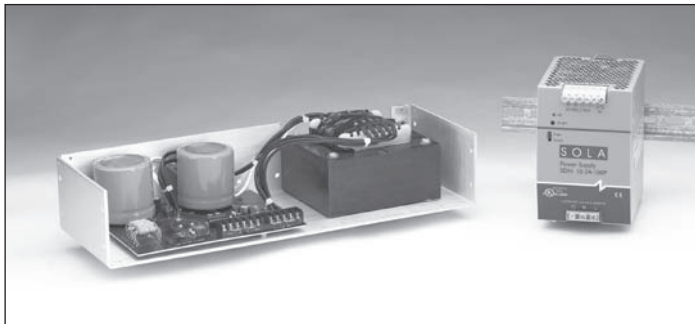


Sola/Hevi-Duty has a broad range of standard power supplies to suit almost any industrial application. Updated approvals and user friendly features make power system design easy. The product line includes one of the broadest ranges of DIN Rail and linear-based power supplies in the marketplace. The DIN 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.

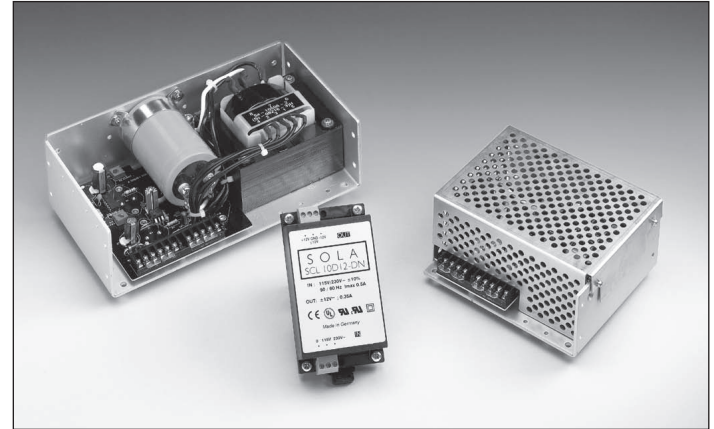
Sola/Hevi-Duty also offers a three phase input option on many of the SDN DIN Rail products that convert 380/480 three phase directly to 24 VDC. They provide extremely stable, regulated low voltage without the need for a step down transformer saving space and money. For the popular SL linear line, Sola/Hevi-Duty leads the market by replacing the time consuming solder connections with screw terminals. Ease-of-use is now combined with the economy and extremely low noise.

### Linear vs. Switcher

Sola/Hevi-Duty 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 Sola'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 (Sola's SL and 83 series). Sola/Hevi-Duty 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. Sola/Hevi-Duty'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 Sola/Hevi-Duty'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.
- 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.

Try our online product selector at [www.solaheviduty.com/psselect](http://www.solaheviduty.com/psselect). Enter your power requirements and a list of matching power supplies will list. It's fast and easy.

## Selection Worksheet

Input: \_\_\_\_\_ V \_\_\_\_\_ Hz

### Output:

\_\_\_\_\_ VDC x \_\_\_\_\_ Amps = \_\_\_\_\_ Watts

\_\_\_\_\_ VDC x \_\_\_\_\_ Amps = \_\_\_\_\_ Watts

\_\_\_\_\_ VDC x \_\_\_\_\_ Amps = \_\_\_\_\_ Watts

\_\_\_\_\_ VDC x \_\_\_\_\_ Amps = \_\_\_\_\_ Watts

\_\_\_\_\_ VDC x \_\_\_\_\_ Amps = \_\_\_\_\_ Watts

\_\_\_\_\_ 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 - 3 Phase input available. - Redundant options. - NEC Class 2/DeviceNet™	86
SDP™	X	X	X			X	X	X	X	X	15 - 100	X				- Din Rail mount compact	98
SCP	X	X	X		X	X	X	X	X	X	30	X	X	X		- Din Rail mount/Chassis	103
SCD	X					X	X	X	X	X	30	X	X			- Din Rail mount/Chassis - DC input	105
SCL		X	X			X	X	X			4 - 10	X	X	X		- Din Rail mount/Chassis	101
SFL		X	X				X		X	X	75 - 600	X				- Din Rail mount - Adjustable Pot, Red or UPS option	107
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	116
SMP		X	X			X	X	X	X	X	250-1000	X	X	X	X	- Modular design - Screw Terminals (OEM) supply	119
SHP		X	X		X	X	X	X	X	X	1500-2000	X	X	X	X	- Configurable Voltage Output	124
Silver Line Linears		X	X			X	X	X	X		15 - 244	X	X	X		- Industry standard footprint. Screw terminals and optional covers.	110

## DIN Rail Selection Guide

		Output Voltages									
		48	24	15	12	10	5	±15	±12	5/24	5/12/12
A M P S	1	SDP1-48-100T	SDP06-24-100T					SCL4D15-DN	SCL4D12-DN	SCP30D524-DN SCP30S524B-DN	SCL10T512-DN
		SFL1.5-48-100	SDP1-24-100T	SCP30S15-DN	SDP2-12-100T			SCL10D15-DN	SCL10D12-DN		SCP30T512-DN
	2.5	SFL1.5-48-100	SDN2.5-24-100P SDP2-24-100T			SCP30S12B-DN			SCP30D15-DN	SCP30D12-DN	
		3	SFL3-48-100		SDP3-15-100T		SDP2-12-100T				
	4		SDN4-24-100LP SDP4-24-100LT								
	5	SFL6-48-100	SDN5-24-100P SDN5-24-480 (3Ø)			SFL6-12-100		SDP5-5-100T SCP30S5B-DN			
			7.2								
	10		SDN10-24-100P SDN10-24-480 (3Ø)								
	12	SFL12-48-100	SFL12-24-100								
	20		SDN20-24-100P SDN20-24-480C (3Ø)								
	25		SFL24-24-100								
	30		SDN30-24-480 (3Ø)								
	40		SDN40-24-480 (3Ø)								

## SDN™ Performance DIN Rail Series

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

### Features

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



### Related Products

- SDP™ Series
- SFL Series
- SCP Series
- SCL Series

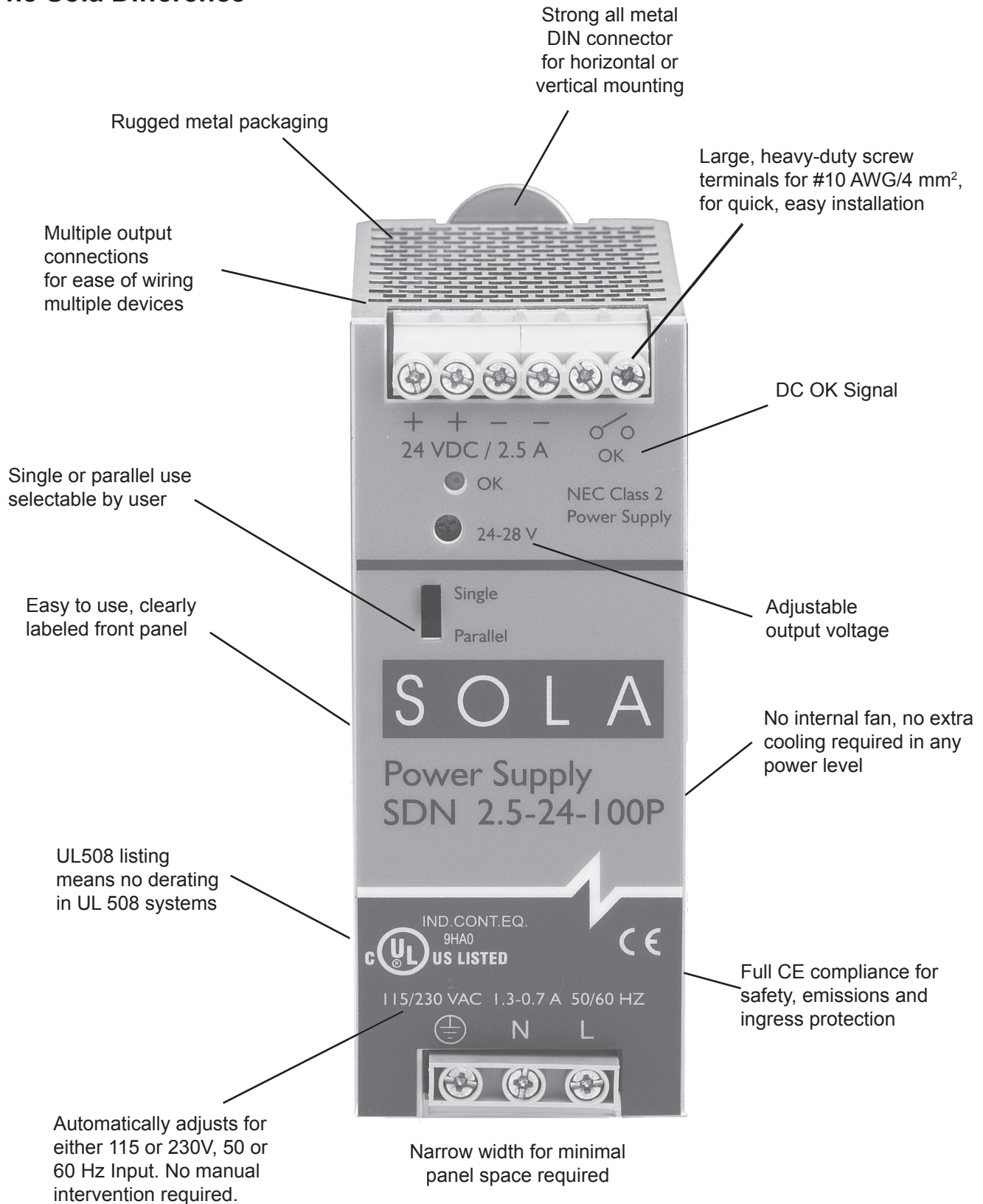
### Applications

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

### Accessories

- Chassis Mount Bracket (SDN-PMBRK2)

## The Sola Difference



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

## SDN™ Specifications (Single Phase)

Description	Catalog Number				
	SDN 2.5-24-100P	SDN 4-24-100LP	SDN 5-24-100P	SDN 10-24-100P	SDN 20-24-100P
<b>Input</b>					
Nominal Voltage	115/230 VAC auto select				
-AC Range	85-132/176-264 VAC				
-DC Range <sup>6</sup>	90-375 VDC	210-375 VDC			N/A
-Frequency	47 - 63 Hz				
Nominal Current <sup>1</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>2</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>3</sup>	< 50 mVpp				
Nominal Current	2.5 A (60 W)	3.8 A (92 W)	5 A (120 W)	10 A (240 W)	20 A (480 W)
-Peak Current <sup>4</sup>	1.6x Nominal Current < 2 sec.	4.2 A max at 23.8V	6 A 2x Nominal Current < 2 sec.	12 A 2x Nominal Current < 2 sec.	25 A 2x Nominal Current < 2 sec.
-Current Limit	Fold Forward (Current rises, voltage drops to maintain constant power during overload up to max peak current)				
Holdup Time <sup>5</sup>	> 50 ms	> 100 ms	> 100 ms		> 20 ms
Parallel Operation	Single or Parallel use is selectable via Front Panel Switch (SDN4 should not be used in parallel as Class 2 rating would be violated.)				
<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; Transient resistance according to VDE 0160/W2 over entire load range.				
Approvals	EN60950; EN50178; EN60204; UL508 Listed, cULus; UL60950, cRUus, CE (LVD 73/23 & 93/68/EEC). EN61000-3-2, IEC60079-15 (Class 1, Zone 2, Hazardous Location, Groups A, B, C, D w/ T3A temp class up to 60°C Ambient.) SEMI F47 Sag Immunity. SDN2.5 & SDN4 - UL60950 testing to include approval as Class 2 power supply.				
Temperature	Storage: -25°C...+85°C Operation. -10°-60°C full power with operation to 70°C possible with a linear derating to half power from 60°C to 70°C (Convection cooling, no forced air required). Operation up to 50% load permissible with sideways or front side up mounting orientation. The relative humidity is < 90% RH, noncondensing; IEC 68-2-2, 68-2-3. For operation below -10°C, contact Technical Services.				
MTBF:	> 820,000 hours	> 640,000 hours		> 600,000 hours	> 510,000 hours
- Standard	Bellcore Issue 6 Method 1 Case 3 @ 40C				MIL217F @ 30C
Warranty	5 years				
General Protection/Safety	Protected against continuous short-circuit, overload, open-circuit. Protection class 1 (IEC536), degree of protection IP20 (IEC 529) Safe low voltage: SELV (acc.EN60950)				
Status Indicators	Green LED and DC OK signal (N.O. Solid State Contact rated 200 mA / 60 VDC)				
<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	Input: 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. Output: 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 in. x 1.97 in. x 4.55 in. (124 mm x 50 mm x 116 mm)	4.88 in. x 2.56 in. x 4.55 in. (124 mm x 65 mm x 116 mm)		4.88 in. x 3.26 in. x 4.55 in. (124 mm x 83 mm x 116 mm)	4.88 in. x 6.88 in. x 4.55 in. (124 mm x 175 mm x 116 mm)
Weight (lbs/g)	1 lb (460g)	1.5 lbs (620g)		2.2 lbs (1100g)	3 lbs (1520g)

<sup>1</sup> Input current ratings are conservatively specified with low input, worst case efficiency and power factor.

<sup>2</sup> Losses are heat dissipation in watts at full load, nominal input line.

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

<sup>4</sup> All peak current is calculated at 24 Volt levels.

<sup>5</sup> Full load, 100 VAC Input @ T<sub>amb</sub> = +25°C

<sup>6</sup> Not UL listed for DC input.

