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Applied Concepts
INNOVATION IN POWER CONVERSION TECHNOLOGY

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Tully, New York 13159-1175
Phone: 315 696-6676
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Email: sales@acipower.com
www.acipower.com

ACI-1865

PRODUCT DATA SHEET

08/13/09

I-DRIVE, 14.4 WATT LED DRIVER

(Single Channel 120V, 0-120mA)

GENERAL DESCRIPTION

The ACI-1865 is a universal driver utilizing the 3rd generation of I-Drive technology used for powering LED backlights.

This driver includes a Mode Select feature, enabling the user to select one of four maximum current settings by the user providing a Mode Select Resistance (MSr) between Pins 10 and 11 of CON1, enabling the driver to support a wide range of LED Rails.

Operating as a true constant current source and capable of driving up to 40 LEDs in series, this driver provides a complete integrated solution that is regulated over an input range of +8V to +18V.

Simple to connect and operate, this driver solution is capable of providing precise control to supporting dimming applications with a minimum of 3000:1.

This unit also features an enable control input.

MECHANICAL/ENVIRONMENTAL

Weight = 21.2 grams

Altitude = 35,000 ft max.

Humidity < 95% non-condensing

Size (L x W x H) = 2.60 IN x 1.43 IN x 0.385 IN

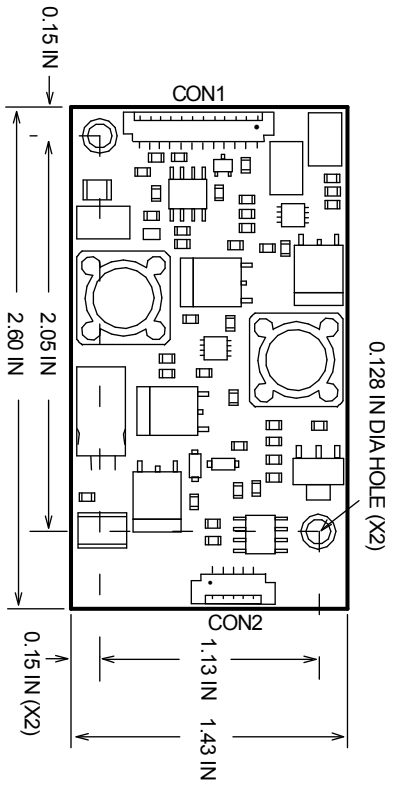
PCB thickness = 0.062 IN

Mounting Holes = 0.128 IN diameter (X2)

Input Power & Control Connector = CON1

LED Output Connector = CON2

This unit is RoHS Compliant



INPUT CONNECTOR
CON1
MOLEX 53261-1271

PIN#	FUNCTION
1	+8 to +18VDC (PWR)
2	+8 to +18VDC (PWR)
3	+8 to +18VDC (PWR)
4	GND (PWR)
5	GND (PWR)
6	GND (PWR)
7	ENABLE
8	ICNTL
9	GND (SIGNAL)
10	MODE SELECT RESISTANCE (MSr)
11	MODE SELECT RESISTANCE (MSr)
12	+5VDC REF OUT

OUTPUT CONNECTOR
CON2
MOLEX 53261-0571

PIN#	FUNCTION
1	+ LED (ANODE)
2	+ LED (ANODE)
3	NC
4	- LED (CATHODE)
5	- LED (CATHODE)

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MAXIMUM RATINGS*

Symbol	Parameter	Value	Unit
Vin	Supply Voltage (Referenced to Ground)	-0.7 to 20	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 Control Pin	+/- 10	mAdc
Pin	Input Power (DC Input Voltage x DC Input Current)	18.5	W
Top	Operating Temperature (Still air ambient around Driver)	-30 to +85	°C
Tstg	Storage Temperature	-40 to +105	°C

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

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Min	Max	Unit
Vin	Supply Voltage (Referenced to Ground)	8.0	18.0	Vdc
Vf	Series Connected Cumulative LED Forward-Drop Voltage	36	110	Vdc
Icntl	LED Intensity Control Voltage	0.5	4.5	Vdc

