

FN3000 Load Cell Tension and Compression



- Pan-cake load cell
- 10 to 1000 kN (2 to 200 kLbf)
- Very high stability
- Aluminum or Stainless steel
- Accuracy: 0.1% F.S.
- High Level Output Model with Integrated Amplifier

DESCRIPTION

The FN3000 measures tension and compression in standard ranges from 0-10 kN to 0-1000 kN. The mechanical design and gauge placement minimizes transverse effects. Depending on the range, the FN3000 is constructed in aluminium alloy or stainless steel and is available with numerous options. It is suitable for test bench applications and used in many hostile environments and can be customized for increased protection.

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 : from 0-10 kN to 0-1000 kN [0-2 to 0-200 kLbf]
- Tension and Compression
- Accuracy: 0.1% F.S.
- High Level Output Model with Integrated Amplifier

APPLICATIONS

- Process control equipment
- Weighing calibration tool
- Static fatigue tests
- Robotics and effectors
- Laboratory and Research

STANDARD RANGES

F.S. Ranges In N	10K	25K	50K	100K	200K	500K	1000K
F.S. Ranges In Lbf	2K	5K	10K	20K	40K	100K	200K
Stiffness in N/m	2.5×10^8	5×10^8	1×10^9	2×10^9	3×10^9	5×10^9	7×10^9
Stiffness in Lbf/ft	1.7×10^7	3.4×10^7	6.9×10^7	1.4×10^8	2.1×10^8	3.4×10^8	4.8×10^8
Material	Aluminum	Stainless steel					

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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	<2.10 ⁻⁴ / °C of reading [<1.10 ⁻⁴ / °F of reading]
Range (F.S.)	0-10 to 0-1000 KN [0-2 klf to 0-200 klf]
Over-Range	
Without Damage	1.5 x F.S.
Without Destruction	3 x F.S.
Accuracy	
Linearity	±0.1% F.S.
Hysteresis	±0.1% F.S.

