MQA SERIES

DC POWER SUPPLIES

- 20 TO 60 KW
- CURRENT FED
- PROGRAMMABLE

MAGNA-POWER
ELECTRONICS, INC.

MQA SERIES

MODULAR POWER

20 KW TO 60 KW DC POWER SUPPLIES

FEATURES

- 60 Models: 10 to 800 Vdc, 24 to 5400 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 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

SIZE MATRIX

PWR (kW)	SIZE (H"xW"xD")	WEIGHT
20	38½X22x29	280
30	38½X22x29	395
40	38½X22x29	510
50	49X22x29	645
60	49X22x29	760

CE

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
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
Programming resistors: 1K full scale for output voltage, output current, over voltage, and over current shutdown
Temperature coefficient: 0.04%/°C of maximum output current

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

MODELS AND RATINGS

MODEL	VOLTS Vdc	AMPS Adc	RIPPLE mVrms	PWR kW
MQA10-1800	0-10	0-1800	40	
MQA16-1200	0-16	0-1200	35	
MQA32-600	0-32	0-600	40	
MQA50-400	0-50	0-400	50	
MQA80-250	0-80	0-250	60	
MQA125-160	0-125	0-160	100	
MQA200-100	0-200	0-100	125	20.0
MQA250-80	0-250	0-80	130	
MQA375-54	0-375	0-54	170	
MQA500-40	0-500	0-40	220	
MQA600-32	0-600	0-32	250	
MQA800-24	0-800	0-24	270	
MQA10-2700	0-10	0-2700	40	
MQA16-1800	0-16	0-1800	35	
MQA32-900	0-32	0-900	40	
MQA50-600	0-50	0-600	50	
MQA80-375	0-80	0-375	60	
MQA125-240	0-125	0-240	100	
MQA200-150	0-200	0-150	125	30.0
MQA250-120	0-250	0-120	130	
MQA375-81	0-375	0-81	170	
MQA500-60	0-500	0-60	220	
MQA600-48	0-600	0-48	250	
MQA800-36	0-800	0-36	270	
MQA10-3600	0-10	0-3600	40	
MQA16-2400	0-16	0-2400	35	
MQA32-1200	0-32	0-1200	40	
MQA50-800	0-50	0-800	50	
MQA80-500	0-80	0-500	60	
MQA125-320	0-125	0-320	100	
MQA200-200	0-200	0-200	125	40.0
MQA250-160	0-250	0-160	130	
MQA375-108	0-375	0-108	170	
MQA500-80	0-500	0-80	220	
MQA600-64	0-600	0-64	250	
MQA800-48	0-800	0-48	270	
MQA10-4500	0-10	0-4500	40	
MQA16-3000	0-16	0-3000	35	
MQA32-1500	0-32	0-1500	40	
MQA50-1000	0-50	0-1000	50	
MQA80-625	0-80	0-625	60	
MQA125-400	0-125	0-400	100	
MQA200-250	0-200	0-250	125	50.0
MQA250-200	0-250	0-200	130	
MQA375-135	0-375	0-135	170	
MQA500-100	0-500	0-100	220	
MQA600-80	0-600	0-80	250	
MQA800-60	0-800	0-60	270	
MQA10-5400	0-10	0-5400	40	
MQA16-3600	0-16	0-3600	35	
MQA32-1800	0-32	0-1800	40	
MQA50-1200	0-50	0-1200	50	
MQA80-750	0-80	0-750	60	
MQA125-480	0-125	0-480	100	
MQA200-300	0-200	0-300	125	60.0
MQA250-240	0-250	0-240	130	
MQA375-162	0-375	0-162	170	
MQA500-120	0-500	0-120	220	
MQA600-96	0-600	0-96	250	
MQA800-72	0-800	0-72	270	

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Magna-Power Electronics' **MQA 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. **MQA SERIES** power supplies are current fed and are more tolerant to abusive loads than conventional switching power supplies.

MQA 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. 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.

MQA 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.

MQA 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.

MQA 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.

