




PQD SERIES

DC POWER SUPPLIES



-  3.3 KW
-  6.6 KW
-  10 KW

MAGNA-POWER
ELECTRONICS, INC.

PQD SERIES

RUGGED MFL TECHNOLOGY

MULTIPROCESSOR EMBEDDED CONTROL

MODELS AND RATINGS

MODEL	VOLTS Vdc	AMPS Adc	RIPPLE mVrms	POWER kW
PQD5-600	0-5	0-600	50	3.3
PQD8-400	0-8	0-400	40	
PQD10-300	0-10	0-300	40	
PQD16-200	0-16	0-200	35	
PQD20-165	0-20	0-165	40	
PQD32-100	0-32	0-100	40	
PQD40-82	0-40	0-82	40	
PQD50-65	0-50	0-65	50	
PQD80-41	0-80	0-41	60	
PQD100-33	0-100	0-33	60	
PQD125-26	0-125	0-26	100	
PQD160-20	0-160	0-20	120	
PQD200-16	0-200	0-16	125	
PQD250-13	0-250	0-13	130	
PQD375-8	0-375	0-8	170	
PQD500-6	0-500	0-6	220	
PQD600-5	0-600	0-5	250	
PQD800-4	0-800	0-4	270	
PQD8-800	0-8	0-800	40	6.6
PQD10-600	0-10	0-600	40	
PQD16-400	0-16	0-400	35	
PQD20-330	0-20	0-330	40	
PQD32-200	0-32	0-200	40	
PQD40-165	0-40	0-165	40	
PQD50-130	0-50	0-130	50	
PQD80-82	0-80	0-82	60	
PQD100-66	0-100	0-66	60	
PQD125-53	0-125	0-53	100	
PQD160-41	0-160	0-41	120	
PQD200-33	0-200	0-33	125	
PQD250-26	0-250	0-26	130	
PQD375-17	0-375	0-17	170	
PQD500-13	0-500	0-13	220	
PQD600-10	0-600	0-10	250	
PQD800-8	0-800	0-8	270	
PQD10-900	0-10	0-900	40	10
PQD16-600	0-16	0-600	35	
PQD20-500	0-20	0-500	40	
PQD32-300	0-32	0-300	40	
PQD40-250	0-40	0-250	40	
PQD50-200	0-50	0-200	50	
PQD80-125	0-80	0-125	60	
PQD100-100	0-100	0-100	60	
PQD125-80	0-125	0-80	100	
PQD160-62	0-160	0-62	120	
PQD200-50	0-200	0-50	125	
PQD250-40	0-250	0-40	130	
PQD375-27	0-375	0-27	170	
PQD500-20	0-500	0-20	220	
PQD600-16	0-600	0-16	250	
PQD800-12	0-800	0-12	270	

FEATURES

- 51 Models: 5 to 800 Vdc, 4 to 900 Adc
- Series and parallel master/slave operation
- High dielectric withstand: 2500 Vac
- All user interface circuitry referenced to earth ground
- OVT and OCT shutdown standard
- Automatic V/I crossover
- RS232 interface with SCPI commands
- Optional IEEE-488, RS485, and Ethernet programming
- Front panel potentiometers for stepless rotary control
- Front panel keypad and up/down control for digital control
- 100 memory states with front panel memory indicator
- Auto sequencing by time or external triggering
- Modulation with addition or multiplication
- Front panel calibration
- User friendly controls and indicators
- Remote Interface Software with self-teaching features
- Drivers: Certified LabWindows/CVI and LabVIEW for GPIB, Serial, and TCP/IP communications
- High power factor
- CE Mark



SPECIFICATIONS:

Input voltage: 208/240 Vac, 50-60 Hz, 3-phase; 380/415 Vac, 50-60 Hz, 3-phase; 440/480 Vac, 50-60 Hz, 3-phase; 240 Vac, 50-60 Hz, 1-phase, 3.3 kW only

Regulation line and load combined: 0.10%

Stability: 0.10% for 8 hours after 30 minute warm up

Transient response: 10 ms to recover within 2% of regulated output with a 30% step load change

Ambient Temperature: 0 to 50°C

External programming potentiometers: 1K full scale for output voltage, output current, over voltage, and over current shutdown

Temperature coefficient: 0.04%/°C of maximum output current

Size: 5 1/4" H x 19" W x 24" D

Weight: 125 lbs for 10 kW models, 97 lbs for 6.6 kW models, and 74 lbs for 3.3 kW models

NOTES:

1. Specifications subject to change without notice.
2. Specify optional EMI filter to meet EMC requirements.
3. Other options consult factory.

OPTIONS

Custom input voltage
Custom output voltage

IEEE-488 Interface USB Interface
Ethernet Interface EMI Filter



MAGNA-POWER
ELECTRONICS, INC.

