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.

UL 508 Listed
IND. CONT. EQ.
E61379

UL 60950
E137632
CUL/CSA-C22.2
No. 234-M90

EMC and
Low Volt.
Directive

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

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

Strong all metal DIN connector for horizontal or vertical mounting

Rugged metal packaging

Large, heavy-duty screw terminals for #10 AWG/4 mm^2, for quick, easy installation

Multiple output connections for ease of wiring multiple devices

DC OK Signal

Single or parallel use selectable by user

Easy to use, clearly labeled front panel

Adjustable output voltage

No internal fan, no extra cooling required in any power level

UL508 listing means no derating in UL 508 systems

Full CE compliance for safety, emissions and ingress protection

Automatically adjusts for either 115 or 230V, 50 or 60 Hz Input. No manual intervention required.

Narrow width for minimal panel space required

SDN™ Specifications (Single Phase)

Description	Catalog Number				
	SDN 2.5-24-100P	SDN 4-24-100LP	SDN 5-24-100P	SDN 10-24-100P	SDN 20-24-100P
Input					
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. < 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	Units Fulfill EN61000-3-2				
Output					
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 (combination Line, load, time and temperature 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 Current[4]	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 during overload up to max peak current)				
Holdup Time[5]	> 50 ms	> 100 ms	> 100 ms		> 20 ms
Parallel Operation	Single or Parallel use is selectable via Front Panel Switch (SDN4 should not be used in parallel as Class 2 rating would be violated.)				
General					
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	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 Operation. -10°-60°C full power with operation to 70°C possible with a linear derating to half power from 60°C to 70°C (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. 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 @ 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 OK signal (N.O. Solid State Contact rated 200 mA / 60 VDC)				
Installation					
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.				
Case	Fully enclosed metal housing with fine ventilation grid to keep out small parts.				
-Free Space	25 mm above and below, 25 mm left and right, 10 mm in front		25 mm above and below, 25 mm left and right, 15 mm in front	70 mm above and below, 25 mm left and right, 15 mm in front	
H x W x D (inches/mm)	4.88 in. x 1.97 in. x 4.55 in. (124 mm x 50 mm x 116 mm)	4.88 in. x 2.56 in. x 4.55 in. (124 mm x 65 mm x 116 mm)		4.88 in. x 3.26 in. x 4.55 in. (124 mm x 83 mm x 116 mm)	4.88 in. x 6.88 in. x 4.55 in. (124 mm x 175 mm x 116 mm)
Weight (lbs/g)	1 lb (460g)	1.5 lbs (620g)		2.2 lbs (1100g)	3 lbs (1520g)

1 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.
3 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.

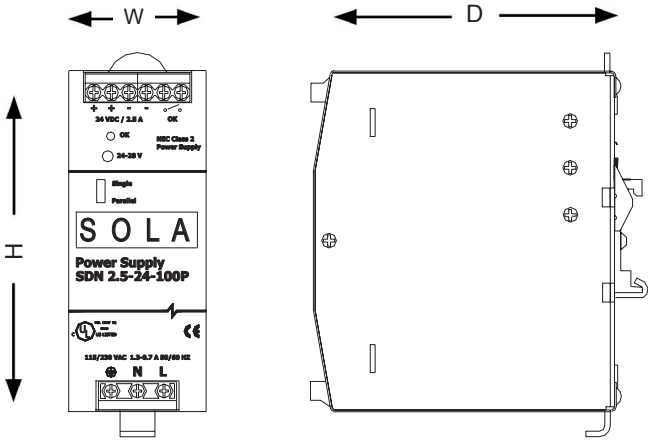
Visit our website at www.solaheviduty.com or
contact **Technical Services** at **(800) 377-4384** with any questions.

SDN™ Specifications (Three Phase)

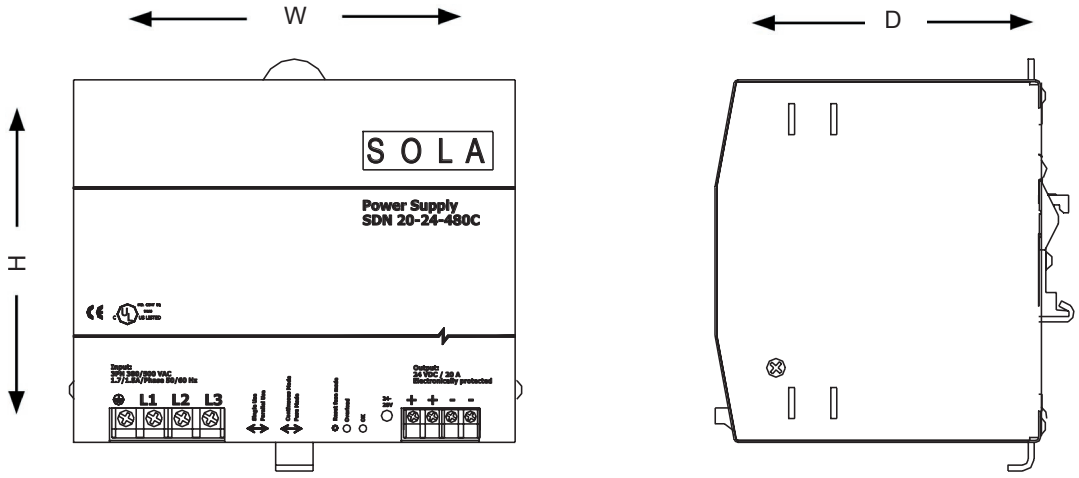
Description	Catalog Number				
	SDN 5-24-480	SDN 10-24-480	SDN 20-24-480C	SDN 30-24-480	SDN 40-24-480
Input					
Nominal Voltage	1Ø or 3Ø 380-480 VAC		1Ø or 3Ø 380 - 480 VAC[1]	3Ø 380 - 480 VAC	
-AC Range	340 - 576 VAC				
-DC Range	450 - 820 VDC				
-Frequency	47 - 63 Hz				
Nominal Current	0.5 A	0.8 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% typ (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 (combination Line, load, time and temperature related changes)				
-Ripple[4]	< 50 mVpp				
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	Fold Forward (Current rises, voltage drops to maintain constant power during overload up to max peak current)				
Holdup Time	> 40 ms		> 28 ms	> 20 ms	
Parallel Operation	5A through 30A units may be passively paralleled by selecting the “P” position of the switch on the unit. The SDN40 contains active current balancing.				
General					
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.				
Temperature	Storage: -25oC...+85oC Operation. -10oC -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.				
Installation					
Fusing					
-Input	Internally fused.				
-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.[5]				
Case	Fully enclosed metal housing with fine ventilation grid to keep out small parts.				
-Free Space	25 mm above and below, 25 mm left and right, 15 mm in front		70 mm above and below, 25 mm left and right , 15 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)
Weight (lbs/g)	1.7 lbs (730g)	2.16 lbs (980g)	3.97 lbs (1800g)	4 lbs (2000g)	6.6 lbs (3300g)

