The iLoad Analog Series integrates signal conditioning electronics into the load cell, 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 make it an ideal choice for a wide range of applications.

**Highlights**

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

**Integrated Load Cell 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 Load Cell Capacities**

*Compression Load Cells*
- iLoad Analog 10 pounds
- iLoad Analog 50 pounds
- iLoad Analog 100 pounds
- iLoad Analog 250 pounds
- iLoad Analog 500 pounds

**Overview**

Loadstar’s iLoad Analog Series load cell, based on new break-through technology, provide several unique benefits that make them usable across a wide range of applications. The iLoad Analog load cell 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 load cells 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.
iLoad Analog Integrated Load Cell

Dimensions

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

Load Cell Specifications

Accuracy

- Linearity ±0.15 % full scale
- Hysteresis ±0.15 % full scale
- Non-repeatability ±0.15 % full scale
- Response Time 10 milliseconds

Mechanical

- Safe Overload to 150% of capacity (200% - 500% available)
- Deflection 0.003-in at capacity typical
- Sensor Size 3 OD, 0.505 thick top-to-bottom

Electrical

- Input Power Regulated 5V at 60 mA
- Voltage Output ~0.5V to 4.5V DC
- Connections Integrated 6 ft. cable with half inch striped wire for terminal attachment or 5 pin male USB connector

Environmental

- Creep, in 20 min ±0.03 %
- Operating Temperature Range 10°C to 40°C, non-condensing
- Temperature Effect on Output ±0.02 % full scale/°C

Alternative Load Cell Configurations

- With Inline Adapter (IX-300)
- 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 load cell 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 load cells 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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