Electrical Characteristics

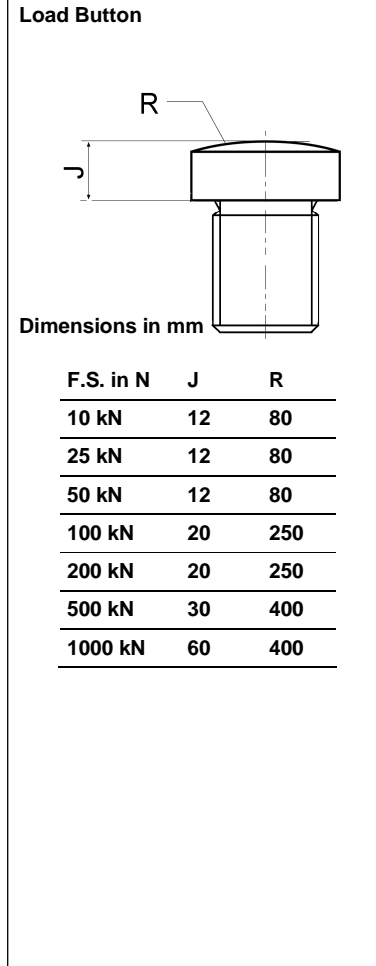
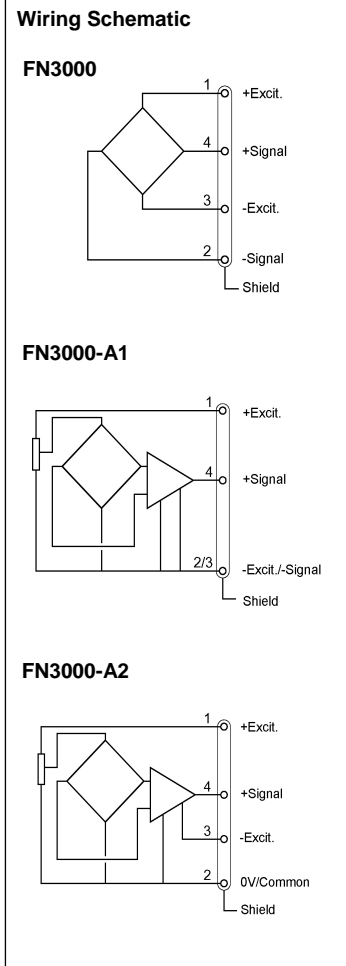
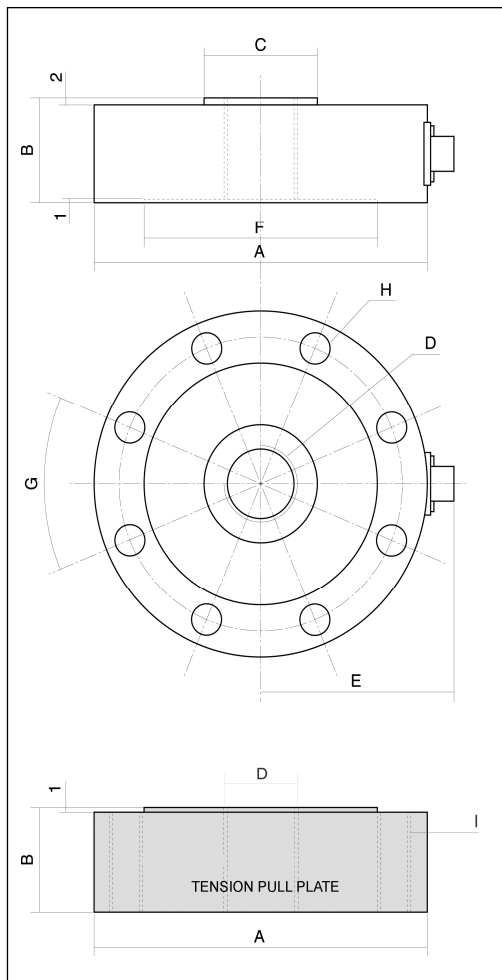
Model	FN3000	FN3000-A1	FN3000-A2
Supply Outage	10Vdc	10–30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output	2mV/V	0.5 to 4.5V	±5V
Zero Offset	±5% F.S.	2.5V ±5% F.S.	0V ±5% F.S.
Input Impedance/Consumption	350 to 700Ω	<50mA	<50mA
Output Impedance	350 to 700Ω	<10Ω	<10Ω
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

Notes

1. Electrical Termination: 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)

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DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



Dimensions in mm [inch]

F.S. Ranges In N [Lbf]	10K [2K]	25K [5K]	50K [10K]	100K [20K]	200K [40K]	500K [100K]	1000K [200K]
A	100		[3.94]	150	[5.91]	195 [7.68]	272 [10.71]
B	30		[1.18]	40	[1.57]	60 [2.36]	80 [3.15]
C	34		[1.34]	65	[2.56]	87 [3.43]	120 [4.72]
D (Thread)	M20x1.5			M32x2		M56x2	M80x3
E	65		[2.56]	90	[3.54]	106 [4.17]	150 [5.91]
F	70		[2.76]	100	[3.94]	143 [5.63]	186 [7.32]
G	45°			30°		22.5°	
H	8x8.2/Ø85			12x10.4/Ø125		16x16.2/Ø169	16x24.5/Ø229
I	M8/Ø85			M10/Ø125		M16/Ø169	M24/Ø229
Screwdown (m.kg)	2.2	2.5	2.5	5	5	15	50
Screw-down in lb/ft	15.9	18.1	18.1	36.2	36.2	108.5	361.7
Material	Aluminum		Stainless steel				

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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
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/LC “x”: Additional cable length to standard length (in m) with PE option (Note : “X” = Custom value)

ORDERING INFO

FN3000 - A1 - 100KN -/PE/ET1



RECOMMENDED ACCESSORIES

EH : Hemispherical load button
FF : Tension pull plate

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