

CCM250 SERIES

AC/DC Single Output: 250 Watts



Features

- Convection Cooled
- 300 W Peak Rating for 500 ms
- Very High Efficiency up to 95%
- Class B Conducted & Radiated Emissions
- 80 - 275 VAC Operation
- IT, Industrial & Medical Safety Approvals
- No minimum load required

Specification

Input

Input Voltage	• 80-275 VAC (See derating curve)
Input Frequency	• 47-63 Hz
Input Current	• 2.4 A typical at 115 VAC, full load 1.2 A typical at 230 VAC, full load
Inrush Current	• 30 A max at 230 VAC, cold start (25 °C)
Power Factor	• EN61000-3-2, class A
Earth Leakage Current	• 250 µA at 264 VAC/60 Hz max.
Input Protection	• Internal T5.0 A/250 V fuse in line and neutral

Output

Output Voltage	• 12-48 VDC (see tables)
Output Voltage Trim	• ±3% (see Mechanical Details)
Initial Set Accuracy	• ±0.5% V1, ±5% V2
Minimum Load	• No minimum load required
Start Up Delay	• 1 s typical
Start Up Rise Time	• 50 ms typical
Hold Up Time	• 16 ms min at 115 VAC
Drift	• ±0.2% after 20 min warm up
Line Regulation	• ±0.5% max
Load Regulation	• ±1% V1, ±5% V2
Over/Undershoot	• 5% typical
Transient Response	• 4% max. deviation, recovery to within 1% in 500 µs for a 50-75-50% load change
Ripple & Noise	• 1% pk-pk, 20 MHz bandwidth
Overvoltage Protection	• 115-140% Vnom, recycle input to reset (V1 only)
Overload Protection	• 125-165% Inom V1 only
Short Circuit Protection	• Continuous trip and restart (Hiccup mode)
Temperature Coefficient	• 0.05%/°C
Remote On/Off (Inhibit/Enable)	• Uncommitted isolated optocoupler diode, powered diode inhibits V1

General

Efficiency	• Up to 95%
Isolation	• 4000 VAC Input to Output, 1500 VAC Input to Ground, 500 VAC Output to Ground
Switching Frequency	• PFC 30-500 kHz, Boost 25.6 kHz, Main 51.2 kHz
Signals	• Power Fail Remote On/Off, 5 V Standby
MTBF	• 365 kHrs to MIL-HDBK-217F at 25°C, GB

Environmental

Operating Temperature	• -20 °C to +70 °C derate linearly from +50 °C at 2.5%/°C to 50% load at +70 °C. See derating curve and longform datasheet for thermal considerations. (-40 °C consult sales)
Cooling	• Convection cooled
Operating Humidity	• 95% RH, non-condensing
Storage Temperature	• -40 °C to +85 °C
Operating Altitude	• 3000 m
Shock	• 30 g pk, half sine, 6 axes
Vibration	• 2 g rms, 5 Hz to 500 kHz, 3 axes

EMC & Safety

Low Voltage PSU EMC Emissions	• EN61204-3, high severity level as below • EN55022 level B conducted • EN55022 level B radiated
Harmonic Currents	• EN61000-3-2, class A
Voltage Flicker	• EN61000-3-3
Radiated Immunity	• EN61000-4-3, level 3 Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3 Perf Criteria A
Surge	• EN61000-4-5, installation class 3 Perf Criteria A
Conducted Immunity	• EN61000-4-6, level 3 Perf Criteria A
Dips & Interruptions	• EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms, Perf Criteria A, B, B, EN60601-1-2, 30% 500 ms, 60% 100 ms, 100% 10 ms, 100% 5000 ms, Perf Criteria A, A, A, B - 230 VAC. Consult longform datasheet for 115 V operation.
Safety Approvals	• See Safety Approvals (see next page)
Equipment Protection Class	• Class I

