



1 DESCRIPTION

KELK Load Cells are used for the measurement and control of load or tension in harsh industrial environments. Applications include metals rolling mills, paper making machinery, mining equipment, weighing systems, laboratory testing and other measurement applications where excellent reliability and accuracy are required under severe operating conditions.

The use of strain gages as measuring elements within the load cell permits the use of DC excitation. This provides exceptionally fast response to changes in load and tension. Both digital and analog electronics are available to interface with the load cells to suit individual process requirements.

2 FEATURES

- 2.1** Manufactured from high strength alloy steel or stainless steel forgings.
- 2.2** Standard and custom sizes available. To help ensure a successful installation a detailed engineering drawing is prepared by KELK engineers showing the load cell and adjacent mechanical components.
- 2.3** High overload capacity.
- 2.4** Excellent tolerance to uneven loading with minimal error.
- 2.5** Excellent linearity and low hysteresis.

- 2.6 Durable and accurate, with very low thermal drift over a wide range of temperature.
- 2.7 Hermetically sealed construction for long term stability.
- 2.8 Each load cell is supplied with a permanently attached, four conductor, shielded cable.

3 TYPICAL SPECIFICATIONS

- 3.1 **Capacity Range:** 0.1 to 10,000 tonnes
(Consult KELK for higher capacities)
- 3.2 **Bridge Resistance:** 120 ohms minimum
- 3.3 **Excitation Voltage:** 15 VDC or VAC maximum
- 3.4 **Output:** 1.0 to 1.8 mV per volt of excitation at rated load.
- 3.5 **Response Time:** Less than 0.1 mS
- 3.6 ***Linearity:** Within $\pm 0.5\%$ of full scale output through rated load rang
- 3.7 ***Hysteresis:** Less than $\pm 0.3\%$ of full scale output
- 3.8 **Repeatability:** Within $\pm 0.1\%$ of full scale output
- 3.9 **Thermal Zero Shift:** $\pm 0.005\%$ (50 parts per million) of full scale output per °C over the compensated range

3.10 *Load Limits:

- 300% of rating without zero shift
- 500% of rating without change in characteristics
- 700% of rating without mechanical damage

Note: some load cells are supplied with a mechanical overload stop offering overload capacities of 2000% of rating without mechanical damage.

- 3.11 **Operating Temperature Range:** 0°C to 150°C (32°F to 302°F).
- 3.12 **Storage Temperature Range:** -40°C to +180°C (-40°F to 356°F).
- 3.13 **Accuracy of Calibration:** $\pm 0.1\%$ of full scale output at rated load, traceable to the National Institute of Standards and Technology (formerly the U.S. National Bureau of Standards).
- 3.14 **Standard Cable Length:** 10 m (33 feet).

(*Actual specifications vary with type of load cell. Consult KELK for details)



KELK (Vishay Precision Group Canada ULC) | 48 Lesmill Road, Toronto, Ontario, M3B 2T5, Canada
T: +1 416 445 5850 | F: +1 416 445 5972 | www.kelk.com

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