DC-DC

212 Watts
DMA Series

xppower.com

- Open Frame Telecom DC-DC Converter
- -48 VDC Input
- ETSI Compliant
- NEBS Compliant
- 5 V Standby & 12 V Fan Outputs
- Remote On/Off & Power Good Signal
- AC Input Version Available (EMA212)

Specification

Input

Input Voltage Range	• 48 VDC nominal (36 - 75 VDC). Can be configured as -48 VDC input
Input Current	• 5 A typical. 7 A max.
Input Reverse Voltage Protection	• Continuous protection with automatic recovery
Input Transient	• Compliant with ETSI EN300 132:2003
Undervoltage Lockout Protection	• 32 - 35V DC
Fusing	• 15 A F rated in -ve line

Output

Output Voltage	• V1: 12 V, see table
Output Voltage Trim	• Not fitted
Minimum Load	• 10% minimum load required on V1 to meet all specification parameters of V2 & V3.
Line Regulation	• V1:±0.5%, V2: ±5%, V3:±3% of nominal with input variation of 36-75 VDC
Load Regulation	• V1:±1%, V2: ±5%, V3:±3% of nominal with load variation 10-100%
Setpoint Accuracy	• V1:±1%, V2: ±5%, V3:±3% of nominal with 48V DC input and 50% load
Turn-on Time	• 2 s typical from application of DC input
Transient Response	• <4% deviation with a 50-75-50% load change at 1 A/µs. Output returns to within 1% in less than 500 µs
Ripple & Noise	• 1% max pk-pk 20MHz bandwidth
Overvoltage Protection	• V1:115-140% of nominal, recycle input DC to reset
Overload Protection	• V1:110-125% of max current
Short Circuit Protection	• Continuous protection, trip and restart (hiccup mode) characteristic
Temperature Coefficient	• 0.02%/°C (after 20 minute warm up)

General

Efficiency	• 88% typical
Isolation Voltage	• 1500 VDC Input to Output (basic insulation), 1000 VDC Input to Ground, 500 VDC Output to Ground.
Switching Frequency	• 60 kHz typical
Power Density	• 11 W/In^3
Signals	• Combined input & DC OK - Open collector referenced to output 0 V, transistor normally off when input & output good. Input fail provides ≥5 ms warning of loss of output from input failure. DC OK provides warning of DC output failure.
MTBF	• 550 kHrs per MIL-HDBK-217F

Environmental

Operating Temperature	• 0 °C to +50 °C with full load, derate linearly to 50% load at 70 °C with force cooling 10CFM minimum
Cooling	• Forced cooled (see operating temperature)
Operating Humidity	• 0 to 95% RH non condensing. [1,3]
Storage Temperature	• -40 °C to +80 °C. [2,3]
Storage Humidity	• 0 to 95% RH non condensing. [2,3]
Operating Altitude	• 3000m. [3]
Shock	• ±3 shocks in each axis (total 18 shocks) 30g 11ms (half sine). [1,4]
Vibration	• 2g, 10 - 500Hz 10 sweeps. [1,5]

EMC & Safety

Emissions	• EN61204-3 2000, EN55022 class A conducted & radiated, ETSI EN 300 132-2 2003, ETSI 300 386-1 1994, NEBS GR-1089-CORE issue 4
EFT/Burst	• EN61000-4-4 level 1 Perf Criteria A, ETSI 300 386-1 1994
Surge	• EN61000-4-5 level 1 Perf Criteria A,
Conducted Immunity	• EN61000-4-6 level 2 Perf Criteria A, ETSI 300 386-1 1994, NEBS GR-1089-Core issue 4
Narrow & Wide Band Noise	• ETSI EN 300 132-2 2003
Safety Approvals	• EN60950-1:2006, CSA-C22.2 No. 60950-1-03, CB Report IEC60950-1:2005, CE Marked to LVD

