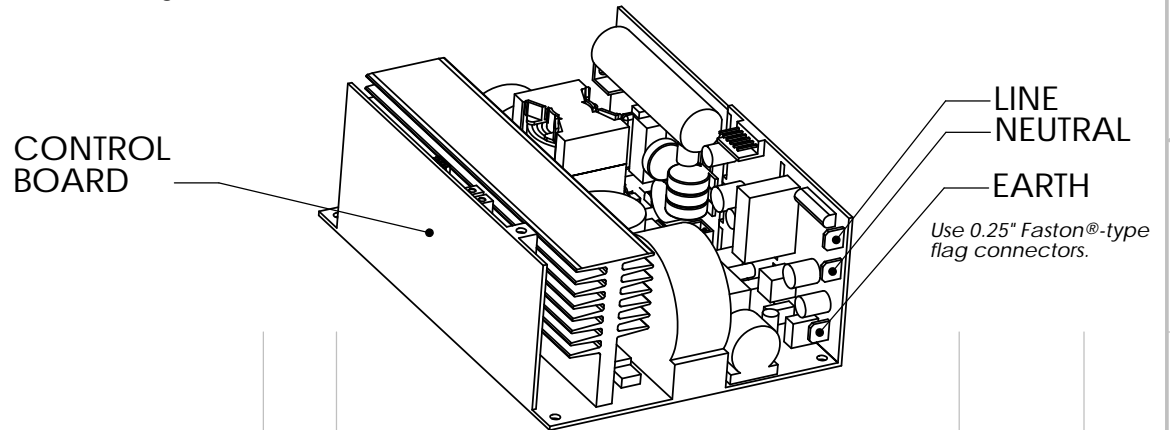
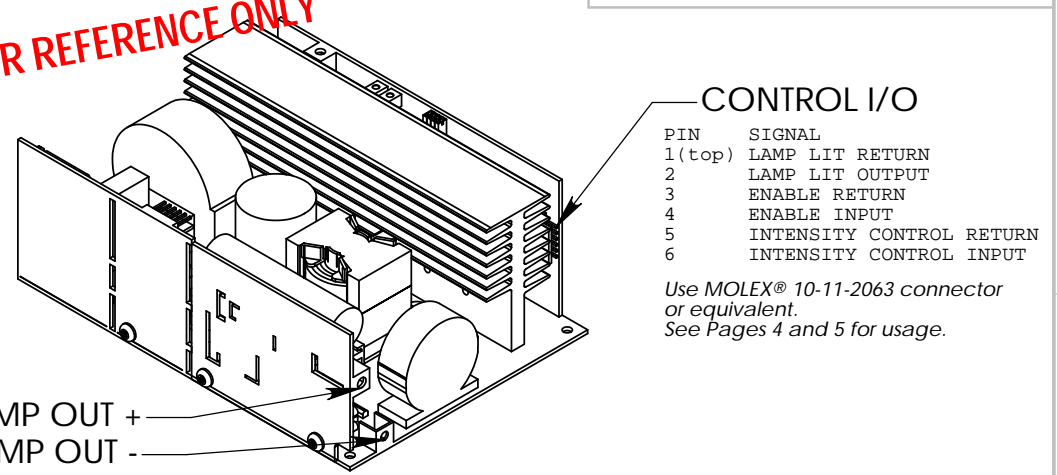


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PART NO: **01053-00001**

FOR REFERENCE ONLY



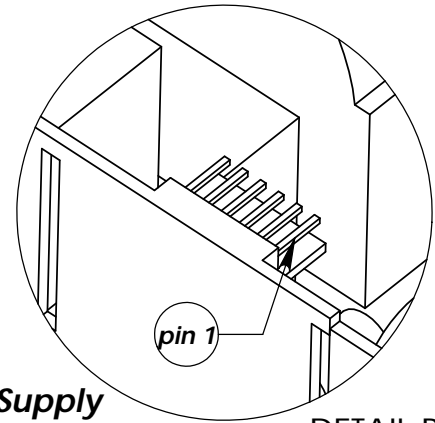
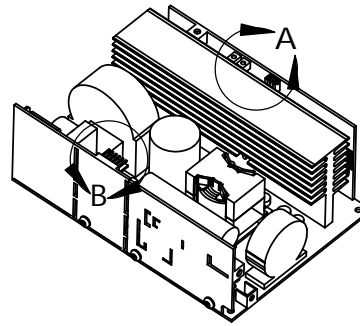
FOR MODELS CEP200AMH, BMH, CMH, DMH, CEP200AHX, BHX, CHX, and DHX