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

## SDN™ Specifications (Three Phase)

Description	Catalog Number				
	SDN 5-24-480	SDN 10-24-480	SDN 20-24-480C	SDN 30-24-480	SDN 40-24-480
<b>Input</b>					
Nominal Voltage	1Ø or 3Ø 380-480 VAC		1Ø or 3Ø 380 - 480 VAC <sup>1</sup>	3Ø 380 - 480 VAC	
-AC Range	340 - 576 VAC				
-DC Range	450 - 820 VDC				
-Frequency	47 - 63 Hz				
Nominal Current	0.5 A	0.8 A	1.5 A	2.0 A	3.0 A
-Inrush current max.	typ. < 18 A			typ. < 30 A	
Efficiency (Losses) <sup>3</sup>	> 90% typ (12 W)	> 90% typ (48 W)		> 90% typ (72 W)	> 90% typ (96 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				
Nominal Current	5 A (120 W)	10 A (240 W)	20 A (480 W)	30 A (720 W)	40 A (960 W)
-Peak Current	6 A 2x Nominal Current <2sec.	12 A 2x Nominal Current <2 sec.	25 A 2x Nominal Current <2sec.	35 A 2x Nominal Current < 2 sec.	45 A 2x Nominal Current<2 sec
-Current Limit	Fold Forward (Current rises, voltage drops to maintain constant power during overload up to max peak current)				
Holdup Time	> 40 ms		> 28 ms	> 20 ms	
Parallel Operation	5A through 30A units may be passively paralleled by selecting the "P" position of the switch on the unit. The SDN40 contains active current balancing.				
<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; Transient resistance according to VDE 0160/W2 over entire load range.				
Approvals	CB Scheme, EN60950; EN50178; EN60204; UL508 Listed, cULus; UL60950, cRUus, CE (LVD 73/23 & 93/68/EEC), EN61000-3-2, IEC 60079-15 (Class 1, Zone 2 hazardous location, Groups IIA, IIB, IIC w/T3 temp class up to 60°C Ambient.				
Temperature	Storage: -25oC...+85oC Operation. -10oC -60oC full power with operation to 70oC possible with a linear derating to half power from 60oC to 70oC (Convection cooling, no forced air required). Operation up to 50% load permissible with sideways or front side up mounting orientation. The relative humidity is < 90% RH, noncondensing; IEC 68-2-2, 68-2-3.				
MTBF	> 1,110,000 hours	> 940,000 hours	> 550,000 hours	> 620,000 hours	> 490,000 hours
-Standard	MIL217F @ 30C				
Warranty	5 years				
General Protection/ Safety	Protected against continuous short-circuit, overload, open-circuit. Protection class 1 (IEC536), degree of protection IP20 (IEC 529) Safe low voltage: SELV (acc.EN60950)				
Status Indicators	Green LED on when Vout = 18V or greater.				
<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 for wire/loads if 2x Nominal O/P current rating cannot be tolerated. Continuous current overload allows for reliable fuse tripping.				
Mounting	Simple snap-on system for DIN Rail TS35/7.5 or TS35/15 or chassis-mounted (optional screw mounting set SDN-PMBRK2 required).				
Connections	Input: IP20-rated screw terminals, connector size range: 16-10 AWG (1.5-6 mm <sup>2</sup> ) for solid conductors. 16-12 AWG (0.5-4 mm <sup>2</sup> ) for flexible conductors. Output: Two connectors per output, connector size range: 16-10 AWG (1.5-6 mm <sup>2</sup> ) for solid conductors. <sup>5</sup>				
Case	Fully enclosed metal housing with fine ventilation grid to keep out small parts.				
-Free Space	25 mm above and below, 25 mm left and right, 15 mm in front		70 mm above and below, 25 mm left and right, 15 mm in front		
H x W x D (inches/mm)	4.88 in. x 2.91 in. x 4.55 in. (124 mm x 73 mm x 116 mm)	4.88 in. x 3.5 in. x 4.55 in. (124 mm x 89 mm x 116 mm)	4.88 in. x 5.9 in. x 4.55 in. (124 mm x 150 mm x 116 mm)	4.88 in. x 9.72 in. x 4.55 in. (124 mm x 247 mm x 116 mm)	4.88 in. x 11.1 in. x 4.55 in. (124 mm x 282 mm x 116 mm)
Weight (lbs/g)	1.7 lbs (730g)	2.16 lbs (980g)	3.97 lbs (1800g)	4 lbs (2000g)	6.6 lbs (3300g)

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

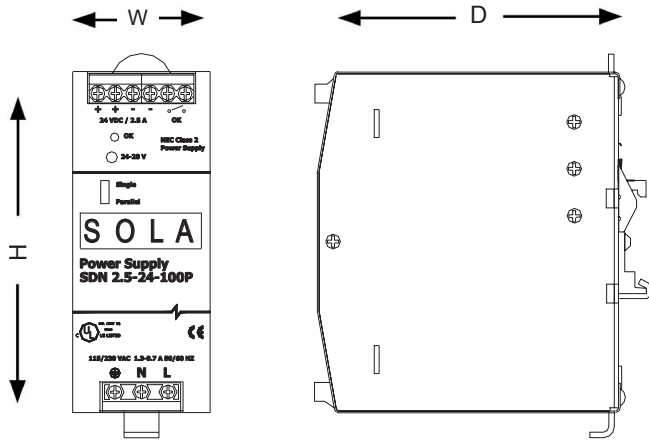
<sup>2</sup> Input current ratings are conservatively specified with low input, worst case efficiency and power factor.

<sup>3</sup> Losses are heat dissipation in watts at full load, nominal input line.

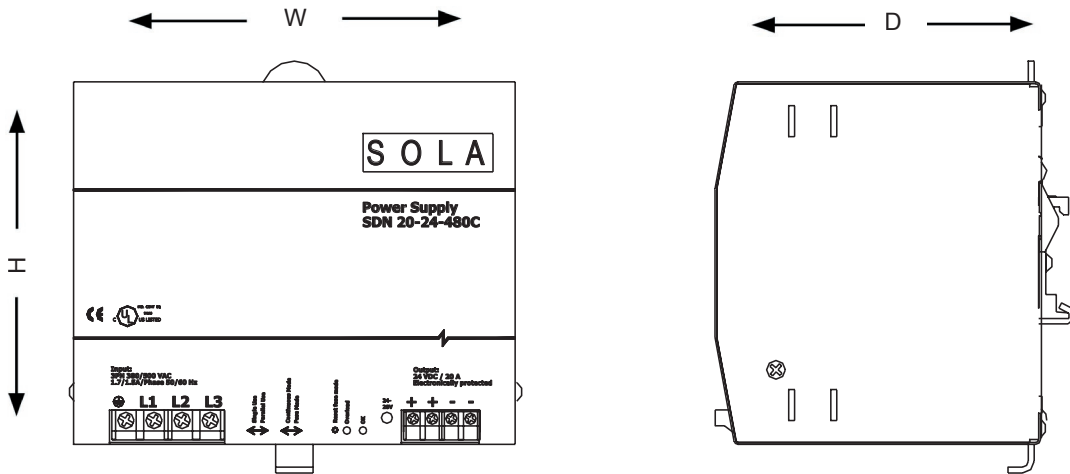
<sup>4</sup> Ripple/noise is stated as typical values when measured with a 20 MHz, bandwidth scope and 50 Ohm resistor.

<sup>5</sup> 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
SDN 2.5-24-100P	4.88 (124)	1.97 (50)	4.55 (116)
SDN 4-24-100LP	4.88 (124)	2.56 (65)	4.55 (116)
SDN 5-24-100P	4.88 (124)	2.56 (65)	4.55 (116)
SDN 5-24-480	4.88 (124)	2.91 (73)	4.55 (116)
SDN 10-24-100P	4.88 (124)	3.26 (83)	4.55 (116)



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

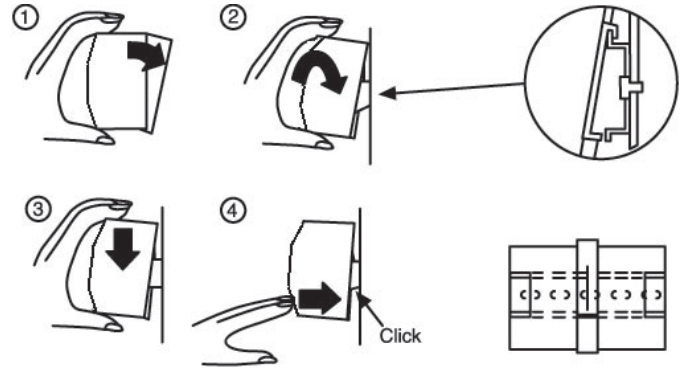


## SDN™ Series Mounting

### DIN Rail Mounting

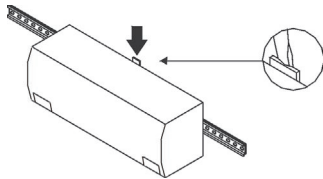
Snap on the DIN Rail:

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



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

Detachment from DIN Rail:

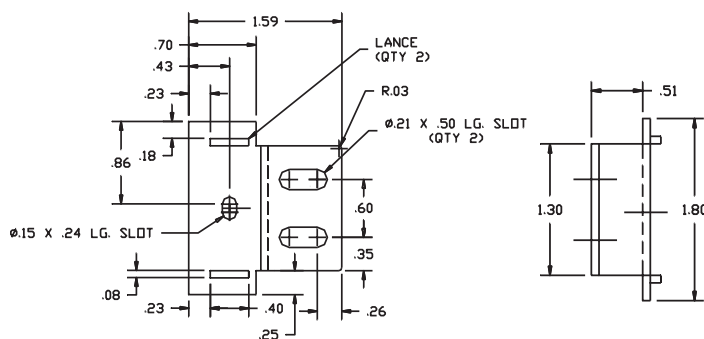


Press button downwards (to unlock) and remove the unit from the DIN Rail.

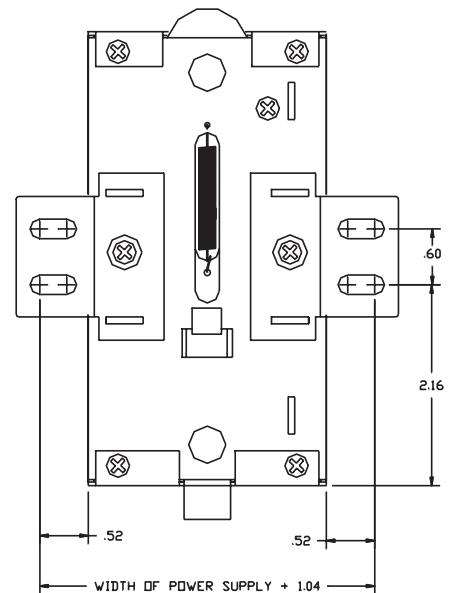
### Chassis Mounting

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

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



### Dimensions



## SDN™ DeviceNet™ Series

As a member of the Open DeviceNet™ Vendors Association (ODVA), Sola/Hevi-Duty has designed two power supplies specifically for DeviceNet™ applications. Sola's SDN DeviceNet™ models meet ODVA specifications for power supplies for either Thin or Thick cable applications.

The SDN4-24-100LP 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 SDN10-24-100P 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.

### Features (General)

- Power Factor Correction
- SEMI F47 Sag Immunity
- 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
- Five year warranty



### Features (SDN4-24-100LP 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	
	SDN4-24-100LP	SDN 10-24-100P
<b>Input</b>		
Nominal Voltage	115/230 VAC auto select (no manual required)	
- AC Range	85-132/176-264 VAC	
- DC Range <sup>6</sup>	210-375 VDC	
- Frequency	47 - 63 Hz	
Nominal Current <sup>1</sup>	2.1 A / 1.0 A typ.	5 A / 2 A typ.
- Inrush current max.	typ. < 20 A	typ. < 30 A
Efficiency (Losses <sup>2</sup> )	> 88% typ (13.1 W)	> 88% typ (32.7 W)
Power Factor Correction	Units Fulfill EN61000-3-2	
<b>Output</b>		
Nominal Voltage	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>3</sup>	< 50 mVpp	
Nominal Current	3.8 A (92 W)	10 A (240 W)
- Peak Current <sup>4</sup>	4.2 A max at 23.8V	12 A 2x Nominal Current < 2 sec.
-Current Limit	Fold Forward (Current rises, voltage drops to maintain constant power during overload up to max peak current)	
Holdup Time <sup>5</sup>	> 100 ms	
Parallel Operation	The SDN4 should not be used in parallel as Class 2 rating would be violated.	
<b>General</b>		
<b>EMC</b>		
-Emissions	EN61000-6-3, -4; Class B EN55011, EN55022 Radiated and Conducted including Annex A.	
-Immunity	EN61000-6-1, -2; EN61000-4-2 Level 4, EN61000-4-3 Level 3; EN61000-4-6 Level 3; EN61000-4-4 Level 4 input and Level 3 output; EN61000-4-5 Isolation Class 4, EN61000-4-11; Transient resistance according to VDE 0160/W2 over entire load range.	
Approvals	EN60950; EN50178; EN60204; UL508 Listed, cULus; UL60950, cRUus, CE (LVD 73/23 & 93/68/EEC). EN61000-3-2, IEC60079-15 (Class 1, Zone 2, Hazardous Location, Groups A, B, C, D w/ T3A temp class up to 60°C Ambient.) SEMI F47 Sag Immunity. SDN4 - UL60950 testing to include approval as NEC Class 2 power supply acc. to NFPA 70 art. 725-41 (a)(2).	
Temperature	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. For operation below -10°C, contact Technical Services.	
MTBF:	> 640,000 hours	> 600,000 hours
- Standard	Bellcore Issue 6 Method 1 Case 3 @ 40C	
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. Contact rated 200 mA @ <60 VDC only)	
<b>Installation</b>		
Fusing	Internally fused. External 10 A slow acting fusing for the input is recommended.	
-Input		
-Output	Class 2 Current Limited	Class 1 Current Limited
Mounting	Simple snap-on system for DIN Rail TS35/7.5 or TS35/15 or chassis-mounted (optional screw mounting set SDN-PMBRK2 required).	
Connections	Input: IP20-rated screw terminals, connector size range: 16-10 AWG (1.5-6 mm <sup>2</sup> ) for solid conductors. 16-12 AWG (0.5-4 mm <sup>2</sup> ) for stranded conductors. Output: 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	70 mm above and below 25 mm left and right 15 mm in front
H x W x D (inches/mm)	4.88 in x 2.56 in x 4.55 in (124 mm x 65 mm x 116 mm)	4.88 in x 3.26 in x 4.55 in (124 mm x 83 mm x 116 mm)
Weight (lbs/g)	1.5 lbs (620g)	2.2 lbs (1100g)

<sup>1</sup> Input current ratings are conservatively specified with low input, line conditions, worst case efficiency values and power factor spikes.

