

## FEATURES

- ◆ High accuracy
- ◆ Integrated Amplifier optional
- ◆ Cable or connector output

## APPLICATIONS

- ◆ Process control equipment
- ◆ Medical Instruments
- ◆ Weighing
- ◆ Laboratory and Research
- ◆ Calibration test benches

## FN3148

### Load Cell with mechanical stops

#### SPECIFICATIONS

- ◆ Ranges from 10 N to 2 000 N [2 lbf to 400 lbf]
- ◆ S-Beam sensor in tension and compression
- ◆ Combined linearity & hysteresis < 0.05% F.S.

The **FN3148** high precision load cell is protected against accidental overloads in tension and compression.

High-level outputs are available with amplifier A1 or A2 integration.

For lower ranges, another sensor, model **FN3280**, can measure 0-1 N to 0-5 N [0.2 lbf to 1 lbf].

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

On request, Instruction documents can be provided to ease the selection and use of our sensors and provide helpful tips.

**STANDARD RANGES**

<b>Ranges in N (FS)</b>	10	50	100	200	500	1k	2k
<b>Ranges in lbf</b>	2	10	20	40	100	200	400
<b>Stiffness in N/m</b>	2.2x10 <sup>4</sup>	1.8x10 <sup>5</sup>	3.7x10 <sup>5</sup>	8.3x10 <sup>5</sup>	2.2x10 <sup>6</sup>	4.5x10 <sup>6</sup>	9.5x10 <sup>6</sup>
<b>Stiffness in lbf/ft</b>	1.5x10 <sup>3</sup>	1.2x10 <sup>4</sup>	2.5x10 <sup>4</sup>	5.7x10 <sup>4</sup>	1.5x10 <sup>5</sup>	3.1x10 <sup>5</sup>	6.5x10 <sup>5</sup>

**PERFORMANCE SPECIFICATIONS (typical values at temperature 23±3°C)**

<b>PARAMETERS</b>	
Operating Temperature Range (OTR)	-20 to 80° C [-4 to 176° F]
Compensated Temperature Range (CTR)	0 to 60° C [32 to 140° F]
Thermal Zero Shift in CTR	<0.5% F.S. / 50° C [1/100° F]
Thermal Sensitivity Shift in CTR	<0.5 % of reading / 50° C [1/100° F]
<b>Over-Range</b>	
Without Damage	5 to 100 x F.S. (see table page 3)
<b>Accuracy</b>	
Combined non-linearity & hysteresis	↑±0.05% F.S.

**Electrical Characteristics**

<b>Model</b>	<b>FN3148<sup>1</sup></b>	<b>FN3148-A1</b>	<b>FN3148-A2</b>
Supply Voltage	1 to 10 Vdc regulated	10 to 30Vdc	±15Vdc (±12 to ±18Vdc)
Sensitivity "FSO" <sup>2</sup>	±2mV/V	±2V ±0.2V	±5V ±0.2V
Zero Offset <sup>2</sup>	±1 mV	2.5V ±0.2V	0V ±0.2
Input Impedance/Consumption	350 to 700Ω	<50mA	50mA
Output Impedance	350 to 700Ω	1 kΩ <sup>5</sup>	1 kΩ <sup>5</sup>
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

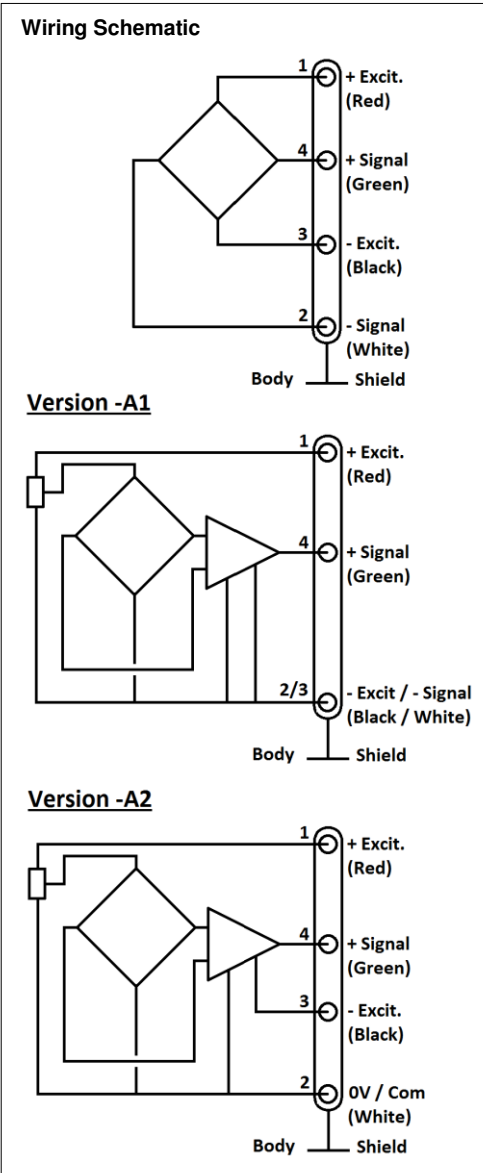
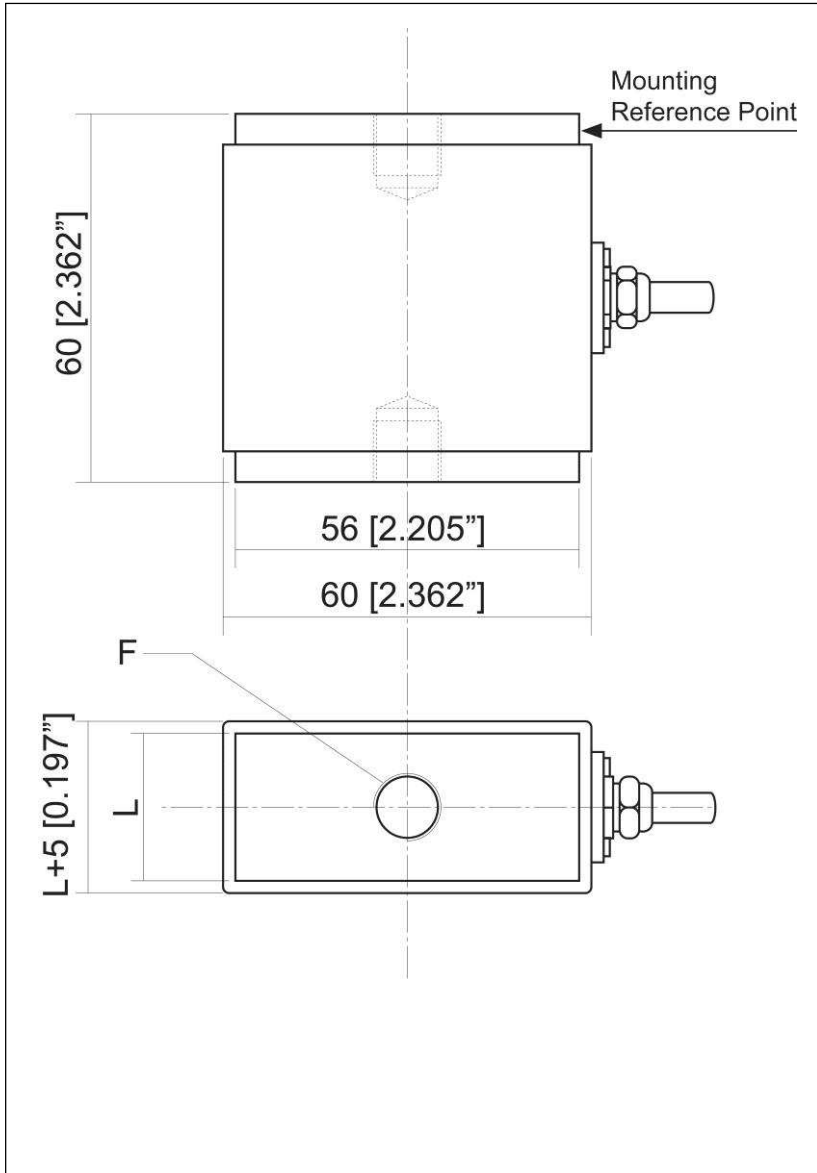
**Notes**

