400 Watts
SDL Series

- Single & Dual Outputs
- Up to 700 W Peak Power
- Fan Fail & Power Good Signals
- Variable Speed Fan
- Low Leakage Current Option
- Fits 1U Applications
- 3 Year Warranty

Specification

Input

Input Voltage	• 90-264 VAC
Input Frequency	• 47-63 Hz
Input Current	• 6 A at 90 VAC, 2.5 A at 230 VAC
Inrush Current	• Max 70 A at 230 VAC, 35 A at 115 VAC, cold start
Power Factor	• EN61000-3-2 class A, >0.9
Earth Leakage Current	• <1.5 mA at 264 VAC, option '-L' 500 µA at 240 VAC
Input Protection	• T8 A/250 V fuse

Output

Output Voltage	• See tables
Output Voltage Trim	• ±5% on V1 (V2 of dual output models will track by same % of adjustment)
Initial Set Accuracy	• ±1%
Minimum Load	• 1% on single output models, 10% on both output of dual output models in order to maintain ripple & noise and regulation specifications
Start Up Delay	• 1.5 s max at 115 VAC
Start Up Rise Time	• 50 ms typical
Hold Up Time	• 16 ms min at 75% of full load at 115 VAC
Line Regulation	• ±0.5%
Load Regulation	• ±1% for single outputs, ±3% V1, ±7% V2 for dual outputs (except PD0512 version: ±5% on V1 and ±10% on V2)
Over/Undershoot	• 5% max
Transient Response	• ±5% max deviation, recovery to within 1% in 500 µs for a 50% load change
Ripple & Noise	• 1% pk-pk (see note 3)
Overvoltage Protection	• <130% on V1 recycle AC input to reset
Overload Protection	• 110-140%
Short Circuit Protection	• Trip & restart, auto recovery
Fan Supply	• <5V at 300mA with 1% load rising to 12-13 V at 300mA with full load. Not available on '-F' & '-E' versions with built-in fans
Remote On / Off	• Applying short circuit between inhibit pin and signal return turns output off.

General

Efficiency	• Single output: 88% typical Dual Output: 85% typical at 230 V & full load
Isolation	• 3000 VAC Input to Output, 1500 VAC Input to Ground, 250 VDC Output to Ground
Switching Frequency	• PFC, 68 kHz PFC, PWM: 55 kHz for single output, & PD1224, 48 kHz for other parts.
Power Density	• 11.11 W/In^3
Signals	• Fan Fail & Power Good
MTBF	• >100 kHrs to MIL-HDBK-217F, at 25 °C GB

Environmental

Operating Temperature	• 0 °C to +70 °C, derate at 2.5%/°C from +50 °C to +70 °C
Storage Temperature	• -20 °C to +85 °C
Operating Humidity	• 5-90%, non-condensing
Cooling	• '-F' & '-E' versions have built-in variable speed fans, all other models require 15 CFM
Operating Altitude	• 3000 m
Vibration	• 5-50 Hz, acceleration 7.35 ms^2 on 3 axes

EMC & Safety

Emissions	• EN55022 Level B conducted & radiated
Harmonic Currents	• EN61000-3-2 class A EN61000-3-2 class C for loads ≥30%
Voltage Flicker	• EN61000-3-3
ESD Immunity	• EN61000-4-2, level 3 Perf Criteria A
Radiated Immunity	• EN61000-4-3, 3 V/m Perf Criteria A
EFT/Burst	• EN61000-4-4, level 2 Perf Criteria A
Surge	• EN61000-4-5, installation class 3 Perf Criteria A
Conducted Immunity	• EN61000-4-6, 3V Perf Criteria A
Dips & Interruptions	• EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms Perf Criteria A, B, B
Safety Approvals	• UL60950-1, CSA C22.2 No. 60950-1, EN60950-1