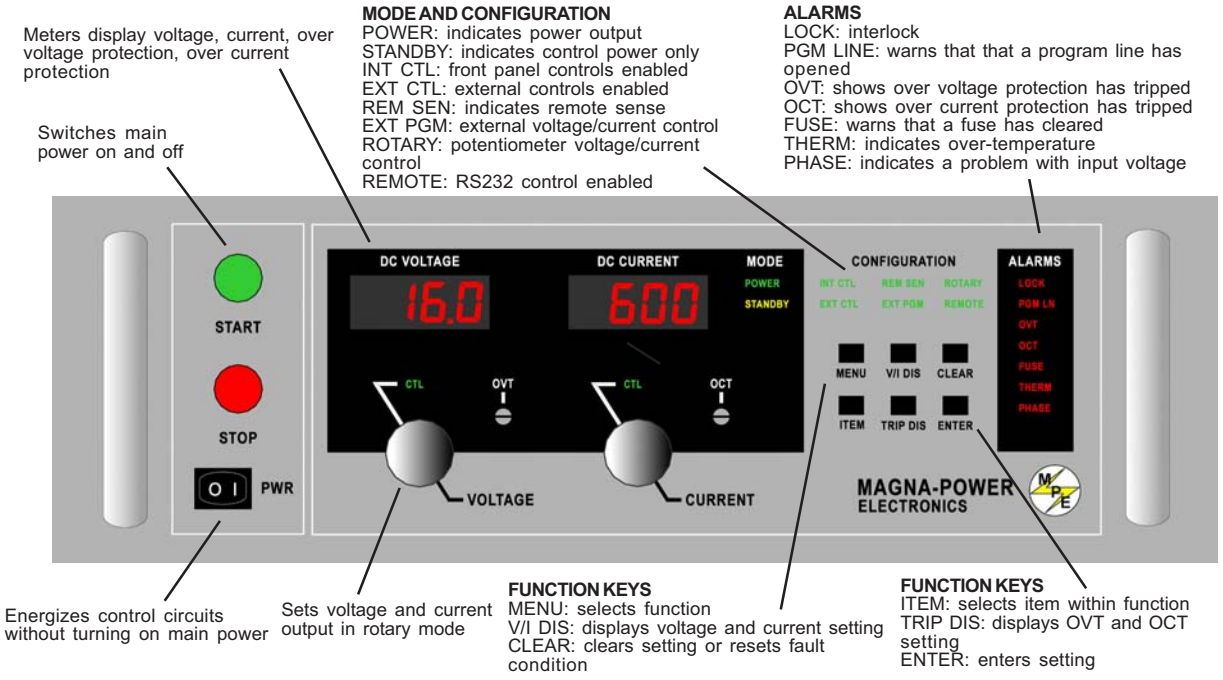
MQA SERIES power supplies can operate as a voltage source or current source depending on the control settings and load conditions. If the power supply is operating as a voltage source and the load increases to a point beyond the current command setting, the power supply automatically crosses over to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

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.

MQA 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 **MQA SERIES** units.

MQA 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.

MQA 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.



MQA SERIES

MODULAR SIMPLICITY!

OUTLINE DRAWINGS AND ELECTRICAL INTERFACE

CONNECTOR JS1

TERM	PARAMETER	TERM	PARAMETER
1	REF GND	20	REF GND
2	REF GND	21	REF
3	VREF EXT	22	IREF EXT
4	TVREF EXT	23	TIREF EXT
5	VO2	24	IO2
6	REF CAL	25	NC
7	GND	26	+5
8	POWER	27	PGM LINE
9	THERMAL	28	STANDBY
10	INTERLOCK	29	PHASE LOSS
11	CUR CTL	30	VOLT CTL
12	STANDBY/ALM	31	RESERVE
13	ALM	32	OCT
14	EXT CTL	33	INT CTL
15	FUSE	34	OVT
16	RESERVE	35	RESERVE
17	START	36	RESERVE
18	CLEAR	37	INTERLOCK SET
19	STOP		

CONNECTOR JS3

TERM	PARAMETER
1	NC
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	NC

CONNECTOR JS2

TERM	PARAMETER
1	VO1REM-
2	VO1REM+