1. Sensors are calibrated with 10Vdc power supply as standard.
2. Signal goes positive in tension with standard wiring configuration. Other signal output on request
3. Electrical Termination: Cable gland termination, 2m cable length standard
4. Materials: Body in aluminium alloy and cover in stainless steel
5. Output impedance < 100Ω on request
6. CE conformance according to EN 61010-1, EN 50081-1, EN 50082-1

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## DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



Dimensions in mm [inch]

Range in N [in 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 kN [4 klbf]						
Over-range (tension)	1 kN [200 lbf]		2 kN [400 lbf]		5 kN [1 klbf]	10 kN [2klbf]	
Stiffness in N/m [in lbf/ft]	2.2x10 <sup>4</sup> [1.5x10 <sup>3</sup> ]	1.8x10 <sup>5</sup> [1.2x10 <sup>4</sup> ]	3.7x10 <sup>5</sup> [2.5x10 <sup>4</sup> ]	8.3x10 <sup>5</sup> [5.7x10 <sup>4</sup> ]	2.2x10 <sup>6</sup> [1.5x10 <sup>5</sup> ]	4.5x10 <sup>6</sup> [3.1x10 <sup>5</sup> ]	9.5x10 <sup>6</sup> [6.5x10 <sup>5</sup> ]

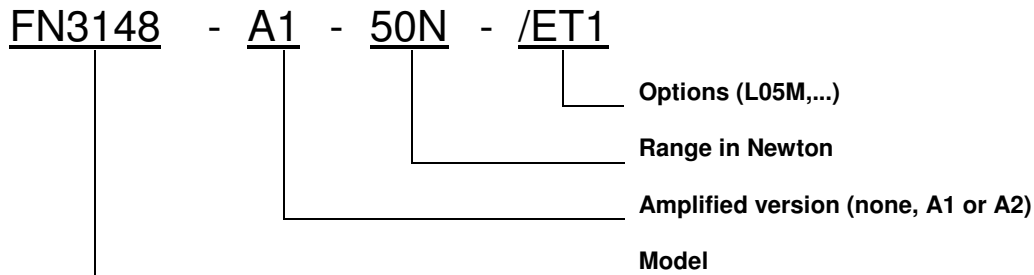
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### OPTIONS

<b>A1</b> : Amplified Tension output with unipolar power supply
<b>A2</b> : Amplified Tension output with bipolar power supply
<b>ET1</b> : CTR -20 to 100° C [-4 to 212° F] OTR = CTR
<b>ET2</b> : CTR -40 to 120° C [-40 to 248° F] OTR = CTR
<b>SC</b> : Connector output
<b>V00</b> : Non-standard power supply calibration, replace "00" with value in Volt (standard 10Vdc, unamplified sensor only)
<b>L00M</b> : special cable length, replace "00" with total length in meters

### ORDERING INFO



### SUPPLIED ACCESSOIRES (ONLY WITH SC OPTION)

<b>EFMX-4M</b> : mating plug Jaeger 530-801-006 with clamp 530-841-006 standard and ET1 with SC option
<b>EFMX-4H</b> : mating plug Jaeger 530-804-006 with clamp 530-844-006 for ET2 option with SC option

### RECOMMENDED ACCESSORIES

<b>ER</b> : Rod Ends
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