

## FEATURES

- ◆ High stiffness
- ◆ Accuracy: 0.25% F.S.
- ◆ Skydrol compatible on request
- ◆ Integrated Amplifier optional

## APPLICATIONS

- ◆ Crash test walls and plates
- ◆ Hydraulic cylinder regulation
- ◆ Dynamic lifetime component tests
- ◆ Aerospace structure test beds
- ◆ Laboratory and Research

## FN3042

### Load Cell for Fatigue Testing

#### SPECIFICATIONS

- ◆ Heavy duty cylindrical load cell
- ◆ Ranges from 5 kN to 500 kN [1 klbf to 100 klbf]
- ◆ Tension and Compression
- ◆ Suited for fatigue and crash testing
- ◆ High Level Output with Integrated Amplifier

The **FN3042** is highly suited for use in test benches and fatigue tests. Due to the mechanical design, the **FN3042** is especially durable.

Dedicated to fatigue test benches, **FN3042** is able to undergo more than 10 million cycles of full scale with very little change in zero offset stability.

The sensor housing can be supplied fully stainless steel with high IP protection level for fatigue test benches or regulation in high temperature or corrosive fluids environments.

With a long standing experience as a designer and manufacturer of sensors, TE CONNECTIVITY often works with customers to design or customize sensors for specific uses and testing environments.

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>	5k	10k	25k	50k	100k	200k	500k
<b>Ranges in lbf</b>	1k	2k	5k	10k	20k	40k	100k
<b>Stiffness in N/m</b>	1.7x10 <sup>8</sup>	3x10 <sup>8</sup>	6x10 <sup>8</sup>	1.5x10 <sup>9</sup>	2x10 <sup>9</sup>	3.5x10 <sup>9</sup>	6.5x10 <sup>9</sup>
<b>Stiffness in lbf/ft</b>	1.2x10 <sup>7</sup>	2.1x10 <sup>7</sup>	4.1x10 <sup>7</sup>	1.0x10 <sup>8</sup>	1.4x10 <sup>8</sup>	2.4x10 <sup>8</sup>	4.5x10 <sup>8</sup>
<b>Material</b>	Aluminum	Stainless steel					

**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 [/100° F]
Thermal Sensitivity Shift in CTR	<1 % of reading / 50° C [/100° F]
<b>Over-Range</b>	
Without Damage	2 x F.S.
Without Destruction	3 x F.S.
<b>Accuracy</b>	
Combined non-linearity and hysteresis	±0.25%F.S.

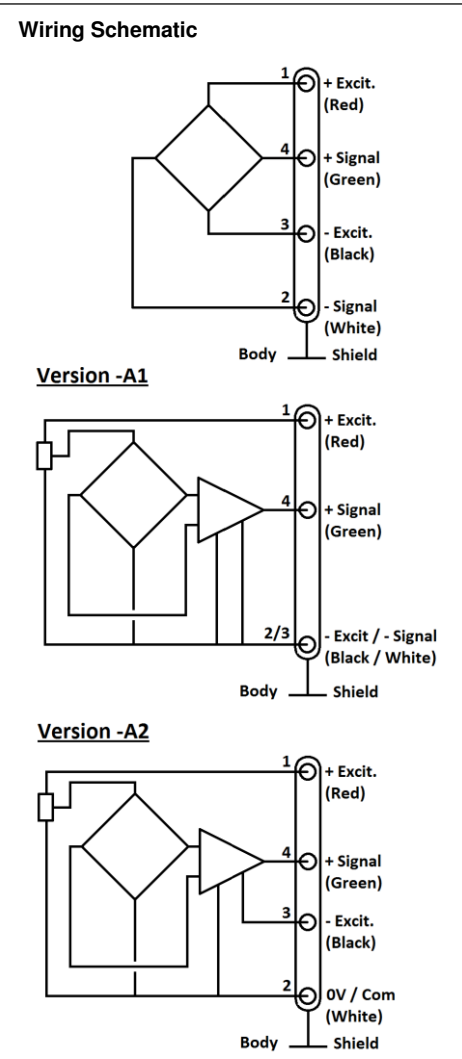
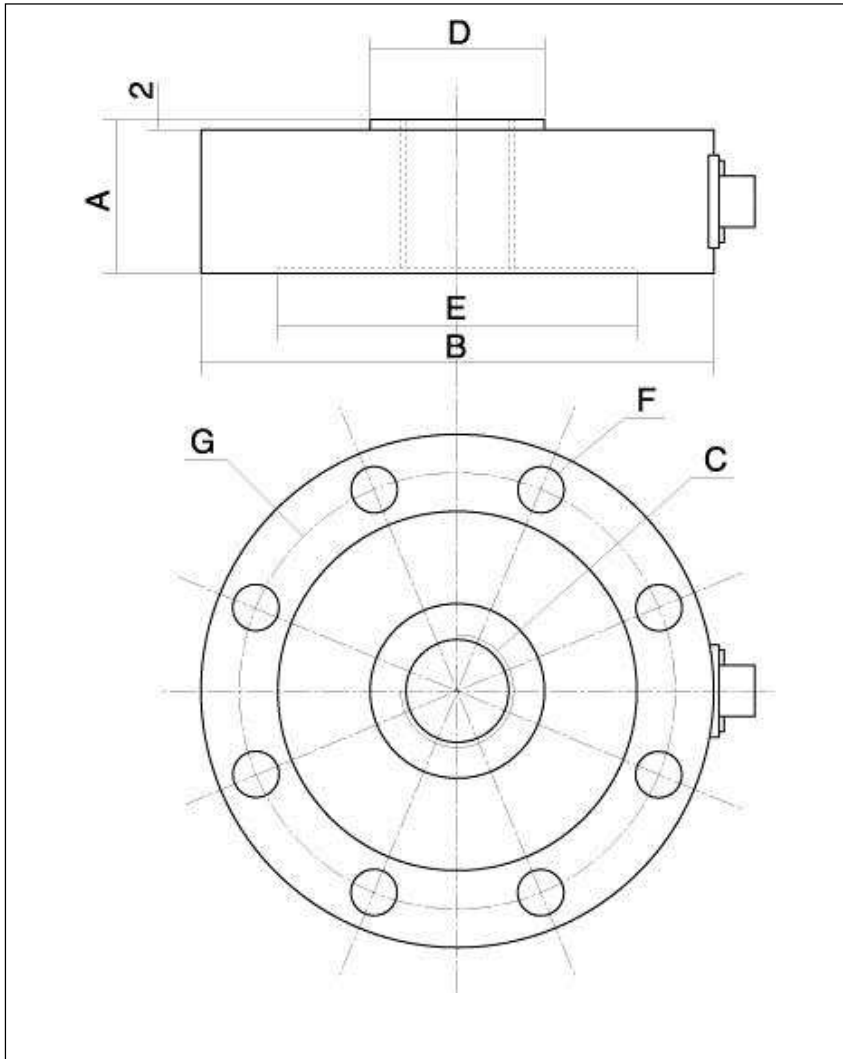
**Electrical Characteristics**