[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 mm[2]) solid conductor.

SDN™ Series Dimensions



Catalog Number	Dimensions - inches (mm)		
	H	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)



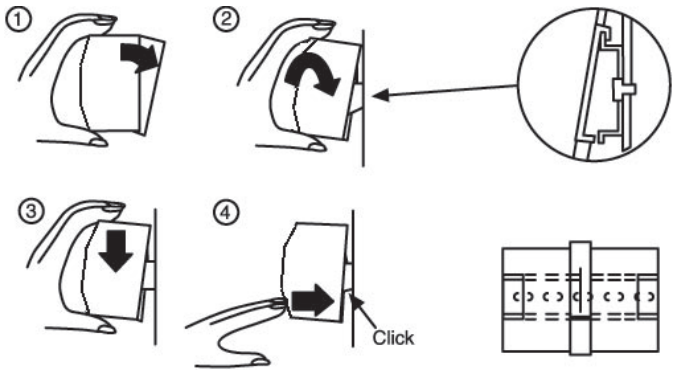
Catalog Number	Dimensions - inches (mm)		
	H	W	D
SDN 20-24-100P	4.88 (124)	6.88 (175)	4.55 (116)
SDN 10-24-480	4.88 (124)	3.50 (89)	4.55 (116)
SDN 20-24-480C	4.88 (124)	5.90 (150)	4.55 (116)
SDN 30-24-480	4.88 (124)	9.72 (247)	4.55 (116)
SDN 40-24-480	4.88 (124)	11.10 (282)	4.55 (116)

SDN™ Series Mounting

DIN Rail Mounting

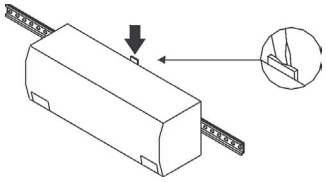
Snap on the DIN Rail:

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.

Detachment from DIN Rail:

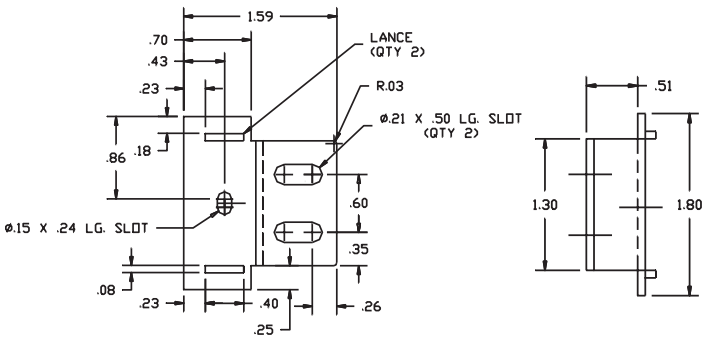


Press button downwards (to unlock) and remove the unit from the DIN Rail.

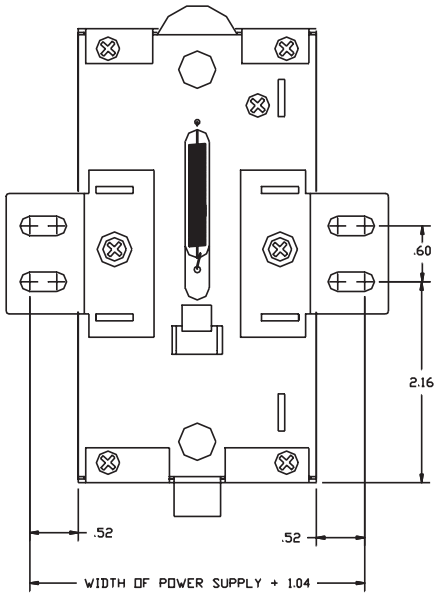
Chassis Mounting

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

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



Dimensions



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

SolaHD:

SDN10-24-100 SDN2.5-24-100 SDN-20-24-100 SDN20-24-480 SDN4-24-100 SDN5-24-100