

# SDH400 SERIES

AC/DC Power Supply: 400 watts



## Features

- Convection-cooled
- Single and Dual Outputs
- Up to 700 W Peak Power on Single Output Versions
- Power Good and Remote On/Off
- Optional Connectors
- Fits 1U Applications
- 3 Year Warranty

## Description

The SDH400 series provide up to 400 W with only convection cooling in a low profile (1.6") chassis mount format. Single outputs are available from 3.3 – 60 VDC and there are three dual output models offering combinations from 5V to 24 VDC. The full convection rating is available from 90 – 264 VAC input in ambient temperatures up to 50 °C providing power solutions for global use without the need for de-rating. All models comply with level B for both conducted and radiated emissions.

## Models & Ratings

Output	Output 1 <sup>(2)</sup>		Output 2		Model Number <sup>(1)</sup>
	Voltage	Current	Voltage	Current	
200 W	3.3 VDC	60.00 A			SDH400PS03
300 W	5.0 VDC	60.00 A			SDH400PS05
400 W	12.0 VDC	33.33 A			SDH400PS12
400 W	15.0 VDC	26.66 A			SDH400PS15
400 W	18.0 VDC	22.22 A			SDH400PS18
400 W	24.0 VDC	16.66 A			SDH400PS24
400 W	36.0 VDC	11.11 A			SDH400PS36
400 W	48.0 VDC	8.33 A			SDH400PS48
400 W	54.0 VDC	7.40 A			SDH400PS54
400 W	60.0 VDC	6.66 A			SDH400PS60
300 W	+5.0 VDC	35.00 A	+12.0 V	16.67 A	SDH400PD0512
300 W	+5.0 VDC	35.00 A	+24.0 V	8.33 A	SDH400PD0524
400 W	+12.0 VDC	25.00 A	+24.0 V	12.5 A	SDH400PS1224

## Notes

1. Standard models have screw terminals, for optional Molex input terminals add suffix '-F-', for optional Molex output terminals add suffix '-G' and for optional Molex input and output terminals add suffix '-FG'. Molex output terminals are not available on 3V3 and 5V single output versions or 0512 and 0524 dual output versions.
2. Output peak power of 700 W for 500 μs is available on single output models.

## Summary

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Range	90		264	VAC	
Signals					Power Good
Efficiency		88 / 85		%	Single output / Dual output at 230 V and full load
Operating Temperature	0		+70	°C	Derate at 2.5%/°C from +50 °C to +70 °C
Weight		2.42/1.1		lb (kg)	
EMC	EN55022 Level B Conducted & Radiated, EN61000-4, EN61000-3				
Safety Approvals	EN60950-1, UL60950-1, CSA22.2 No.60950-1				

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## Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	90		264	VAC	
Input Frequency	47		63	Hz	
Input Current		4.1		A	115 VAC (2.0 A at 230 VAC)
Inrush Current		70		A	230 VAC (35 A at 115 VAC)
Power Factor		>0.9			EN61000-3-2 class A
Earth Leakage Current		<0.5		mA	264 VAC
Input Protection	T6.3 A/250 V fuse				

## Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	3.3		60	VDC	See Models and Ratings table
Output Voltage Trim		±5		%	V1 (V2 of dual output models will track by same % of adjustment)
Initial Set Accuracy		±1		%	
Minimum Load	1 / 10			A	Single / Dual (for regulation)
Start Up Delay			2.0	s	115 VAC
Start Up Rise Time		40		ms	PD1224 model typically 80ms
Hold Up Time	10	13		ms	115 VAC
Drift			±0.5	%	After 20 min warm up
Line Regulation			±0.5	%	
Load Regulation		±1 / ±3 / ±5		%	Single / Dual V1 / Dual V2 outputs
Over/Undershoot		1.5	5	%	
Transient Response			±5	%	Deviation, recovery to within 1% in 500 µs for a 50% load change
Ripple & Noise			1	% pk-pk	Measured at 20 MHz BW and 22 µF electrolytic and 0.1 µF ceramic at terminals
Overvoltage Protection			130	%	V1 recycle AC input to reset
Overload Protection	110		140	%	
Short Circuit Protection - V1					Trip and restart, auto recovery
Remote On/Off	Applying short circuit between inhibit pin and signal return turns output off.				

## General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		88 / 85		%	Single output / Dual output at 230 V and full load
Isolation: Input to Output Input to Ground Output to Ground			3000	VAC	
			1500	VAC	
			250	VDC	
Switching Frequency		60 / 27		kHz	PFC / PWM
Power Density		6.25		W/in <sup>3</sup>	
Signals					Power Good
Mean Time Between Failure	115			kHrs	MIL-HDBK-217F at 25 °C GB
Weight		2.42/1.1		lb (kg)	

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## Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	0		+70	°C	Derate at 2.5%/°C from +50 °C to +70 °C
Storage Temperature	-20		+85	°C	
Cooling					Convection-cooled
Operating Altitude			3000	m	
Vibration	5		50	Hz	Acceleration 7.35 ms <sup>2</sup> on 3 axes

## EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55022	Level B	
Radiated	EN55022	Level B	
Harmonic Current	EN61000-3-2	Class A	Class C for loads ≥70%
Voltage Flicker	EN61000-3-3		

## EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD	EN61000-4-2	Level 3	A	
Radiated	EN61000-4-3	Level 2	A	
EFT	EN61000-4-4	Level 2	A	
Surges	EN61000-4-5	Installation class 3	A	
Conducted	EN61000-4-6	Level 2	A	
Dips and Interruptions	EN61000-4-11	DIP: 30% 10 ms DIP: 60% 100 ms INT: 100% 5000 ms	A A/B B	Highline/Lowline

## Safety Approvals

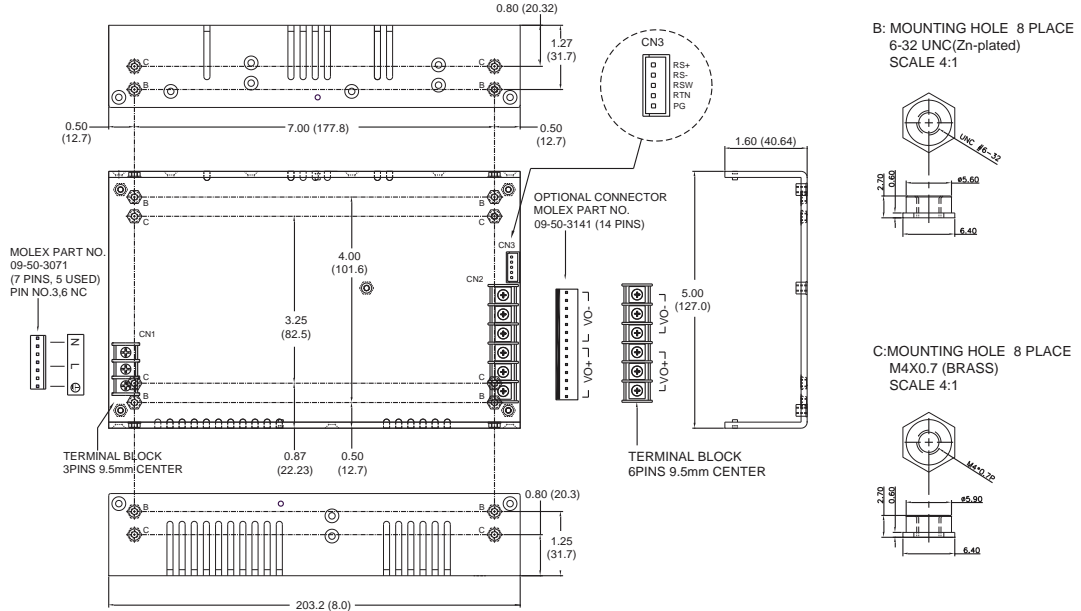
Safety Agency	Safety Standard	Notes & Conditions
UL	UL60950-1 (2007), CSA 22.2 No.60950-1-1:08	
CSA	C22.2 No.60950-1	
TUV	EN60950-1	

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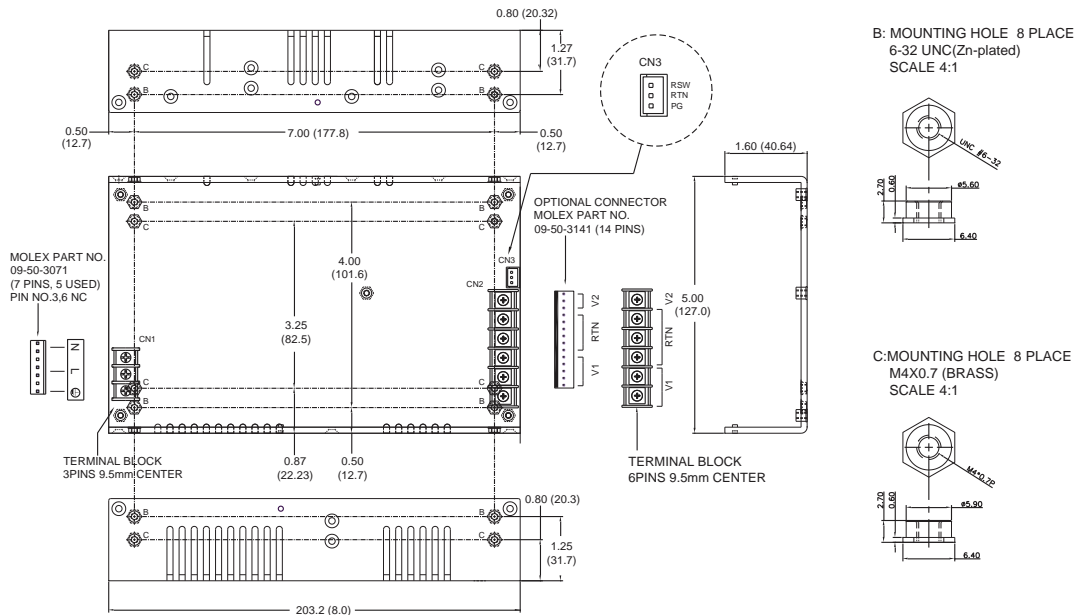
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## Mechanical Details

### Single Model



### Dual Model



### Notes

1. All dimensions in inches (mm).
2. Tolerance .xx =  $\pm 0.02$  (0.50); .xxx =  $\pm 0.01$  (0.25)

3. Weight: 2.42 (1.1)