Micro Load Cell (0-100g) – CZL639HD

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 type of 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.

Connection

Load cells require a power source and produce a very small voltage differential when under strain. In order to read this signal, an amplifier or a board with a high-precision analog-to-digital converter is required. For more details and a list of Phidgets that will connect to this load cell, see the “Compatible Products” tab.

This Single Point Load Cell is often used in small, high-precision 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. 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
Controlled By	Bridge Input
Weight Capacity Max	100 g
Maximum Overload	120 g
Cell Repeatability Error Max	?± 50 mg
Cell Non-Linearity Max	50 mg
Cell Hysteresis Max	50 mg

Electrical Properties

Rated Output	600 ?¼V/V
Rated Output Error Max	?± 150 ?¼V/V
Output Impedance	1 k?©
Creep	100 mg/hr
Temperature Effect on Zero	5 mg/?°C
Temperature Effect on Span	5 mg/?°C
Supply Voltage Min	3 V DC
Supply Voltage Max	10 V DC
Zero Balance Ratio	?± 100 ?¼V/V

Physical Properties

Operating Temperature Min	-10 ?°C
Operating Temperature Max	40 ?°C
Compensated Temperature Min	-10 ?°C
Compensated Temperature Max	60 ?°C
Cable Length	110 mm
Cable Gauge	4x 30 AWG
Material	Aluminium Alloy (LY12CZ)
Screw Thread Size	2.5M
Weight	3.2 g