

iLoad Analog™ Integrated Load Sensor

The iLoad Analog Series integrates signal conditioning electronics into the load sensor, eliminating the need to attach any external equipment to use the sensor. The small size, ruggedness, and low power requirements of the iLoad Analog Series makes it an ideal choice for a wide range of applications.

Highlights

Capacitive Technology

- Simplifies load measurements
- Standard 5V DC input
- Standard 0.5V – 4.5V DC output
- Large 4000 mV typical change for full load

Integrated Electronics

- No external signal conditioner
- Large signal to noise ratio
- Saves space & reduces clutter

Rugged & Reliable

- Stainless steel construction
- Mechanically robust design
- Weather-resistant packaging

Easy Attachment

- Convenient mounting on top and bottom of sensor
- Self balancing three point support on base

Multiple Capacities

Compression

- iLoad Analog 40 N
- iLoad Analog 200 N
- iLoad Analog 400 N
- iLoad Analog 1 kN
- iLoad Analog 2 kN

Tension

- iLoad Analog 40 N
- iLoad Analog 200 N
- iLoad Analog 400 N

Overview

Loadstar's iLoad Analog Series load sensor, based on new break-through technology, provide several unique benefits that make them usable across a wide range of applications. The iLoad Analog has signal conditioning electronics built into the sensor itself, and does not need specialized external equipment for output measurement. The sensor itself is extremely small, thin, and rugged, and provides high reliability as well as space-saving benefits to manufacturers. It mounts easily on commonly available fixtures.

Loadstar's breakthrough comes from its use of Capacitive Technology for load sensing. Unlike conventional resistive sensors based on either strain gauges or piezo-resistive techniques, Loadstar's patented technology harnesses changes in Capacitance to measure loads quickly and accurately.

The sensor accepts a 5V DC input signal and outputs an analog 0.5V – 4.5V DC signal proportional to the applied load. The full scale output range is 4000 mV – two hundred times that of traditional strain-gauge-based load cells. This signal can easily be measured using commonly available Digital Multi-meters.

Load Sensing Made Easy!



Precise

Accuracies from 0.25% to 0.15% of full scale



Rugged

Stainless steel construction. Environmentally protected.



Integrated Electronics

No need for signal conditioning or amplification



Easy Mounting

Threaded mounting holes for easy attachment using standard fixtures

Sensors



Interface Devices



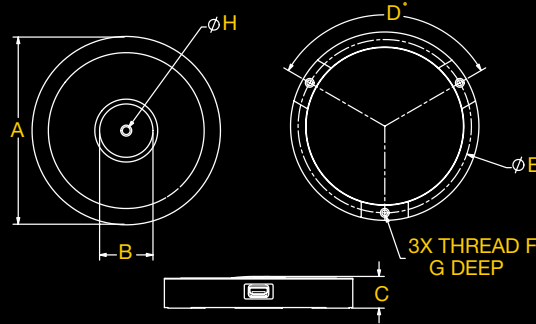
Software



iLoad Analog Integrated Load Sensor

Dimensions

| Rated Capacity | 500lb. | 250lb. | 100lb. | 50lb. | 10lb. |
|----------------|------------------------------|--------|--------|-------|-------|
| A | 3.000 in. / 76.20 mm | | | | |
| B | 0.850 in. / 21.59 mm | | | | |
| C | 0.505 in. / 12.83 mm | | | | |
| D | 3 x 120.0° | | | | |
| E | 2.760 in. / 70.11 mm | | | | |
| F | #4-40 UNC | | | | |
| G | 0.250 in. / 06.35 mm | | | | |
| H | √φ 0.23 in. / 05.84 mm x 90° | | | | |



Specifications

Accuracy

Combined Accuracy 0.25% of Full Scale Output (FS) - Standard
(Hysteresis, Linearity and Repeatability) 0.15% of Full Scale - Precision

Sensitivity 700 mV/V typical

Response Time 5 milliseconds

Mechanical

Safe Overload to 150% of capacity (200% - 500% available)

Deflection 0.075mm at capacity typical

Sensor Size 76.2mm OD, 12.8mm thick top-to-bottom

Electrical

Input Power Regulated 5V at 50 mA

Voltage Output 0.5V to 4.5V DC

Connections Integrated 1.8m cable with half inch stripped wire for terminal attachment or 5 pin male USB connector (to connect to DS-2100 or DQ-1200)

Environmental

Long-term Drift 0.05% of FS per 20 minutes max.

Operating Temperature Range -10°C to +70°C, non-condensing

Compensated Temperature Range -10°C to +40°C (with tare)

Alternative Configurations

With Inline Adapter (IX-300)



With #8-32 x 0.5" stud



With Tension Adapter (TX-300)



Suggested Mounting

Connector Option

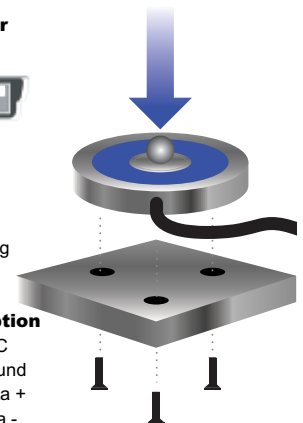


Pin Out

1. 5V DC
2. DATA -
3. DATA +
4. No Wiring
5. Ground

Pigtail Option

- Red - 5V DC
- Black - Ground
- Green - Data +
- White - Data -



The sensor is round in shape with a gentle dome (4-in. radius) upper surface. The flat bottom surface has three slightly stepped areas 120° apart with mounting holes tapped to accept #4-40 screws. Mount the sensors on a flat surface and apply loads perpendicular to the sensor body. Off-center or laterally-applied loads will reduce accuracy. Avoid side loads and twisting loads.

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