

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 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

- 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

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	<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

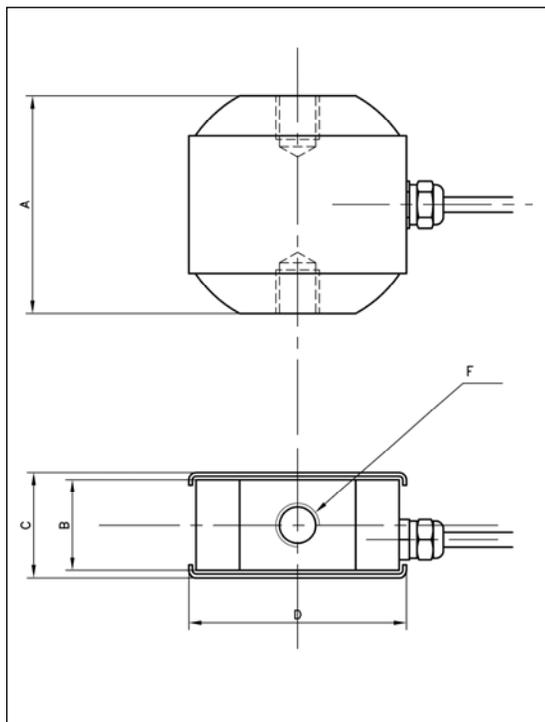
Model	FN3030	FN3030-A1	FN3030-A2
Supply Outage	10Vdc	10–30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output	±2mV/V	±2V ±5% F.S	±5V ±5% F.S
Zero Offset	<±5% F.S.	2.5V ±5% F.S.	0V ±5% F.S.
Input Impedance/Consumption	350 to 700Ω	<50mA	<50mA
Output Impedance	350 to 700Ω	<10Ω	<10Ω
Insulation under 50Vdc	≥100MΩ	≥100MΩ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

Notes

1. Electrical Termination: 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)

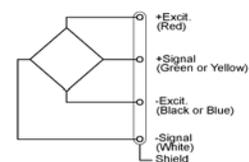
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DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)

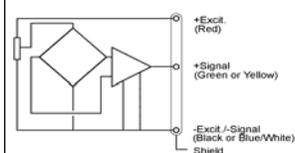


Wiring Schematic

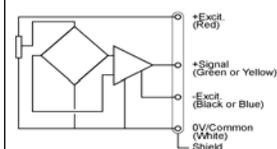
FN3030



FN3030-A1



FN3030-A2



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							

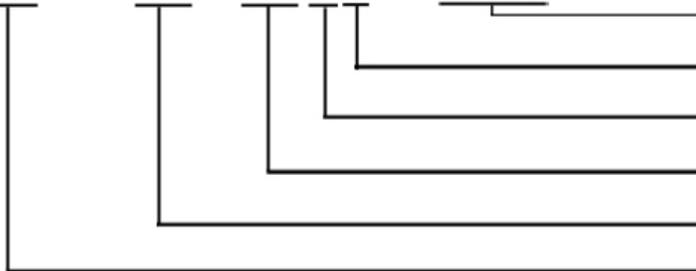
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OPTIONS

A1 : Unipolar Tension
A2 : Bipolar Tension
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
LC"x" : Additional cable length to standard length (in m) (Note : "X" = Custom value)

ORDERING INFO

FN3030 - A1 - 100KN - /ET1/SC



Other Options (HA, ET1, ET2, etc.)

Unit (N=Newtons)

Multiplier (K for ranges >1000)

Range

Power Supply Reference (None, A1, or A2)

Model

RECOMMENDED ACCESSORIES

ER: Rod Ends

NORTH AMERICA

Measurement Specialties Inc.
1000 Lucas Way
Hampton, VA 23666
USA
Tel: 1-757-766-1500
Fax: 1-757-766-4297
Sales: pvg.cs.amer@meas-spec.com

EUROPE

Measurement Specialties
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26 Rue des Dames
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