



Endicott Research Group, Inc.

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http://www.ergpower.com

10m123379

## Specifications and Applications Information

12/27/06

Preliminary

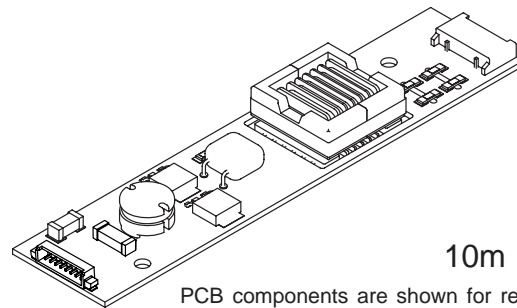
**10m Class**  
DC to AC Inverter

The ERG (10m Class) low profile dc to ac inverter is specifically designed to power the following display module(s) to a moderate brightness level.

- Hitachi TX23D11VM2BAA display from a +12 volt dc power supply.

This low profile inverter features:

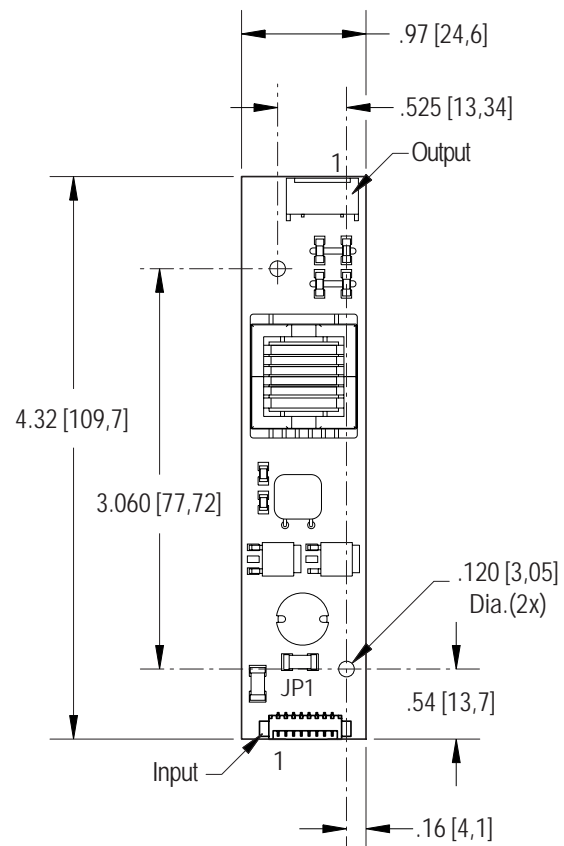
- ✓ Less Than 10 mm in Height
- ✓ LCD Module Specific
- ✓ Display Compatible Output Connector
- ✓ Firm Specifications
- ✓ Application Information
- ✓ Designed, Manufactured and Supported in the USA
- ✓ Custom Input and Output Voltages
- ✓ Flexible System Interface



**10m Package**

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

### Package Configuration



Mass: 22 grams

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### Connectors

Input Connector		Output Connector
Molex 53261-0871		JST SM02(8.0)B-BHS-1-TB
J1-1,2	Vin(+)	J2-1 ACout
J1-3,4	GND	J2-2 ACreturn
J1-5	Enable *	
J1-6,7,8	N/C	
* Valid only with JP1 removed.		

## Absolute Maximum Ratings

Rating	Symbol	Value	Units
Input Voltage Range	V <sub>in</sub>	-0.3 to +13.2	Vdc
Storage Temperature	T <sub>stg</sub>	-40 to +85	°C

## Operating Characteristics

With a load simulating the referenced display and lamp warm-up of 5 minutes.  
Unless otherwise noted V<sub>in</sub> = 12.00 Volts dc and T<sub>a</sub> = 25°C

Characteristic	Symbol	Min	Typ	Max	Units
Input Voltage	V <sub>in</sub>	+10.8	+12.0	+12.6	Vdc
Component Surface Temperature	T <sub>s</sub>	-20	-	+80	°C
Input Current <sup>(note 1)</sup>	I <sub>in</sub>	-	0.6	0.7	Adc
Operating Frequency	F <sub>o</sub>	37	42	47	kHz
Minimum Output Voltage	V <sub>out</sub> (min)	1700	-	-	Vrms
Efficiency	$\eta$	-	86	-	%
Output Current (per lamp) <sup>(note 2)</sup>	I <sub>out</sub>	-	6.2	-	mArms
Output Voltage	V <sub>out</sub>	-	1000	-	Vrms
Enable Pin Input Current Requirement <sup>(note 3)</sup>	I <sub>in</sub>	-	5.1	-	mAdc
Enable Pin Input Voltage Requirement <sup>(note 3)</sup>	V <sub>in</sub>	<b>Off</b> 0 or Floating	<b>On</b> 12	<b>On</b> 13.2	Vdc

Specifications subject to change without notice.

