



Endicott Research Group, Inc.

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10m123313

Specifications and Applications Information

05/02/05

Preliminary

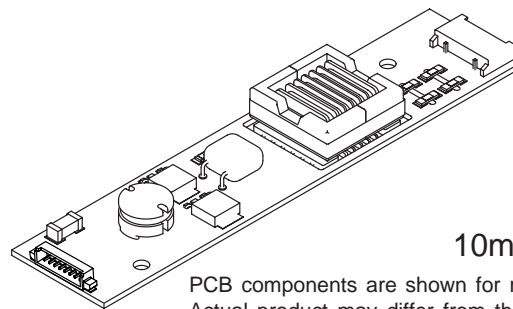
10m Class DC to AC Inverter

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

- Sharp LQ038Q5DR01 CCFL display from a +12 volt dc power supply.

This low profile inverter features:

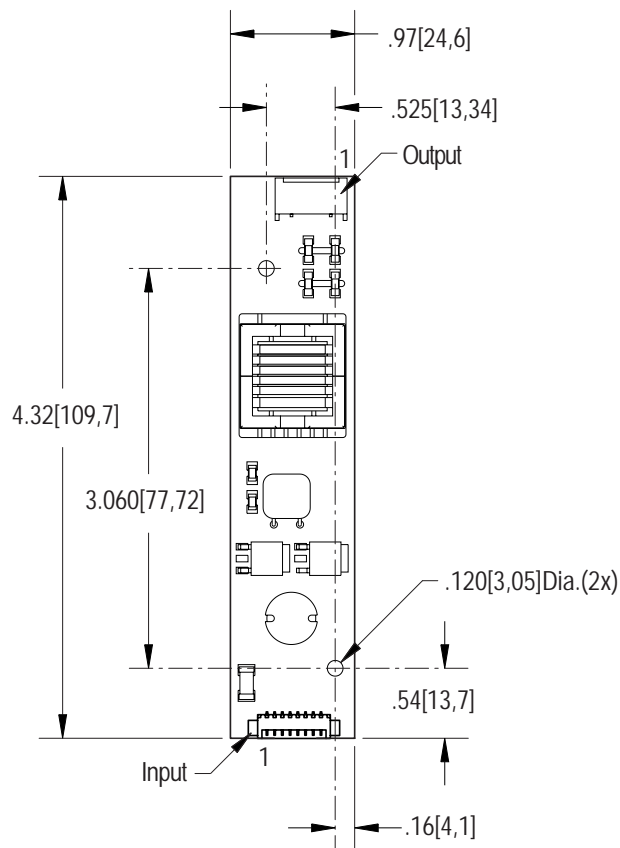
- ✓ Less Than 10 mm in Height
- ✓ LCD Module Specific
- ✓ Display Compatible Output Connector
- ✓ Firm Specifications
- ✓ Application Information
- ✓ Designed, Manufactured and Supported in the USA
- ✓ Custom Input and Output Voltages
- ✓ Flexible System Interface



10m Package

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

Package Configuration



Mass: 22 grams

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

Connectors

| Input Connector | Output Connector |
|---|-----------------------------|
| Molex 53261-0890 | JST SM02(8.0)B-BHS-1-TB |
| J1-1 Vin(+) J1-2 Vin(+) J1-3 GND J1-4 GND J1-5 Enable * J1-6 N/C J1-7 N/C J1-8 N/C | J2-1 ACout J2-2 ACreturn |

* Valid only with JP1 removed.

