I GENERAL INFORMATION

I.1 DESCRIPTION

The EMX/EMK series power supply is a completely solid-state regulated current source with a continuously variable output, designated particularly for supplying power to xenon or krypton arc lamps. Stable light output and long lamp life are ensured since the lamp current is regulated to within 1% regardless of line functions and the ripple current is less than 2%. the semiconductor circuitry allows instant start-up and the use of silicon controlled rectifiers as regulating elements provides high reliability and high efficiency in a very compact unit.

This power supply also provides the boost or "open circuit" voltage required for starting arc lamps. In addition, it can pulse any standard igniter to permit a completely automated starting sequence, locally or remotely controlled.

The EMKI series power supply incorporates a built-in high-voltage igniter assembly which is pulsed automatically when the power supply is turned on.

I.2 SPECIFICATIONS

I.2.1 input

Three-phase, three-wire system, (plus neutral for 380V operation).

Line Voltage, phase-to-phase:	188-242V or 342-418V (See schematic).
Line Frequency:	47-63Hz (57-63Hz for units rated over 10kW).
Line Current:	1.6kW - 8A 3.5kW - 15A 6kW - 25A 11kW - 43A

NOTE: Current ratings of line fuses in some models may be lower than rated line current because of internal circuit arrangement. Be careful to replace fuses only with the type specified on the fuse cover plate or on the schematic.

I.2.2 output

MODEL	BOOST (V)	OPERATING (V)*	CURRENT (A)
EMX28-75	120	28	75
EMX35-100	120	35	100
EMX40-165	120	40	165
EMX75-140	120	75	140
EMK120-50	350	120	50
EMK150-40	350	150	40

EMK200-30	375	200	30
EMK200-40	375	200	40
EMK220-50	375	220	50
EMK240-25	375	240	25

*Guaranteed minimum value at lowest specified line voltage. High voltage ignition pulse (EMKI units only):

Single Lamp Models 20kV
Dual Lamp Models 30kV
Super Igniter Models 50kV

Ignition pulse amplitude values are approximate. Actual value depends on load characteristics and distributed impedances of load leads.

I.2.3 general

Current Regulation:
1% line and load combined, over useful operating range of lamp(s) (50-100% of rated current).

Current Ripple (RMS):
Less than 1% for EMK units and less than 2% for EMX units. Ripple is measured with lamp(s) ignited and the power supply operating between 50-100% of rated current. Dynamic impedance of the lamp(s) is to be greater than 0.9Ω per lamp for EMK units and greater than 0.1Ω for EMX units.

Temperature Coefficient:
0.02% per ℃.

Stability:
0.1% for 8 hours after warm-up, under fixed line, load and temperature conditions.

Response Time:
Approximately 25mS for a 30-100% current programming change.

Ambient Temperature:
Operating: 0℃ to 50℃.
Non-Operating: -40℃ to 85℃.

Protection:
Fuses or circuit breaker for input lines. Fuses for auxiliary circuits. Automatic reset over-temperature switch de-energizes line contactor. Adjustable over-current kill circuit drops output to zero in case current regulation goes out of control. Auxiliary contact on line contactor discharges filter capacitors when unit is turned off. (Except output capacitor on super igniter units).

Size:

All units: 19" (483 mm) rack width X 20" (508 mm) depth + 2" (51 mm) for output terminals on EMKI units.

Panel Height:

EMX28-75, EMX35-100:	7" (178 mm).
All others:	8 3/4" (222 mm).

Weight:

EMX28-75, EMX35-100:	135 Lbs. (61.4 kg).
EMX75-140, EMK:	180 Lbs. (81.8 kg).
EMKI:	215 Lbs. (97.7 kg).

II INSTALLATION

II.1 INSPECTION

Immediately after unpacking the power supply, perform a visual inspection for possible internal and external damage incurred in shipment. If such damage is found, follow the "Claim for Damage in Shipment" instructions printed inside the front cover of this manual.

II.2 INSTALLATION

Refer to Section 1.2 for dimensions and other general information. Before placing the power supply in operation, see that all packing material has been removed. On EMKI units, remove the output terminal guard and reinstall the three mounting screws and washers into the cabinet. Save this guard together with all other packing materials in the event that the unit is reshipped. Make sure that adjacent equipment does not block the air intake or exhaust openings. Except for test purposes, this unit should not be operated with covers removed. For electrical installation requirements, see Sections 2.3 and 2.6.

II.3 POWER REQUIREMENTS

This power supply requires a three-phase input, of the specified voltage phase-to-phase (three wire system). For 380V operation, a common return to neutral is required (four wire system). Unless otherwise specified, units are supplied strapped for 208-220V operation. For 380V, jumpers can be changed with a screwdriver (see Schematic). Phase rotation sequence of the input lines need not be observed.

II.4 PANEL and REMOTE CONTROLS

The following panel controls are provided:

a. Power switch with indicator, or circuit breaker (optional).
b. Continuously variable output current control.
c. Ammeter.
d. Voltmeter.