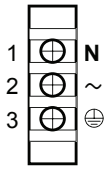
Specifications

Table 1: Technical Specifications	
INPUT	
Input voltage range	90–264 V ac; 120–300 V dc; single-phase
Frequency	47–63 Hz
Inrush current	40 A peak maximum (soft start)
Efficiency	Up to 85% at full load
Power factor	0.99 typical
Turn-on time	Ac on 1.5 s typical, inhibit/enable 150 ms typical, configurable through I²C; 50 ms internal turn-on delay (dual output only)
Hold-up time	10 ms minimum
AC OK	>5 ms early warning before outputs lose regulation, full cycle ride at 50 Hz, configurable through I²C
OUTPUT	
Output voltage range	±10% minimum for all outputs, user-adjustable pot, full adjustment range using I²C
Factory set point accuracy	1%
I²C output program accuracy	±5%
Margining	±4–6% nominal analog (single output module only)
Line/load regulation	0.4% or 20 mV maximum (1% maximum for 1500 W module)
Ripple	RMS: 0.1% or 10 mV maximum; Pk-Pk: 1.0% or 50 mV maximum; bandwidth limited to 20 MHz
Dynamic response	<2% or 100 mV with 25% load step
Recovery time	Within 1% in <300 µs
Overcurrent protection	Single output module and main output of the dual output module 105–120% of rated output current. Aux output of dual output module 105–140% of rated output current. Special programmable OCP delay on 1500 W module from 100 ms to 25.5 s with shutdown features. Configurable through I²C with load calibration required (except for 1500 W module).
Short-circuit protection	Protected for continuous short-circuit; recovery is automatic upon removal of short. Shutdown mode available on the 1500 W module.
Overvoltage protection	Single output module: 2–5.5 V, 122–134%; 6–60 V, 110–120% Dual output module: 2–6 V, 122–134%; 8–28 V, 110–120% Triple output module: No overvoltage protection provided Configurable through I²C
Thermal protection	All outputs are disabled when the internal temperature exceeds the safe operating range; configurable through I²C
Remote sense	Up to 0.5 V drop (not available on triple output module)
Single wire parallel	Current share to within 2% of total rated current
DC OK	±5% of nominal; configurable through I²C
Minimum load	Not required
Housekeeping bias voltage	5 V dc @ 1.0 A maximum present whenever ac input is applied
Module inhibit	Configured and controlled through I²C
Output/output isolation	>1 MΩ, 500 V
Global inhibit/enable	TTL, Logic “1” and Logic “0”; configurable through I²C
ENVIRONMENTAL	
Operating temperature	-40 °C to +70 °C ambient; derate each output 2.5% per degree from 50 °C to 70 °C; -20 °C start up
Storage temperature	-40 °C to +85 °C
Humidity	10% to 95% RH, non-condensing
Vibration	IEC68-2-6 to the levels of IEC721-3-2
MTBF demonstrated	>550,000 hr. @ full load, 220 V ac, 25 °C ambient
SAFETY	
Electromagnetic susceptibility	EN61000-4-2, EN61000-4-4, EN61000-4-5 Level 3
Conducted EMI	CISPR 22/EN55022 Level B when installed in a properly grounded and shielded metal enclosure
Radiated EMI	CISPR 22/EN55022 Level B when installed in a properly grounded and shielded metal enclosure
Certifications	c UL us, UL/CSA 60950-1 2nd Edition, CE to LVD 2006/95/EC, EN60950-1/A11:2009
GENERAL	
Case specifications	SH30 Series: 5 in. x 5 in. x 11 in. [127.0 mm x 127.0 mm x 279.4 mm], 1500 W–3210 W, 09 slots available, 6.2 lb. SH45 Series: 5 in. x 8 in. x 11 in. [127.0 mm x 203.2 mm x 279.4 mm], 1800 W–4500 W, 14 slots available, 9.0 lb.
Module weights	210 W single: 0.6 lb.; 360 W single: 1.0 lb.; 600 W single: 2.0 lb.; 750 W single: 1.6 lb.; 1500 W single: 2.0 lb.; 144 W dual: 0.6 lb.; 36 W triple: 0.5 lb.
Limited warranty	3 years

Connectors

Table 2: Ac Input

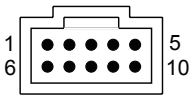


BARRIER TYPE
SH30: THREE #6-32 B.H. SCREWS
6 in.-lb. (0.67 N-m) MAX. TORQUE
SH45: THREE M4 SCREWS
7 in.-lb. (0.79 N-m) MAX. TORQUE