<b>Model</b>	<b>FN3042<sup>1</sup></b>	<b>FN3042-A1</b>	<b>FN3042-A2</b>
Supply Voltage	1 to 10 Vdc	10 to 30Vdc	±15Vdc (±12 to ±18Vdc)
Sensitivity "FSO" <sup>2</sup>	±1.5mV/V	±2V ±0.2V	±5V ±0.2V
Zero Offset	±1mV	2.5V ±0.2V	0V ±0.2V
Input Impedance/Consumption	350 to 700Ω	<50mA	50mA
Output Impedance	350 to 700Ω	1 kΩ <sup>6</sup>	1 kΩ <sup>6</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: Connector output including mate
4. Materials: Body in stainless steel or aluminium alloy depending on F.S.; aluminum cover
5. Protection Index: IP50 (other protection levels on request)
6. Output impedance < 100Ω on request
7. CE conformance according to EN 61010-1, EN 50081-1, EN 50082-1

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



Dimensions in mm [inch]

Ranges in N [in lbf]	5k [1k]	10k [2k]	25k [5k]	50k [10k]	100k [20k]	200k [40k]	500k [100k]
A	30 [1.18]	30 [1.18]		40 [1.57]	50 [1.97]	50 [1.97]	70 [2.76]
B	101 [3.98]	101 [3.98]		119 [4.69]	144 [5.67]	168 [6.61]	228 [8.98]
C (Thread)	M16 x 2	M20 x 1.5		M24 x 2	M36 x 3	M45 x 4	M64 x 4
D	34 [1.34]	34 [1.34]		49 [1.93]	66 [2.60]	72 [2.83]	102 [4.02]
E	70 [2.76]	70 [2.76]		83 [3.27]	104 [4.09]	118 [4.65]	152 [5.98]
F	8x 8.2 [0.32]	8x 8.2 [0.32]		8x 10.2 [0.40]	8x 12.2 [0.48]	8x 16.2 [0.64]	16x 20.2 [0.8]
G	85 [3.35]	85 [3.35]		101 [3.98]	124 [4.88]	143 [5.63]	190 [7.48]
Material	Aluminum	Stainless steel					

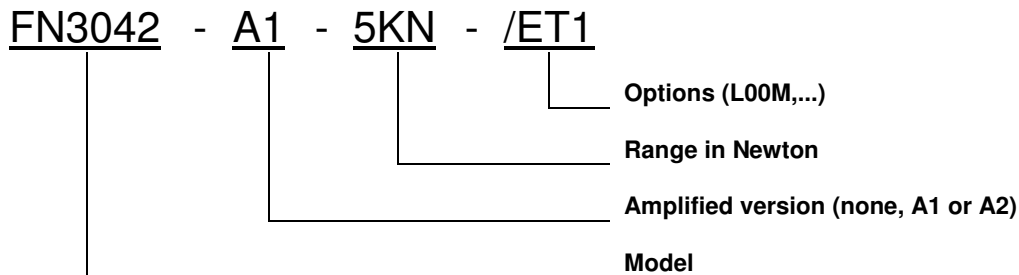
## FN3042

Load Cell for Fatigue Testing

### 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>ET3</b> : CTR -40 to 150° C [-40 to 302° F] OTR = CTR (Note : ET3 not available with A1 and A2 options)
<b>V00</b> : Non-standard power supply calibration, replace "00" with value in Volt (standard 10Vdc)
<b>PE</b> : Cable Gland Termination with 2 m [6.5 ft] cable
<b>PE/L00M</b> : Additional cable length with PE option, replace "00" with total length in meters

### ORDERING INFO



### SUPPLIED ACCESSOIRES

<b>EFMX-4S</b> : mating plug Jaeger 043-085-006 with clamp 630-135-006 for standard or ET1 option
<b>EFMX-4SH</b> : mating plug Jaeger 632-604-256 with clamp 630-135-256 for ET2 or ET3 option

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