

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 ± 12 V | $\pm 0.7\%$ of I_N | |
| Overall accuracy at 25° C and | $\pm 0.5\%$ of I_N | |
| Supply voltage (Vdc) | ± 12 to ± 15 ($\pm 5\%$) | |
| 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 (± 15 V) | ± 0.05 mA | ± 0.15 mA |
| Residual current offset after an overload of $3 \times I_N$ | ± 0.05 mA | ± 0.15 mA |
| Offset current temperature drift (± 15 V) (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 $\pm 0.2\%$ | |
| Response time | less than 1 μ s | |
| di/dt accurately followed | better than 50 A/ μ s | |
| 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 ± 15 V) 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) |

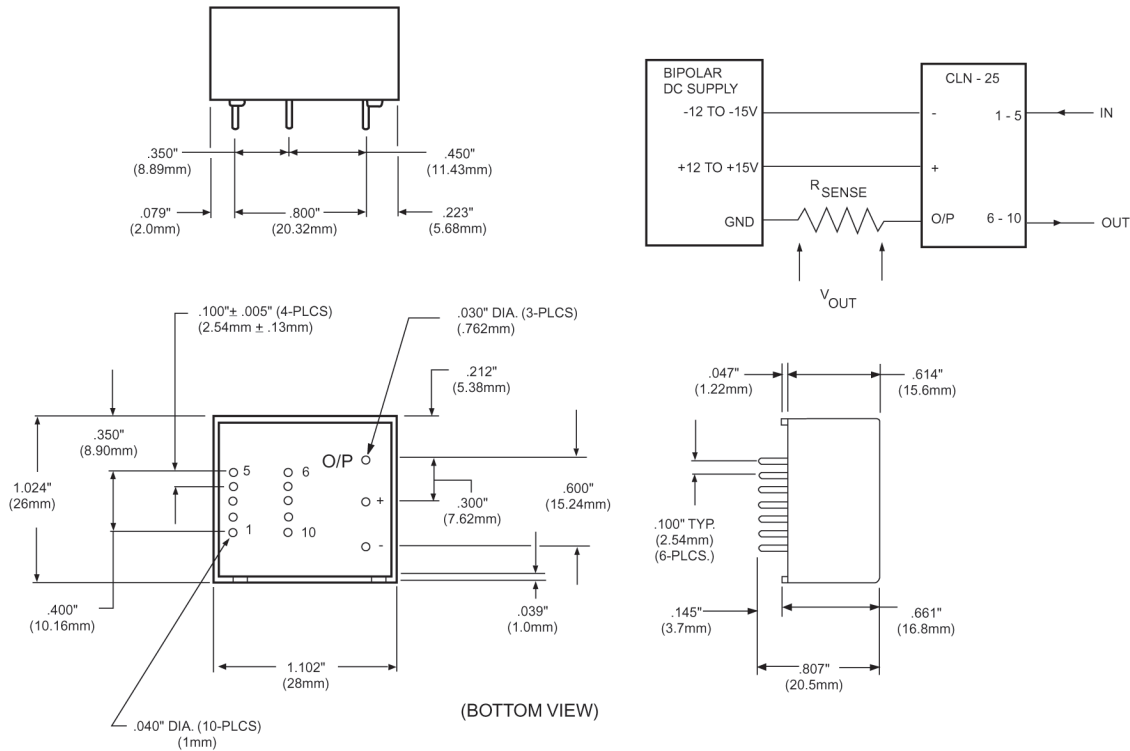
Notes : * The CLN-25 offers a choice of 5 measuring ranges (refer to the measuring range table)



Mechanical Dimensions

All dimensions are in inches (millimeters)

Model CLN-25



Current Sensors

Measuring Range Table

| Number of Turns of I_N | I_N (A) | Peak (A) | Nominal output Current (mA) | Turn Ratio | Insertion Loss Resistance ($m\Omega$) | Insertion Loss Inductance (μH) | Recommended Connections |
|--------------------------|-----------|----------|-----------------------------|------------|---|---------------------------------------|--|
| 1 | 25 | 36 | 25 | 1/1000 | 0.3 | 0.023 | <pre> 5 4 3 2 1 IN o-o-o-o-o o-o-o-o-o o-o-o-o-o 6 7 8 9 10 OUT </pre> |
| 2 | 12 | 18 | 24 | 2/1000 | 1.1 | 0.09 | <pre> 5 4 3 2 1 IN o-o-o-o-o o-o-o-o-o o-o-o-o-o 6 7 8 9 10 OUT </pre> |
| 3 | 8 | 12 | 24 | 3/1000 | 2.5 | 0.21 | <pre> 5 4 3 2 1 IN o-o-o-o-o o-o-o-o-o o-o-o-o-o 6 7 8 9 10 OUT </pre> |
| 4 | 6 | 9 | 24 | 4/1000 | 4.4 | 0.37 | <pre> 5 4 3 2 1 IN o-o-o-o-o o-o-o-o-o o-o-o-o-o 6 7 8 9 10 OUT </pre> |
| 5 | 5 | 7 | 25 | 5/1000 | 6.3 | 0.58 | <pre> 5 4 3 2 1 IN o-o-o-o-o o-o-o-o-o o-o-o-o-o 6 7 8 9 10 OUT </pre> |

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

