

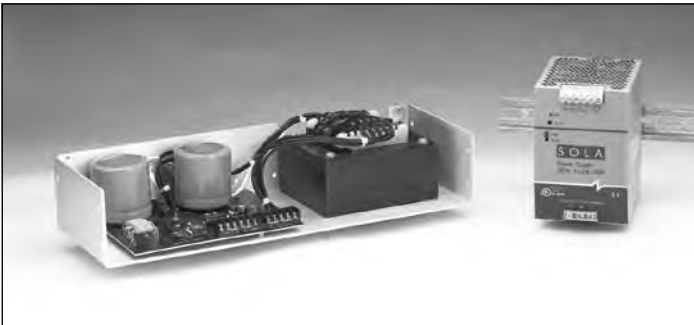
SolaHD has a broad range of standard power supplies to suit almost any industrial application. Updated approvals and user friendly features make power system design easy. The product line includes one of the broadest ranges of DIN Rail and linear-based power supplies in the marketplace. The DIN Rail products feature full CE compliance (including all the elements of CE design engineers need to worry about: safety/LVD, EMC, and ingress protection). UL 508 approvals eliminate derating in UL 508 listed panel systems. Global inputs are available for installations around the world.

Three phase input options are available on many of the SDN DIN Rail products that convert 380/480 three phase directly to 24 Vdc. They provide extremely stable, regulated low voltage without the need for a step down transformer saving space and money.

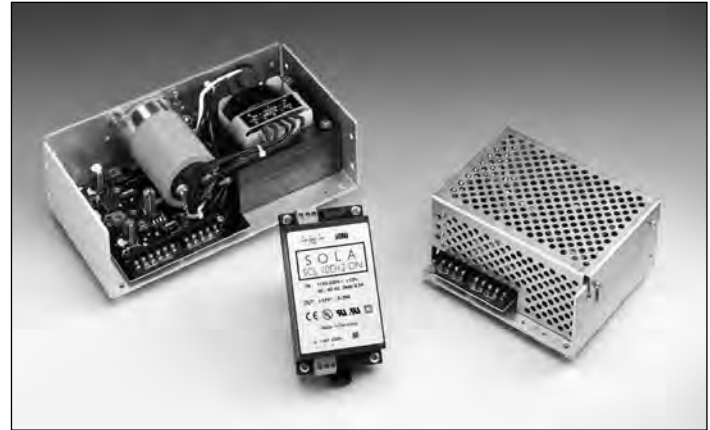
SolaHD now offers a DC UPS to provide backup power to the power supply in the event of a blackout.

#### Linear vs. Switcher

SolaHD has provided both linear and switching technology products for many years. As a leading supplier of power products to the industrial market, both technologies are still important. Switching technology (most of SolaHD's DIN Rail line) is the predominant method of AC-DC conversion for almost any type of electronic system sold today in the world, from PLC's to desktop PC's.



*Linear vs. Switcher*



*Linear Power Supplies for a broad range of applications*

The small size, lightweight and high efficiency of the switching products give them significant advantages over the linear technology products (SolaHD's SL and 83 series). SolaHD switching products provide well filtered and regulated DC of typically less than 1% deviation from the nominal output voltage.

Linears are about 50% efficient while their switching counterparts are typically over 80% efficient. Switchers are light enough to mount on a DIN Rail, while only the smallest linears are capable of being securely mounted to a DIN Rail. Linears are still popular today because they do provide very tight regulation (<.01% typically), almost perfectly clean DC, fast transient response and their low component count helps provide a lower material cost for its user. Linears are typically open frame because of the excessive heat dissipation from their low efficiency.

SolaHD's industry standard linears, however, are available with optional covers for safety. Most linears are recognized to UL 60950 and cannot meet the stricter temperature requirements of the UL 508 Listing, such as with SolaHD's DIN Rail power supplies.

**DC Power Supply Selection Process**

Power supplies can be selected online by visiting our website. Enter your power requirements and a list of matching power supplies will list. You can also manually select a power supply by following the directions below:

- 1) Gather the required information.
  - Input voltage and frequency?
  - Wattage needed?
  - Number of outputs?
  - Voltage of each output?
  - Amperage of each output?
  - Don't forget to take into account the peak loading of each output.
  - Battery Backup
  
- 2) Calculate the power (wattage) of the DC power supply you need. If more than one output is required, do the following calculation:
  - Multiply the Voltage times the amperage of each output to calculate the wattage of each output. Next, add together the wattage of each output to get the total wattage for the supply.
  
- 3) Determine which models from the Power Supply Selection Chart (on the next page) meet all of the required specifications.
  
- 4) Download the specifications sheets from our web site ([www.solaheviduty.com](http://www.solaheviduty.com)).
  
- 5) Check the mounting style, connections and physical size of the power supply to ensure its suitability for the intended application.
  
- 6) Check for applicable safety approvals for the country and application the power supply will be used in.

**Selection Worksheet**

Output:

\_\_\_\_\_ Vdc x \_\_\_\_\_ Amps = \_\_\_\_\_ Watts  
 \_\_\_\_\_ Vdc x \_\_\_\_\_ Amps = \_\_\_\_\_ Watts  
 \_\_\_\_\_ Vdc x \_\_\_\_\_ Amps = \_\_\_\_\_ Watts  
 \_\_\_\_\_ Vdc x \_\_\_\_\_ Amps = \_\_\_\_\_ Watts  
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 \_\_\_\_\_ Vdc x \_\_\_\_\_ Amps = \_\_\_\_\_ Watts  
 \_\_\_\_\_ Vdc x \_\_\_\_\_ Amps = \_\_\_\_\_ Watts  
 \_\_\_\_\_ Vdc x \_\_\_\_\_ Amps = \_\_\_\_\_ Watts

Add Watts from each output to calculate

Total Watts = \_\_\_\_\_

Physical Dimensions:

\_\_\_\_\_ H x \_\_\_\_\_ W x \_\_\_\_\_ D

Mounting:

\_\_\_\_\_ DIN Rail  
 \_\_\_\_\_ Chassis  
 \_\_\_\_\_ Other

Other required features or options:

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If you have filled out this form and cannot find the appropriate power supply, please fax (800-367-4384) or e-mail ([tech@sola-hevi-duty.com](mailto:tech@sola-hevi-duty.com)) this information to the Technical Services group.

## Power Supply Selection Table

This chart is intended only as a guide for selecting a series of DC power supply, some of the series listed may not work in all applications.

Series	Input Voltage				Output Voltage						Power Range (Total Watts)	Number of Outputs				Notes	Page
	DC	115 Vac	230 Vac	380/480 Vac	3.3 V	5 V	12 V	15 V	24 V	48 V		Single	Dual	Triple	>4		
SDN™	X	X	X	X					X		60 – 960	X				- DIN Rail mount - DC Battery Back-up Available - Redundant options - NEC Class 2/DeviceNet™	101
SDP™	X	X	X			X	X	X	X	X	15 – 100	X				- DIN Rail mount compact	118
SCP	X	X	X		X	X	X	X	X	X	30 – 100	X	X	X		- DIN Rail mount/Chassis	124
SCD	X					X	X	X	X	X	30	X	X			- DIN Rail mount/Chassis - DC input	128
SCL		X	X			X	X	X			4 – 10	X	X	X		- DIN Rail mount/Chassis	126
SFL		X	X				X		X	X	75 – 600	X				- DIN Rail mount - Adjustable Pot, Red or UPS option	134
GL OEM Switchers		X	X			X	X	X	X		40 – 200	X	X	X	X	- 40 - 110 Watt, open frame, Molex type connections - 200 Watt, enclosed with connected screw terminals	143
SMP		X	X			X	X	X	X	X	250 – 1000	X	X	X	X	- Modular design - Screw Terminals (OEM) supply	146
SHP		X	X			X	X	X	X	X	1500 – 2000	X	X	X	X	- Configurable Voltage Output	151
Silver Line Linears		X	X			X	X	X	X		15 – 244	X	X	X		- Industry standard footprint - Screw terminals and optional covers	137

## DIN Rail Selection Guide

		Output Voltages										
		48	24	15	12	10	5	±15	±12	5/24	5/12/12	
A M P S	1	SDP 1-48-100T	SDP 06-24-100T						SCL 4D15-DN	SCL 4D12-DN	SCP 30D524-DN SCP 30S524B-DN	SCL 10T512-DN
			SDP 1-24-100T	SCP 30S15-DN					SCL 10D15-DN	SCL 10D12-DN		SCP 30T512-DN
	2.5	SFL 1.5-48-100	SDN 2.5-24-100P SDP 2-24-100T		SDP 2-12-100T SCP 30S12B-DN				SCP 30D15-DN	SCP 30D12-DN		
	3	SFL 3-48-100			SDP 3-15-100T	SDP 2-12-100T						
	3.8		SCP 100S24X-CM SDN 4-24-100LP SDP 4-24-100LT									
	4		SDP 4-24-100RT									
	5		SDN 5-24-100P SDN 5-24-100C SDN 5-24-480 (30)					SDP 5-5-100T SCP 30S5B-DN				
	6	SFL 6-48-100			SFL 6-12-100							
	10		SDN 10-24-100P SDN 10-24-100C SDN 10-24-480 (30)									
	12	SFL 12-48-100	SFL 12-24-100									
	20		SDN 20-24-100P SDN 20-24-480C (30)									
	25		SFL 24-24-100									
30		SDN 30-24-480 (30)										
40		SDN 40-24-480 (30)										

## SDN-C Compact DIN Rail Series

The SDN-C DIN rail power supplies are the next generation of the popular SDN series. These models combine high efficiency and compact size with new visual diagnostic LEDs to offer the most performance available from SolaHD. Essential industrial features such as Sag Immunity, Power Factor Correction, and universal voltage input have been retained in this series. Wide temperature operating range and parallel operation capability make the new SDN-C units suitable to a variety of industrial applications.

### Features

- Compact packaging to save space on the DIN rail
  - 27% reduction in width along the rail compared to existing 10A model
  - 23% reduction in width along the rail compared to the existing 5A model
- New visual diagnostic LEDs for input and output status at a glance
- High MTBF means high reliability and long life
- Higher efficiency saves energy and lowers amount of heat generated in panel
- PowerBoost™ overload capability to start high inrush loads
- Accepts Universal voltage 85-264 Vac, 50/60 Hz input
- Single phase models meet SEMI F47 Sag Immunity standard
- Power Factor Correction (meets EN61000-3-2)
- Class 1, Zone 2 Hazardous Locations rating per UL60079-15
  - ATEX approval (pending)
- Patented DIN rail mounting clip
- User Adjustable output voltage accessible via front face
- Parallel capability standard
- Industrial grade design
  - -10°C to 60°C operation without derating
  - Rugged metal case and DIN connector
- User-friendly
  - LEDs for status
  - Large, rugged, accessible screw terminals
  - Easy on/off DIN mounting
- Fully tested and burned-in at factory
- RoHS compliant



UL US  
UL 508 Listed  
IND. CONT. EQ.  
E61379

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

CE  
EMC and  
Low Volt.  
Directive

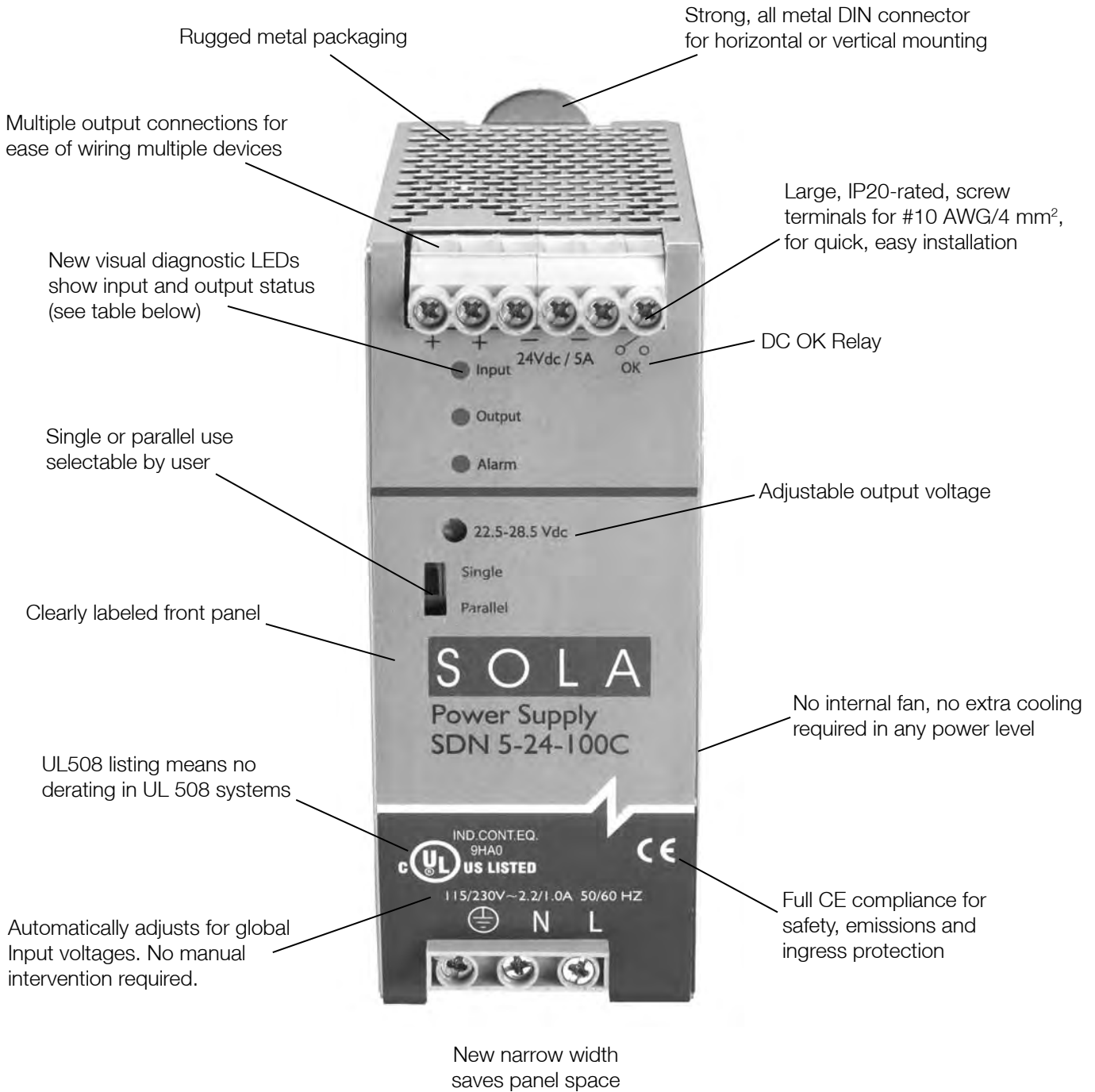
### Related Products

- SDN-P series
- SDP™ series
- SFL series
- SCP series
- SDU UPS

### Applications

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

The SolaHD Difference



LED Light Status Conditions

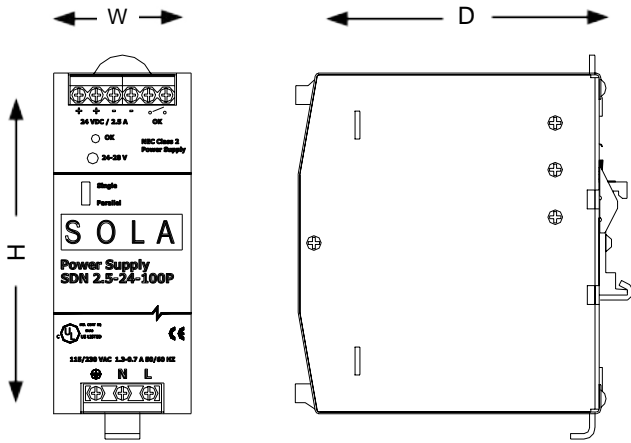
	All Is OK	AC Power Loss	Brownout	No DC	High Load	Overload	Hot	Too Hot
Input	Green	-	Yellow	Green	Green	Green	Green	Green
Output	Green	-	Green	-	Yellow	Yellow	Green	-
Alarm	-	-	-	Red	Yellow	Red	Yellow	Yellow

## SDN-C Specifications

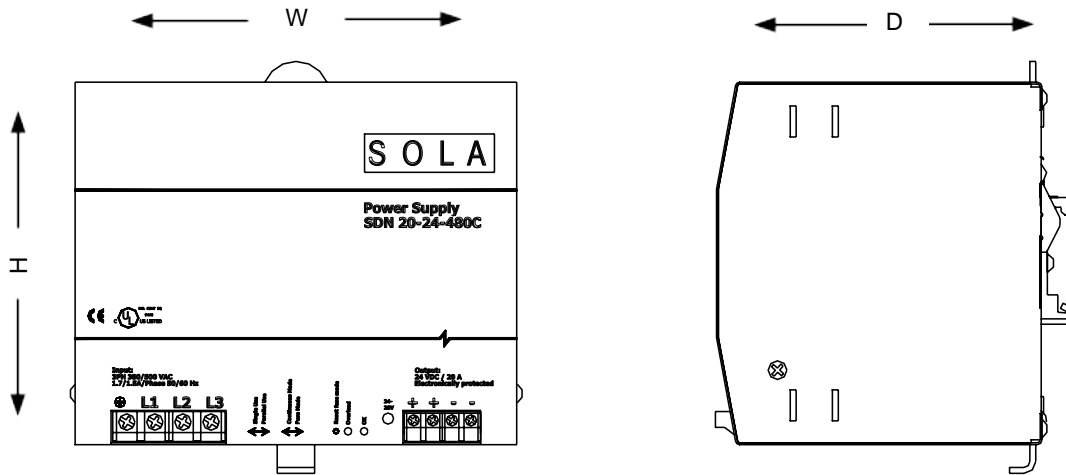
Description	Catalog Number	
	SDN 5–24–100C	SDN 10–24–100C
	<b>Input</b>	
<b>Nominal Voltage</b>	115/230 Vac	
<b>–AC Range</b>	85 - 264 Vac	
<b>–DC Range<sup>1</sup></b>	90 - 375 Vdc	
<b>–Frequency</b>	43-67 Hz, 400 Hz	
<b>Nominal Current<sup>2</sup></b>	1.65 - 0.55 A	3.2 - 1.0 A
<b>–Inrush current max.</b>	Typ. < 15 A	Typ. < 30 A
<b>Efficiency (Losses<sup>3</sup>)</b>	> 90% typ. (12 W)	> 90% typ. (24 W)
<b>Power Factor Correction</b>	Active power factor correction to better than 0.92	
	<b>Output</b>	
<b>Nominal Voltage</b>	24V (22.5-28.5 Vdc Adj.)	
<b>–Tolerance</b>	< ±2 % overall (combination Line, load, time and temperature related changes)	
<b>Initial Voltage Setting</b>	24.5V ± 1%	
<b>–Ripple<sup>4</sup></b>	< 50 mVpp	
<b>PARD</b>	PARD (Periodic and Random Deviation) = 100 mV peak-peak max	
<b>Overvoltage Protection</b>	> 30.5 but < 33 Vdc, auto recovery	
<b>Power Back Immunity</b>	< 35V	
<b>Nominal Current</b>	5 A (120 W)	10 A (240 W)
<b>–Peak Current<sup>5</sup></b>	1.5 x Nominal Current for 2 seconds minimum while holding voltage > 20 Vdc	
<b>–Short Circuit Current</b>	1.5 x Nominal Current at near zero volts at short circuit condition	
<b>–Current Limit</b>	PowerBoost™	
<b>Parallel Operation</b>	Switch selectable single unit or parallel unit operation. Units will not be damaged by parallel operation (regardless of switch position setting).	
<b>Holdup Time</b>	>20 ms (Full load, 100 Vac Input @ T <sub>amb</sub> = +25°C) to 95% output voltage	
<b>Voltage Fall Time</b>	<150 mS from 95% to 10% rated voltage @ full load (T <sub>amb</sub> = +25°C)	
<b>Line and Load Regulation</b>	< 0.5%	
	<b>General</b>	
<b>EMC:</b>	EN61000-6-2:2001, EN61000-6-3:2001, Class B EN55011, EN55022 Radiated and Conducted including Annex. A, EN61000-3-2	
<b>–Emissions</b>		
<b>–Immunity</b>	EN61000-6-1:2001, EN61000-6-2:2001, 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, IEC 61000-4-34 voltage dip immunity standard	
<b>Approvals</b>	UL508 Listed, cULus; UL 60950-1, cURus; IEC60950-1; UL60079-15 (pending) and IEC60079-15 (pending) CE (LVD 73/23 & 2004/108/EC), (EMC 89/336 & 93/68/EEC); EN61000-3-2	
<b>Temperature</b>	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.	
<b>MTBF Standard<sup>6</sup></b>	> 650,000 hrs	> 550,000 hrs
<b>Warranty</b>	5 Years	
<b>General Protection/Safety</b>	Protected against continuous short -circuit, continuous overload, continuous open circuit. Protection Class 1 (IEC536), degree of protection IP20 (IEC60529) Safe low voltage: SELV (acc. IEC60950-1)	
<b>Status Indicators</b>	<b>Visual:</b> 3 status LEDs (Input, Output, Alarm) <b>Relay:</b> N.O. contact rated 200ma/50 Vdc	
	<b>Installation</b>	
<b>Fusing</b>	Internally fused	
<b>–Input</b>		
<b>–Output</b>	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.	
<b>Mounting</b>	Simple snap-on to DIN TS35/7.5 or TS35/15 rail system.	
<b>Connections</b>	<b>Input:</b> Screw terminals, connector size range: 16-10 AWG (1.5-6 mm <sup>2</sup> ) for solid conductors. <b>Output:</b> Two terminals per output, connector size range: 16-10 AWG (1.5-6 mm <sup>2</sup> ) for solid conductors.	
<b>Case</b>	Fully enclosed metal housing with fine ventilation grid to keep out small parts.	
<b>–Free Space</b>	15 mm in front, 25 mm above and below, 10 mm left and right.	
<b>H x W x D (inches/mm)</b>	4.88 in. x 1.97 in. x 4.55 in. (124 mm x 50 mm x 116 mm)	4.88 in. x 2.36 in. x 4.55 in. (124 mm x 60 mm x 116 mm)
<b>Weight (lbs/kg)</b>	1.5 lbs (.62 kg)	2.2 lbs (1.1 kg)

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. Peak current is calculated at 24 Volt levels.  
6. MTBF 115 Vac (@120 watts & 240 watts) at 40°C ambient per Telecordia Issue 1.

SDN™ Series Dimensions



Catalog Number	Dimensions – inches (mm)		
	H	W	D
SDN 5-24-100C	4.88 (124)	1.97 (50)	4.55 (116)
SDN 5-24-480	4.88 (124)	2.91 (73)	4.55 (116)
SDN 10-24-100C	4.88 (124)	2.36 (60)	4.55 (116)



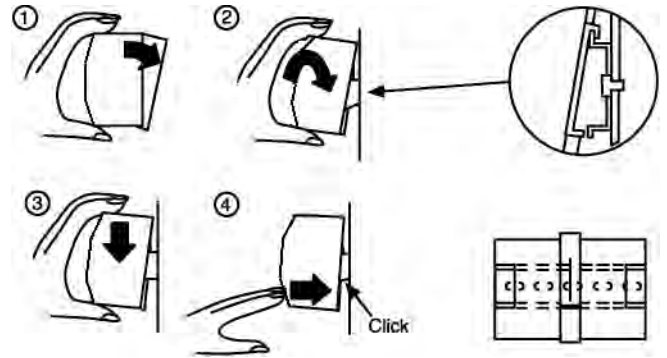
Catalog Number	Dimensions – inches (mm)		
	H	W	D
SDN 10-24-480	4.88 (124)	5.90 (150)	4.55 (116)
SDN 20-24-480C	4.88 (124)	2.56 (65)	4.55 (116)
SDN 30-24-480	4.88 (124)	9.72 (247)	4.55 (116)
SDN 40-24-480	4.88 (124)	11.10 (282)	4.55 (116)

### SDN™ Series Mounting

#### DIN Rail Mounting

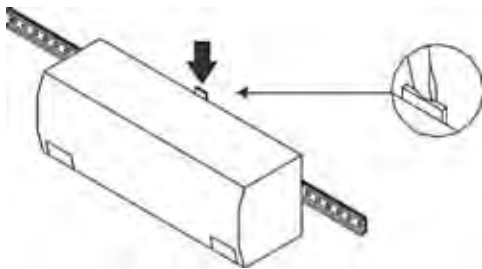
Snap on the DIN Rail:

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.