Input current at nominal input line settings will be typically half these values.

<sup>2</sup> Losses are heat dissipation in watts at full load, nominal input line.

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

<sup>4</sup> All peak current is calculated at 24 Volt levels.

<sup>5</sup> Full load, 100 VAC Input @ T<sub>amb</sub> = +25°C

<sup>6</sup> Not UL listed for DC input.

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Contact **Technical Services** at (800) 377-4384 with any questions.

## 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 SDN2.5-20RED and SDN30/40RED 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

- Smart power “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		SDN2.5-24-100P*	SDN4-24-100LP*	SDN5-24-100P	SDN10-24-100P	SDN20-24-100P
SDN2.5-20RED	Power Rating	Yes	Yes	Yes	Yes	Yes
	Input / Output Signals	Yes	Yes	Yes	Yes	Yes
SDN30/40RED	Power Rating	Yes	Yes	Yes	Yes	Yes
	Input / Output Signals	Yes	Yes	Yes	Yes	Yes
Three Phase SDN™ Series		SDN5-24-480	SDN10-24-480	SDN20-24-480C	SDN30-24-480	SDN40-24-480
SDN2.5-20RED	Power Rating	Yes	Yes	Yes	No	No
	Input / Output Signals	Output Only	Output Only	Output Only	N/A	N/A
SDN30/40RED	Power Rating	Yes	Yes	Yes	Yes	Yes
	Input / Output Signals	Yes	Yes	Yes	Yes	Yes

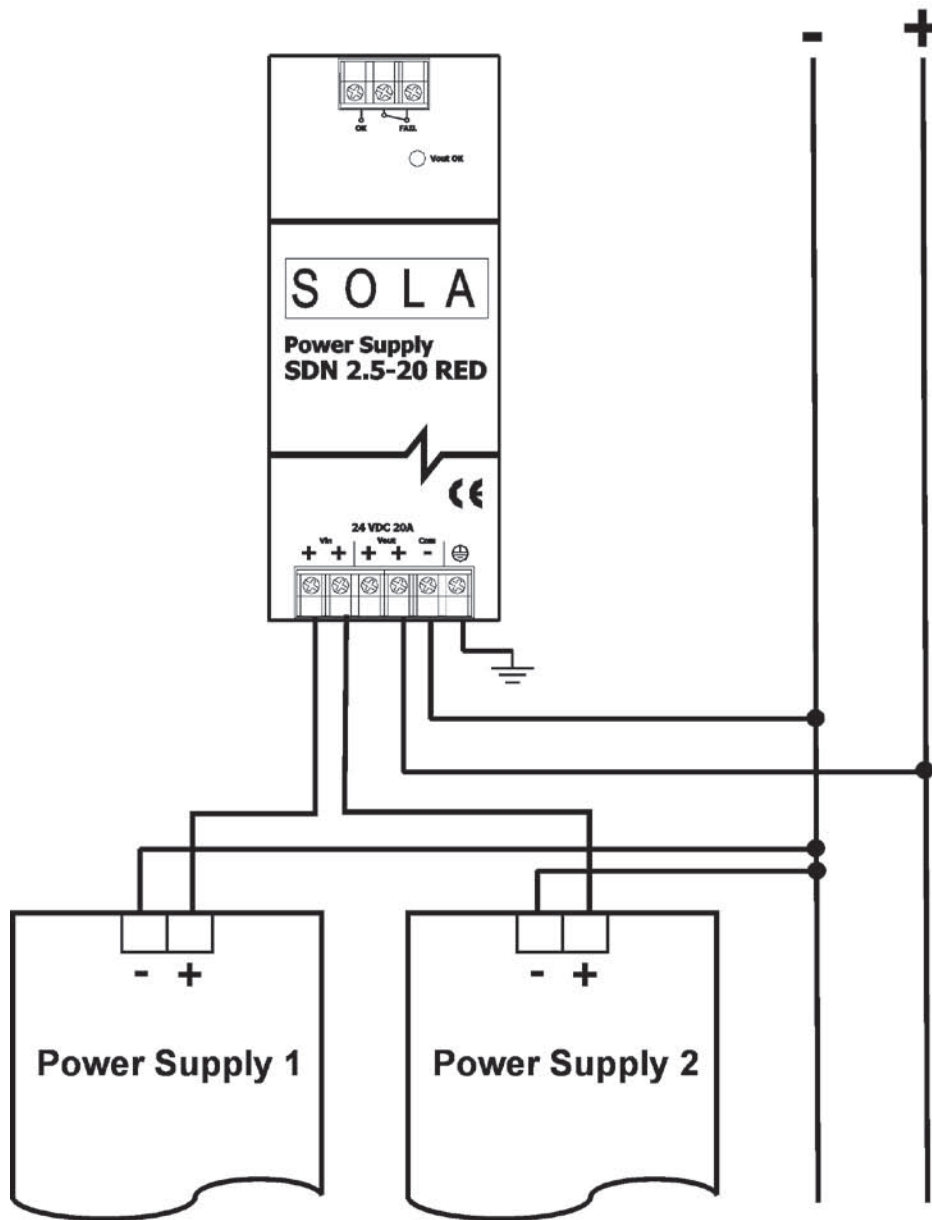
\* Paralleling will violate Class 2 current limits.

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## SDN™ Redundant Series Specifications for SDN2.5-20RED and SDN30/40RED

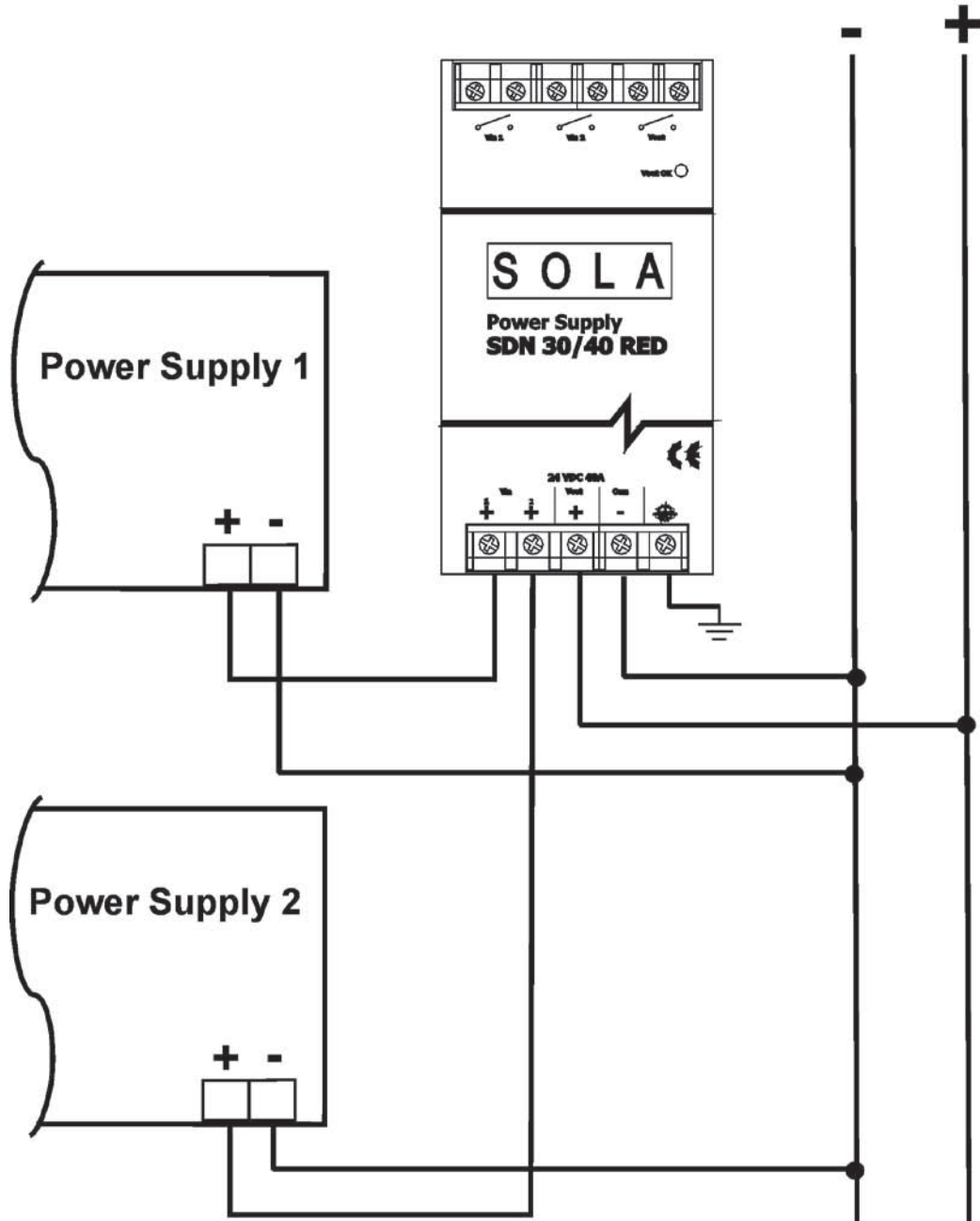
Catalog Number		
Description	SDN2.5-20RED	SDN30/40RED
<b>Concept</b>		
By means of a separate redundancy module, you can interconnect several identical SDN power supply units in a N+1 redundant mode. These external modules decouple the power supply outputs from each other so that, in case of failure, one power supply unit cannot overload the other units. The modules incorporate DC OK relay contacts.		
<b>Electrical Characteristics</b>		
<b>Voltage</b>		
-Nominal Value	24 VDC	
-Max. Rated	35 V	
<b>Voltage Drop</b>		
-Vin -> Vout	Typ. 0.6 V	
<b>Current Handling Capacity</b>		
-Maximum Nominal Value	20 A	40 A
<b>Inverse Battery Protection</b>	Yes	
<b>Connection</b>	Via captive screw terminals	
-Connector size range	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.		
<b>Relay Contacts</b>		
<b>DC Okay Contacts</b> (qty) description	(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
-Voltage Set Point	> 18 VDC ±5%	
-Contact Rating	30 Vdc @ 2A / 250 V @ 2A	
<b>DC OK LED</b>	V <sub>out</sub> "OK" Green LED	
-Voltage Set Point	> 18 VDC ±5%	
<b>Dimensions</b>		
<b>(H x W x D) (in/mm)</b>	4.88 in x 1.97in 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>	<b>Above/below:</b> 0.39 in. (10 mm) recommended <b>Left/Right:</b> 0.39 in. (10 mm) recommended	
<b>Weight (lbs/g)</b>	1.38 lbs (625 g)	1.43 lb (646 g)
<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; IEC 68-2-2, 68-2-3. For operation below -10°C, contact Technical Services.	

## Wiring Diagram for SDN2.5-20RED

**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 SDN30/40RED



**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 Sola SDP™ series, you can count on a high grade design.



### 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
- 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)
SDP5-5-100T	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)
SDP2-12-100T	10 - 12 V	3 - 2.5 A		
SDP3-15-100T	12 - 15 V	4.2 - 3.4 A		
SDP1-48-100T	48 - 56 V	1 A		
SDP06-24-100T	24-28 VDC	0.6 A		2.95 in x 0.9 in x 3.8 in (75mm x 22.8 mm x 96.7 mm)
SDP1-24-100T		1.3 A		2.95 in x 1.77 in x 3.58 in (75 mm x 45 mm x 91 mm)
SDP2-24-100T		2.1 A		2.95 in x 2.85 in x 3.8 in (75 mm x 72.5 mm x 96.7 mm)
SDP4-24-100LT		3.8 A		
SDP4-24-100RT*		4.2 A		

\* NEC Class 1

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contact **Technical Services** at (800) 377-4384 with any questions.



