

APPLIED CONCEPTS INC.

397 Route 281 - P.O. BOX 453
Tully, New York 13159-0453
Phone: (315) 696-6676 Fax: (315) 696-9923
www.acipower.com

AC3-12-1410

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CCFL INVERTER (For Multiple Tube Applications)

06/15/04

DESCRIPTION

The AC3-12-1410 is designed to power 2 CCFL's with up to 7mA of output current and 6W of output power per tube. This unit features a low profile and high starting voltage capability to meet the needs of present generation LCD backlights.

Intensity control (0-100%) is accomplished by the user providing a variable dc level of 0.5V(off) to 4.5V(full-on) at pin 6 of CON1.

A +5V level is available at pin 7 of CON1 for powering the high-side of the intensity control potentiometer.

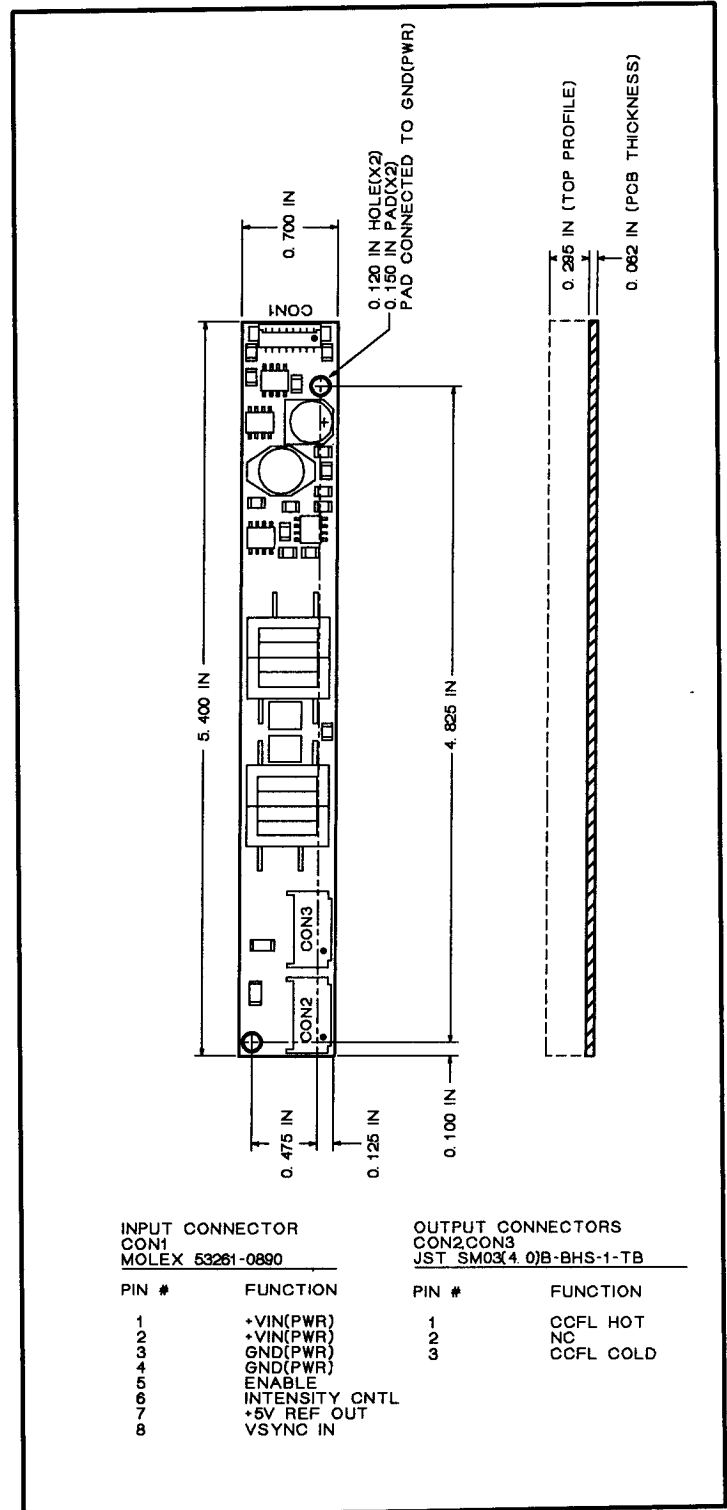
To minimize beat frequency interference, this unit is capable of synchronizing its pwm frequency to the LCD Vsync rate via pin 8 of CON1.