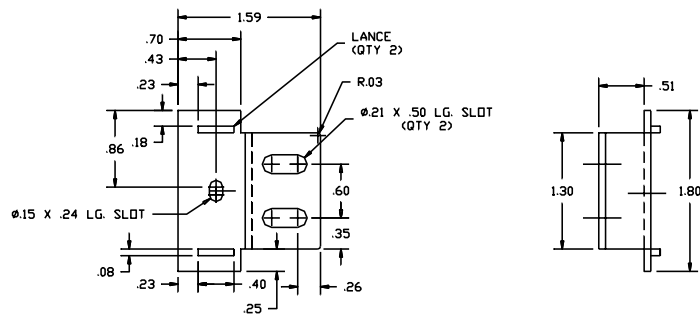
#### Detachment from DIN Rail:



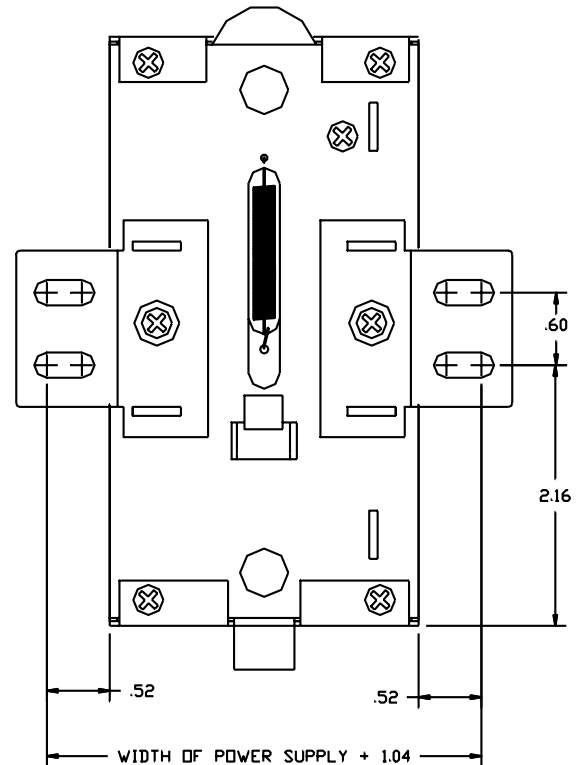
#### Chassis Mounting

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



## 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



Description	Catalog Number				
	SDN 2.5–24–100P	SDN 4–24–100LP	SDN 5–24–100P	SDN 10–24–100P	SDN 20–24–100P
<b>Input</b>					
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				
<b>Output</b>					
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.)				
<b>General</b>					
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)				
<b>Installation</b>					
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)

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<sub>amb</sub> = +25°C

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



II 3G

DEMKO 06  
ATEX 05 21715U

Description	Catalog Number		
	SDN 9-12-100P	SDN 5-48-100P	SDN 16-12-100P
<b>Input</b>			
Nominal Voltage	115/230 Vac auto select		
-AC Range	85-132/176-264 Vac		
-DC Range <sup>1</sup>	210-375 Vdc		
-Frequency	47-63 Hz, 400 Hz		
Nominal Current <sup>2</sup>	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 <sup>2</sup> (Losses <sup>3</sup> )	> 84% typ. (17.28 W)	> 88% typ. (28.8 W)	> 84% typ. (30.72 W)
Power Factor Correction	Units fulfill EN61000-3-2		
<b>Output</b>			
Nominal Voltage	12 V (11.8-15.2 Vdc Adj.)	48 V (35.8 - 52 Vdc Adj.)	12 V (11.6-14.0 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 <sup>3</sup>	< 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 <sup>4</sup>	110% of nominal - Fold Forward (Current rises, voltage drops to maintain constant power during overload up to max peak current)		
Holdup Time <sup>5</sup>	>20 ms (Full load, 100 Vac Input @ T <sub>amb</sub> =+25°C) to 95% output Voltage		
Parallel Operation	Supplies will not be damaged with parallel operation		
Power Back Immunity	16 Vdc	60 Vdc	16 Vdc
<b>General</b>			
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		
Approvals	UL508 Listed, cULus; UL 60950-1, cURus; CE (LVD 73/23 & 93/68/EEC), (EMC 89/336 & 93/68/EEC). EN61000-3-2; UL 60079-15 pending (Class 1, Zone 2 hazardous location, Groups IIA, IIB, IIC w/ T3 temp. class up to 60°C Ambient.); EN60079-15 (ATEX); SEMI F47 Sag Immunity, RoHS		
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 years		
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 <sub>out</sub> > 75% (with ± 5% tolerance) of nominal output voltage		
Status Indicators (Relay)	Normally Open solid state relay - signal active when V <sub>out</sub> >70% of nominal output voltage (rated up to 200 mA, 60 Vdc)		
<b>Installation</b>			
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	<b>Input:</b> Screw terminals, connector size range: 16-10 AWG (1.5-6mm <sup>2</sup> ) for solid conductors. <b>Output:</b> Two terminals per output, connector size range: 16-10 AWG (1.5-6mm <sup>2</sup> ) 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 x 2.56 x 4.55 (124 x 65 x 116)	4.88 x 3.26 x 4.55 (124 x 83 x 116)	
Weight (lbs/kg)	2.4 (1.05)	3.3 (1.48)	3.3 (1.48)

1. Input current ratings are specified with low input, line conditions and worst case efficiency values. Input current at nominal input settings will be typically half these values.

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

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

4. Unit shall not shutdown or 'hiccup' during overload or short circuit. Maximum current value shown shall be maintained indefinitely without damage to the supply. Voltage shall drop according to amount of overload to protect supply from damage.

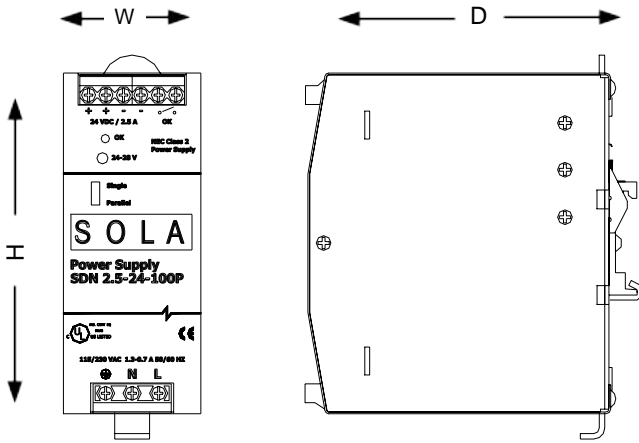
**SDN™ Specifications (Three Phase)**

Description	Catalog Number				
	SDN 5–24–480	SDN 10–24–480	SDN 20–24–480C	SDN 30–24–480	SDN 40–24–480
<b>Input</b>					
<b>Nominal Voltage</b>	1Ø or 3Ø 380-480 Vac		1Ø or 3Ø 380 - 480 Vac <sup>1</sup>	3Ø 380 - 480 Vac	
<b>-AC Range</b>	340 - 576 Vac				
<b>-DC Range<sup>2</sup></b>	450 - 820 Vdc				
<b>-Frequency</b>	47 - 63 Hz				
<b>Nominal Current<sup>3</sup></b>	0.5 A	0.8 A	1.5 A	2.0 A	3.0 A
<b>-Inrush current max.</b>	typ. < 18 A			typ. < 30 A	
<b>Efficiency (Losses<sup>4</sup>)</b>	> 90% typ. (12 W)	> 90% typ. (48 W)		> 90% typ. (72 W)	> 90% typ. (96 W)
<b>Power Factor Correction</b>	Units Fulfill EN61000-3-2				
<b>Output</b>					
<b>Nominal Voltage</b>	24 Vdc (22.5 - 28.5 Vdc adj.)				
<b>-Tolerance</b>	< ±2% overall (combination Line, load, time and temperature related changes)				
<b>-Ripple<sup>5</sup></b>	< 50 mVpp				
<b>Overvoltage Protection</b>	> 30 Vdc, but < 33 Vdc, auto recovery				
<b>Nominal Current</b>	5 A (120 W)	10 A (240 W)	20 A (480 W)	30 A (720 W)	40 A (960 W)
<b>-Peak Current</b>	6A, 2x Nominal Current < 2 sec.	12A, 2x Nominal Current < 2 sec.	25A, 2x Nominal Current < 2 sec.	35A, 2x Nominal Current < 2 sec.	45A, 2x Nominal Current < 2 sec.
<b>-Current Limit</b>	Fold Forward (Current rises, voltage drops to maintain constant power during overload up to max peak current)				
<b>Holdup Time<sup>6</sup></b>	> 40 ms		> 28 ms	> 20 ms	
<b>Parallel Operation</b>	5A through 30A units may be passively paralleled by selecting the "P" position of the switch on the unit. The SDN 40 contains active current balancing.				
<b>General</b>					
<b>EMC: -Emissions</b>	EN61000-6-3, -4; Class B EN55011, EN55022 Radiated and Conducted including Annex A.				
<b>-Immunity</b>	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;				
<b>Approvals</b>	CB Scheme, EN60950; UL508 Listed, cULus; UL60950, cRUus, CE (LVD 73/23 & 93/68/EEC). EN61000-3-2, UL60079-15 Class 1, Zone 2 Hazardous Location, Groups IIA, IIB, IIC w/T3 temp class up to 60°C Ambient.				
<b>Temperature</b>	Storage: -25°C...+85°C Operation. -10°C -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.				
<b>MTBF:</b>	> 1,110,000 hours	> 940,000 hours	> 550,000 hours	> 620,000 hours	> 490,000 hours
<b>- Standard</b>	MIL STD 217F @ 30°C				
<b>Warranty</b>	5 years				
<b>General Protection/ Safety</b>	Protected against continuous short-circuit, overload, open-circuit. Protection Class 1 (IEC536), degree of protection IP20 (IEC 60529) Safe low voltage: SELV (acc. EN60950)				
<b>Status Indicators</b>	Green LED on when $V_{out} = 18V$ or greater.				
<b>Installation</b>					
<b>Fusing -Input</b>	Internally fused				
<b>-Output</b>	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.				
<b>Mounting</b>	Simple snap-on system for DIN Rail TS35/7.5 or TS35/15 or chassis-mounted (optional screw mounting set SDN-PMBRK2 required).				
<b>Connections<sup>7</sup></b>	<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.				
<b>Case</b>	Fully enclosed metal housing with fine ventilation grid to keep out small parts.				
<b>-Free Space</b>	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		
<b>H x W x D (inches/mm)</b>	4.88 x 2.91 x 4.55 (124 x 73 x 116)	4.88 x 3.5 x 4.55 (124 x 89 x 116)	4.88 x 5.9 x 4.55 (124 x 150 x 116)	4.88 x 9.72 x 4.55 (124 x 247 x 116)	4.88 x 11.1 x 4.55 (124 x 282 x 116)
<b>Weight (lbs/kg)</b>	1.7 lbs (.77 kg)	2.16 lbs (.98 kg)	3.97 lbs (1.8 kg)	4 lbs (1.81 kg)	6.6 lbs (2.99 kg)

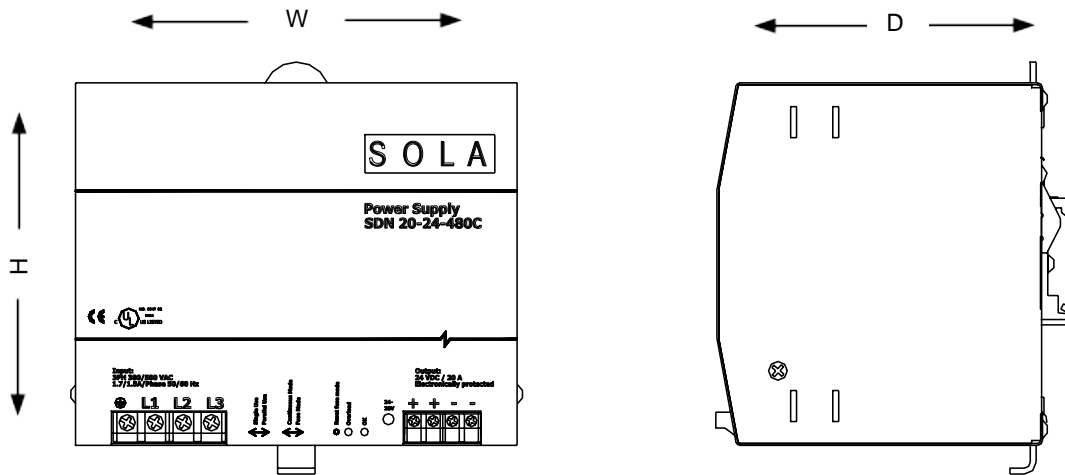
- For the SDN 20-24-480C, single phase input is permissible, but output is derated to 75% (15 Amps @ 24 Vdc).
- Not UL listed for DC input.
- Input current ratings are conservatively specified with low input, worst case efficiency and power factor.

- 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 @  $T_{amb} = +25°C$
- For the SDN 40-24-480, output: one (+) two (-) connectors, size range 16-5 AWG (1.5016 mm<sup>2</sup>) solid conductor.

SDN™ Series Dimensions



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



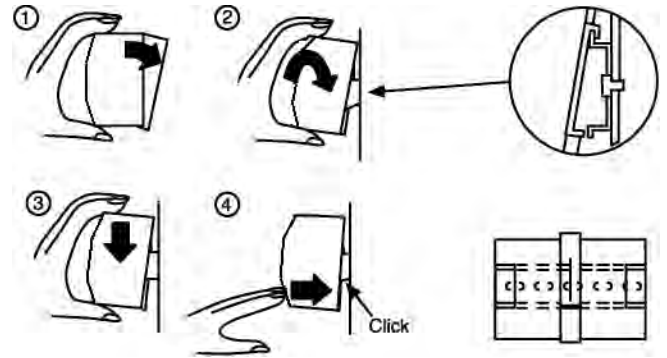
Catalog Number	Dimensions – inches (mm)		
	H	W	D
SDN 10–24–480	4.88 (124)	5.90 (150)	4.55 (116)
SDN 30–24–480	4.88 (124)	9.72 (247)	4.55 (116)
SDN 40–24–480	4.88 (124)	11.10 (282)	4.55 (116)

### SDN™ Series Mounting

#### DIN Rail Mounting

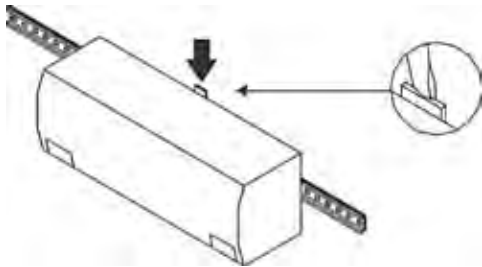
Snap on the DIN Rail:

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.

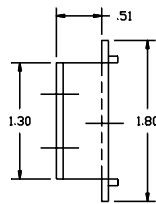
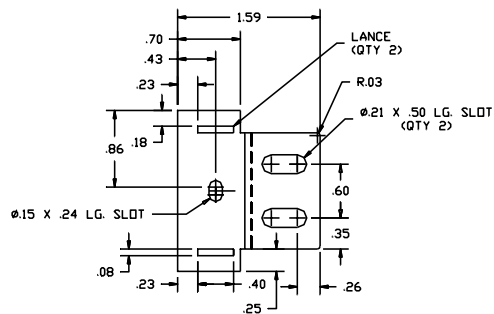
#### Detachment from DIN Rail:



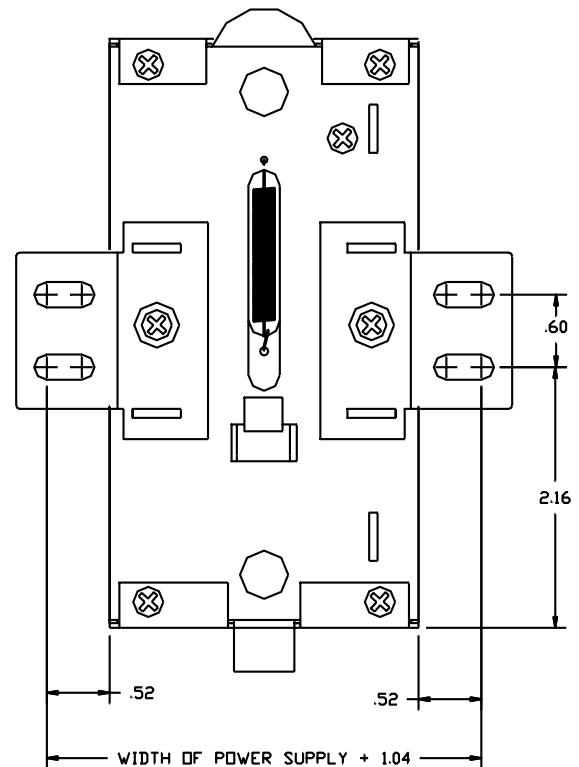
#### Chassis Mounting

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



## SDN™ DeviceNet™ Series

As members of the Open DeviceNet™ Vendors Association (ODVA), SolaHD has designed two power supplies specifically for DeviceNet™ applications. SolaHD's SDN DeviceNet™ models meet ODVA specifications for power supplies for either thin or thick cable applications.

The SDN 4-24-100LP has the highest output current possible while still meeting the requirements for NEC Class 2 and UL 1310. This is necessary for installations to meet the National Electrical Code (NEC) or the Canadian Electric Code (CE code) without the need for secondary fusing.

The SDN 10-24-100P is designed for installations that utilize the full 8A capability of the Thick Cable system. Note – local codes may prohibit the use of the full capacity of the power supply.



UL 508 Listed  
IND. CONT.  
EQ. E61379

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

EMC and  
Low Volt.  
Directive

### Features (General)

- Power Factor Correction
- SEMI F47 Sag Immunity Standard
- Class 1, Div. 2 Hazardous Locations
- DC Okay Signal
- Industrial Grade Design
  - Indefinite short-circuit, overvoltage and overtemperature protection
  - 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
- High efficiency for cooler operation and less heat losses
- High MTBF & reliability
- High grade and low stress design components
- No fans used or required
- RoHS Compliant
- Five year warranty

### Features (SDN 4-24-100LP only)

- Meets the requirements of NEC Class 2 & UL 1310
- No derating from -10°C to 60°C, operation to 70°C possible with a linear derating to half power from 60°C to 70°C.

### Related Products

- SDP™ Series
- SCD Series
- SCP Series
- SCL Series

### Applications

- Industrial Control
- Process Control
- Building Automation
- DeviceNet™

## SDN™ DeviceNet™ Specifications

Description	Catalog Number	
	SDN 5-24-100P	SDN 10-24-100P
<b>Input</b>		
Nominal Voltage	115/230 Vac auto select	
-AC Range	85-132/176-264 Vac	
-DC Range <sup>1</sup>	210-375 Vdc	
-Frequency	47 - 63 Hz	
Nominal Current <sup>2</sup>	2.2 A / 1.0 A	5 A / 2 A typ.
-Inrush current max.	typ. < 20 A	typ. < 40 A
Efficiency (Losses <sup>3</sup> )	> 88% typ. (16.4 W)	> 88% typ. (32.7 W)
Power Factor Correction	Units fulfill EN61000-3-2	
<b>Output</b>		
Nominal Voltage	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	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 <sup>5</sup>	> 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.)	
<b>General</b>		
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.	
MTBF:	> 640,000 hours	> 600,000 hours
- Standard	Bellcore Issue 6 Method 1 Case 3 @ 40°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)	
<b>Installation</b>		
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, 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 2.56 x 4.55 (124 x 65 x 116)	4.88 x 3.26 x 4.55 (124 x 83 x 116)
Weight (lbs/kg)	1.5 lbs (.68 kg)	2.2 lbs (0.10 kg)

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<sub>amb</sub> = +25°C

## SDN™ Series Redundant Options

The SDN Series standard options allow for operation in a wide variety of applications. With the addition of an external redundancy module, the SDN can also be used for true redundant operation including 2N and N+x configurations.

All SDN units include built in current sharing for parallel and redundant operation. All models ending in P also include a DC OK status relay contact. The external modules SDN 2.5-20RED and SDN 30/40RED increase the reliability by isolating the supplies and adding more signal options. Paralleling for increased power does not require the use of these modules.

### Module Compatibility

Two separate modules are available to provide the maximum flexibility in size, cost and signaling capability. Refer to the chart below for information on which module can be used for each SDN power supply.

**Power Rating** – A simple Yes or No indication that this module can or cannot handle the power rating of that power supply.

**Input/Output Signals** – Yes indicates that each power supply would have an independent relay contact to provide power supply status, and the DC bus output from the redundant module has it's own DC OK relay contact. Output only indicates that only the output of the redundant module would have a DC OK relay contact.



### Features

- DC OK Relay Contact
- True Isolation
- High availability
- SDN features and quality

### Applications

- Process Control
- Remote Location
- Critical Production

## Redundancy Module Compatibility Chart

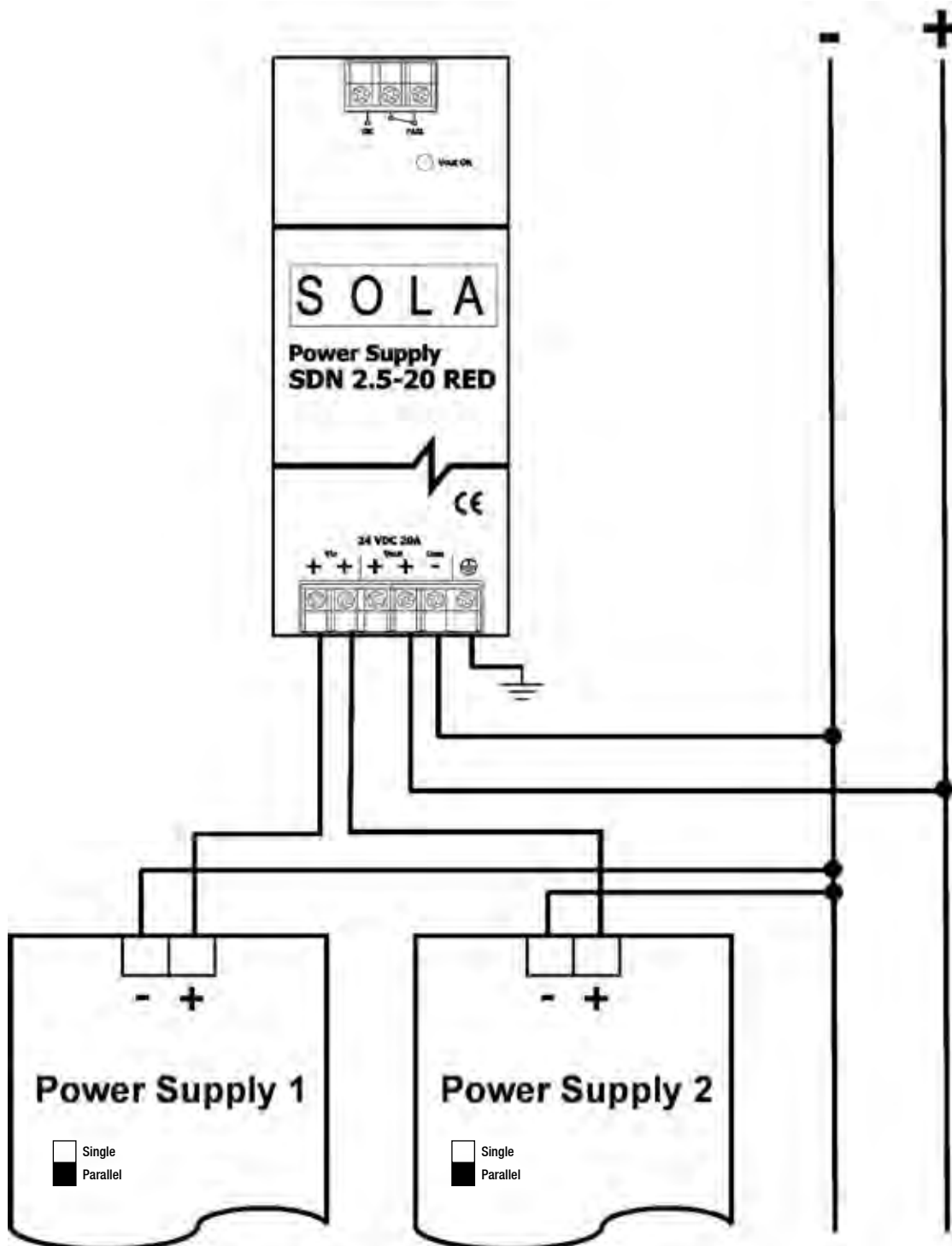
		Single Phase SDN Series				
		SDN 2.5–24–100P*	SDN 4–24–100P*	SDN 5–24–100P	SDN 10–24–100P	SDN 20–24–100P
SDN 2.5–20RED	Power Rating	Yes	Yes	Yes	Yes	Yes
	Input / Output Signals	Yes	Yes	Yes	Yes	Yes
SDN 30/40RED	Power Rating	Yes	Yes	Yes	Yes	Yes
	Input / Output Signals	Yes	Yes	Yes	Yes	Yes
		Three Phase SDN Series				
		SDN 5–24–480	SDN 10–24–480	SDN 20–24–480	SDN 30–24–480	SDN 40–24–480
SDN 2.5–20RED	Power Rating	Yes	Yes	Yes	No	No
	Input / Output Signals	Output Only	Output Only	Output Only	N/A	N/A
SDN 30/40RED	Power Rating	Yes	Yes	Yes	Yes	Yes
	Input / Output Signals	Yes	Yes	Yes	Yes	Yes

\* Paralleling will violate Class 2 current limits.

