SDN[™] Performance DIN Rail Series

The SDN DIN Rail power supplies provide industry leading performance. Sag immunity, transient suppression and noise tolerant, the SDN series ensures compatibility in demanding applications. Power factor correction to meet European directive, hazardous location approvals and optional redundant accessories allow the SDN series to be used in a wide variety of applications. Wide operation temperature range, high tolerance to shock and vibration and reliable design make the SDN series the definition of DC power quality.

Features

- Power Factor Correction (per EN61000-3-2)
- · Auto Select 115/230 VAC, 50/60 Hz Input
- · Single Phase models meet SEMI F47 Sag Immunity
- · Class 1, Div 2 Hazardous Locations
 - ATEX approval on 2.5 through 10A Single Phase Models
- · Improved metal mounting clip
- DC OK Signal
- Adjustable Voltage
- SDN10-24-100P New Compact width (3.26")
- · Parallel Capability standard on all units
- Industrial grade design
 - -10°C to 60°C operation without derating. Indefinite short circuit, overvoltage and overtemperature protection.
 - Powers high inrush loads without shutdown or foldback
 - · Rugged metal case and DIN connector
- SDN2.5-24-100P and SDN4-24-100LP meet NEC Class 2
- · Narrow width on rail for space critical applications
- User-friendly front panel
 - Large, rugged, accessible, multiple connection screw terminations
 - Easy installation
- Broad range of product to fit almost any application – 2.5 A through 40 A
- Single and three phase inputs available
- Highly efficient >90% switching technology
- · High MTBF and reliability



CUL 508 Listed IND. CONT. EQ. E61379 UL 60950 E137632 CUL/CSA-C22.2 No. 234-M90

Related Products

- SDP[™] Series
- SFL Series
- SCP Series
- SCL Series

Applications

- Industrial/Machine control
- Process control
- · Conveying Equipment
- · Material Handling
- · Vending Machines
- · Packaging Equipment
- DeviceNet[™]
- Amusement Park Equipment
- Semiconductor Fabrication Equipment

Accessories

Chassis Mount Bracket (SDN-PMBRK2)



The Sola Difference







SDN[™] Specifications (Single Phase)

Description	Catalog Number					
Description	SDN 2.5-24-100P	SDN 4-24-100LP	SDN 5-24-100P	SDN 10-24-100P	SDN 20-24-100P	
		Iı	nput	Δ	·	
Nominal Voltage			115/230 VAC auto select			
-AC Range			85-132/176-264 VAC			
-DC Range ⁶	90-375 VDC		210-375 VDC		N/A	
-Frequency			47 - 63 Hz			
Nominal Current ¹	1.3 A. / 0.7 A	2.1 A / 1.0 A	2.2 A / 1.0 A	5 A / 2 A typ.	9 A/ 3.9 A	
-Inrush current max.	typ. < 25 A	typ	o. < 20 A	typ. <	40 A	
Efficiency (Losses ²)	> 87.5% typ (8.6 W)	> 88% typ (13.1 W)	> 88% typ (16.4 W)	> 88% typ (32.7 W)	> 90% typ (48 W)	
Power Factor Correction		λ	Units Fulfill EN61000-3-2	Δ		
		0	utput			
Nominal Voltage	24 VDC (22.5 - 28.5 VDC adj.)	24 VDC (22.5 - 25.5 VDC adj.)		24 VDC (22.5 - 28.5 VDC adj.)		
-Tolerance		< ±2% overall (comb	ination Line, load, time and tempera	ture related changes)		
-Ripple ³			< 50 mVpp			
Nominal Current	2.5 A (60 W)	3.8 A (92 W)	5 A (120 W)	10 A (240 W)	20 A (480 W)	
-Peak Current⁴	1.6x Nominal Current < 2 sec.	4.2 A max at 23.8V	6 A 2x Nominal Current < 2 sec.	12 A 2x Nominal Current < 2 sec.	25 A 2x Nominal Current < 2 sec.	
-Current Limit	Fold	Forward (Current rises, voltage	drops to maintain constant power du	uring overload up to max peak cur	rent)	
Holdup Time⁵	> 50 ms	> 100 ms	> 100	ms	> 20 ms	
Parallel Operation	Single or Parall	l el use is selectable via Front Pa	I Inel Switch (SDN4 should not be use	d in parallel as Class 2 rating wou	Id be violated.)	
•		Ge	eneral			
EMC:						
-Emissions		EN61000-6-3, -4; Class B	EN55011, EN55022 Radiated and C	onducted including Annex A.		
-Immunity	EN61000-6-1, -2; EN61000-4-;	EN61000-6-1, -2; EN61000-4-2 Level 4, EN61000-4-3 Level 3; EN61000-4-6 Level 3; EN61000-4-4 Level 4 input and Level 3 output; EN61000-4-5 Isolation Class 4, EN61000-4-11; Transient resistance according to VDE 0160/W2 over entire load range.				
Approvals	EN60950; EN50178; EN60204; UL508 Listed, cULus; UL60950, cRUus, CE (LVD 73/23 & 93/68/EEC). EN61000-3-2, IEC60079-15 (Class 1, Zone 2, Hazardous Location, Groups A, B, C, D w/ T3A temp class up to 60°C Ambient.) SEMI F47 Sag Immunity. SDN2.5 & SDN4 - UL60950 testing to include approval as Class 2 power supply.					
Temperature	Storage: -25°C+85°C Operation10°-60°C full power with operation to 70°C possible with a linear derating to half power from 60°C to 70°C (Convection coolin no forced air required). Operation up to 50% load permissable with sideways or front side up mounting orientation. The relative humidity is < 90% RH, noncondensing; IEC 68-2-2, 68-2-3. For operation below -10°C, contact Technical Services.					
MTBF:	> 820,000 hours	> 640	,000 hours	> 600,000 hours	> 510,000 hours	
- Standard	Bellcore Issue 6 Method 1 Case 3 @ 40C MIL217F @ 3				MIL217F @ 30C	
Warranty	5 years					
General Protection/Safety	Protected against continuous short-circuit, overload, open-circuit. Protection class 1 (IEC536), degree of protection IP20 (IEC 529) Safe low voltage: SELV (acc.EN60950)					
Status Indicators		Green LED and DC C	OK signal (N.O. Solid State Contact r	ated 200 mA / 60 VDC)		
	•	Inst	allation			
Fusing -Input	Internally fused. External 10 A slow acting fusing for the input is recommended to protect input wiring.					
-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 system for DIN Rail TS35/7.5 or TS35/15 or chassis-mounted (optional screw mounting set SDN-PMBRK2 required).					
Connections	Input: IP20-rated screw terminals, connector size range: 16-10 AWG (1.5-6 mm2) for solid conductors. 16-12 AWG (0.5-4 mm2) for flexible conductors. Output: Two connectors per output, connector size range: 16-10 AWG (1.5 - 6 mm2) for solid conductors.					
	Fully enclosed metal housing with fine ventilation grid to keep out small parts.					
Case	25 mm above and below, 25 mm left and right, 10 mm in front 25 mm above and below, 25 mm left and right, 10 mm in front				. OF mm left and right	
Case -Free Space						
		4.88 in. x 2				