ECO #	Description	Date	REV.
ENGINEERING CHANGE RECORD			
UNLESS OTHERWISE SPECIFIED Dimension are in inches. TOLERANCES ARE: DECIMALS ANGLES .XX: +/- .015 .XX: +/- 0.5 deg .XXX: +/- .005		CAD GENERATED DRAWING. DO NOT MANUALLY UPDATE	
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		QUAL ENG Bocast 02-04-2002	CEP200 METAL HALIDE POWER SUPPLY
		SIZE DWG. NO. REV.	A 93553-00001 A
		SCALE	SHEET 1 OF 5

92100-04001 A.siddrt

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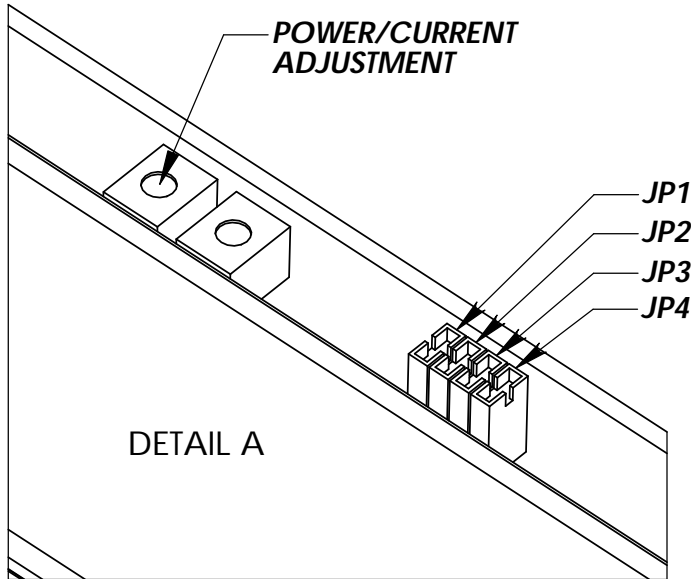
PART NO: **01053-00001**



Low Voltage Power Supply (SELV Rated)

Pins 1,2,3 : +12VDC, 2.0A
Pins 4,5,6: Return

Use MOLEX® 10-11-2063 connector or equivalent.



JUMPER TABLE				
	JP1	JP2	JP3	JP4
POWER CONTROL	O	I	X	X
CURRENT CONTROL	I	O	X	X
TIMER DISABLED	X	X	I	X
LAMP ENABLED	X	X	X	I

LEGEND: I JUMPER IN
O JUMPER OUT
X DON'T CARE

TEST POINTS:
TP0: SIGNAL GROUND
TP3: LAMP CURRENT (100mV/A)
TP5: LAMP POWER (10mV/W)

NOTES:
Test points are accessible through the control board.
Test points are to be used for evaluation only.

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DECIMALS	ANGLES	DRAWN	del Cid 02-04-2002
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UNLESS OTHERWISE SPECIFIED		SIZE	DWG. NO.
Dimension are in inches.		A	93553-00001
TOLERANCES ARE:		SCALE	REV. A
DECIMALS	ANGLES		
.XX: +/- .010	.XX: +/- 0.5 deg		
.XXX: +/- .005			