## SDN™ Redundant Series Specifications for SDN2.5-20RED and SDN 30/40RED

Catalog Number		
Description	SDN 2.5-20RED	SDN 30/40RED
<b>Concept</b>		
By means of a separate redundancy module, you can interconnect several identical SDN power supply units in a N+1 redundant mode. These external modules decouple the power supply outputs from each other so that, in case of failure, one power supply unit cannot overload the other units. The modules incorporate DC OK relay contacts. The switch on front of the SDN power supply should be placed in parallel mode (not single mode) when power supplies are used with redundant module.		
<b>Electrical Characteristics</b>		
<b>Voltage</b>		
-Nominal Value	24 Vdc	
-Max. Rated	35 V	
<b>Voltage Drop</b>		
-V <sub>in</sub> -> V <sub>out</sub>	Typ. 0.6 V	
<b>Current Handling Capacity</b>		
-Maximum Value	20 A	40 A
<b>Inverse Battery Protection</b>		
Yes		
<b>Connection</b>		
Via captive screw terminals		
<b>-Connector size range</b>	Solid: 16-10 AWG (1.5 - 6 mm <sup>2</sup> ) Stranded: 16-12 AWG (1.5 - 4 mm <sup>2</sup> )	Solid: 16-5 AWG (1.5 - 16 mm <sup>2</sup> ) Stranded: 16-8 AWG (1.5 - 10 mm <sup>2</sup> )
	Note: GND must be connected to module for voltage monitor to operate properly. See Connectors and Wiring diagrams on next page.	
<b>Relay Contacts</b>		
<b>DC Okay Contacts (qty) description</b>	(1) V <sub>out</sub> "OK" - N.O. & N.C. Contact	(1) V <sub>out</sub> "OK" - N.O. Contact (2) V <sub>in</sub> "OK" - N.O. Contact
<b>-Voltage Set Point</b>	> 18 Vdc ±5%	
<b>-Contact Rating</b>	30 Vdc @ 2A / 250 V @ 2A	
<b>DC OK LED</b>		
	V <sub>out</sub> "OK" Green LED	
<b>-Voltage Set Point</b>	> 18 Vdc ±5%	
<b>Dimensions</b>		
<b>H x W x D – inches (mm)</b>	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)
<b>Free Space for Ventilation – inches (mm)</b>	Above/Below: 0.39 in. (10 mm) recommended Left/Right: 0.39 in. (10 mm) recommended	
<b>Weight lbs (kg)</b>	1.38 (625)	1.43 (646)
<b>General</b>		
<b>Ambient Temperature</b>	Storage: -25°C...+85°C Operation: -10°C...+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.	

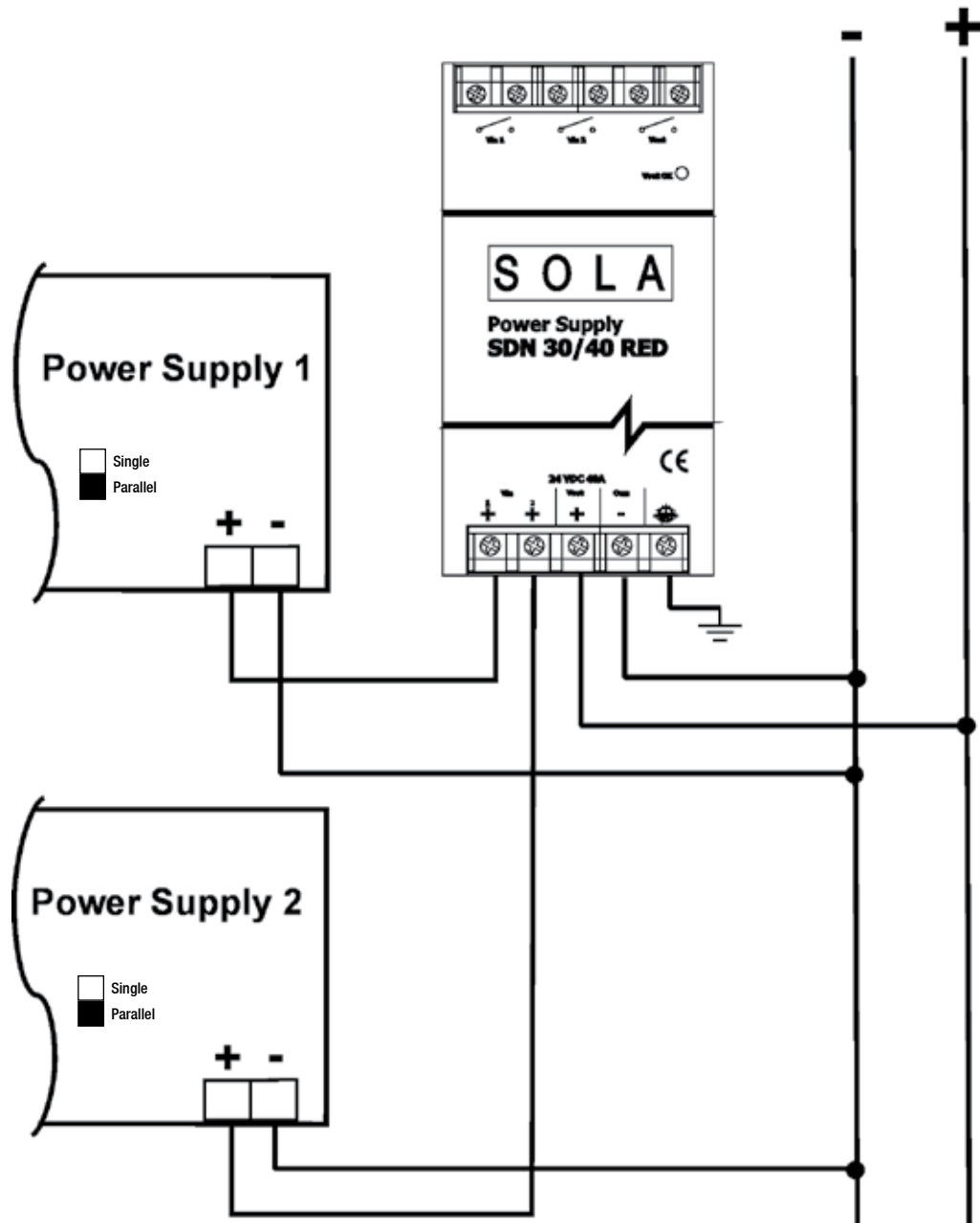
## Wiring Diagram for SDN 2.5-20RED



## Notes:

1. The Common (marked "COM -") connection to the module is required for voltage monitoring (DC OK Contacts), and is not meant to be part of the current path from the power supply to the load.
2. Protective earth connection only provides protective ground to the metal case of the module. This connection is isolated from the positive and common connections.

Wiring Diagram for SDN 30/40RED



Notes:

1. The Common (marked "COM -") connection to the module is required for voltage monitoring (DC OK Contacts), and is not meant to be part of the current path from the power supply to the load.
2. Protective earth connection only provides protective ground to the metal case of the module. This connection is isolated from the positive and common connections.

## SDP™ Low Power DIN Rail Series

The compact, lightweight DIN Rail power supplies come in output voltages from 5 to 48 Vdc and power ratings of up to 100 Watts. These extra small, efficient units are designed specifically for the industrial environment. Each unit is rated from -10°C to 70°C, with no derating necessary until above 60°C.

Many extra “industrial” features are standard for the SDP PowerBoost™ overload circuitry can start up industrial loads (i.e. motors, relays, solenoids and DC-DC converters), that can cause ordinary power supplies to foldback or shutdown. Each unit contains a DC indicator and front panel adjustment potentiometer. With the Solahd SDP series, you can count on a high grade design.



**UL** US  
UL 508 Listed  
IND. CONT.  
EQ.E61379

**C** **RA** **US**  
UL 60950  
E137632  
CUL/CSA-C22.2  
No. 234-M90

**CE**  
EMC and  
Low Volt.  
Directive

### Features

- Ultra slim 15W footprint
- No tools required for mounting
- Adjustable output
- PowerBoost™ industrial overload design
- Overvoltage, short circuit protection
- NEC Class 2 Current Limited
- Continuous short circuit protection
- Low output noise
- Screw terminal connections
- RoHS Compliant
- Three year warranty

### Related Products

- SDN™ Series
- SCP Series
- SCL Series

### Applications

- Industrial Control
- Process Control
- Machine Control
- Building Automation
- Instrumentation

### Selection Table

Catalog Number	DC Output Voltage	Output Current	Ripple / Noise	Size (H x W x D)
SDP 5-5-100T	5 - 6 V	5 A	<50 mVpp	2.95 in x 1.77 in x 3.58 in (75 mm x 45 mm x 91 mm)
SDP 2-12-100T	10 - 12 V	3 - 2.5 A		
SDP 3-15-100T	12 - 15 V	4.2 - 3.4 A		
SDP 1-48-100T	48 - 56 V	1 A		2.95 in x 0.9 in x 3.8 in (75 mm x 22.8 mm x 96.7 mm)
SDP 06-24-100T	24-28 Vdc	0.6 A		
SDP 1-24-100T		1.3 A		
SDP 2-24-100T		2.1 A		
SDP 4-24-100LT		3.8 A		
SDP 4-24-100RT*		4.2 A		

\* NEC Class 1

## SDPTM Series Specifications (24 V models)

Description	Catalog Number				
	SDP 06-24-100T	SDP 1-24-100T	SDP 2-24-100T	SDP 4-24-100LT	SDP 4-24-100RT
<b>Input</b>					
Input Voltage <sup>1</sup>	85-264 Vac, 90-375 Vdc			85-132 / 176-264 Vac, 210-375 Vdc	
Input Frequency	47-63 Hz				
Input Current	0.4 A / 0.25 A	0.7 A / 0.4 A	1.1 A / 0.7 A	1.8 A / 1.0 A	2.2 A / 1.2 A
External Fusing	Not required. Unit provides internal fuse (T3A, not accessible)				
Hold-Up Time	> 25 ms				
Efficiency	> 80% typ.	> 83% typ.	> 86% typ.	> 88% typ.	
Losses	< 3.75 W typ.	< 6.1 W typ.	< 8.1 W typ.	< 12 W typ.	
<b>Output</b>					
Output Voltage	24 V (22.5 - 28.5 Vdc Adj.)			24 V (24 - 25.7 Vdc Adj.)	24 V (22.5 - 28.5 Vdc Adj.)
Voltage Regulation	Static 0.5% $V_{out}$ , dynamic + 2% $V_{out}$ overall				
Ripple/Noise <sup>2</sup>	< 50 mVpp				
Overvoltage Protection (OVP)	> 30 Vdc, but < 33 Vdc, auto recovery			> 26 Vdc, but < 27.2 Vdc, auto recovery	> 30 Vdc, but < 33 Vdc, auto recovery
Output Noise Suppression	Radiated EMI values below EN61000-6-2				
Rated Continuous Loading	0.63 A @ 24 Vdc / 0.54 A @ 28 Vdc	1.3 A @ 24 Vdc / 1.1 A @ 28 Vdc	2.1 A @ 24 Vdc / 1.8 A @ 28 Vdc	3.8 A @ 24.5 Vdc	4.2 A @ 24.5 Vdc / 3.6 A @ 28 Vdc
Overload Behavior	Continuous operation at overload/short-circuit: up to 1.5 x Nominal Current Continuous				
Protection	Unit is continuously protected against short-circuit, overload and open-circuit.				
Power Back Immunity	35 V				
<b>Installation</b>					
Status Indicators	Green LED on, when $V_{out}$ "OK".				
Case & Mounting	Molded plastic housing using UL 94 approved flameproof material rating 94V-2. Simple snap-on to DIN TS35/7.5 or TS35/15 rail system.				
<b>Dimensions</b>					
(H x W x D) (in/mm)	2.95 x 0.9 x 3.8 (75 x 22.8 x 96.7)	2.95 x 1.77 x 3.58 (75 x 45 x 91)		2.95 x 2.85 x 3.8 (75 x 72.5 x 96.7)	
Weight – lbs (kg)	0.35 lbs (.16 kg)	0.5 lbs (.23 kg)		0.7 lbs (.32 kg)	
Mounting Orientation	Standard: Vertical; Optional: Horizontal or on top (Contact Technical Services).				
Ventilation/Cooling •Free space for cooling	Normal convection, no fan required; Above/below: 25 mm recommended.				
Connection •Connector size range	Input: screw terminals, connector size range: 20-12AWG (1.5 - 6 mm <sup>2</sup> ) for solid or stranded conductors.				
<b>General</b>					
Temperature	<b>Storage:</b> -25°C...+85°C <b>Operation:</b> -10°...+60°C full power with linear derating to half power from 60°C to 70°C. (Convection cooling, no forced air required).				
MTBF	> 500,000 hours according to Telcordia/Belcore Document SR-332, Issue 1.				
Humidity	Up to 90% RH, noncondensing; IEC 68-2-2, 68-2-3				
Electromagnetic Emissions (EME)	EN61000-6-3 (Includes EN61000-6-4) Class B (EN 55022) incl. Annex A				
Electromagnetic Immunity (EMI)	EN61000-6-2 (Includes EN61000-6-1) (EN55024) Criterion A: no derogation of performance				
Safe Low Voltage	SELV (acc. EN60950)				
Protection Class/Voltage	IP20 (IEC529), Protection Class 1 (IEC536)				
Warranty	3 years				
<b>Safety</b>					
CB Scheme, EN60950, UL60079-15 (Class 1, Zone 2 Hazardous Locations, Temp Class T3), UL508 Listed, cULus, UL 60950, cURus, CE (LVD 73/23 & 93/68/EEC). (EMC 89/336 & 93/68/EEC). EN61000-3-2, NEC Class 2 power supply acc. To NFPA 70 art. 725-41 (a)(2). <sup>3</sup>					

**Notes:**

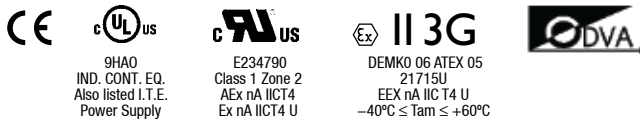
1. Not UL listed for DC input.
2. Ripple/noise is stated as typical values when measured with a 20 MHz, bandwidth scope and 50 Ohm resistor.
3. For all models except SDP 4-24-100LT.

## SDP™ Series Specifications (Other Voltages)

Description	Catalog Number			
	SDP 5-5-100T	SDP 2-12-100T	SDP 3-15-100T	SDP 1-48-100T
<b>Input</b>				
Input Voltage <sup>1</sup>	85-264 Vac, 90-375 Vdc			
Input Frequency	47-63 Hz			
Input Current	0.6 A @ 102 Vac; 0.33 A @ 196 Vac		1.0 A @ 102 Vac; 0.6 A @ 196 Vac	<1.0 A @ 100 Vac; <0.6 A @ 196 Vac
External Fusing	Not required. Unit provides internal fuse (T3A, not accessible)			
Hold-Up Time	> 25 ms			
Efficiency	> 80% typ.		> 86% typ.	
Losses	7.5 W typ.	8.1 W typ.	< 8.1 W typ.	
<b>Output</b>				
Output Voltage	5 - 5.5 Vdc (5 - 6 min adj.)	12 Vdc (9.9 - 12.1 min adj. )	15 Vdc (11.9 - 15.1 min adj.)	48 Vdc (48 - 56 min adj.)
Voltage Regulation	< 2% Dynamic; < 0.5% Static			
Ripple/Noise <sup>2</sup>	< 50 mVpp			
Overvoltage Protection (OVP)	> 6.7 Vdc	> 18 Vdc	> 20 Vdc	> 56 Vdc
Output Noise Suppression	Radiated EMI values below EN61000-6-2			
Rated Continuous Loading	$I_{out} = 5A @ V_{out} = 5.1V$	3A @ 10 Vdc 2.5A @ 12 Vdc	4.2A @ 12 Vdc 3.4A @ 15 Vdc	Up to 1.05A @ 48 V 0.9A @ 56 V
Overload Behavior	Continuous operation at overload/short-circuit: up to 1.5 x Nominal Current Continuous			
Protection	Unit is continuously protected against short-circuit, overload and open-circuit.			
Power Back Immunity	10 V	22 V		80 V
<b>Installation</b>				
Status Indicators	Green LED on, when $V_{out}$ "OK".			
Case & Mounting	Molded plastic housing using UL 94 approved flameproof material rating 94V-2. Simple snap-on to DIN TS35/7.5 or TS35/15 rail system.			
<b>Dimensions</b>				
(H x W x D) (in/mm)	2.95 x 1.77 x 3.58 (75 x 45 x 91)			
Weight – lbs (kg)	0.5 lbs (.23 kg)			
Mounting Orientation	<b>Standard:</b> Vertical; <b>Optional:</b> Horizontal or On Top (Contact Technical Services).			
Ventilation/Cooling •Free space for cooling	Normal convection, no fan required; Above/below: 25 mm recommended.			
Connection •Connector size range	Input: screw terminals, connector size range: 20-12 AWG (1.5 - 6 mm <sup>2</sup> ) for solid or stranded conductors.			
<b>General</b>				
Temperature	<b>Storage:</b> -25°C...+85°C <b>Operation:</b> -10°...+60°C full power with linear derating to half power from 60°C to 70°C. (Convection cooling, no forced air required).			
MTBF	> 500,000 hours according to Telcordia/Bellcore Document SR-332, Issue 1.			
Humidity	Up to 90% RH, noncondensing; IEC 68-2-2, 68-2-3			
Electromagnetic Emissions (EME)	EN61000-6-3 (Includes EN61000-6-4) Class B (EN 55022) incl. Annex A			
Electromagnetic Immunity (EMI)	EN61000-6-2 (Includes EN61000-6-1) (EN55024) Criterion A: no degradation of performance			
Safe Low Voltage	SELV (acc. EN60950)			
Protection Class/Voltage	IP20 (IEC529), Protection Class 1 (IEC536)			
Warranty	3 years			
<b>Safety</b>				
CB Scheme, EN60950, UL60079-15 (Class 1, Zone 2 Hazardous Locations, Temp Class T3), UL508 Listed, cULus, UL 60950, cURus, CE (LVD 73/23 & 93/68/EEC), (EMC 89/336 & 93/68/EEC). EN61000-3-2, NEC Class 2 power supply acc. To NFPA 70 art. 725-41 (a)(2). <sup>3</sup>				

- Notes:
1. Not UL listed for DC input.
  2. Ripple/noise is stated as typical values when measured with a 20 MHz, bandwidth scope and 50 Ohm resistor.
  3. Not to exceed 30 watts total.

SCP-X Extreme Environment Series



The SCP-X is a rugged power supply designed for use in extreme environments. The metal case reduces costs by eliminating separate enclosures. Quick change connectors simplify connectivity for distributed I/O devices on industrial machinery. This model provides 24 Vdc output with limited power to meet Class 2 requirements. Three models are currently offered based on application.

Features

- IP66/67 Versatile/NEMA 4X Rated
- 24 Vdc, 115/230 Vac, 3.8A Nominal Current
- Listed power supply for stand alone applications
- Can be mounted in any orientation without limitation
- Universal input
- High ambient temperature up to 60°C without derating
- DC OK Green LED
- Worldwide approvals
- Five Year Warranty

Related Products

- SDN Series
- SCP Series

Accessory

Catalog Number	Description	Approx. Ship Weight lbs (kg)
SCP-DINBKT	Mounting bracket to secure SCP-X to DIN Rail (included)	1 (.45)

Selection Table

Catalog Number	Output Current	Output Voltage	Output Power
SCP 100S24X-CM	3.8 A	24 Vdc	95 W
SCP 100S24X-CP			
SCP 100S24X-DVN			

Chassis Mount (-CM) Applications

This extreme environment power supply is ideal for outdoor or wet chassis-mount applications (Figure 1).

- Input connector: 3-pole, male receptacle **externally** threaded with 1/2-14 NPT mounting thread.
- Output Connector: 4-pole, female receptacle **externally** threaded with 1/2-14 NPT mounting thread.

Control Power (-CP) Applications

The SCP100S24X-CP is designed for Control Power applications where a grounded power supply output is required (Figure 2).

- Input connector: 3-pole, male receptacle **externally** threaded with 1/2-14NPT mounting thread.
- Output connector: 4-pole, female receptacle **internally** threaded with 1/2-14 NPT mounting thread.

DeviceNet™ (-DVN) Applications

The SCP100S24X-DVN is designed for DeviceNet™ applications where an isolated output from ground is required (Figure 2).

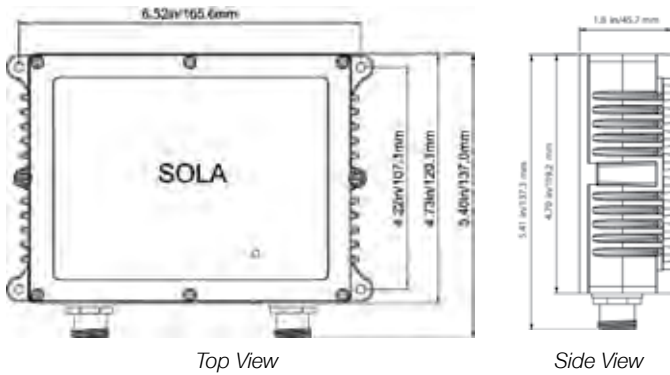
- Input connector: 3-pole, male receptacle **externally** threaded with 1/2-14NPT mounting thread.
- Output connector: 4-pole, female receptacle **internally** threaded with 1/2-14 NPT mounting thread.

Recommended Electrical Connections<sup>(1)</sup>

Catalog Number	Input 3-PIN Connections	Output 4-PIN Connections
SCP 100S24X-CM	Daniel Woodhead P/N 103000A01FXX0 <sup>(2)</sup>	Daniel Woodhead P/N 104002A01FXX0 <sup>(2)</sup>
SCP 100S24X-CP		Turck RSM46*M *length in meters
SCP 100S24X-DVN		

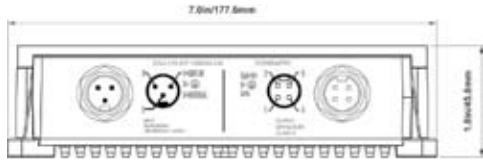
1. Connections to be provided by the user.
2. XX is the length of the cordset in foot.