Models and Ratings

Output Power		Output 1				Output 2				Model Number
Forced Air Cooled	Convection Cooled	Voltage	Current			Voltage	Current			
			Forced Air	Convection	Peak[1]		Forced Air	Convection	Peak[1]	
400 W	220 W	12 V	33.33 A	18.33 A	58.33 A					SDL400PS12
400 W	220 W	15 V	26.67 A	14.67 A	46.77 A					SDL400PS15[4]
400 W	220 W	18 V	22.22 A	12.22 A	38.89 A					SDL400PS18[4]
400 W	220 W	24 V	16.67 A	9.17 A	29.17 A					SDL400PS24
400 W	220 W	28 V	14.29 A	7.86 A	25.00 A					SDL400PS28[4]
400 W	220 W	36 V	11.11 A	6.11 A	19.44 A					SDL400PS36
400 W	220 W	48 V	8.33 A	4.58 A	14.58 A					SDL400PS48
400 W	220 W	54 V	7.41 A	4.07 A	12.96 A					SDL400PS54[4]
400 W	220 W	60 V	6.67 A	3.67 A	11.61 A					SDL400PS60[4]
320 W	180 W	+5 V	30.00 A	15.00 A	36.00 A	+12 V	20.83 A	13.33 A	20.00 A	SDL400PD0512[4]
320 W	180 W	+5 V	30.00 A	15.00 A	36.00 A	+24 V	10.42 A	6.67 A	10.00 A	SDL400PD0524[4]
320 W	180 W	+5 V	30.00 A	15.00 A	36.00 A	+48 V	5.21 A	3.33 A	5.00 A	SDL400PD0548[4]
400 W	200 W	+12 V	20.83 A	12.50 A	20.00 A	+24 V	10.42 A	8.33 A	10.00 A	SDL400PD1224

Notes

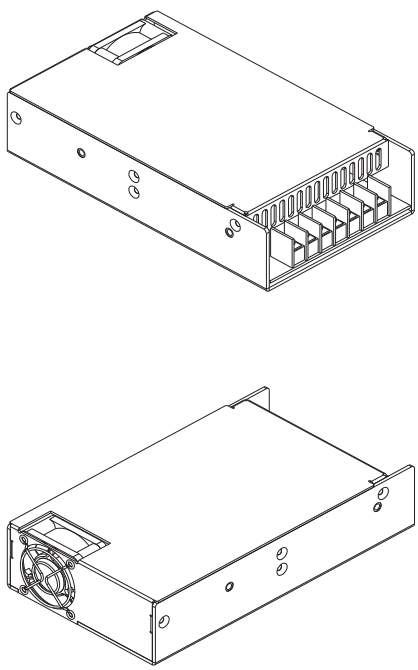
1. *Peak load can be taken for 500 µs. Average power not to exceed nominal power.*
2. *Add suffix '-L' to model number for optional 500 µA leakage current[4]*
3. *Ripple & noise is measured using 0.1 µF ceramic capacitor in parallel with 22 µF electrolytic and 20 MHz bandwidth.*
4. *Available for OEM quantities, contact Sales.*

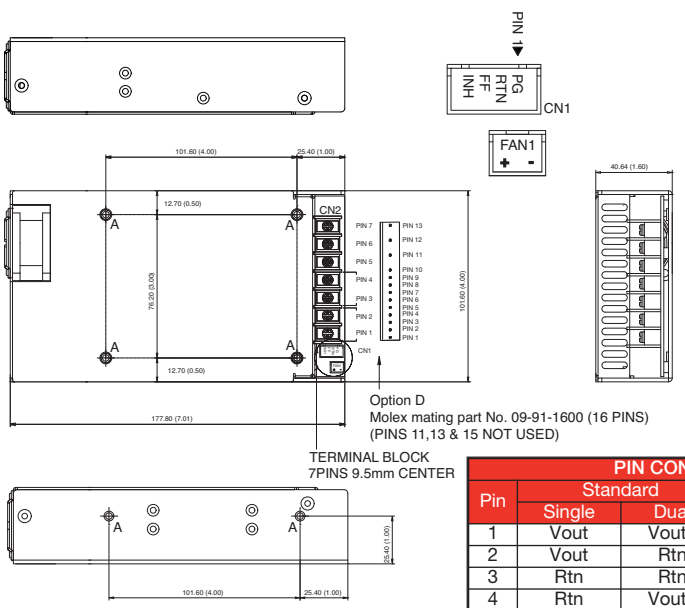
Mechanical Options

- If no suffix is added to the model number the unit is a U-channel, convection-cooled ratings apply or external fan cooling required (15 CFM).
- Add suffix '-E' to the model number for an end fan cover (forced air cooled ratings apply).
- Add suffix '-F' to the model number for a top fan cover (forced air cooled ratings apply).
- Add suffix '-C' to the model number for a U-channel with vented cover. Convection cooled ratings apply or external fan cooling required (15 CFM).
- Add suffix 'D' to the model number for MOLEX connector for OEM quantities, contact Sales.