Absolute Maximum Ratings

| Rating | Symbol | Value | Units |
|---------------------|--------|---------------|-------|
| Input Voltage Range | Vin | -0.3 to +13.2 | Vdc |
| Storage Temperature | Tstg | -40 to +85 | °C |

Operating Characteristics

With referenced display and lamp warm-up of 5 minutes.
 Unless otherwise noted Vin = 12.00 Volts dc and Ta = 25°C

| Characteristic | Symbol | Min | Typ | Max | Units |
|--|------------|-----------------------------|-----------------|-------------------|-------|
| Input Voltage | Vin | +10.8 | +12.0 | +12.6 | Vdc |
| Component Surface Temperature | Ts | -20 | - | +80 | °C |
| Input Current ^(note 1) | Iin | - | .28 | .32 | Adc |
| Operating Frequency | Fo | 31 | 36 | 41 | KHz |
| Minimum Output Voltage | Vout (min) | 1700 | - | - | Vrms |
| Efficiency | - | - | 84 | - | % |
| Output Current (per lamp) | Iout | - | 5.7 | - | marms |
| Output Voltage | Vout | - | 530 | - | Vrms |
| Enable Pin Input Current Requirement ^(note 2) | Iin | - | 2.4 | - | madc |
| Enable Pin Input Voltage Requirement ^(note 2) | Vin | Off 0 or Floating | On 12 | On 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) Valid only with JP1 removed. See Recommended User Disable/Interface Circuit on page 3.

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.



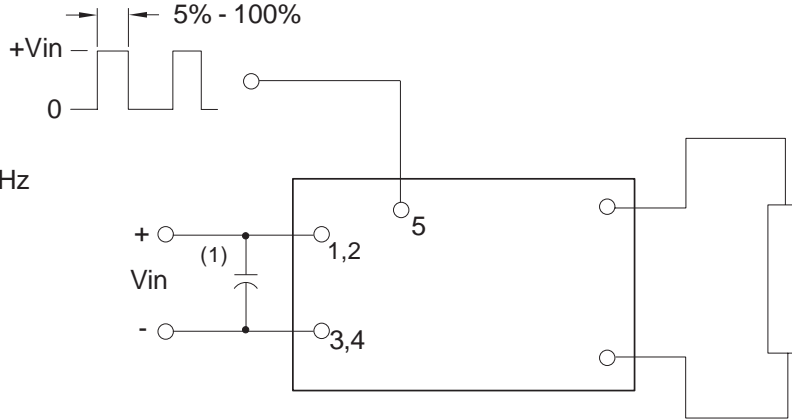
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Made in USA

PWM Dimming

(Valid only with JP1 removed)



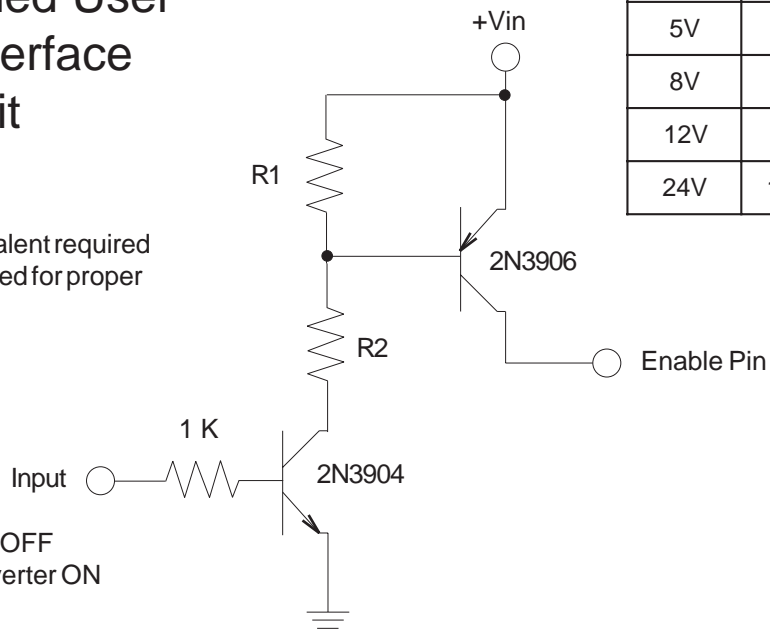
PWM frequency 100-300Hz should be selected to be compatible with LCD and display driver.

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

Recommended User Disable/Interface Circuit

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

0-0.5V Inverter OFF
2.0V - 12.6V 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 |