PIN #	FUNCTION	
1	Ac neutral	Dc -
2	Ac line (hot)	Dc +
3	Chassis (earth) ground	

Table 3: PFC Input Connector (Control & Signals)

Connector J1

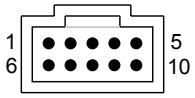


MATES WITH:
MOLEX 90142-0010 HOUSING
MOLEX 90119-2110 TERMINAL
CONNECTOR KIT AVAILABLE, PART NUMBER 70-841-004

PIN #	FUNCTION
1	Input ac OK (emitter)
2	Input ac OK (collector)
3	Global dc OK (emitter)
4	Global dc OK (collector)
5	No connection
6	Global inhibit/optional enable logic “0”
7	Global inhibit/optional enable logic “1”
8	Global inhibit/optional enable return
9	+5 VSB housekeeping (1 A max.)
10	+5 VSB housekeeping return

Table 4: Dc Output Module Connector (Control & Signals)

Connector J1

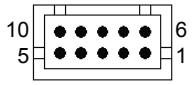


MATES WITH:
MOLEX 90142-0010 HOUSING
MOLEX 90119-2110 TERMINAL
CONNECTOR KIT AVAILABLE, PART NUMBER 70-841-004

PIN #	FUNCTION
1	+ Remote sense (single or dual o/p main)
2	Remote margin/V. program (single o/p)
3	Margin high (single o/p)
4	- Remote sense/margin low (single or dual o/p main)
5	Spare
6	Module isolated inhibit (single or dual o/p)
7	Module inhibit return (single or dual o/p)
8	Current share (SWP) (single or dual o/p main)
9	+ Remote sense V2 (dual o/p, single is spare)
10	- Remote sense V2 (dual o/p, single is spare)

Table 5: I²C Bus Output Connector

Connector J2



MATES WITH:
JST PHDR-10VS HOUSING
JST SPHD-002T-P0.5 TERMINAL (FOR 24–28 AWG WIRE)
JST SPHD-001T-P0.5 TERMINAL (FOR 24–28 AWG WIRE) OR
LANDWIN 2050S1000 HOUSING
LANDWIN 2053T011P TERMINAL
CONNECTOR KIT AVAILABLE, PART NUMBER 70-841-023

PIN #	FUNCTION
1	No connection
2	
3	
4	Serial clock signal (SCL)
5	Serial data signal (SDA)
6	Address bit 0 (A0)
7	Address bit 1 (A1)
8	Address bit 2 (A2)
9	Secondary return (GND)
10	5 VCC external bus (1 A max.)

NOTES:

- M4 x 8mm screws for all single output modules; maximum torque is 10 in.-lb. (1.13 N-m). M3 x 8mm screws for dual output module; maximum torque is 5 in.-lb. (0.57 N-m).
- 36 W triple output module mates with Molex 09-91-0600 housing and Molex 26-60-5060 terminal.
- Single and dual output modules have a green DC OK LED.