(Note 1) 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 2) With simulated load.

(Note 3) Valid only with JP1 removed.

### 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 should be non-conductive.
- 3) Open framed inverters should not be used in applications at altitudes over 10,000 feet.
- 4) Contact ERG for possible exceptions.



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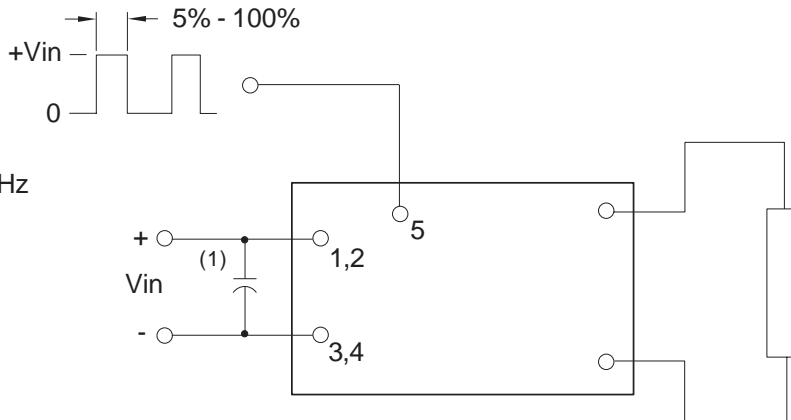
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Made in USA



## PWM Dimming

(Valid only with JP1 removed)



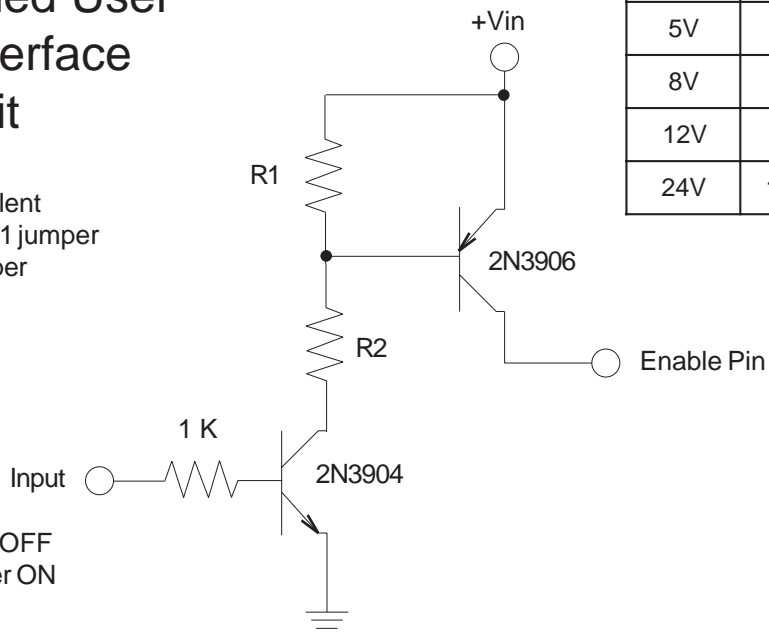
PWM frequency 100-300Hz should be selected to be compatible with LCD and display driver.

(1) Low ESR type input by-pass capacitor (22 uf - 100 uf) may be required to reduce reflected ripple.

## Recommended User Disable/Interface Circuit

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

0-0.5V Inverter OFF  
2V - 12V Inverter ON



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



Endicott Research Group, Inc. (ERG) reserves the right to make changes in circuit design and/or specifications at any time without notice. Accordingly, the reader is cautioned to verify that data sheets are current before placing orders. Information furnished by ERG is believed to be accurate and reliable. However, no responsibility is assumed by ERG for its use.