Micro Load Cell (0-20kg) – CZL635

Product Description

A load cell is a force sensing module – a carefully designed metal structure, with small elements called strain gauges mounted in precise locations on the structure. Load cells are designed to measure a specific force, and ignore other forces being applied. The electrical signal output by the load cell is very small and requires specialized amplification. Fortunately, the 1046 PhidgetBridge will perform all the amplification and measurement of the electrical output.

Load cells are designed to measure force in one direction. They will often measure force in other directions, but the sensor sensitivity will be different, since parts of the load cell operating under compression are now in tension, and vice versa.

This Single Point Load Cell is used in small jewelry scales and kitchen scales. It's mounted by bolting down the end of the load cell where the wires are attached, and applying force on the other end in the direction of the arrow. Where the force is applied is not critical, as this load cell measures a shearing effect on the beam, not the bending of the beam. If you mount a small platform on the load cell, as would be done in a small scale, this load cell provides accurate readings regardless of the position of the load on the platform.

Product Specifications

Sensor Properties

Sensor Type	Shear Load Cell
Weight Capacity Max	20 kg
Maximum Overload	24 kg
Creep	20 g/hr
Zero Balance	± 300 g
Cell Repeatability Error Max	± 10 g
Cell Non-Linearity Max	10 g
Cell Hysteresis Max	10 g

Temperature Effect on Span	1 g/°C
Temperature Effect on Zero	2 g/°C

Electrical Properties

Rated Output	1 mV/V
Rated Output Error Max	± 150 ?V/V
Output Impedance	1 k?
Supply Voltage Max	5 V DC

Physical Properties

Compensated Temperature Min	-10 °C
Compensated Temperature Max	40 °C
Operating Temperature Min	-20 °C
Operating Temperature Max	55 °C
Cable Length	55 mm
Cable Gauge	30 AWG
Material	Aluminium Alloy
Screw Thread Size	M5x0.8

Resources

The Data Sheet below has a comprehensive glossary that describes in practical terms the meaning and usefulness of the specifications.

- Load Cell Primer
- Mechanical Drawing

Warning

Make sure to calibrate your load cell before using it. You can find information on how to calibrate the cell in the Load Cell Primer. You should also look at the 1046 – PhidgetBridge User Guide.

Connection

The 3134 connects to a bridge on the 1046 – PhidgetBridge 4-Input

The following table shows how to connect the Load Cell Wires to the bridge connectors.

Wire Color	Red	Green	White	Black
Bridge Connector	5V	+	–	GND