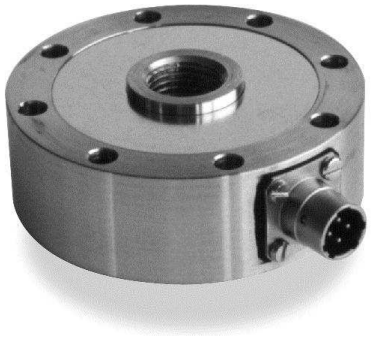
FN3050

Load Cell Tension and Compression



SPECIFICATIONS

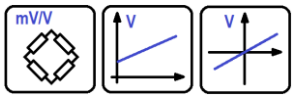
- **Range from 100 N to 20000 N (20 lbf to 4000 lbf)**
- **Accuracy: 0.1% F.S.**
- **Stainless steel or aluminum**
- **Connector or cable gland output**
- **Build in amplifier per request**

The rugged **FN3050** load cell is highly suited for process industry and test bench applications. Dimensions are identical in standard ranges from 0-100 N 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 a long standing experience as a designer and manufacturer of sensors, TE CONNECTIVITY often works with customers to design or customize sensors for specific uses and testing environments.

To meet your needs we also offer extensive turnkey systems. The matched components (sensor, power, amplifier and digital display) are formatted, calibrated and ready for immediate use.

On request, Instruction documents can be provided to ease the selection and use of our sensors and provide helpful tips.



FEATURES

- Same housing for all ranges
- Mechanical stops in option
- Optional :
  Tension Pull Plate
  Load Button
- Integrated amplifier optional

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 (FS)	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	

PERFORMANCE SPECIFICATIONS (typical values at temperature 23±3°C)

PARAMETERS	
Operating Temperature Range (OTR)	-20 to 80° C [-4 to 176° F]
Compensated Temperature Range (CTR)	0 to 60º C [32 to 140° F]
Thermal Zero Shift in CTR	<0.5% F.S. / 50º C [/100° F]
Thermal Sensitivity Shift in CTR	<1 % of reading / 50º C [/100° F]
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	-	-	-	-	-	-

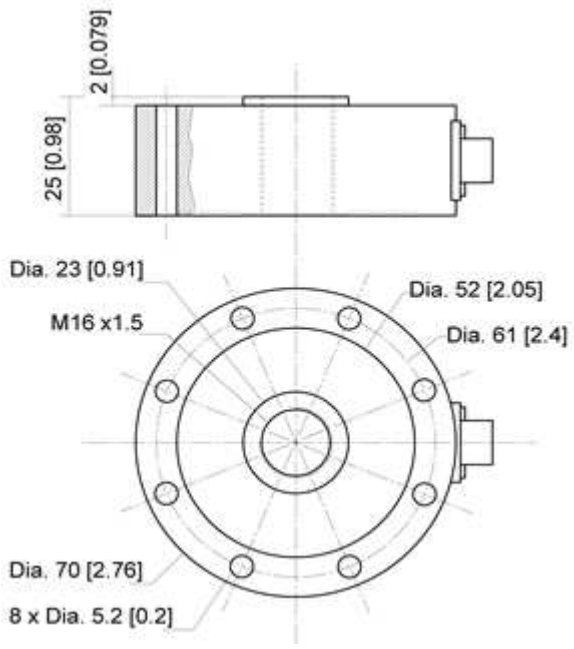
Electrical Characteristics

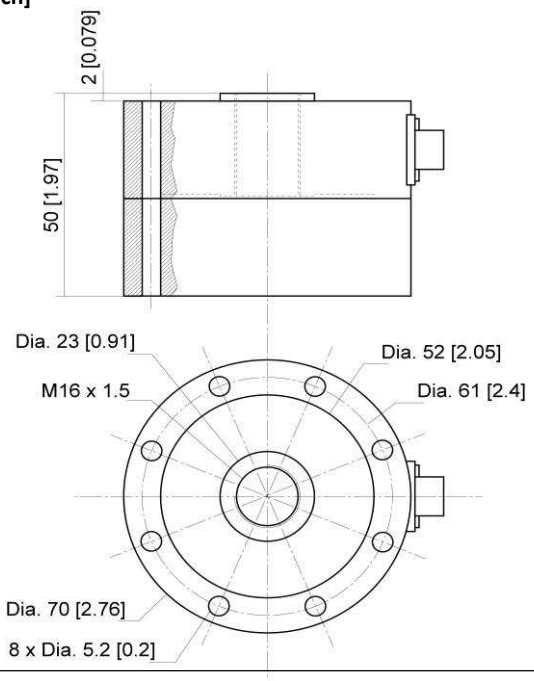
Model	**FN3050** [1]	**FN3050-A1**	**FN3050-A2**
Supply Voltage	1 to 10 Vdc	10 to 30Vdc	±15Vdc (±12 to ±18Vdc)
Sensitivity "FSO" [2]	±1.5mV/V	±2V ±0.2V	±5V ±0.2V
Zero Offset [2]	±1mV	2.5V ±0.2V	0V ±0.2V
Input Impedance/Consumption	350 to 700Ω	<50mA	50mA
Output Impedance	350 to 700Ω	1 kΩ [5]	1 kΩ [5]
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

