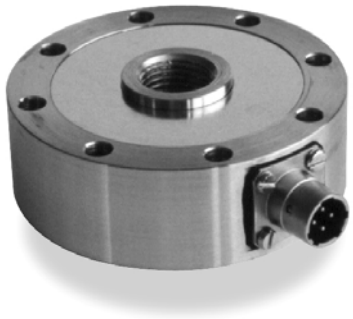
FN3050 Load Cell Tension and Compression



- **Pancake load cell**
- **Range from 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**

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 0-20000 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, 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

- Same housing for all ranges
- Tension and compression
- Mechanical stops in option
- Optional : Tension Pull Plate, Load Button
- Accuracy : 0.1% F.S.

APPLICATIONS

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

STANDARD RANGES

Ranges in N	100	200	500	1k	2k	5k	10k	20k
Ranges in lbf	20	40	100	200	400	1k	2k	4k
Stiffness in N/m	$1x10^6$	$2.5x10^6$	$1x10^7$	$1.7x10^7$	$5x10^7$	$1.2x10^8$	$2x10^8$	$4x10^8$
Stiffness in lbf/ft	$6.9x10^4$	$1.7x10^5$	$6.9x10^5$	$1.2x10^6$	$3.4x10^6$	$8.2x10^6$	$1.4x10^7$	$2.7x10^7$
Material	Aluminium			Stainless Steel		Aluminium	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.)	0-10 to 0-1000 kN [0-2 to 0-200 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								
Ranges in N	100	200	500	1k	2k	5k	10k	20k
Ranges in lbf	20	40	100	200	400	1k	2k	4k
Linearity (%F.S.)	-	-	0.1	0.1	0.1	0.1	0.1	0.1
Hysteresis (%F.S.)	-	-	0.1	0.1	0.1	0.1	0.1	0.1
Combined linearity & hysteresis (%FS)	0.3	0.3	-	-	-	-	-	-

Electrical Characteristics

Model	FN3050	FN3050-A1	FN3050-A2
Supply Voltage	10Vdc	10 – 30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output [4]	±1.5mV/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: Connector output including mate
2. Body in stainless steel or aluminium alloy depending on F.S.
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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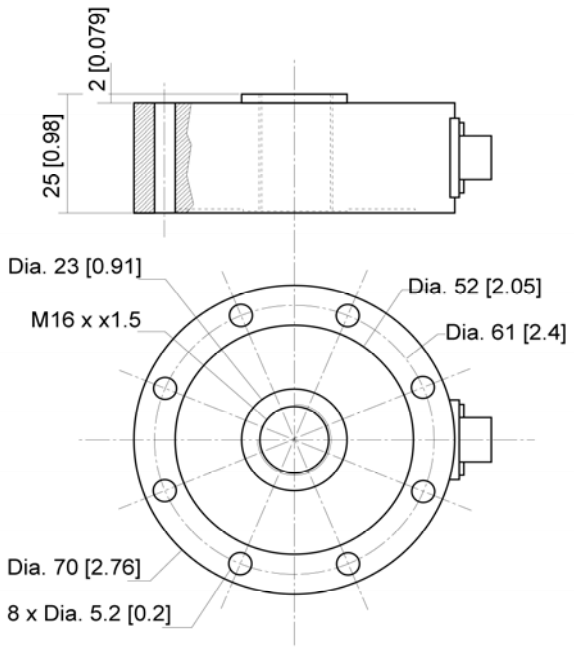
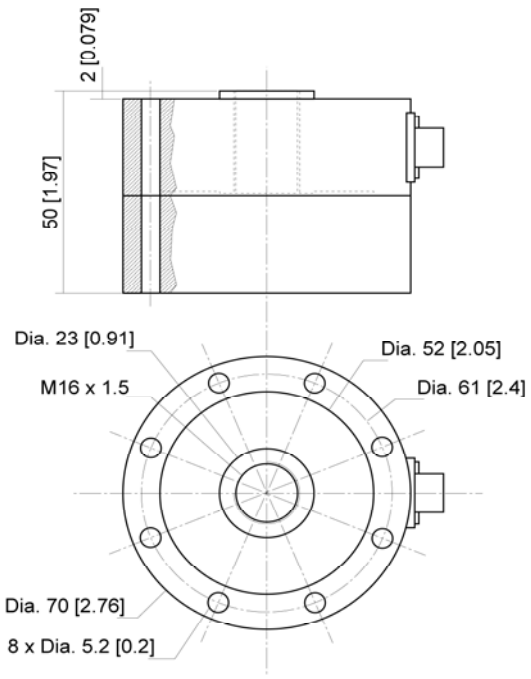
DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)

