150-300 Watts

SML Series

- Small Size - 4" x 6" Footprint
- Single Outputs 12-54 VDC
- High Power Density
- 150 W Convection-cooled
- 300 W Fan-cooled
- Temperature-controlled Fan
- PFD & Fan Fail Signals

Specification

Input

Input Voltage	• 90-132 / 180-264 VAC autoranging
Input Frequency	• 47-63 Hz
Input Current	• 6.30/3.15 A at 115/230 VAC
Inrush Current	• 70 A max at 230 VAC, cold start
Power Factor	• Complies with EN61000-3-2 Class A
Earth Leakage Current	• 3.5 mA max at 230 VAC
Input Protection	• Internal 6.3 A / 250 VAC fuse

Output

Output Voltage	• See tables
Output Voltage Trim	• ±5%
Minimum Load	• See tables
Initial Set Accuracy	• ±1%
Start Up Delay	• 1 s max
Start Up Rise Time	• 20 ms min at 120 VAC
Hold Up Time	• 20 ms min at 120 VAC & 80% load
Total Regulation	• ±1%
Over/Undershoot	• 5% max at turn on/off
Transient Response	• 5% max. deviation, recovery to within 1% in 500 µs for a 50% load change
Ripple & Noise	• 1% pk-pk, 20 MHz BW, see note 1
Overvoltage Protection	• <130% Vnom, recycle input to reset
Overtemperature Protection	• Unit shuts down with auto recovery, measured internally
Overload Protection	• 110-140%, trip & restart (Hiccup mode) with auto recovery
Fan Output	• 12 VDC at 500 mA, temperature-controlled (available on 150 W model only)
Aux Output	• 12 VDC at 500 mA (12.0-14.5 VDC)

General

Efficiency	• 75% minimum, 230 VAC 100% load
Isolation	• 3000 VAC Input to Output 1500 VAC Input to Ground 250 VDC Output to Ground
Switching Frequency	• 30 kHz typical
Power Density	• Up to 6.25 W/In^3
PFD	• Open collector signal is LOW when DC is OK
Signals	• Green LED to indicate power on
MTBF	• 100 kHrs per MIL-HDBK-217F at +30 °C

Environmental

Operating Temperature	• -20 °C to +70 °C, derate from +50 °C at 2.5%/°C
Cooling	• 150 W convection-cooled, 300 W with internal fan
Operating Humidity	• 5-90% RH, non-condensing
Storage Temperature	• -20 °C to +85 °C
Operating Altitude	• 3000 m
Vibration	• 5-50 Hz, 7.35 ms^2 on X,Y & Z axis

EMC & Safety

Emissions	• EN55022, level B conducted FCC Part 15 Subject J Class B
Voltage Flicker	• EN61000-3-3 amendments 1 & 2
ESD Immunity	• EN61000-4-2, level 2 Contact, Level 3
Radiated Immunity	• EN61000-4-3, level 3 V/m Perf Criteria A
EFT/Burst	• EN61000-4-4, level 2 Perf Criteria A
Surge	• EN61000-4-5, level 3 Perf Criteria A
Conducted Immunity	• EN61000-4-6, level 3 V Perf Criteria A
Safety Approvals	• EN60950-1, UL60950-1, CSA22.2 No 60950-1

