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.

E61379 E137632 E234790

Applications

- Industrial/Machine Control
- Process Control
- Conveying Equipment
- Material Handling
- Vending Machines
- Packaging Equipment
- DeviceNet™
- Amusement Park Equipment
- Semiconductor Fabrication Equipment

Features

- Power Factor Correction (per EN61000-3-2)
- Auto Select 115/230 Vac, 50/60 Hz Input
- Improved metal mounting clip
- DC OK Signal
- Adjustable Voltage
- 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
- Narrow width on rail for space critical applications
- User-friendly front panel
  - Large, rugged, accessible, multiple connection screw terminations
  - Easy installation
- 12 Vdc and 48 Vdc single phase models available
- Highly efficient >90% switching technology
- High MTBF and reliability

Accessories

- SDN-C Redundant Modules
- Chassis Mount Bracket (SDN-PMBRK2)

Certifications and Compliances *

All Models

- c UL us Listed, Ind. Control Equipment, E61379
  - UL 508, CSA C22.2 No. 107.1
- c UL us UL Recognized Component, ITE, E137632
  - UL 60950-1/CSA C22.2 No. 60950-1, 2nd Edition
- c UL us UL Recognized Component, Haz. Loc., E234790
  - ISA 12.12.01, CSA C22.2 No. 213
  - Class I, Division 2, Groups A, B, C, D
- CE - Low Voltage Directive
  - IEC/EN60950-1, 2nd Edition
- Sag Immunity: SEMI F47
- RoHS Compliant

Models SDN 2.5-24-100P, SDN 4-24-100LP

- Class 2 per UL 1310, CSA C22.2 No. 223

Related Products

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

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

EMERSON

SDN-P Specifications (Single Phase), 24 Vdc Output

Description	Catalog Number			
	SDN 2.5–24–100P	SDN 4–24–100LP	SDN 5–24–100P	SDN 10–24–100P
Input				
Nominal Voltage	115/230 Vac, Auto select			
–AC Range	85-264 Vac	85-132/176-264 Vac		
–DC Range [1]	90 - 375 Vdc	210 - 375 Vdc		
–Frequency	47 - 63 Hz			
Nominal Current [2]	1.3 / 0.7 A	2.1 / 1.0 A	2.2 / 1.0 A	5 / 2 A typ.
–Inrush current max.	typ. < 25 A	typ. < 20 A		typ. < 40 A
Efficiency (Losses [3])	> 87.5% typ. (8.6 W)	> 88% typ. (13.1 W)	> 88% typ. (16.4 W)	> 88% typ. (32.7 W)
Power Factor Correction	Units Fulfill EN61000-3-2			
Output				
Nominal Voltage	24 Vdc (22.5 - 28.5 Vdc adj.)	24 Vdc (22.5 - 25.7 Vdc adj.)	24 Vdc (22.5 - 28.5 Vdc adj.)	
–Tolerance	< ±2% overall (combination Line, load, time and temperature related changes)			
–Ripple [4]	< 50 mVpp			
Overvoltage Protection	< 33 Vdc	< 27 Vdc	< 33 Vdc	
Nominal Current	2.5 A (60 W)	3.8 A (92 W)	5 A (120 W)	10 A (240 W)
–Current Limit	Fold Forward (Current rises, voltage drops to maintain constant power during overload up to max peak current)			
Holdup Time [5]	> 20 ms @ full load			
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. EN61000-3-2			
–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;			
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.			
Humidity	The relative humidity is < 90% RH, noncondensing; IEC 68-2-2, 68-2-3.			
MTBF:	> 820,000 hours	> 640,000 hours		> 600,000 hours
– Standard	Bellcore Issue 6 Method 1 Case 3 @ 40°C			
Warranty	5 year limited warranty			
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 mm^2) for solid conductors. 16-12 AWG (0.5-4 mm^2) for flexible conductors. Output: Two connectors per output, connector size range: 16-10 AWG (1.5 - 6 mm^2) 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 (124.0 x 50.0 x 116.0)	4.88 x 2.56 x 4.55 (124.0 x 65.0 x 116.0)		4.88 x 3.26 x 4.55 (124.0 x 83.0 x 116.0)
Weight lbs (kg)	1.6 (.73)	2.4 (1.10)		3.3 (1.50)

