



Endicott Research Group, Inc.

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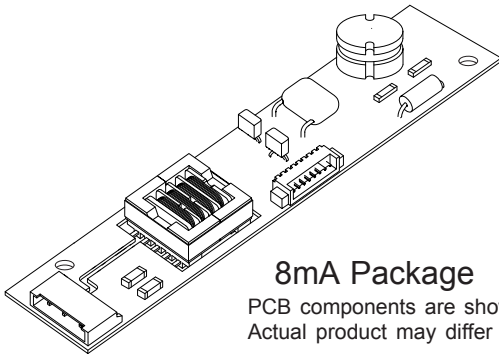
Specifications and Applications Information

02/04/11

The ERG 8mA22420 (*8m Class*) low profile dc to ac inverter is specifically designed to power backlight of the NEC NL8060BC30-17 LCD display module to a moderate brightness level from a +12 volt dc source.

This low profile inverter features:

- ✓ Less Than 8 mm in Height
- ✓ LCD Module Specific
- ✓ Display Compatible Output Connector
- ✓ Firm Specifications
- ✓ Application Information
- ✓ Designed, Manufactured and Supported in the USA
- ✓ Custom Input and Output Voltages
- ✓ Flexible System Interface
- ✓ Notebook Display Head Compatible



8mA Package

PCB components are shown for reference only.
Actual product may differ from that shown.

Connectors

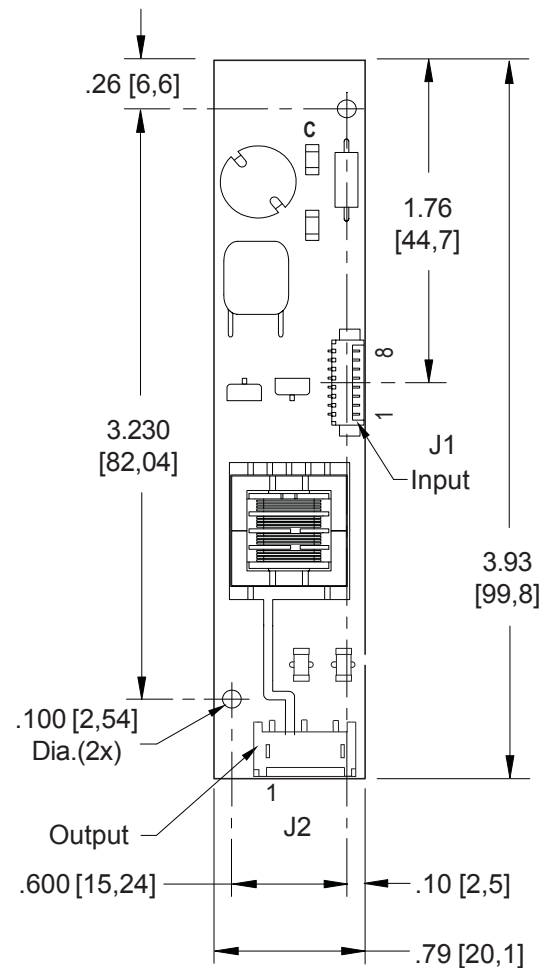
Input J1
Molex
53261-0871

Output J2
JST
SM03(4.0)B-BHS-1-TB

8mA22420

Two Lamp DC to AC Inverter

Package Configuration



PCB components are shown for reference only. Actual product may differ from that shown.

Pin Descriptions

J1-1 +Vin	J2-1 ACreturn
J1-2 +Vin	J2-2 ACout
J1-3 GND	J2-3 ACout
J1-4 GND	
J1-5 Enable *	
J1-6 N/C	
J1-7 N/C	
J1-8 GND	

* Valid only with "C" jumper (JP1) removed

Absolute Maximum Ratings

Rating	Symbol	Value	Units
Input Voltage Range	V_{in}	-0.3 to +13.2	Vdc
Storage Temperature	T_{stg}	-40 to +85	°C

Operating Characteristics

With a load simulating the referenced display and lamp warm-up of 5 minutes.
Unless otherwise noted $V_{in} = 12.00$ Volts dc and $T_a = 25^{\circ}\text{C}$.

