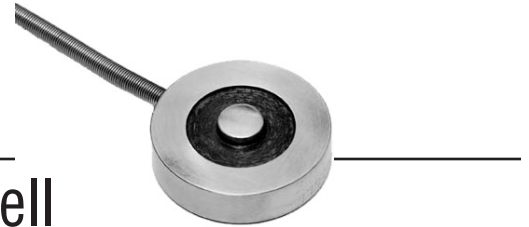


## Model 53E

### Low Cost/OEM Compression Load Cell



#### DESCRIPTION

Model 53E load cells are bonded foil strain gage transducers designed for cost efficient production and testing applications (i.e. press calibration). Engineered compression force measurements up to 200 kN, this model achieves a maximum non-linearity of 0.25 % full scale. Precision gaging techniques and a stainless steel construction provides excellent long-term

stability and reliability under severe operating conditions. The Model 53E compression-only load cell has an integral load button machined as part of the load cell. The Model 53E must be mounted on a smooth flat surface for proper operation. Three tapped holes are provided for mounting.

#### FEATURES

- 20 N to 200 kN range
- Stainless steel
- Often ideal for OEM applications
- Submersible option available
- mV/V output

# Model 53E

## PERFORMANCE SPECIFICATIONS

Characteristic	Measure
Load ranges <sup>6</sup>	20 N to 200 kN
Linearity (max.)	±0.5 % full scale
Hysteresis (max.)	±0.3 % 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 [-67 °F to 248 °F]
Temperature, compensated	15 °C to 70 °C [59 °F to 158 °F]
Temperature effect, zero	0.01 % full scale/°F
Temperature effect, span	0.02 % reading/°F

## ELECTRICAL SPECIFICATIONS

Characteristic	Measure
Strain gage type	Bonded foil
Excitation (calibration) 20 N to 500 N	5 Vdc
Excitation (calibration) 1 kN to 200 kN	10 Vdc
Insulation resistance	5000 mOhm @ 50 Vdc
Bridge resistance (tolerance)	350 ohm (nominal)
Zero balance (tolerance)	±1 % full scale
Electrical termination (std)	1,5 m; four-core (shielded) ptf cable incorporating a spring strain relief

## MECHANICAL SPECIFICATIONS

Characteristic	Measure
Maximum allowable load	150 % FS <sup>1</sup>
Weight	See table
Material	17-4 PH stainless steel
Deflection full scale	0,07 mm [0.003 in]
Natural frequency	See table

## WIRING CODES

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

## RANGE CODES

Range Code	Available ranges	Range Code	Available ranges
020N0	20 N	02KN0	2 kN
050N0	50 N	05KN0	5 kN
100N0	100 N	10KN0	10 kN
200N0	200 N	20KN0	20 kN
500N0	500 N	50KN0	50 kN
01KN0	1 kN	200KN0	200 kN

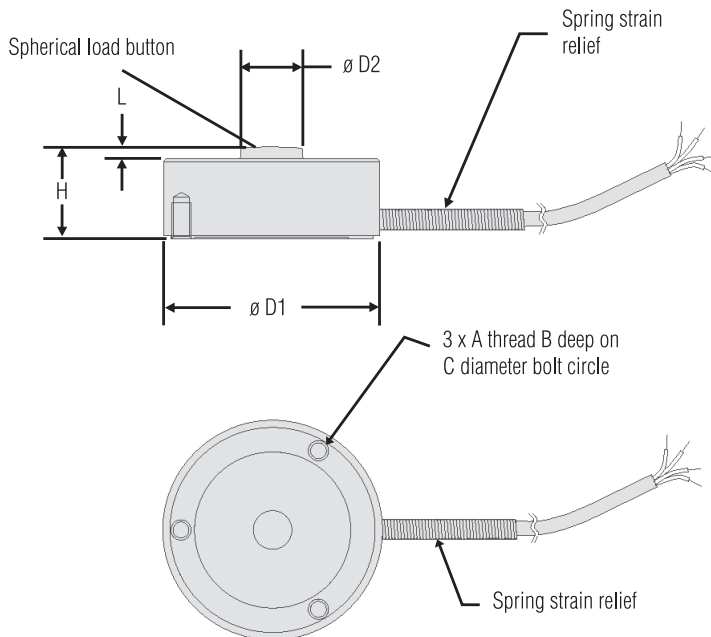
## OPTION CODES

	<b>Many range/option combinations are available in our quick-ship and fast-track manufacture programs. Please see <a href="http://sensing.honeywell.com/TMsensorship">http://sensing.honeywell.com/TMsensorship</a> for updated listings.</b>
<b>Load range</b>	20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 200K N
<b>Temperature compensation</b>	15 °C to 70 °C 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>	1,5 m; four-core (shielded) P.T.F.E. cable 6d. Microtec DR-4S-4H 4-pin (max. 120 °C) 6f. Integral cable: PVC 6g. Integral cable: Neoprene 6h. Integral cable: Silicone 6i. Integral underwater cable <sup>3</sup> 6v. Phoenix connector on end of cable
<b>Special calibration</b>	9a. 10 point (5 up/5 down) 20 % increments @ 20 °C [68 °F] 9b. 20 point (10 up/10 down) 10 % increments @ 20 °C [68 °F]
<b>Shock and vibration</b>	44a. Shock and vibration resistance
<b>Interfaces</b>	53e. Signature calibration <sup>7</sup> 53t. TEDS IEEE 1451.4 module <sup>5</sup>