81 Fulton Street, Boonton, NJ 07005
(973) 263-0017 FAX: (973) 263-1928
E-mail: sales@magna-power.com
http://www.magna-power.com

PQD SERIES

COST AND PERFORMANCE AUTO SEQUENCING WITH SIMPLE PROGRAMMING

Magna-Power Electronics' **PQD SERIES** combines the best of dc power processing with multiprocessor embedded control. A combination of high and medium frequency power processing technologies improves response, shrinks package size, and reduces cost. **PQD SERIES** power supplies are current fed and are more tolerant to abusive loads than conventional switching power supplies.

PQD SERIES power supplies offer an unusual blend of both analog and digital control. Two front panel potentiometers are available to set voltage and current for stepless analog control. Alternatively, voltage, current, over voltage trip, and over current trip may be programmed through a rear connector via resistance, voltage, or current. With simple configuration changes, the **PQD SERIES** power supplies will accept keypad entries and up/down key presses for programming voltage, current, over voltage trip, and over current trip. Key strokes are kept to a minimum by a repeat last command feature. RS232 communications is embedded in the control circuitry allowing full computer control with SCPI commands. An optional IEEE-488 to RS232 converter, Ethernet to RS232 converter, and other communications converters are available to echo commands over the communications bus.

PQD SERIES power supplies can be configured through the front panel for different applications. The power supply can be programmed to have its control functions accessible from the front panel, rear connector, or through RS232 communications. Sensing can be established at the output terminal of the power supply or through a rear terminal block for sensing at the load. An external interlock can be set to enable operation only when an external connection is made. Even calibration has been simplified with front panel access to calibration digital potentiometers.

PQD SERIES power supplies incorporate an optically isolated feedback system. The result is that all user interface circuitry is reference to earth ground -- not the negative terminal of the power supply. This enables users to connect external circuitry without concern of ground loops or voltage breakdown.

PQD SERIES power supplies offer both master/slave parallel and series operation. This enables two or more power supplies to be placed in parallel for increased output current or in series for increased output voltage. With master/slave operation, power supplies operate at near equal voltage and current.

PQD SERIES power supplies can operate as a voltage source or current source depending on the control settings and load conditions. If the power supply is operating as a voltage source and the load increases to a point beyond the current command setting, the power supply automatically crosses over to current mode control and operates as a current source at that setting.

One-hundred memory states are available to program voltage, current, over voltage trip, over current trip, and time period. Set points can be auto sequenced with time or external triggering. Special programming codes allow repeating to create a power function generator. The first 10 memory states are displayed on the front panel to simplify programming tasks.

PQD SERIES power supplies have an analog input to modulate the digital programming signal. The modulator can be programmed to modulate the voltage or current command setting and to act as a multiplier or adder. The modulator can be applied to tailor the output profile by sensing output voltage or current, respond to transducers, simulate sources such as photovoltaic cells, and compensate for line drop without sense leads.

Remote Interface Software is included to provide sophisticated computer control. This software provides a virtual control panel to emulate the power supply's front panel, a command panel to send and monitor SCPI commands, a register panel to monitor registers, and a calibration panel to provide easy access to calibration digital potentiometers.

PQD SERIES power supplies have extensive diagnostic functions -- all of which when activated take command to shut down the system. Diagnostic functions include phase loss, excessive thermal conditions, over voltage trip, over current trip, fuse clearing, and program line. Program line monitors externally applied analog set point signals to insure they are within the specified range. Upon a diagnostic fault condition, main power is disconnected and the diagnostic condition is latched into memory. Pressing the clear key clears the memory. All diagnostic functions can be monitored through a rear connector. Furthermore, control functions can also be set through the rear connector to allow simultaneous control of one or more **PQD SERIES** units.

PQD SERIES supplies have three levels of over voltage/current protection: shutdown of controlling insulated gate bipolar transistors (IGBT's), disconnect of main power, and input fuses. After an over voltage/current trip condition, the supply must be reset.

PQD SERIES have push button start/stop controls. These controls are tied to a mechanical contactor which operates with the electronic switches to break the ac mains when stop is commanded. Unlike competing products, an off means both an electrical and mechanical break in the power circuit -- not a break in an electronic switch. Safety comes first at Magna-Power Electronics.



