

PNC700 Series

General Purpose, High Accuracy Tension Compression
Pancake Load Cells

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Description

PNC700 Series load cells are high accuracy, low profile “pancake” designs for both tension and compression applications. These force sensors incorporate a threaded-through center hole with dual diaphragms and uniquely configured mounting holes. These design features result in improved accuracy and increased rigidity, thus reducing both the effects of off-center loading and side loading. PNC700 Series load cells are constructed of welded stainless steel for very demanding application environments. Bolted-on hermetic stainless steel electrical connectors with O-ring seals are standard. Welded hermetically sealed connectors are also available. Additional features include shock and vibration protection and barometric compensation. Each unit is shipped with a 5 point calibration record traceable to NIST as standard.



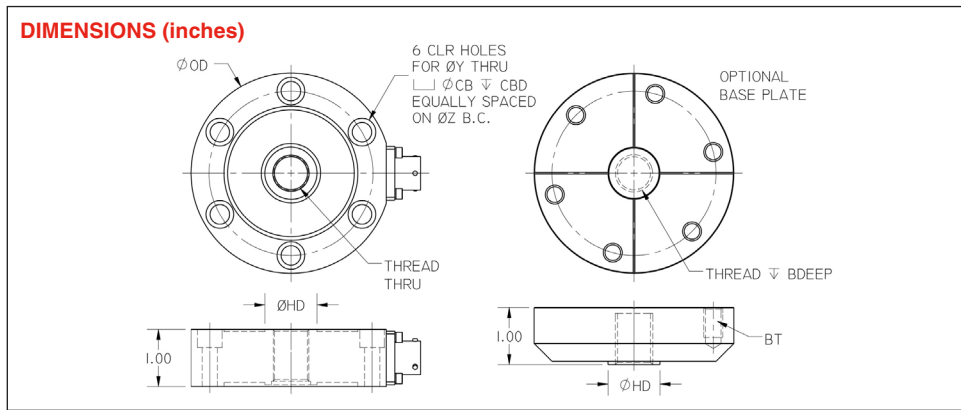
Standard Features

- 0.05% FSO Accuracy
- Low Profile Design
- Tension and Compression
- 3 mV/V Nominal
- Welded Stainless Steel
- -65°F to 250°F Standard Operating Temperature
- Excellent Off-Axis Capability
- Shock and Vibration Resistant
- 5 Point Calibration Record Traceable to NIST

Optional Features

- Customer Specified Threaded Center Hole
- Customer Specified Electrical Termination
- Metric Versions
- Overload Stops
- Special Calibrations
- Internal Amplifier for High Level Analog and/or Digital Output
- Dual Bridges
- -320°F to 400°F Operating Temperature

LORD DATA SHEET



| Capacity (lbs) | ØOD | Thread | HD | Y | Z | ØCB | CBD | BDEEP | BT |
|----------------|------|------------|------|------|-------|------|------|-------|----------------|
| 100, 250 | 3.00 | 3/8-24 UNF | 0.75 | 0.28 | 2.500 | 0.39 | 0.28 | 0.50 | 1/4-28 X 0.50 |
| 500, 1000 | 3.00 | 1/2-20 UNF | 0.75 | 0.28 | 2.500 | 0.39 | 0.28 | 0.50 | 1/4-28 X 0.50 |
| 2.5K, 5K | 3.50 | 5/8-18 UNF | 0.91 | 0.34 | 2.875 | 0.48 | 0.34 | 0.90 | 5/16-24 X 0.50 |

MAXIMUM EXTRANEIOUS LOADS (%FS LOAD)

Loads listed may not be applied in combination. For combination loading, please consult factory.

| Capacity (lbs) | Thread | Bending (in-lb) | Side Load (lbs) | Torque (in-lb) |
|----------------|------------|-----------------|-----------------|----------------|
| 100, 250 | 3/8-24 UNF | 40% | 100% | 50% |
| 500, 1000 | 1/2-20 UNF | 40% | 100% | 50% |
| 2.5K, 5K | 5/8-18 UNF | 35% | 50% | 50% |

Above table listing maximum extraneous loads pertains to the load cell only.

The user supplied mechanical engagement to the inner hub (typically a threaded rod) will generally not be as strong as the load cell.

PERFORMANCE

Standard Ranges

100 to 5000 lbs FSO (see table)

Output

3 mV/V nominal

Accuracy

0.05% FSO BFSL

Linearity

0.05% FSO (typical)

Hysteresis

0.05% FSO (typical)

Repeatability

0.02% FSO

Temperature Effect on Zero

0.002% FSO/°F

Temperature Effect on Span

0.002% Reading/°F

Zero Balance

1% FSO

MECHANICAL CHARACTERISTICS

Standard Calibration

Tension only:

5 points (0, 50%, 100%, 50%, 0 of FSO)

Optional Calibrations

Compression only:

5 points (No charge option)

Tension and Compression:

5 points in each direction

Special Multipoint Calibration (customer specified):

Tension or Compression or Both Tension and Compression

Static Overload Without Damage

150% FSO

Material

Welded Stainless Steel

ELECTRICAL CHARACTERISTICS

Bridge Resistance

350 ohms nominal

Excitation

10 Vdc or Vac

Insulation Resistance

> 5000 megohms at 50 Vdc

Electrical Termination

PTIH-10-6P Stainless Steel Connector with O-Ring Seal

Wiring

A (+) Excitation

B (+) Signal

C (-) Signal

D (-) Excitation

E, F No Connection

Customer specified wiring codes available.

ENVIRONMENTAL CHARACTERISTICS

Compensated Temperature Range

70°F to 170°F (-65°F to +400°F optional)

Operating Temperature Range

-65°F to +250°F (-320°F to +400°F optional)

Values stated in this technical data sheet represent typical values as not all tests are run on each lot of material produced. For formalized product specifications for specific product end uses, contact the Customer Support Center.

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