Dimensions in mm [inch]

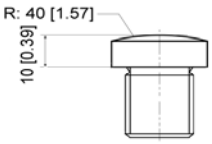
FN3050



FN3050-B2

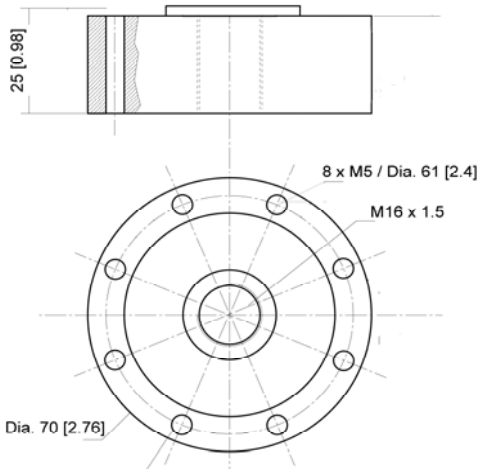


Optional:

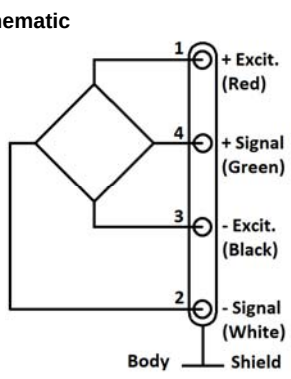


Load button

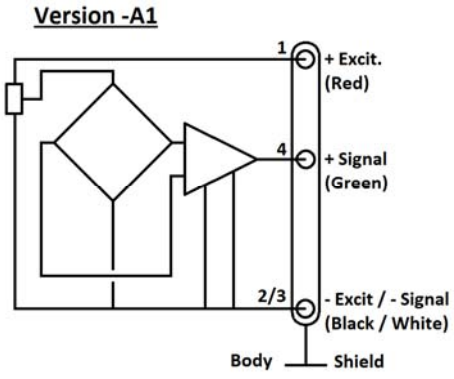
Tension pull plate



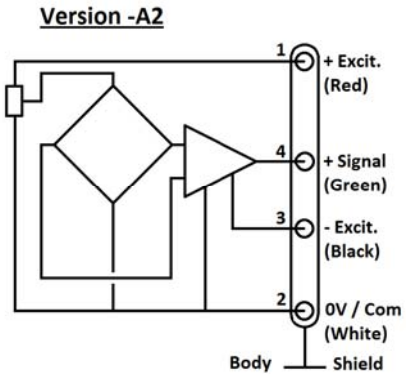
Wiring Schematic



Version -A1



Version -A2



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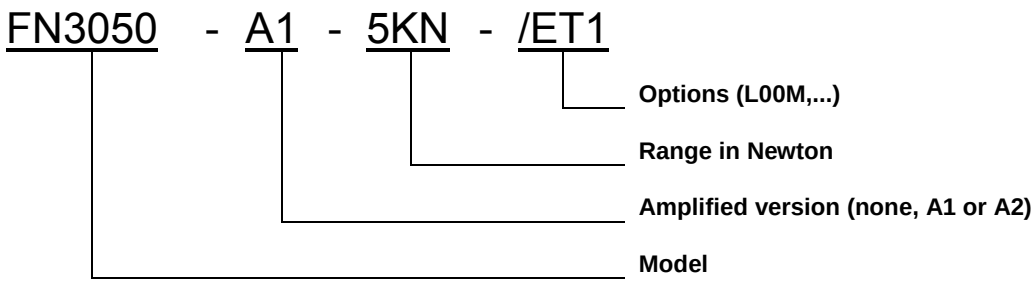
OPTIONS

A1 : Amplified Tension output with unipolar power supply
A2 : Amplified Tension output with bipolar power supply
ET1 : CTR -20 to 100º C [-4 to 212° F] OTR = CTR
ET2 : CTR -40 to 120º C [-40 to 248° F] OTR = CTR
ET3 : CTR -40 to 150º 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/L00M: Additional cable length with PE option, replace “00” with total length in meters

ORDERING INFO



RECOMMENDED ACCESSORIES

EH : Hemispherical load button
FF : Tension pull plate

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