## Low Cost/OEM Compression Load Cell

### MOUNTING DIMENSIONS

Range	Range code	D1	D2	H	L	A	B	C
20 N	020N0	25 mm [0.98 in]	5 mm [0.2 in]	16 mm [0.63 in]	1 mm [0.04 in]	M3x0.5	6 mm [0.24 in]	19 mm [0.75 in]
50 N	050N0	25 mm [0.98 in]	5 mm [0.2 in]	16 mm [0.63 in]	1 mm [0.04 in]	M3x0.5	6 mm [0.24 in]	19 mm [0.75 in]
100 N	100N0	25 mm [0.98 in]	5 mm [0.2 in]	16 mm [0.63 in]	1 mm [0.04 in]	M3x0.5	6 mm [0.24 in]	19 mm [0.75 in]
200 N	200N0	25 mm [0.98 in]	5 mm [0.2 in]	16 mm [0.63 in]	1 mm [0.04 in]	M3x0.5	6 mm [0.24 in]	19 mm [0.75 in]
500 N	500N0	25 mm [0.98 in]	5 mm [0.2 in]	16 mm [0.63 in]	1 mm [0.04 in]	M3x0.5	6 mm [0.24 in]	19 mm [0.75 in]
1 kN	01KNO	32 mm [1.26 in]	8 mm [0.31 in]	10 mm [0.39 in]	2 mm [0.08 in]	M4x0.7	5 mm [0.2 in]	25 mm [0.98 in]
2 kN	02KNO	32 mm [1.26 in]	8 mm [0.31 in]	10 mm [0.39 in]	2 mm [0.08 in]	M4x0.7	5 mm [0.2 in]	25 mm [0.98 in]
5 kN	05KNO	32 mm [1.26 in]	8 mm [0.31 in]	10 mm [0.39 in]	2 mm [0.08 in]	M4x0.7	5 mm [0.2 in]	25 mm [0.98 in]
10 kN	10KNO	32 mm [1.26 in]	8 mm [0.31 in]	10 mm [0.39 in]	2 mm [0.08 in]	M4x0.7	5 mm [0.2 in]	25 mm [0.98 in]
20 kN	20KNO	38 mm [1.5 in]	11 mm [0.43 in]	16 mm [0.63 in]	2 mm [0.08 in]	M4x0.7	6 mm [0.24 in]	32 mm [1.26 in]
50 kN	50KNO	38 mm [1.5 in]	11 mm [0.43 in]	16 mm [0.63 in]	2 mm [0.08 in]	M4x0.7	6 mm [0.24 in]	32 mm [1.26 in]
200 kN	200KNO	76 mm [3 in]	20 mm [0.79 in]	38 mm [1.5 in]	5 mm [0.2 in]	M4x0.7	6 mm [0.24 in]	60 mm [2.36 in]



### DEFLECTIONS AND RINGING FREQUENCIES

Capacity (lb)	Natural ringing frequency (Hz)	Weight with cable g
20 N	2000	59
50 N	3000	59
100 N	16000	62
200 N	21000	63
500 N	28000	64
1 kN	28000	72
2 kN	32000	72
5 kN	42000	75
10 kN	50000	77
20 kN	35000	140
50 kN	45000	145
200 kN	25000	1270

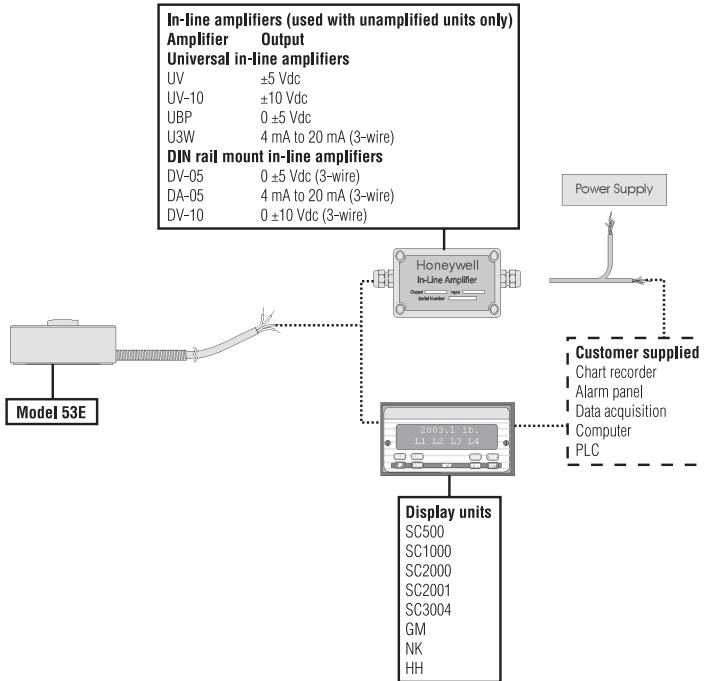
# Model 53E

# Low Cost/OEM Compression Load Cell

## 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. Dimension "H" will increase with option 6i.
4. Varies by capacity, consult factory
5. TEDS available with integral cable units only.
6. This unit is calibrated to Metric (non-Imperial) units.
7. Signature calibration only available as inline module.

## 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.**

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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.**

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