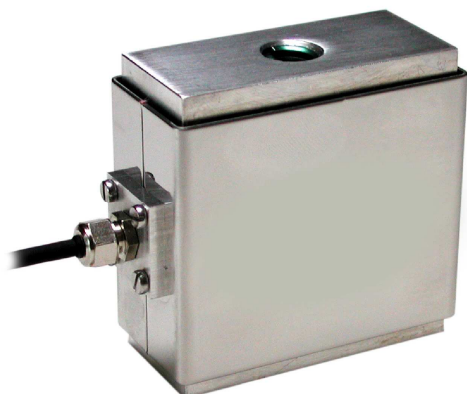


FN3148 Load Cell Tension and Compression



- **S-Beam with Mechanical stops**
- **Low range: 10 to 2,000 N (2 to 400 Lbf)**
- **Very high resolution**
- **Compact size High Level Output Model with Integrated Amplifier**

DESCRIPTION

The FN3148 high precision load cell features accuracy of 0.05% F.S. It is available in standard ranges from 0-10 N to 0-2000 N. Integrated mechanical stops protect against accidental overloads in tension and compression. For high-level output a model with integrated amplifier is available.

With many years of experience as a designer and manufacturer of sensors, Measurement-Specialties often works with customers to design or customize sensors for specific uses and testing environments.

To meet your needs we also offer complete turnkey systems. The matched components (sensor, power, amplifier and digital display) are formatted, calibrated and ready for immediate use.

FEATURES

- Full Scale Range : 0-10 N to 0-2,000 N (0-2 to 0-400 Lbf)
- Tension and Compression
- High Level Output Model with Integrated Amplifier
- Accuracy : 0.05% F.S.
- Integrated Mechanical Stops
- Optional Rod Ends

APPLICATIONS

- Product Validation Testing
- Medical Instruments
- Weighing
- High Accuracy Measurements
- Laboratory and Research

STANDARD RANGES

F.S. Ranges In N	10	50	100	200	500	1K	2K
F.S. Ranges In Lbf	2	10	20	40	100	200	400
Stiffness in N/m	2.2×10^4	1.8×10^5	3.7×10^5	8.3×10^5	2.2×10^6	4.5×10^6	9.5×10^6
Stiffness in Lbf/ft	1.5×10^3	1.2×10^4	2.5×10^4	5.7×10^4	1.5×10^5	3.1×10^5	6.5×10^5

FN3148 Load Cell Tension and Compression

PERFORMANCE SPECIFICATIONS

Ambient Temperature: 20±1°C (unless otherwise specified)

PARAMETERS

Operating Temperature Range (OTR)	-20 to 80 °C [-4 to 176 °F]
Compensated Temperature Range (CTR)	0 to 60 °C [32 to 140 °F]
Zero Shift in CTR	<0.5% F.S. / 50°C [100 °F]
Sensitivity Shift in CTR	:1.10^{-4} / °C [5.10^{-5} / °F] of reading
Range (F.S.)	0-10 N to 0-2 kN [0-2 lbf to 0-400 lbf]
Over-Range	
Without Damage	5 to 100 x F.S.
Accuracy	
Combined Non-Linearity & Hysteresis	±0.05% F.S.

