



Technical Specifications

L-Cell

Next generation bolt-on weight measurement with active temperature compensation for bulk material vessel inventories.

Developed from many years' experience with bolt-on strain gage technology, this uniquely designed, highly sensitive, thermally stable, dual axis strain gage sensor is bolted directly to the vessel's support structure. The L-Cell measures changes in stress in the vessel support member and provides a change in voltage output in direct proportion to the weight of material.

The L-Cell's exclusive *Standardized Axial Strain Sensitivity (SASS®)* provides active temperature compensation over a wide temperature range. Seasonal and transient environmental effects are minimized as the L-Cell does not rely on typical passive resistor networks.

The L-Cell is quickly and easily installed while the vessel is still in productive use. For use on existing vessels, the L-Cell is a very cost-effective weighing solution when compared to modifying or lifting vessels if using other types of weighing sensors.

In combination with your existing vessel's H-beam support legs, shear beam cross supports, or support skirt, the versatility of the L-Cell can supply a cost effective, industrial strength weighing system. The L-Cell is also easy to install, easy to maintain, and highly reliable.



Features & Benefits

Bolt-on Technology

Creates a weighing system by mounting L-Cells on the structural support members of the vessels legs, shear beam supports, or structural skirt.

Simple Mounting

No specialized tools for installation.

Uses Existing Vessel Structure

No need to empty vessel or take out of production to install or service.

75 Years MTBF

Unprecedented long term reliability.

Unique Design

Dual sensing elements that reject temperature induced errors.

Specifications:

Mechanical

Stress Level - Carbon Steel Applications:

Maximum: $\pm 15,000$ psi (10.5 kg/mm²)

Recommend: $5,000 \pm 3,500$ psi (3.5 ± 2.5 kg/mm²)

Stress Level - Aluminum Applications:

Maximum: $\pm 6,500$ psi (4.6 kg/mm²)

Recommend: $3,000 \pm 1,500$ psi (2.1 ± 1.1 kg/mm²)

Consult factory for stress levels outside the recommended range

Fatigue Life: In excess of 20 million cycles; load and unload at 0 to 7,500 psi (0 to 5.3 kg/mm²)

Electrical

Excitation Voltage: Standard 12 Vdc ($\pm 5\%$)

Excitation Current @ 12V: 11.8 mA at 0° F (-18°C) to 8.4 mA at 100° F (38°C)

Insulation Resistance: 2M ohms

Strain Gage to Sensor Frame Breakdown Voltage: >250V

Output (for 12V excitation)

Sensitivity - Carbon Steel: 35 mV $\pm 1\%$ /1,000 psi (35 mV $\pm 1\%$ /0.7 kg/mm²)

Sensitivity - Aluminum: 80 mV $\pm 1\%$ /1,000 psi (80 mV $\pm 1\%$ /0.7 kg/mm²)

Zero-Strain Output: 0 mV ± 100 mV

Nonlinearity and Hysteresis: $\pm 0.2\%$ of 525 mV at 15,000 psi

Repeatability: 0.1% of full scale output

Output Impedance: 3.75K ohms ($\pm 1\%$)

Environmental

Rating: Designed for rugged, outdoor applications, not for high-pressure washdown

Temperature Range - Operational:

-30° to 140° F (-34° to 60° C)

Temperature Range - Storage:

-30° to 140° F (-34° to 60° C)

Environmental (continued)

Temperature Range - Compensated:

0° to 100° F (-18° to 38° C)

Temperature Effects - Sensitivity Change: 0.02%

per degree Fahrenheit (0.036% per degree Celsius) over the compensated range

Temperature Effects - Zero Shift: ± 2 mV between 0° and 100° F (-18° and 38° C)

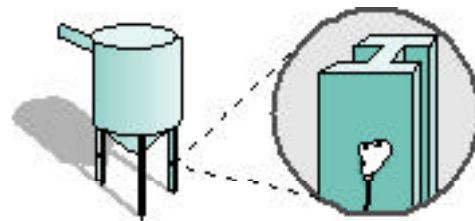
Physical

Weight: 1.4 ounces (40 grams)

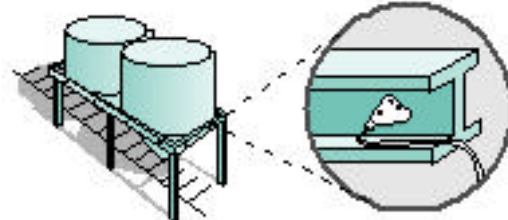
Steel Base: 17-4 PH stainless steel

Cable: 3-conductor, 22 gage, unshielded

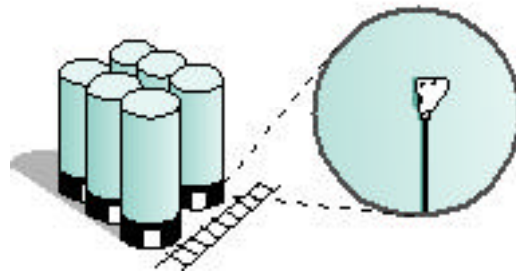
Cable Length: 15 feet (4.6 meters)



Vertical Column



Horizontal Beam



Skirted Silo

P/N 97-7001 Rev B

KM is represented in your area by:



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