Notes
1. Sensors are calibrated with 10Vdc power supply as standard.
2. Signal goes positive in tension with standard wiring configuration. Other signal output on request
3. Electrical Termination: Connector output including mate
4. Body in stainless steel or aluminium alloy depending on F.S.
5. Protection ingress IP50
6. Output impedance < 100Ω on request
7. CE conformance according to EN 61010-1, EN 50081-1, EN 50082-1

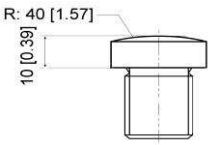
DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)

FN3050 **Dimensions in mm [inch]** **FN3050-B2**



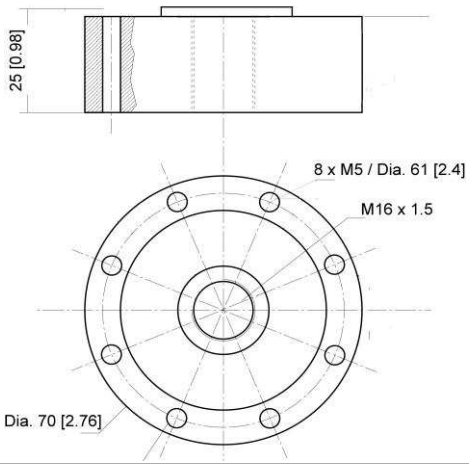


Optional:



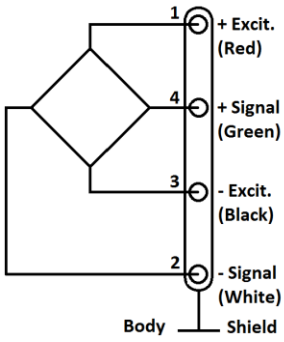
Load button

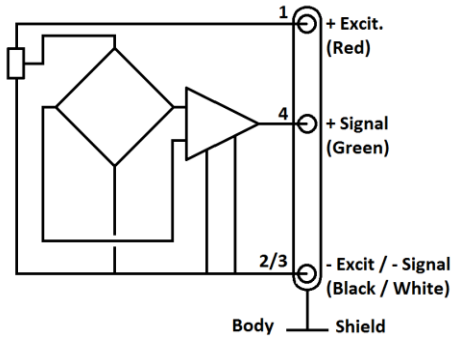
Tension pull plate



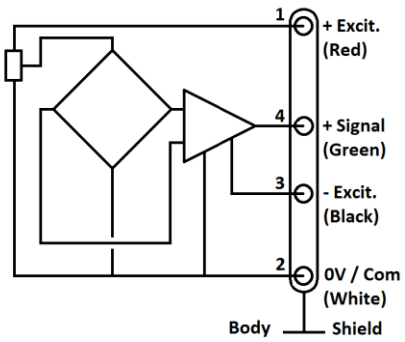
Wiring Schematic

Version -A1





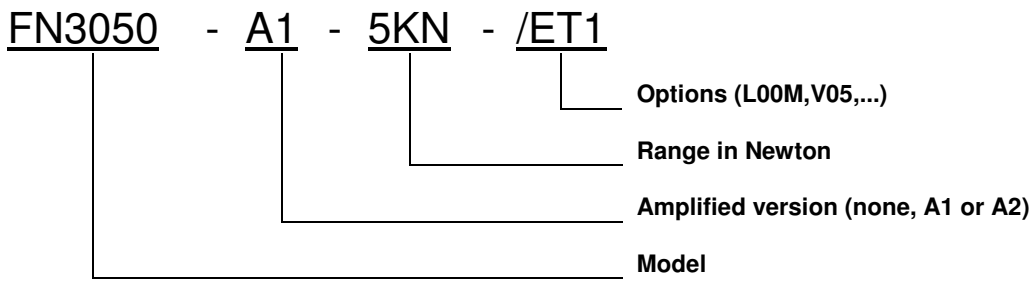
Version -A2



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
V00: Non-standard power supply calibration, replace “00” with value in Volt (standard 10Vdc, unamplified sensor only)
PE/L00M: Additional cable length with PE option, replace “00” with total length in meters

ORDERING INFO



SUPPLIED ACCESSOIRES

EFMX-4M : mating plug Jaeger 530-801-006 with clamp 530-841-006 standard and ET1
EFMX-4H : mating plug Jaeger 530-804-006 with clamp 530-844-006 for ET2 or ET3 option

RECOMMENDED ACCESSORIES

EH : Hemispherical load button
FF : Tension pull plate

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