

Model CLN-50/100

Closed Loop Hall Effect

Current Sensors

Description

Models CLN-50 and CLN-100 are closed loop Hall effect current sensors that accurately measure DC and AC currents and provide electrical isolation between the current carrying conductor and the output of the sensor.

Features

- Noncontact measurement of high current
- Measures DC, AC and impulse currents
- Current sensing up to 400A peak
- Very fast response and high accuracy
- High overload capacity
- PC board mount
- Solid core with aperture

Applications

- Variable speed drives for motors
- Welding Equipment
- Power supply Equipment
- Measure and control system
- Over current protection
- Protection of power semiconductors



Electrical Specifications

	CLN-50	CLN-100
Nominal current (I_N).....	50 A rms	100 A rms
Measuring range.....	0 to ± 90 A	0 to ± 150 A
Sense resistor.....	R. min. R. max.	R. min. R. max.
with ± 12 V at ± 70 A peak	50 ohms – 90 ohms	n/a n/a
at ± 100 A peak	n/a n/a	30 ohms – 55 ohms
at ± 150 A peak	n/a n/a	10 ohms – 25 ohms
with ± 15 V at ± 90 A peak	70 ohms – 100 ohms	n/a n/a
at ± 100 A peak	n/a n/a	30 ohms – 85 ohms
at ± 150 A peak	n/a n/a	30 ohms – 40 ohms
Nominal analog output current.....	50 mA	100 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.....	$\pm 0.5\%$ of I_N	
Supply voltage(Vdc)	± 12 to ± 15 ($\pm 5\%$)	
Dielectric strength	3 kV rms/50 Hz/1 min.	
(between the current carrying conductor and the output of the sensor)		

Accuracy-Dynamic Performance

Zero current offset at 25°C	± 0.2 mA max.
Offset current temperature drift	
between 0°C and +70°C	± 0.3 mA typ., ± 0.5 mA max.
between -25°C and +85°C	± 0.3 mA typ., ± 0.8 mA max.
Linearity.....	better than $\pm 0.1\%$
Response time	less than 500ns
di/dt accurately followed	better than 100 A/ μ s
Bandwidth	0 to 150 kHz (-1dB)

General Information

Operating temperature	-40°C to +85°C
Storage temperature.....	-40°C to +90°C
Current drain (plus output current)	10 mA (at ± 15 V) 14 mA (at ± 15 V)
Coil resistance at +70°C	30 ohms
Package.....	Flame retardant plastic case
Weight	18 grams 21 grams
Mounting	Designed to mount on PCB via thru hole connection pins
Aperture	0.492" x 0.354" (12.5mm x 9mm)
Output reference.....	To obtain a positive output on the terminal marked "O/P", aperture current must flow in the direction of the arrow (conventional flow)

- Notes:**
- The temperature of the current carrying conductor should not exceed 90°C.
 - Contact F.W. Bell for other models.
 - Due to continuous process improvement, specifications are subject to change without notice



6120 Hanging Moss Road • Orlando, Florida 32807
Phone (407) 678-9748 • Fax (407) 677-5765 • www.fwbell.com

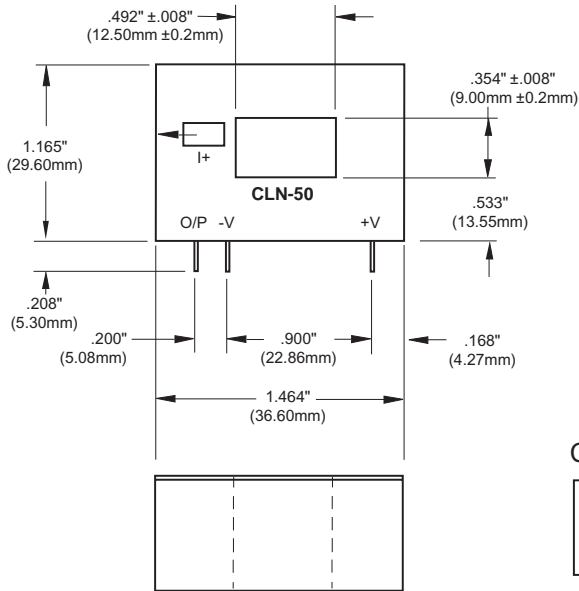


Mechanical Dimensions

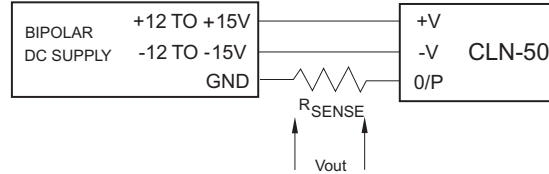
All dimensions are in inches (millimeters)

Current Sensors

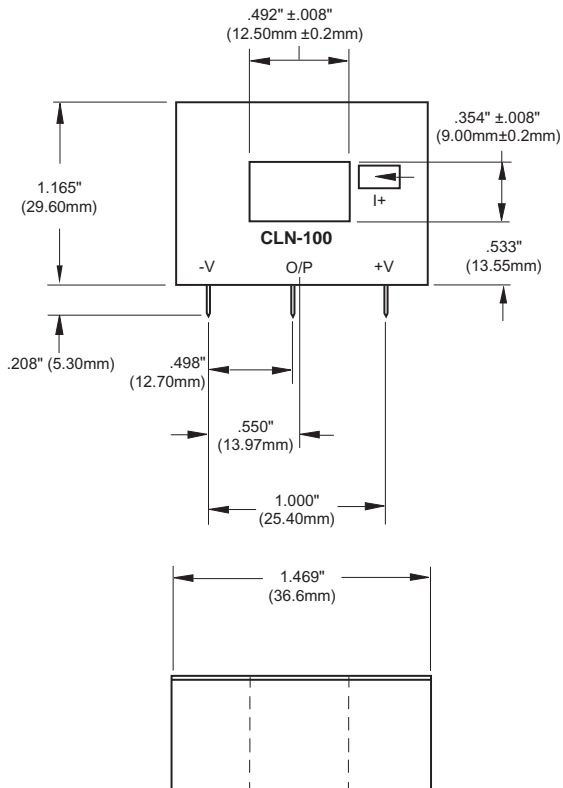
Model CLN-50



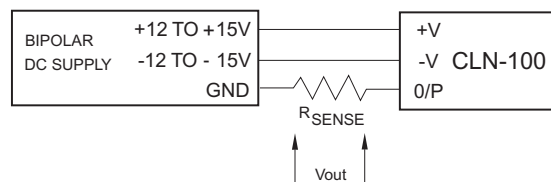
Connection Schematic



Model CLN-100



Connection Schematic



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