SCP100S24X-CM Mechanical Diagrams



Top View

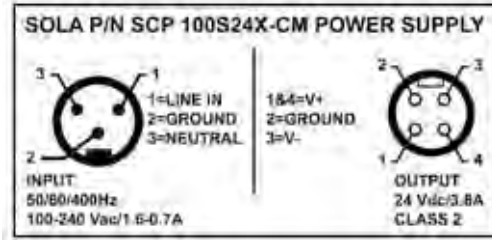
Side View



Bottom View

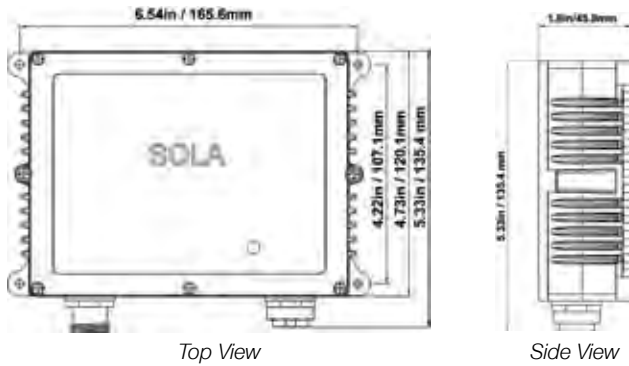
Figure 1

Electrical Connections



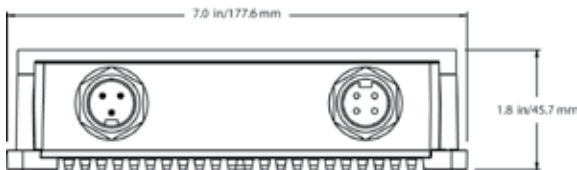
1. V- is isolated from ground. V- is a separately derived source so it is permissible to bond to ground if required in the application.

SCP100S24X-CP and SCP100S24X-DVN Mechanical Diagrams



Top View

Side View



Bottom View

Figure 2

Electrical Connections



1. 0 Vdc connections are internally bonded to ground
2. V- is isolated from ground. V- is a separately derived source so it is permissible to bond to ground if required in the application.

## SCP-X Specifications

Input	
Nominal Voltage	Any voltage from 100 to 240 Vac Input
–AC Range	85-264 Vac Universal Input
–DC Range	100-353 Vdc
Nominal Current <sup>1</sup>	1.6A/0.7A
–Inrush current max.	Typ. <25A
Power Factor Correction <sup>2</sup>	0.95
Frequency	50/60/400 Hz
Output	
Power Back Immunity	35 V
Overvoltage Protection	25-25.5 Vdc, autorecovery
Nominal Voltage	24 Vdc
Tolerance	< +/-2% overall (combination line, load, time and temperature related changes)
– Line Regulation	< 0.5%
– Load Regulation	< 0.5%
– Time & Temp. Drift	< 1%
Ripple <sup>3</sup>	< 50 mVpp
Total Nominal Current	3.8A
Holdup Time	> 25 ms (Full load, 100 Vac Input @ T <sub>amb</sub> = +25°) to 95% output voltage
General	
Case	IP66/67 versatile ingress protection; also meets UL50 Type 4X enclosure.
Min. Required Free Space	1 in. (25 mm) all sides but mounted base (permissible to mount in any orientation)
H x W x D (inches/mm)	4.7 x 7 x 1.8 (119 x 178 x 46)
Weight – lbs (kg)	2.6 lbs (1.16 kg)
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
Approvals	UL508, cULus; UL60950, cULus; UL60079-15 cRUus; IEC60950; CE (LVD 73/23 & 93/68/EEC). (EMC 89/336 & 93/68/EEC). EN61000-3-2, EN50021 (Class 1, Division 2 Hazardous Location, EEX nA IIC T4 U up to 60°C Ambient.) <sup>4</sup>
Temperature	<b>Storage:</b> -40° to +85°C, <b>Operation:</b> -40° 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 100% load permissible with sideways or front side up mounting orientation.
Humidity	Up to 100% RH with condensation.
Altitude	0 to 3,000 meters (0 to 10,000 feet)
Vibration	1.0 gravity (g) peak, 10-500 Hz (random wave). Passed random vibration test conditions for 3 axes for 60 minutes duration while energized and operating.
Shock	4 g peak, 22 milliseconds half-sine pulse, 3 times on 6 faces while energized and operating
Warranty	5 years
MTBF	>500,000 hours according to Telecordia/Bellcore SR-332 Issue 1, (V <sub>in</sub> 120 Vac, T <sub>amb</sub> = 40°C)
General Protection/Safety	Protected against continuous short-circuit, continuous overload, continuous open circuit. Protection Class 1 (IEC536), degree of protection IP66/67 versatile (IEC 529). Safe low voltage: SELV (acc. IEC60950)
Status Indicators – Visual	DC OK LED
Installation	
Fusing	
–Input	Internally fused, fuses not replaceable
–Output	Inherently limited current to meet Class 2 requirements per UL1310
Mounting	Chassis mounted via built in mounting tabs. Removal and replacement of the unit shall be possible from front of panel.
Connections	<b>Input:</b> 3 pin IP67 molded plug (quick disconnect). <b>Output:</b> 4 pin IP67 molded receptacle (quick disconnect).

1. Input current ratings are specified with low input, line conditions, worst case efficiency values and power factor.  
 2. Power Factor Correction at 50/60 Hz only.

3. Ripple/noise is stated as typical AC values when measured with a 20 MHz, bandwidth scope and 50 Ohm termination.  
 4. Additional installation requirements apply when used in hazardous locations (refer to user manual).

## SCP Series, 30 Watt; Single, Dual and Triple



These switchers are compact, rugged power supplies designed to power many of your industrial control and instrumentation devices and equipment, with high reliability and tight regulation through the most difficult factory-floor conditions around the globe. "User friendly" applies to these unique power supplies that feature easy-to-install DIN Rail and chassis mounting. Terminations are also easy to access (AC and DC terminations are well separated) and simple to wire. Safety is another aspect where the SCP distinguishes itself. The encapsulated design meets IP20 specifications, and the wide range of voltages will reliably support almost any low-power device in your cabinet or system for years to come.

### Features

- International approvals for global use
- DIN Rail or Chassis Mount
- Rugged, encapsulated design to resist environment
- IP20 protection
- Many output voltages, 3.3-48 Volts; single, dual, triple
- Five year warranty

### Packaging and Mounting Specifications

- Simple snap-on for DIN Rail TS35/7.5 or TS35/15
- M3 screw clamp terminations
- Chassis mounting possible on -DN Low-Profile versions by removing DIN clips (simply unscrew at the back of the unit).

### Selection Table

Low Profile Catalog Number	Description	Output Voltages						Min Load V1 A	Efficiency %
		V1		V2		V3			
		Vdc	A	Vdc	A	Vdc	A		
<b>30 Watts; Switching DC Power Supply</b>									
SCP 30S3.3-DN	3.3 V	3.3	6.0	-	-	-	-	0	≥ 62
SCP 30S5-DN	5 V	5	6.0	-	-	-	-	0	≥ 70
SCP 30S12-DN	12 V	12	2.5	-	-	-	-	0	≥ 75
SCP 30S15-DN	15 V	15	2.0	-	-	-	-	0	≥ 75
SCP 30S24-DN	24 V	24	1.3	-	-	-	-	0	≥ 77
SCP 30S48-DN	48 V	48	0.6	-	-	-	-	0	≥ 77
SCP 30D12-DN	Dual O/P +/- 12 V	12	1.2	-12	1.2	-	-	0.12	≥ 68
SCP 30D15-DN	Dual O/P +/- 15 V	15	1.0	-15	1.0	-	-	0.15	≥ 68
SCP 30D512-DN	Dual O/P 5 V & 12 V	5	3.0	12	1.2	-	-	0.3	≥ 68
SCP 30D524-DN	Dual O/P 5 V & 24 V	5	3.0	24	0.6	-	-	0.3	≥ 68
SCP 30T512-DN	Triple O/P 5/12/12 V	5	3.0	-12	0.6	12	0.6	0.3	≥ 68
SCP 30T515-DN	Triple O/P 5/15/15 V	5	3.0	-15	0.5	15	0.5	0.3	≥ 68

Please order using the following model number suffixes:

**-DN:** Low Profile – DIN Rail or Chassis Mount  
(ie: SCP30S3.3-DN).

**B-DN:** Slim Line – DIN Rail Mount Availability Only  
(ie: SCP30S3.3B-DN).

**Note:** Slim line version not available on SCP30D512-DN

### Options and Accessories

- SCP-MDC – Pair of metal DIN clips
- SCP-PDC – 1 plastic DIN clip with lever for removal from rail

### Standards

- UL60950, E137632
- EN60950
- CE and IP20

SCP Series

Specifications

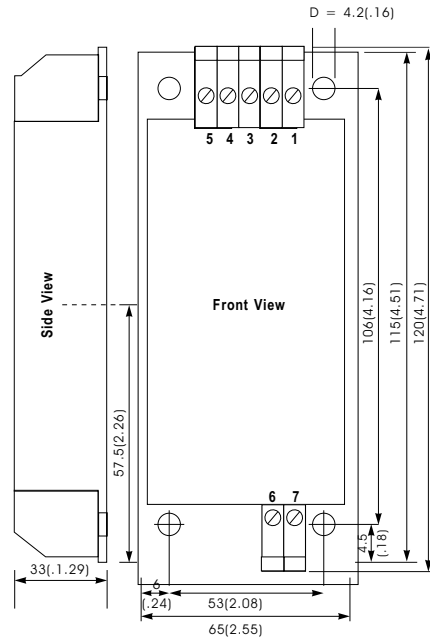
Parameter	Condition	Value
<b>Input</b>		
AC Input Voltage		85...264 Vac
DC Input Voltage		100...375 Vdc
Input Frequency		50/60 HZ
Filtering EMI/RFI		EN 55011/B, 55022/B
Switching Frequency		Typ. 100 kHz
Input Fusing Required		Use 2.0 A Slow Fuse
<b>Output</b>		
Output Voltage Accuracy	$V_{in} = 230V, I_{out} = \text{max}, 25^{\circ}C$	$V1 \leq \pm 1\%, V2/3 \leq \pm 3\%$
Ripple	$V_{in} = \text{min}, I_{out} = \text{max}, 25^{\circ}C$	$\leq 1\%, V_{out}$
Noise	$V_{in} = \text{min}, I_{out} = \text{max}, 25^{\circ}C$	$\leq 2\%, V_{out}$
Line Regulation	$V_{in} = \text{min/max } 25^{\circ}C$ $I_{out} = \text{max}, 25^{\circ}C$	$\leq +0.5\%, V_{out}$
Load Regulation	$I_{out} = 10\% \dots 90\% \dots 10\%, 25^{\circ}C$ $V_{in} = 230Vac, 25^{\circ}C$	$\leq +0.5\%, V_{out}$
Overcurrent Protection		105...130% $I_{nom}$
Load Regulation Timing	10...90...10%, 25°C	<4 ms
Temperature Coefficient	$T_{amb} = -25...+65^{\circ}C$	0.01%/K
Overload/Short Circuit	Continuous	
Derating Single/Dual/Triple	$T_{amb} > 50^{\circ}C$	2/3/5%/K max
<b>General</b>		
Holdup Time	$V_{in} = 230 Vac$	>50 ms
Operating Temperature		-25...+65°C
Storage Temperature	$T_{amb} = 25^{\circ}C$	45...+85°C
Case Temperature Rise at Full Load		45 K max
MTBF at 25°C (input/output)	acc. MIL-HDBK-217F	800,000 hrs
Transient Protection		EN61000-4-2, 3, 4, 5
Cooling		Convection
Weight – lbs (kg)	0.75 lbs (.34 kg)	0.84 lbs (.38 kg)
Case Material/Potting		UL94-VO
CSA Power Supply Class		Level 3
Protection		IP20
Visual Indicators		Green LED indicates DC OK for B-DN Slim Line versions only

Dimensions (H x W x D)

- Low Profile “-DN”**  
 4.72 x 2.55 x 1.29 inches (120 x 65 x 33 mm)  
 (Takes up 2.55 inches or 65 mm on DIN Rail)
- Slim Line “B-DN”**  
 4.72 x 1.29 x 2.68 inches (120 x 33 x 68 mm)  
 (Takes up 1.29 inches or 33 mm on DIN Rail)

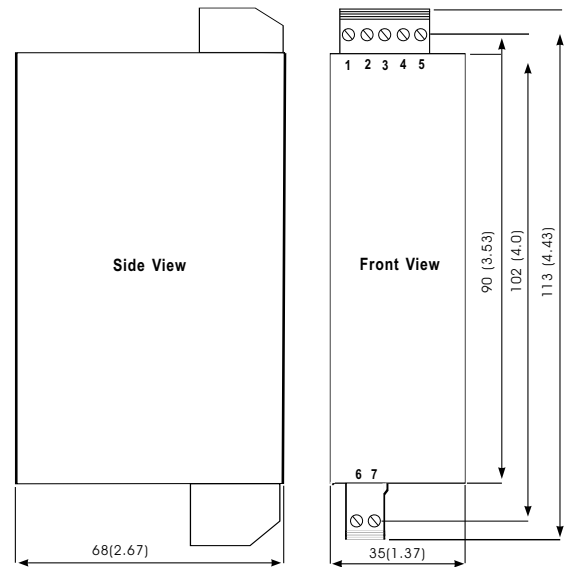
Dimensions – mm (inches)

Low Profile DIN Rail (-DN) or Chassis Mount\*



\* Unscrew DIN connector for chassis mounting.

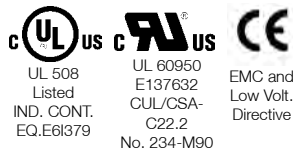
Slim Line DIN Rail Mount only (B-DN)



Pin-Out

SCP 30	1	2	3	4	5	6	7
Single				RETURN	+V1	IN	IN
Dual sym			-V2	COM	+V1	IN	IN
Dual asym		COM (V1)	+V1	COM V3	+V3	IN	IN
Triple	-V2	COM (V1)	COM (V2/3)	+V1	+V3	IN	IN

## SCL Series, 4 and 10 Watt CE Linears



The 4 and 10 Watt encapsulated linears are available in dual and triple outputs for applications with sensitive electronics and analog circuitry. The rugged enclosed encapsulated package, with screw terminals and DIN Rail clips, make for easy installation and maintenance. These low-noise modules are capable of being DIN Rail or Chassis mounted.

## Features

- Quiet, low noise DC Linear technology
- DIN Rail or Chassis mount for easy installation
- Rugged encapsulated design
- Global specifications including CE and UL 508
- Two year warranty

## Packaging and Mounting Specifications

- Simple snap-on for DIN Rail TS35/7.5 or TS35/15
- M3 screw clamp terminations
- Chassis mounting possible on -DN Low-Profile versions by removing DIN clips (simply unscrew at the back of the unit).

## Selection Table

Catalog Number	Description	Output Voltages					
		V1		V2		V3	
		Vdc	A	Vdc	A	Vdc	A
<b>4 Watt; Linear DC Power Supply; DIN Rail Mount</b>							
SCL 4D12-DN	Dual O/P $\pm 12$ V	12	0.13	-12	0.13	-	-
SCL 4D15-DN	Dual O/P $\pm 15$ V	15	0.1	-15	0.1	-	-
<b>10 Watt; Linear DC Power Supply; DIN Rail Mount</b>							
SCL 10D12-DN	Dual O/P $\pm 12$ V	12	0.35	-12	0.35	-	-
SCL 10D15-DN	Dual O/P $\pm 15$ V	15	0.3	-15	0.3	-	-
SCL 10T512-DN	Triple O/P, 5 V $\pm 12$ V	5	0.2	12	0.3	-12	0.3
SCL 10T515-DN	Triple O/P, 5 V $\pm 15$ V	5	0.2	15	0.25	-15	0.25

**Note:** Dual output units can be series connected for 24V or 30V applications.

## Standards

- UL60950, E137632
- EN60950
- CE and IP20
- UL 508 Listed

## Dimensions (H x W x D)

- 4 watt: 4.31 x 2.0 x 0.90 inches  
110 x 51 x 23 mm
- 10 watt: 4.71 x 2.55 x 1.29 inches  
120 x 65 x 33 mm

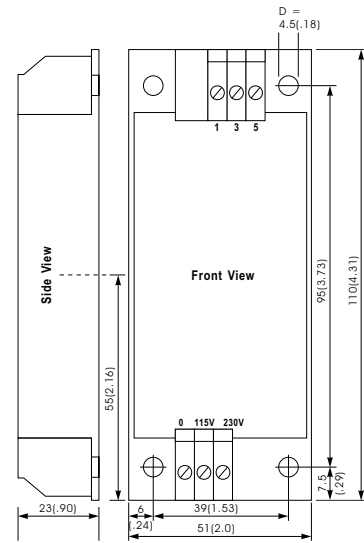
SCL Series

Specifications

Parameter	Condition	Value
<b>Input</b>		
AC Input Voltage		115/230 ±10% Vac Field Selectable
Input Frequency		47-63 Hz
Input Current 115/230 V		10 Watt: 0.2 A/0.1 A max 4 Watt: 0.1 A/0.05 A max
Efficiency		Typ. 50%
Filtering		10 Watt Only: VDE 871/B
<b>Output</b>		
Trimming		Fixed, preset
Ripple	$V_{in} = \text{min}, I_{out} = \text{max}, 25^{\circ}\text{C}$	<5 mVpp
Noise	$V_{in} = \text{min}, I_{out} = \text{max}, 25^{\circ}\text{C}$	<5 mVpp
Regulation Accuracy	100...50%, 25°C	<0.05%
Load Regulation Timing	10...90...10%, 25°C	100 ms
Temperature Coefficient	$T_A = -25...+65^{\circ}\text{C}$	0.01%/K typ.
Holdup Time		min. 20 ms
Overload/Short Circuit		Continuous
<b>General</b>		
Conducted Emissions		EN 55 011, Level B
Inducted Noise ESD HF Burst		EN 61 000-4-2, Level 4 EN V 50 140 (10 V/m) EN 61 000-4-4, Level 4
Isolation Voltage (input/output)	$T_A = 25^{\circ}\text{C}$	3.0k Vac, EN 60 950
Isolation Resistance	V = 230 Vac, 50 Hz	>100 MOhm
Leakage Current	2 cm side, middle case	<0.05 mA
Operating Temperature		10 W: -20...+70°C 4 W: -25...+70°C
Derating	$T_A > 50^{\circ}\text{C}$	3%/K
Storage Temperature		-40...+85°C
Cooling		Convection
Weight – lbs (kg)		10 Watt: 1.2 lbs (.55 kg) 4 Watt: 0.44 lbs (.20 kg)
Case Material/Potting		UL94-VO
SELV	Protection Class	Class 2

Dimensions – mm (inches)

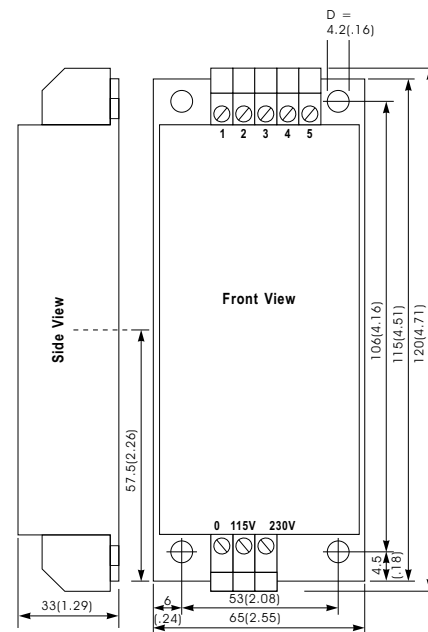
SCL 4 Watt Linear



Pin-Out

SCL 4	1	3	5	6	7	8
Dual	12/15V	COM 12/15V	-12/-15V	IN	IN	IN

SCL 10 Watt Linear



Pin-Out

SCL 10	1	2	3	4	5	6	7	8
Dual	-12/15V		GND 12/15V		12/15V	IN	IN	IN
Triple	-12/15V	5V	GND 12/15V	COM 5V	12/15V	IN	IN	IN

## SCD Series, Encapsulated, Industrial DC to DC Converter

These compact, rugged DC to DC converters are power supplies designed to power industrial control instrumentation devices and equipment where AC power is not convenient or accessible. With high reliability and wide input range, these units can operate through the most difficult factory-floor conditions around the globe. "User friendly" applies to these unique power supplies that feature easy-to-install DIN Rail and chassis mounting. Terminations are also easy to access and simple to wire. Encapsulated design meets IP20 specifications for use in harsh environments.

### Features

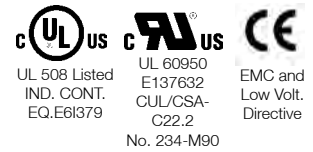
- DIN Rail or Chassis mount by removing DIN clips
- Rugged, encapsulated design to resist environment
- IP20 protection
- Wide 20 to 72 Vdc input range
- M3 screw clamp terminations
- Simple snap-on for DIN Rail TS35/7.5 or TS35/15
- Galvanic isolation
- 5 year warranty

### Options and Accessories

- SCP-MDC – Pair of metal DIN clips
- SCP-PDC – 1 plastic DIN clip with lever for removal from rail

### Standards

- UL60950, E137632
- EN60950
- CE and IP20
- UL 508 Listed



### Applications

These units regulate voltage for sensitive electronic equipment run from battery power. For example, a 24 Vdc battery system where the battery voltage can be 30 volts, sometimes higher during charging, and dip below 22 volts under heavy load. The SCD can be used to stabilize the voltage for those devices not designed to handle wider voltage swings.

They are also a convenient and inexpensive alternative to running AC power through a large industrial machine. The SCD can use 24 Vdc commonly available on many parts of the machine to create other voltages needed to run sensors, transducers and other devices that the machine requires to work properly.

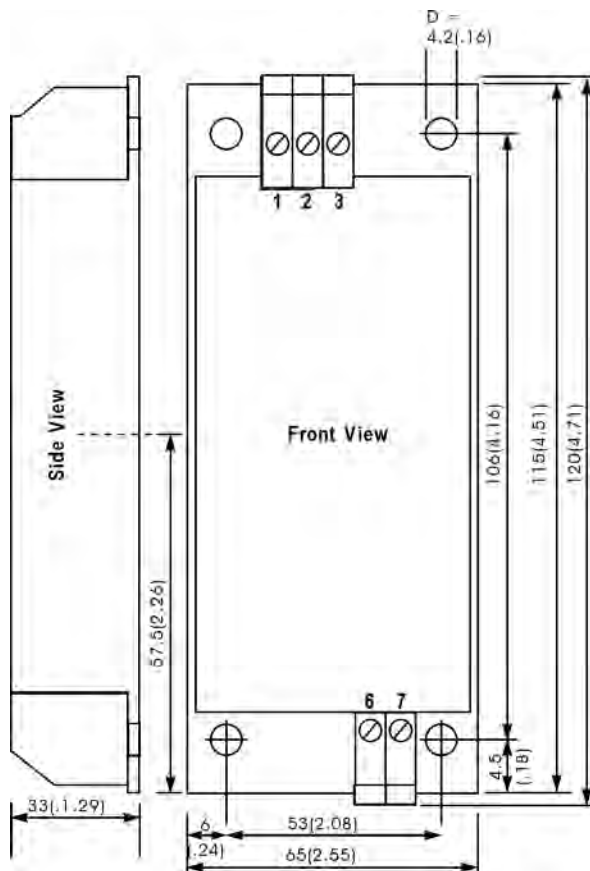
- Industrial
  - Encoders, special sensors, communications and instrumentation
- Telecommunications systems
- Remote Site/Harsh Environment

SCD Series, Encapsulated, Industrial DC to DC Converter

Selection Table

Low Profile Catalog Number	Description	Output Voltages				Min Load V1 A
		V1		V2		
		Vdc	A	Vdc	A	
<b>30 Watts; Switching DC Power Supply</b>						
SCD 30S5-DN	5 V	5	5	-	-	0
SCD 30S12-DN	12 V	12	2.5	-	-	0
SCD 30S15-DN	15 V	15	2	-	-	0
SCD 30S24-DN	24 V	24	1.3	-	-	0
SCD 30S48-DN	48 V	48	0.6	-	-	0
SCD 30D15-DN	Dual O/P+15 V	15	0.8	-15	0.8	0.15

Dimensions



Pin-Out

SCD 30	1	2	3	6	7
Single	+V1	-V1		+IN	-IN
Dual	V1	COM	V2	+IN	-IN

Specifications

Parameter	Condition	Value
<b>Input</b>		
Input Voltage		20...72 Vdc
Filtering EMI/RFI		EN 55011/B, 55022/B
Switching Frequency		Typ. 100 kHz
<b>Output</b>		
Output Voltage Accuracy	$V_{in} = 48V$ , $I_{out} = \text{max}$ , 25°C	$V1 \leq \pm 1\%$ , $V2 \leq \pm 4\%$
Ripple	$V_{in} = \text{min}$ , $I_{out} = \text{max}$ , 25°C	$\leq 1\%$ , $V_{out}$
Noise	$V_{in} = \text{min}$ , $I_{out} = \text{max}$ , 25°C	$\leq 2\%$ , $V_{out}$
Line Regulation	$V_{in} = \text{min/max}$ 25°C, $I_{out} = \text{max}$ , 25°C	$\leq +0.5\%$ , $V_{out}$
Load Regulation	$I_{out} = 10...90...10\%$ , 25°C, $V_{in} = 48 V$ , 25°C	$\leq +0.5\%$ , $V_{out}$
Overcurrent Protection		105...130% $I_{nom}$
Load Regulation Timing	10...90...10%, 25°C	<4 ms
Temperature Coefficient	$T_A = -25...+65^\circ C$	0.01%/K
Overload/Short Circuit		Continuous
Derating Single/Dual/Triple	$T_A > 50^\circ C$	5%/K max
<b>General</b>		
Holdup Time	$V_{in} = 48 V$	>10 ms
Operating Temperature		-25...+65°C
Storage Temperature	$T_A = 25^\circ C$	45...+85°C
Case Temperature Rise at Full Load		45 K max
MTBF at 25°C (input/output)	acc. MIL-STD-217F	800,000 hrs
Transient Protection		EN61000-4-2, 3, 4, 5
Cooling		Convection
Weight – lbs (kg)		0.86 lbs (.39 kg)
Case Material/Potting		UL94-VO
CSA Power Supply Class		Level 3
Protection		IP20

Note: No input protection against reverse voltage.

