

# CCM250 Series



- 250 W Convection Cooled
- 300 W Peak Rating 500 ms
- Very High Efficiency up to 95%
- Class B Conducted & Radiated Emissions
- 1U Form Factor
- 5 V Standby Rail
- 80 V – 275 VAC Input Operation
- IT, Industrial & Medical Safety Approvals
- Remote On/Off & Power Fail Signal as Standard

The CCM250 range of single output AC-DC 250 W nominal, 300 peak power supplies feature industry leading efficiency of 95% and absolute minimum efficiency of 90% with 90 VAC input and full load. This leap in efficiency has been achieved with full resonant ZCS topology and careful consideration to every aspect of power loss resulting in a convection cooled power supply packaged in a 6" (153mm) x 4" (102mm) x 1.5" (38mm) chassis which can be easily installed into the end application due to a 70% reduction in the dissipated heat, associated with other power supplies in this power range.

The six standard models cover the voltage range from 12V - 48V , have dual input fusing and are compliant with IEC60601-1 Medical and IEC60950-1 IT safety approvals.

The CCM250 series also boasts low earth leakage current of typically 90 $\mu$ A at 115V and 160 $\mu$ A at 230V, class B conducted and radiated emissions 5V standby rail, power fail signal and remote on / off.

## Models and Ratings - Convection-cooled

Output Power		Output Voltage V1	Output Current V1		Standby Supply	Model Number
P nom	P peak <sup>(1)</sup>		I nom	I peak <sup>(1)</sup>		
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 500 ms max, average power must not exceed 250 W.

## Input Characteristics

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage - Operating	80	115/230	275	VAC	Derate output power <90 VAC. See fig 1. Power fail signal cannot be used <90 VAC.
Input Frequency	47	50/60	63	Hz	
Power Factor		>0.9			EN61000-3-2 class A compliant
Input Current - No Load		0.13/0.17		A	115/230 VAC
Input Current - Full Load		2.4/1.2		A	115/230 VAC
Inrush Current			30	A	230 VAC, 25 °C
Earth Leakage Current		90/160	250	µA	115/230 VAC/50 Hz (Typ.), 264 VAC/60 Hz (Max.)
Input Protection	T5.0A/250 V internal fuse in both line and neutral				

## Output Characteristics

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage - V1	12		48	VDC	See Models and Ratings table
Initial Set Accuracy			±0.5 <sup>(v1)</sup> , ±5 <sup>(v2)</sup>	%	50% load, 115/230 VAC
Output Voltage Adjustment	±3			%	V1 only via potentiometer. See mech. details (page 11).
Minimum Load	0			A	
Start Up Delay		0.5		s	230 VAC full load (see fig.2)
Hold Up Time	20	40		ms	90 VAC full load (see fig.3)
Drift			±0.2	%	After 20 min warm up
Line Regulation			±0.5	%	90-264 VAC
Load Regulation			±1 <sup>(v1)</sup> , ±5 <sup>(v2)</sup>	%	0-100% load.
Transient Response - V1			4	%	Recovery within 1% in less than 500 µs for a 50-75% and 75-50% load step
Over/Undershoot - V1			5	%	
Ripple & Noise			1 <sup>(v1)</sup> , 2 <sup>(v2)</sup>	% pk-pk	20 MHz bandwidth (see fig.4 & 5)
Overvoltage Protection	115		140	%	Vnom DC. Output 1 only, recycle input to reset
Overload Protection	125		165	% I nom	Output 1 only, auto reset (see fig.6)
Short Circuit Protection					Continuous, trip & restart (hiccup mode) all outputs
Temperature Coefficient			0.05	%/°C	
Overtemperature Protection		110		°C	Auto recovery - temperature of main transformer