Electrical Characteristics

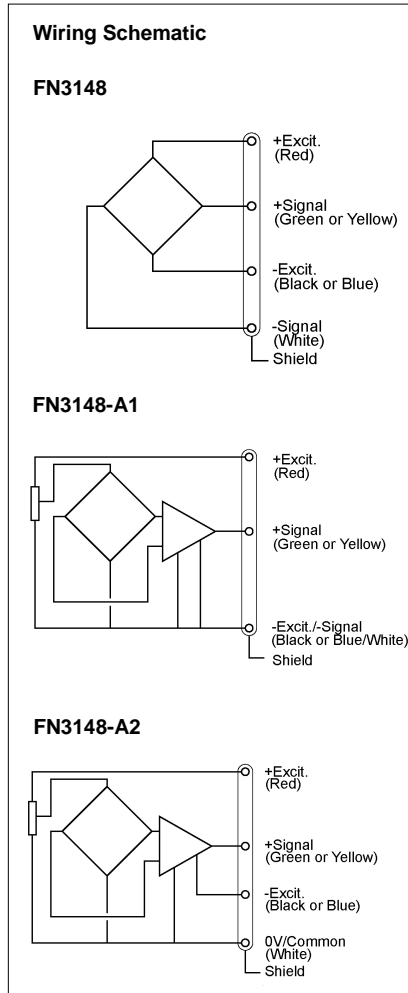
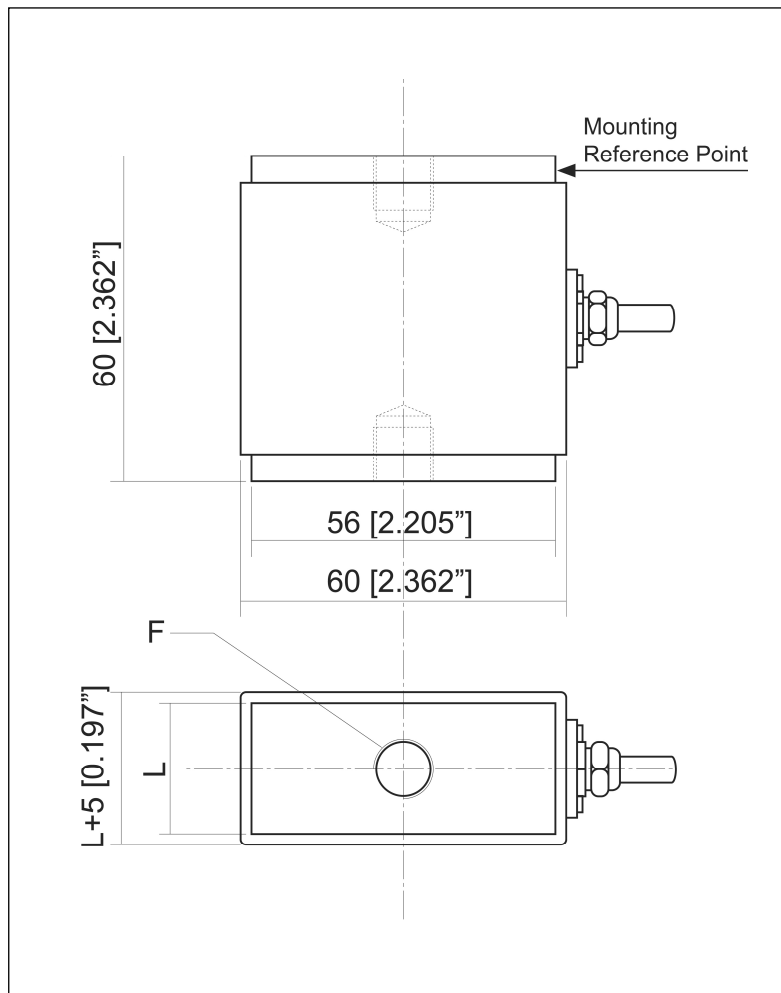
Model	FN3148	FN3148-A1	FN3148-A2
Supply Outage	10Vdc	10 – 30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output	±2mV/V	0.5 to 4.5V	±5V
Zero Offset	<±5% F.S.	2.5V ±5% F.S.	0V ±5% F.S.
Input Impedance/Consumption	350 to 700Ω	<50mA	<50mA
Output Impedance	350 to 700Ω	<10Ω	<10Ω
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

Notes

1. Electrical Termination: Cable gland termination, 2m cable length standard
2. Materials: Body in aluminium alloy; stainless steel cover

FN3148 Load Cell Tension and Compression

DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



Dimensions in mm [inch]

F.S. in N [Lbf]	10 [2]	50 [10]	100 [20]	200 [40]	500 [100]	1K [200]	2K [400]
F (Thread)	M6			M10			
L	20 [0.79"]	25 [0.98"]					
Over-range (compression)	20 000 N [4000 lb]						
Over-range (tension)	1000 N [200 lb]		2000 N [400 lb]	5000 N [1000 lb]	10 000 N [2000 lb]		
Stiffness in N/m [lb/ft]	2.2x10 ⁴ [1.5x10 ³]	1.8x10 ⁵ [1.2x10 ⁴]	3.7x10 ⁵ [2.5x10 ⁴]	8.3x10 ⁵ [5.7x10 ⁴]	2.2x10 ⁶ [1.5x10 ⁵]	4.5x10 ⁶ [3.1x10 ⁵]	9.5x10 ⁶ [6.5x10 ⁵]

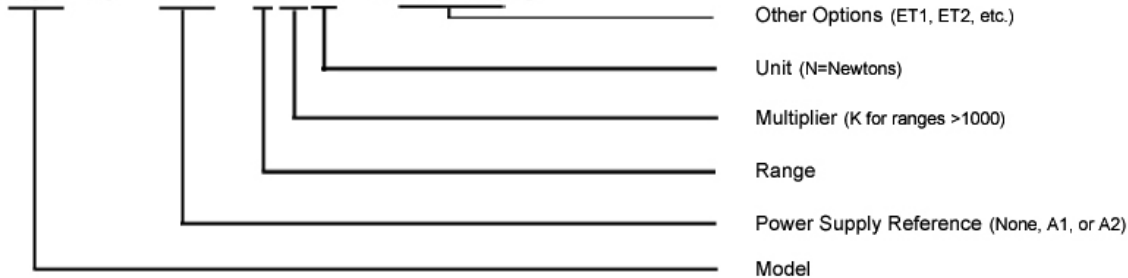
FN3148 Load Cell Tension and Compression

OPTIONS

A1 : Unipolar tension
A2 : Bipolar Tension (ex.±15Vdc)
ET1 : CTR -20 to 100 °C [-4 to 212 °F] OTR = CTR
ET2 : CTR -40 to 120 °C [-40 to 248 °F] OTR = CTR
SC : Connector output (JAEGER 4b mini)
LC"x" : Additional cable length to standard length (in m) (Note : "X" = Custom value)

ORDERING INFO

FN3148 - A1 - 2KN - /ET1/SC



RECOMMENDED ACCESSORIES

ER : Rod Ends

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