## SDP™ Series Specifications (24 V models)

Description	Catalog Number				
	SDP06-24-100T	SDP1-24-100T	SDP2-24-100T	SDP4-24-100RT	SDP4-24-100LT
<b>Input</b>					
Input Voltage <sup>3</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	2.2 A / 1.2 A	1.8 A / 1.0 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.)				
Voltage Regulation	Static 0.5% $V_{out}$ dynamic + 2% $V_{out}$ overall				
Ripple/Noise <sup>1</sup>	< 50 mVpp				
Overvoltage Protection (OVP)	> 30 VDC, but < 33 VDC, auto recovery				
Output Noise Suppression	Radiated EMI values below EN61000-6-2				
Rated Continuous Loading	0.63 A @ 24 VAC / 0.54 A @ 28 VAC	1.3 A @ 24 VDC / 1.1 A @ 28 VDC	2.1 A @ 24 VDC / 1.8 A @ 28 VDC	4.2 A @ 24.5 VDC / 3.6 A @ 28 VDC	3.8 A @ 24.5 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 in x 0.9 in x 3.8 in (75 mm x 22.8 mm x 96.7 mm)	2.95 in x 1.77 in x 3.58 in (75 mm x 45 mm x 91 mm)	2.95 in x 2.85 in x 3.8 in (75 mm x 72.5 mm x 96.7 mm)		
Weight	0.35 lbs (150 g)	0.5 lbs (240 g)	0.7 lbs (320 g)		
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	Storage: -25°C...+85°C Operation: -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 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, EN50178, EN60204, EN60079-15 (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>2</sup>					

Notes:

<sup>1</sup> Ripple/noise is stated as typical values when measured with a 20 MHz, bandwidth scope and 50 Ohm resistor.

<sup>2</sup> For models less than 100W.

<sup>3</sup> Not UL listed for DC input.

## SDP™ Series Specifications (Other Voltages)

Description	Catalog Number			
	SDP5-5-100T	SDP2-12-100T	SDP3-15-100T	SDP1-48-100T
<b>Input</b>				
Input Voltage <sup>3</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.	90% typ.
Losses	7.5 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>1</sup>	< 50 mVpp			
Overvoltage Protection (OVP)	> 6.7 VDC	> 18 VDC	> 20 VDC	> 60 VDC
Output Noise Suppression	Radiated EMI values below EN61000-6-2			
Rated Continuous Loading	$I_{out} = 5 A @ V_{out} = 5.1V$	3 A @ 10 VDC 2.5 A @ 12 VDC	4.2 A @ 12 VDC 3.4 A @ 15 VDC	Up to 1.05 A @ 48 V 0.9 A @ 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>				
Dimensions (H x W x D) (in/mm)	2.95 in x 1.77 in. x 3.58 in (75 mm x 45 mm x 91 mm)			
Weight	0.5 lbs (240 g)			
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: 20-12 AWG (1.5 - 6 mm <sup>2</sup> ) for solid or stranded conductors.			
<b>General</b>				
Temperature	Storage: -25°C...+85°C Operation: -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 (EN55022) 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, EN50178, EN62024, EN60079-15 (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).				

## Notes:

<sup>1</sup> Ripple/noise is stated as typical values when measured with a 20 MHz, bandwidth scope and 50 Ohm resistor.

<sup>2</sup> Not to exceed 30 watts total.

<sup>3</sup> Not UL listed for DC input.

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contact **Technical Services** at **(800) 377-4384** with any questions.

## 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>							
SCL4D12-DN	Dual O/P $\pm 12$ V	12	0.13	-12	0.13	-	-
SCL4D15-DN	Dual O/P $\pm 15$ V	15	0.1	-15	0.1	-	-
<b>10 Watt; Linear DC Power Supply; DIN Rail Mount</b>							
SCL10D12-DN	Dual O/P $\pm 12$ V	12	0.35	-12	0.35	-	-
SCL10D15-DN	Dual O/P $\pm 15$ V	15	0.3	-15	0.3	-	-
SCL10T512-DN	Triple O/P, 5 V $\pm 12$ V	5	0.2	12	0.3	-12	0.3
SCL10T515-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

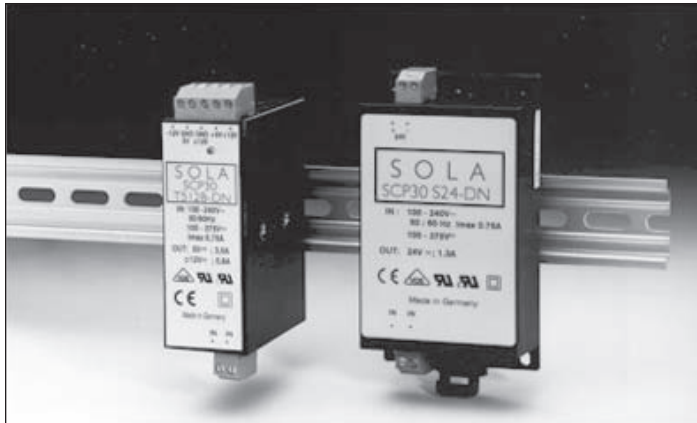
- CE Certified
- UL 508 Listed
- EN55011/13, 55022/B
- ENV 50140, 10 V/m
- EN61000-4-2, Level 4
- EN61000-4-4, Level 4
- EN61000-4-5, Level 2
- EN60950

### 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



## 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
- 5-year warranty

### Selection Table

Low Profile Catalog Number	Description	Output Voltages						Min Load V1 A	Efficiency %
		V1		V2		V3			
		VDC	A	VDC	A	VDC	A		
30 Watts; Switching DC Power Supply									
SCP30S3.3-DN	3.3 V	3.3	6.0	-	-	-	-	0	≥ 62
SCP30S5-DN	5 V	5	6.0	-	-	-	-	0	≥ 70
SCP30S12-DN	12 V	12	2.5	-	-	-	-	0	≥ 75
SCP30S15-DN	15 V	15	2.0	-	-	-	-	0	≥ 75
SCP30S24-DN	24 V	24	1.3	-	-	-	-	0	≥ 77
SCP30S48-DN	48 V	48	0.6	-	-	-	-	0	≥ 77
SCP30D12-DN	Dual O/P +/- 12 V	12	1.2	-12	1.2	-	-	0.12	≥ 68
SCP30D15-DN	Dual O/P +/- 15 V	15	1.0	-15	1.0	-	-	0.15	≥ 68
SCP30D512-DN	Dual O/P 5 V & 12 V	5	3.0	12	1.2	-	-	0.3	≥ 68
SCP30D524-DN	Dual O/P 5 V & 24 V	5	3.0	24	0.6	-	-	0.3	≥ 68
SCP30T512-DN	Triple O/P 5/12/12 V	5	3.0	-12	0.6	12	0.6	0.3	≥ 68
SCP30T515-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

### 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).

### 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>		
$V_{in}$ : AC Input Voltage		85...264 VAC
$V_{in}$ : DC Input Voltage		100...375 VDC
$f_{in}$ : Input Frequency		50/60 HZ
Filtering EMI/RFI		EN 55011/B, 55022/B
$f_{sw}$ : Switching Frequency		Typ. 100 kHz
Input Fusing Required		Use 2.0 A Slow Fuse
<b>Output</b>		
$\Delta V_{out}$ : Output Voltage Accuracy	$V_{in} = 230V, I_{out} = \max, 25^{\circ}C$	$V1 \leq \pm 1\%, V2/3 \leq \pm 3\%$
$\Delta V_{NF}$ : Ripple	$V_{in} = \min, I_{out} = \max, 25^{\circ}C$	$\leq 1\%, V_{out}$
$\Delta V_{NF}$ : Noise	$V_{in} = \min, I_{out} = \max, 25^{\circ}C$	$\leq 2\%, V_{out}$
Line Regulation	$V_{in} = \min/\max, 25^{\circ}C$ $I_{out} = \max, 25^{\circ}C$	$\leq +0.5\%, V_{out}$
Load Regulation	$I_{out} = 10...90...10\%, 25^{\circ}C$ $V_{in} = 230VAC, 25^{\circ}C$	$\leq +0.5\%, V_{out}$
$I_{MAX}$ : Overcurrent Protection		105...130% $I_{nom}$
$t_R$ : 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	$T_A > 50^{\circ}C$	2/3/5%/K max
<b>General</b>		
$t_h$ : Holdup Time	$V_{in} = 230 VAC$	>50 ms
$T_A$ : Operating Temperature		-25...+65°C
$T_S$ : 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-HDBK-217F	800,000 hrs
Transient Protection		EN61000-4-2, 3, 4, 5
Cooling		Convection
Weight (lbs/g)		0.75 lbs (340g) 0.84 lbs (380g)
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”

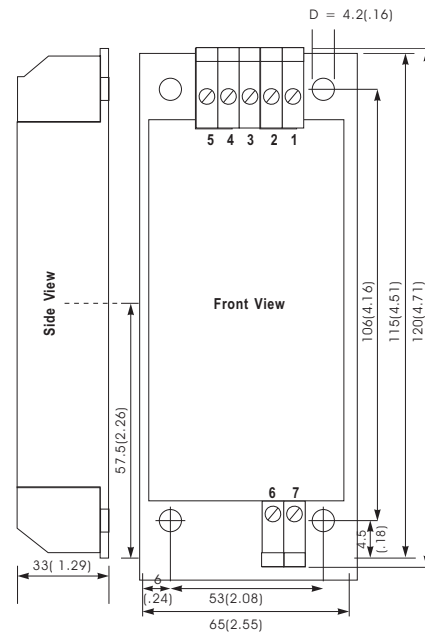
4.72 x 1.29 x 2.68 inches

120 x 33 x 68 mm

(Takes up 1.29 inches or 33 mm on DIN Rail)

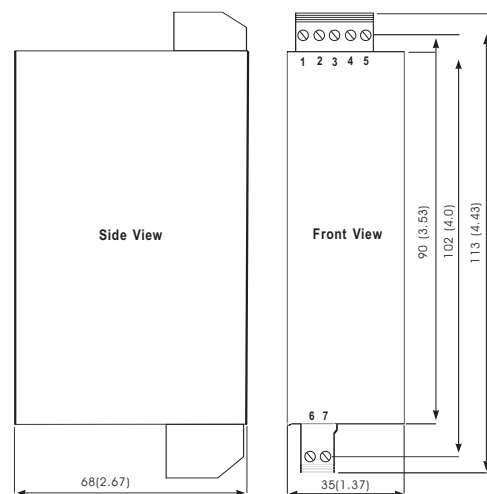
## Dimensions – mm (inches)

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



\* Unscrew DIN connector for chassis mounting.

## Slim Line DIN Rail Mount only (B-DN)

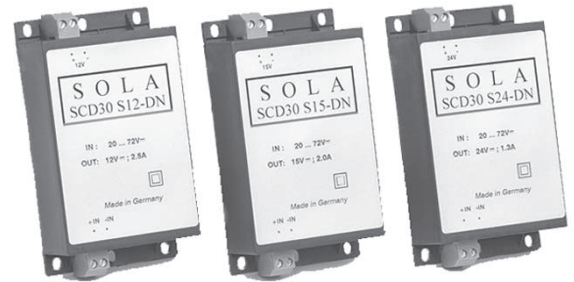


## Pin-Out

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

## 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
- 5-year warranty
- Simple snap-on for DIN Rail TS35/7.5 or TS35/15
- M3 screw clamp terminations
- Galvanic isolation

### Options and Accessories

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

### Standards

- UL60950, C22.2 (cRU) & UL508
- CE and IP20



### Applications

These easy-to-mount and install units can be used to regulate voltage for sensitive electronic equipment run from battery power. A good example would be a 24 VDC battery system. 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

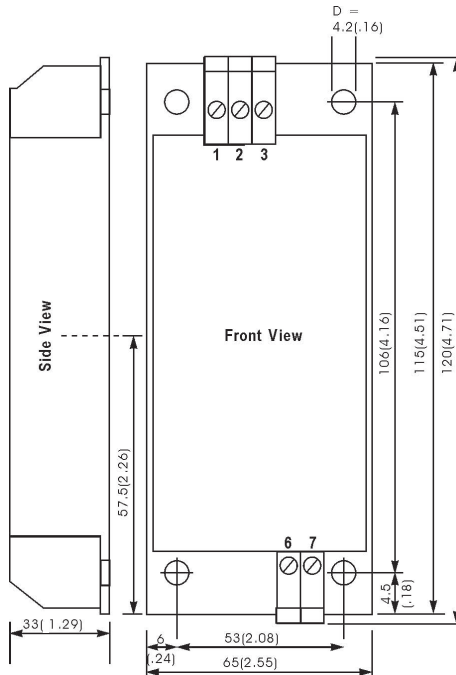
### Selection Table

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>						
SCD30S5-DN	5 V	5	5	-	-	0
SCD30S12-DN	12 V	12	2.5	-	-	0
SCD30S15-DN	15 V	15	2	-	-	0
SCD30S24-DN	24 V	24	1.3	-	-	0
SCD30S48-DN	48 V	48	0.6	-	-	0
SCD30D15-DN	Dual O/P±15 V	15	0.8	-15	0.8	0.15

### Specifications

Parameter	Condition	Value
<b>Input</b>		
Input Voltage		20...72 VDC
Filtering EMI/RFI		EN 55011/B, 55022/B
$f_{sw}$ : Switching Frequency		Typ. 100 kHz
<b>Output</b>		
$\Delta V_{out}$ : Output Voltage Accuracy	$V_{in} = 48V$ , $I_{out} = \text{max}$ , 25°C	$V1 \leq \pm 1\%$ , $V2 \leq \pm 4\%$
$\Delta V_{NF}$ : Ripple	$V_{in} = \text{min}$ , $I_{out} = \text{max}$ , 25°C	$\leq 1\%$ , $V_{out}$
$\Delta V_{NF}$ : 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	$\leq \pm 0.5\%$ , $V_{out}$
Load Regulation	$I_{out} = 10...90...10\%$ , 25°C $V_{in} = 48 V$ , 25°C	$\leq \pm 0.5\%$ , $V_{out}$
$I_{MAX}$ : Overcurrent Protection		105...130% $I_{nom}$
$t_R$ : Load Regulation Timing	10...90...10%, 25°C	<4 ms
Temperature Coefficient	$T_A = -25...+65^\circ\text{C}$	0.01%/K
Overload/Short Circuit	Continuous	
Derating	$T_A > 50^\circ\text{C}$	5%/K max
<b>General</b>		
$t_h$ : Holdup Time	$V_{in} = 48 V$	>10 ms
$T_A$ : Operating Temperature		-25...+65°C
$T_s$ : Storage Temperature	$T_A = 25^\circ\text{C}$	-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/g)	0.86 lbs (390g)	
Case Material/Potting	UL94-VO	
CSA Power Supply Class	Level 3	
Protection	IP20	

### Dimensions



\* Unscrew DIN connector for chassis mounting.