## SDU Series, Direct Current Uninterruptible Power Supply (DC UPS) System



The SDU DIN Rail DC UPS is an advanced 24 Vdc uninterruptible power system that combines an industry leading design with a wide operational temperature range and unique installation options. The SDU DC UPS is a powerful, microprocessor controlled UPS that provides protection from power interruptions. With an input voltage range of 22.5 to 30.0 Vdc, the DC UPS is the ideal power back-up solution for your critical connected loads.

These units were designed specifically for use with SolaHD's popular SDN Series of power supplies. SolaHD's external battery module is the only one on the market that allows you to seal the electronics in the panel and maintain safety by placing the battery outside of a non-ventilated enclosure.

These units include easy to wire screw terminations for critical devices needing battery back-up. The SDU DC UPS includes an automatic self-test feature that checks the UPS and battery functions. Battery charging occurs automatically when input DC power is applied. When power fails, the DC UPS will switch to battery back-up. If the battery is no longer useful, the UPS will sound an alarm and an LED indicator will illuminate.

Back-up power protection in modern industrial applications depends mainly on AC UPS. AC is converted to DC, and converted back to AC in the AC UPS, then converted back to DC in the protected equipment power supply. By applying the new SolaHD SDU DIN Rail DC UPS, you avoid the inefficiencies of all these conversions. This design maximizes system up-time flexibility, and optimizes reliability assurance.

### Applications

- Industrial/Machine Control
- Automation process Control
- Computer-based Control Systems
- Conveying Equipment
- Material Handling
- Packaging Machines
- Semiconductor Fabrication Equipment
- DeviceNet™
- Amusement Park Equipment
- Pharmaceutical Applications
- Control Rooms



### Features

- Modular, rugged industrial grade design
- Microprocessor based controls
- Automatic self-test feature for UPS function and battery management check
- Power module wide operation temperature range (-20° to +50°C)
- Flexible batteries back-up expansion capabilities
- Overload protection in normal and battery modes
- User replaceable batteries
- IP20 rated input and output screw terminals
- No internal fan, no extra cooling required
- Sturdy, reliable all metal DIN Rail mounting connector
- LED Status Indicators
- Universal Dry Contact Relay terminals provide remote signaling
- Monitoring, diagnostics, and remote turn-on and shut-off capabilities
- Two year warranty

### Related Products

- SDN-P Series DIN Rail Power Supplies
- SDN-C Series DIN Rail Power Supplies
- STV 25K Series Surge Protective Devices

Selection Table

Catalog Number	Description	Approx. Ship Weight lbs (kg)
<b>SDU 10-24</b>	240 VA, 24V/10A DIN Rail DC UPS power module, battery module is required	1.65 (0.65)
<b>SDU 20-24</b>	480 VA, 24V/20A DIN Rail DC UPS power module, battery module is required	1.65 (0.65)
<b>SDU 24-BAT</b>	24V DIN Rail/Panel Mount Battery Module (cable included)	12.0 (5.33)
<b>SDU 24-BATEM</b>	24V External Mount Battery Module (cable included)	16.0 (7.11)
<b>SDU 24EXTBC6</b>	Optional 6 ft. Battery Module cable to 24V DC UPS	0.5 (0.22)
<b>SDU 24-DB9</b>	Optional interface kit to convert relay contacts signals to DB9 signals	1.0 (0.45)
<b>SDU-PMBRK</b>	Optional chassis mount brackets to secure UPS to wall, panel, or enclosure	0.5 (0.22)

There are three individual hardware products when putting an SDU DC UPS system into operation:

1. 24 Vdc Power Supply (Recommended SolaHD SDN Series)
2. 24 Vdc SDU DC UPS Power Module
3. 24 Vdc SDU DC UPS Battery Module; or 24 Vdc SDU DC UPS External Battery Module

There are two models of the SDU DC UPS Power Module:

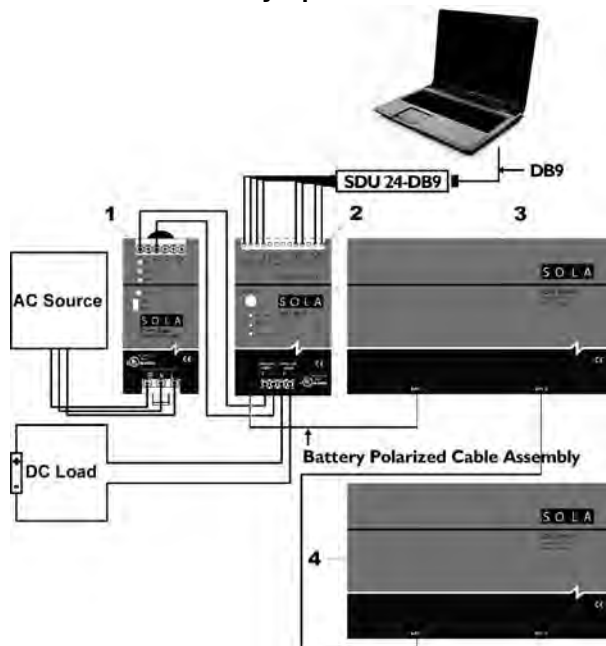
1. SDU 10-24, 24 Vdc/10amp (battery modules are required)
2. SDU 20-24, 24 Vdc/20amp (battery modules are required)

There are two models\* of the SDU DC UPS Battery Modules:

1. SDU 24-BAT, DIN Rail/Panel mount for installation in ventilated enclosure, up to 4 battery modules can be connected to the SDU DC UPS.
2. SDU 24-BATEM, Panel mount, alternate battery module for external installation of non-ventilated enclosures, only 1 battery module can be connected to the SDU DC UPS.

\*Can not use a combination of both models of the battery modules, only one model of the battery module can be connected to the SDU DC UPS.

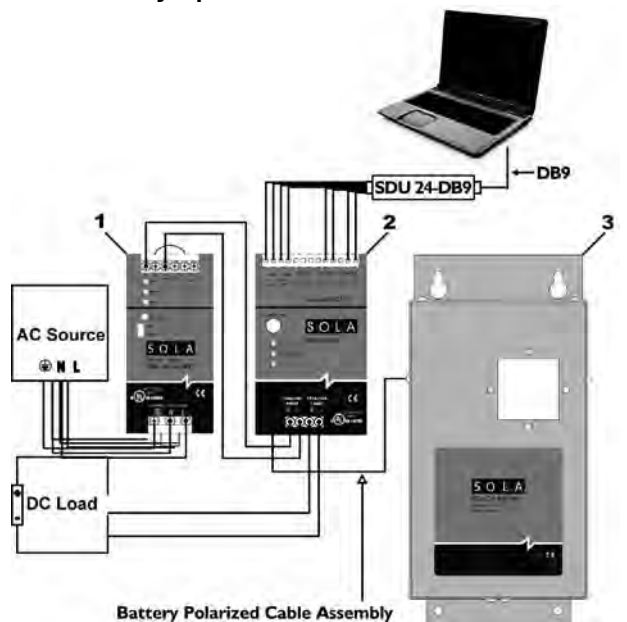
DIN Rail Mounted Battery Option



Notes:

- 1) AC/DC Power Supply
- 2) Power Module: SDU 10-24 or SDU 20-24
- 3) Battery Module: SDU 24-BAT
- 4) Optional battery module for extended runtime.

External Battery Option



Notes:

- 1) AC/DC Power Supply
- 2) Power Module: SDU 10-24 or SDU 20-24
- 3) Battery Module: SDU 24-BATEM

## SDU DC UPS Power Modules Specifications

Specification	SDU 10-24	SDU 20-24
<b>Input</b>		
Nominal Input Voltage	24 Vdc	
Input Voltage Range	22.5 - 30 Vdc	
Input Fuse	DC Fuse 30A	
<b>Output</b>		
Nominal Output Voltage	24 Vdc	
Output Voltage Range	22.5 - 30 Vdc	
Output Current	10A	20A
Current Limit	12A	22A
<b>Protection</b>		
Input Protection	Fuse for overload & short circuit protection	
Overload Protection	Electrical Circuit Protection	
Short Circuit	UPS output cut off immediately	
<b>Battery Module</b>		
Type	Sealed, maintenance-free lead acid batteries.	
Charging Current	0.5 A	
Typical Recharge Time (to 90% of full capacity)	8 Hours for 1 Battery Module 24 Hours for 2 Battery Module 12 Hours for each additional Battery Module	
Back-up Time (full load) <sup>1</sup>	14 min.	4 min.
Protection	UPS Shutdown when battery voltage drops below 22V, to prevent the complete depletion of the battery, short circuit protection by a 30A fuse.	
<b>Physical</b>		
Net Weight – lbs (kg)	1.65 (0.75)	
Dimensions H x W x D – in. (mm)	4.88 x 3.02 x 4.55 (124 x 77 x 116)	
<b>Alarm</b>		
Battery Low	Rapid Audible Indicator every 1 second	
Overload	Continuous Audible Indicator	
<b>Environment</b>		
Audible Noise	<40 dBA (1 meter from surface)	
Power Module Operating Temperature	-20°C to +50°C	
Storage Temperature	-20°C to +70°C	
Humidity	0-95%	
Max Elevation	3500 meters (11,483 feet)	
Shock & Vibration	According to ISTA 2A	
<b>DC UPS System<sup>2</sup> Safety</b>		
US Standard	UL 60950-1, UL508, FCC Part 15, Class A	
Canadian Standard	CAN/CSA C22.2 No 107.1-01, CAN/CSA C22.2 No. 60950-1	
CE	Low Voltage Directive IEC 60950-1 (CB Scheme) Directive 2004/108/EC: EN 62040-2 Category C2 EN 55022 Class A + A1 + A2, CISPR 22 Class A (2005), IEC 61000-3-2, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6 + A1, IEC 61000-4-8, IEC 61000-2-2	
<b>General</b>		
MTBF	> 200,000 Hours, MIL-STD HDBK-217F	
<b>Installation</b>		
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 SDU-PMBRK.	
Connections	Input & Output: IP20-rated screw terminals, connector size range: 16-12 AWG (0.5-4 mm <sup>2</sup> ) for copper conductors rated 90°.	
Relay Contact Terminal Connections	IP20 screw terminals; connector size range: 24-16 AWG (0.34-4mm <sup>2</sup> )	
Case	Fully enclosed metal housing with ventilation grid to keep out small particles.	
Free Space	20 mm above and 35 mm below, 20 mm left and right, 10 mm in front	

## Notes:

1. See Battery Back-Up Times on next page.
2. DC UPS System includes one power module (SDU 10-24 or SDU 20-24) and one or more battery modules (SDU 24-BAT or SDU 24BATEM)

SDN DC UPS Battery Module Specifications

Parameter	SDU 24-BAT	SDU 24-BATEM
Nominal Voltage	24 Vdc	
Protection	Fuse: 30A	Circuit Breaker: 24V, 25A
Charging Current	0.5A	0.8A
Enclosure Dimension in. (mm)	4.88 x 8.27 x 4.55 (124 x 210 x 116)	11.5 x 5.57 x 4.57 (292 x 142 x 116)
Enclosure Type	IP20	NEMA 1
Terminal Connector Type	Polarized Powerpole Connectors	
Batteries	Replaceable Batteries	
Accessories	1 ft. polarized battery cable	6 ft. polarized battery cable
Operating Temperature	-20° to +50°C	
Storage Temperature	-20° to +40°C	
Humidity	95% no condensation	
Safety Standard For DC UPS System*	UL60950-1, IEC 60950-1, UL508, CE CAN/CSA C22.2 No 107.1-01 CAN/CSA C22.2 No 60950-1	
Weight – lbs (kg)	12 (5.33)	16 (7.11)
Mounting	Simple snap-on system for DIN Rail TS35/7.5 or TS35/15 or chassis-mounted, optional screw mounting set <b>SDU-PMBRK</b> .	Wall/Chassis Mounting

SDU DC UPS Back-Up Times (Typical)

SDU 10-24 with SDU 24-BAT					
Load	20% (2A)	40% (4A)	60% (6A)	80% (8A)	100% (10A)
1 unit	113	45	30	21	14
2 units	247	114	74	48	38
3 units	396	178	117	80	58
4 units	531	233	148	111	81
SDU 10-24 with SDU 24-BATEM					
1 EBP	135	52	28	19	14
SDU 20-24 with SDU 24-BAT					
Load	20% (4A)	40% (8A)	60% (12A)	80% (16A)	100% (20A)
1 unit	46	21	10	06	04
2 units	116	50	28	17	10
3 units	178	80	46	31	20
4 units	237	113	65	43	31
SDU 20-24 with SDU 24-BATEM					
1 EBP	48	17	9	6	4

## SFL Series, 75–600 Watt

The SFL series is a DIN Rail switching power supply series that complements the SolaHD SDN™ products with more input voltage, output voltage and power levels to give an even broader range of industrial DC power solutions.

These products are available in 12, 24 and 48 Vdc output and 115/230 Vac Input. They feature pluggable screw connectors\* (mating connectors are included in each box sold) for easy installation and service. The products feature a DIN Rail connection, front panel DC OK indicators, and easily accessible AC and DC connections.

For parallel operation with power sharing, a redundant version is available for the 300 W (24 V/12 A) and 600 W (24 V/24 A) models.

### Features

- DIN Rail Mount regulated switch mode power supplies
- 12 V, 24 V, and 48 V outputs available from 1.5-24 A
- Easy-to-wire pluggable\* and screw terminal connectors
- Adjustable output voltage
- Selectable input: 115/230 Vac
- UL1604 Listed for Class 1, Division 2 hazardous locations (except -RED and -UDS versions)
- UL 508 Listed (except -RED and -UDS versions). No derating necessary.
- Two year warranty

\* Except 600 watt models.



UL 508 Listed  
IND. CONT.  
EQ.E61379



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



EMC and  
Low Volt.  
Directive

- Fully Integrated Redundant models available:
  - RED (For SFL24-24-100 and SFL12-24-100 only)  
Designed for N + 1 redundant power supply systems, these units provide active current sharing and allow up to 5 power supplies to be paralleled. Decoupling diodes and an alarm output to signal a unit failure are included in this option. Multiple units are required for redundancy.
- Models with optional battery back-up available:
  - UDS (For SFL24-24-100 and SFL12-24-100 only)  
Contact Technical Services for details.

### Selection Table

Catalog Number	Input Voltage Selectable	Output Power Maximum	Output Voltage Nominal	Output Current Maximum
SFL 6–12–100 SFL 1.5–48–100	115/230 Vac	75 Watt	12 Vdc 48 Vdc	6 A 1.5 A
SFL 3–48–100		150 Watt	48 Vdc	3 A
SFL 12–24–100 SFL 6–48–100		300 Watt	24 Vdc 48 Vdc	12 A 6 A
SFL 24–24–100 SFL 12–48–100		600 Watt	24 Vdc 48 Vdc	24 A 12 A
Redundant Models				
SFL 12–24–100RED SFL 24–24–100RED	115/230 Vac	300 Watt 600 Watt	24 Vdc	12 A 24 A

## SFL Specifications

Parameter	Value	
<b>Input</b>		
<b>Input voltages nominal (user selectable)</b>	93-132 Vac / 187-264 Vac	
<b>Input Frequency</b>	47-63 Hz	
<b>Input current at full load (typical)</b>	115 Vac	230 Vac
– 75 W (12 V/6 A, 24 V/3 A, 48 V/1.5 A)	1.7A	0.9 A
– 150 W (24 V/6 A, 48 V/3 A)	3.0A	1.7 A
– 300 W (24 V/12 A, 48 V/6 A)	5.4A	3.3 A
– 600 W (24 V/24 A, 48 V/12 A)	10.5A	6.4 A
<b>Inrush current (max.)</b>	115 Vac	230 Vac
– 75 W	16.5 A	33.0 A
– 150 W	35.0 A	70.0 A
– 300 W	35.0 A	70.0 A
– 600 W	70.0 A	80.0 A
<b>Internal fuse (slow blow) not accessible</b>		
– 75 W / 150 W	4.0 A	
– 300 W	6.3 A	
– 600 W	12.0 A	
<b>Output</b>		
<b>Voltage Adjustment Range</b>		
– 12 V models	12 – 14 Vdc	
– 24 V models	24 – 28 Vdc	
– 48 V models	48 – 52 Vdc	
<b>Output Regulation</b>	±0.2% max.	
– Line voltage variation		
– Load variation 10–90%	±1.0% max.	
75W, 150W models	±0.5% max.	
300W, 600W models		
<b>Ripple and noise (20 MHz bandwidth)</b>	< 50 mVpp	
<b>Electronic short circuit protection / current limitation</b>	110 % typ. (constant current)	
<b>Parallel Operation</b>	Up to 5 units	
– SFL12–24–100RED		
– SFL24–24–100RED		
<b>Overvoltage Protection, trigger point at</b>	140% typical out nominal	
<b>Holdup Time</b>	min. 20 mS	

Parameter	Value	
<b>General</b>		
<b>Operating Temperature Range Derating above 50°C</b>	-25°C...+70°C 2%/°C	
<b>Storage Temperature</b>	-25°C...+85°C	
<b>Humidity (non condensing)</b>	95% rel H max.	
<b>Switching Frequency</b>	100 kHz typical 67 kHz typical	
– 75 W		
– 150 W/300 W/600 W		
<b>Efficiency</b>	>85%	
<b>Operation Indication</b>	LED, DC OK	
<b>Isolation Voltage</b>	3,000 Vac (1 minute)	
– Input/output	2,000 Vac (1 minute)	
– Input/case	500 Vac (1 minute)	
– Output/case		
<b>Safety Class (IEC536)</b>	Class 1	
<b>Safety Standards Met</b>	IEC950, EN60950, CE marked for LVD, UL60950 recognized and UL 508.	
<b>Conducted EMI according to:</b>	EN55022 Class B, EN55011 Class B, FCC-B	
<b>Electromagnetic Susceptibility</b>	4 kV/8 kV	
– Electrostatic discharge ESD.	EN61000-4-2	10 V/m
– RF field susceptibility.	EN61000-4-3	2 kV
– Electrical fast transients/ bursts on main line.	EN61000-4-4	10 V
– Immunity to conducted radio frequency disturbances above 9 kHz.	EN61000-4-6	30 A/m
– Mains frequency field	EN61000-4-8	
<b>Case protection according to IEC529</b>	IP 20	
<b>Case material</b>	Steel	
<b>Mounting</b>	Snap-on 35 mm DIN Rail as per EN50022 or Chassis mounting option available	

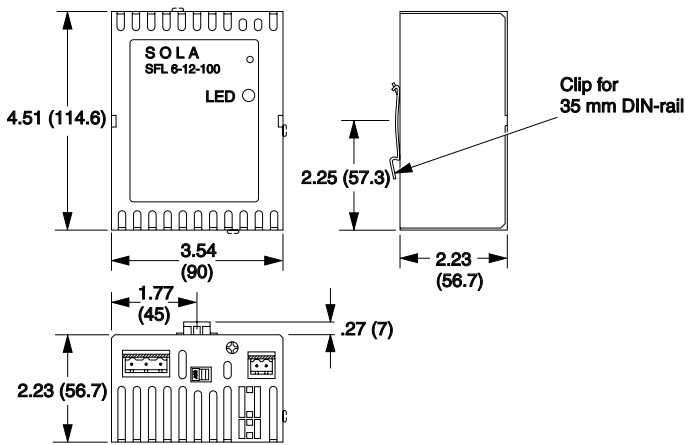
## Mounting Brackets

For easy conversion to panel or chassis mounting.

Catalog Number	Output Power Maximum
SFL 75–PMBRK	75 Watt
SFL 150–PMBRK	150 Watt
SFL 300–PMBRK	300 Watt
SFL 600–PMBRK	600 Watt

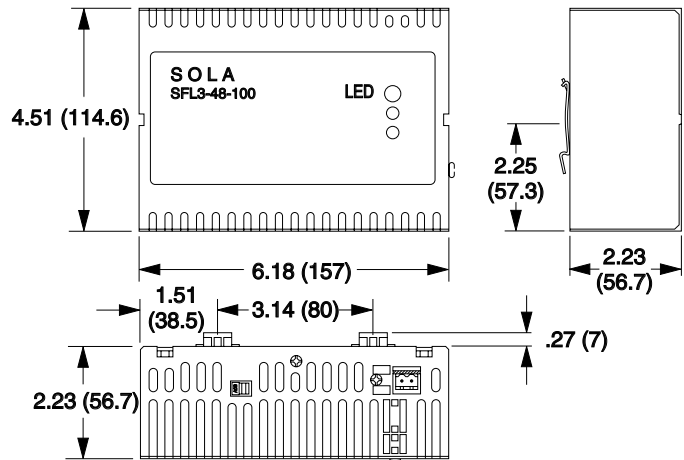
SFL Series Dimensions (inches/mm)

SFL 75 Watt (12 V/6 A, 48 V/1.5 A)



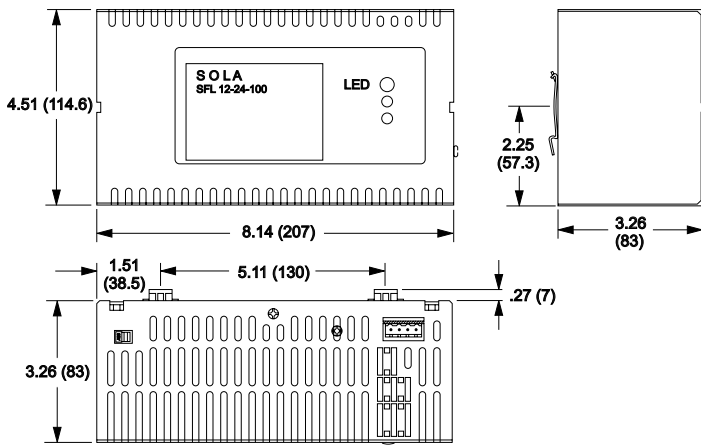
Weight: 1.06 lbs/.48 kg approx.

SFL 150 Watt (SFL 3-48-100)



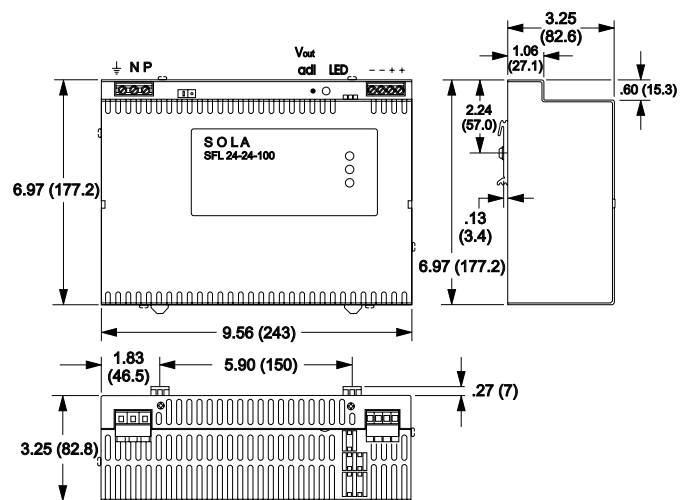
Weight: 1.6 lbs/.73 kg approx.