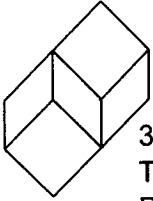
The lamp outputs are open and short circuit

No protruding leads or components provides flat surface on bottom side of inverter assembly.

MECHANICAL / ENVIRONMENTAL

- Weight = 20 grams
- Altitude = 10,000 Ft maximum
- Humidity < 85% non-condensing
- Size (L x W x H) = 5.4 IN x 0.7 IN x 0.360 IN
- PCB thickness = 0.062 IN
- Mounting Holes = 0.120 IN diameter (X2)
- Input Power & Control connector = CON1
- CCFL Output Connectors = CON2, CON3





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MAXIMUM RATINGS*

| Symbol | Parameter | Value | Unit |
|--------|---|--------------|------|
| Vin | Supply Voltage (Referenced to Ground) | -0.7 to 13.5 | Vdc |
| Vip | Voltage applied to any Input Pin (Referenced to Ground) | -0.7 to 5.7 | Vdc |
| Iop | Current sourced or sinked from any Output Pin | +/- 10 | mAcd |
| Pin | Input Power (DC Input Voltage x DC Input Current) | 10 | W |
| Top | Operating Temperature (Still Air Ambient around Inverter) | 0 to +70 | DegC |
| Tstg | Storage Temperature | -40 to +150 | DegC |

* Maximum Ratings are those values beyond which damage to the inverter may occur

RECOMMENDED OPERATING CONDITIONS

| Symbol | Parameter | Min | Max | Unit |
|--------|--|------|------|------|
| Vin | Supply Voltage (Referenced to Ground) | 10.8 | 13.2 | Vdc |
| Lsv | Cold Cathode Fluorescent Lamp Sustaining Voltage | 350 | 750 | Vrms |
| VSYif | Vertical Synchronization Input Frequency | 48 | 62 | Hz |
| Vcntl | Intensity Control Voltage | 0.5 | 4.5 | Vdc |

ELECTRICAL CHARACTERISTICS

Vin = +12V, Lsv = 550Vrms, Vcntl = +5V, ENon = +5V unless otherwise specified

| Symbol | Parameter | Test Conditions | Min | Max | Unit |
|--------|-----------------------------------|--|-------------|--------------|----------|
| Lstart | Lamp Starting Voltage | | 2000 | | Vrms |
| Lout | Lamp Output Current | | 6.25 | 7.75 | mA rms |
| Lfreq | Lamp-Current Frequency | | 45 | 55 | Khz |
| Pfreq | PWM Dimming Frequency | Vcntl(Pin 6) = +2.5V Vsync-In (Pin 8) = 0V Vsync-In (Pin 8) = 60Hz | 95 119.8 | 101 120.2 | Hz Hz |
| Pdc | PWM Duty Cycle Range | Vcntl(Pin 6) = 0.5 to +4.5V | 0 | 100 | % |
| ENoff | Enable Control, UNIT OFF (Pin 5) | | 0 | 0.7 | Vdc |
| ENon | Enable Control, unit on (Pin 5) | | 3.5 | 5.0 | Vdc |
| VSYhi | Vertical Sync In Hi Level (Pin 8) | | 0 | 0.7 | Vdc |
| VSYlo | Vertical Sync In LO Level (Pin 8) | | 3.5 | 5.0 | Vdc |
| +5Vout | +5V Reference Out (Pin 7) | 10k load to ground | 4.6 | 5.3 | Vdc |
| Iin | Input Current Draw | | | 0.7 | Adc |
| Eff | Electrical Efficiency | | 90 | | % |