Model CLN-25 **Closed Loop Hall Effect**

Current Sensors

Description

The Model CLN-25 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.

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

Applications

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

Electrical Specifications

Nominal current (I_N)	25 Ampere turns rms	
Measuring range *	0 to 36 Ampere turns (A.t.)	
Sense resistor	R. min.	R. max.
with ± 12 V at 25 A.t. peak	100 ohms	200 ohms
at 36 A.t. peak	100 ohms	140 ohms
with ± 15 V at 25 A.t. peak	100 ohms	320 ohms
at 36 A.t. peak	100 ohms	190 ohms
Nominal analog output current	25 mA	
Turns ratio	1-2-3-4-5:1000	
Overall accuracy at 25°C and ±12V	± 0.7% of I_N	
Overall accuracy at 25° C and	± 0.5% of I_N	
Supply voltage (Vdc)	± 12 to ± 15 (± 5%)	
Dielectric strength	between the current carrying conductor and the output of the sensor: 5 kV rms/50 Hz/1 min.	

Accuracy-Dynamic Performance

	Typical	Max.
Zero current offset at 25°C (± 15V)	± 0.05 mA	± 0.15 mA
Residual current offset after an overload of 3 x I_N	± 0.05 mA	± 0.15 mA
Offset current temperature drift (± 15V)		
(between 0°C and +25°C)	± 0.06 mA	± 0.25 mA
(between +25°C and +70°C)	± 0.1 mA	± 0.35 mA
Linearity	better than ±0.2%	
Response time	less than 1 μs	
di/dt accurately followed	better than 50 A/μs	
Bandwidth	0 to 150 kHz (- 1 dB)	

General Information

Operating temperature	-40°C to +85°C
Storage temperature	-40°C to +90°C
Current drain	10 mA (at ± 15V) plus output current
Coil resistance	110 ohms (at 70°C)
Package	Flame retardant plastic case
Weight	16 grams
Mounting	Designed to mount directly on PCB via through hole connection pins
Output reference	To obtain a positive output on the terminal marked "O/P", current must flow from terminals 1,2,3,4 and 5 to terminals 10,9,8,7 and 6 (conventional flow)

Notes : * The CLN-25 offers a choice of 5 measuring ranges (refer to the measuring range table)

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Mechanical **Dimensions**

All dimensions are in inches (millimeters)

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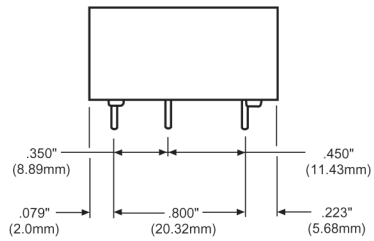

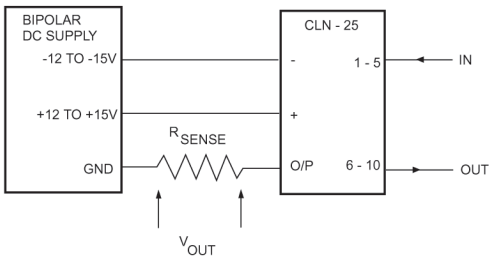

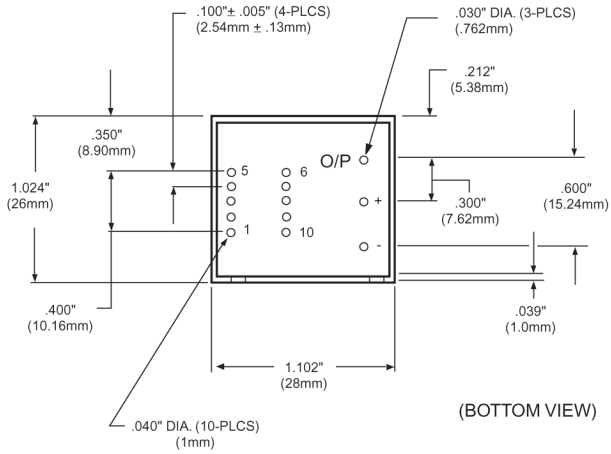

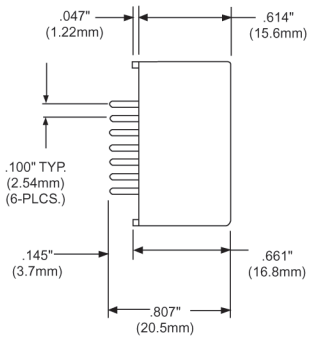

Measuring Range Table

Number of Turns of I_N	I_N(A)	Peak (A)	Nominal output Current (mA)	Turn Ratio	Insertion Loss Resistance (mΩ)	Insertion Loss Inductance (uH)	Recommended Connections
1	25	36	25	1/1000	0.3	0.023	5 4 3 2 1 IN OUT 6 7 8 9 10
2	12	18	24	2/1000	1.1	0.09	5 4 3 2 1 IN OUT 6 7 8 9 10
3	8	12	24	3/1000	2.5	0.21	5 4 3 2 1 IN OUT 6 7 8 9 10
4	6	9	24	4/1000	4.4	0.37	5 4 3 2 1 IN OUT 6 7 8 9 10
5	5	7	25	5/1000	6.3	0.58	5 4 3 2 1 IN OUT 6 7 8 9 10

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

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