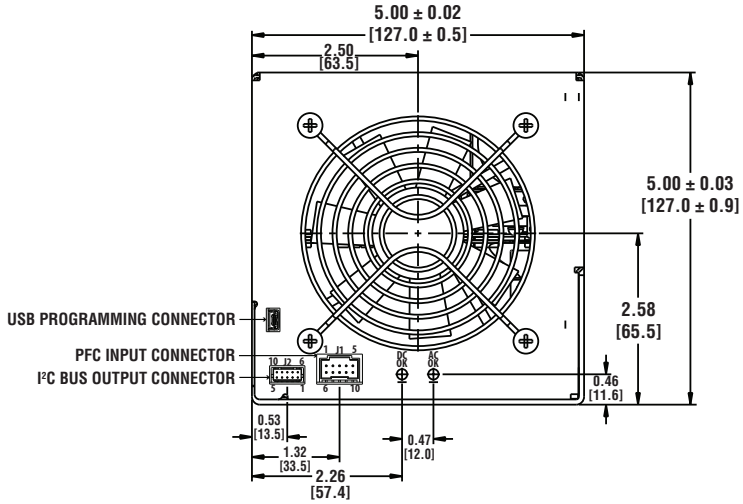
Installation/Safety Requirements

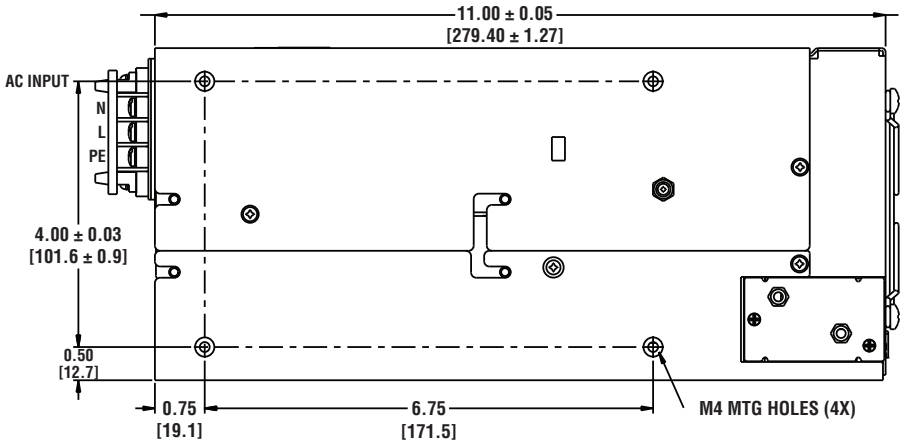
⚠ WARNING—RISK OF ELECTRICAL SHOCK

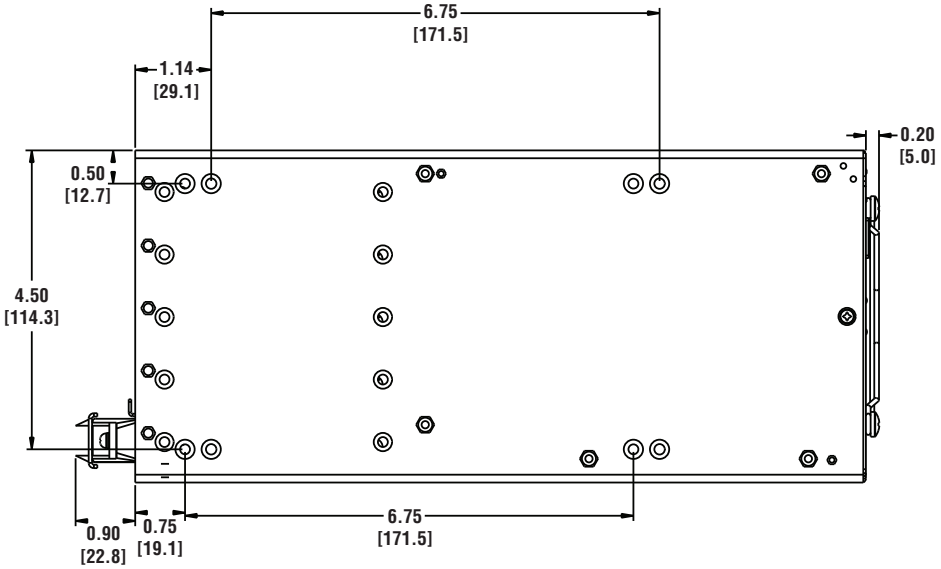
No user-serviceable parts. Do not open the power supply. Do not replace components.

- The earth ground wire must be connected only to the point marked with the earth ground symbol (on the unit). If the earth ground wire is connected by a screw, the wire must have a ring terminal secured by a lock washer to prevent accidental loosening.
- A safety approved (e.g. UL, CSA, CE) power cord and plug, with an appropriate wire gauge for the rated input current, must be provided by the end system manufacturer. Additional ferrites may be required on the power cord for radiated emissions testing and are system dependent.
- The power supply must be installed in a properly grounded and shielded metal enclosure.
- An accessible disconnect device shall be installed external to the equipment.
- The power supply is CE marked following the provisions of the Low Voltage Directive 2006/95/EC only.
- Please refer to our Web site (www.solahd.com) for additional information on the optional CANBUS/RS485 interface.
- For installation assistance and overall support, please contact SolaHD Technical Support at (800) 377-4384/(847) 268-6651 or by e-mail at solahd.technicalservices@emerson.com.

SH30 Series (1500/3210 W Maximum)



