

Models SDN 5-24-100C, SDN 10-24-100C, SDN 16-12-100C, SDN 20-24-100C, SDN 40-24-100C, SDN 5-24-480C, SDN 10-24-480C

- ExEAC TR CU 012/2011 Safety of Equipment intended for Explosive Atmospheres
- ABS Type Approval

Models SDN 5-24-100C, SDN 10-24-100C, SDN 16-12-100C, SDN 20-24-100C, SDN 40-24-100C

- DNV-GL Type Approved

Models SDN 5-24-100C, SDN 10-24-100C, SDN 20-24-100C, SDN 40-24-100C

- KC Certified

SDN-C Specifications (Three Phase)

Description	Catalog Number			
	SDN 5–24–480C	SDN 10–24–480C	SDN 20–24–480CD	SDN 40–24–480C
Input				
Nominal AC Voltage (Range)	380 - 480 Vac (320 - 540 Vac), 3-phase			
Two–phase input [1]	Yes			
Nominal DC Voltage (Range)	600 Vdc (+/- 50 Vdc)			
Frequency	50/60 Hz			
Nominal Current [2]	3 x 0.5 A	3 x 0.8 A	3 x 0.9A	3 x 1.6A
–Inrush current max.	Typ. < 25 A		Negligible	
Efficiency (Losses [3])	> 85% (18 W)	91% (24W)	93% (42 W)	94% (78 W)
Power Factor Correction	Meets EN61000-3-2 Class A		Active Power Factor Correction > 0.92	
Output				
Nominal Voltage [4]	24 V (23.5 – 28.5 Vdc Adj.)			
Initial Voltage Setting	24.5 V ± 1%			
–Tolerance	< ±2 % overall (combination Line, load, time and temperature related changes)			
–Ripple [5]	< 50 mVpp		< 100 mVpp	
PARD (Periodic and Random Deviation)	100 mVpp max		200 mVpp max	
Nominal Current (Rated Power)	5 A (120 W)	10 A (240 W)	20 A (480 W)	40 A (960 W)
Parallel Operation [6]	Single or Parallel operation selectable via front switch.			Active Paralleling.
Turn On Time	< 1 s after AC is applied to input at full resistive load (Tamb=+25°C). <1.5 s With capacitive load 7000µF			
Holdup Time (Full load, 100 Vac Input @ T = +25°C)	20 ms			15 ms
Voltage Fall Time	<150 mS from 95% to 10% rated voltage @ full load (T =+25°C)			
Protection				
–Short Circuit Current	Voltage output automatically goes to near zero and output is protected from continuous short circuit. Auto-recovery.			
–Peak Current [7]	1.5 × Nominal Current for > 4 seconds minimum while holding voltage > 20 Vdc			
–Current Limit	PowerBoost™			
Back EMF Immunity	< 35 V No damage, auto-recovery			
Overvoltage Protection	> 30.5 but < 33 Vdc, auto-recovery			
Over Temperature Protection	LED Alarm and Output shutdown , auto-recovery			
Environmental Data				
Emissions	EN 61000-6-3, EN 55011 Class B, EN 55022 Class B, EN 61326-1, EN 61000-3-2, EN 61000-3-3		EN 61000-6-3, EN 55011 Class B, EN 55032 Class B, EN 61326-1, EN 61000-3-2, EN 61000-3-3	EN 55011 Class B, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3
Immunity	EN 55024, EN 61326-1, EN 61000-6-1, EN 61000-6-2, SEMI F47		EN 55024, EN 61326-1, EN 61000-6-1, EN 61000-6-2, SEMI F47	EN 61000-4-2, EN 61000-4-4, EN 61000-4-5, SEMI F47
General Protection/ Safety	Protected against continuous short circuit, continuous overload, continuous open circuit. IEC 60950-1: Class I Earthed, Output is SELV (Safety Extra Low Voltage), Environmental Rating: Pollution Degree 2 IEC 60529 Ingress Protection Rating: IP20			
Temperature [8]	Storage: -40°C to + 85°C, Operation -40°C to +60°C full power, with linear derating to 75% power from 60 to 70°C (Convection cooling, no forced air required). Operation up to 50% load permissible with sideways or front-side-up mounting orientation.			
Humidity	5 to 95 % RH Non-condensing, IEC 60068-2-2, IEC 60068-2-3			
Vibration	2.5g RMS, 10-2000 Hz (random); three axes for 20 minutes each - IEC 60068-2-6			
Shock	10g RMS, three axes, 11mseconds for each axis - IEC 60068-2-27			
Altitude	0 to 3000 meters (0 to 10,000 feet)			

