

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 many years of 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

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

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

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]
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]
Over-Range	
Without Damage	2 x F.S.
Without Destruction	3 x F.S.
Accuracy	
Combined non-linearity and hysteresis	±0.25%F.S.

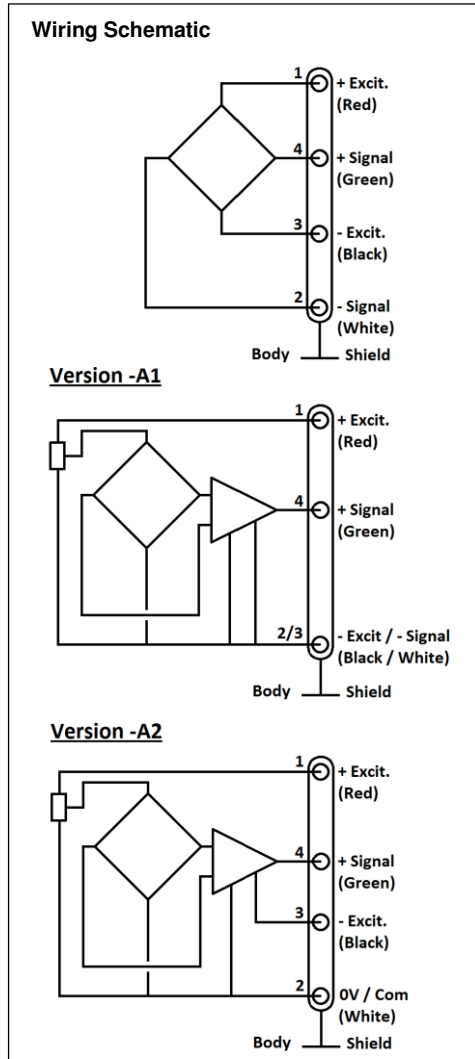
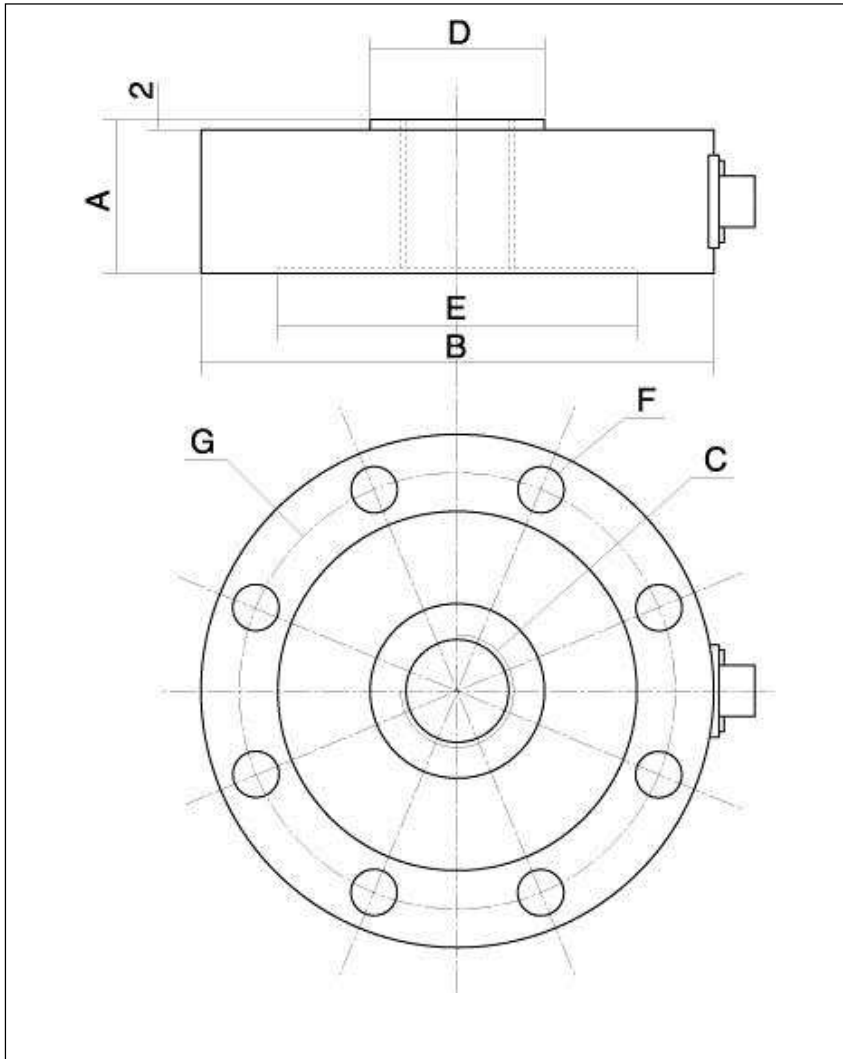
Electrical Characteristics

