Honeywell

Model 13

Subminiature Load Cell

DESCRIPTION

Model 13 (compression only) subminiature load cell is designed to measure load ranges from 150 g to 1000 lb. With subminiature dimensions, including diameters from 0.38 in to 0.75 in and heights of 0.13 in to 0.25 in, these units are easily incorporated into systems having limited space. Model 13 combines high frequency response and low deflection to achieve a combined non-linearity and hysteresis of 0.25 % to 0.5 % full scale. A balance module is included in the load cell's lead wire cable for temperature compensation and should not be removed.

FEATURES

- 150 g to 1000 lb
- 0.7 % accuracy
- mV/V output
- Subminiature design
- Single diaphragm construction

Model 13

PERFORMANCE SPECIFICATIONS

Characteristic	Measure
Load ranges[6]	150 g, 250 g, 500 g, 1000 g, 5 lb, 10 lb, 25 lb, 50 lb, 100 lb, 250 lb, 500 lb, 1000 lb
Linearity	±0.5 % full scale
Hysteresis	±0.5 % full scale
Non-repeatability	±0.1 % full scale
Tolerance on output 150 g to 500 g	15 mV/V (nominal)
Tolerance on output 1000 g	1.5 mV/V (nominal)
Tolerance on output 5 lb to 1000 lb	2 mV/V (nominal)
Operation	Compression only
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	0.01 % full scale/°F
Temperature effect, span	0.02 % reading/°F

ELECTRICAL SPECIFICATIONS

Characteristic	Measure
Strain gage type 150 g to 500 g	Semiconductor
Strain gage type 1000 g to 1000 lb	Bonded foil
Excitation (calibration)	5 Vdc
Insulation resistance	5000 mOhm @ 50 Vdc
Bridge resistance (tolerance)150 g to 500 g	500 ohm (nominal)
Bridge resistance (tolerance)1000 g to 1000 lb	350 ohm (nominal)
Zero balance (tolerance)	±3 % of full scale (nominal)
Shunt calibration data	Included
Electrical termination (std)	1,83 m [5 ft] integral cable with balance board[3]

MECHANICAL SPECIFICATIONS

Characteristic	Measure
Maximum allowable load	See table
Weight	See table
Material	Stainless steel
Deflection @ full scale	See table

RANGE CODES

Range codes	Range
AL	150 g
AN	250 g
AP	500 g
AR	1000 g
AT	5 lb
AV	10 lb
BL	25 lb
BN	50 lb
BR	100 lb
CN	250 lb
CR	500 lb
CV	1000 lb

WIRING CODES

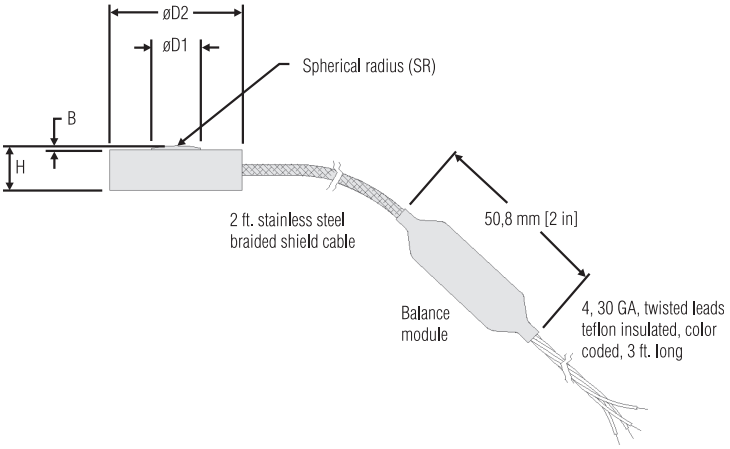
Cable	Unamplified
Red	(+) excitation
Black	(-) excitation
Green	(-) output
White	(+) output