Mechanical Details

Enclosed with End Fan ('-E' Option)





PIN CONNECTIONS				
Pin	Standard		Molex (Option D)	
	Single	Dual	Single	Dual
1	Vout	Vout1	Vout	Vout1
2	Vout	Rtn	Vout	Vout1
3	Rtn	Rtn	Vout	Vout1
4	Rtn	Vout2	Vout	Rtn
5	Ground	Ground	Vout	Rtn
6	Neutral	Neutral	Rtn	Rtn
7	Live	Live	Rtn	Rtn
8			Rtn	Rtn
9			Rtn	Vout2
10			Rtn	Vout2
11			Ground	Ground
12			Neutral	Neutral
13			Live	Live

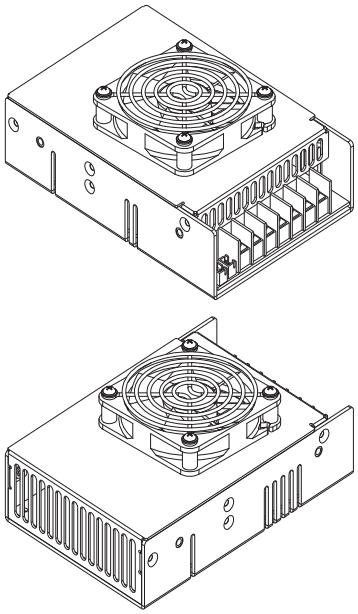
Signal Connector mating part is JST XHP-4
Crimp terminals SXH-002T-P0.6

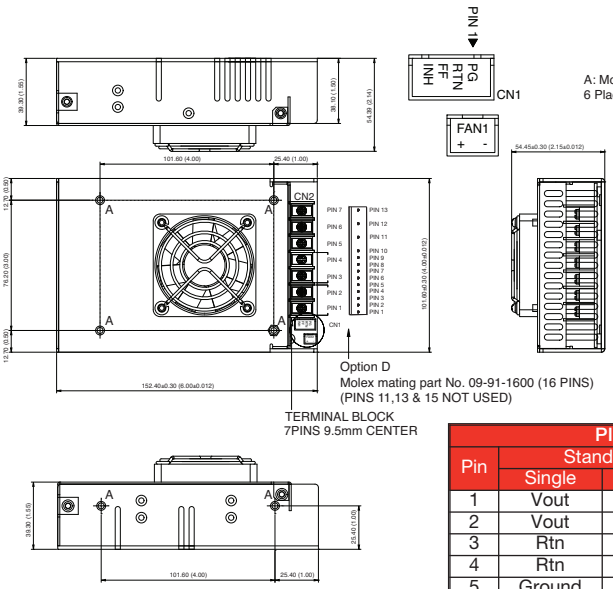
All dimensions are in inches (mm)
Weight: 800 g (1.76 lbs)
Tolerance: ±0.012 in (±0.3 mm)

Max screw terminal torque: 15.7 lbs-in (1.8 Nm)
Max screw mount hole penetration : 0.16 (4.0)

Mechanical Details

Enclosed with Top Fan ('–F' Option)





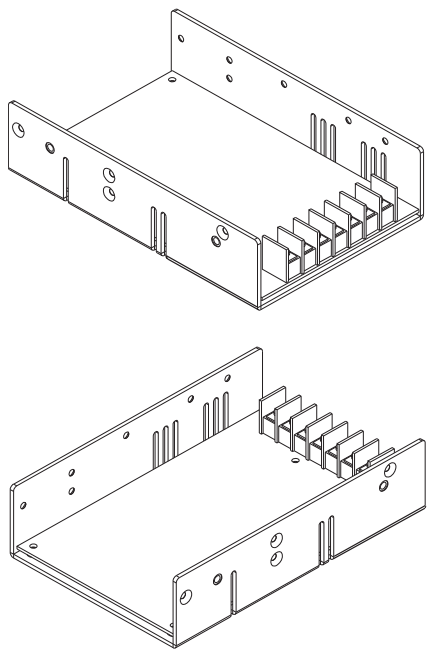
Signal Connector mating part is JST XHP-4
Crimp terminals SXH-002T-P0.6