Model	FN3042	FN3042-A1	FN3042-A2
Supply Voltage	10Vdc	10 – 30Vdc	±15Vdc (±12 to ±18Vdc)
Sensitivity ⁴	±1.5mV/V	±2V ±0.2V	±5V ±0.2V
Zero Offset ⁴	±5% F.S.	2.5V ±0.2V	0V ±0.2V
Input Impedance/Consumption	350 to 700Ω	<50mA	50mA
Output Impedance	350 to 700Ω	1 kΩ ⁵	1 kΩ ⁵
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

Notes

1. Electrical Termination: Connector output including mate
2. Materials: Body in stainless steel or aluminium alloy depending on F.S.; aluminum cover
3. Protection Index: IP50 (other protection levels on request)
4. Other signal output on request
5. Output impedance < 100Ω on request
6. 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]	50 [1.97]	70 [2.76]
B	101 [3.98]	101 [3.98]	119 [4.69]	144 [5.67]	168 [6.61]	168 [6.61]	228 [8.98]
C (Thread)	M16 x 2	M20 x 1.5	M24 x 2	M36 x 3	M45 x 4	M45 x 4	M64 x 4
D	34 [1.34]	34 [1.34]	49 [1.93]	66 [2.60]	72 [2.83]	72 [2.83]	102 [4.02]
E	70 [2.76]	70 [2.76]	83 [3.27]	104 [4.09]	118 [4.65]	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]	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]	143 [5.63]	190 [7.48]
Material	Aluminum	Stainless steel					

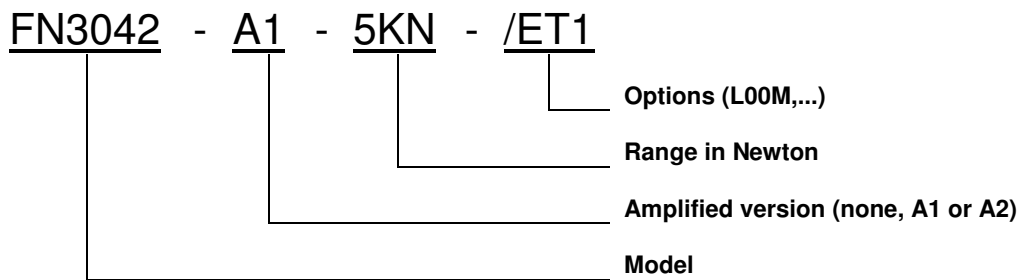
FN3042

Load Cell for Fatigue Testing

OPTIONS

A1 : Amplified Tension output with unipolar power supply
A2 : Amplified Tension output with bipolar power supply
ET1 : CTR -20 to 100° C [-4 to 212° F] OTR = CTR
ET2 : CTR -40 to 120° C [-40 to 248° F] OTR = CTR
ET3 : CTR -40 to 150° C [-40 to 302° F] OTR = CTR (Note : ET3 not available with A1 and A2 options)
PE : Cable Gland Termination with 2 m [6.5 ft] cable
PE/L00M : Additional cable length with PE option, replace "00" with total length in meters

ORDERING INFO



SUPPLIED ACCESSOIRES

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

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