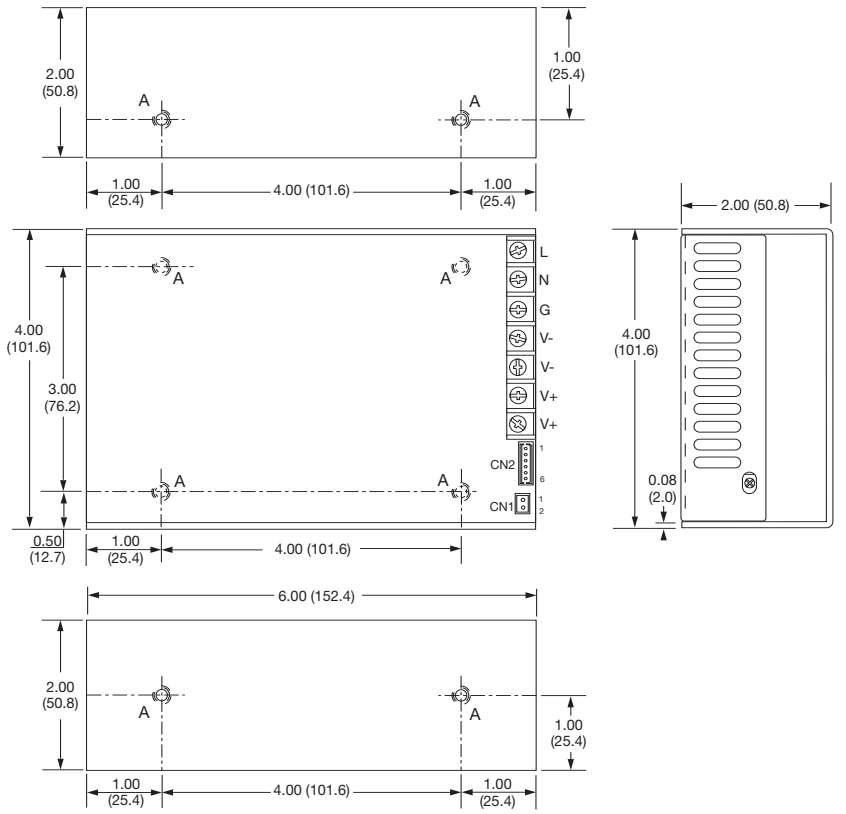
Models and Ratings

Output Power	Output Voltage	Output Current Min	Output Current Max[2]	Ripple & Noise[1]	Model Number
150 W	12.0 V	1.25 A	12.50 A	1%	SML150PS12
	13.5 V	1.11 A	11.10 A	1%	SML150PS13
	15.0 V	1.00 A	10.00 A	1%	SML150PS15
	18.0 V	0.85 A	8.33 A	1%	SML150PS18
	24.0 V	0.63 A	6.70 A	1%	SML150PS24
	27.0 V	0.55 A	5.55 A	1%	SML150PS27
	30.0 V	0.50 A	5.00 A	1%	SML150PS30
	36.0 V	0.42 A	4.17 A	1%	SML150PS36
	48.0 V	0.32 A	3.13 A	1%	SML150PS48
	54.0 V	0.28 A	2.78 A	1%	SML150PS54
300 W	12.0 V	1.25 A	25.00 A	1%	SML300PS12
	13.5 V	1.11 A	22.20 A	1%	SML300PS13
	15.0 V	1.00 A	22.00 A	1%	SML300PS15
	18.0 V	0.85 A	16.66 A	1%	SML300PS18
	24.0 V	0.63 A	12.55 A	1%	SML300PS24
	27.0 V	0.55 A	11.00 A	1%	SML300PS27
	30.0 V	0.50 A	10.00 A	1%	SML300PS30
	36.0 V	0.42 A	8.33 A	1%	SML300PS36
	48.0 V	0.32 A	6.25 A	1%	SML300PS48
	54.0 V	0.28 A	5.55 A	1%	SML300PS54

Notes

1. Measured at 20 MHz bandwidth with 0.1 µF ceramic capacitor in parallel with 22 µF electrolytic capacitor.
2. Peak power of 600 W can be taken for 500 µs.

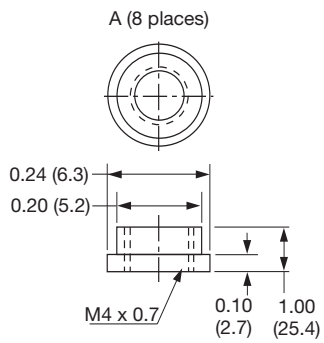
Mechanical Details



Pin	CN1 Fan	CN2 Signals
1	Return	+12 V, 0.5 Auxiliary
2	+12 V	Return
3		PFD LED Drive+
4		Fan LED Drive +
5		PFD
6		Fan Fail

All dimensions are in inches (mm).

Weight approx 1.75 lb (800 g).



Notes

1. Fan drive connector CN1 mates with Molex 22-01-1022 or equivalent with Series 2759 or 5159 crimps.
2. Signal connector CN2 mates with JST XHP-6 or equivalent with JST SXH-002T-P0.6 crimps.
3. Auxiliary 12 V 500 mA supply is regulated between 12 V to 14.5 V.
4. External LED can be connected between 'PFD LED Drive +' and 'PFD', max current is 5 mA.
5. External LED can be connected between 'Fan LED Drive +' and 'Fan Fail', max current is 5 mA.
6. Input/Output connector is Howder, part H3-95-7P.
7. Optional cable harness available. Order part number SML LOOM KIT.
8. Maximum mounting screw penetration 0.15 (4.00) from case outer surfaces.