ELECTRICAL CHARACTERISTICS

Vin = +12V, Icntl = +4.5V, Enable = +5V, unless otherwise specified

Symbol	Parameter	Test Conditions	Min	Nom	Max	Unit
OCV	Open Circuit Voltage	No Load	133	140	147	Vdc
Iadj	Nominal output current adjust range	Icntl (Pin8) = +0.5V to +4.5V	0		Note1	mAdc
ENoff	Enable Control, Unit Off	Enable (Pin 7)			0.5	Vdc
ENon	Enable Control, Unit ON	Enable (Pin 7)	2.0			Vdc
+5Vref	+5V Output Reference Voltage	1K Ohm Load to Ground (Pin 12)	4.75	5.0	5.25	Vdc
MSr	Mode Select Resistance, Mode = 1	Pins 10 and 11 electrically shorted together	0	0	15.5K	Ohms
MSr	Mode Select Resistance, Mode = 2	Resistance applied between Pins 10 and 11	31.4K	33K	34.7K	Ohms
MSr	Mode Select Resistance, Mode = 3	Resistance applied between Pins 10 and 11	64.6K	68K	71.4K	Ohms
MSr	Mode Select Resistance, Mode = 4	Pins 10 and 11 electrically open	141K	∞	∞	Ohms
Zms	Mode Select Input Impedance	MS (Pin 10)		47K		Ohms
Iind	Input Current Draw (Disabled)	Enable (Pin 7) = 0V			0.06	Adc
Eff	Electrical Efficiency			86		%

Note1: Maximum current is Mode dependent. Refer to Electrical Characteristics on Page 3.

Electrical Characteristics continued on Page 3.

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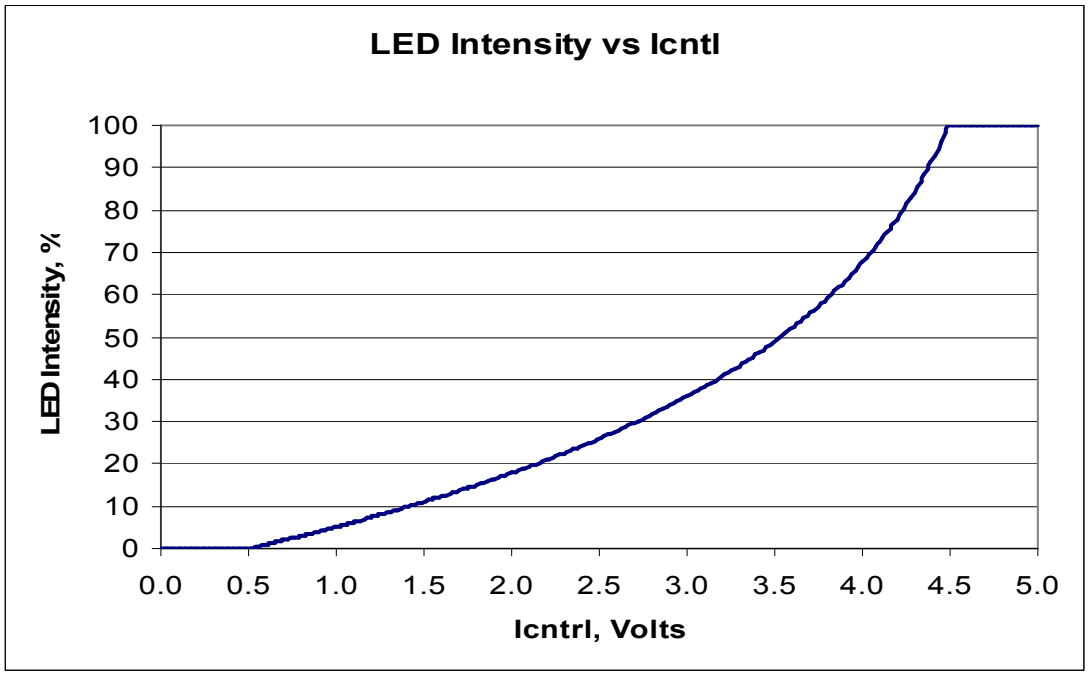
PRODUCT DATA SHEET