Note: No input protection against reverse voltage.

### Pin-Out

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

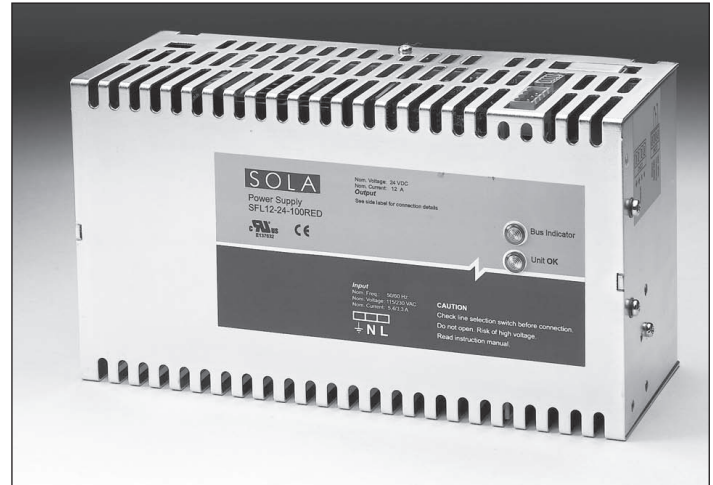
Visit our website at [www.solaheviduty.com](http://www.solaheviduty.com) or contact **Technical Services** at (800) 377-4384 with any questions.



## SFL Series, 75–600 Watt

The SFL series is a DIN Rail switching power supply series that complements the Sola 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
- Output voltage adjustable
- Selectable input: 115/230 VAC
- UL1604 Listed for Class 1, Division 2 hazardous locations (except -RED versions)
- UL 508 Listed (except -RED versions). No derating necessary.
- Two year warranty

\* Except 600 watt models.



- 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.
  - **UDS (For SFL24-24-100 and SFL12-24-100 only)**  
Contact Technical Services for details.
- Models with optional battery back-up available:

### Selection Table

Catalog Number	Input Voltage Selectable	Output Power Maximum	Output Voltage Nominal	Output Current Maximum
SFL6-12-100 SFL1.5-48-100	115/230 VAC	75 Watt	12 VDC 48 VDC	6 A 1.5 A
SFL3-48-100	115/230 VAC	150 Watt	48 VDC	3 A
SFL12-24-100 SFL6-48-100	115/230 VAC	300 Watt	24 VDC 48 VDC	12 A 6 A
SFL24-24-100 SFL12-48-100	115/230 VAC	600 Watt	24 VDC 48 VDC	24 A 12 A
<b>Redundant Models</b>				
SFL12-24-100RED SFL24-24-100RED	115/230 VAC	300 Watt 600 Watt	24 VDC	12 A 24 A

## SFL Specifications

Parameter	Value	
<b>Input</b>		
Input voltages nominal (user selectable)	93-132 VAC / 187-264 VAC	
$f_{in}$ : Input Frequency	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>		
- Line voltage variation	±0.2% max.	
- Load variation 10–90%		
75W, 150W models	±1.0% max.	
300W, 600W models	±0.5% max.	
Ripple and noise (20 MHz bandwidth)	< 50 mVpp	
Electronic short circuit protection / current limitation	110 % typ. (constant current)	
<b>Parallel Operation</b>		
- SFL12-24-100RED	Up to 5 units	
- SFL24-24-100RED		
$I_{MAX}$ : Overvoltage Protection, trigger point at	140% typical out nominal	
$t_h$ : Holdup Time	min. 20 mS	

Parameter	Value	
<b>General</b>		
$T_A$ : Operating Temperature Range Derating above 50°C	-25°C...+70°C 2%/°C	
$T_S$ : Storage Temperature	-25°C...+85°C	
Humidity (non condensing)	95% rel H max.	
<b>Switching Frequency</b>		
- 75 W	100 kHz typical	
- 150 W/300 W/600 W	67 kHz typical	
Efficiency	>85%	
Operation Indication	LED, DC OK	
<b>Isolation Voltage</b>		
- Input/output	3,000 VAC (1 minute)	
- Input/case	2,000 VAC (1 minute)	
- Output/case	500 VAC (1 minute)	
Safety Class (IEC536)	Class 1	
Safety Standards Met	IEC950, EN60950, CE marked for LVD, UL60950 recognized and UL 508.	
Conducted EMI according to:	EN55022 Class B, EN55011 Class B, FCC-B	
<b>Electromagnetic Susceptibility</b>		
- Electrostatic discharge ESD.	EN61000-4-2	4 kV/8 kV
- RF field susceptibility.	EN61000-4-3	10 V/m
- Electrical fast transients/ bursts on mainsline.	EN61000-4-4	2 kV
- Immunity to conducted radio frequency disturbances above 9 kHz.	EN61000-4-6	10 V
- Mains frequency field	EN61000-4-8	30 A/m
Case protection according to IEC529	IP20	
Case material	Steel	
Mounting	Snap-on 35 mm DIN Rail as per EN50022 or Chassis mounting option available	

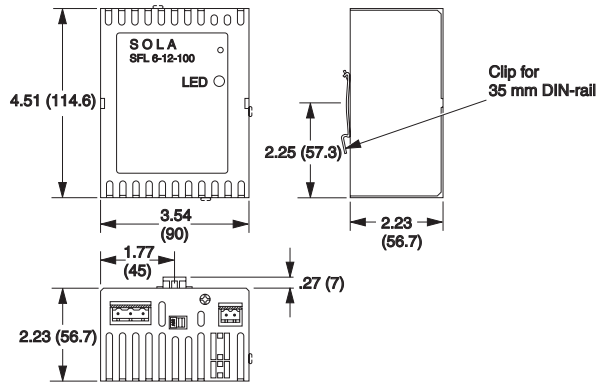
## Mounting Brackets

For easy conversion to panel or chassis mounting.

Catalog Number	Output Power Maximum
SFL75-PMBRK	75 Watt
SFL150-PMBRK	150 Watt
SFL300-PMBRK	300 Watt
SFL600-PMBRK	600 Watt

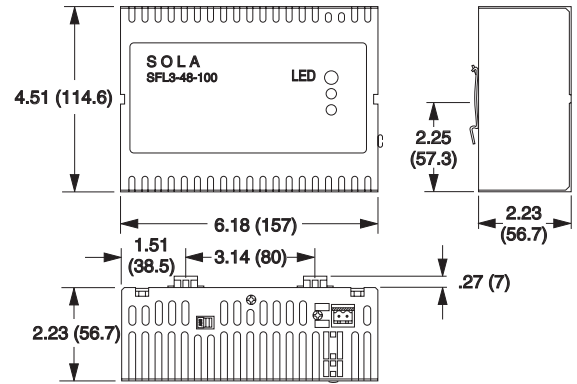
## SFL Series Dimensions (inches/mm)

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



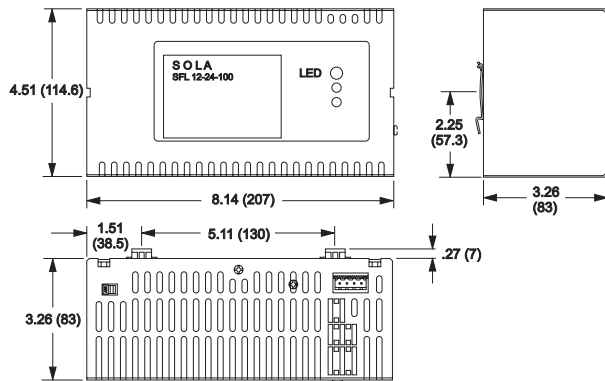
Weight: 1.06 lbs/480 g approx.

### SFL 150 Watt (SFL 3-48-100)



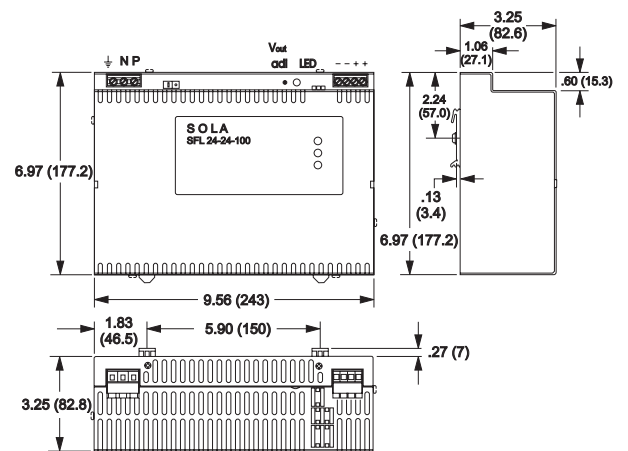
Weight: 1.6 lbs/800 g approx.

### SFL 300 Watt (SFL12-24-100 [RED], SFL6-48-100)



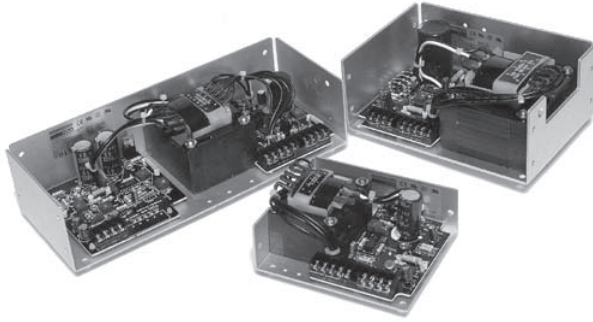
Weight: 3.09 lbs/1400 g approx.

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



Weight: 4 lbs/2000 g approx.

## Silver Line Series – Single & Multi-Output Linears



The Silver Line series follows the industry accepted footprint for open frame, linear power supplies. Sola improves on this design by offering standard screw terminal connections and optional covers 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%
Vibration	Method 514	Per MIL-STD-810C
Shock	Method 516	Per MIL-STD-810C
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-12-017T <sup>1</sup>	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
SLT12-20404-12T <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
SLT12-31010-12T <sup>1</sup>	5 V @ 3 A*#	12 V @ 1 A# or 15 V @ .8 A	-12 V @ 1 A# or -15 V @ .8 A	F
SLT12-61010-12T <sup>1</sup>	5V @ 6 A*#	12 V @ 1 A or 15 V @ 1 A	-12 V @ 1 A or -15 V @ 1 A	I4
SLT12-61818-12T <sup>1</sup>	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
SLT24-30530-05T	5V @ 3A*	-5 V @ .5 A*	24 V @ 3 A	G1
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

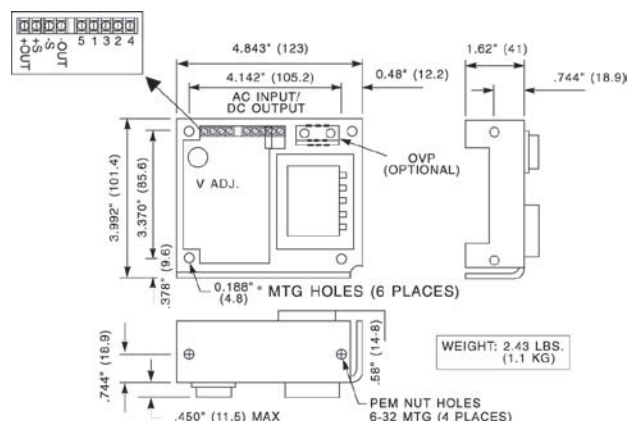
Notes:

\* With Built-In OVP

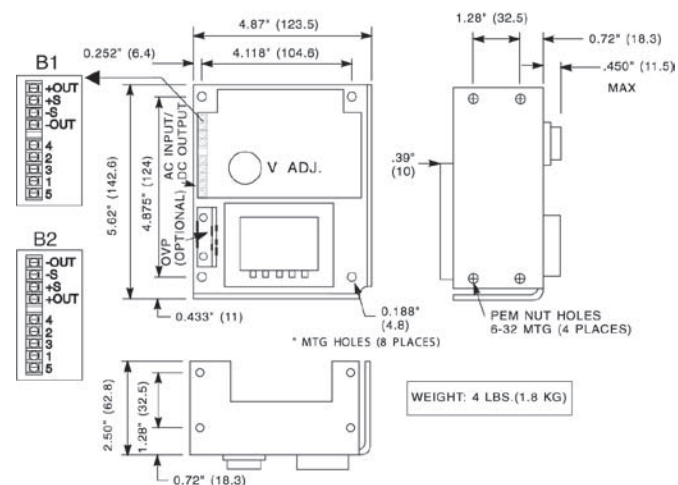
# With Remote Sense (R.S.)

