

Series PNC700

General Purpose, High Accuracy Tension Compression
Pancake Load Cell



Standard Features

- High Accuracy 0.05%
- Low Profile Design
- Tension and Compression
- 3 mV/V nominal
- All 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/Triple Bridges
- Submersible Versions to 30,000 ft. Seawater
- -320°F to 400°F Operating Temperature

Description

The Series PNC700 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. The PNC700 series is constructed of all welded stainless steel for very demanding application environments. Bolted-on or welded-on stainless steel electrical connectors are standard. Hermetically sealed connectors are also available providing for a fully hermetic load cell. 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.

Performance

Standard Ranges

100 lbs. FSO to 100,000 lbs. FSO. (see table)

Output

3 mV/V nominal.

Accuracy

0.05% FSO BFSL.

Linearity

0.05% FSO TYP.

Hysteresis

0.05% FSO TYP.

Repeatability

0.02% FSO.

Temperature Effect on Zero

0.002% FSO/°F.

Temperature Effect on Span

0.002% Reading/°F.

Zero Balance

1% FSO.

Environmental Characteristics

Operating Temperature Range

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

Compensated Temperature Range

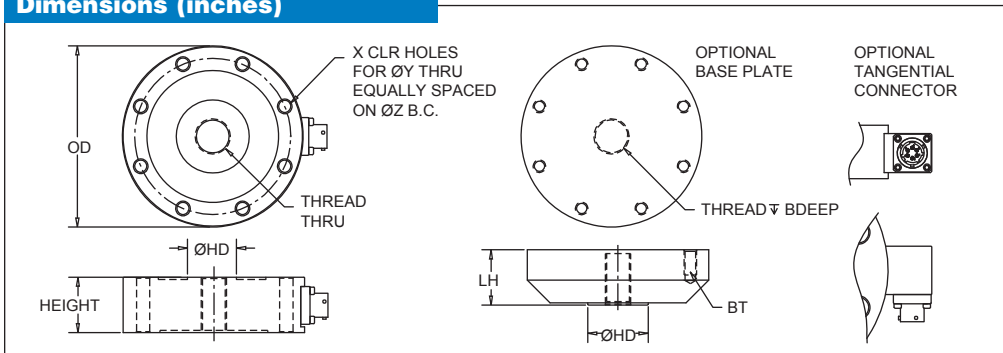
70°F to 170°F.
(-65°F to 400°F optional.)

PNC700

Series PNC700 Specifications

Baseline Configuration Specs Represented.
Modifications Encouraged - See Below
Custom Designs Available

Dimensions (inches)



NOTES:

1. 100 LB THRU 5000 LB UNITS ARE COUNTER-BORED FOR SOCKET HEAD CAP SCREWS.
2. OPTIONAL THREAD STOPS ADDED IN LOAD CELL WHEN ORDERED WITH BASE KIT.

Capacity (lbs.)	ØOD	Thread	Height	HD	X	Y	Z	Base LH	Base BDEEP	Base BT
100, 250	3.00	3/8-24 UNF	1.00	0.75	6	0.28	2.500	1.00	0.50	1/4-28 X 0.50 DEEP
500, 1000	3.00	1/2-20 UNF	1.00	0.75	6	0.28	2.500	1.00	0.68	1/4-28 X 0.50 DEEP
2.5K, 5K	3.50	5/8-18 UNF	1.00	0.91	6	0.34	2.875	1.00	0.90	5/16-24 X 0.50 DEEP
10K, 15K	4.50	1-14 UN	1.38	1.76	8	0.34	3.875	1.38	1.25	5/16-24 X 0.63 DEEP
25k, 50K	6.50	1-3/4-12 UN	2.00	3.00	12	0.47	5.625	2.00	1.75	7/16-20 X 0.88 DEEP
75K, 100K	8.50	2-1/4-12 UN	2.50	3.75	12	0.66	7.375	2.50	2.25	5/8-18 X 1.00 DEEP

Mechanical Characteristics

Static Overload Without Damage

150% FSO.

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):

in tension or compression or both tension and compression.

Material

Welded stainless steel.

Electrical Characteristics

Bridge Resistance

350 Ohms nominal.

Excitation

10 Vdc or Vac.

Insulation Resistance

Greater than 5000 megaohms at 50 Vdc.

Electrical Termination

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

Electrical Characteristics

Connector Pins (Standard)

A +EXE D - EXE

B +SIG E NC

C - SIG F NC

Customer specified wiring codes are available.

Modifications and Warranty

MODIFICATIONS: We realize transducer applications vary greatly and as such our designs are flexible. Choice of pressure port, electrical termination, material compatibility and performance characteristics are a few of the many options available. Specifications on this datasheet represent the standard configuration only. Product and company names listed are trademarks of their respective companies. Specifications subject to change without notice.

WARRANTY: Stellar Technology warrants that its product shall be free from defective workmanship and/or material for a twelve month period from the date of shipment, provided that Stellar Technology's obligation hereunder shall be limited to correcting any defective material FOB our factory. No allowance will be made for any expenses incurred for correcting any defective workmanship and/or material without written consent by Stellar Technology. This warranty is in lieu of all other warranties expressed or implied.

LORD SENSING

Stellar Technology

ISO 9001/AS9100

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Datasheet P/N: 229642G DCN 9338

Due to the nature of technology, changes are inevitable. For latest technical specifications, see our website.

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Series PNC700

Supplemental Technical Details

Baseline Configuration Specs Represented.
Modifications Encouraged - See Below
Custom Designs Available

The PNC700 was designed to be the best combination of compact, rugged, stainless steel and cost effective in a pancake load cell.

The load cell includes:

- Large center threads
- All welded stainless steel construction
- Compact size, low profile

Standard features include:

- Shock and Vibration rated
- Stainless steel connector with glass to metal seal for pins. Pins are gold plated.
- Connector is sealed to the sensor with an O-Ring seal. Hermetic Optional
- All bolts holes for connector connection, regardless of connector orientation are Blind Holes that won't allow water or fluids to seep past the seals.
- Full calibration report - never a charge for a full certified data report.

The table listing Maximum extraneous loads pertain to the load cell only.

The user supplied mechanical engagement to the inner hub (typicall a threaded rod) will generally not be as strong as the load cell. We would be glad to help with any questions in determining the best sizes for your application.

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%
10K, 15K	7/8-14 UN	40%	50%	50%
10K, 15K	1-14 UN	40%	50%	50%
25k, 50K	1-1/2-12 UN	40%	50%	50%
25k, 50K	1-3/4-12 UN	40%	50%	50%
75K, 100K	2-12 UN	50%	50%	50%



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