08/13/09

ELECTRICAL CHARACTERISTICS (Mode Dependent)

Vin = +12V, Vf = 110Vdc, Icntl = +4.5V, Enable = +5V, unless otherwise specified

Symbol	Parameter	Test Conditions	Min	Nom	Max	Unit
Iout	Output Current per channel	Mode = 1	57	**60**	63	mAdc
Iin	Input Current Draw		0.61	0.64	0.67	Adc
Iout	Output Current per channel	Mode = 2	76	**80**	84	mAdc
Iin	Input Current Draw		0.81	0.85	0.90	Adc
Iout	Output Current per channel	Mode = 3	95	**100**	105	mAdc
Iin	Input Current Draw		1.0	1.1	1.1	Adc
Iout	Output Current per channel	Mode = 4	114	**120**	126	mAdc
Iin	Input Current Draw		1.2	1.3	1.3	Adc



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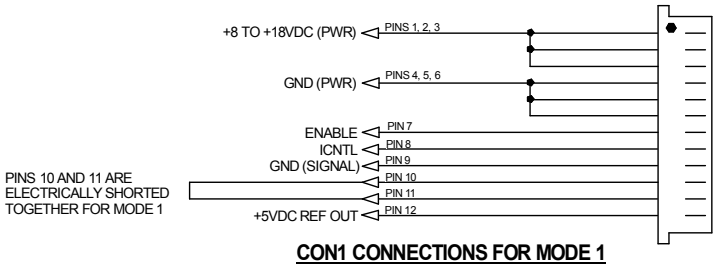
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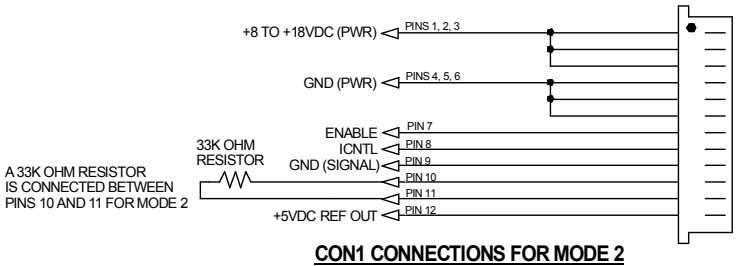
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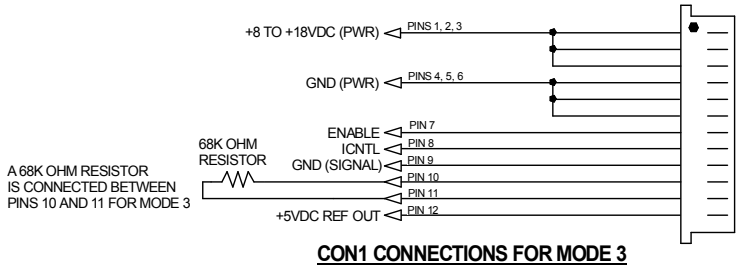
CON1 CONNECTIONS FOR MODE SELECTION



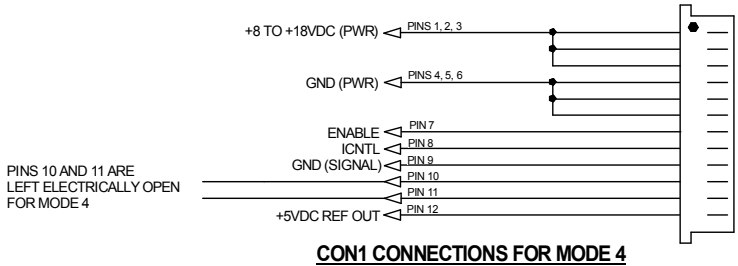
CON1 CONNECTIONS FOR MODE 1



CON1 CONNECTIONS FOR MODE 2



CON1 CONNECTIONS FOR MODE 3



CON1 CONNECTIONS FOR MODE 4

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