

FN3050 Load Cell Tension and Compression



- Pancake load cell
- 100 to 20000 N (20 to 4000 Lbf)
- Accuracy: 0.1% F.S.
- Stainless steel or aluminum
- Connector or cable gland output
- Build in amplifier per request
- Same housing for all ranges

DESCRIPTION

The rugged FN3050 load cell is highly suited for process industry and test bench applications. Dimensions are identical in standard ranges from 0-100 to 0-20,000 N so during testing the sensor can be interchanged for another of a different range without mechanical modifications. The sensor design minimizes transverse effects. For high-level output a model with integrated amplifier is available as are numerous other options.

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 0-100 N to 0-20,000 N (0-20 to 0-4,000 Lbf)
- Tension and compression
- Accuracy : 0.1% F.S.
- Optional : Tension Pull Plate, Load Button
- Version with Mechanical Stops
- High Level Output Model with Integrated Amplifier

APPLICATIONS

- Process control equipment
- Regulation load cell
- Robotics and effectors
- Laboratory and Research
- Dedicated to low and medium quantity volume.

STANDARD RANGES

F.S. Ranges in N	100	200	500	1K	2K	5K	10K	20K
F.S. Ranges in Lbf	20	40	100	200	400	1K	2K	4K
Stiffness in N/m	1×10^6	2.5×10^6	1×10^7	1.7×10^7	5×10^7	1.2×10^8	2×10^8	4×10^8
Stiffness in Lbf/ft	6.9×10^4	1.7×10^5	6.9×10^5	1.2×10^6	3.4×10^6	8.2×10^6	1.4×10^7	2.7×10^7
Material	Aluminum			Stainless steel		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.)	0-100 N to 0-20 kN [20 lbf to 4 klbf]
Over-Range	
Without Damage	1.5 x F.S. (10 x F.S. with optional mechanical stops)
Without Destruction	3 x F.S.
Accuracy	
Linearity	±0.1% F.S.
Hysteresis	±0.1% F.S.

