

Model 31E Mid-Range Precision Miniature Load Cell

Order Code 31E

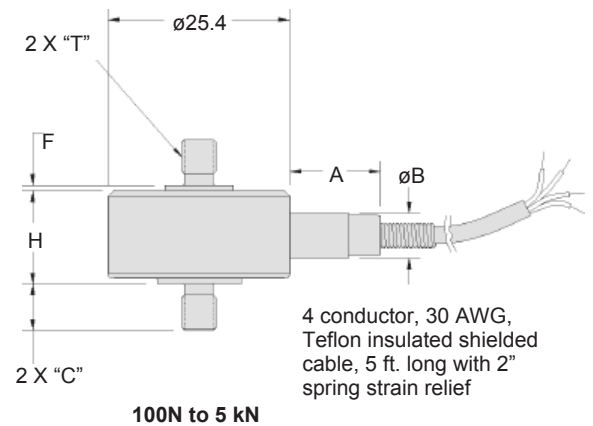
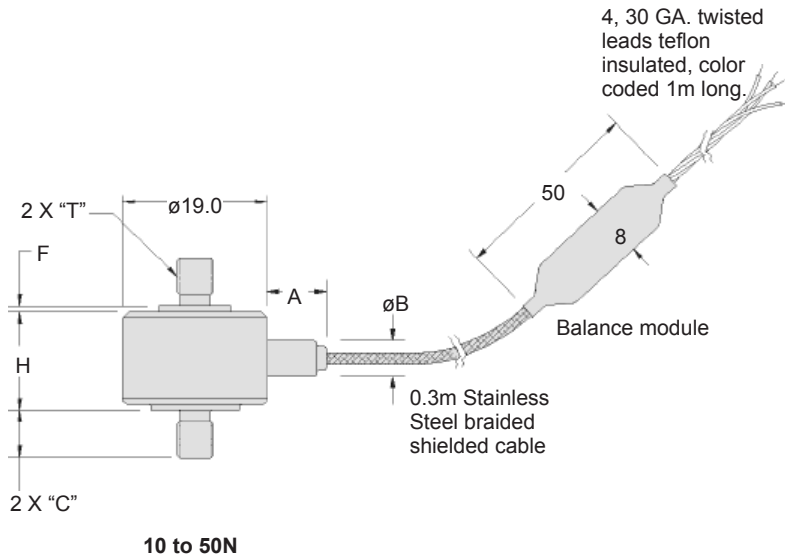
- 10N to 5kN
- mV/V Output
- Stainless Steel
- Miniature Design



Wiring Code

Cable/ Unamplified

- Red (+) Excitation
- Black (-) Excitation
- Green (-) Output
- White (+) Output



Dimensions

Ranges	T	H (mm)	C (mm)	F (mm)	A (mm)	B (mm)
10; 20; 50N	M4 x 0.7	11.4	6.3	1.27	7.9	4.8
100; 200; 500N	M5 x 0.8	13.2	6.3	0.76	12.7	6.3
1; 2; 5kN	M6 x 1	13.2	9.6	0.76	12.7	6.3

Performance

- Load Ranges.....10N to 5kN
- Linearity
 - 10N to 1kN.....+/- 0.15% Full Scale
 - 2kN to 5kN.....+/- 0.2% Full Scale
- Hysteresis
 - 10N to 1kN.....+/- 0.15% Full Scale
 - 2kN to 5kN.....+/- 0.2% Full Scale
- Non-Repeatability
 - 10N.....+/- 0.1% Full Scale
 - 20N to 5kN.....+/- 0.05% Full Scale
- Tolerance on Output
 - 10N.....1.5 mV/V (nominal)
 - 20N to 5kN.....2 mV/V
- Operation.....Tension/ Compression (note 3)
- Resolution.....Infinite

Model 31E

Environmental

Temperature, Operating.....	-55° to 120° C
Temperature, Compensated.....	15° to 70° C
Storage Temperature.....	-70° to 150° C
Temperature, Effect	
Zero.....	0.01% Full Scale/° C
Span.....	0.01% Full Scale/° C

Electrical

Strain Gage Type.....	Bonded Foil
Excitation (calibration)	
10 to 20 N.....	5 VDC
50 N to 5 kN.....	10VDC
Insulation Resistance.....	5000 Megohms @ 50 VDC
Bridge Resistance.....	350 Ohms
Zero Balance.....	1% max.
Electrical Termination (std).....	Teflon Cable (1.5m)

