

Section 19

HIGH POWER NON-ISOLATED CONVERTERS DC TO DC 1KW TO 10KW

Pioneer Magnetics introduces its new comprehensive non-isolated high power DC to DC Converter product line.

Designed to operate from 10V to 150V DC input, these converters are configurable for output voltages ranging from 5V to 120V. The following features make these converters the top of the line choice for all DC to DC non-isolated applications:

Features:

- ◆ -10°C to +50°C at Full Load
- ◆ Wide Range Programmable Output & Input
- ◆ Over Current Protection
- ◆ Over Voltage Protection
- ◆ Over Temperature Protection
- ◆ Self-Contained Forced-Air Cooling
- ◆ Battery Charging
- ◆ Monitor Output Voltage & Current
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- ◆ Programmable Output Voltage & Current
- ◆ Over Voltage Protection
- ◆ Under Voltage Detect
- ◆ Compact Size and Weight
- ◆ Maximum Power Density
- ◆ Efficiency 95%
- ◆ Cost Effective
- ◆ Rugged and Versatile
- ◆ Battery Charging

Common Options:

- ◆ (-128L) DC OK with LED indicator
- ◆ (-1UL) DC Line Monitor with LED indicator
- ◆ (-2T) Unit enable/disable
- ◆ (-5LO) ±10% Output voltage adjust
- ◆ (-6B) Single wire current sharing
- ◆ (-6D) Slope/Droop current sharing
- ◆ (-20C) Isolation diodes
- ◆ (-25) Constant current limit
- ◆ (-33) Current monitor

Special Options:

- ◆ Maximum Power Point Tracking (MPPT) (for variable DC sources like batteries, photo cell arrays and wind turbines)
- ◆ RS232 interface will allow access to diagnostic routines and parameter modification as described in this specification. Power supply is configured as a DCE device using a DB9 connector. Set any VT100 emulator to 9600 baud, 8 bits, no parity, 1 stop bit, with flow control off.

Note: Refer to Section 26 for list of all standard options

Product Matrix

MODEL	PM3536H-3	PM3539H-3	PM35311H-3	PM35315H-3	PM35317H-3	PM35317H-3
POWER	1000W	2000W	3000W	5000W	6500W	10000W
INPUT	10VDC to 150VDC					
OUTPUTS	Current	Current	Current	Current	Current	Current
5V	100A	400A	550A	N/A	N/A	N/A
12V	84A	168A	250A	416A	541A	N/A
24V	42A	84A	125A	208A	271A	416A
30V	34A	68A	100A	167A	217A	334A
48V	21A	42A	63A	104A	135A	208A
60V	17A	34A	50A	83A	108A	167A
90V	11A	22A	33A	55A	72A	111A
120V	8A	16A	25A	42A	54A	83A
Dimensions	5.73"	X	10"	X	16"	

SPECIFICATION

DC Inputs

RANGE: 10V to 150V.
INRUSH CURRENT: <150A peak for 5.6 ms.
FULL LOAD EFFICIENCY: 95%

Environmental

AUDIBLE NOISE: 70dbA max at 1 meter
TEMPERATURE: Operating: 0°C to +50°C at full load.
 Storage: -55°C to +85°C.
HUMIDITY: 20% to 95% non-condensing.
ALTITUDE: Operating: 5,000 feet. De-rates to 70% at 15,000 feet. Non-Operating: To 30,000 feet.
VIBRATION: Operating: From 5 to 27 Hz, 0.02 in double amplitude; from 27 Hz to 500 Hz, 0.75G, 3 Axes, 3 min per octave sweep, dwell 15 min at resonance. Non-operating: From 5 to 17 Hz, 0.10 in double amplitude, from 17 to 500Hz, 1.5G peak; 3 axes, 5 min per octave sweep; dwell 15 min at resonance.
SHOCK: Operating: 5G, half sine, 11msec, 3 axes. Non-Operating: 15G, half sine, 11msec, 3 axes.
COOLING: Forced air, internal fan. Airflow exits at connector end.

Safety

SAFETY: UL1950, CSA22.2 No 950 and TUV to EN60950. CE Mark (LVD)
EMI: Conducted & Radiated: EN55022 Level A
 CE Certification is Optional

DC Outputs

POWER: Converter: Up To 10kW
OUTPUT RANGE: Settable by user via RS232
 $V_{out} = 5V$ to 120V
VOLTAGE LIMIT SETTING: 30V or 60V selectable via RS232
STATIC REGULATION: Line: $\pm 0.5\%$ over full line range.
 Load: $\pm 0.5\%$, min load to full load
POLARITY: Input and output negative is common
 RIPPLE AND NOISE: <1% RMS
TURN ON DELAY: 2 seconds max from application of line
OVERSHOOT: No turn-on or turn-off overshoot
VOLTAGE STABILITY: $\pm 1\%$ for 24-hour period after 30 minutes warm up
TEMP COEFFICIENT: $\pm 0.02\%/^{\circ}C$.
 From -10°C to 50°C

Internal Protection

OVER VOLTAGE PROTECTION: Settable via RS232
OVER CURRENT PROTECTION: Current Limit Point: 5% of maximum output current.
REVERSE VOLTAGE PROTECTION: Protected to rated load with the fan running.
OVER TEMPERATURE PROTECTION: The unit automatically shuts down in the event of an over temperature condition. After cool down, power must be recycled to restart unit.



Ref: Proton Application