

iLoad Digital USB™ Integrated Load Cell

The iLoad Digital USB load cells offer direct measurement of static loads via the USB port of a PC. No need for signal conditioners, data acquisition systems or special software. Just connect and start measuring!

Highlights

Capacitive Load Cell Technology

- Plug and Sense Simplicity
- Digital Integrated Electronics
- Standard USB output
- Power supplied via USB port
- Integrated power conditioning
- Stored calibration

Rugged Construction

- Compact design with low profile
- Stainless steel construction
- Mechanically robust
- Weather resistant packaging available

Easy Attachments

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

Multiple Load Cell Capacities

Compression Load Cells

- iLoad Digital 50 pounds
- iLoad Digital 100 pounds
- iLoad Digital 250 pounds
- iLoad Digital 500 pounds

Can be used in compression only

Overview

Loadstar's iLoad Digital USB load cells provide unprecedented integration of sensing and measurement electronics to provide Plug and Sense™ simplicity for compressive load and force measurements.

Load Sensing Made Easy!



Precise

Accuracies to 0.15% of full scale.



Rugged

Stainless steel construction. Optional environmental protection.



True USB

No need for signal conditioning or data acquisition system. Optional analog output (0.5 - 4.5 V DC).



Easy Mounting

Threaded mounting holes for easy attachment using standard fixtures.



Here's How It Works



iLoad USB

Digital USB Signal



1 Sense

2 View & Process

LoadVUE, LoadVUE Lite

Simply connect the digital load cell to a PC via the USB port. The digital load cell appears on the PC as a virtual COM port. Using a standard terminal emulator, send commands to the sensor to directly display sensor outputs in pounds as ASCII text. You can query loads one reading at a time or get a continuous stream of readings. Alternatively, use our application (LoadVUE or LoadVUE Lite) to simplify load and force measurements. You can easily get load data into your custom application using our simple ASCII command set with real load information in ASCII format.

Suggested Configuration

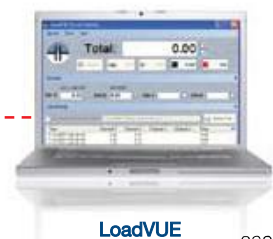


USB

Display & Controller



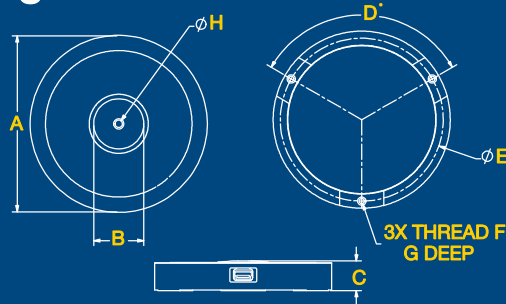
USB



iLoad Digital USB Integrated Load Cell

Dimensions

Rated Capacity	50lb.	100lb.	250lb.	500lb.
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°			



* For alignment only, not a usable thread.
 † Hardness: 40-47 (Rockwell C)



Load Cell Specifications

Accuracy w/tare (% of FS)	Non-linearity	Hysteresis	Non-repeatability
50, 100, 250, 500 lb.	±0.15 %	±0.15 %	±0.15 %
Data Update Rate	150 Hz		
Response Rate	10 Hz (40 Hz available)		

Mechanical

Safe Overload	to 150% of capacity
Deflection	0.003-in typical at rated capacity
Sensor Size	3-in. OD, 0.505-in thick top-to-bottom

Electrical

Input Power	Input power from USB Digital Output - USB 2.0 (5V at 60mA)
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Environmental

Creep, in 20 min	±0.03 % of full scale
Operating Temperature Range	10°C to 40°C, non-condensing
Temperature Effect on Span	up to ±0.05 % full scale/°C (from calibration temperature)

Connections

Connector Information	Standard female 5-pin USB mini-B connector
Mating Cable	USB 5-pin mini-B to male USB-A 6' long included Optional 10' cable available Optional 16' active extender cable available (LX-100)

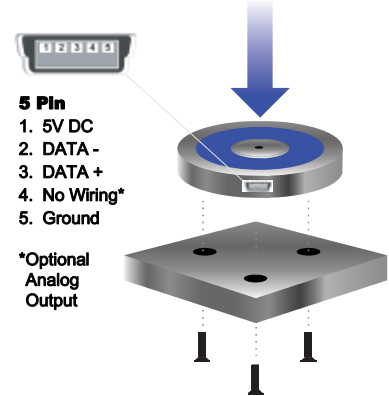
Alternative Load Cell Configurations

With Inline Female Adapter (X-300)



Female #8-32 x 0.25" on adapter

Suggested Use



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

*Optional Analog Output

The load cell is circular with a gentle dome (3-in. radius) on its 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. Use under steady temperature conditions for best results.

Certifications



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