Pioneer Magnetics
POWER WITH INTELLECT

The Leader of High Power Switching Power Supplies

AIR COOLED HIGH POWER 10kW AC TO DC SINGLE OUTPUT

Pioneer introduces a new line of Air Cooled high power supplies. The hallmark of this series is High Efficiency, High Power with full Output Power of 10kW with 3P AC input ranging from 360V to 528V with Nominal 480VAC 3P or 180V to 264V with Nominal 240VAC 3P. This high power air cooled product series support 0.95 PF with 3P Input and has Efficiency >90% for outputs greater than 40V at nominal line and full load.

The Air Cooled high power series is designed to support both standalone and parallel configurations. The models are configured in standard I/O interfaces with DC output bus bars, 3P AC terminal block with ground and a DB15 for the additional features and options. The Premium Quality front ends are ruggedized and are reliable for high performance designed in a 3U compact package with dimensions 5″ x 5″ x 17.38″.

With Optimum power density of 23 watts/in^3 excluding the I/O interface, these units also have built-in protection from electrical over-loads and over temperature.

A single unit provides continuous full power over ambient operating temperatures of 0°C to +50°C using one fan. The 10kW Air Cooled unit is available in different configurations depending on the selected output voltage as listed below in the Product Matrix.

Product Matrix:

Model		Max Power	Model		Max Power	Model		Max Power
PM36220B		10kW	PM36220B		10kW	PM36220B		10kW
Low Voltage	@	High Current	Medium Voltage	@	Medium Current	High Voltage	@	Low Current
33V		300A	40V		250A	100V		100A
36V		280A	48V		210A	150V		67A
			60V		165A	200V		50A
			75V		135A	250V		40A
			90V		110A	300V		33A
						350V		29A
						400V		25A
Dimensions		3P AC Input	Dimensions		3P AC Input	Dimensions		3P AC Input
5″ x 5″ x 17.38″		480VAC or 240VAC	5″ x 5″ x 17.38″		480VAC or 240VAC	5″ x 5″ x 17.38″		480VAC or 240VAC

Features:

- ♦ Power Factor 0.95
- ♦ Ambient 0°C to +50°C at Full Load
- ♦ Outputs Fully Floating
- ♦ Overcurrent Protection
- ♦ Overvoltage Protection
- ♦ Remote Sense (Not Available on outputs above 200V)
- ♦ Over Temperature Protection
- ♦ Built-in Input Fuses

Options

- ♦ (-128L) DC OK with LED indicator
- ♦ (-1CL) AC Fail with LED indicator
- ♦ (-2T) Unit enable/disable (Available in 4 Different Configurations)
- ♦ (-6B) Single wire current sharing
- ♦ (-20C) Isolation FETs
- ♦ (-25) Constant current limit
- ♦ (-33) Current monitor
- ♦ (-60/61) Voltage and Current Programming Using 0 to 5V Signal

10kW Air Cooled Power Supply, 9/2/15

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SPECIFICATIONS

Inputs

RANGE: 360 to 528VAC 3P, 480VAC Nominal or 180 to 264VAC 3P, 240VAC Nominal.
FREQUENCY: 47 to 63 Hz.
POWER FACTOR: 0.95 @ Full Load.
EFFICIENCY: > 90% for outputs greater than 40 volts at nominal line and full load.

Output

POWER: 10kW Max
VOLTAGE & CURRENT: See Product Matrix
REMOTE SENSE: Compensates for up to 5% drop between the power supply and load with nominal voltage setting.
POLARITY: Output is isolated. It may be referenced plus/minus as required.
STATIC REGULATION: Line: ±0.25% over full line range. Load: ±0.25% from zero to full load.
VOLTAGE STABILITY: ±0.1% for 24-hr period after 30-minute warm up.
P-P RIPPLE: 1% Voutpp, 5% to 100% load
MINIMUM LOAD: Not Required.

Internal Protection

OVER VOLTAGE PROTECTION: 115% ±5% of nominal. OVP shutdown is latched until the input line is removed for 30 seconds and then reapplied. OVP sensing is done at the output terminals.
OVER CURRENT PROTECTION: Current Limit Point: 105% to 110% of full load.
OVER TEMPERATURE PROTECTION: In the event of an over temperature condition, the unit automatically shuts down. Unit recovers automatically after it cools down.
INPUT FUSES: Three built in fuses are provided.

Safety, EMI and EMC

SAFETY: TUV to EN60950-1. CE Mark (LVD)
EMI: Conducted & Radiated: EN55022 Level A
EMC: EN50082-1

Environmental

AUDIBLE NOISE: 70dBA max at 1 meter
AMBIENT TEMPERATURE: 0°C to +50°C.
HUMIDITY: 20% to 95% non-condensing.
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.

Mechanical

DIMENSIONS: Case: 5" x 5" x 17.38". Excluding the I/O Connectors.
WEIGHT: 21lbs.
MOUNTING: 6 Mounting holes are provided on the bottom and on one side.
I/O CONNECTORS: All Electrical Connections are provided at the same end. This includes the DC Bus Bars for output voltage, 4 Position Terminal Block for AC 3P input and DB15 for Options.

Option Description

(-1CL) POWER FAIL: Upon loss of AC line, signal goes from low to high before loss of output regulation. LED on is good and off indicates failure.
(-2T) LOGIC INHIBIT: Less than 0.5 volts will inhibit the supply. Two volts or more or an open circuit will enable the supply.
(-6B) CURRENT SHARING: Allows two or more similar power supply main outputs to load share using a single wire.
(-20C) FET ISOLATION: Built in isolation FETs in the positive output line to prevent a failed power supply from affecting the bus.
(-25) CURRENT LIMIT: Power Supply limits at maximum output current during a short circuit load condition. Current limit set between 95% and 105%. Short circuit is Set between 90% to 110%
(-33) CURRENT MONITOR: The current monitor signal is referenced to the negative output. It is accurate to within +/- 10%, from 10% to 100% load. The analog signal 0V to 5V is proportional to the load when increased from no load to maximum load.

Applications

Typical uses of a high power Air Cooled supply are found in many applications such as laser cutting, semi-conductor test equipment, transmitters, radar facilities, data centers, ATE, supercomputers and broadcast equipment.

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