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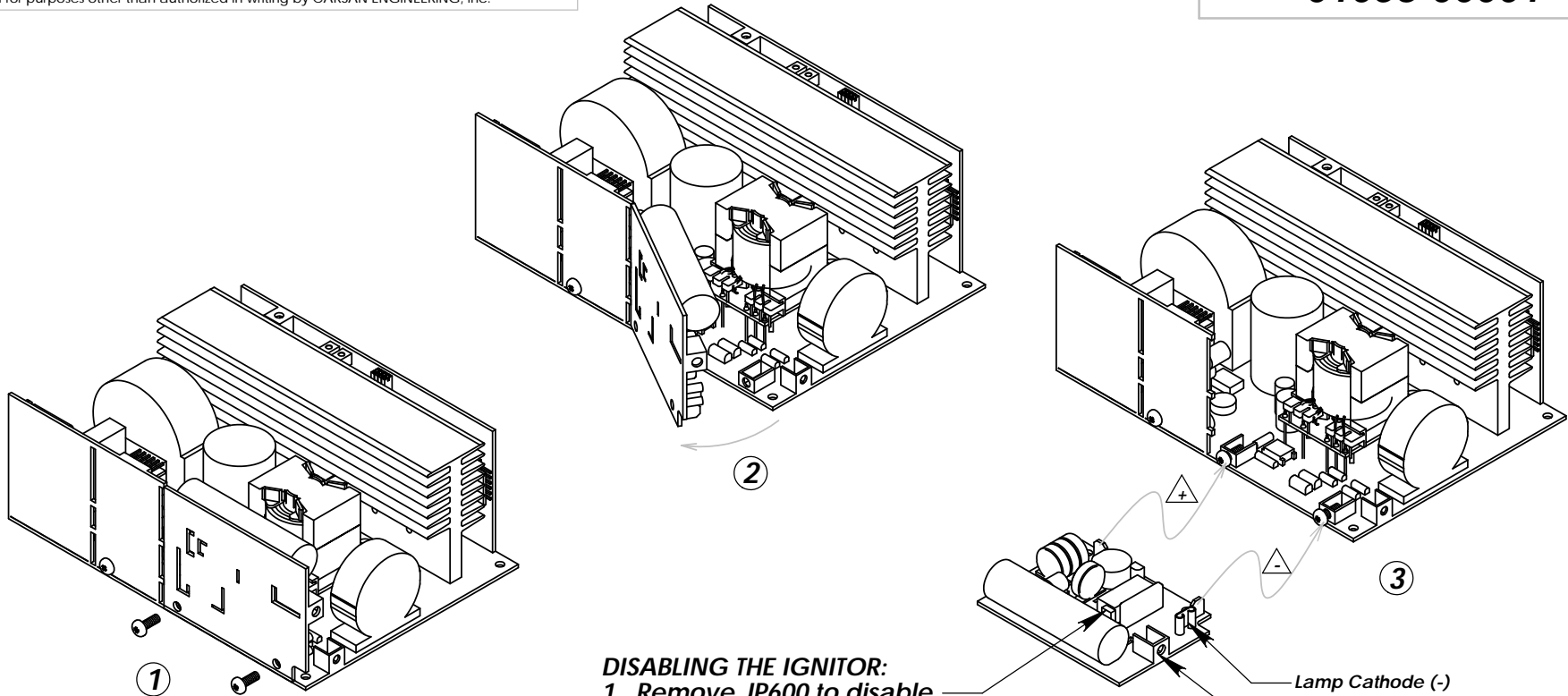
CEP200 METAL HALIDE POWER SUPPLY

SIZE **A** DWG. NO. **93553-00001** REV. **A**
SCALE SHEET 2 OF 5

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PART NO: **01053-00001**



DISABLING THE IGNITOR:
1. Remove JP600 to disable.

REMOVING THE IGNITOR:

1. Remove ignitor mounting screws.
2. Tear ignitor in the direction shown.
3. Connect ignitor using 18AWG, 600V (min) wire.
PS end: #6 ring or fork terminals.
Ignitor end: 0.25" Faston®-type flag terminals.
4. Connect ignitor to lamp using 18AWG, 40kV wire
UL Style 3239.

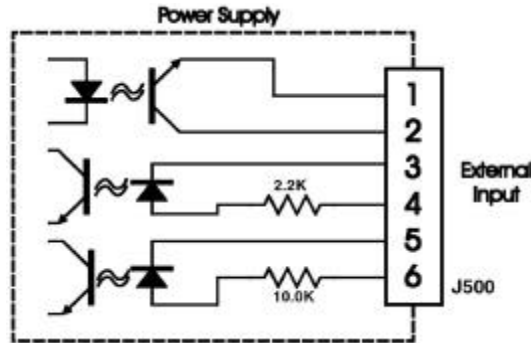
Anode (+): #6 ring or fork terminal.
Cathode (-): 0.25" Faston®-type spade terminal.

ECO #	Description	Date	REV.
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FINISH	--	QUAL ENG	Bocast 02-20-2002
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		SCALE	REV. A
			SHEET 3 OF 5

92100-04001 A.siddrt

Using TheCONTROL I/O:

The Control I/O Connector consists of two inputs and one output, each of which is optically isolated. The inputs are designed to be driven by a 5-12V source.



PINS 1 and 2:

The Lamp Lit output is a transistor that is on when current is flowing to the lamp. The collector current will be greater than 3.0 mA when the lamp is on. A 2.2K ohm resistor pull-up will create a TTL-compatible signal. The delay from light output from the lamp to the Lamp Lit output being asserted is less than 10 ms.