<sup>1</sup> 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	SLCASC-CVR	Cover for Cases G1 and G2
SLCASB-CVR	Cover for Case B	SLCASH-CVR	Cover for Cases H1 and H2
SLCASC-CVR	Cover for Case C	SLCASI-CVR	Cover for Cases I1, I2, I3 and I4
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		

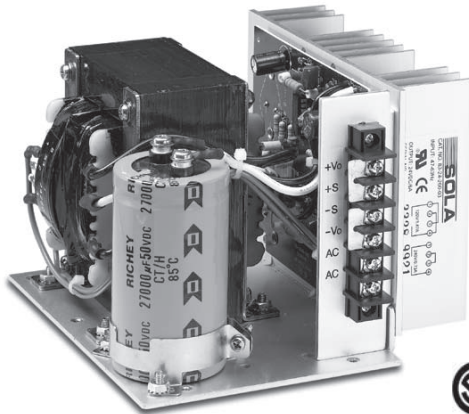
Note:

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





## 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
83-05-260-3	5 V @ 6 A	C
83-12-250-3	12 V @ 5 A	C
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

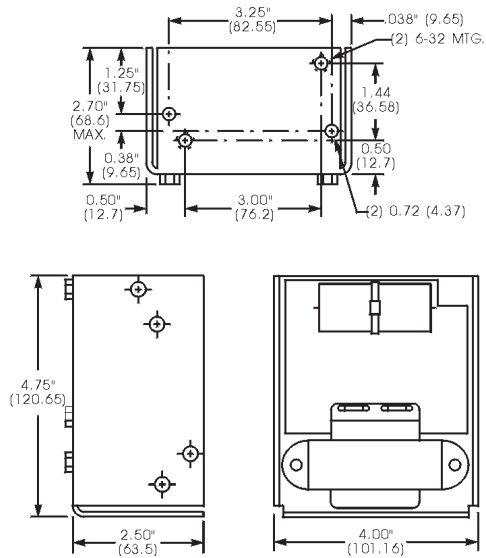
- Microprocessor circuits
- Process controls
- Control circuits
- Noise sensitive circuits
- Instrumentation
- CNC machinery
- Analog circuits

### Specifications

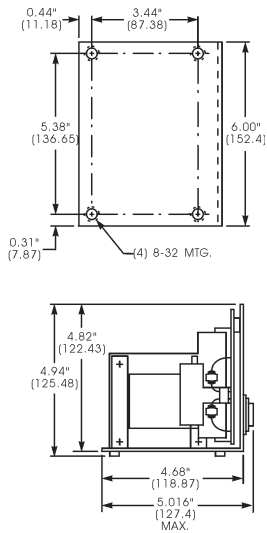
Parameter	Condition	Limit
<b>Input</b>		
Input Voltage		104-127 VAC 208-254 VAC
Input Frequency		50-60 Hz
<b>Output</b>		
Regulation Line & Load		±0.1%
Pard (Ripple and Noise)		0.1% pk/pk
Periodic Deviations (Ripple)		10mv rms
Output Voltage Adjustment		±5% Minimum
Transient Recovery Time	50%-100% Load	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	



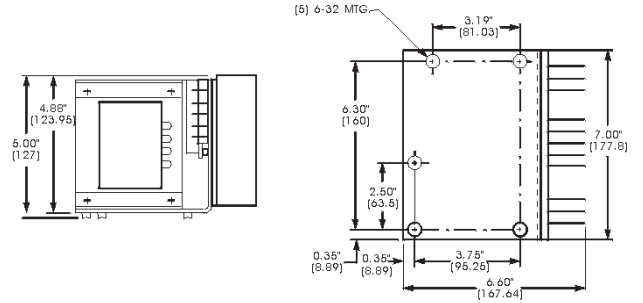
## Linear OEM Cases and Dimensions



### Case B



### Case C



### Case D

#### Notes:

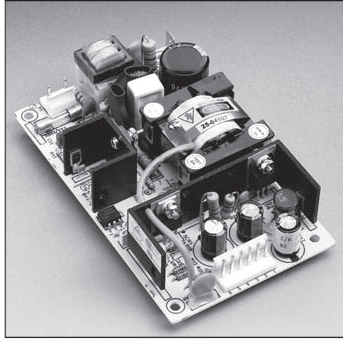
All dimensions in inches (mm). Dimensions may change and should not be used for construction purposes.

When ordering, be sure to specify the complete part number. Orders may be placed with your local Sola/Hevi-Duty distributor.

## 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
- 100% Burn-In
- One year warranty
- Power fail signal on 110 and 200 Watt model
- 200 Watt enclosed with screw terminals

### Applications

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

### 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

### Specifications

Parameter	Condition	Limit
<b>Input</b>		
Input Voltage		85 to 264 VAC
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
EMI		FCC20780 Level B & VDE 0871 Level A
Safety	All Models	UL 1950, CSA C22.2 No. 234, EN 60950
Cooling	Full Load	Convection Cooling 200 W units have an internal fan

### 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.

### 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.

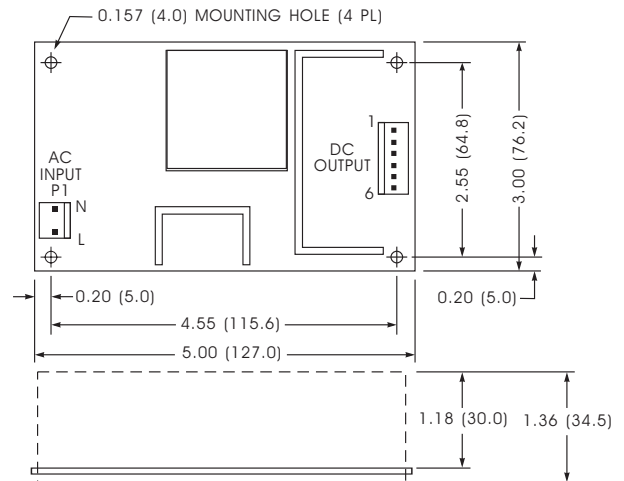
## Selection Table for 40 Watt, GL Series

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).

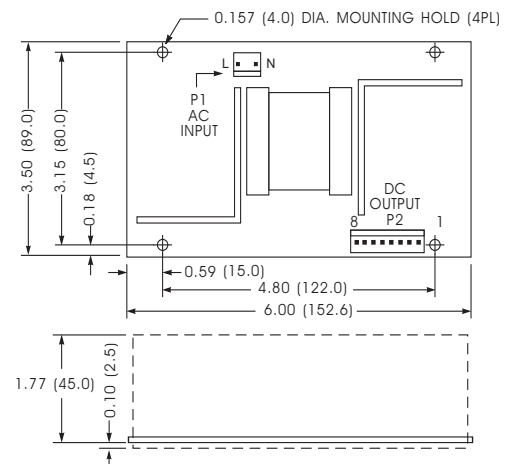
## Selection Table for 65 Watt, GL Series

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, 0.5 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).

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Contact **Technical Services** at (800) 377-4384 with any questions.

## GL Series: Single & Multi Output Switchers – continued

Selection Table for 110 Watt, GL Series

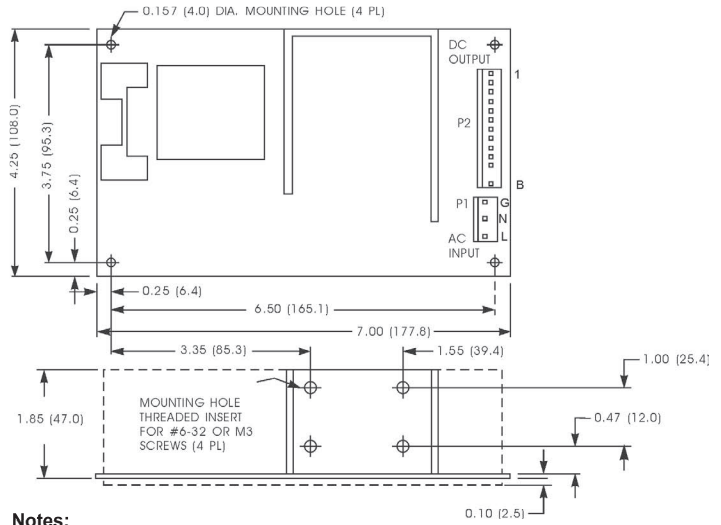
Catalog Number	Output 1	Output 2	Output 3	Output 4	Maximum Output*
GLS-01-110	5 V, 22 A	-	-	-	110 W
GLS-02-110	12 V, 9 A	-	-	-	110 W
GLS-03-110	15 V, 7.5 A	-	-	-	110 W
GLS-04-110	24 V, 4.5 A	-	-	-	110 W
GLD-01-110	5 V, 10 A	12 V, 5 A	-	-	110 W
GLT-01-110	5 V, 10 A	12 V, 3 A	-12 V, 1 A	-	110 W
GLT-02-110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

\* With 25 CFM airflow, 80 W with convection cooling.

### Output Connector

Model	Pin 1-2-3	Pin 4-5	Pin 6-7	Pin 8-9	Pin 10	Pin 11	Pin 12	Pin 13
GLS	Output 1	Return	Return	Output 1	Power Fail	N/A	Key	N/A
GLD	Output 1	Common	Common	Output 2	Power Fail	N/A	Key	N/A
GLT	Output 1	Common	Common	Output 2	Power Fail	Output 3	Key	N/A
GLQ	Output 1	Common	Common	Output 2	Power Fail	Output 3	Key	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).

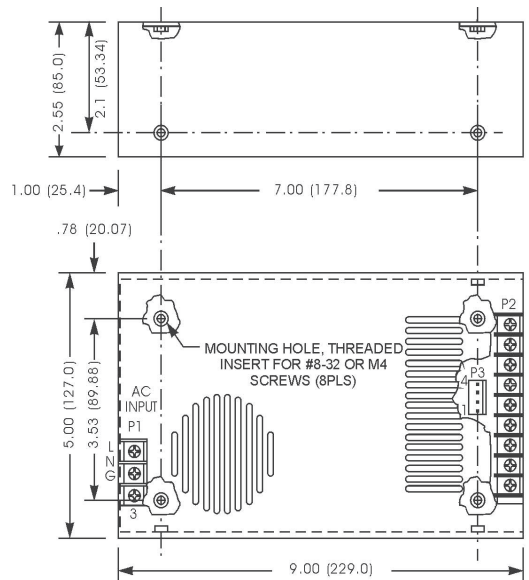
Selection Table for 200 Watt, GL Series

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	Common	Output 2	Output 3	N/A	N/A
GLQ	Output 1	Common	Output 2	Output 3	Output 4 Return	Output 4

Dimensions for 200 Watt, GL Series



**Notes:**

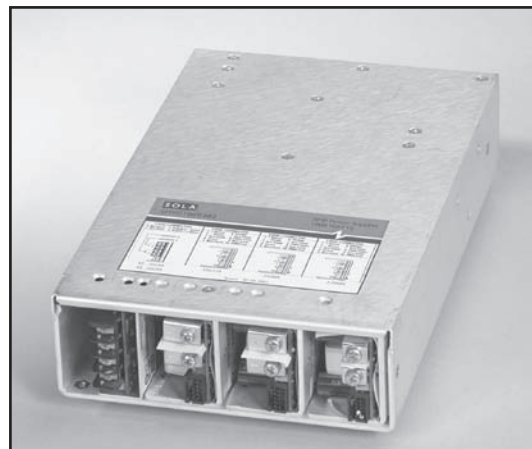
1. Tolerance 0.02 (0.5) maximum.
2. Connector Molex # 22-01-2041 and Molex series 2759 # 08-50-0113 crimp terminal using Molex # 11-01-0185 hand applicator.
3. Connectors P3 mates with Molex housing 22-01-1043 and Molex 4809 series crimp terminal.
4. Weight: 3.9 lbs. (1,750 grams) approx.
5. All dimensions 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 IEC1000-3-2
- Power Factor Corrections (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
- Two year warranty
- Thermal overload protection
- MTBF demonstrated >500,000 hours



### 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>					
AC Input	90-264 VAC, 47-63 Hz single phase				
Inrush Current	Less than 20 A peak			Less than 40 A peak	
PFC and Harmonic Correction	Compliant with EN61000-3-2.				
Input Transient and ESD, AC	Compliant with EN61000-4-2,3,4,5,6 (Level 3 minimum)				
<b>Output</b>					
Line Regulation AC input	Less than 0.1% for line variations from 90-264 VAC Less than 0.3% for dual and triple output modules				
Load Regulation	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				
Cross Regulation	Less than 0.1% between single output modules. Less than 2% between dual outputs with 25% step load change on main output.				
Current Share	Single wire on all main outputs, droop on secondary outputs			Single wire parallel current share	
Output Adjustment Range	±10% of nominal on all Main outputs 5 -15 volts on U and T module Auxiliary outputs			±5% min on all outputs	
Current Limit	140% nominal rating.				
Overvoltage Protection	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.	
Minimum Load	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.				
Dynamic Response	±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 100mV peak. 125mV for outputs 4V or less. Outputs should recover to within 1% of nominal voltage within 350μsec.				
<b>General</b>					
Efficiency	75% typical at nominal line. 24 V+ single outputs 80%			75% typical at nominal line.	
EMC	Radiated and Conducted per CISPR 11 level B, CE compliant.			EN55022 Class B, EN61000-4-2, 3, 4, 5 & 6 Level 3	
Temperature Coefficient	0.02 - 0.03%/°C				
Holdup Time, AC Input	All AC Input units will maintain regulation within specifications for a period of not less than 16 msec for 60Hz, (20msec for 50Hz) 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 16msec for 60Hz, (20msec for 50Hz) at full rated load from nominal 230 line voltage.	
Remote Sense	All main outputs incorporate remote sense and are able to compensate for a total cable drop up to 0.5V DC.			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 0.5V DC. Dual output "G" modules do not have remote sense.	
Cooling	Temperature performance curves are available. Contact Technical Services.				
Operating Temperature Range	0 to +70°C (full power to 50°C, derate linearly to 50% at 70°C).				
Storage Temperature	-40° to +85°C				
Operating Altitude	-350 to 7,500 feet with no derating				
Shock and Vibration	Commercial transportation ratings, suitable for International Air and Ground transport				
<b>Dimensions</b>					
Mounting	All platforms - two surfaces, bottom and one side			Chassis mount via threaded M4 holes on two surfaces.	
H x W x D (inches/mm)	1.56 in x 5 in x 9.5 in (40 mm x 127 mm x 241 mm)	1.56 in x 5 in x 10.5 in (40 mm x 127 mm x 266 mm)	1.68 in x 5 in x 10.5 in (43 mm x 127 mm x 266 mm)	2.5 in x 5 in x 11 in (64 mm x 127 mm x 280 mm)	2.5 in x 7 in x 11 in (64 mm x 178 mm x 280 mm)
Weight (lbs/g)	2.3 lbs (1200 g), Unit 3.5 lbs (1588 g) Shipping	2.9 lbs (1315 g), Unit 4.0 lbs (1814 g), Shipping	3.0 lbs (1360 g), Unit 4.5 lbs (2041 g), Shipping	3.2 lbs (1451g), Unit 4.8 lbs (2177g), Shipping	4.4 lbs (1996 g), Unit 6.6 lbs (2994 g), Shipping