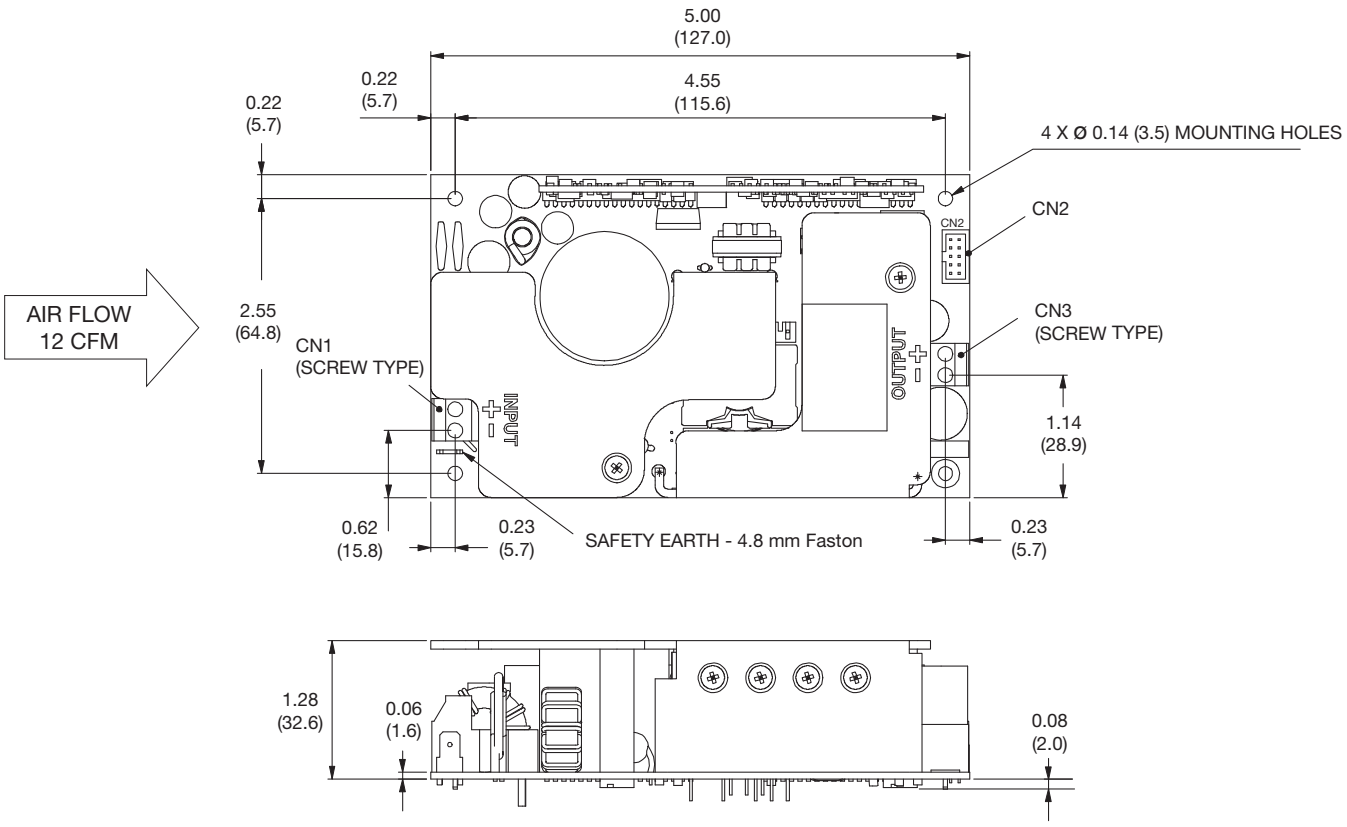
Notes

1. Compliant with ETS 300 019-1-3 May 1992 + ammendment 1 June 1997 class 3.1.
2. Compliant with ETS 300 019-1-1 Feb 1992 class 1.1, ETS 300 019-1-2 Feb 1992 class 2.2.
3. Compliant with NEBS GR-63-Core issue 3.
4. Compliant with EN60068-2-27.
5. Compliant with EN60068-2-6.

Models and Ratings

Max Output Power (10 CFM Air Flow)	Output Voltage V1	Output Current (10 CFM Airflow)	Fan Output V2	Standby Supply V3	Model Number
212 W	12.0 VDC	16.7 A	12.0 V/1.0 A	5.0 V/0.1 A	DMA21248S12

Mechanical Details



PIN CONNECTIONS - CN1	
1	-Vin
2	+Vin
0.25" Faston	Earth

PIN CONNECTIONS - CN2	
1	+V2
2	V2 Return
3	V2 Return
4	ROF
5	ROF Return
6	Input Fail/DC OK
7	Current Share
8	+V3
9	-V3
10	+V2

PIN CONNECTIONS - CN3	
1	+V1
2	V1 Return

Mating Connectors:
CN2: Molex housing 51110-1050 and crimp 50394-8100.

Notes

1. All dimensions in inches (mm). Tolerance .xx = ±0.02 (0.50); .xxx = ±0.01 (0.25)
2. Units supplied with screw terminal (CN2) as standard. For faston type, add suffix '-F' to the part number.
3. All 4 mounting positions should be connected to safety earth.
4. The air flow needs to be directed through the power supply within the end application.