



ROLLMAX SLAB LOAD CELL

1 DESCRIPTION

KELK Slab Load Cells are electromechanical sensors used to measure force or load in harsh environments. Their long service life in metals rolling mills has proven them reliable and accurate under severe operating conditions and high overloads.

As the measuring elements within the load cell, strain gages permit the use of DC excitation to provide exceptionally fast response to changes in force or load.

2 APPLICATIONS

The shape and mill-worthy construction of KELK ROLLMAX Slab Load Cells makes them particularly well-suited for use in metals rolling mills, where they are fitted for measurement and control of roll separating forces and, ultimately, Automatic Gage Control (AGC). In this application, they are usually mounted under the bottom back-up chock of the mill in order to measure the force evenly spread over the rectangular area. To ensure uniform pressure over a slab load cell surface, a load distribution plate of hardened (not soft) steel is required.

As well as in rolling mills, KELK Slab Load Cells can be used in other types of machinery to measure force or load.

KELK Slab Load Cells interface ROLLMAX DSP2 Digital Signal Processors or with older P1000 Processors and P400 Analog Signal Amplifier. A wide variety of standard features are available to meet individual roll force measurement requirements.

ROLLMAX 5 YEAR WARRANTY

ROLLMAX Load Cells are warranted not only against defects in workmanship or material, but against failure of any kind, however caused, for a period of FIVE YEARS.

(For details contact KELK)

KELK Slab Load Cells are sized for each application. To help ensure a successful installation a detailed drawing showing the cell and adjacent mill components is prepared by KELK engineers. All necessary mounting hardware is supplied with each load cell.

Each load cell is fitted with a 15 meter (50 foot) teflon cable as standard (other lengths are available). This is permanently attached, has four conductors shielded, and is armoured for protection.

3 FEATURES

- Mechanically interchangeable with other slab-shaped load cells.
- Manufactured from a single high strength stainless steel forging.
- Hermetically sealed, welded construction, filled with dry inert gas for long term stability.
- Excellent accuracy.
- Durable and accurate over a wide range of temperatures.
- A steel reinforced, oil resistant hydraulic hose assembly to protect the connecting cable.

4 SPECIFICATIONS

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| 4.1 Model: | SLCXXXX-YY, where XXXX is the capacity in tonnes (a four-digit number) and YY is the 'style' number identifying a unique set of dimensions. |
| 4.2 Capacity Range: | Up to 7,500 MT. |
| 4.3 Bridge Resistance: | 120 ohms minimum. |
| 4.4 Excitation Voltage: | 20 VDC maximum. |
| 4.5 Output: | 1.0 to 1.8 mV per volt of excitation at rated load. |
| 4.6 Response Time: | Less than 0.1 mS. |
| 4.7 Combined Error ¹: | Within ± 0.5 % of full scale output. |
| 4.8 Thermal Zero Shift: | ± 0.005 % (50 parts per million) of full scale output per °C temperature change over the compensated range of 20°C to 100°C (68°F to 212°F).
Optional range: 20°C to 150°C (68°F to 302°F). |
| 4.9 Load Limits: | 300% of rated load without zero shift.
500% of rated load without change in characteristics.
700% of rated load without mechanical damage. |
| 4.10 Operating Temperature Range: | -20°C to 150°C (-4°F to 302°F). |

4.11 Storage Temperature Range: -40°C to +180°C (-40°F to +356°F).

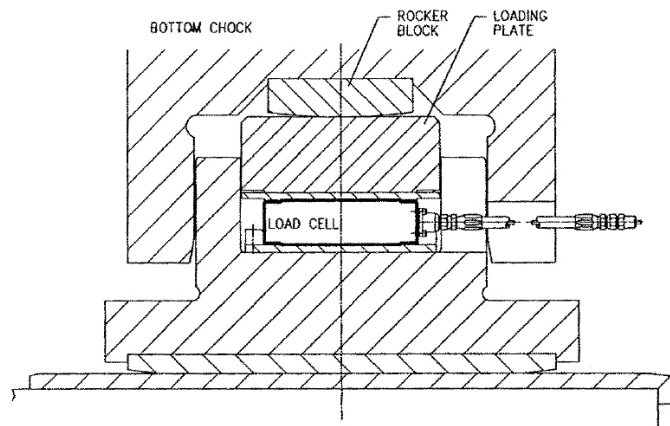
4.12 Compression: 0.1% of cell height at rated load.

4.13 Calibration: Traceable to the National Institute of Standards and Technology (formerly the National Bureau of Standards).

¹) Combined Error is defined as the maximum deviation, which includes Linearity, Hysteresis and Repeatability.

5 USUAL MOUNTING LOCATION

FRONT VIEW



SIDE VIEW

Note: Load cell same length as rocker block

