

## Model TH

---

### Thru-Hole Load Cell



#### DESCRIPTION

Model TH Donut Shaped Load Cell features a smooth thru-hole design for use in applications which require the load structure to pass through the cell. Such applications include bolt force measurement, post or leg mount, and rolling mill systems. Load ranges as low as 15,000 pounds and as great as 200,000 pounds can be measured within a maximum full scale non-linearity of  $\pm 0.25$ . This model is used in compression

applications. For optimum performance, this load cell must be mounted between load surfaces which are flat and parallel. The Model TH Donut Shaped Load Cell is designed to provide the customer with an internal hole diameter which is large relative to the outside diameter. The Model TH is a small size, high capacity load cell.

#### FEATURES

- 15000 lb to 200000 lb range
- Thru-hole design
- Compact column construction
- mV/V output
- 0.25 % linearity

# Model TH

## PERFORMANCE SPECIFICATIONS

Characteristic	Measure
Load ranges <sup>3</sup>	15000 lb to 200000 lb
Accuracy	0.5 %
Linearity (max.)	±0.25 % full scale
Hysteresis (max.)	±0.25 % full scale
Non-repeatability (max.)	± 0.1 % full scale
Output (tolerance)	2 mV/V (nominal)
Operation	Compression
Resolution	Infinite

## ENVIRONMENTAL SPECIFICATIONS

Characteristic	Measure
Temperature, operating	-54 °C to 121 °C [-65 °F to 250 °F]
Temperature, compensated	15 °C to 71 °C [60 °F to 160 °F]
Temperature effect, zero	0.005 % full scale/°F
Temperature effect, span	0.005 % full scale/°F

## ELECTRICAL SPECIFICATIONS

Characteristic	Measure
Strain gage type	Bonded foil
Excitation (calibration)	10 Vdc
Insulation resistance	5,000 mOhm @ 50 Vdc
Bridge resistance	350 ohm
Zero balance	±1 % full scale
Electrical termination (std)	Teflon cable (5 ft)

## MECHANICAL SPECIFICATIONS

Characteristic	Measure
Maximum allowable load	150 % FS <sup>1</sup>
Weight	See table
Case material	Stainless steel
Deflection full scale	See table
Natural frequency	See table

## WIRING CODES

Cable	Unamplified
Red	(+) excitation
Black	(-) excitation
Green	(-) output
White	(+) output

## RANGE CODES

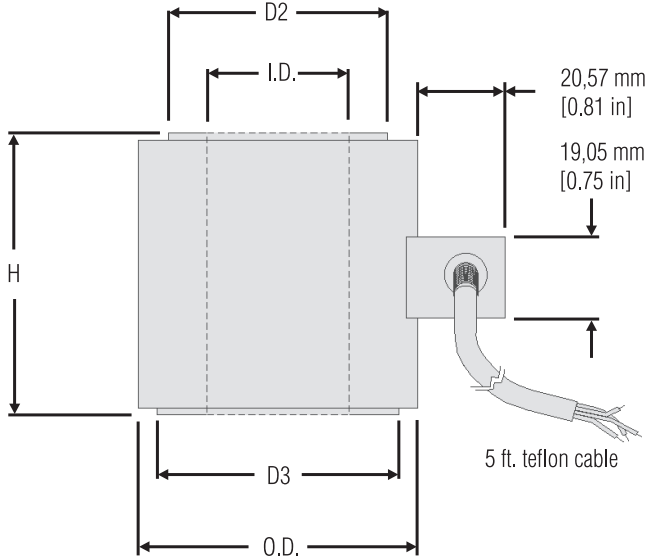
Range codes	Range
EJ	15000 lb
EL	20000 lb
EN	30000 lb
EP	50000 lb
ER	75000 lb
ET	100000 lb
FJ	150000 lb
FL	200000 lb

## DEFLECTIONS AND RINGING FREQUENCIES

Capacity (lb)	Deflection at full scale mm [in]	Ringling frequency (kHz)	Weight kg [lb]
15000	0,025 [0.001]	35	0,18 [0.4]
20000	0,025 [0.001]	35	0,18 [0.4]
30000	0,051 [0.002]	17	0,45 [1.0]
50000	0,051 [0.002]	17	0,45 [1.0]
75000	0,076 [0.003]	14	0,90 [2.0]
100000	0,076 [0.003]	14	0,90 [2.0]
150000	0,152 [0.006]	12	1,13 [2.5]
200000	0,102 [0.004]	10	2,72 [6]

### MOUNTING DIMENSIONS

Ranges (lb)	H mm [in]	OD mm [in]	ID mm [in]	D2 mm [in]	D3 mm [in]
15000, 20000	38,1 [1.50]	38,1 [1.50]	19,3 [0.76]	26,92 [1.06]	29,21 [1.15]
30000, 50000	50,8 [2.00]	50,8 [2.00]	25,65 [1.01]	38,1 [1.50]	38,1 [1.50]
75000, 100000	63,5 [2.50]	63,5 [2.50]	32,60 [1.26]	47,75 [1.88]	47,75 [1.88]
150000	76,2 [3.00]	76,2 [3.00]	38,35 [1.51]	58,67 [2.31]	61,97 [2.44]
200000	88,9 [3.50]	88,9 [3.50]	44,70 [1.76]	69,85 [2.75]	88,9 [3.50]