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## 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, 3 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	12 V, 4 A	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

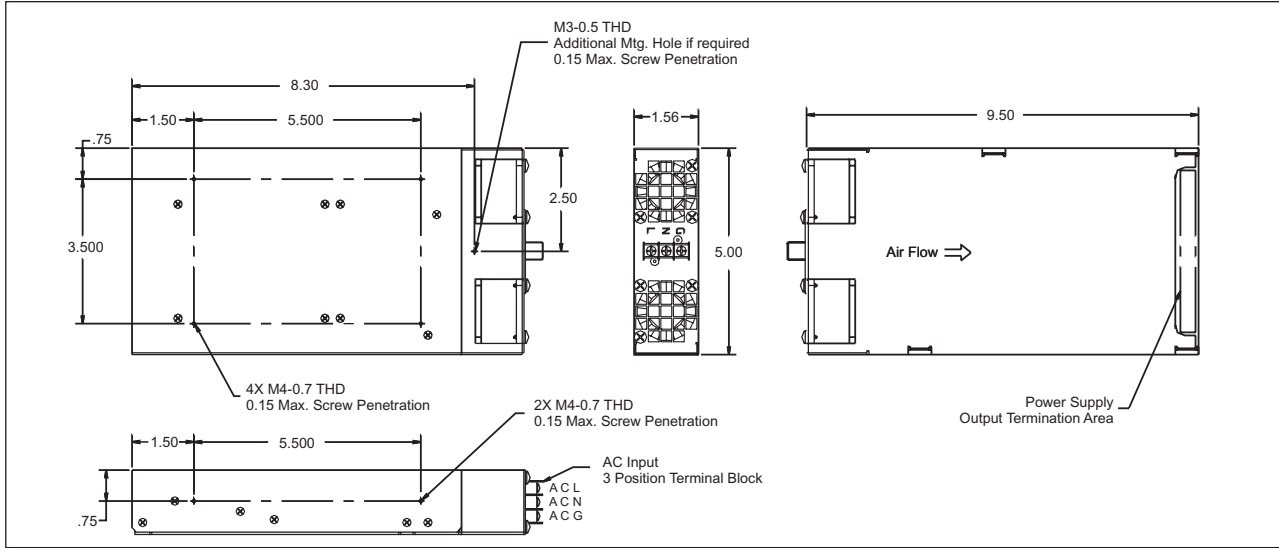
### 1000 Watt, SM9 Series

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

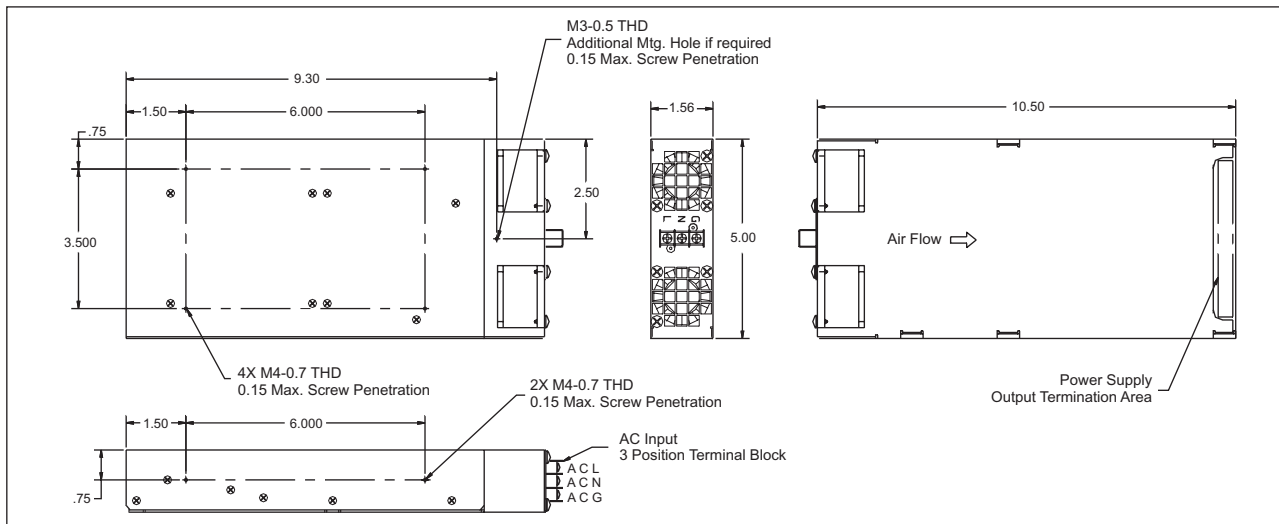
More models available online. Visit <http://www.solaheviduty.com/psselect/> and use our modular power supply selector.

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

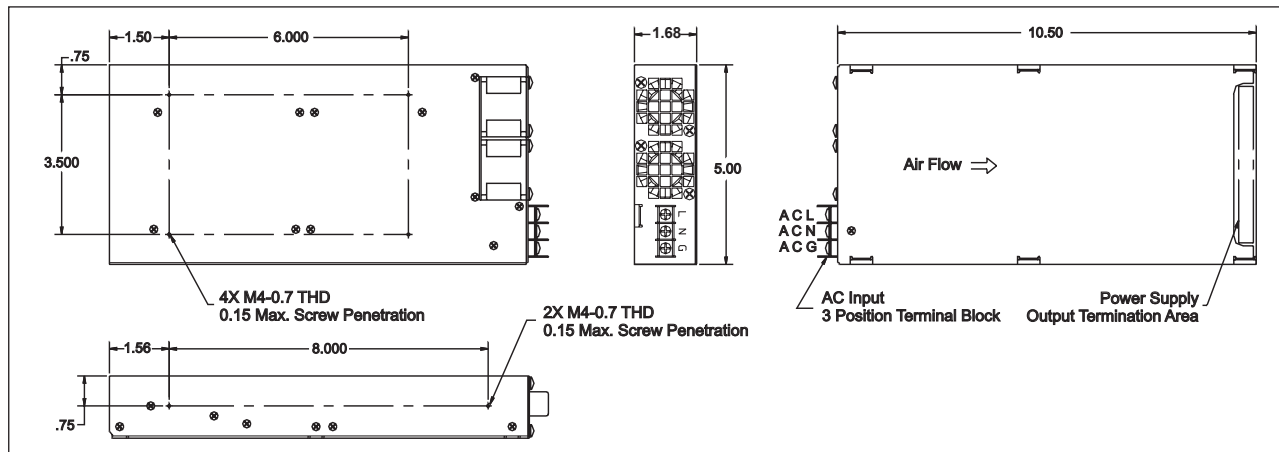
## Mechanical Dimensions



**SM2**



**SM3**

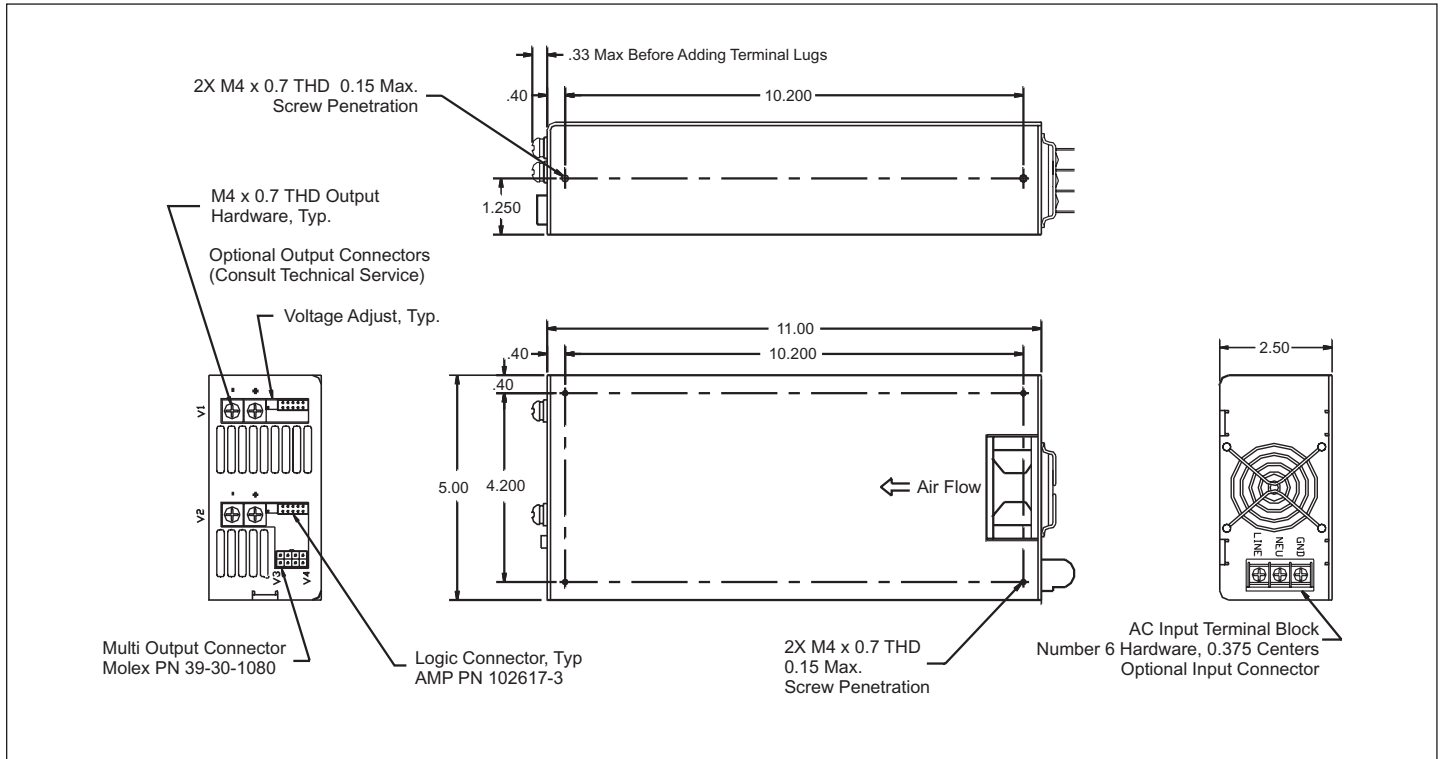


**SM4**

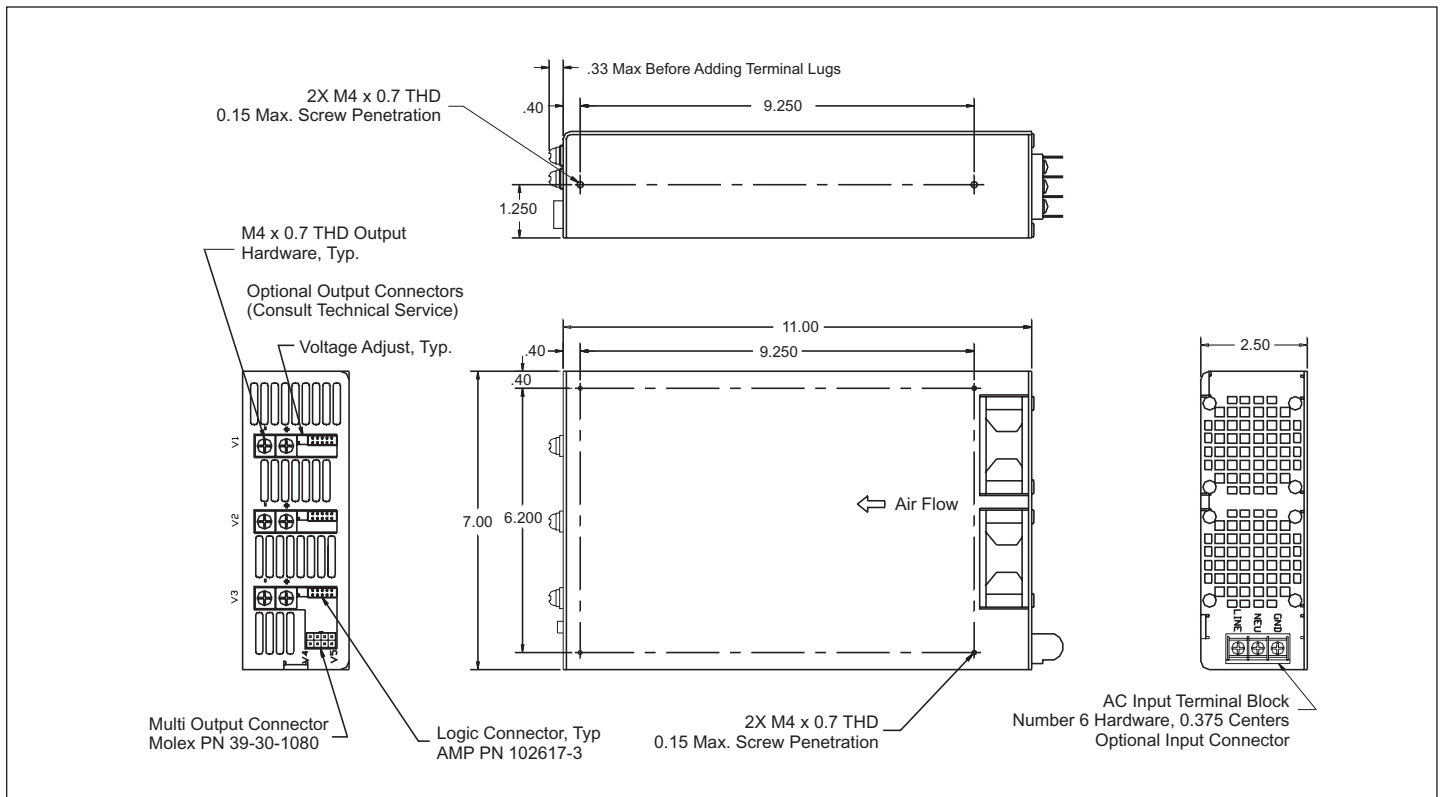
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## Mechanical Dimensions - continued



