

## SDN-P 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 directives, 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 preferred choice of users everywhere.

### 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, Zone 2 Hazardous Locations
  - ATEX approval on 2.5 through 10A, 24 Vdc Single Phase Models
  - ATEX approval pending on 12 Vdc and 48 Vdc 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, 24 Vdc
- Single and three phase inputs available
- 12 Vdc and 48 Vdc single phase models available
- Highly efficient >90% switching technology
- High MTBF and reliability
- RoHS compliant



UL 508 Listed  
IND. CONT. EQ.  
E61379



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



EMC and  
Low Volt.  
Directive

### Related Products

- SDP™ Series
- SFL Series
- SCP Series
- SCL Series
- SDU UPS

### 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)

## SDN™ Specifications (Single Phase), 24 Vdc Output

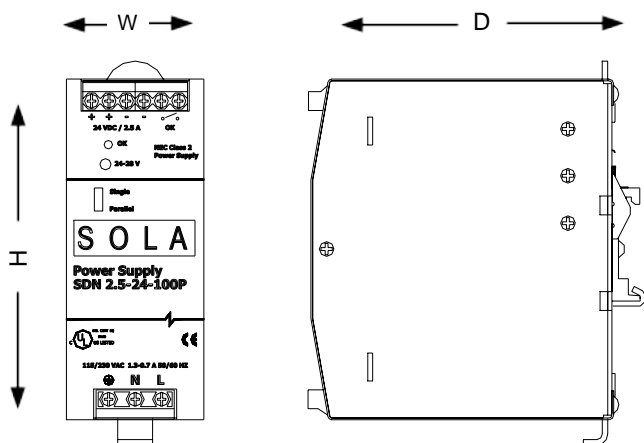
CE  II 3G DEMKO 06  
ATEX 05 21715U

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 <sup>1</sup>	90-375 Vdc	210-375 Vdc			N/A
–Frequency	47 - 63 Hz				
Nominal Current <sup>2</sup>	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 <sup>3</sup> )	> 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 <sup>4</sup>	< 50 mVpp				
Overvoltage Protection	> 30 Vdc, but < 33 Vdc, auto recovery				
Nominal Current	2.5 A (60 W)	3.8 A (92 W)	5 A (120 W)	10 A (240 W)	20 A (480 W)
–Current Limit	Fold Forward (Current rises, voltage drops to maintain constant power during overload up to max peak current)				
Holdup Time <sup>5</sup>	> 50 ms	> 100 ms	> 100 ms		> 100 ms
Parallel Operation	Single or Parallel use is selectable via Front Panel Switch (SDN 2.5, 4 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;				
Approvals	EN60950; 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. SDN 2.5 & SDN 4 - UL60950 testing to include approval as Class 2 power supply in accordance with UL1310.				
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 permissible with sideways or front side up mounting orientation. The relative humidity is < 90% RH, noncondensing; IEC 68-2-2, 68-2-3.				
Humidity					
MTBF:	> 820,000 hours	> 640,000 hours		> 600,000 hours	> 510,000 hours
– Standard	Bellcore Issue 6 Method 1 Case 3 @ 40°C				MIL STD 217F @ 30°C
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	<b>Input:</b> IP20-rated screw terminals, connector size range: 16-10 AWG (1.5-6 mm <sup>2</sup> ) for solid conductors. 16-12 AWG (0.5-4 mm <sup>2</sup> ) for flexible conductors. <b>Output:</b> Two connectors per output, connector size range: 16-10 AWG (1.5 - 6 mm <sup>2</sup> ) 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. x 1.97 x 4.55 (124 x 50 x 116)	4.88 x 2.56 x 4.55 (124 x 65 x 116)		4.88 x 3.26 x 4.55 (124 x 83 x 116)	4.88 x 6.88 x 4.55 (124 x 175 x 116)
Weight (lbs/kg)	1 lbs (.45 kg)	1.5 lbs (.68 kg)		2.2 lbs (0.1 kg)	3 lbs (1.36 kg)

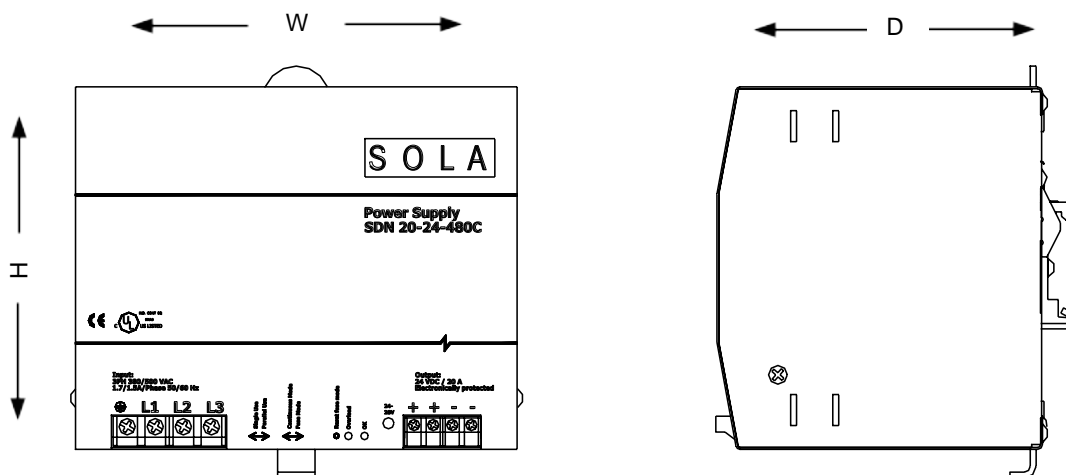
- Not UL listed for DC input.
- Input current ratings are conservatively specified with low input, worst case efficiency and power factor.
- Losses are heat dissipation in watts at full load, nominal input line.

- Ripple/noise is stated as typical values when measured with a 20 MHz, bandwidth scope and 50 Ohm resistor.
- Full load, 100 Vac Input @ T<sub>amb</sub> = +25°C

## SDN™ Series Dimensions



Catalog Number	Dimensions – inches (mm)		
	H	W	D
<b>12 Vdc</b>			
<b>SDN 9–12–100P</b>	4.88 (124)	2.56 (65)	4.55 (116)
<b>SDN 16–12–100P</b>	4.88 (124)	3.26 (83)	4.55 (116)
<b>24 Vdc</b>			
<b>SDN 2.5–24–100P</b>	4.88 (124)	1.97 (50)	4.55 (116)
<b>SDN 4–24–100LP</b>	4.88 (124)	2.56 (65)	4.55 (116)
<b>SDN 5–24–100P</b>	4.88 (124)	2.56 (65)	4.55 (116)
<b>SDN 5–24–480</b>	4.88 (124)	2.91 (73)	4.55 (116)
<b>SDN 10–24–100P</b>	4.88 (124)	3.26 (83)	4.55 (116)
<b>SDN 20–24–100P</b>	4.88 (124)	6.88 (175)	4.55 (116)
<b>48 Vdc</b>			
<b>SDN 5–48–100P</b>	4.88 (124)	3.26 (83)	4.55 (116)



Catalog Number	Dimensions – inches (mm)		
	H	W	D
<b>SDN 10–24–480</b>	4.88 (124)	5.90 (150)	4.55 (116)
<b>SDN 30–24–480</b>	4.88 (124)	9.72 (247)	4.55 (116)
<b>SDN 40–24–480</b>	4.88 (124)	11.10 (282)	4.55 (116)