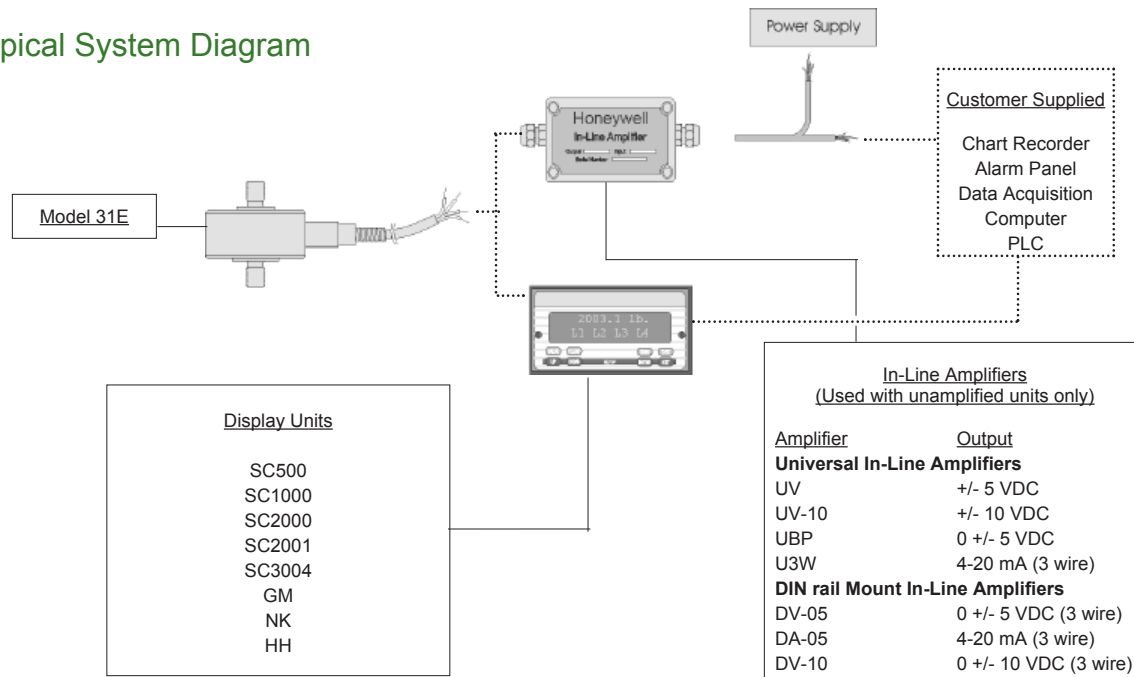
Mechanical

Maximum Allowable Load.....	150% F.S. (note 1)
Weight.....	See table
Material.....	17-4 PH Stainless Steel
Deflection Full Scale.....	See table
Natural Frequency.....	See table

Deflections and Ringing Frequencies

Capacity	Deflection at Full Scale (mm)	Ringing Frequency (Hz)	Weight (grams)
10 to 50N	0.02	3,000	21
100N to 500N	0.02	10,000	63
1kN to 5kN	0.03	12,000	80

Typical System Diagram



Range Codes

Range	Range Code
10N	010N0
20N	020N0
50N	050N0
100N	100N0
200N	200N0
500N	500N0
1kN	01KN0
2kN	02KN0
5kN	05KN0

Options

	Same Day Ship	Fast track manufacture	Build to Order
Load Range	10, 20, 50, 100, 200, 500N; 1, 2, 5kN		
Temperature Compensation	1a. 15° to 70° C	1j. 0° to 50° C 1k. -20° to 85° C 1m. -25° to 110° C	
Internal Amplifiers	2u. Unamplified, mV/V output		
Electrical Termination	6e. Integral cable: Teflon	6v. Phoenix connector on end of cable	6a. Bendix PTIH-10-6P - 6 pin (max. 120° C) (note 5) 6d. Microtec DR-4S-4H 4 pin 6f. Integral cable: PVC 6g. Integral cable: Neoprene (max. 80° C) 6h. Integral cable: Silicone 6i. Integral underwater cable (max. 80° C)
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 & Vibration		44a. Shock and vibration resistance	
Interfaces (note 4)		53e. Signature Calibration 53t. T.E.D.S. IEEE 1451.4 Module	

Supplied as standard

Notes

1. Allowable Maximum Loads- Maximum load to be applied without damage (note 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. TEDS available with integral cable units only.
5. Availability varies with range.

Special Customer Requirements (Consult Factory)

OEM Labels
Radiation proof
Different cable lengths
Enhanced temperature ranges

How to Order

Combine the order code, the range code and the options code.

Sample Code: **31E** **020N0** **1J, 30a**
Model Code Range Code Options Code



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Capteurs et Systèmes de mesure

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