

MODEL CL-50

The Model CL-50 is a closed loop Hall effect current sensor that accurately measures dc and ac currents and provides electrical isolation between the current carrying conductor and the output of the sensor.

Description:

Nominal current (I_N) 50 A rms
 Measuring range 0 to ± 70 A

Electrical Specifications

	at 70 °C		at 85 °C	
	R min.	R max.	R min.	R max.
Sense resistor				
with ± 12 V at ± 50 A peak	10 ohms	100 ohms	60 ohms	95 ohms
at ± 70 A peak	10 ohms	50 ohms	(± 60 A max.) * 60 ohms	60 ohms
with ± 15 V at ± 50 A peak	50 ohms	160 ohms	135 ohms	155 ohms
at ± 70 A peak	50 ohms	90 ohms	(± 55 A max.) * 135 ohms	135 ohms
Nominal analog output current	50 mA			
Turns ratio	1:1000			
Overall accuracy at 25 °C and ± 12 V	$\pm 0.9\%$ of I_N			
Overall accuracy at 25 °C and ± 15 V	$\pm 0.65\%$ of I_N			
Supply voltage (Vdc)	± 12 to ± 15			
Dielectric strength	between the current carrying conductor and the output of the sensor: 2 kV rms/50 Hz/1 min.			

Accuracy-Dynamic Performance

Zero current offset at 25 °C	± 0.2 mA max.	
Residual current offset after an overload of $3x I_N$	± 0.3 mA max.	
Offset current temperature drift		
(between 0 °C and +70 °C)	± 0.1 mA typical	± 0.5 mA max.
(between -25 °C and +85 °C)	± 0.1 mA typical	± 0.6 mA max.
Linearity	better than $\pm 0.15\%$	
Response time	less than 500 ns	
di/dt accurately followed	better than 200 A/ μ s	
Bandwidth	0 to 200 kHz (- 1 dB)	

General Information

Operating temperature	-25 °C to +85 °C
Storage temperature	-40 °C to +90 °C
Current drain	10 mA (at ± 15 V) plus output current
Coil resistance	80 ohms (at 70 °C) 85 ohms (at +85 °C)
Package	flame retarded plastic case
Weight	18 grams
Mounting	Designed to mount directly on PCB via through hole connection pins.
Aperture size	0.500" x 0.276" (12.7 mm x 7 mm)
Output reference	To obtain a positive output on the terminal marked "OUT", aperture current must flow in the direction of the arrow (Conventional flow)

- Notes:**
- * Peak current at +85 °C
 - The temperature of the current carrying conductor should not exceed 90 °C
 - Plus and minus supply voltages must be within $\pm 5\%$ of each other
 - Contact F.W. Bell for other models

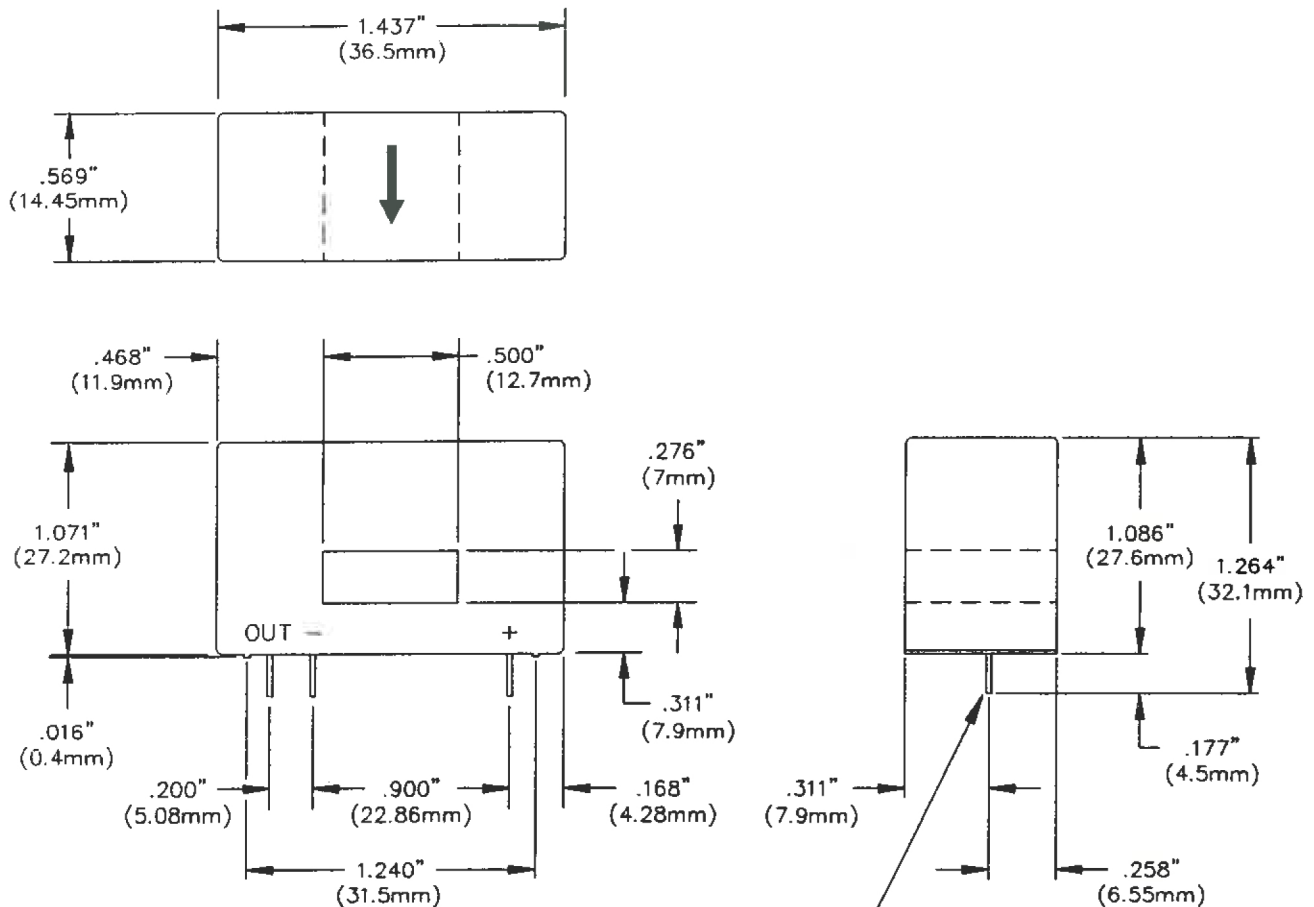
Due to continuous process improvement, specifications are subject to change without notice.

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MECHANICAL DIMENSIONS

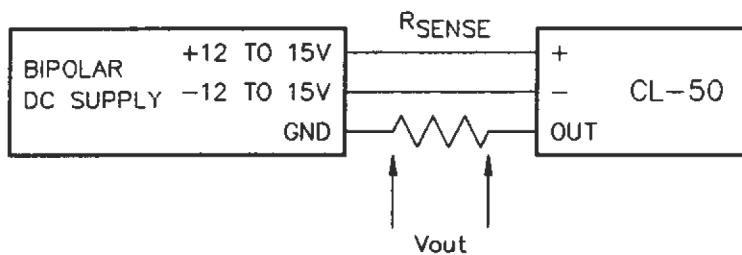
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS)

RECOMMENDED MOUNTING HOLE DIAMETER: .035" (0.9mm)



PINS, .025" x .022"
(0.63mm x 0.56mm)

CONNECTION SCHEMATIC:



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