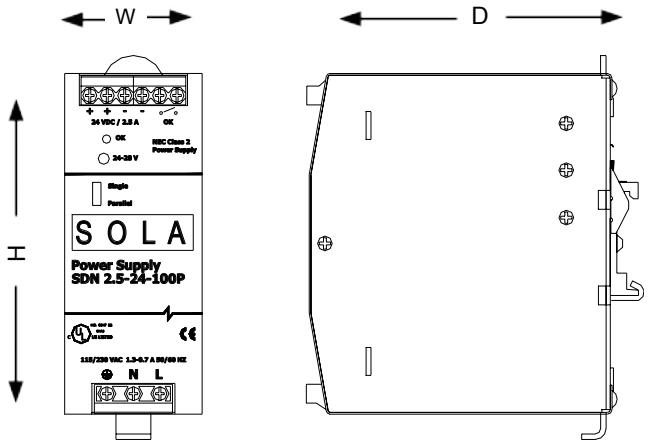
1. Not UL listed for DC input.
2. Input current ratings are conservatively specified with low input, worst case efficiency and power factor.
3. Losses are heat dissipation in watts at full load, nominal input line.
4. Ripple/noise is stated as typical values when measured with a 20 MHz, bandwidth scope and 50 Ohm resistor.
5. Full load, 100 Vac Input @ T_{amb} = +25°C

SDN-P Specifications (Single Phase), 12 Vdc and 48 Vdc Output

Description	Catalog Number		
	SDN 9–12–100P	SDN 5–48–100P	SDN 16–12–100P
Input			
Nominal Voltage	115/230 Vac auto select		
–AC Range	85-132/176-264 Vac; 210 - 375 Vdc		
–DC Range [1]	210 - 375 Vdc		
–Frequency	47 - 63 Hz		
Nominal Current [2]	2.0 A / 1.5 A	4 A / 2.3 A	3.3 A / 1.7 A
–Inrush current max.	Typ. < 20 A	typ. < 40 A	
Efficiency (Losses [3])	> 84% typ. (17.28 W)	> 88% typ. (28.8 W)	> 84% typ. (30.72 W)
Power Factor Correction	Units fulfill EN61000-3-2		
Output			
Nominal Voltage	12 V (11.6-15.2 Vdc Adj.)	48 V (35.8 - 52 Vdc Adj.)	12 V (11.6-14.2 Vdc Adj.)
Tolerance	< ±2 % overall (combination Line, load, time and temperature related changes)		
–Line Regulation	< 0.5%		
–Load Regulation	< 0.5%		
–Time & Temp. Drift	< 1%		
Ripple [4]	< 50 mVpp		
Overvoltage Protection	< 16 Vdc with auto-recovery	< 60 Vdc with auto-recovery	< 16 Vdc with auto-recovery
Nominal Current	9 A (108 W)	5 A (240 W)	16 A (192 W)
–Current Limit	110% of nominal - Fold Forward (Current rises, voltage drops to maintain constant power during overload up to max peak current)		
Holdup Time [5]	>20 ms @ full load		
Parallel Operation	Supplies will not be damaged with parallel operation		
Power Back Immunity	16 Vdc	60 Vdc	16 Vdc
General			
EMC: –Emissions	EN61000-6-3, EN61204-3, EN55022 Class B, EN61000-3-2, EN61000-3-3		
–Immunity	EN61000-6-2, EN61204-3, EN55024, IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-8, IEC61000-4-11		
Temperature	Storage: -25 to +85°C, Operation -10 to +60°C full power; with linear derating to half 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	< 90% RH, non-condensing; IEC 68-2-2, 68-2-3		
MTBF:	>500,000 hrs		
– Standard	Telcordia/Bellcore, Issue Case 3 @ 25°C		
Warranty	5 year limited warranty		
General Protection/Safety	Protected against continuous short -circuit, continuous overload, continuous open circuit. Protection Class 1 (IEC536), Degree of Protection IP20 (IEC 529) Safe low voltage: SELV (acc. EN60950)		
Status Indicators (Visual)	Green LED on when V_{out} > 75% (with ± 5% tolerance) of nominal output voltage		
Status Indicators (Relay)	Normally Open solid state relay - signal active when V_{out} >70% of nominal output voltage (rated up to 200 mA, 60 Vdc)		
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 if 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. Unit should handle normal shock and vibration of industrial use and transportation without falling off the rail.		
Connections	**Input:** Screw terminals, connector size range: 16-10 AWG (1.5-6mm²) for solid conductors. **Output:** Two terminals per output, connector size range: 16-10 AWG (1.5-6mm²) for solid conductors.		
Case	Fully enclosed metal housing with fine ventilation grid to keep out small parts.		
–Free Space	70 mm above and below, 25 mm left and right, 15mm in front		
H x W x D inches (mm)	4.88 × 2.56 × 4.55 (124.0 x 65.0 × 116.0)	4.88 × 3.23 × 4.55 (124.0 × 83.0 × 116.0)	
Weight lbs (kg)	2.4 (1.10)	3.3 (1.50)	

1. Not UL listed for DC input.
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. Full load, 100 Vac Input @ T_{amb} = +25°C