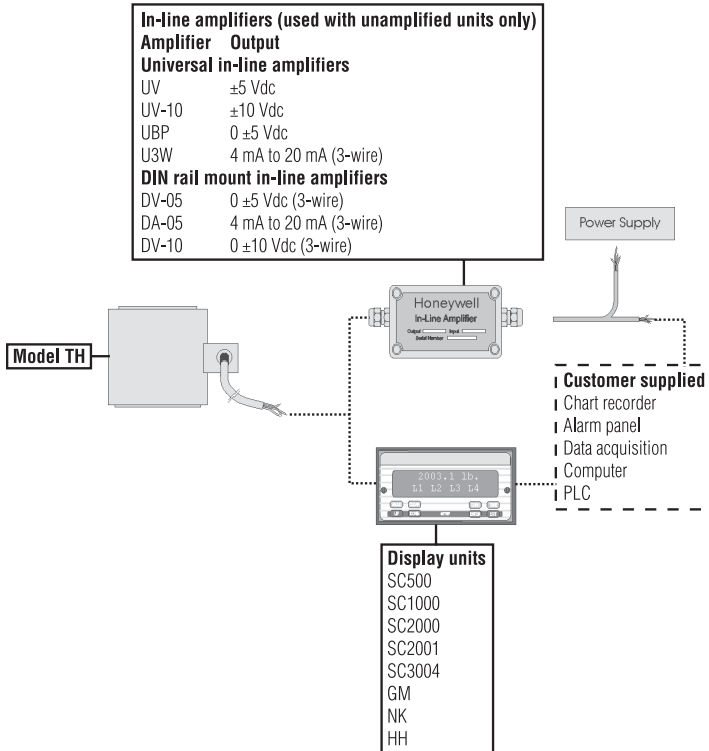
### OPTION CODES

	Many range/option combinations are available in our quick-ship and fast-track manufacture programs. Please see <a href="http://sensing.honeywell.com/TMsensor-ship">http://sensing.honeywell.com/TMsensor-ship</a> for updated listings.	
<b>Load ranges</b>	15K, 20K, 30K, 50K, 75K, 100K, 150K, 200K	
<b>Temperature compensation</b>	1a. 60 °F to 160 °F 1b. 30 °F to 130 °F 1c. 0 °F to 185 °F 1d. -20 °F to 130 °F 1e. -20 °F to 200 °F 1f. 70 °F to 250 °F	1g. 70 °F to 325 °F 1h. 70 °F to 400 °F 1i. -65 °F to 250 °F 1j. 0 °C to 50 °C 1k. -20 °C to 85 °C 1m. -25 °C to 110 °C
<b>Internal amplifiers</b>	2u. Unamplified, mV/V output	
<b>Electrical termination</b>	6a. Bendix PTIH-10-6P (or equivalent), 6-pin (max. 250 °F) 6b. MS connector MS3102E-14S-6P (mates with MS3106E-14S-6S) (max. 160 °F) <sup>4</sup> 6e. Integral cable: Teflon (5 ft range) 6f. Integral cable: PVC 6g. Integral cable: Neoprene	6h. Integral cable: Silicone 6i. Integral underwater cable 6j. 1/2-14 conduit fitting with 5 ft of 4 conductor PVC cable 6q. Integral cable: Polyurethane 6v. Phoenix connector on end of cable 15d. Connector on end of cable
<b>Shunt calibration</b>	8a. Precision internal resistor	
<b>Special calibration</b>	9a. 10 point (5 up/5 down) 20 % increments @ 70 °F 9b. 20 point (10 up/10 down) 10 % increments @ 70 °F 9c. ASTM E-74 calibration 30a. Positive in compression, compression testing only 30c. Negative in compression, compression testing only	
<b>Bridge type</b>	31a. Dual bridge	
<b>Bridge resistance</b>	12b. 5000 ohm (foil)	
<b>Electrical connector orientation</b>	15a. Horizontal electrical exit port orientation 15b. Vertical electrical exit port orientation 15c. Radial electrical exit port orientation 15d. Connector on end of cable	
<b>Shock and vibration</b>	44a. Shock and vibration resistance	
<b>Interfaces</b>	53e. Signature calibration 53t. TEDS IEEE 1451.4 module	

## NOTES

1. Allowable maximum loads – maximum load to be applied without damage.<sup>2</sup>
2. Without damage - loading to this level will not cause excessive zero shift or performance degradation. The user must consider fatigue life for long-term use and structural integrity. All structurally critical applications (overhead loading, etc.) should always be designed with safety redundant load paths.
3. This unit calibrated to Imperial (non-Metric) units.
4. Cannot be used with options 1c, 1e, 1f, 1g, 1h, or 1i.

## TYPICAL SYSTEM DIAGRAM



**Warranty.** Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

For more information about Sensing and Control products, visit [www.honeywell.com/sensing](http://www.honeywell.com/sensing) or call +1-815-235-6847

Email inquiries to [info.sc@honeywell.com](mailto:info.sc@honeywell.com)

### **WARNING** **PERSONAL INJURY**

- DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

### **WARNING** **MISUSE OF DOCUMENTATION**

- The information presented in this catalogue is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**