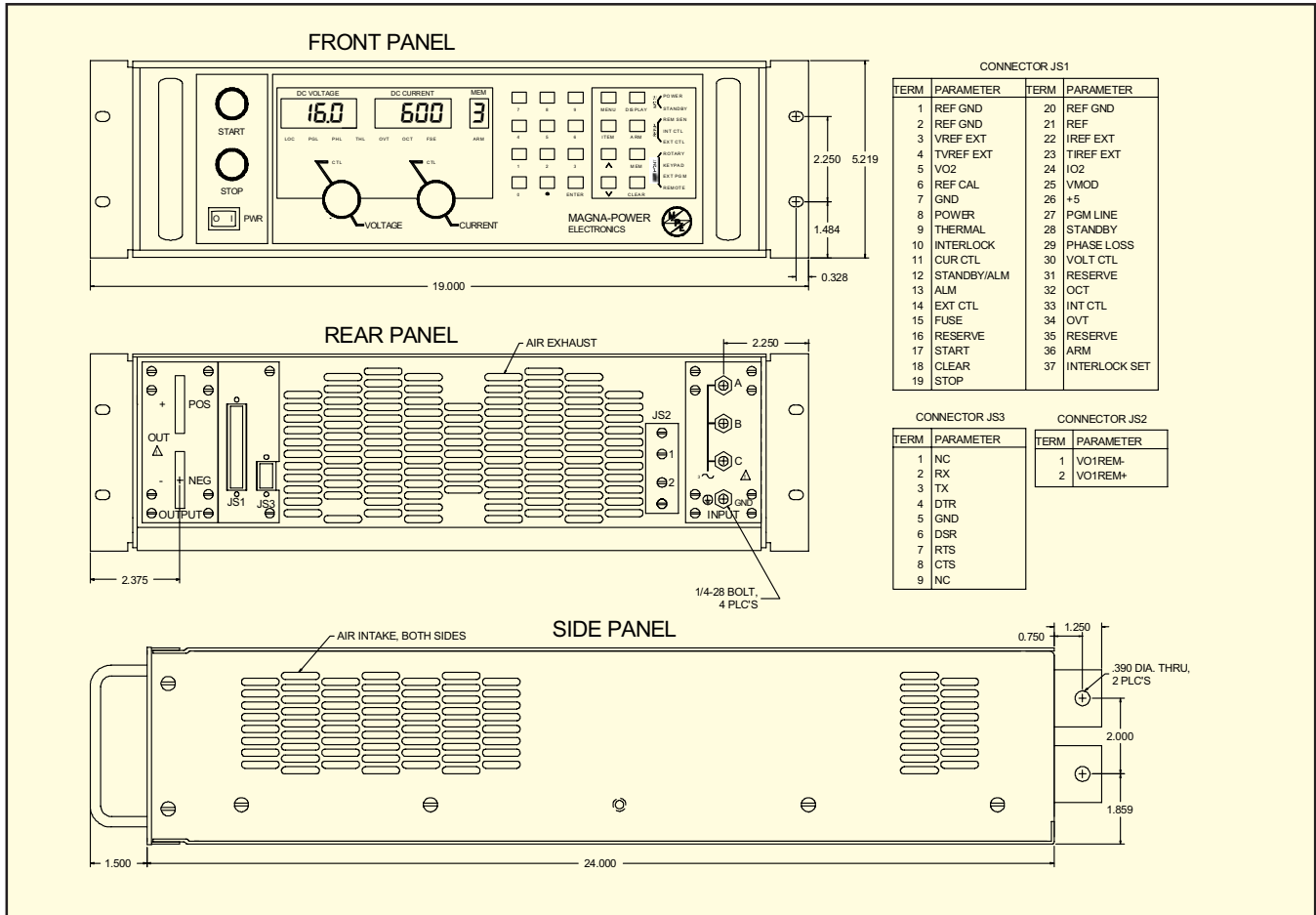
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81 Fulton Street, Boonton, NJ 07005
(973) 263-0017 FAX: (973) 263-1928
E-mail: sales@magna-power.com
<http://www.magna-power.com>

PQD SERIES

HIGH-EFFICIENCY OPERATION!

OUTLINE DRAWINGS AND FRONT PANEL INTERFACE



DIAGNOSTICS

LOC: interlock
 PGL: warns that a program line has opened
 PHL: indicates a problem with input voltage
 THL: indicates over-temperature
 OVT: shows over voltage protection has tripped
 OCT: shows over current protection has tripped
 FSE: warns that a fuse has cleared
 ARM: indicates power supply is ready for or operating in auto sequencing

FUNCTION KEYS

MENU: selects function
 ITEM: selects item within function
 DISPLAY: displays voltage and current setting
 ARM: arms power supply for auto sequencing through states stored in memory
 MEM: sets memory
 CLEAR: clears setting or resets fault condition
 ▲: up
 ▼: down

MODE, SETUP, DISPLAY

POWER: indicates power output
 STANDBY: indicates control power only
 REM SEN: indicates remote sense
 INT CTL: front panel controls enabled
 EXT CTL: external controls enabled
 ROTARY: potentiometer voltage/current control
 KEYPAD: keypad voltage/current control
 EXT PGM: external voltage/current control
 REMOTE: RS232 control enabled