Input current ratings are conservatively specified with low input, worst case efficiency and power factor. 2 Losses are heat dissipation in watts at full load, nominal input line.

Ripple/noise is stated as typical values when measured with a 20 MHz, bandwidth scope and 50 Ohm resistor.

⁴ All peak current is calculated at 24 Volt levels. 5 Full load, 100 VAC Input @ T_{amb} = +25°C

6 Not UL listed for DC input.

Visit our website at www.solaheviduty.com or contact Technical Services at (800) 377-4384 with any questions.

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SDN™ Specifications (Three Phase)

	Catalog Number					
Description	SDN 5-24-480	SDN 10-24-480	SDN 20-24-480C	SDN 30-24-480	SDN 40-24-480	
	· · · · · ·		Input		·	
Nominal Voltage	1Ø or 3Ø 3	80-480 VAC	1Ø or 3Ø 380 - 480 VAC ¹	3Ø 380 - 4	480 VAC	
-AC Range			340 - 576 VAC			
-DC Range			450 - 820 VDC			
-Frequency			47 - 63 Hz			
Nominal Current	0.5 A	0.8 A	1.5 A	2.0 A	3.0 A	
-Inrush current max.		typ. < 18 A		typ. <	30 A	
Efficiency (Losses) 3	> 90% typ (12 W)	> 90% ty	rp (48 W)	> 90% typ (72 W)	> 90% typ (96 W)	
Power Factor Correction			Units Fulfill EN61000-3-2			
			Output			
Nominal Voltage			24 VDC (22.5 - 28.5 VDC adj.)			
-Tolerance		< ±2% overall (comb	ination Line, load, time and tempera	ture related changes)		
-Ripple ⁴		, , , , , , , , , , , , , , , , , , ,	< 50 mVpp	<u> </u>		
Nominal Current	5 A (120 W)	10 A (240 W)	20 A (480 W)	30 A (720 W)	40 A (960 W)	
-Peak Current	6 A 2x Nominal Current <2sec.	12 A 2x Nominal Current <2 sec.	25 A 2x Nominal Current <2sec.	35 A 2x Nominal Current < 2 sec.	45 A 2x Nominal Current<2 sec	
-Current Limit			l	Iring overload up to max peak curre	L	
Holdup Time		0 ms	> 28 ms	> 20	,	
Parallel Operation				on the unit. The SDN40 contains act	-	
			General		g	
EMC						
- Emissions	EN61000-6-3, -4; Class B EN55011, EN55022 Radiated and Conducted including Annex A.					
-Immunity	EN61000-6-1, -2; EN61000-4-2 Level 4, EN61000-4-3 Level 3; EN61000-4-6 Level 3; EN61000-4-4 Level 4 input and Level 3 output; EN61000-4-5 Isolation Class 4, EN61000-4-11; Transient resistance according to VDE 0160/W2 over entire load range.					
Approvals	CB Scheme, EN60950; EN50178; EN60204; UL508 Listed, cULus; UL60950, cRUus, CE (LVD 73/23 & 93/68/EEC). EN61000-3-2, IEC 60079-15 (Class 1, Zone 2 hazardous location, Groups IIA, IIB, IIC w/T3 temp class up to 60°C Ambient.				C 60079-15 (Class 1, Zone 2	
Temperature	Storage: -25oC+85oC Operation10oC -60oC full power with operation to 70oC possible with a linear derating to half power from 60oC to 70oC (Convection cooling, no forced air required). Operation up to 50% load permissable with sideways or front side up mounting orientation. The relative humidity is < 90% RH, noncondensing; IEC 68-2-2, 68-2-3.					
MTBF	> 1,110,000 hours	> 940,000 hours	> 550,000 hours	> 620,000 hours	> 490,000 hours	
-Standard	MIL217F @ 30C					
Warranty			5 years			
General Protection/ Safety	Protected against continuous short-circuit, overload, open-circuit. Protection class 1 (IEC536), degree of protection IP20 (IEC 529) Safe low voltage: SELV (acc.EN60950)					
Status Indicators	Green LED on when Vout = 18V or greater.					
		Ir	stallation			
Fusing						
-Input	Internally fused.					