SM6



SM9

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## 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
- Overload protection on all outputs
- Two year warranty
- Power factor correction (.99 typ.)
- Margining on all outputs
- Modular Construction
- Global and individual module inhibits/enable
- Single phase and three phase inputs

### Applications

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

### Related Products

- SMP Medium Power Modular Power Supplies
- Surge Suppression
- SCD DC to DC Converters



### Specifications

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

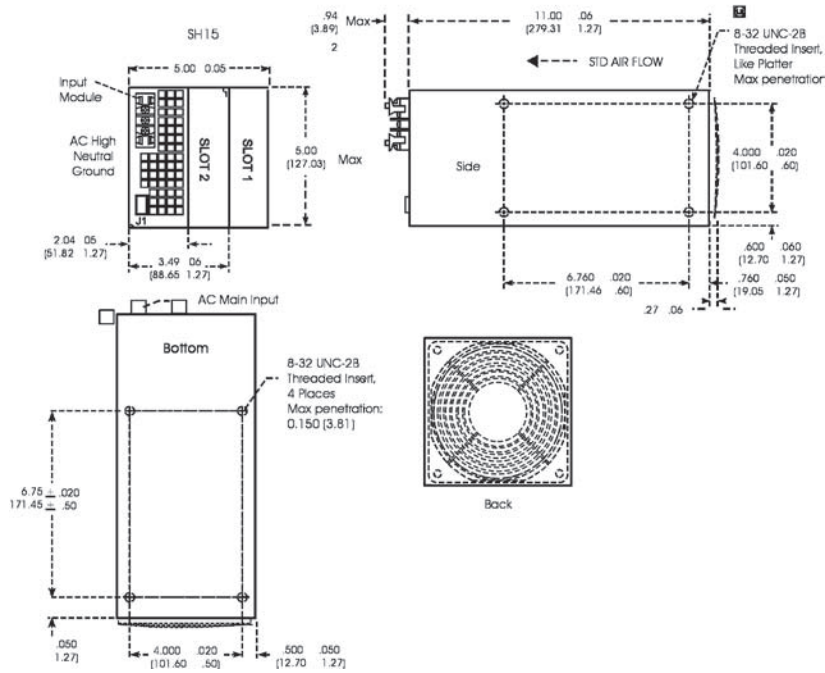
### Three Phase 2000 Watt, S3H20 Series

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

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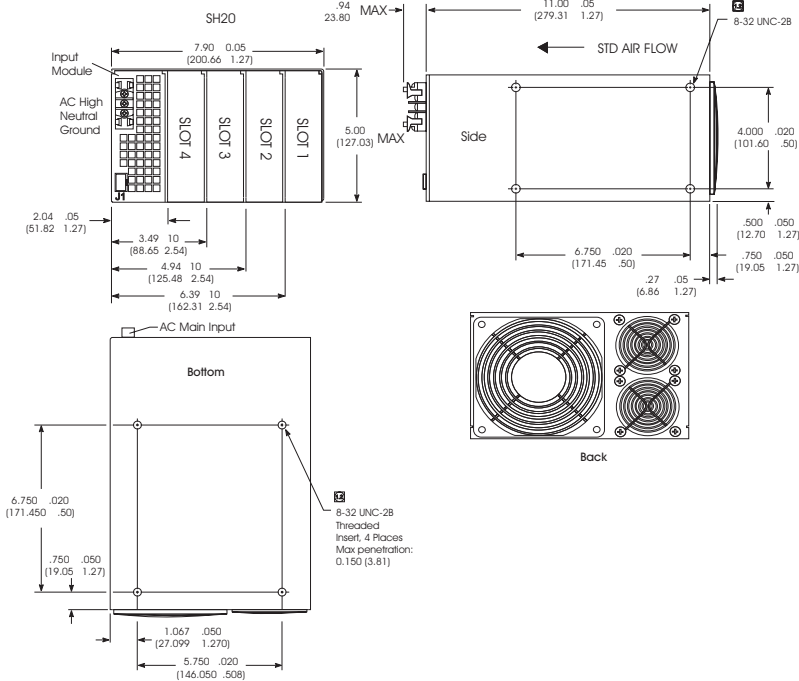
## SH15 & S3H15 Dimensions

5-inch Case Size (4" x 5" x 11")



## SH20 & S3H20 Dimensions

8-inch Case Size (5" x 8" x 11")  
(18 lbs. / 8.2 kg. Maximum)



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## CVDC Power Supplies - 28 Series

Rackmount Regulated DC for industrial and telecommunication applications

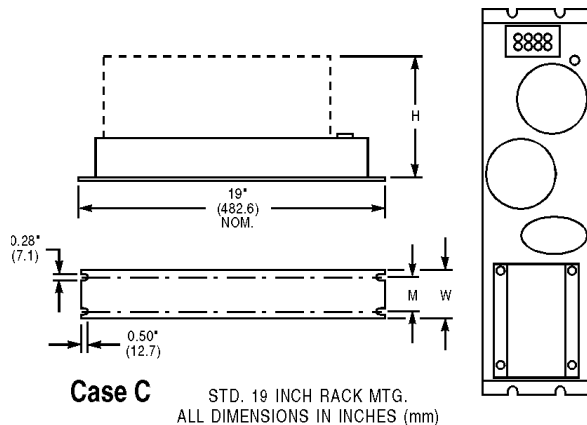


### Features

- Isolated output
- Short circuit protected
- Rack-mount
- Highly reliable, convection cooled design (no fan used or required)
- Operating temperature at 50°C
- MTBF greater than 300,000 hours
- High efficiency
- One year warranty
- UL Recognized

### Applications

- Process controls
- Drives
- Telecommunications and cellular applications



### Specifications

Parameter	Condition	Limit
<b>Input</b>		
Input Voltage		100 to 130 VAC 60 Hz
<b>Output</b>		
Source Frequency Effect		Actual variation is approximately 1.4 % voltage change for a 1% frequency increase or decrease
Line Regulation		±1%
Load Regulation		±5% (1/2 FL to FL)
Periodic Deviations (Ripple)		1% RMS of Output
Ripple	Telecommunications Models	35 dbm C (15 mv RMS)
Response Time		25 msec
<b>General</b>		
Efficiency	Full Load	80% to 90%
Operating Ambient		
Temperature		0°C to 50°C
Current Limit		250% Rated Current

### Selection Table

Catalog Number	Output	Case
28-2233*	48 V @ 10 A	C-1
28-2234*	48 V @ 20 A	C-2
28-1024-1†	24 V @ 6 A	C-1
28-2126-1†	24 V @ 10 A	C-5
28-1203-2†	24 V @ 15 A	C-6
28-2127-1†	24 V @ 25 A	C-2

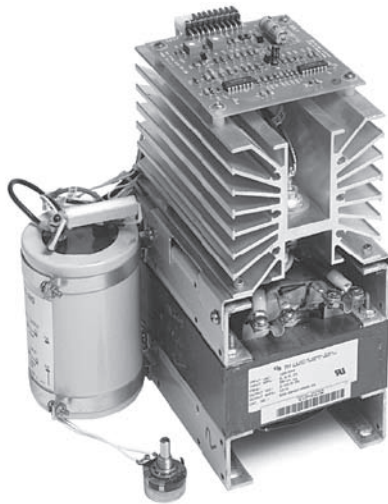
\*Telecommunications models 115/230 V selectable and UL only.

†UL tested to CSA standards.

### Dimensions (inches) Standard 19" Rackmounting

Case C	W	M	H
C-5	5 1/4	2 1/4	8 3/4
C-1	5 1/4	2 1/4	9 3/4
C-6	7	4	7 1/4
C-2	8 3/4	5 3/4	9 3/4

## Copper Line Series



### 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	39-407	12 A	6 A	23 (10.4)
600	39-408	24 A	12 A	30 (13.6)
1200	39-409	48 A	24 A	73 (33.1)

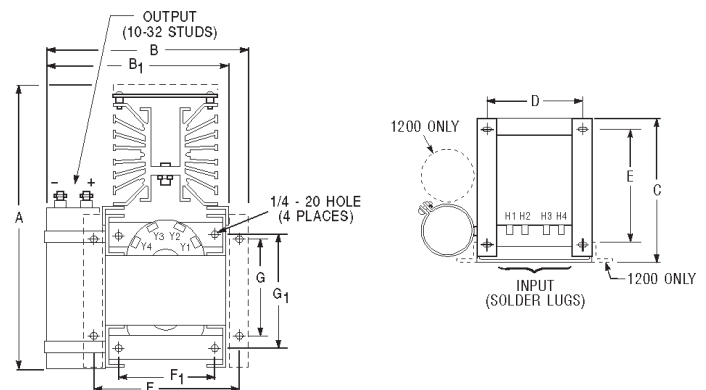
\* Current listed is the maximum at any voltage in that range.

Model	A	B	B1	C	D	E	F	F1	G	G1
39-407	10.4	-	7.7	6.8	3.8	5.3	-	3.5	-	3.6
39-408	11.4	-	7.7	6.8	3.8	5.3	-	3.5	-	4.6
39-409	14	11.1	-	10	6	8	8.3	-	3.5	

### Specifications

Parameter	Conditions	Limit
<b>Input</b>		
Input Voltage		105-130/210-260 VAC (user selectable)
Input Frequency		47-63 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



## SCP-X Series



The SCP-X is a rugged power supply designed for use in extreme environments. The metal case reduces costs by eliminating separate enclosures and the 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.

### Features

- IP66/67 Versatile / NEMA 4X Rated
- 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

### Accessory

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

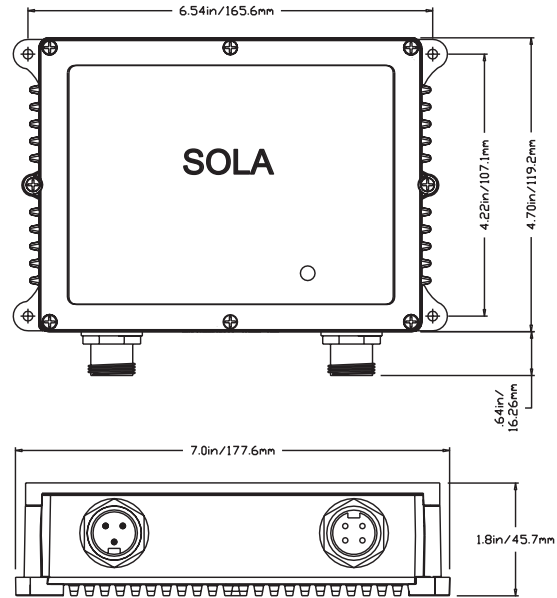
### Related Products

- SDN Series
- SCP Series

### Selection Table

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

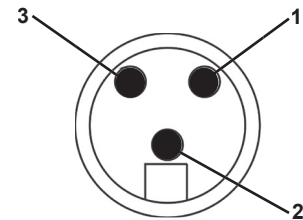
### Mechanical Diagrams



### Electrical Connections

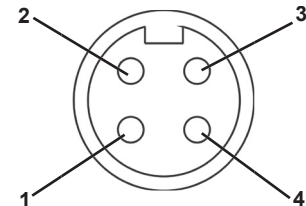
#### AC Input - EN175301-803 (formerly DIN 43650)

1. L<sub>1</sub> (Line)
2. Ground
3. L<sub>2</sub> (Neutral)



#### DC Output - EN175301-803 (formerly DIN 43650)

1. V+
2. Ground\*
3. V-\*\*
4. V+



\* Ground is isolated from V-.

\*\* 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	35V
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>	< 50mVpp
Nominal Current	3.8A
Holdup Time	> 25ms (Full load, 100Vac Input @ Tamb=+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 in. x 7 in. x 1.8 in.(119 mm x 178 mm x 46 mm)
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	Storage: -40° to +85°C, Operation: -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	0.15 gravity (g) peak, 5-500 Hz (swept sine); 5-500 Hz (random)
Shock	3g peak, 11 milliseconds half-sine pulse - IEC 68-2-27
Warranty	5 years
MTBF	>500,000 hours according to Telcordia/Bellcore SR-332 Issue 1, (Vin 120Vac, Tamb=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	Input: 3 pin IP67 molded plug (quick disconnect). Output: 4 pin IP67 molded receptacle (quick disconnect).

<sup>1</sup> Input current ratings are specified with low input, line conditions, worst case efficiency values and power factor.

<sup>2</sup> Power factor correction at 50/60 Hz only.

<sup>3</sup> Ripple/noise is stated as typical AC values when measured with a 20 MHz, bandwidth scope and 50 Ohm termination.

<sup>4</sup> Additional installation requirements apply when used in hazardous locations (refer to user manual).

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