Characteristic	Symbol	Min	Typ	Max	Units
Input Voltage	V_{in}	+10.8	+12.0	+12.6	Vdc
Component Surface Temperature (note 1)	T_s	-20	-	+80	°C
Input Current (note 2)	I_{in}	-	0.64	0.74	Adc
Operating Frequency	F_o	41	46	51	kHz
Minimum Output Voltage (note 3)	V_{out} (min)	1500	-	-	Vrms
Efficiency	η	-	80	-	%
Output Current (per lamp)	I_{out}	-	5.1	-	mArms
Output Voltage	V_{out}	-	600	-	Vrms
Enable Pin Input Current Requirement (notes 4,5,6)	I_{Enable}	-	7	-	mAdc

Specifications subject to change without notice.

- (Note 1) Surface temperature must not exceed 80 degrees C; thermal management actions may be required.
 (Note 2) Input current in excess of maximum may indicate a load/inverter mismatch condition, which can result in reduced reliability. Please contact ERG technical support.
 (Note 3) Provided data is not tested but guaranteed by design.
 (Note 4) Required User Enable/Disable Interface Circuit is shown on page 3.
 (Note 5) Valid only with "C" jumper (JP1) removed.
 (Note 6) With the inverter powered and JP1 is in place, a ground applied to the enable pin J1-5 will open the inverter fuse.

Application Notes:

- 1) The minimum distance from high voltage areas of the inverter to any conductive material should be .12 inches per kilovolt of starting voltage.
- 2) Mounting hardware to be non-conductive.
- 3) Open framed inverters should not be used in applications at altitudes over 10,000 feet.
- 4) ACreturn should be left floating, not grounded.
- 5) Contact ERG for possible exceptions.



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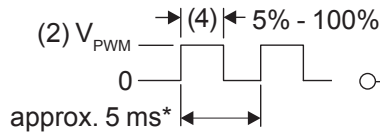
PWM Dimming

(Valid only with JP1 removed)

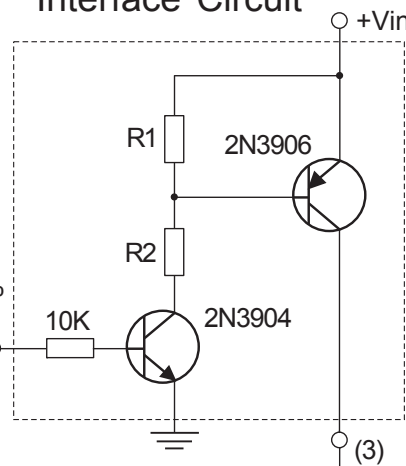
Required User Enable/Disable Interface Circuit

With JP1 in place, a ground applied to the enable pin J1-5 will open the inverter fuse.

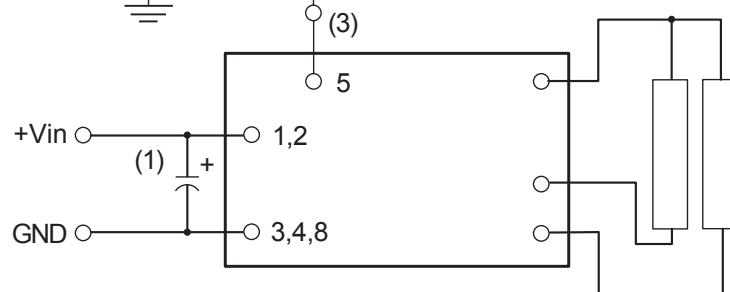
Circuit or equivalent required with JP1 removed for proper inverter turnoff.



* should be selected to be compatible with LCD and display driver



Vin	R1	R2
5V	3.3K	1.5K
8V	3.3K	1.8K
12V	3.3K	2.2K
24V	10.0K	8.2K



- (1) Low ESR type input by-pass capacitor (22 uF - 100 uF) may be required to reduce reflected ripple.
- (2) V_{PWM} from 2.4V to less than or equal to +Vin.
- (3) Full brightness without PWM control requires that pin 5 be tied to +Vin. Pin 5 must be at 0V to turn off.
- (4) Duty Cycle 5% - 100%.