-Output	Outputs are capable of providing high currents for short periods of time for inductive load startup or switching.					
Mounting	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.					
Connections	Simple snap-on system for DIN Rail TS35/7.5 or TS35/15 or chassis-mounted (optional screw mounting set SDN-PMBRK2 required).					
	Input: IP20-rated screw terminals, connector size range: 16-10 AWG (1.5-6 mm2) for solid conductors. 16-12 AWG (0.5-4 mm2) for flexible conductors. Output: Two connectors per output, connector size range: 16-10 AWG (1.5-6 mm2) for solid conductors. ⁵					
Case		Fully enclosed metal	housing with fine ventilation grid to	keep out small parts.		
-Free Space	25 mm above and below, 25 n	nm left and right, 15 mm in front	70 mm above	and below, 25 mm left and right , 15	5 mm in front	
H x W x D (inches/mm)	4.88 in. x 2.91 in. x 4.55 in. (124 mm x 73 mm x 116 mm)	4.88 in. x 3.5 in. x 4.55 in. (124 mm x 89 mm x 116 mm)	4.88 in. x 5.9 in. x 4.55 in. (124 mm x 150 mm x 116 mm)	4.88 in. x 9.72 in. x 4.55 in. (124 mm x 247 mm x 116 mm)	4.88 in. x 11.1 in. x 4.55 in. (124 mm x 282 mmx 116 mm)	
			•			

¹ For the SDN 20-24-480C, single phase input is permissable, but output is derated to 75% (15 Amps @ 24 VDC).

² Input current ratings are conservatively specified with low input, worst case efficiency and power factor.

³ Losses are heat dissipation in watts at full load, nominal input line.

⁴ Ripple/noise is stated as typical values when measured with a 20 MHz, bandwidth scope and 50 Ohm resistor.

⁵ For the SDN 40-24-480, output: one (+) two (-) connectors, size range 16-5 AWG (1.5016 mm²) solid conductor.

Visit our website at www.solaheviduty.com or Contact **Technical Services** at **(800) 377-4384** with any questions.



SDN™ Series Dimensions



Catalog Number	Dimensions - inches (mm)			
	Н	W	D	
SDN 2.5-24-100P	4.88 (124)	1.97 (50)	4.55 (116)	
SDN 4-24-100LP	4.88 (124)	2.56 (65)	4.55 (116)	
SDN 5-24-100P	4.88 (124)	2.56 (65)	4.55 (116)	
SDN 5-24-480	4.88 (124)	2.91 (73)	4.55 (116)	
SDN 10-24-100P	4.88 (124)	3.26 (83)	4.55 (116)	



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Catalog Number	Dimensions - inches (mm)			
Catalog Number	Н	W	D	
SDN 20-24-100P	4.88 (124)	6.88 (175)	4.55 (116)	
SDN 10-24-480	4.88 (124)	3.50 (89)	4.55 (116)	
SDN 20-24-480C	4.88 (124)	5.90 (150)	4.55 (116)	
SDN 30-24-480	4.88 (124)	9.72 (247)	4.55 (116)	
SDN 40-24-480	4.88 (124)	11.10 (282)	4.55 (116)	



SDN™ Series Mounting

DIN Rail Mounting

Snap on the DIN Rail:

- 1. Tilt unit slightly backwards
- 2. Put it onto the DIN Rail
- 3. Push downwards until stopped
- 4. Push at the lower front edge to lock
- 5. Shake the unit slightly to ensure that the retainer has locked

Alternative Panel Mount: Using the optional SDN-PMBRK2 accessory, the unit can be screw mounted to a panel.



Click

Detachment from DIN Rail:

from the DIN Rail.

Chassis Mounting

Instead of snapping a Sola SDN[™] unit on the DIN Rail, you can also attach it using the screw mounting set SDN-PMBRK2.

Press button downwards (to unlock) and remove the unit

This set consists of two metal brackets, which replace the existing two aluminum profiles.



Dimensions



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