



## **iLoad Series Integrated Load Sensors**

### **Instructions for Optimal Performance**

Please follow the guidelines listed below to get the best performance from your iLoad Series Integrated Load Sensor:

#### **Wiring:**

*Note: The iLoad series sensors are intended for use with an NRTL approved device such as a computer or regulated power supply.*

If you have ordered **iLoad Digital USB** sensors, you may connect the sensor to any PC USB port using the appropriate cable. If you are connecting to a PC via a USB hub, ensure that the hub is powered and capable of supporting at least 75 mA per USB port.

If you have ordered an **iLoad Analog** sensor with the pigtail cable, it comes with the free end stripped. The color coding of the stripped wires is as follows:

Red: +5V DC, regulated  
Black: Common ground for power and signal  
Yellow: +Signal  
White: Not Used  
Green: Not Used

#### **Soak and warm up time:**

Place the sensor in the intended location of use at least for twelve hours so that the sensor is “soaked” in that environment and has reached steady state.

Before operating the sensor, allow it to “warm up” by connecting it to power for at least 30 minutes. This allows the signal conditioning electronics to stabilize and perform more accurately.

#### **Temperature stability:**

Please ensure that during use the load sensor is not subject to significant changes in temperature. This could lead to some thermal drift. Allow the sensor to stabilize at the new temperature, then use the “tare” button on your display or LoadVUE software to set the new “zero load” condition before commencing load readings. If you are using the direct voltage output from the iLoad Analog, use the stabilized voltage at no load at any new temperature as your new zero load voltage.

**Sensor Noise:**

Using the average of 5 - 10 readings will ensure smoothing of any noise in the output of the sensor.

**Direction of Loading:**

For best results, please ensure that the force is applied in a direction normal to the top surface of the sensor. Any angular force vector or moment may lead to inaccuracy. If your configuration allows it, we recommend that you use a steel ball of 3/8"–3/4" diameter placed directly on the hole in the center of the top dome for compression-only iLoad sensors. The ball will help properly concentrate and direct the force to optimize accuracy. If you are using the sensor in tension, ensure that you are minimizing any side loads to the screw threads to which the load is applied. *Do not insert a screw into the hole at the top of the dome on a compression-only iLoad Sensor; this will affect the accuracy of the device.*

If you are using a sensor in both compression and tension, we recommend for best accuracy that you tare the sensor when the direction of the applied force changes direction. Ideally, this tare should be taken with a small (~1% capacity) pre-load in the direction (compression or tension) of loading to be measured.

**Mounting:**

If used horizontally, the sensor may be placed on a flat hard surface. The three small legs on the bottom will support the sensor correctly. If the location is not horizontal or if the sensor needs to be secured to a fixed location, use three screws to mount the sensor.

Following the dimensions on the iLoad Series specification sheet, ensure that the mounting holes are precisely located so that tightening the screws does not add any pre-stress to the case of the sensor.

Over tightening of the mounting screws may also pre-stress the case and reduce accuracy.

Of course, if you are using the sensors with the TX-300 or TX-325 tension adapters, use the screw threads provided to mount the sensor.

*In all cases, ensure that there is no contact or force applied to the center disc on the base of the sensor.*

If you are building a scale with multiple sensors – place the weighing platform on top of the sensors making sure that the top of the dome is in contact with the platform. Shim as required to ensure contact.

Alternatively, you can attach the sensors to the platform with the three mounting holes – with screws coming in from the other side of the platform. You can invert the platform with the sensors attached to convert into a scale.

**Overload Protection:**

Please make sure to not load the sensors beyond the rated overload of 1.5X of capacity. Be gentle and careful especially when placing loads on the sensor since instantaneous loads can be several times higher than the static load being placed.

The sensor calibration can be affected in case of exceeding rated overloads. In extreme cases, the sensor can be severely damaged.

*Thanks for your purchase. We hope our sensor meets your application needs and you will come back to us for additional load sensors!*

*Feel free to call us if we can be of additional help.*

*Loadstar Sensors Team*

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