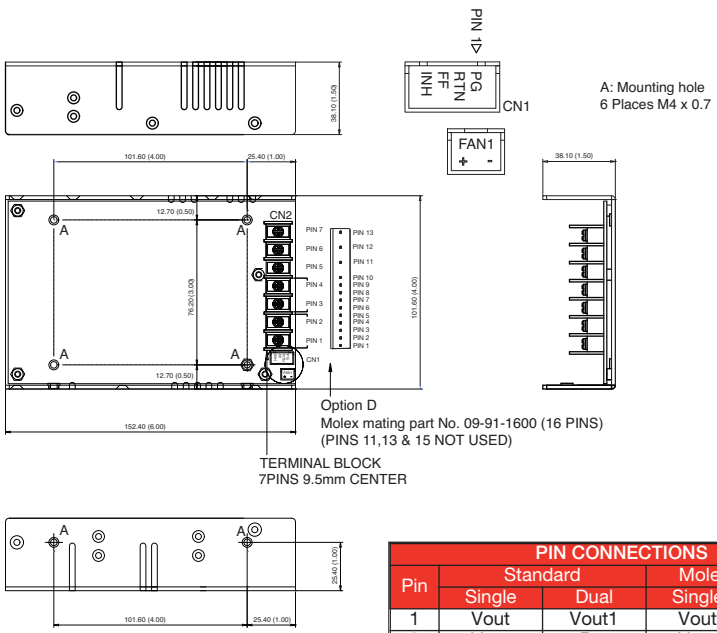
All dimensions are in inches (mm)
Weight: 770 g (1.70 lbs)
Tolerance: ±0.012 in (±0.3 mm)

Max screw terminal torque: 15.7 lbs-in (1.8 Nm)
Max screw mount hole penetration : 0.16 (4.0)

PIN CONNECTIONS				
Pin	Standard		Molex (Option D)	
	Single	Dual	Single	Dual
1	Vout	Vout1	Vout	Vout1
2	Vout	Rtn	Vout	Vout1
3	Rtn	Rtn	Vout	Vout1
4	Rtn	Vout2	Vout	Rtn
5	Ground	Ground	Vout	Rtn
6	Neutral	Neutral	Rtn	Rtn
7	Live	Live	Rtn	Rtn
8			Rtn	Rtn
9			Rtn	Vout2
10			Rtn	Vout2
11			Ground	Ground
12			Neutral	Neutral
13			Live	Live

U–Channel





Signal Connector mating part is JST XHP-4
Fan Connector mating part is JST XHP-2, Crimp terminals SXH-002T-P0.6

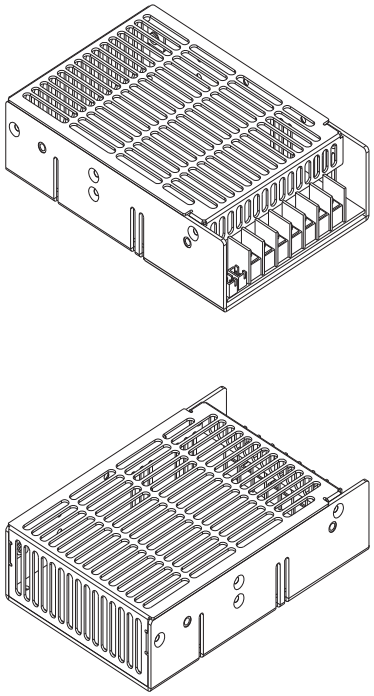
All dimensions are in inches (mm)
Weight: 680 g (1.50 lbs)
Tolerance: ±0.012 in (±0.3 mm)

