

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!

Alternative Configurations



With Inline Female Adapter (IX-300)

Highlights

Capacitive Load Cell Technology

- ★ 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

Easy Attachments

- ★ Convenient dome on top and mounting holes on bottom of sensor

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.

Here's How It Works



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, further simplify load and force measurements using our application software (LoadVUE or LoadVUE Lite). You can easily get load data into your custom application using our simple ASCII command set with real load information in ASCII format.

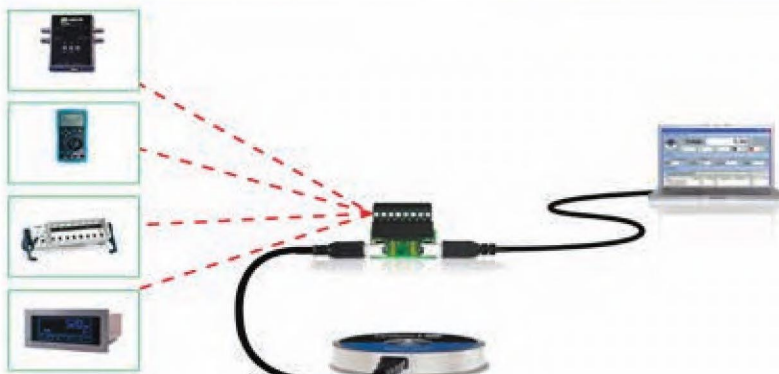
Ordering Information

Used in Compression Only

iLoad Digital	Digital - USB	Analog
10 pounds	LUD-010-100-S	LAD-010-100-S
50 pounds	LUD-050-025-S	LAD-050-025-S
100 pounds	LUD-100-025-S	LAD-100-025-S
250 pounds	LUD-250-025-S	LAD-250-025-S
500 pounds	LUD-500-025-S	LAD-500-025-S

*Analog option available with HX-100 Hybrid interface breakout board or as Pigtail Opton

Hybrid Configuration

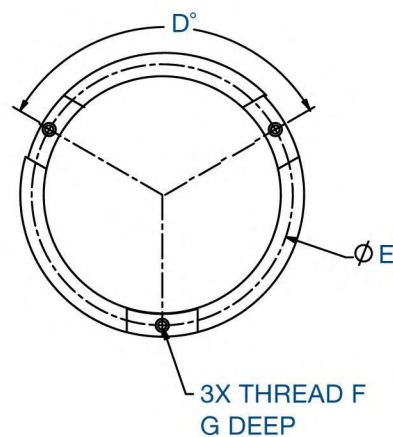
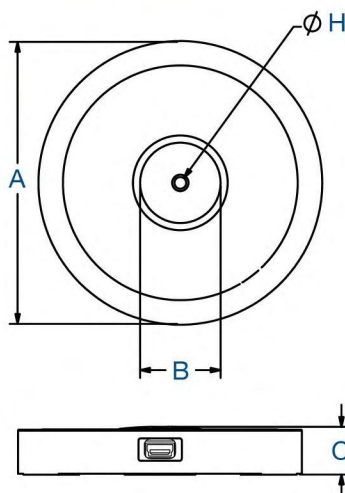


Dimensions

Capacity	lb
	10, 50, 100, 250 & 500 lb.
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*	∅ 0.23 in./ 05.84 mm x 90°

* For alignment only, not a usable thread.

† Hardness: 40-47 (Rockwell C)



Accuracy Specifications At Room Temperature ~25°C

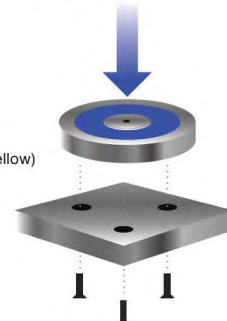
Accuracy • with tare (% of FS)	10 lb	50, 100, 250 lb	500 lb.
Non-linearity	± 1%	± 0.25%	± 0.25%
Hysteresis	± 1%	± 0.25%	± 0.25%
Non-repeatability	± 1%	± 0.25%	± 0.25%

Load Cell Specifications

Data Update Rate	150 Hz (500 Hz available)
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
Input Power	input power from USB Digital Output - USB 2.0 (5V at 60mA)
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)
Connector Information	Standard female 5-pin USB mini-B connector
Mating Table	USB 5-pin mini-B to male USB-A 6' long included Optional 10' cable available Optional 16' active extender cable available (UX-100)

Suggested Mounting

1. 5V DC (Red)
2. D- (White)
3. D+ (Green)
4. Optional Analog (Yellow)
5. Ground (Black)



Optional analog 0.5V-4.5V DC output can be obtained between pins 4 and 5 using HX-100 breakout board.

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. Suggest using a small steel ball to center the load. Use under steady temperature conditions for best results.

Certifications



Compatible Accessories

Digital Interfaces							Software	
							LV-100	page 127
DS-3000U Display & Controller	HX-100 iLoad Hybrid Interface	HX-700 Wired USB Hub	WX-100 Wireless USB Hub	EX-500 Ethernet Hub	SC-1200 Sensor Concentrator	HX-400 Wired USB Hub	LV-400	page 128
							LV-1000	page 127
							LV-4000	page 128
							LV-4000R	page 128
							LV-4000HS	page 128
							LV-4000CG	page 129
							SensorVUE	page 128
Hardware Accessories								