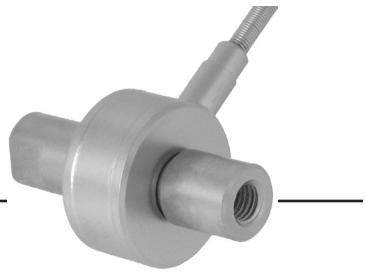
Honeywell

Model 34

Precision Miniature Load Cell



DESCRIPTION

Model 34 precision miniature load cells measure both tension and compression load forces of 1000 g to 1000 lb. These models are our highest accuracy, rugged miniature load cells. Model 34's welded, stainless steel construction is designed to eliminate or reduce to a minimum, the effects of off-axis loads. (The internal construction assures excellent long-term stability for ranges 1000 grams and above.) A modification permits this model to be completely welded for underwater applications.

The Model 34 tension/compression load cell has female threads attachments. High accuracies of 0.15 % to 0.25 % full scale are achieved. Each bonded strain gage unit is built of welded 17-4 PH stainless steel for additional ruggedness. All load cells with ranges from 1 kg to 10 lb have an electrical balance module in the lead wire (approximately 1 in x .087 in thick). This balance module does not have to be the same temperature as the transducer.

FEATURES

- 1000 g to 1000 lb
- Welded stainless steel
- Rugged, small size
- Tension/compression
- 0.15 %/0.20 % accuracy

Model 34

PERFORMANCE SPECIFICATIONS

Characteristic	Measure
Load ranges[6]	1000 g, 5 lb, 10 lb, 25 lb, 50 lb, 100 lb, 250 lb, 500 lb, 1000 lb
Linearity 1000 g to 250 lb	±0.15 % full scale
Linearity 500 lb to 1000 lb	±0.2 % full scale
Hysteresis 1000 g to 250 lb	±0.15 % full scale
Hysteresis 500 lb to 1000 lb	±0.2 % full scale
Non-repeatability 1000 g	±0.1 % full scale
Non-repeatability 5 lb to 1000 lb	±0.05 % full scale
Tolerance on output 1000 g	1.5 mV/V (nominal)
Tolerance on output 5 lb to 1000 lb	2 mV/V
Operation	Tension/compression[3]
Resolution	Infinite

ENVIRONMENTAL SPECIFICATIONS

Characteristic	Measure
Temperature, operating	-53 °C to 121 °C [-65 °F to 250 °F]
Temperature, compensated	15 °C to 71 °C [60 °F to 160 °F]
Storage temperature	-73 °C to 148 °C [-100 °F to 300 °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) 1 kg to 10 lb	5 Vdc
Excitation (calibration) 25 lb to 1000 lb	10 Vdc
Insulation resistance	5000 Mohm @ 50 Vdc
Bridge resistance	350 ohm
Electrical termination (std) 1000 g to 10 lb	Teflon cable (1524 mm [5 ft]) with balance board
Electrical termination (std) 25 lb to 1000 lb	Teflon cable (1524 mm [5 ft])

MECHANICAL SPECIFICATIONS

Characteristic	Measure
Maximum allowable load	150 % FS[1]
Weight	See table
Material	17-4 PH stainless steel
Deflection full scale	See table
Natural frequency	See table

RANGE CODES

Range codes	Range
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

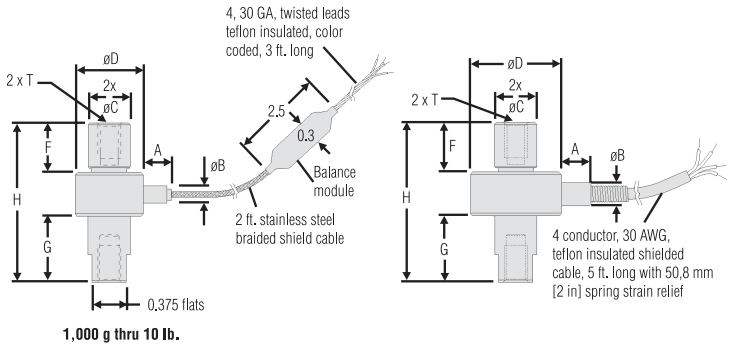
Cable	Unamplified
Red	(+) excitation
Black	(-) excitation
Green	(-) output
White	(+) output

DEFLECTIONS AND RINGING FREQUENCIES

Capacity (lb)	Deflection at full scale (in)	Ringing frequency (Hz)	Weight (g)
1000 g to 10 lb	0,03 mm [0.001 in]	1000 Hz	40 g [0.09 lb]
25 lb to 100 lb	0,03 mm [0.001 in]	3000 Hz	80 g [0.18 lb]
250 lb to 1000 lb	0,05 mm [0.0015 in]	5000 Hz	100 g [0.22 lb]