PINS 3 and 4:

The Enable input turns the lamp on and off. A high input (5-12VDC) to the Enable pin turns on the lamp. The source used must have a low impedance and be capable of supplying 2.0 mA into the circuit. The electrical delay of the enable input is less than 10 ms. To turn on the lamp, the delay of the Enable input must be added to the time to ignite the lamp, which is approximately 100 ms, for a total of 110 ms. Turning off the lamp takes only 10 ms. The auxiliary +12 V supply runs all the time, regardless of the state of the Enable input.

PINS 5 and 6:

See "Using the Lamp Intensity Control Input on the CEP200 Metal-Halide Power Supply" (page 5).

ECO #	Description	Date	REV.
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		del Cid	02-25-2002
		QUAL ENG	Bocast 02-25-2002
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		A	93553-00001
		SCALE	REV. A
			SHEET 4 OF 5

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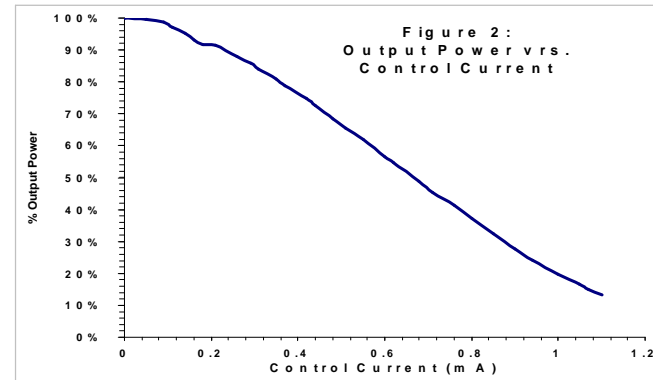
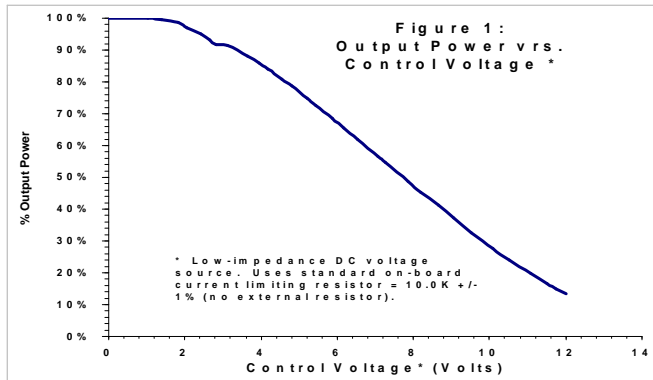
**CEP200 METAL HALIDE
POWER SUPPLY**

Using the Lamp Intensity Control Input on the CEP200 Metal-Halide Power Supply

The Carsan Engineering power supply drives metal-halide lamps with a constant power. The supply provides an external input for controlling the power to the lamp. This paper provides the information needed by the system designer to take advantage of the Lamp Intensity Control input.

The power stage of the supply can be modeled as a high-gain amplifier with current and voltage feedback from the lamp. The power to the lamp is controlled by a user adjustable potentiometer that adjust the feedback from the multiplier. This determines the quiescent power to the lamp.

The Control I/O Connector provides an optoisolated input for controlling lamp power. When a voltage is applied to the Lamp Intensity input (pins 5 & 6), current flows in the diode of the optoisolator. A corresponding current flows in the coupled transistor, which injects a current into the output reference. This lowers the reference, hence reducing the power. Notice that the external input is only capable of decreasing lamp power. This is a safety feature; the lamp power can never exceed the value set by the potentiometer. The typical relationship between the external applied voltage and the lamp output is shown in Figure 1. Note that although the output power is capable of going to zero, many lamps become unstable when run at less than 30% to 50% of their rated power.



The transfer function from the external applied voltage to transistor current is not linear. This is often not a problem for closed loop feedback systems. If the feedback loop is a first order loop, or has low open-loop gain, then it may be desirable to linearize the transfer function of the optoisolator. This can be done if the input is driven with a constant current source. The transistor current will be equal to the diode current. For most applications this will require a 12V supply in order to give the driving current source enough compliance. The typical relationship between the control current and the lamp output is shown in Figure 2. The current transfer ratio (CTR) of the optoisolator is specified to stay between 100% and 200% over time and temperature.

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MATERIAL --	del Cid 02-27-2002	CEP200 METAL HALIDE POWER SUPPLY	
FINISH --	QUAL ENG Bocast 02-27-2002	SIZE DWG. NO.	REV.
DO NOT SCALE DRAWING		A 93553-00001	A
		SCALE	SHEET 5 OF 5

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