SDN-P Series Dimensions



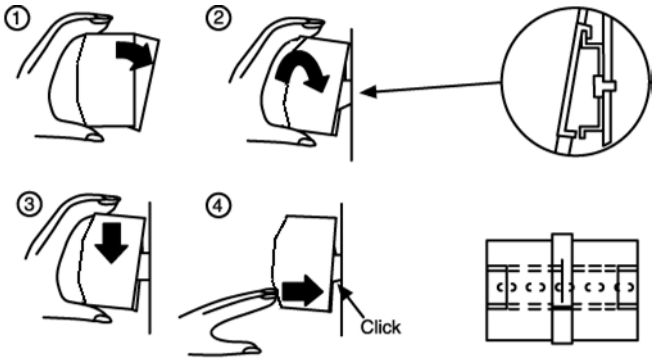
Catalog Number	Dimensions – inches (mm)		
	H	W	D
12 Vdc			
SDN 9–12–100P	4.88 (124.0)	2.56 (65.0)	4.55 (116.0)
SDN 16–12–100P	4.88 (124.0)	3.23 (83.0)	4.55 (116.0)
24 Vdc			
SDN 2.5–24–100P	4.88 (124.0)	1.97 (50.0)	4.55 (116.0)
SDN 4–24–100LP	4.88 (124.0)	2.56 (65.0)	4.55 (116.0)
SDN 5–24–100P	4.88 (124.0)	2.56 (65.0)	4.55 (116.0)
SDN 10–24–100P	4.88 (124.0)	3.26 (83.0)	4.55 (116.0)
48 Vdc			
SDN 5–48–100P	4.88 (124.0)	3.23 (83.0)	4.55 (116.0)

SDN-P Series Mounting

DIN Rail Mounting

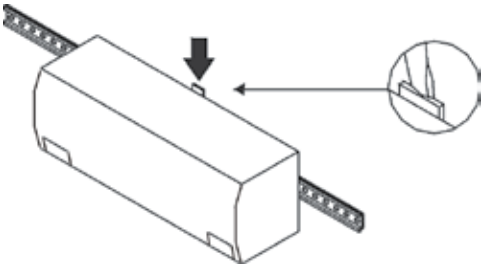
Snap on the DIN Rail:

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.

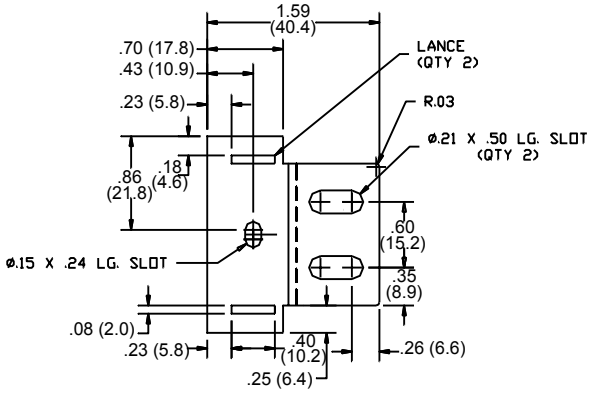
Detachment from DIN Rail:



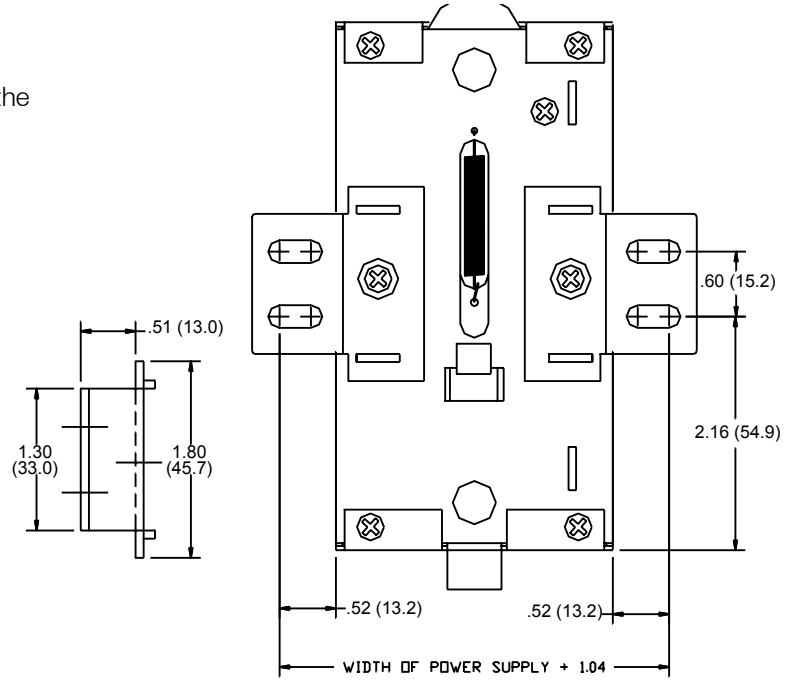
Chassis Mounting

Instead of snapping a SolaHD 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 - in. (mm)



Sola/Hevi-Duty:

SDN2.5-24-100P SDN10-24-100P SDN5-24-100P