ML Series 300 Watt Regulated High Voltage DC Modules

Medium Power Premium Performance... Low Cost

Fully RoHS Compliant

The ML Series of 600 watt high voltage supplies are air insulated, fast response units, with tight regulation and extremely low arc discharge currents.

Please refer to Technology > Applications page on our web site for typical applications.

The ML Series with F22 option, are fully compliant with the following European Directives:
2014/30/EU, EMC Directive
2014/35/EU, Low Voltage Safety Directive
EN61000-3-2, Line Harmonics.

All ML Series supplies are fully compliant with:
2011/65/EU, Restriction of the use of hazardous substances (RoHS).



Models from 0-8kVDC through 0-60kVDC; weight <20 lbs.

The ML Series is a family of sophisticated, medium power, high voltage power supplies that complies with current international safety and EMI directives. We have packaged this series as a space saving module to avoid the expense of front panels and displays. However, no compromises in performance and/or operating features have been made. The result is a power supply that offers outstanding value for a wide range of demanding applications.

Features:

High Speed Dynamic Voltage Regulation. For load transients of 10% to 99% and 99% to 10%, the output voltage will recover to within 1% in less than 1ms.

Low Ripple. Ripple is less than 0.05% of rated voltage at full load.

Low stored Energy. Most models exhibit less than one joule of stored energy.

Air Insulated. The ML Series features "air" as the primary dielectric medium. No oil or encapsulation is used which would impede serviceability or increase weight.

CV/CC/CT Operation. Automatic crossover from constant-voltage to constant-current regulation provides protection against overloads, arcs, and short circuits. Current mode operation is user configured for constant current regulation or current trip operation.

PFC Option. Assures compliance with EN61000-3-2.

Local Control. User designated ten-turn potentiometer control provides the capability for local control of output voltage or current.

Warranty. All power supplies are warranted for three years. A formal warranty statement is available.

Specifications

(Specifications apply from 2% to 100% of rated voltage. Below 2% of rated voltage a slight degradation of ripple, regulation, and stability may occur.)

Input: 90-132VAC single-phase, 48-420Hz, 600VA maximum. Connector per IEC 60320 with mating line cord terminated with NEMA 5-15 plug.

Efficiency: Typically 85% at full load.

Output: Continuous, stable adjustment, from 0 to rated voltage or current by panel mounted 10-turn potentiometer with 0.05% resolution, or by external 0 to 10V signals is provided. Voltage accuracy is 0.5% of setting + 0.2% of rated. Repeatability is < 0.1% of rated.

Current limiting/Current Trip: User selectable at interface control connector for either "trip" operation or normal current limiting. If "trip" operation is selected the power supply will latch off in the event the load current exceeds the current "set" point.

Stored Energy: See Models chart. The stored energy includes the capacitance of the standard 8' output cable which is approximately 300pF.

Static Voltage Regulation: Better than 0.005% for specified line and load variations.

Dynamic Voltage Regulation: For load transients from 10% to 99% and 99% to 10%, typical deviation is 2% of output voltage with recovery to within 1% in 1ms, and to 0.1% in 2ms.

Current Regulation: Better than 0.1% of rated current from short circuit to rated voltage at any load condition.

Ripple: <0.05% rms of rated voltage at full load.

Voltage Monitor: 0 to +10V equivalent to 0 to rated voltage. Accuracy, 0.5% of reading + 0.2% of rated. Output impedance is 10 kΩ.

Current Monitor: 0 to +10V equivalent to 0 to rated current. Accuracy, 1% of reading + 0.1% of rated. Output impedance is 10 kΩ.

Stability: 0.01% per hour after 1/2 hour warm-up, 0.05% per 8 hours.

Voltage Rise/Decay Time Constant: 400ms typical with a 5% resistive load using either the HIGH VOLTAGE ENABLE input or remote programming control.

Temperature Coefficient: 0.01% per °C.

Ambient Temperature: -20 to +50°C, operating; -40 to +85°C, storage.

Polarity: Output polarity is available as either positive or negative with respect to chassis ground.

Protection: User selected automatic current regulation or current trip protects against all overloads, including arcs and short circuits. Fuses, surge-limiting resistors, and low energy components provide ultimate protection

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Accessories: Detachable 8' HV coaxial output cable, 6' detachable line cord, and mating control connector.

Interface Control Connector: Twenty-five pin "D" sub-miniature connector.

As standard, all ML Series supplies provide output VOLTAGE AND CURRENT PROGRAM/MONITOR (0-+10V = 0-fs), HIGH VOLTAGE ENABLE (0-1.5V off, 2.5 -15V on), HIGH VOLTAGE STATUS (high = HV on, low = HV off), SAFETY INTERLOCK (open = off, closed = on), CURRENT TRIP/LIMIT select, +10 VOLT REFERENCE source, V/I MODE STATUS (high = voltage mode, low = current mode), LOCAL CONTROL, COMMON and CHASSIS GROUND.

Options

Symbol	Description
10	100VAC input line, rated 90-100VAC, 48-420Hz. (**Not CE Compliant.**)
22	230VAC input line, rated 180-264VAC, 48-420Hz. Mating line cord terminated with a NEMA 6-15 plug. (**Not CE Compliant.**)
SS	Slow start ramp. Specify standard times of 5, 10, 15, 20, or 30 Sec, ± 20%.
5VC	0-5 V voltage and current program/monitor.
F22	Power-Factor Corrected. 230VAC AC input line, (**Required for CE Compliance.**) rated 180-264VAC, 48-63Hz, 400VA maximum. Active correction circuitry achieves an input line current harmonic content well below the maximum specified in EN 61000-3-2. One NEMA 6-15 line cord provided.
K01	RS-232/USB control and monitor
K02	RS-232/USB/Ethernet control and monitor

Models

Positive Polarity	Negative Polarity	Output Voltage(kV)	Output Current(mA)	Stored Energy (J)	Output Cable	Case Size
ML08P37.0	ML08N37.0	0 - 8	0 - 37	0.38	RG-8U	A
ML10P30.0	ML10N30.0	0 - 10	0 - 30	0.44	RG-8U	A
ML12P25.0	ML12N25.0	0 - 12	0 - 25	0.52	RG-8U	A
ML15P20.0	ML15N20.0	0 - 15	0 - 20	0.68	RG-8U	A
ML20P15.0	ML20N15.0	0 - 20	0 - 15	0.66	RG-8U	A
ML25P12.0	ML25N12.0	0 - 25	0 - 12	0.72	RG-8U	A
ML30P10.0	ML30N10.0	0 - 30	0 - 10	1.00	RG-8U	A
ML40P07.5	ML40N07.5	0 - 40	0 - 7.5	1.44	RG-8U	A
ML50P06.0	ML50N06.0	0 - 50	0 - 6	1.88	RG-8U	B
ML60P05.0	ML60N05.0	0 - 60	0 - 5	2.34	RG-8U	B