DEFLECTIONS AND RINGING FREQUENCIES

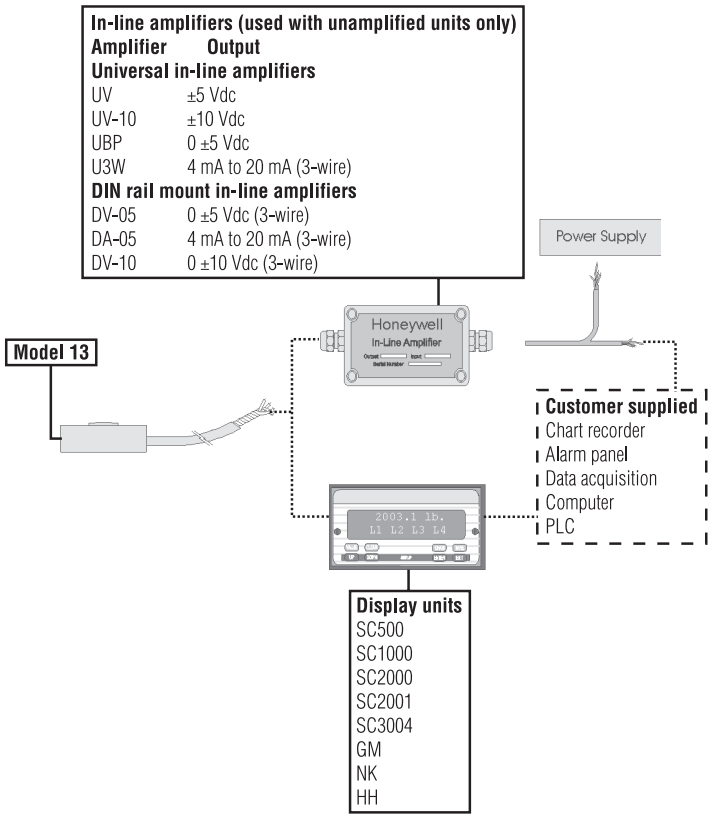
Capacity (lb)	Deflection at full scale (10^{-3} in)	Weight	Weight with cable	Max. allowable load[1] (% FS)
150 g	0.06	1 g [0.002 lb]	9 g [0.019 lb]	500
250 g	0.06	1 g [0.002 lb]	9 g [0.019 lb]	500
500 g	0.08	1 g [0.002 lb]	9 g [0.019 lb]	500
1000 g	0.05	1 g [0.002 lb]	9 g [0.019 lb]	150
5 lb	0.5	1 g [0.002 lb]	9 g [0.019 lb]	150
10 lb	0.4	1 g [0.002 lb]	9 g [0.019 lb]	150
25 lb	0.4	1 g [0.002 lb]	9 g [0.019 lb]	150
50 lb	0.4	1 g [0.002 lb]	9 g [0.019 lb]	150
100 lb	0.4	3 g [0.006 lb]	11 g [0.024 lb]	150
250 lb	0.5	3 g [0.006 lb]	11 g [0.024 lb]	150
500 lb	0.5	10 g [0.022 lb]	18 g [0.039 lb]	150
1000 lb	0.6	10 g [0.022 lb]	18 g [0.039 lb]	150

MOUNTING DIMENSIONS

Ranges	D1	D2	H	B	SR
150, 250, 500, 1000 g; 5, 10, 25, 50 lb	2,29 mm [0.09 in]	9,65 mm [0.38 in]	3,3 mm [0.13 in]	0,69 mm [0.027 in]	6,35 mm [0.25 in]
100, 250 lb	3,05 mm [0.12]	12,7 mm [0.50 in]	3,81 mm [0.15 in]	0,51 mm [0.020 in]	12,7 mm [0.50 in]
500 lb, 1000 lb	6,35 mm [0.25 in]	19,05 mm [0.75]	6,35 mm [0.25 in]	0,64 mm [0.025 in]	12,7 mm [0.50 in]



TYPICAL SYSTEM DIAGRAM



OPTION CODES

	Many range/option combinations are available in our quick-ship and fast-track manufacture programs. Please see http://sensing.honeywell.com/TMsensor-ship for updated listings.
Load range	150, 250, 500 g, 1000 g; 5, 10, 25, 50, 100, 250, 500, 1000 lb
Temperature compensation	1a. 60 °F to 160 °F 1b. 30 °F to 130 °F 1c. 0 °F to 185 °F 1d. -20 °F to 200 °F 1e. -20 °F to 200 °F 1j. 0 °C to 50 °C 1k. -20 °C to 85 °C 1m. -25 ° to 110 °C
Internal amplifiers	2u. Unamplified, mV/V output
Overload stops	4a. Overload stops
Electrical termination	5 ft integral cable with balance board[3] 6v. Phoenix connector on end of cable 15d. Connector on end of cable
Special calibration	9a. 10 point (5 up/5 down) 20 % increments @ 68 °F 9b. 20 point (10 up/10 down) 10 % increments @ 68 °F
Shock and vibration	44a. Shock and vibration resistance

NOTES

1. Allowable maximum loads – maximum load to be applied without damage.[2] Loads described allow for 100 % full scale axial loading with the bending loads specified. Torque loading maximum is without axial or other load. For any other combination, consult factory.
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. A small, 2 in circuit board is included in the cable, 2 ft from the load cell. Do not remove this board.
4. Only for ranges greater-than-or-equal-to 1000 g.
5. Specifications may vary with this option.
6. This unit calibrated to Imperial (non-Metric) units.

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.

⚠ 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 datasheet 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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