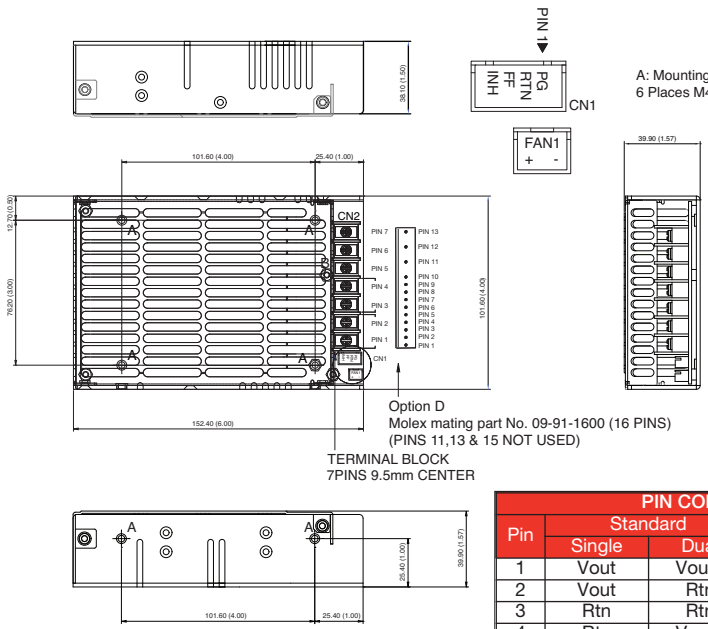
Max screw terminal torque: 15.7 lbs-in (1.8 Nm)
Max screw mount hole penetration : 0.16 (4.0)

PIN CONNECTIONS				
Pin	Standard		Molex (Option D)	
	Single	Dual	Single	Dual
1	Vout	Vout1	Vout	Vout1
2	Vout	Rtn	Vout	Vout1
3	Rtn	Rtn	Vout	Vout1
4	Rtn	Vout2	Vout	Rtn
5	Ground	Ground	Vout	Rtn
6	Neutral	Neutral	Rtn	Rtn
7	Live	Live	Rtn	Rtn
8			Rtn	Rtn
9			Rtn	Vout2
10			Rtn	Vout2
11			Ground	Ground
12			Neutral	Neutral
13			Live	Live

Mechanical Details

U-Channel with cover ('-C' Option)





Signal Connector mating part is JST XHP-4
Fan Connector mating part is JST XHP-2, Crimp terminals SXH-002T-P0.6

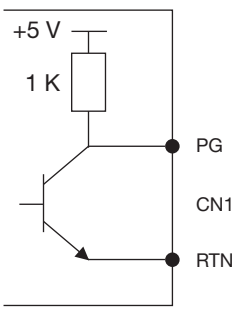
All dimensions are in inches (mm)
Weight: 720 g (1.59 lbs)
Tolerance: ±0.012 in (±0.3 mm)

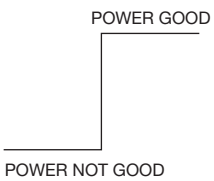
Max screw terminal torque: 15.7 lbs-in (1.8 Nm)
Max screw mount hole penetration : 0.16 (4.0)

PIN CONNECTIONS				
Pin	Standard		Molex (Option D)	
	Single	Dual	Single	Dual
1	Vout	Vout1	Vout	Vout1
2	Vout	Rtn	Vout	Vout1
3	Rtn	Rtn	Vout	Vout1
4	Rtn	Vout2	Vout	Rtn
5	Ground	Ground	Vout	Rtn
6	Neutral	Neutral	Rtn	Rtn
7	Live	Live	Rtn	Rtn
8			Rtn	Rtn
9			Rtn	Vout2
10			Rtn	Vout2
11			Ground	Ground
12			Neutral	Neutral
13			Live	Live

Application Notes

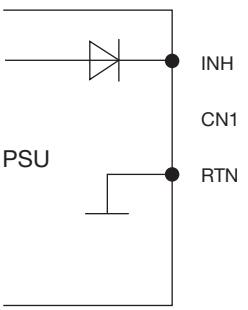
Power Good

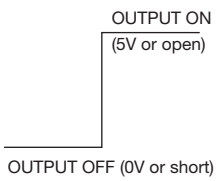




Sink current = 6 mA
Source current = 1 mA

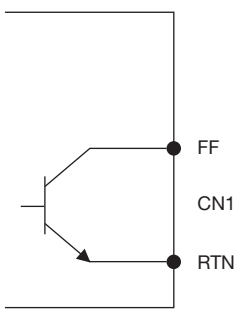
Remote On / Off

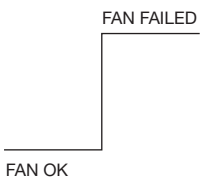




Note:
1. Applying <0.3 V or short between the pins turns the output OFF.
2. Applying >4.5 V or open circuit between the pins turns output ON.

Fan Fail





Open collector signal, maximum rating 28 VDC/5 mA