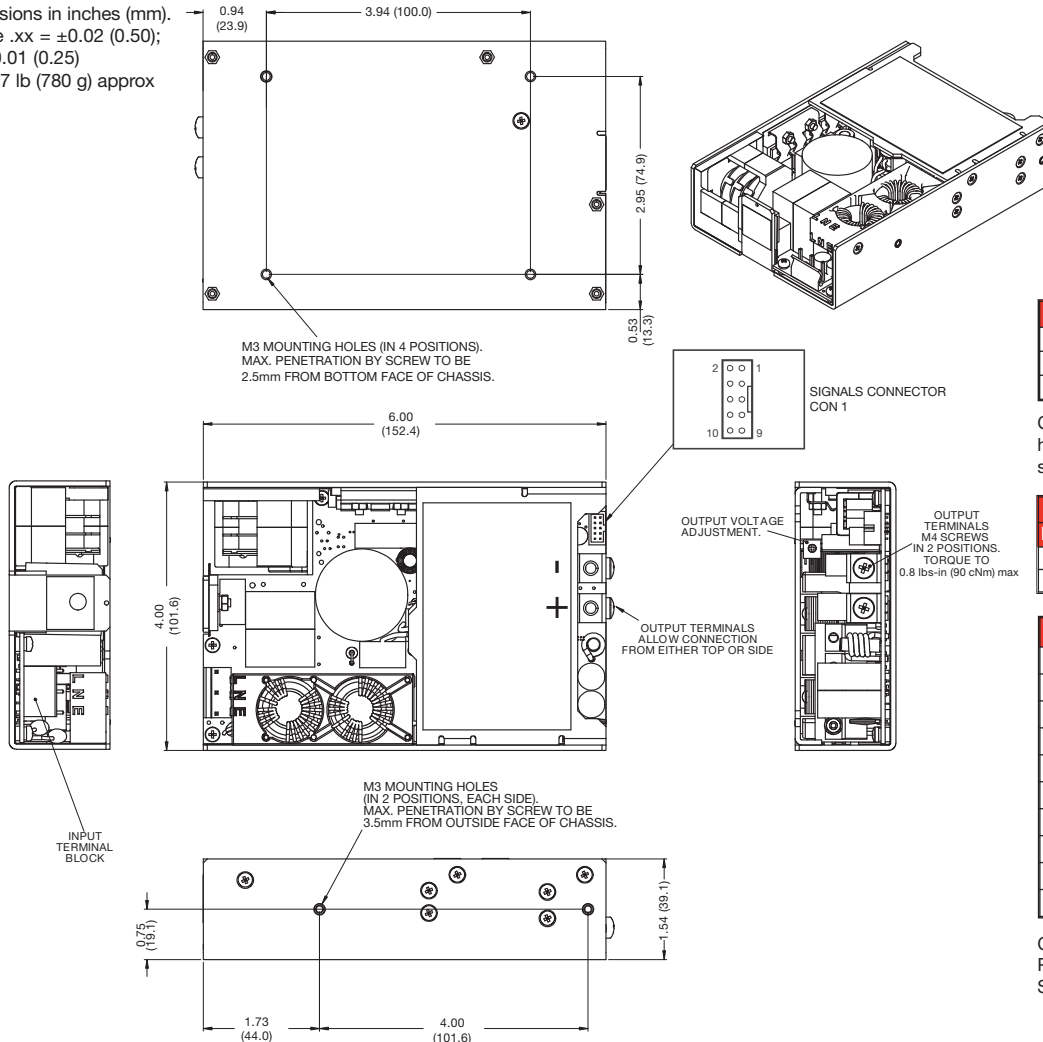
Output Power		Output Voltage V1	Output Current V1		Standby Supply V2	Model Number
Nominal	Peak (1)		Nominal	Peak (1)		
250 W	300 W	12.0 VDC	20.8 A	25 A	5.0 V/0.5 A	CCM250PS12
250 W	300 W	15.0 VDC	16.7 A	20 A	5.0 V/0.5 A	CCM250PS15
250 W	300 W	24.0 VDC	10.4 A	12.5 A	5.0 V/0.5 A	CCM250PS24
250 W	300 W	28.0 VDC	8.9 A	10.7 A	5.0 V/0.5 A	CCM250PS28
250 W	300 W	36.0 VDC	6.9 A	8.3 A	5.0 V/0.5 A	CCM250PS36
250 W	300 W	48.0 VDC	5.2 A	6.25 A	5.0 V/0.5 A	CCM250PS48

Notes

1. Peak duration is 500ms max, average power must not exceed 250 W.

Mechanical Details

All dimensions in inches (mm).
Tolerance .xx = ±0.02 (0.50);
.xxx = ±0.01 (0.25)
Weight 1.7 lb (780 g) approx



Input Connector CON 4	
1	Line
2	Neutral
3	Earth

CON 4 mates with Molex housing 09-50-1051 and Molex series 5194 crimp terminals.

Output Connector CON 3	
Pin	Single
1	+V1
2	V1 RTN

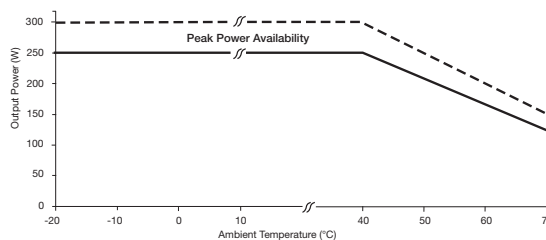
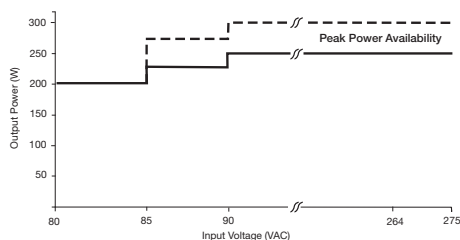
Signals Connector CON 1	
1	5 V Standby Return
2	5 V Standby
3	5 V Standby Return
4	5 V Standby
5	5 V Standby Return
6	5 V Standby
7	Power Fail (Collector)
8	Power Fail (Emitter)
9	Remote On / Off (Cathode)
10	Remote On / Off (Anode)

CON 1 mates with JST housing PHDR-10VS with contact SPHD-001T-P0.5

Notes

1. At AC switch on the output (V1) may momentarily rise when the unit is disabled using the 5 V standby supply in conjunction with the Remote On/Off function. (See longform datasheet for details)

Input Voltage & Temperature Derating



Safety Approvals

IEC60950-1 CB report, CSA 22.2 No. 60950-1, UL60950-1, TUV EN60950-1

IEC60601-1 CB report, CSA 22.2 No. 60601-1, UL60601-1, TUV 60601-1,

TUV IEC61010-1