1. In the event of a phase loss, the power supply will continue to operate normally. However, the resulting lower rectified RMS voltage can cause excessive heat build up, which may eventually cause the unit to shut down if maximum operating temperature is exceeded.
2. Input current ratings are specified with low AC 3-phase input, line conditions, worst case efficiency values and power factor spikes. Input current at nominal AC 3-phase input will typically be half these values.
3. Losses are heat dissipation in watts at full load, nominal line.
4. 24-28 Vdc adjustable guaranteed at full load.
5. Ripple/noise is stated as typical values when measured with a 20 MHZ, bandwidth scope and 50 Ohm resistor
6. All models are capable of paralleling. For redundant operation, please use external Redundancy module. Only the 40A uses active paralleling scheme. Please refer to user manual for details.
7. SDN 20 and SDN 40 are capable of delivering 150% load for approximately 4s before the unit will go to HICCUP mode. SDN 5 and 10 will maintain minimum 4s to deliver 150% load then drops to almost zero Vout. The output voltage will immediately drop to almost zero when load rises above 150%.
8. Contact Tech Support for operation -40°C.

SDN-C Specifications (Three Phase)

Description		Catalog Number			
		SDN 5–24–480C	SDN 10–24–480C	SDN 20–24–480CD	SDN 40–24–480C
Reliability					
MTBF	**Telcordia SR–332 Issue 2 Method 1 Case 3 @ 25°C**	>1,100,000 hours @ 380 Vac >900,000 hours @ 480 Vac	>1,400,000 hours @ 380 Vac >900,000 hours @ 480 Vac	>630,000 hours @ 380 Vac >630,000 hours @ 480 Vac	>600,000 hours @ 380 Vac >550,000 hours @ 480 Vac
	Telcordia SR–332 Issue 2 Method 1 Case 3 @ 40°C	>600,000 hours @ 380 Vac >500,000 hours @ 480 Vac	>910,000 hours @ 380 Vac >600,000 hours @ 480 Vac	>460,000 hours @ 380 Vac >450,000 hours @ 480 Vac SDN 20-24-480CR	>380,000 hours @ 380 Vac >360,000 hours @ 480 Vac
Status Indicators		Visual: 3 status LEDs (Input, Output, Alarm) Relay: N.O. contact rated 200mA/50 Vdc, Signal Active when Vout> 18.5 Vdc +/-5%			
Installation					
Fusing –Input		Input Branch fuse or circuit breaker should be provided by customer. See manual for details.			
–Output		Outputs are capable of providing high currents for short periods of time for inductive load startup or switching. Fusing may be required for wire/loads if 2x Nominal O/P current rating cannot be tolerated. Continuous current overload allows for reliable fuse tripping.			
Mounting		Simple snap-on to DIN TS35/7.5 or TS35/15 rail system.			
Connections [9,10] (Screw Type)	**Input**	16-10 AWG (1.5-6 mm^2) for solid conductors. Screw Torque: 4.4 lb-in (~ 50 N-cm).			
	Output	16-10 AWG (1.5-6 mm^2) for solid conductors. Screw Torque: 7 lb-inch (~ 80 N-cm)			7–6 AWG (10.6–13 mm^2) solid or stranded conductors. Screw Torque: 15.6 lb-inch (176 N-cm)
–Free Space	**Above & Below**	0.98 in (25 mm)		1.6 in (40 mm)	2.80 in (70mm)
	Left & Right	0.98in (25mm)			
	Front	0.59 in. (15 mm)			
Dimensions – WxDxH in (mm)		4.85 × 1.97 × 4.36 (123.0 × 50.0 × 110.0)	4.85 × 2.36 × 4.36 (123.0 × 60.0 × 110.0)	4.85 x 3.42 x 4.98 (123.0 x 87.0 x 127.0)	4.85 x 7.09 x 4.66 (123.0 x 180.0 x 119.0)
Weight – lbs (kg)		1.2 (0.5)	1.5 (0.7)	2.7 (1.2)	5.3 (2.4)
General					
Case		Fully enclosed metal housing with fine ventilation grid to keep out small parts. IP20 touch proof			
Status Indicators		Visual: 3 status LEDs (Input, Output, Alarm) Relay: N.O. contact rated 200mA/50 Vdc, Signal Active when Vout> 18.5 Vdc +/-5%			
Warranty		5 Year Limited Warranty			

9. Screw terminals. Use only one copper wire per terminal. Non-ratcheting torque driver recommended.
10. SDN 40-24-480C only: Output signaling terminal block features (Shut down, Power Good, Current Monitor, Current Balance, signal GND). Please refer to Signals Manual for details.