



# L-Cell®

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

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**TECHNICAL SPECIFICATIONS**



The L-Cell is a bolt-on strain gage sensor that is uniquely designed, highly sensitive, thermally stable, dual axis strain gage sensor which 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 I-beam support legs, horizontal shear beams, or skirt supported silos, 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 AND BENEFITS

### Bolt-on Technology

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

### Simple Mounting

No specialized tools for installation.  
 No need to empty vessel or take out of production to install or service.  
 Uses Existing Vessel Structure.

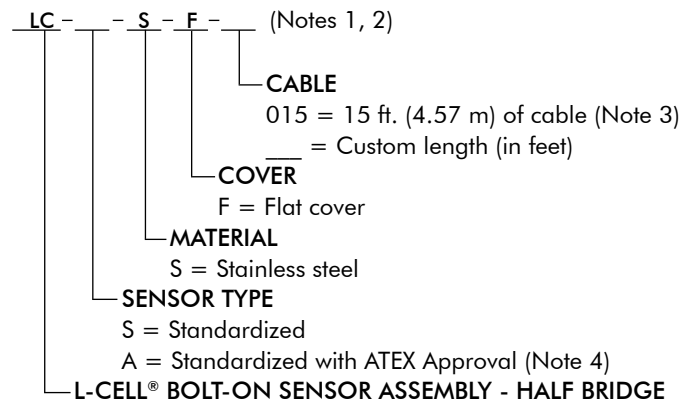
### 75 Years MTBF

Unprecedented long term reliability.

### Unique Design

Continuous weighing that is immune to material characteristics.

## HOW TO ORDER

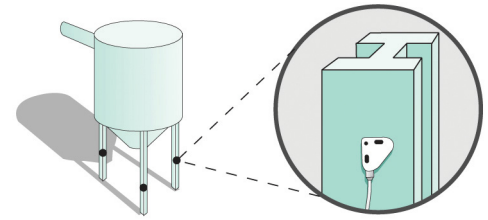


- Note 1. New installations require an installation kit.
- Note 2. Replacement installations require Sikaflex® sealant, silicone grease and cover.
- Note 3. Lengths available from 5 ft (1.52m) to 500 ft (152.4m).
- Note 4. ATEX approved Microcell® sensors must be ordered with ATEX approved stainless steel junction boxes.
- Note 5. Consult the manufacturing facility for special barriers when 24 or more L-Cell® sensors are installed on a single vessel.

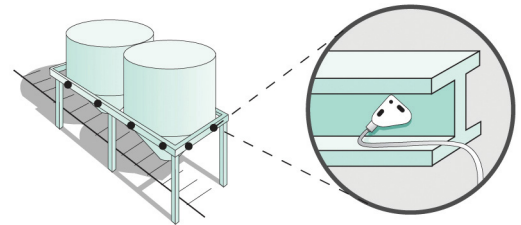
# SPECIFICATIONS

## FUNCTIONAL

Excitation Voltage	12 VDC ( $\pm 5\%$ )
Excitation Current	At 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
Stress Level	Carbon Applications: Maximum: $\pm 15,000$ psi (10.5 kg/mm <sup>2</sup> ) Recommended: 5,000 $\pm$ 3,500 psi (3.5 $\pm$ 2.5 kg/mm <sup>2</sup> )
	Aluminum Applications: Maximum: $\pm 6,500$ psi (4.6 kg/mm <sup>2</sup> ) Recommended: 3,000 $\pm$ 1,500 psi (2.1 $\pm$ 1.1 kg/mm <sup>2</sup> )
Fatigue Life	> 20 million cycles; load and unload at 0 to 7,500 psi (0 to 5.3 kg/mm <sup>2</sup> )



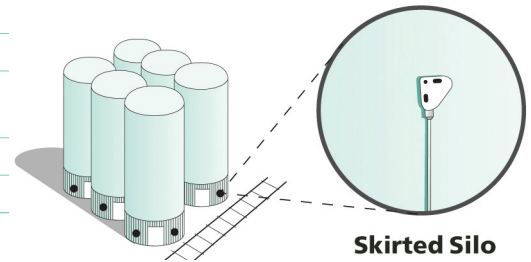
**Vertical Column**



**Horizontal Beam**

## PERFORMANCE

Output for 12V Excitation	Sensitivity: Carbon Steel: 35 mV $\pm$ 1%/1,000 psi (35 mV $\pm$ 1%/0.7 kg/mm <sup>2</sup> )
	Sensitivity: Aluminum: 80 mV $\pm$ 1%/1,000 psi (80 mV $\pm$ 1%/0.7 kg/mm <sup>2</sup> )
	Zero Strain Output: 0 mV $\pm$ 100 mV
Output Impedance	3.75K ohms ( $\pm 1\%$ )
Temperature Effects	Sensitivity Change: 0.02% per degree F (0.036% per degree C) over the compensated range Zero Shift: 2 mV between 0° & 100° F (-18° & 38° C)



**Skirted Silo**

## PHYSICAL

Rating	Designed for rugged, outdoor applications, not for high-pressure wash-down
Temperature Range	Operational: -30° to 150°F (34° to 66°C)
	Storage: -30° to 150°F (34° to 66°C)
	Compensated: 0° to 100° F (-18° to 38°C)
Weight	1.4 ounces (40 grams)
Steel Base	17-4 PH Stainless Steel
Cable	3-conductor, 22 gage, un-shielded
Cable Length	15 feet (4.6 meters)

## OPTIONS

Junction Box	Plastic or stainless steel version
Test Meter	To simplify sensor installation
Installation Hardware	

## APPROVALS

	ATEX, CE
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