

# LS-300 / LS-1000 Closed Loop Hall Effect

## Description

Models LS-300 and LS-1000 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. These models are offered in a ruggedized package suitable for harsh environments

## 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
- Heavy duty housing
- 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
- Traction sensing



## Electrical Specifications

|   | 300 A        | 1000 A             |
|---|--------------|--------------------|
| Nominal current ( $I_N$ )                                       |              |                    |
| Measuring range (Depends on supply voltage and burden resistor) |              |                    |
| ±15V, 10 Ohm  | 375 A dc     | 1300 A dc          |
| ±15V, 3 Ohm   | 400 A dc     | 1500 A dc          |
| ±24V, 10 Ohm  | 600 A dc     | 2200 A dc          |
| ±24V, 3 Ohm   | 640 A dc     | 2400 A dc (<+70°C) |
| Nominal analog output current                                   | 100 mA       | 200 mA             |
| Turns ratio   | 1:3000       | 1:5000             |
| Supply voltage (Vdc ±10%)                                       | ±15 to ±24   | ±15 to ±24         |
| Dielectric strength primary to ground                           | 6.0kV ac     | 12.0kV ac          |
| Dielectric strength secondary to ground                         | 1.5kV ac     | 1.5kV ac           |
| Creepage distance   | 20mm         | 35 mm              |
| Burden resistance   | 0 to 10 Ohms | 0 to 10 Ohms       |

## Accuracy-Dynamic Specifications

|   |              |              |
|---|--------------|--------------|
| Overall accuracy, (Max.) -40°C to +85°C<br>(includes linearity, offset & accuracy of sensitivity) | ±0.6%        | ±0.6%        |
| Linearity at 25°C (Max.)  | ±0.1%        | ±0.1%        |
| Offset at 25°C (Max.)   | ±0.1mA       | ±0.1mA       |
| Residual magnetism (Max.)   | ±0.3mA       | ±0.3mA       |
| Offset drift, (Max.) -40°C to +85°C   | ±0.4mA       | ±0.6mA       |
| Response time   | < 1µs        | < 1µs        |
| di/dt accurately followed   | > 100 A/µs   | > 100 A/µs   |
| Frequency range (-3dB)  | DC to 100KHz | DC to 100KHz |

## General Information

|                                      |                      |                  |
|--------------------------------------|----------------------|------------------|
| Operating temperature                | -40°C to +85°C       | -40°C to +85°C   |
| Extended range operating temperature | -55°C to +85°C       | -55°C to +85°C   |
| Storage temperature                  | -55°C to +100°C      | -55°C to +100°C  |
| Package-Flame retardant              | UL-94VO              | UL-94VO5 mm dia. |
| Weight                               | 0.3kg                | 0.9kg            |
| Mounting                             | 2 holes, 5.6 mm dia. | 4 holes, 6.      |
| Aperture size                        | 24.3mm x 18.7mm      | 44mm diameter    |
| Output connection (shielded)         | 3 cond. cable        | 3 cond. cable    |
| RED: + SUPPLY VOLTAGE                |                      |                  |
| BLACK: - SUPPLY VOLTAGE              |                      |                  |
| GREEN: OUTPUT                        |                      |                  |
| SHIELD: EARTH (OPTIONAL)             |                      |                  |

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



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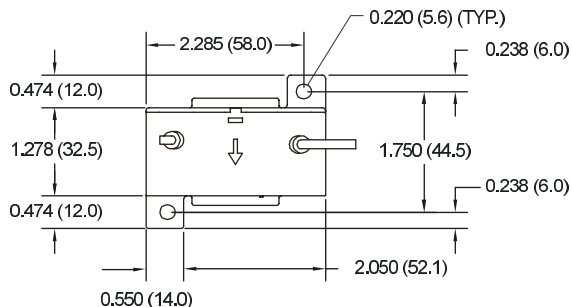


Rev. date 04/2003

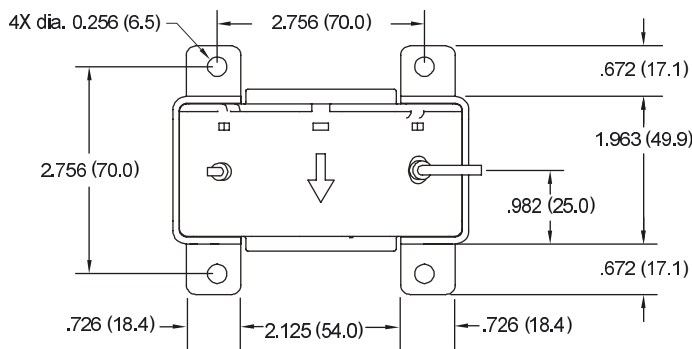
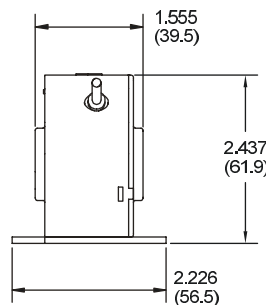
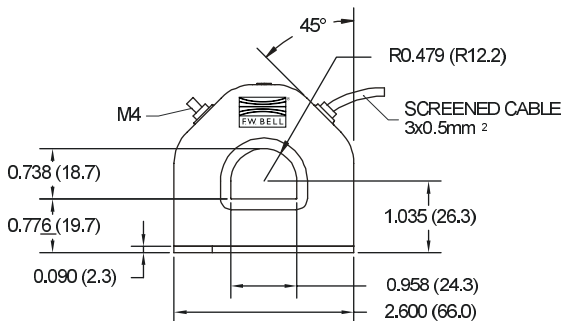
# Mechanical Dimensions

All dimensions are in inches (millimeters)

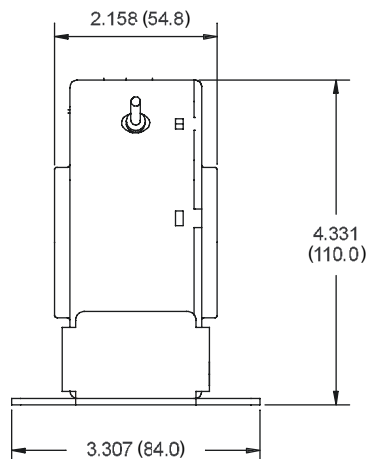
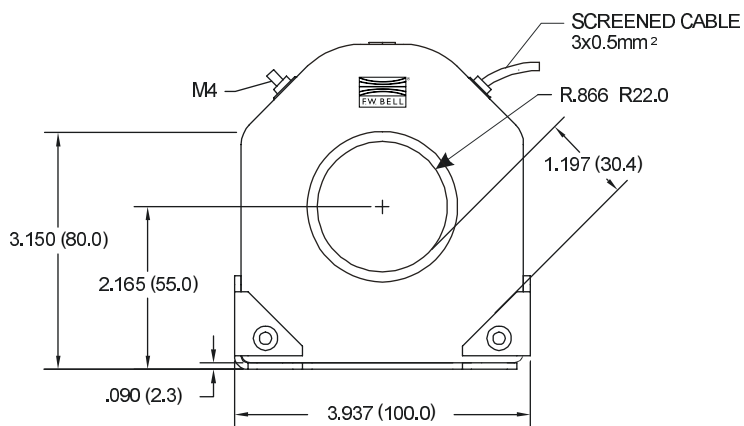
Current Sensors



**300 A**



**1000 A**



Measurements are in inches (mm)

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