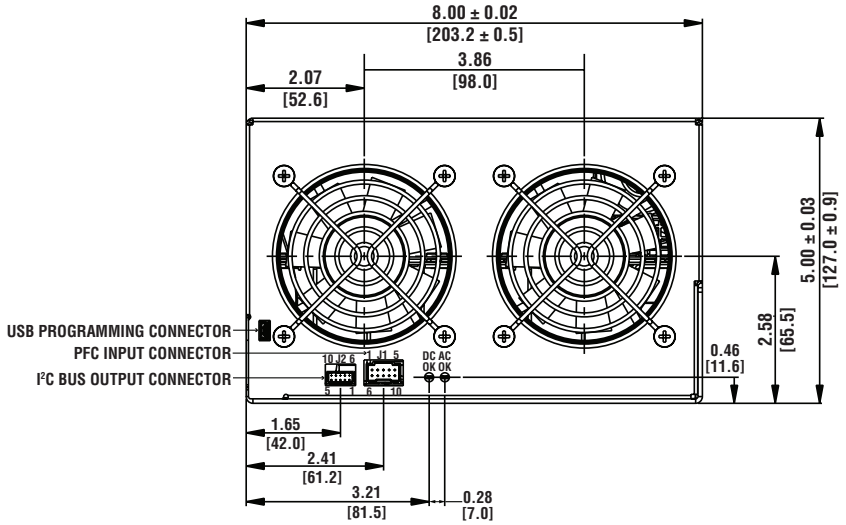


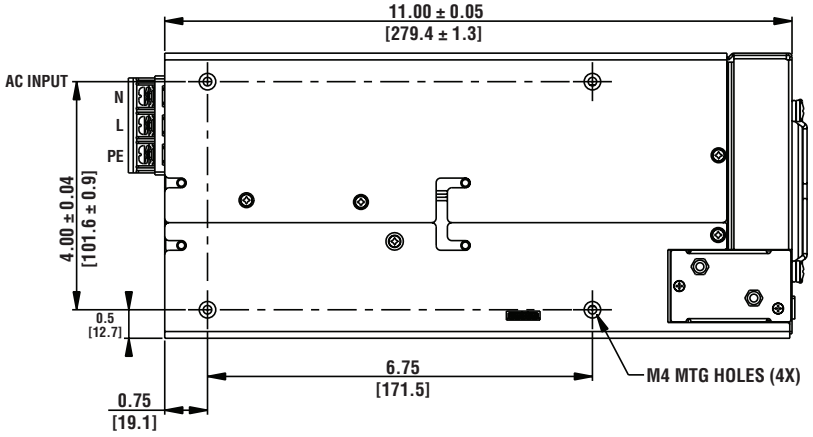


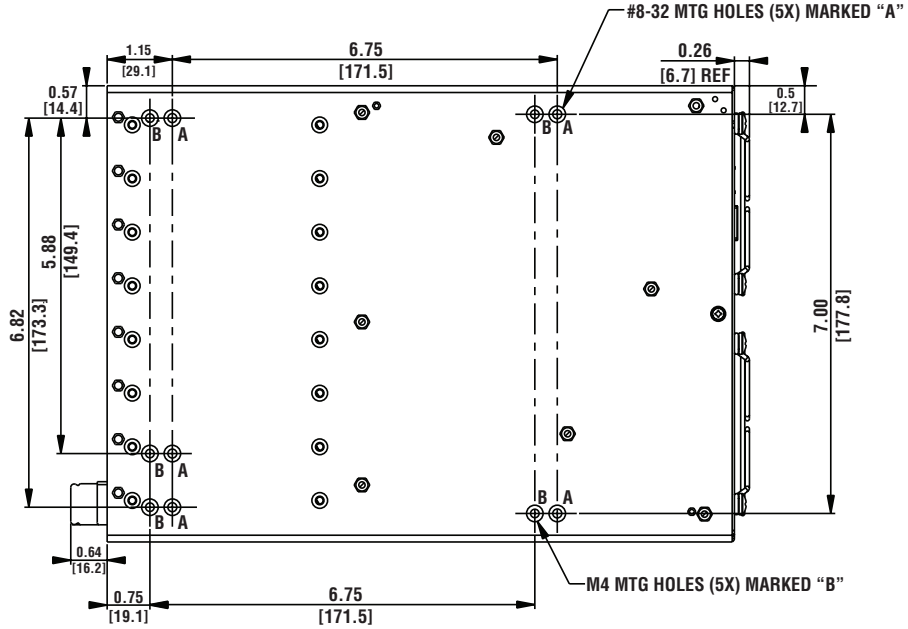
NOTES:

- M4 mounting holes on 3 sides; #8-32 mounting holes on the bottom. Maximum penetration is 0.155 in. (4.0 mm); maximum torque is 5 in.-lb. (0.57 N-m).
- All dimensions are typical, with inches and [millimeters] shown.

SH45 Series (1800/4500 W Maximum)







NOTES:

- M4 mounting holes on 3 sides; #8-32 mounting holes on the bottom. Maximum penetration is 0.155 in. (4.0 mm); maximum torque is 5 in.-lb. (0.57 N-m).
- All dimensions are typical, with inches and [millimeters] shown.

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