

iLoad Pro Analog™ Integrated Load Sensor

The iLoad Pro Analog Series integrates signal conditioning electronics into the load sensor, eliminating the need to attach any external equipment to generate a usable 0-5V signal. These sensors offer greater ruggedness and improved cable strain relief for more demanding 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 Attachments

- Convenient, robust mounting on top and bottom of sensor
- Self balancing multiple point support on base
- Optional Tension Adapter available

Multiple Capacities

- iLoad Pro Analog 200 N
- iLoad Pro Analog 400 N
- iLoad Pro Analog 1 kN
- iLoad Pro Analog 2 kN
- iLoad Pro Analog 4 kN
- iLoad Pro Analog 10 kN
- iLoad Pro Analog 20 kN
- iLoad Pro Analog 40 kN
- iLoad Pro Analog 100 kN

Overview

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

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 or with programmable logic controllers (PLC).

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



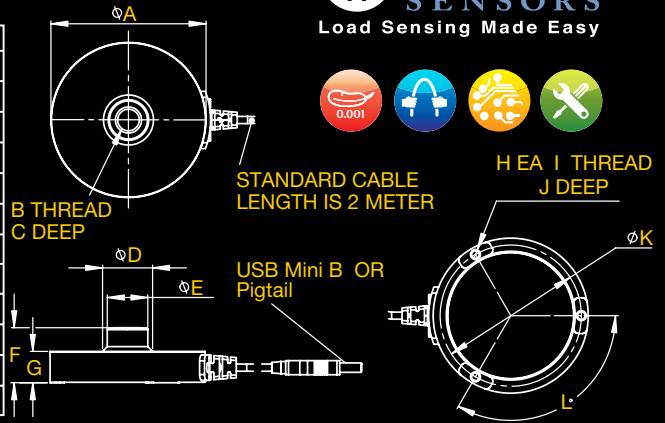
Software



iLoad Pro Analog Integrated Load Sensor

Dimensions

| Rated Capacity | 50lb. | 100lb. | 250lb. | 500lb. | 1,000lb. | 2,500lb. | 5,000lb. | 10,000lb. | 25,000lb. |
|----------------|----------------|----------|----------|----------|----------|----------|----------------|-----------|------------------|
| A | 3.25 in. | | | | | | 4 in. | | 5 in. |
| B | #1/2-20 UNF-2B | | | | | | #7/8-14 UNF-2B | | #1 1/4-12 UNF-3B |
| C | 0.4 in. | | | | | | 0.75 in. | | 1 in. |
| D | 0.85 in. | | | | | | 1.7 in. | | 1.57 in. |
| E | 0.89 in. | 0.94 in. | 0.97 in. | 1.05 in. | 1.05 in. | 1.05 in. | 1.25 in. | | 1.75 in. |
| F | 1.15 in. | | | | | | 1.5 in. | | 2.19 in. |
| G | 0.66 in. | | | | | | 0.84 in. | | 1 in. |
| H | 3 | | | | | | 6 | | 6 |
| I | #10-32 UNF-2B | | | | | | #1/4-20 UNC-2B | | #3/8-24 UNF-2B |
| J | 0.4 in. | | | | | | 0.5 in. | | 0.75 in. |
| K | 2.96 in. | | | | | | 3.44 in. | | 4.25 in. |
| L | 120° | | | | | | 60° | | 60° |



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 82.5 to 127mm OD, 29 to 56mm 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

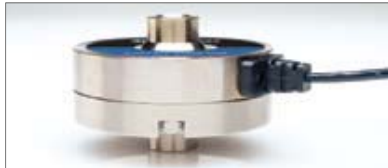
Long-term Drift 0.05% of FS per 20 minutes max.

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

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

Alternative Configurations

With Optional Tension Adapter (TX-325)



Suggested Mounting

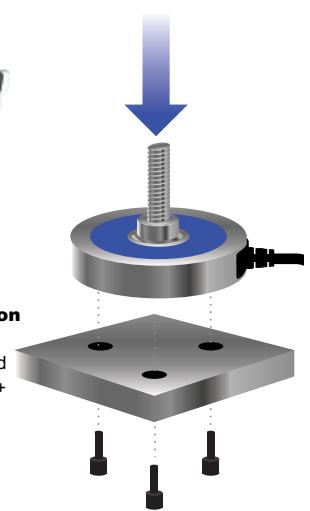
Connector Option



- 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 circular with a raised mounting surface at the top of the sensor. The flat bottom surface has multiple stepped areas with mounting holes tapped to accept #10-32 screws. Mount the sensors on a flat surface and apply loads perpendicular to the sensor body. Off-center or laterally-applied loads will greatly affect accuracy. Avoid side loads and twisting loads.

ELECTRONIC & MECHANIC POWER PARTS

Adalbertstraße 63
60486 Frankfurt / Main
Fon: 069 - 70790850
Fax: 069 - 70790851
Email: info@prodynamics.com
Web: www.prodynamics.com

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