

EMA212 Series



- 3.00" x 5.00" x 1.34"
- High Power Density 10.6 W/in³
- Up to 90% Efficiency
- 5 V Standby & 12 V Fan Outputs
- Active Current Share
- Remote On/Off
- Power Good Signal
- -10 °C to +70 °C Operation
- Universal AC Input 90–264 VAC
- Level B Conducted Emissions
- 48 VDC Input Versions Available (DMA212)

Designed for communications applications, the EMA212 has been developed to meet the needs of networking equipment, voice over IP systems, wireless LANs, servers, storage area networks and post-production broadcast equipment. Designers of these systems demand higher power from AC/DC units in industry-standard 1U formats as processing power and functionality grows within tight space constraints. The EMA212 delivers over 200W across the full universal AC input range from an industry-standard 3 x 5 inch (76.2 x 127 mm) footprint. It is 1.34 inches (34.04 mm) high and achieves 10.6 Watts per cubic inch power density without compromising performance or functionality.

With efficiency up to 90% at full load, the EMA212 needs only 12 CFM air-flow for full power operation at up to 50 °C ambient and will operate at up to 70 °C ambient with de-rating. The main output is 12, 24 or 48 VDC but each power supply also has a 5 V, 100 mA standby output and a 12 V, 1 A output for powering a fan. The unit incorporates a fully featured signal set including AC fail/DC OK, remote on/off and active current sharing.

Models and Ratings

Max Output Power (12 CFM Air Flow)	Output Voltage V1	Output Current (12 CFM Airflow)	Fan Output V2	Standby Supply V3	Model Number
212 W	12.0VDC	16.7 A	12.0 V/1.0 A	5.0 V/0.1 A	EMA212PS12
212 W	24.0VDC	8.3 A	12.0 V/1.0 A	5.0 V/0.1 A	EMA212PS24
205 W	48.0VDC	4.0 A	12.0 V/1.0 A	5.0 V/0.1 A	EMA212PS48

Input Characteristics

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage - Operating	90		264	VAC	
Input Frequency	47	50/60	63	Hz	
Power Factor		>0.9			230 VAC
Input Current - No Load		110		mA	
Input Current - Full Load		2.1/1.1		A	115/230 VAC
Inrush Current			60	A	230 VAC cold start
Earth Leakage Current		0.5	1.1	mA	230/264 VAC 50 Hz
Input Protection	T5 A/250 V internal fuse in line				

Output Characteristics

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage - V1	12		48	VDC	See Models and Ratings table
Initial Set Accuracy			$\pm 1^{(V1)}$, $\pm 5^{(V2)}$ & $\pm 3^{(V3)}$	%	
Output Voltage Adjustment					Not available
Minimum Load					No minimum load required
Start Up Delay		1.5	3	s	90 VAC full load (see fig. 1 to 3)
Start Up Rise Time			20	ms	
Hold Up Time	16	20		ms	90 VAC full load (see fig. 4 to 6)
Drift			± 0.2	%	After 20 min warm up
Line Regulation			$\pm 0.5^{(V1)}$, $\pm 2^{(V2)}$ & $\pm 0.5^{(V3)}$	%	
Load Regulation			$\pm 1^{(V1)}$, $\pm 5^{(V2)}$ & $\pm 1^{(V3)}$	%	0-100% load V1 & V3, 10-100% load V2
Cross Regulation			$\pm 10^{(V2)}$	%	10-100% load change V1
Transient Response - V1			4	%	Recovery within 1% in less than 500 μ s for a 25-75% and 75-25% load step (see fig. 7 & 8)
Over/Undershoot - V1			2/5	%	12/48 V (see fig. 9)
Ripple & Noise			$1^{(V1)}$ & $^{(V3)}$ & $2^{(V2)}$	% pk-pk	20 MHz bandwidth (see fig. 11 to 14)
Overvoltage Protection	115		140	%	Vnom DC. Output 1 only, recycle input to reset
Overload Protection	110		140	% I nom	Output 1 only, auto reset (see fig. 10)
Short Circuit Protection					Trip & Restart (Hiccup mode)
Temperature Coefficient			0.05	%/°C	
Overtemperature Protection				°C	Primary & secondary protection