

INTERFACE 2-AXIS LOAD CELL CHEAT SHEET

COMMON ABBREVIATIONS

| | | | |
|------------------|--------|--------------------|------|
| pound force-inch | lbf-in | Volts | V |
| pound-force | lbf | Millivolt per Volt | mV/V |
| newton-meter | Nm | Full Scale | FS |
| newtons | N | Ohm | Ohm |
| Hertz | Hz | Megohm | Mohm |
| Milliampere | mA | Degree Fahrenheit | °F |
| Rated Output | RO | Degree Celsius | °C |

ACCURACY

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|------------------|--|
| Nonlinearity | The deviation from a perfectly straight calibration curve, expressed as a percentage of full scale |
| Hysteresis | The difference in output when approaching the same load from increasing vs. decreasing directions, as a percentage of full scale |
| Nonrepeatability | The variation in output when the same load is applied repeatedly under identical conditions, expressed as a percentage of rated output |
| Creep | The change in load cell signal occurring with time while under load and with all environmental conditions and other variables remaining constant |

TEMPERATURE PERFORMANCE

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|-------------------|---|
| Compensated Range | The range of ambient temperatures over which the load cell is guaranteed to maintain its specified accuracy |
| Operating Range | The full range of ambient temperatures over which the load cell can safely function without physical or electrical damage |
| Effect on Zero | How much the zero output, the output signal when no load is applied, changes with temperature |
| Effect on Output | Describes how the sensitivity or output signal changes as temperature varies, while under load |

A 2-axis force/torque load cell measures force and torque along two perpendicular directions, or load in one direction and force in the other direction, using strain gages that convert mechanical strain into electrical signals. It's commonly used in robotics, assembly, and bio-mechanical testing for precise load monitoring.

ELECTRICAL

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| Rated Output | Signal level at full load |
| Excitation Voltage | Max power supply allowed |
| Input Resistance | The resistance of the load cell circuit measured at the excitation terminals with no load applied and with the output terminals open-circuited |
| Output Resistance | The resistance of the load cell circuit measured at the SIGNAL terminals with no load applied and with the excitation terminals open-circuited |
| Zero Balance | The signal of the load cell in the no load condition |
| Crosstalk | The way loading one axis effects the other axis |

MECHANICAL

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|-------------------|---|
| Safe Overload | Max load it can handle without permanent damage |
| Ultimate Overload | Max load that can be applied without causing structural failure of the sensor |
| Dimensions | Physical size details |
| Calibration | Verified output under known loads |
| Material | What the load cell is made of |

CALIBRATION

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|--------------------------|---|
| System Calibration | Verifies the performance of the torque sensor and entire system, ensuring accuracy and reliable performance |
| ISO/IEC 17025:2017 Scope | Standard certification Interface is certified to |

AVAILABLE OPTIONS

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|------------|---|
| Cables | Various lengths, gauges, and configurations available |
| Connectors | Type of electrical interface or connection method |