Electrical Characteristics

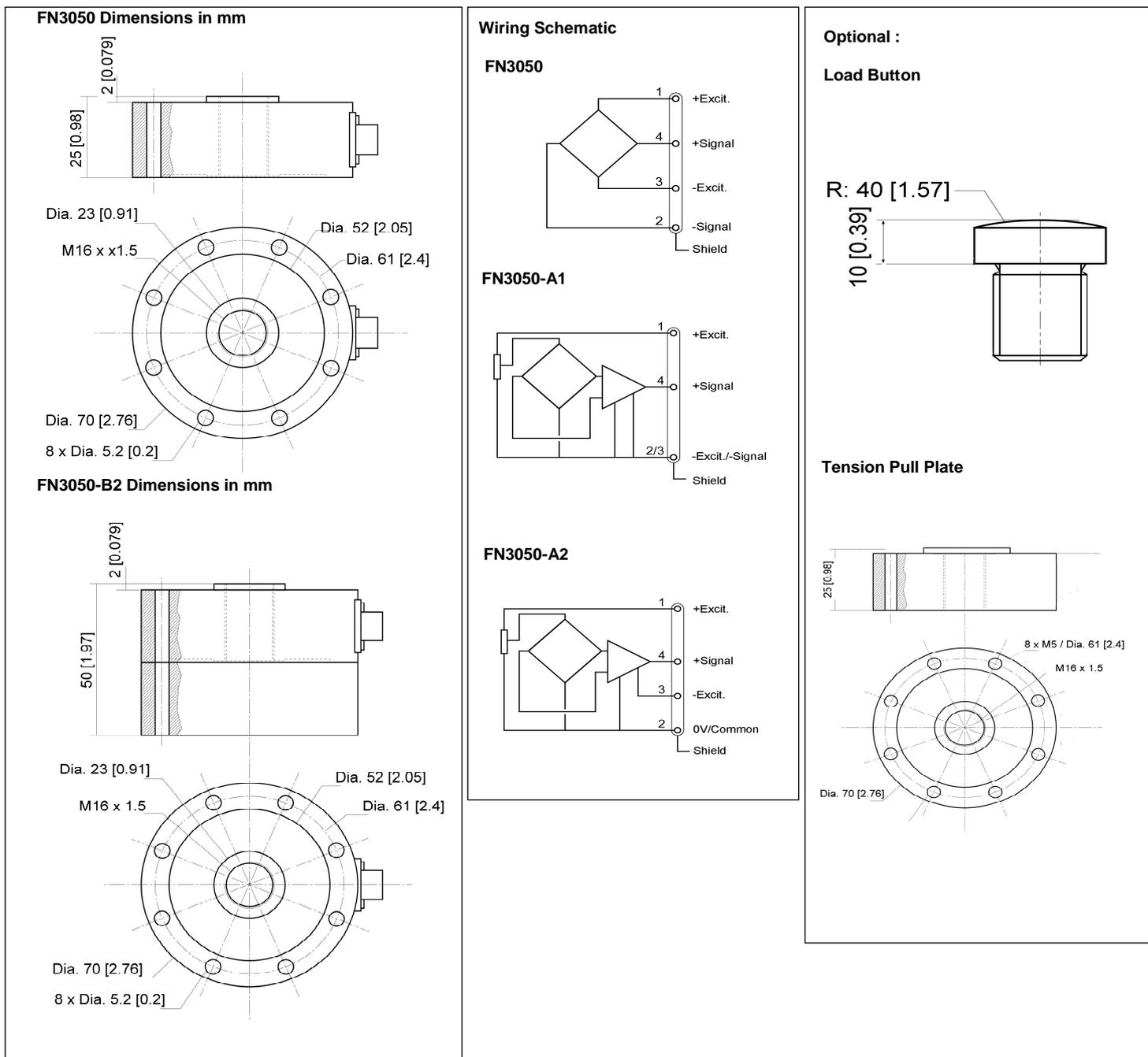
Model	FN3050	FN3050-A1	FN3050-A2
Supply Outage	10Vdc	10 – 30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output	1.5mV/V	0.5 to 4.5V	±5V
Zero Offset	±5% F.S.	2.5V ±5% F.S.	0V ±5% F.S.
Input Impedance/Consumption	350 to 700Ω	<50mA	<50mA
Output Impedance	350 to 700Ω	<10Ω	<10Ω
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

Notes

1. Electrical Termination: Connector output including mate
2. Body in stainless steel or aluminium alloy depending on F.S.

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DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



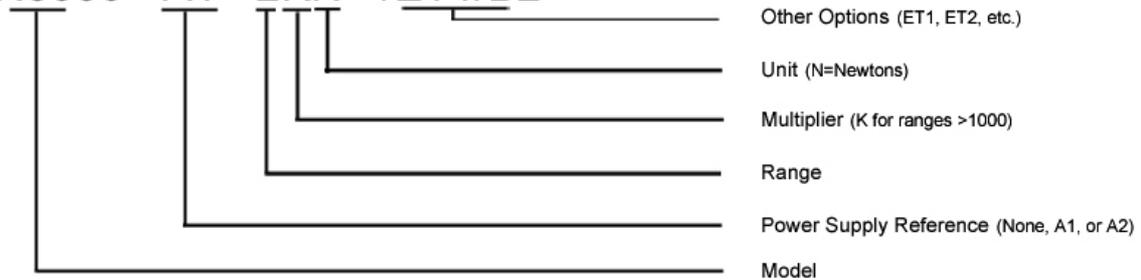
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OPTIONS

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)
B2 : Mechanical stops (compression only, models ≤2000 N; [≤400 Lbf])
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

FN3050 - A1 - 2KN - /ET1/B2



RECOMMENDED ACCESSORIES

EH : Hemispherical load button
FF : Tension pull plate

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