SFL 300 Watt (SFL 12-24-100[RED], SFL 6-48-100)



Weight: 3.09 lbs/1.4 kg approx.

SFL 600 Watt (SFL 12-48-100, SFL 24-24-100[RED])



Weight: 4 lbs/1.81 kg approx.

Silver Line Series – Single & Multi-Output Linears



The Silver Line series follows the industry accepted footprint for open frame, linear power supplies. Standard screw terminal connections and optional covers are offered for safety considerations.

Features

- Easy-to-install screw terminal connections
- Cover options
- Industry standard footprint
- Universal input and approvals (115/230 Vac)
- Low noise, extremely quiet DC output. For noise sensitive or analog circuitry.
- Fast transient response. Ideal for test applications.
- Built-in OVP on 5 V models and optional on 12, 15 and 24 V models
- Automatic resetting overload protection
- Short circuit protected
- Two year warranty

Applications

- Industrial Control Circuits and Components
- Instrumentation
- Drives
- CNC Machinery
- Equipment for food industry
- Microprocessor circuits
- Analog Circuits
- Noise sensitive Circuitry and Sensors

Specifications

Parameter	Condition	Limit
<b>Input</b>		
Input Voltage		100/120/220/230/240 Vac Selectable
Input Frequency		47-63 Hz
<b>Output</b>		
Line Regulation	for 10% change	0.05%
Load Regulation	for 50% change	0.05%
Ripple		3.0 mV maximum Peak-to-Peak
DC Output Adjustment Range		±5% Minimum
Overvoltage Protection		All 5-Volt outputs include build-in OVP as standard (setting is 6.2 V ±0.4 V) OVP is optionally available on other types
Transient Response Time	at 50% Load Changes	50 msec.
Overload Protection		Automatic current limit foldback
Remote Sensing	Available to compensate for output voltage drop on selected models.	0.5 Vdc
<b>General</b>		
Operating Temperature Range	Derate to 40% at +70°C	0 to +50°C
Storage Temperature Range		-25°C to +85°C
Temperature Coefficient (Typical)		0.01% 0°C
Stability	After warm-up	±.5%
EMI/RFI	Linear power supplies have inherently low conducted and radiate noise levels	For most system applications they will meet requirements of FCC Class B and VDE 0871 for Class B
Cover Option		Derate power by an additional 15%
Cooling		Forced air. 20 CFM required for full rating Derate 30% without cooling

Specifications are typical. Load Regulation on outputs without Remote Sense, .1% typical.

### SL Series Selection Table

Catalog Number	Output 1	Output 2	Output 3	Case
SLS-05-030-1T	5 V @ 3 A*#	-	-	A
SLS-05-060-1T	5 V @ 6 A*#	-	-	B1
SLS-05-090-1T	5 V @ 9 A*#	-	-	C
SLS-05-120-1T	5 V @ 12 A*#	-	-	I2
SLS-12-017T1	12 V @ 1.7 A# or 15 V @ 1.5 A	-	-	A
SLS-12-034T	12 V @ 3.4 A#	-	-	B1
SLS-12-051T	12 V @ 5.1 A#	-	-	C
SLS-12-068T	12 V @ 6.8 A#	-	-	I2
SLS-15-045T	15 V @ 4.5 A#	-	-	C
SLS-15-060T	15 V @ 6 A#	-	-	I2
SLS-24-012T	24 V @ 1.2 A#	-	-	A
SLS-24-024T	24 V @ 2.4 A#	-	-	B2
SLS-24-036T	24 V @ 3.6 A#	-	-	C
SLS-24-048T	24 V @ 4.8 A#	-	-	I2
SLS-24-072T	24 V @ 7.2 A#	-	-	K
SLS-24-120T	24 V @ 12.0 A#	-	-	L
SLD-12-1010-12T <sup>1</sup>	12 V @ 1 A or 15 V @ .8 A	-12 V @ 1 A or -15 V @ .8	-	H1
SLD-12-1818-12T <sup>1</sup>	12 V @ 1.8 A or 15 V @ 1.5 A	-12 V @ 1.8 A or -15 V @ 1.5 A	-	D
SLD-12-3434-12T	12 V @ 3.4 A#	-12 V @ 3.4 A#	-	I3
SLD-15-3030-15T	15 V @ 3 A#	-15 V @ 3 A#	-	I3
SLD-12-6034-05T	5 V @ 6 A*#	12 V @ 3.4 A#	-	I1
SLD-12-3015-05T	5 V @ 3 A*#	12 V @ 1.5 A	-	C1
SLT 12-20404-12T <sup>1</sup>	5 V @ 2 A*#	12 V @ .4 A or 15 V @ .4 A	-12 V @ .4 A or -15 V @ .4 A	H2
SLT 12-31010-12T1	5 V @ 3 A*#	12 V @ 1 A# or 15 V @ .8 A	-12 V @ 1 A# or -15 V @ .8 A	F
SLT 12-61818-12T1	5V @ 6A*#	12 V @ 1.8 A or 15 V @ 1.5 A	-12 V @ 1.8 A or -15 V @ 1.5 A	G2
Over Voltage Protector (OVP)				
SLO-12-000-1	6.2 V to 34 V Adjustable @ 8 A	For Cases B through K		J1
SLO-12-000-TB	6.2 V to 34 V Adjustable @ 8 A	For Case A or Cases B through K (when used with a cover)		J2

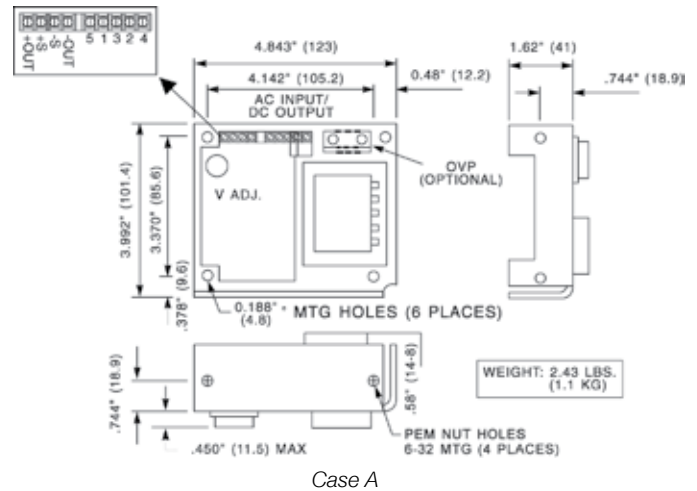
**Notes:**

\* With Built-In OVP

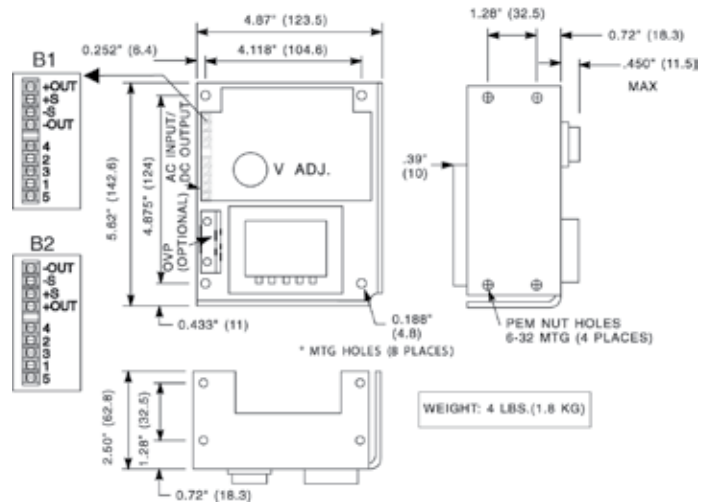
# With Remote Sense (R.S.)

1. 12/15 Volt models are factory set for 12 Volt operation. 15 Volt operation is field adjustable.

### Dimensions - inches (mm)



Case A



Case B

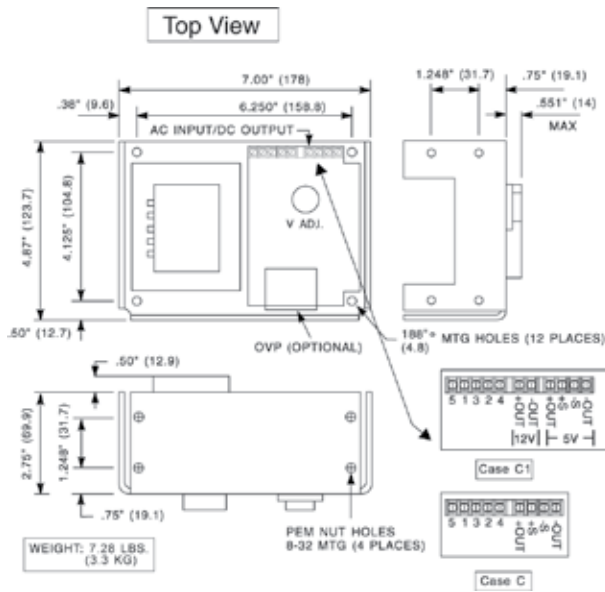
### Cover Options

Catalog Number	Description	Catalog Number	Description
SLCASA-CVR	Cover for Case A	SLCASG-CVR	Cover for Case G2
SLCASB-CVR	Cover for Case B	SLCASH-CVR	Cover for Cases H1 & H2
SLCASC-CVR	Cover for Case C	SLCASI-CVR	Cover for Cases I1, I2, & I3
SLCASC1-CVR	Cover for Case C1	SLCASK-CVR	Cover for Case K
SLCASD-CVR	Cover for Case D	SLCASL-CVR	Cover for Case L
SLCASF-CVR	Cover for Case F		

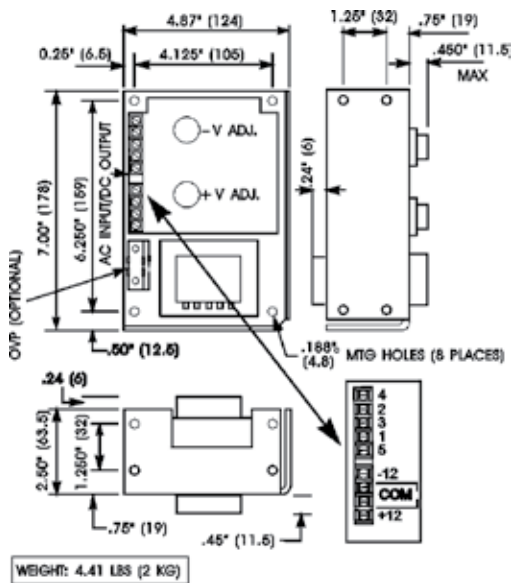
**Note:**

Covers are sold separately. When used, derate the power supply by 15% of its rated value.

### Silver Line Dimensions (inches/mm)



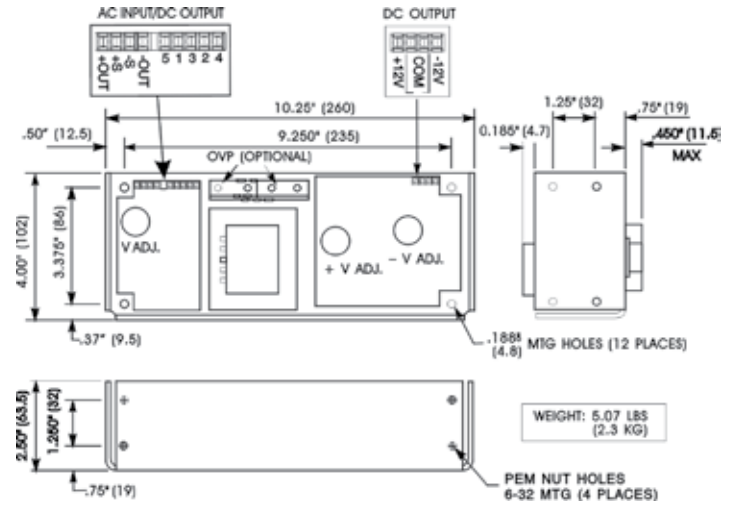
Cases C and C1



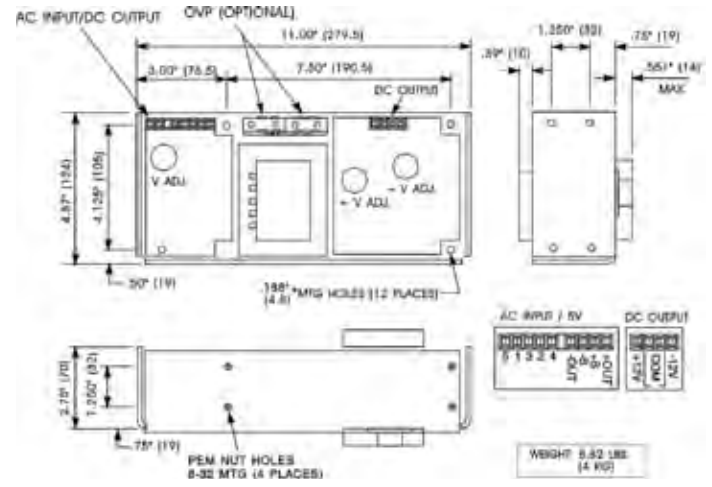
Case D

### AC Input Jumper Connections

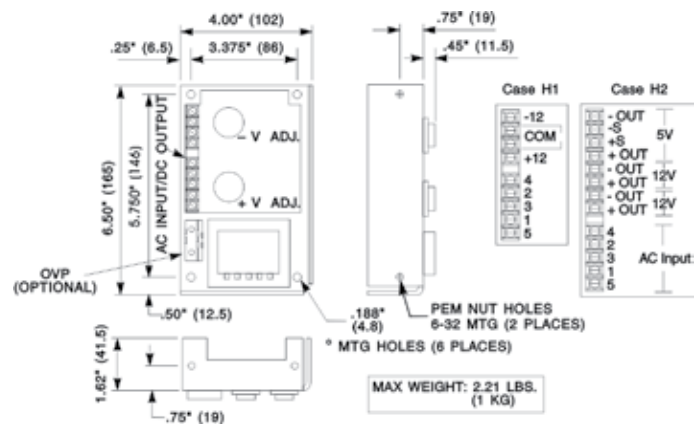
For use at:	100 Vac	120 Vac	220 Vac	230/240 Vac
Connect:	1-3, 2-4	1-3, 2-4	2-3	2-3
Apply AC:	1 & 5	1 & 4	1 & 5	1 & 4



Case F

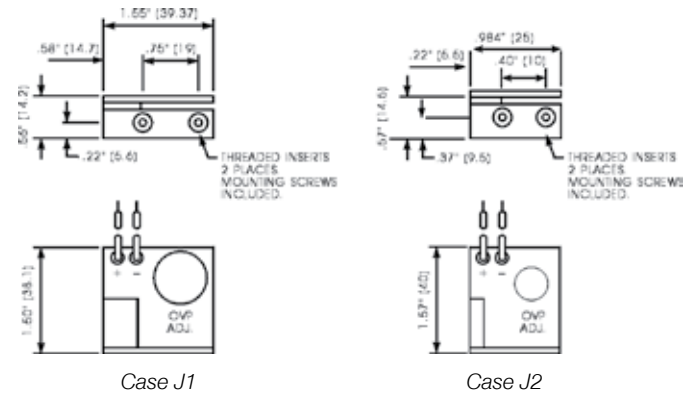
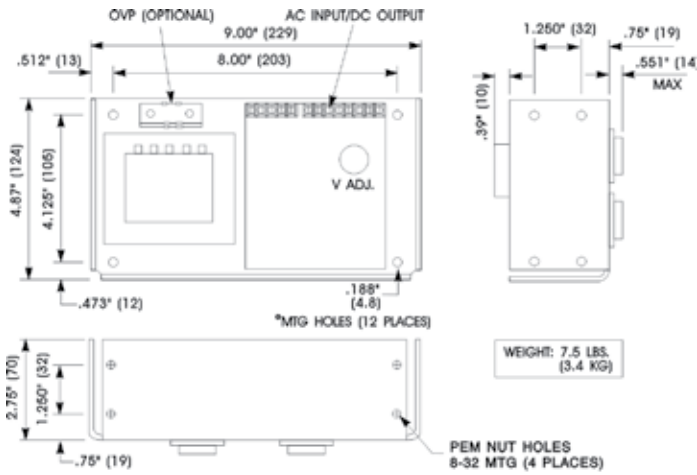


Case G2

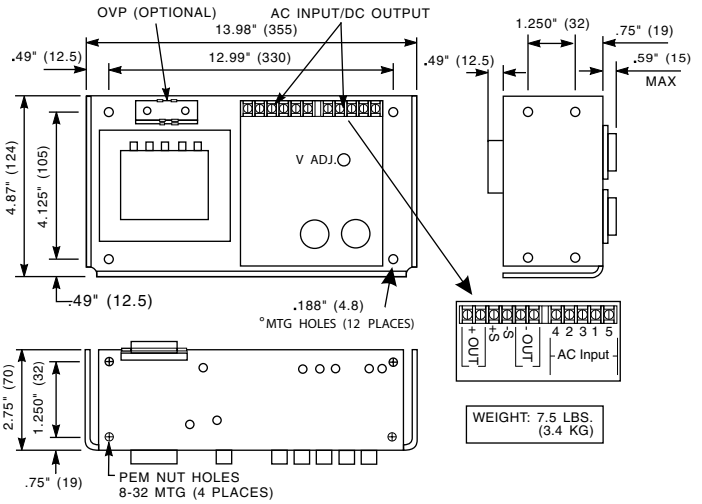


Cases H1 and H2

## Silver Line Dimensions (inches/mm)



Cases I1, I2 and I3

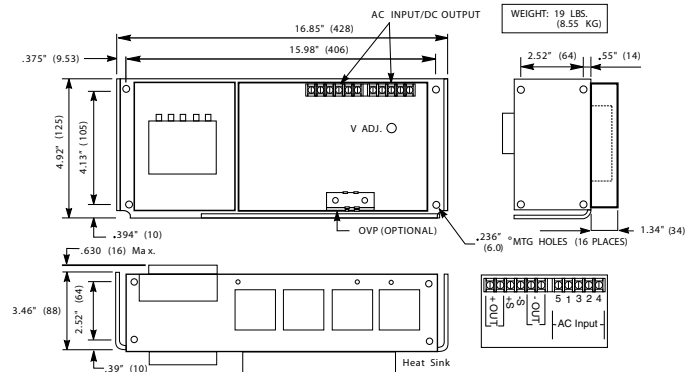


Case K

### Notes:

All dimensions in inches (mm). Dimensions may change and should not be used for construction purposes.

Be sure to specify the complete part number when ordering. Orders may be placed with your local SolaHD distributor.



Case L

Linear OEM – Single Output



Features

- Low noise output
- 115/230 Vac input
- Remote sensing
- Designed for both bench and rack use
- Completely protected short circuit proof; automatic foldback.
- Current limiting – automatic reset
- Isolated floating output
- UL Recognized, CSA Certified
- Built-in OVP on 5 Volt models
- Terminal block on Case D models (24 V/6 A)
- One year warranty

Selection Table

Catalog Number	Output 1	Case
83-05-230-3	5 V @ 3.0 A	B
83-12-218-3	12 V @ 1.8 A	B
83-24-212-3	24 V @ 1.2 A	B
83-24-225-3	24 V @ 2.5 A	C
83-05-312-3	5 V @ 12 A	D
83-12-310-3	12 V @ 10 A	D
83-24-260-3	24 V @ 6 A	D

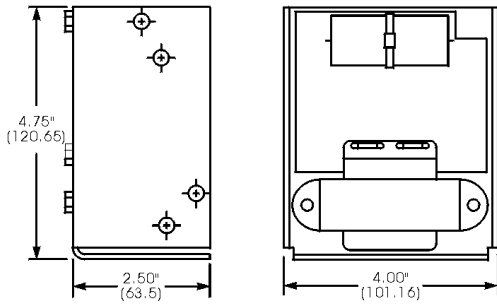
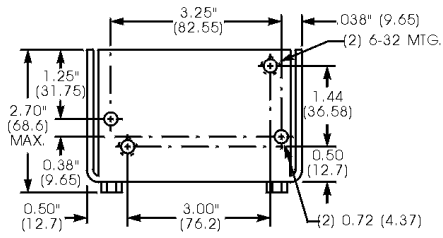
Applications

- Microprocessor Circuits
- Process Controls
- Control Circuits
- Noise sensitive Circuits
- Instrumentation
- CNC Machinery
- Analog Circuits

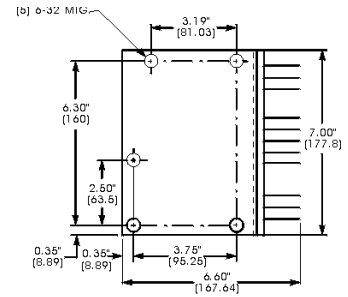
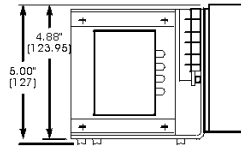
Specifications

Parameter	Condition	Limit
<b>Input</b>		
Input Voltage		104-127 Vac 208-254 Vac
Input Frequency		50-60 Hz
<b>Output</b>		
Regulation Line & Load		±0.1%
Pard (Ripple and Noise)		0.1% pk/pk
Periodic Deviations (Ripple)		10mv rms
Output Voltage Adjustment		±5% Minimum
Transient Recovery Time	50%-100% Load	Less than 50 msec
<b>General</b>		
Storage Ambient Temp.		-40°C to +85°C
Operating Ambient Temp.		0°C to +50°C
Temp. Effect Coefficient		0.03% °C
Polarity		May be used positive or negative
Short Circuit Protection		Protected with Automatic Recovery
Maximum Allowable Lead Drop for Remote Sensing		5%
Maximum Output Current		120% Rated Current
Maximum Short Circuit Current		30% Rated Current
Input/Output Isolation		1000 Megohms D.C., 2500 Vac
Cooling	Forced air. 20 CFM required for full rating Derate 30% without cooling	

Linear OEM Cases and Dimensions



Case B

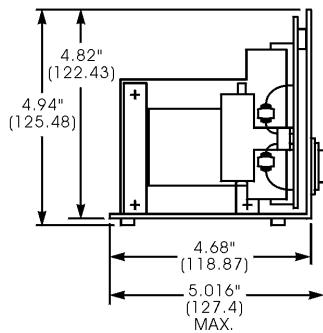
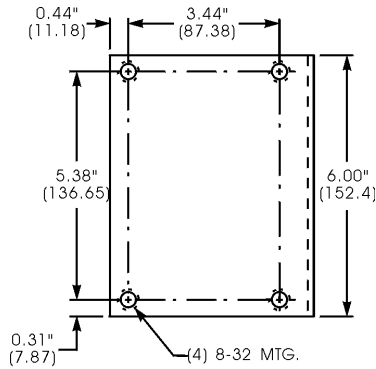


Case D

Notes:

All dimensions in inches (mm). Dimensions may change and should not be used for construction purposes.

When ordering, be sure to specify the complete part number. Orders may be placed with your local SolaHD distributor.

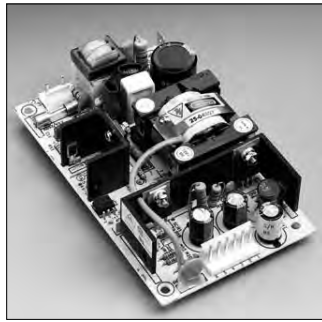


Case C

GL Series: Single & Multi Output Switchers



200 Watt model



40, 65, 100 Watt models



These compact, low profile, AC/DC switching power supplies offer universal input voltage with no switches or jumpers, ideal for higher volume worldwide applications. 40 watt through 110 watt are printed circuit board design with pin and socket connections, 200 watt models are enclosed with internal DC brushless fan and screw terminal connections.

