StrainCell™

Temperature-compensated, Omni-directional Strain Sensor

StrainCell™ is the latest-generation bolt-on strain measurement technology used for applications that require highly accurate strain measurements under demanding environmental conditions. In addition to its unique design that compensates for temperature-induced errors, the sensor is very sensitive to changes in strain. It measures stress in every direction rather than a single direction, which enables very accurate, sensitive, and error-free strain measurements. With these advantages, the StrainCell has unique advantages over bar or L-shaped sensors.

StrainCell™ is capable of measuring nanoscale-level strain changes on metal surfaces. Its accuracy, repeatability, and sensitivity make it a perfect candidate for demanding industrial and OEM applications, such as silo weight and level measurement, weighing, bridge monitoring, crane safety, construction, false work, structural integrity monitoring and any other application that can benefit from accurate strain measurements.

StrainCell™ provides voltage output that can be processed with high-resolution electronics. Its output can be integrated into programmable controllers and computer networks providing continuous, nonintrusive, accurate, and repeatable readings.

PERFORMANCE

- **Maximum stress level**
  30,000 psi (21 kg/mm^2)
- **Recommended stress level**
  5000 psi (3.5 kg/mm^2)
- **Sensitivity**
  0.775 mV/V/1000 psi (0.775 mV/V/0.7 kg/mm^2)
- **Nonlinearity**
  1% of full scale
- **Repeatability & hysteresis**
  0.05% of full scale
- **Zero output**
  ≤±25 mV

FEATURES AND BENEFITS

- **High accuracy, repeatability, and stability**
- **Intrinsically temperature output compensated**
- **Small size**
- **Full-bridge voltage output**
- **Easy installation**
- **Omni-directional measurements**

APPLICATIONS

- **Weighing, scales**
- **Fatigue monitoring**
- **Construction**
- **Transportation**
- **Aerospace**
- **Automotive**
- **Process control, monitoring**
- **R&D**

Strain Systems
Silo Inventory Management

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StrainCell™ Temperature-compensated, Omni-directional Strain Sensor

TECHNICAL SPECIFICATIONS

Mechanical

- **Recommended Stress Level:** 5000 psi (3.5 kg/mm2)
- **Maximum Stress Level:** 30,000 psi (21 kg/mm2)
- **Fatigue:** Over one million load and unload cycles: 0 to ± 5000 psi (0 to ± 3.5 kg/mm2)

Electrical

- **Excitation Voltage:** Standard 12 VDC ± 2% ; Maximum 15 VDC
- **Excitation Current at 12 VDC:** 10 mA (65° to 72° F, 19° to 25° C)
- **Insulation Resistance:** 100 M ohms (50 M ohms at 50 VDC)
- **Strain Gage to Sensor Frame Breakdown:** Greater than 150 VDC

Output (12 VDC Excitation)

- **Sensitivity:** 0.775 mV/V/1000 psi (0.775 mV/V/0.7 kg/mm^2)
- **Zero-Strain Output:** 0 mV ± 25 mV
- **Nonlinearity:** 1% of full-scale output
- **Repeatability and Hysteresis:** 0.05% of full-scale output
- **Output Impedance:** 440 ohms ± 10 ohms

Physical

- **Weight:** 0.5 oz. (14 gm)
- **Sensor Base Material:** 17-4 PH stainless steel heat-treated to H1150 condition
- **Cable:** 4 conductor, 24 gauge, shielded 22 gram/meter weight
- **Cable Length:** 6 feet (1.85 meters)

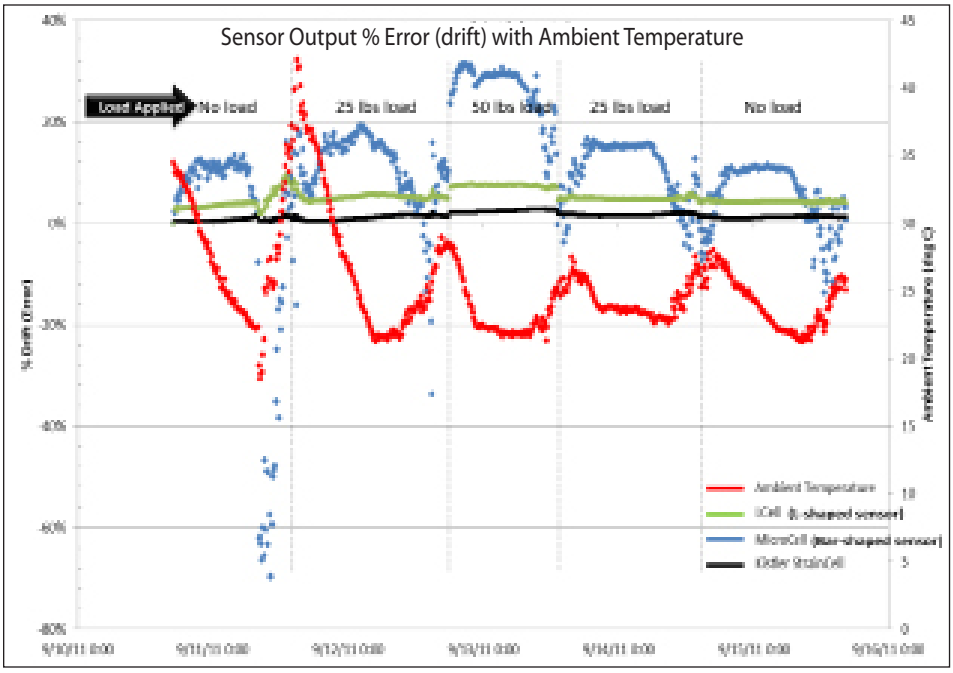
Environmental

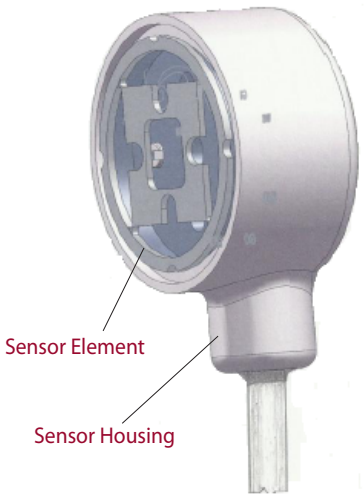
- **Temperature Range – Operational:** –30° to +150° F (–34° to +66° C)
- **Temperature Range – Storage in Inventory:** –30° to +150° F (–34° to +66° C)
- **Temperature Effects – Zero Shift:** ± 2mV 0° to 100° F (–18° to +38° C)
- **Temperature Effects – Sensitivity Change:** 0.02mV/° F (0.035mV/° C)

Compliance

- Strain Systems' products meet US and international standards for hazardous materials and safety.

Strain Systems' omni-directional StrainCell™ outperforms any other strain measurement sensor in the market. StrainCell's design virtually eliminates measurement errors in tough environmental conditions.





WIRE	FUNCTION
Red	+ Power
Black	– Power
Green	+ Signal
White	– Signal
Shield	Grounding

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Distributor: