

FN3030 Load Cell Tension and Compression



- S-Beam Load Cell
- 50 to 100,000 N (10 to 20,000 lbf)
- Stainless Steel or Aluminum
- Cable Gland or Connector Output
- Built In Amplifier per Request



DESCRIPTION

The **FN3030** measures tension and compression in standard ranges from 0-50 N to 0-100 000 N. The **FN3030** is well suited for customization in industrial applications and protection levels can be upgraded for use in hostile environments. Additionally, for high-level output a model with integrated amplifier is available.

With many years of experience as a designer and a manufacturer of sensors, Measurement Specialties, Inc. 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

- Tension and Compression
- Optional Rod Ends
- Accuracy : 0.1% F.S.
- High Level Output Model with Integrated Amplifier
- Low Cost

APPLICATIONS

- Process Control Equipment
- Weighing Calibration Tool
- Robotics and Effectors
- Laboratory and Research

STANDARD RANGES

F.S. Ranges in N	50	100	200	500	1k	2k	5k	10k	20k	50k	100k
F.S. Ranges in lbf	10	20	40	100	200	400	1k	2k	4k	10k	20k
Stiffness in N/m	8.1×10^5	1.3×10^6	2.2×10^6	1.4×10^7	2.1×10^7	2.9×10^7	7.8×10^7	9.3×10^7	1.3×10^8	2.0×10^8	3.0×10^8
Stiffness in lbf/ft	5.5×10^4	9.2×10^4	1.5×10^5	9.5×10^5	1.4×10^6	1.9×10^6	5.3×10^6	6.3×10^6	8.9×10^6	1.3×10^7	2.0×10^7
Material	Aluminum						Stainless steel				

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PERFORMANCE SPECIFICATIONS

All values are typical at temperature 20±1° 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]
Zero Shift in CTR	<0.5% F.S./ 50° C [100° F]
Sensitivity Shift in CTR	<1% of reading / 50° C [100° F]
Range (F.S.)	50 N to 100 kN [10 lbf to 20 klbf]
Over-Range	
Without Damage	1.5 x F.S.
Without Destruction	3 x F.S.
Accuracy	
Combined Non-Linearity & Hysteresis	±0.1% F.S

Electrical Characteristics

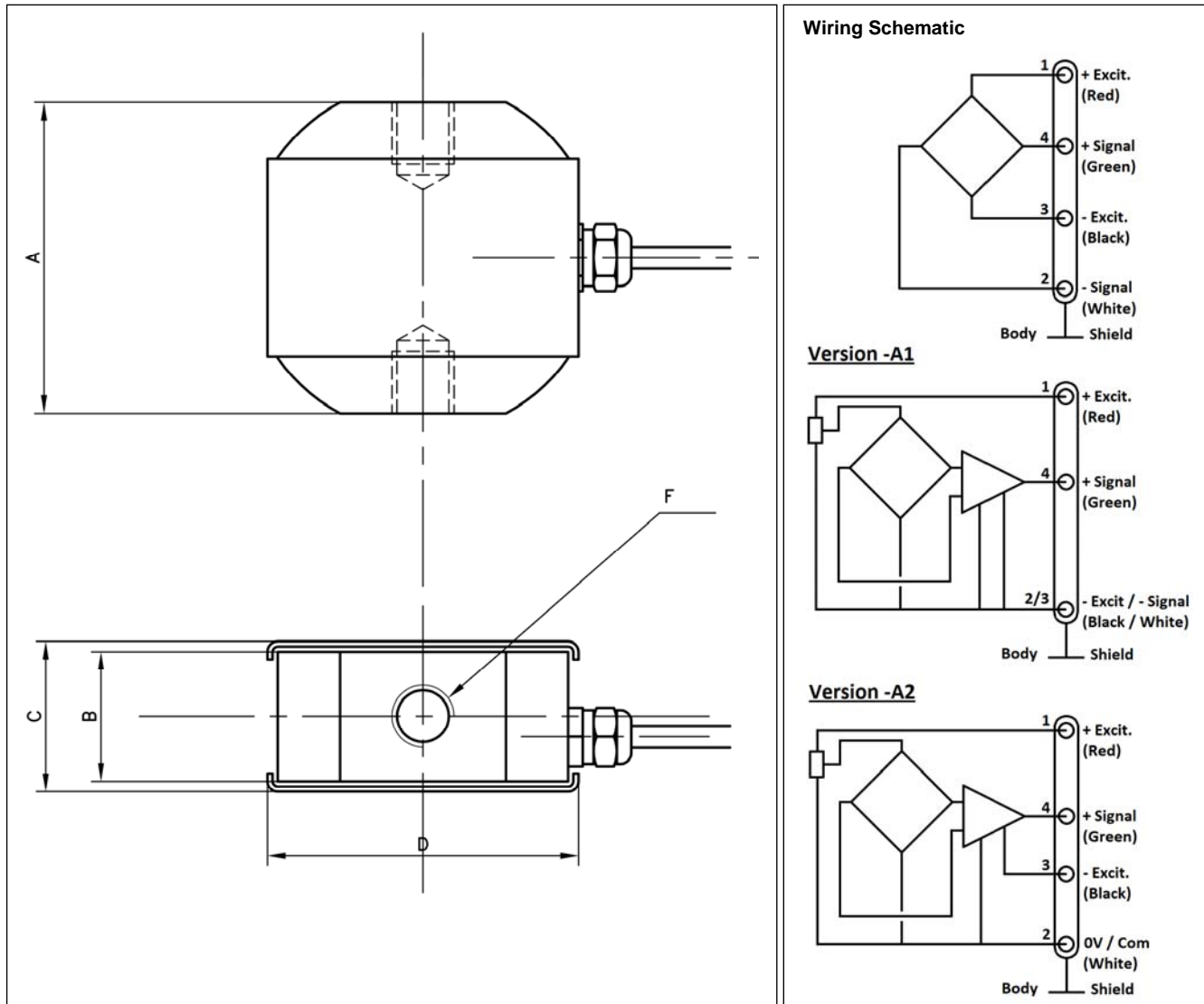
Model	FN3030	FN3030-A1	FN3030-A2
Supply Voltage	10Vdc	10–30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output ⁴	±2mV/V	±2V ±5% F.S	±5V ±5% F.S
Zero Offset ⁴	<±5% F.S.	2.5V ±5% F.S.	0V ±5% F.S.
Input Impedance/Consumption	350 to 700Ω	<50mA	<50mA
Output Impedance	350 to 700Ω	1 kΩ ⁵	1 kΩ ⁵
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

Notes

1. Electrical Termination: Cable gland termination; 2 m cable length standard
2. Material: Body in stainless steel or aluminum alloy depending on F.S., with stainless steel cover
3. Protection Index: IP50 (other levels available 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

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DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



Dimensions in mm [inch]

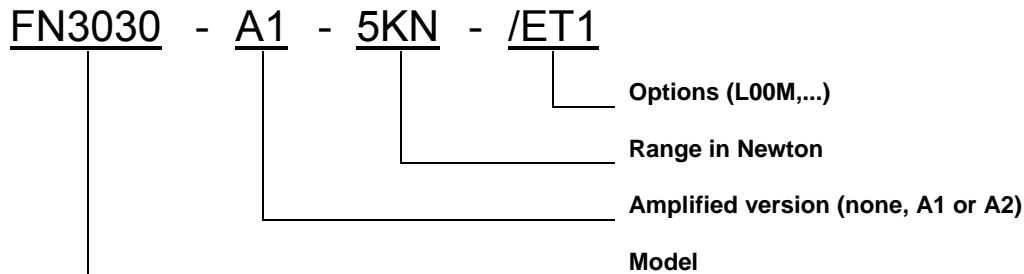
F.S. Ranges in N [lbf]	50 - 100 - 200 [10 - 20 - 40]		500 - 1k - 2k [100 - 200 - 400]		5k - 10k [1k - 2k]		20k [4k]		50k [10k]		100k [20k]	
A	60	[2.36]	60	[2.36]	60	[2.36]	75	[2.95]	110	[4.33]	130	[5.12]
B	25	[0.98]	25	[0.98]	25	[0.98]	30	[1.18]	40	[1.57]	55	[2.17]
C	29	[1.14]	29	[1.14]	29	[1.14]	34	[1.34]	40	[1.57]	55	[1.77]
D	60	[2.36]	60	[2.36]	60	[2.36]	60	[2.36]	80	[3.15]	110	[4.33]
F (Thread)	M6 depth 6		M12 depth 12		M12 depth 12		M16 x 2 depth 16		M20 x 1.5 depth 20		M32 x 2 depth 32	
Material	Aluminum					Stainless steel						

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OPTIONS

A1 : Amplified Tension output with unipolar power supply
A2 : Amplified Tension output with bipolar power supply
ET1 : CTR -20 to 100° C OTR = CTR
ET2 : CTR -40 to 120° C OTR = CTR
ET3 : CTR -40 to 150° C OTR = CTR (Note : ET3 not available with A1 and A2 options)
HA : Accuracy (CNL&H) $\leq \pm 0.05\%$ F.S. (for models $\leq 10\text{kN}$; 2klbf)
SC : Connector output instead of standard cable gland
L00M : special cable length, replace "00" with total length in meters

ORDERING INFO



RECOMMENDED ACCESSORIES

ER : Rod Ends

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