Features

- Universal input
- Compact size
- Industry standard size (3 x 5", 40 Watt)
- On board input fuse
- Automatic overload protection
- OVP on Output #1
- UL Recognized, CSA Certified, CE, LVD, TUV
- 100% Burn-In
- Power fail signal on 110 and 200 Watt model
- 200 Watt enclosed with screw terminals
- One year warranty

Applications

- Industrial computers
- Control
- Instrumentation
- Scanners
- Drive circuits
- CNC machinery
- Printers
- Peripherals

Mating Connector Kits

- Can be ordered separately for units with Molex connection (40, 65 and 110 watt units only).
- Kits include mating housing and pins for input and output connection.

Specifications

Parameter	Condition	Limit
<b>Input</b>		
Input Voltage		85 to 264 Vac
Input Frequency		47 to 63 Hz
Protection		Line Fuse on board
Inrush Current	Cold Start	15 to 60 A Max
<b>Output</b>		
Line Regulation	Full Rated Load	±0.5%
Load Regulation	Full Rated Load	±1% Single Output ±2% Main Output
Cross Regulation	Full Rated Load	5% Typical
Minimum Loading	Main Output	10%
Temp. Coefficient		±0.04%/ °C
Hold up Time		10 mS min.
Overvoltage Protection	#1 Output	112 to 132% of Nominal
Output Ripple		2% peak to peak max.
<b>General</b>		
Operating Temperature	Full Rated Load	-0 to 50°C
Storage Temperature		-20 to +85°C
Efficiency	Full Rated Load	65% min.
MTBF	Per MIL-HDBK-217E	100,000 hour
Shock & Vibration		Designed to meet MIL-STD 810C
Safety	All Models	UL 60950, CSA C22.2 No. 234, EN 60950
Cooling		30% Rated Current

Connector Kits

Catalog Number	Applicable Models	Input/Output Mating Connector	Signal Connector
GL40-KIT	40 Watt	X	N/A
GL65-KIT	65 Watt	X	N/A
GL110-KIT	110 Watt	X	N/A
GL200-KIT	200 Watt	N/A	X

Auxiliary Signal Connector - 200 watt units only

Model	Pin 1	Pin 2	Pin 3	Pin 4
All 200 Watt Models	Fan	Common	Common	Power Fail

Auxiliary Mating Connector Kit for 200 watt units

Kit is for auxiliary signal connection only. Not required for input and output connection which are screw terminal.

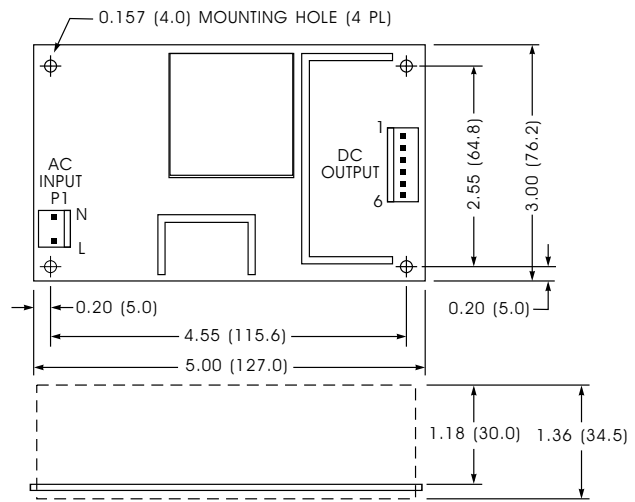
Selection Table for 40 Watt, GL Series

Catalog Number	Output 1	Output 2	Output 3	Maximum Output
GLS-01-040	5 V, 6A	-	-	30 W
GLS-02-040	12 V, 3.5 A	-	-	40 W
GLS-03-040	15 V, 3A	-	-	40 W
GLS-04-040	24 V, 2 A	-	-	40 W
GLD-01-040	5 V, 3 A	12 V, 2 A	-	40 W
GLD-02-040	5 V, 3 A	15 V, 2 A	-	40 W
GLD-03-040	5 V, 3 A	24 V, 1 A	-	40 W
GLT-01-040	5 V, 3 A	12 V, 2 A	-5 V, 0.3 A	40 W
GLT-02-040	5 V, 3 A	12 V, 2 A	-12 V, 0.3 A	40 W
GLT-03-040	5 V, 3 A	15 V, 2 A	-15 V, 0.3 A	40 W
GLT-04-040	5 V, 3 A	15 V, 2 A	-12 V, 0.3 A	40 W
GLT-05-040	5 V, 3 A	24 V, 1 A	-12 V, 0.3 A	40 W

## Output Connector

Model	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
GLS	Output 1	Output 1	Output 1	Return	Return	Return
GLD	Output 2	Output 1	Output 1	Common	Common	N/A
GLT	Output 2	Output 1	Output 1	Common	Common	Output 3

Dimensions for 40 Watt, GL Series



## Notes:

1. Tolerance 0.02/0.5 maximum.
2. Input connector Molex # 09-50-3031 and Molex series 2578 #08-50-0105 crimp terminal using Molex # 63811-2200 hand applicator.
3. Output connector Molex# 09-50-3061 and Molex series 2578 #08-50-0105 crimp terminal using Molex # 63811-2200 hand applicator.
4. Weight: 10.6 oz. (300 grams) approx.
5. Input/Output Mating Connector kit available. Catalog number GL40-KIT.
6. All dimensions in inches (mm).

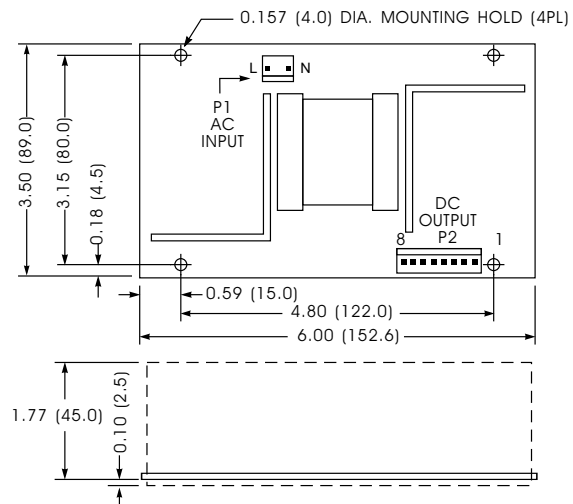
Selection Table for 65 Watt, GL Series

Catalog Number	Output 1	Output 2	Output 3	Output 4	Maximum Output
GLS-01-065	5 V, 10 A	-	-	-	50 W
GLS-02-065	12 V, 5.5 A	-	-	-	65 W
GLS-03-065	15 V, 4.5 A	-	-	-	65 W
GLS-04-065	24 V, 3 A	-	-	-	65 W
GLD-01-065	5 V, 6 A	12 V, 3 A	-	-	65 W
GLD-02-065	5 V, 6 A	15 V, 3 A	-	-	65 W
GLD-03-065	5 V, 6 A	24 V, 2 A	-	-	65 W
GLT-01-065	5 V, 6 A	12 V, 3 A	-5 V, 0.3 A	-	65 W
GLT-02-065	5 V, 6 A	12 V, 3 A	-12 V, 0.5 A	-	65 W
GLT-03-065	5 V, 6 A	15 V, 3 A	-15 V, 0.5 A	-	65 W
GLT-04-065	5 V, 6 A	15 V, 3 A	-12 V, 0.5 A	-	65 W
GLT-05-065	5 V, 6 A	24 V, 2 A	-12 V, 0.5 A	-	65 W
GLQ-01-065	5 V, 6 A	12 V, 3 A	-12 V, 0.5 A	-5 V, 0.5 A	65 W

## Output Connector

Model	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
GLS	Output 1	Output 1	Output 1	Output 1	Return	Return	Return	Return
GLD	Output 1	Output 1	Common	Common	Output 2	Output 2	N/A	N/A
GLT	Output 1	Output 1	Common	Common	Output 2	Output 2	Output 3	N/A
GLQ	Output 1	Output 1	Common	Common	Output 2	Output 2	Output 3	Output 4

Dimensions for 65 Watt, GL Series



## Notes:

1. Tolerance 0.02/0.5 maximum.
2. Input connector Molex # 09-50-3031 and Molex series 2578 #08-50-0105 crimp terminal using Molex # 63811-2200 hand applicator.
3. Output connector Molex # 09-50-3081 and Molex series 2578 #08-50-0105 crimp terminal using Molex # 63811-2200 hand applicator.
4. Weight: 13.4 oz. (380 grams) approx.
5. Input/Output Mating Connector kit available. Catalog number GL65-KIT.
6. All dimensions in inches (mm).

Selection Table for 110 Watt, GL Series

Catalog Number	Output 1	Output 2	Output 3	Output 4	Maximum Output
GLS-01-110	5 V, 22 A	-	-	-	110 W
GLS-02-110	12 V, 9 A	-	-	-	110 W
GLS-03-110	15 V, 7.5 A	-	-	-	110 W
GLS-04-110	24 V, 4.5 A	-	-	-	110 W
GLD-01-110	5 V, 10 A	12 V, 5 A	-12 V, 1 A	-	110 W
GLT-01-110	5 V, 10 A	15 V, 4 A	-15 V, 1 A	-	110 W
GLT-02-110	5 V, 10 A	24 V, 1 A	-15 V, 1 A	-	110 W
GLQ-01-110	5 V, 10 A	12 V, 5 A	-12 V, 1 A	-5 V, 1 A	110 W
GLQ-02-110	5 V, 10 A	12 V, 5 A	-12 V, 1 A	+12 V, 1 A	110 W
GLQ-03-110	5 V, 10 A	12 V, 5 A	-12 V, 1 A	+24 V, 1 A	110 W
GLQ-04-110	5 V, 10 A	15 V, 4 A	-15 V, 1 A	-5 V, 1 A	110 W

Output Connector

Model	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
GLS	Output 1	Output 1	Output 1	Return	Return	Return
GLD	Output 2	Output 1	Output 1	Common	Common	N/A
GLT	Output 2	Output 1	Output 1	Common	Common	Output 3

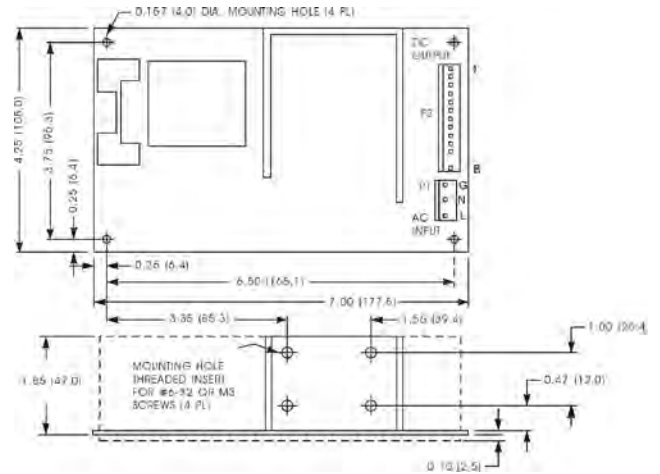
Selection Table for 200 Watt, GL Series

Catalog Number	Output 1	Output 2	Output 3	Output 4	Maximum Output
GLS-01-200	5 V, 40 A	-	-	-	200 W
GLS-02-200	12 V, 16.7 A	-	-	-	200 W
GLS-03-200	15 V, 13.4 A	-	-	-	200 W
GLS-04-200	24 V, 8.4 A	-	-	-	200 W
GLD-01-200	5 V, 30 A	12 V, 8 A	-	-	200 W
GLD-02-200	5 V, 30 A	15 V, 6 A	-	-	200 W
GLD-03-200	5 V, 30 A	24 V, 4 A	-	-	200 W
GLT-01-200	5 V, 30 A	12 V, 8 A	-5 V, 6 A	-	200 W
GLT-02-200	5 V, 30 A	12 V, 8 A	-12 V, 4 A	-	200 W
GLT-03-200	5 V, 30 A	15 V, 6 A	-15 V, 4 A	-	200 W
GLT-04-200	5 V, 30 A	15 V, 6 A	-12 V, 4 A	-	200 W
GLQ-01-200	5 V, 30 A	12 V, 8 A	-12 V, 4 A	5 V, 6 A	200 W
GLQ-02-200	5 V, 30 A	15 V, 6 A	-15 V, 4 A	24 V, 4 A	200 W
GLQ-03-200	5 V, 30 A	12 V, 8 A	-12 V, 4 A	12 V, 4 A	200 W
GLQ-04-200	5 V, 30 A	12 V, 8 A	-15 V, 4 A	15 V, 4 A	200 W
GLQ-05-200	5 V, 30 A	12 V, 8 A	-12 V, 4 A	24 V, 4 A	200 W

Output Connector (Terminal Block)

Model	Pin 1-2	Pin 3-4-5	Pin 6	Pin 7	Pin 8	Pin 9
GLS	- Sense	Return	Output 1	Output 1	Output 1	+Sense
GLD	Output 1	Common	Output 2	N/A	N/A	N/A
GLT	Output 1	Output 1	Common	Common	N/A	N/A
GLQ	Output 1	Common	Common	Output 2	Output 4 Return	Output 4

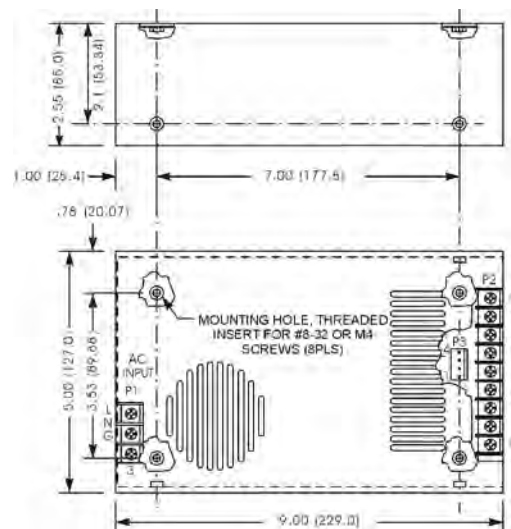
Dimensions for 110 Watt, GL Series



Notes:

1. Tolerance 0.02 (0.5) maximum.
2. Input connector Molex # 09-50-3051 and Molex series 2578 #08-50-0105 crimp terminal using Molex # 63811-2200 hand applicator.
3. Output connector Molex # 09-50-3131 and Molex series 2578 #08-50-0105 crimp terminal using Molex # 63811-2200 hand applicator.
4. Weight: 1.32 lbs. (600 grams) approx.
5. Input/Output Mating Connector kit available. Catalog number GL110-KIT.
6. All dimensions in inches (mm).

Dimensions for 200 Watt, GL Series



Notes:

1. Tolerance 0.02 (0.5) maximum.
2. Connector Molex # 22-01-2041 and Molex series 2759 #08-50-0113 crimp terminal using Molex # 11-01-0185 hand applicator.
3. Connectors P3 mates with Molex housing 22-01-1043 and Molex 4809 series crimp terminal.
4. Weight: 3.9 lbs. (1,750 grams) approx.
5. All dimensions in inches (mm).

## SMP Series: Super Slim Modular Power Supplies

These medium power, modular power supplies, from 250 through 1000 watts, are capable of up to 12 independent outputs. Modular design makes these units easy to customize for unusual voltage and power combinations. All units have power factor corrected inputs, an end mounted fan for cooling and a variety of built-in signals and controls. High reliability and a flexible design make these an excellent choice for process control and semiconductor fabrication applications.

### Features

- Worldwide safety agency approval (UL, CSA and CE)
- 250, 350, 450, 600 & 1000 Watt Power Platforms
- Meets IEC 61000-3-2
- Power Factor Correction (0.99)
- Universal AC Input (90-264V)
- Single wire current share
- Power fail TTL signal
- Cover and End mounted fan
- Capable of up to 12 independent outputs
- Highly Accelerated Life Tested (HALT)
- Fully isolated outputs
- Thermal overload protection
- MTBF demonstrated >500,000 hours
- Two year warranty



### Applications

- Process Control
- Semiconductor Fabrication
- Low Profile Chassis Mount
- Service Automation

### Related Products

- GL Series
- SHP Series

## Specifications

Description	Catalog Number				
	SM2	SM3	SM4	SM6	SM9
<b>Input</b>					
<b>AC Input</b>	90-264 Vac, 47-63 Hz single phase				
<b>Inrush Current</b>	Less than 20 A peak			Less than 40 A peak	
<b>PFC and Harmonic Correction</b>	Compliant with EN61000-3-2.				
<b>Input Transient and ESD, AC</b>	Compliant with EN61000-4-2,3,4,5,6 (Level 3 minimum)				
<b>Output</b>					
<b>Line Regulation AC input</b>	Less than 0.1% for line variations from 90-264 Vac. Less than 0.3% for dual and triple output modules				
<b>Load Regulation</b>	Less than 1.0% no load to full load and full load to no load, mains. Less than 2.0% for dual and triple output modules				
<b>Cross Regulation</b>	Less than 0.1% between single output modules. Less than 2% between dual outputs with 25% step load change on main output.				
<b>Current Share</b>	Single wire on all main outputs, droop on secondary outputs. Single wire parallel current share				
<b>Output Adjustment Range</b>	±10% of nominal on all Main outputs 5 - 15 volts on U and T module Auxiliary outputs			±5% min on all outputs	
<b>Current Limit</b>	140% nominal rating				
<b>Overvoltage Protection</b>	OVP is standard on all Main Output Modules and low voltage secondary outputs. 120-130% of nominal.			OVP is standard on all Main Output Modules and low voltage secondary outputs. 115-130% of nominal.	
<b>Minimum Load</b>	No preload is required on any Single, Dual output module. A min 1A, max 10% preload is required on main output of Triple and Slim-Line Dual (U) outputs in order to achieve specified regulation.				
<b>Dynamic Response</b>	±25% load change from a steady state 75% of nominal at a rate of 1A/µsec will result in an output deviation no greater than 2% or 100 mV peak. 125 mV for outputs 4V or less. Outputs should recover to within 1% of nominal voltage within 350 µsec.				
<b>General</b>					
<b>Efficiency</b>	75% typical at nominal line. 24 V+ single outputs 80%			75% typical at nominal line.	
<b>EMC</b>	Radiated and Conducted per CISPR 11 level B, CE compliant.			EN55022 Class B, EN61000-4-2, 3, 4, 5 & 6 Level 3	
<b>Temperature Coefficient</b>	0.02 - 0.03%/°C				
<b>Holdup Time, AC Input</b>	All AC Input units will maintain regulation within specifications for a period of not less than 16 msec for 60 Hz, (20 msec for 50 Hz) at full rated load from nominal 115/230 line voltage.			All AC Input units will maintain regulation within specifications for a period of not less than 16 msec for 60 Hz, (20 msec for 50 Hz) at full rated load from nominal 230 line voltage.	
<b>Remote Sense</b>	All main outputs incorporate remote sense and are able to compensate for a total cable drop up to 0.5 Vdc.			All single output, main output on triple outputs and dual output "D" modules incorporate remote sense and are able to compensate for a total cable drop up to 0.5 Vdc. Dual output "G" modules do not have remote sense.	
<b>Cooling</b>	Temperature performance curves are available. Contact Technical Services.				
<b>Operating Temperature Range</b>	0 to +70°C (full power to 50°C, derate linearly to 50% at 70°C).				
<b>Storage Temperature</b>	-40° to +85°C				
<b>Operating Altitude</b>	-350 to 7,500 feet with no derating				
<b>Shock and Vibration</b>	Commercial transportation ratings, suitable for International Air and Ground transport				
<b>Dimensions</b>					
<b>Mounting</b>	All platforms - two surfaces, bottom and one side			Chassis mount via threaded M4 holes on two surfaces.	
<b>H x W x D (inches/mm)</b>	1.56 x 5 x 9.5 (40 x 127 x 241)	1.56 x 5 x 10.5 (40 x 127 x 266)	1.68 x 5 x 10.5 (43 x 127 x 266)	2.5 x 5 x 11 (64 x 127 x 280)	2.5 x 7 x 11 (64 x 178 x 280)
<b>Weight – (lbs/kg)</b>	2.3 lbs (1.04 kg), Unit 3.5 lbs (1.59 kg) Shipping	2.9 lbs (1.32 kg), Unit 4.0 lbs (1.81 kg), Shipping	3.0 lbs (1.36 kg), Unit 4.5 lbs (2.04 kg), Shipping	3.2 lbs (1.45 kg), Unit 4.8 lbs (2.18 kg), Shipping	4.4 lbs (2 kg), Unit 6.6 lbs (3 kg), Shipping

## Selection Tables

## 250 Watt, SM2 Series

Catalog Number	Output 1	Output 2	Output 3	Maximum Output
SM2-S3	5 V, 50 A	-	-	250 W
SM2-S4	12 V, 20 A	-	-	250 W
SM2-S5	15 V, 16.6 A	-	-	250 W
SM2-S6	24 V, 10 A	-	-	250 W
SM2-S7	28 V, 9 A	-	-	250 W
SM2-S9	48 V, 5 A	-	-	250 W
SM2-R2	15 V, 5 A	15 V, 5 A	-	250 W
SM2-U4	5 V, 40 A	24 V, 2.5 A	-	250 W
SM2-T1	5 V, 20 A	12 V, 4 A	12 V, 4 A	250 W
SM2-T2	5 V, 20 A	15 V, 3 A	-15 V, 0.5 A	250 W

## 350 Watt, SM3 Series

Catalog Number	Output 1	Output 2	Output 3	Output 4	Maximum Output
SM3-S3R1	5 V, 50 A	12 V, 6 A	12 V, 6 A	-	350 W
SM3-S3R2	5 V, 50 A	15 V, 5 A	15 V, 5 A	-	350 W
SM3-U4R1	5 V, 40 A	12 V, 6 A	12 V, 6 A	24 V, 2.5 A	350 W
SM3-U4R2	5 V, 40 A	15 V, 5 A	15 V, 5 A	24 V, 2.5 A	350 W
SM3-U2R6	5 V, 40 A	12 V, 6 A	2 V, 4A	5 V, 8 A	350 W

## 450 Watt, SM4 Series

Catalog Number	Output 1	Output 2	Output 3	Output 4	Output 5	Maximum Output
SM4-S3S3	5 V, 50 A	5 V, 50 A	-	-	-	450 W
SM4-S3S6	5 V, 50 A	24 V, 10 A	-	-	-	450 W
SM4-S6S6	24 V, 10 A	24 V, 10 A	-	-	-	450 W
SM4-U2S3	5 V, 40 A	5 V, 50 A	12 V, 4 A	-	-	450 W
SM4-T6S3	5 V, 50 A	12 V, 10 A	12 V, 4 A	5 V, 4 A	-	450 W
SM4-U4T6	5 V, 40 A	12 V, 10 A	12 V, 4 A	5 V, 4 A	24 V, 2.5 A	450 W

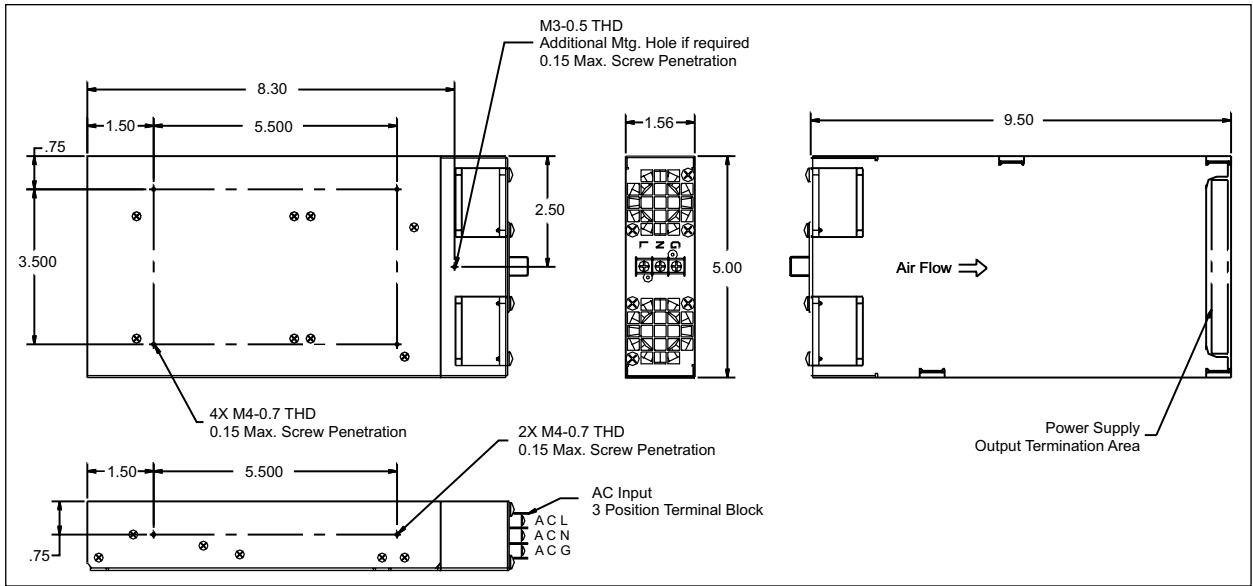
## 600 Watt, SM6 Series

Catalog Number	Output 1	Output 2	Output 3	Output 4	Maximum Output
SM6-C3	5 V, 100 A	-	-	-	600 W
SM6-C6	24 V, 21 A	-	-	-	600 W
SM6-C7	28 V, 18 A	-	-	-	600 W
SM6-C9	48 V, 10.5 A	-	-	-	600 W
SM6-B3B3	5 V, 60 A	5 V, 60 A	-	-	600 W
SM6-G3C3A4	5 V, 100 A	12 V, 10 A	12 V, 4 A	5 V, 8 A	600 W
SM6-B3A3A4A4	5 V, 60 A	12 V, 10 A	12 V, 10 A	5 V, 20 A	600 W
SM6-B3A3A5A5	5 V, 60 A	15 V, 8 A	15 V, 8 A	5 V, 20 A	600 W
SM6-A3A5A5A6	5 V, 20 A	15 V, 8 A	15 V, 8 A	24 V, 6 A	600 W

