



# APPLIED CONCEPTS INC.

397 Route 281 - P.O. BOX 1175  
Tully, New York 13159-1175  
Phone: (315) 696-6676 Fax: (315) 696-9923  
www.acipower.com

# AC-1386D

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## CCFL INVERTER

(For Dual Tube Applications)

7/7/08

### GENERAL DESCRIPTION

The AC-1386D is designed to power 2 CCFL's at a nominal current level of 7mA/tube and regulated over an input voltage range of +8V to +18V.

The AC-1386D features analog dimming control via a dc control level of 0V(off) to +5V(full-on) @ pin 6 of CON1. A dc reference voltage(+5V) is available @ pin 7 of CON1 for external use.

Enable control (0V=off, +5V=on) is accomplished @ pin 5 of CON1.

All outputs are open and short circuit protected.

### MECHANICAL / ENVIRONMENTAL

Weight = 21.5 grams

Altitude = 10,000 Ft maximum

Humidity < 85% non-condensing

Size (L x W x H) = 4.0 IN x 0.9 IN x 0.650 IN

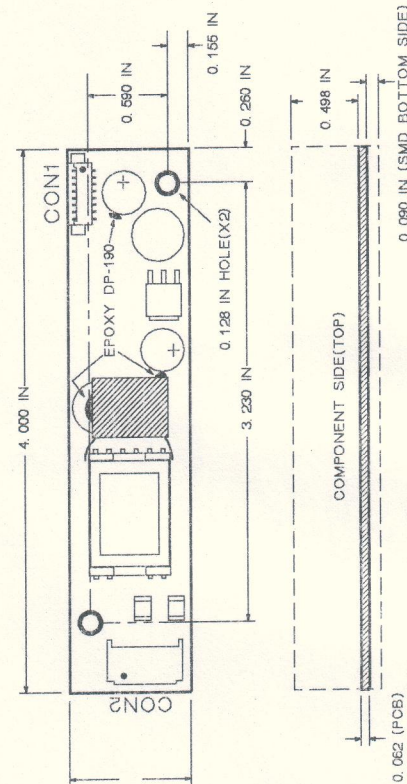
PCB thickness = 0.062 IN

Mounting Holes = 0.128 IN diameter (X2)

Input Power & Control Connector = CON1

CCFL Output Connector = CON2

Epoxy 3M DP-190 spot applied to secure components C1, C4 & C6



INPUT CONNECTOR  
CON1  
MOLEX 53261-0890

PIN #	FUNCTION
1	+8 TO +18V(PWR)
2	+8 TO +18V(PWR)
3	GND(PWR)
4	GND(PWR)
5	ENABLE
6	VCNTL
7	+5V OUT
8	PWM OUT

OUTPUT CONNECTOR  
CON2  
JST SM03(4.0)B-BHS-1-TB

PIN #	FUNCTION
1	CCFL COMMON
2	CCFL 1
3	CCFL 2





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## MAXIMUM RATINGS\*

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Symbol	Parameter	Value	Unit
Vin	Supply Voltage (Referenced to Ground)	-0.3 to 19	Vdc
Vip	Voltage applied to any Input Pin (Referenced to Ground)	-0.3 to 5.3	Vdc
Iop	Current sourced or sinked from any Output Pin	+/- 10	mAdc
Pin	Input Power (DC Input Voltage x DC Input Current)	11	W
Top	Operating Temperature (Still air ambient around Inverter)	0 to +70	DegC
Tstg	Storage Temperature	-20 to +105	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)	8	18	Vdc
Lsv	Cold Cathode Fluorescent Lamp Sustaining Voltage	400	600	Vrms
Vcntl	Intensity Control Voltage	0	5	Vdc

## ELECTRICAL CHARACTERISTICS

Vin = +12V, Lsv = 500Vrms, Vcntl = +5V, Enable = +5V unless otherwise specified

Symbol	Parameter	Test Conditions	Min	Max	Unit
Lstart	Lamp Starting Voltage		1400		Vrms
Lout	Lamp Output Current		6.5	7.5	mArms
Lfreq	Lamp-Current Frequency		62	76	Khz
Pfreq	PWM Dimming Frequency	Vcntl (Pin 6) = +2.5V	95	101	Hz
Pdc	PWM Duty Cycle Range	Vcntl (Pin 6) = 0 to +5V	0	100	%
ENoff	Enable Control, unit OFF (Pin 5)			0.8	Vdc
ENon	Enable Control, unit ON (Pin 5)		2.0		Vdc
+5Vout	+5V Reference Out (Pin 7)	10k load to ground	4.6	5.25	Vdc
Iin	Input Current Draw			0.75	Adc
Eff	Electrical Efficiency		85		%