MOUNTING DIMENSIONS

Ranges	D mm [in]	H mm [in]	A mm [in]	B mm [in]	C mm [in]	F mm [in]	G mm [in]	T
1000 g, 5 lb, 10 lb	19,05 [0.75]	44,45 [1.75]	7,87 [0.31]	4,83 [0.19]	4,83 [0.46]	15,24 [0.60]	18,29 [0.72]	1/4-28 UNF
25 lb, 50 lb, 100 lb	25,4 [1.00]	44,45 [1.75]	12,7 [0.50]	6,35 [0.25]	4,83 [0.46]	13,21 [0.52]	18,29 [0.72]	1/4-28 UNF
250 lb, 500 lb, 1000 lb	25,4 [1.00]	50,8 [2.00]	12,7 [0.50]	6,35 [0.25]	4,83 [0.46]	19,05 [0.75]	19,05 [0.75]	1/4-28 UNF



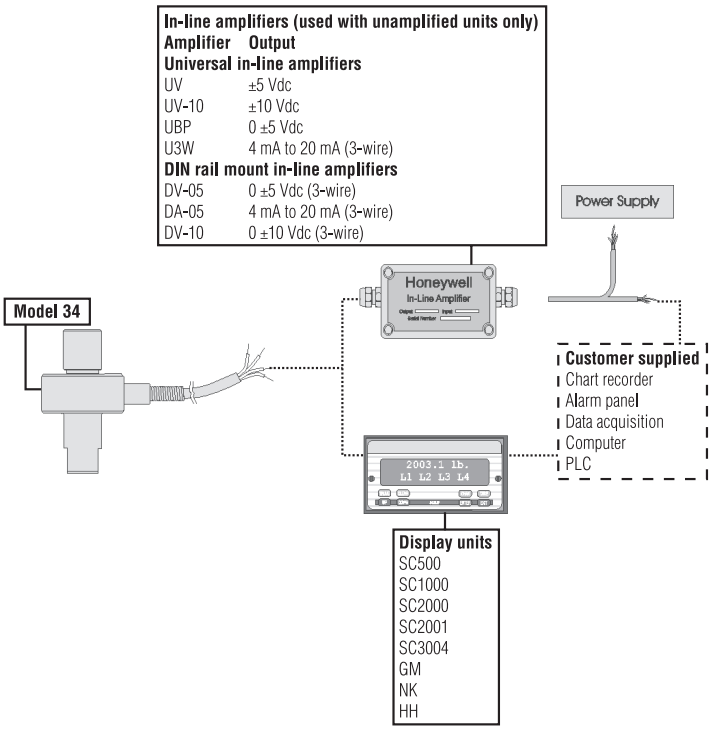
OPTION CODES

	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	1000 g, 5 lb, 10 lb, 25 lb, 50 lb, 100 lb, 250 lb, 500 lb, 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 130 °F 1e. -20 °F to 200 °F 1j. 0 °C to 50 °C 1k. -20 °C to 85 °C 1m. -25 ° to 110 °C[7] 1f. 70 °F to 250 °F 1g. 70 °F to 325 °F[7] 1h. 70 °F to 400 °F[7] 1i. -65 °F to 250 °F[7]
Internal amplifiers	2u. Unamplified, mV/V output
Overload stops	4a. Overload stops
Electrical termination	6a. Bendix PTIH-10-6P - 6 pin (max. 250 °F)[5] 6d. Microtec DR-4S-4H 4 pin 6e. Integral cable: Teflon 6f. Integral cable: PVC 6g. Integral cable: Neoprene (max. 180 °F) 6h. Integral cable: Silicone 6i. Integral underwater cable (max. 180 °F) 6v. Phoenix connector on end of cable 15d. Connector on end of cable
Special calibration	9a. 10 point (5 up/5 down) 20 % increments @ 20 °C 9b. 20 point (10 up/10 down) 10 % increments @ 20 °C
Special calibration	30a. Compression only calibration, positive in compression 30b. Tension and compression calibration, positive in tension 30c. Compression only calibration, negative in compression
Shock and vibration	44a. Shock and vibration resistance
Interfaces[4]	53e. Signature calibration[7] 53t. TEDS IEEE 1451.4 module

NOTES

1. Allowable maximum loads – maximum load to be applied without damage.[2]
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. Standard calibration for tension/compression load cells is in tension only.
4. Option 53e and 53t are external in-line interfaces.
5. Availability varies with range.
6. This unit calibrated to Imperial (non-Metric) units.
7. Not available with 500 g range.

TYPICAL SYSTEM DIAGRAM



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

⚠ WARNING

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- 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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