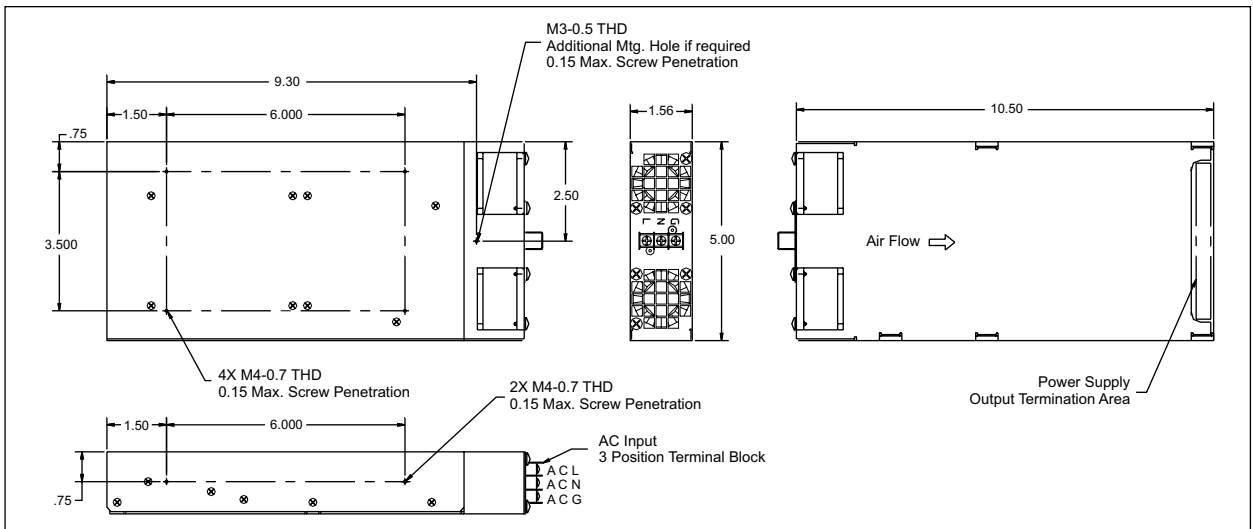
## 1000 Watt, SM9 Series

Catalog Number	Output 1	Output 2	Output 3	Output 4	Output 5	Maximum Output
SM9-C6C6	24 V, 42 A	-	-	-	-	1000 W
SM9-C3C3	5 V, 100 A	5 V, 100 A	-	-	-	1000 W
SM9-D1C3B4	5 V, 100 A	12 V, 25 A	12 V, 10 A	5 V, 10 A	-	1000 W
SM9-B3B4A4A6	5 V, 60 A	12 V, 25 A	12 V, 10 A	24 V, 6 A	-	1000 W
SM9-B3B5A5A6	5 V, 60 A	15 V, 20 A	15 V, 8 A	24 V, 6 A	-	1000 W
SM9-E3C3B4	5 V, 100 A	12 V, 25 A	12 V, 10 A	15 V, 2 A	-15 V, 2 A	1000 W
SM9-D3B3B4B4	5 V, 60 A	12 V, 25 A	12 V, 25 A	5 V, 10 A	24 V, 5 A	1000 W
SM9-D3B3B5B5	5 V, 60 A	15 V, 20 A	15 V, 20 A	5 V, 10 A	24 V, 5 A	1000 W
SM9-E1C3A6	5 V, 100 A	5 V, 20 A	12 V, 2 A	-12 V, 2 A	24 V, 6 A	1000 W

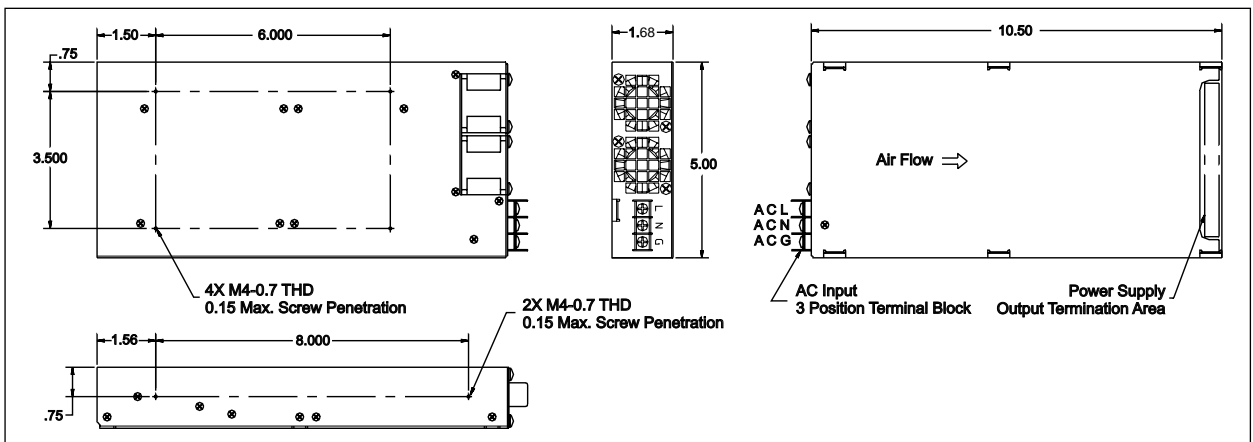
Mechanical Dimensions



SM2

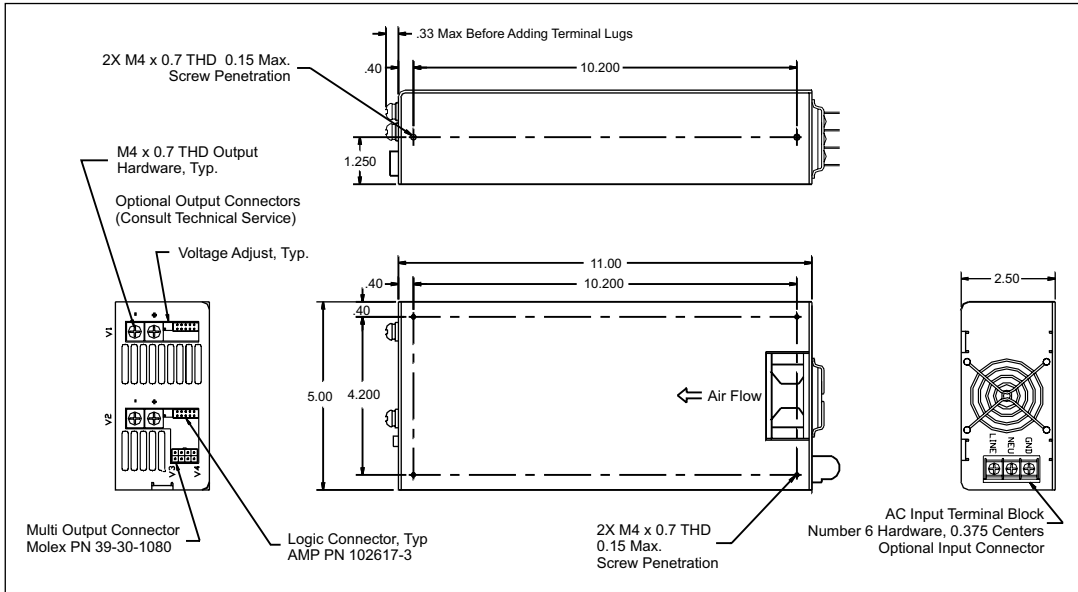


SM3

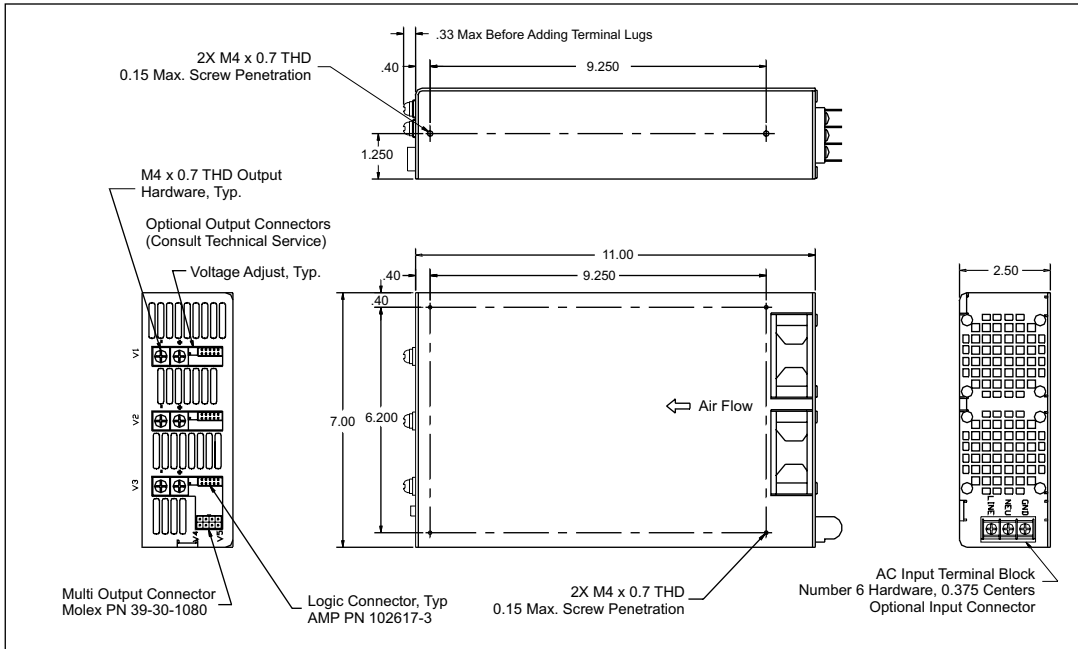


SM4

Mechanical Dimensions - continued



SM6



SM9

**SHP Series: Heavy Duty Modular Power Supplies**

These high power, modular power supplies, from 1500 through 2000 watts, are capable of up to 12 independent outputs. Modular design makes these units easy to customize for unusual voltage and power combinations. All units have power factor corrected inputs, an end mounted fan for cooling and a variety of built-in signals and controls. High reliability and a flexible design make these an excellent choice for process control and semiconductor fabrication applications.

**Features**

- Capable of up to 12 outputs
- Single output 24 V up to 87.4 A
- IEC 801 immunity standards
- Current Share on all outputs
- End mounted fan
- Voltage adjustment on all outputs  $\pm 10\%$
- Overload protection on all outputs
- Power factor correction (.99 typ.)
- Margining on all outputs
- Modular Construction
- Signals
  - Global and individual module inhibits/enable
- Single phase and three phase inputs
- Two year warranty

**Applications**

- Process Controls
- Semi-conductor Fabrication
- Automated Service Equipment

**Related Products**

- SMP Medium Power Modular Power Supplies
- Surge Suppression
- SCD DC to DC Converters
- Active Tracking® Filters



**Specifications**

Parameter	Condition	Limit
<b>Input</b>		
<b>Input Voltage</b>	SH Series	86 to 264 Vac (1 $\emptyset$ )
	S3H Series	180 to 264 (3 $\emptyset$ )
<b>Frequency</b>		47 to 440 Hz
<b>Protection</b>		Internally Fused
<b>Inrush Current</b>		40A Max
<b>Output</b>		
<b>Line Regulation</b>	Full Rated Load	0.2% or 5mV max
<b>Load Regulation</b>	Full Rated Load	0.2% or 5mV max
<b>Minimum Loading</b>	Where indicated	
<b>Temp. Coefficient</b>		$\pm 0.02\%/^{\circ}\text{C}$
<b>Hold up Time</b>	Full Rated Load	No less than 20ms
<b>Overvoltage Protection</b>		2-5 V 122% to 134%
<b>Short-Circuit Protection</b>	Continuous	Protected for short-circuit, auto-recovery
<b>Output Ripple</b>		0.1% or 10mV RMS
<b>General</b>		
<b>Operating Temperature</b>	Full Rated Load	-10 to 50°C
<b>Storage Temperature</b>		-55 to +85°C
<b>Efficiency</b>	Full Rated Load	75% to 82%
<b>MTBF</b>		>500,000 hours
<b>Shock &amp; Vibration</b>		MIL-HDBK 810E
<b>EMI</b>		CISPR 22, EN55022 Level B
<b>Safety</b>	All Models	UL, CE and CSA
<b>Cooling</b>		Internal DC fan 24

## Selection Tables

## Single Phase 1500 Watt, SH15 Series

Catalog Number	Output 1	Output 2	Output 3	Output 4	Maximum Output
SH15-Q2	3.3 V, 300 A	-	-		1500 W
SH15-Q3	5 V, 300 A	-	-		1500 W
SH15-Q4	12 V, 125 A	-	-		1500 W
SH15-Q5	15 V, 100 A	-	-		1500 W
SH15-Q6	24 V, 62.4 A	-	-		1500 W
SH15-Q7	28 V, 53.4 A	-	-		1500 W
SH15-Q8	36 V, 41.6 A	-	-		1500 W
SH15-Q9	48 V, 31.2 A	-	-		1500 W
SH20-P3T53J4	5 V, 150 A	24 V, 10.5 A	12 V, 25 A	12 V, 20 A	1500 W
SH20-P3T54J5	5 V, 150 A	24 V, 10.5 A	15 V, 20 A	15 V, 20 A	1500 W

## Single Phase 2000 Watt, SH20 Series

Catalog Number	Output 1	Output 2	Output 3	Output 4	Output 5	Output 6	Maximum Output
SH20-Q3K3-7	5 V, 420 A	-	-	-	-	-	2000 W
SH20-Q6K6-7	24 V, 87.4 A	-	-	-	-	-	2000 W
SH20-Q9K9-7	48 V, 43.7 A	-	-	-	-	-	2000 W
SH20-M3K2	5 V, 240 A	3.3 V, 120 A	12 V, 4 A	-	-	-	2000 W
SH20-Z6Z7M3	5 V, 240 A	12 V, 21 A	12 V, 20 A	5 V, 50 A	15 V, 10 A	24 V, 5 A	2000 W

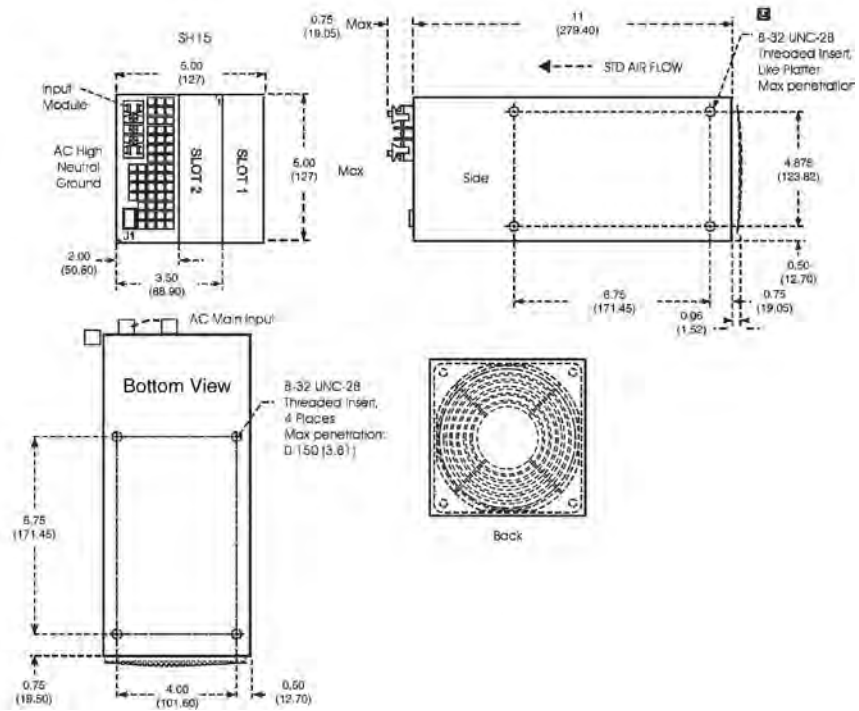
## Three Phase 1500 Watt, S3H15 Series

Catalog Number	Output 1	Output 2	Output 3	Output 4	Maximum Output
S3H15-Q2	3.3 V, 300 A	-	-	-	1500 W
S3H15-Q3	5 V, 300 A	-	-	-	1500 W
S3H15-Q4	12 V, 125 A	-	-	-	1500 W
S3H15-Q5	15 V, 100 A	-	-	-	1500 W
S3H15-Q6	24 V, 62.4 A	-	-	-	1500 W
S3H15-Q7	28 V, 53.4 A	-	-	-	1500 W
S3H15-Q8	36 V, 41.6 A	-	-	-	1500 W
S3H15-Q9	48 V, 31.2 A	-	-	-	1500 W
S3H20-P3T53J4	5 V, 150 A	24 V, 10.5 A	12 V, 25 A	12 V, 20 A	1500 W
S3H20-P3T54J5	5 V, 150 A	24 V, 10.5 A	15 V, 20 A	15 V, 20 A	1500 W

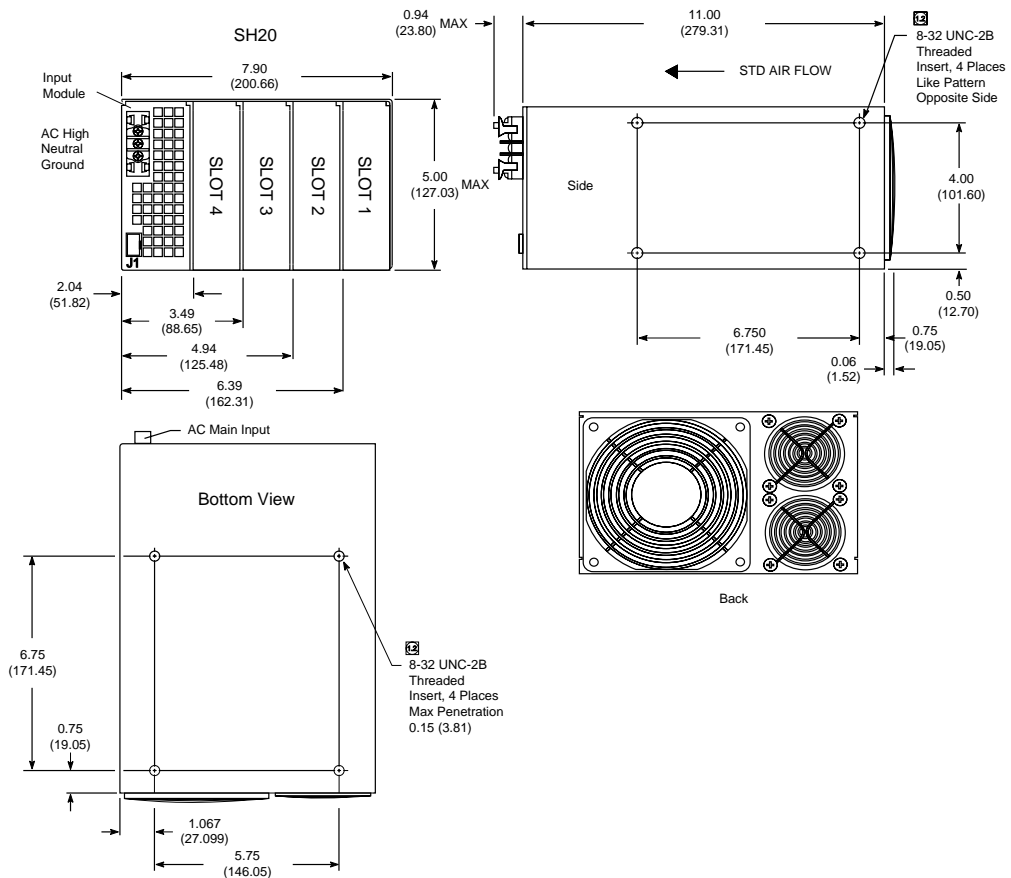
## Three Phase 2000 Watt, S3H20 Series

Catalog Number	Output 1	Output 2	Output 3	Output 4	Output 5	Output 6	Maximum Output
S3H20-Q3K3-7	5 V, 420 A	-	-	-	-	-	2000 W
S3H20-Q6K6-7	24 V, 87.4 A	-	-	-	-	-	2000 W
S3H20-Q9K9-7	48 V, 43.7 A	-	-	-	-	-	2000 W
S3H20-M3K2	5 V, 240 A	3.3 V, 120 A	-	-	-	-	2000 W
S3H20-Z6Z7M3	5 V, 240 A	12 V, 21 A	12 V, 20 A	5 V, 50 A	15 V, 10 A	24 V, 5 A	2000 W

SH15 & S3H15 Dimensions



SH20 & S3H20 Dimensions



### 39 Series Copper Line



#### Features

- Full range adjustable output voltage and current
- Universal 120/240 Vac, 50/60 Hz input
- Single supply for multiple applications
- Parallel operation for increased power output
- UL Recognized

#### Applications

- Engineering bench supply
- Test equipment
- Manufacturing test applications
- Automotive product testing

#### Selection Table

Power Watts	Catalog Number	Maximum Current		Shipping Weight lbs (kg)
		Amps* @25 Vdc (Adj. 2.5-25 Vdc)	Amps* @50 Vdc (Adj. 5-50 Vdc)	
300	<b>39-407</b>	12 A	6 A	23 (10.4)
600	<b>39-408</b>	24 A	12 A	30 (13.6)
1200	<b>39-409</b>	48 A	24 A	73 (33.1)

\* Current listed is the maximum at any voltage in that range.

Model	A	B	B1	C	D	E	F	F1	G	G1
<b>39-407</b>	10.4	-	7.7	6.8	3.8	5.3	-	3.5	-	3.6
<b>39-408</b>	11.4	-	7.7	6.8	3.8	5.3	-	3.5	-	4.6
<b>39-409</b>	14.0	11.1	-	10.0	6.0	8.0	8.3	-	3.5	-

#### Specifications

Parameter	Condition	Limit
<b>Input</b>		
Input Voltage		105-130/210-260 Vac (user selectable)
Input Frequency		47 to 440 Hz
Input Protection		Ext. Slow-blow fuse required
<b>Output</b>		
Line Regulation		0.1% or 50 mV
Load Regulation		0.1% or 50 mV
Ripple	Full Rated Load	<1% RMS
<b>Controls</b>		
Current Limit Adjust		0-100%
Output Volt Adjust		10-100% Coarse Adjust (may be mounted remotely). Fine adjust fine tunes output for no loads and full load conditions.
<b>General</b>		
Operating Temperature	Full Rated Load	0° to 50°C
Storage Temperature	Full Rated Load	-20° to +70°C
Efficiency	Full Rated Load	75%
Vibration		Designed to meet MIL-STD-810D, Method 514.3, Category Procedure 1.
Shock		Designed to meet MIL-STD-810D, Method 516.3, Category Procedure 3.

#### Dimensions

