FN3000 Load Cell Tension and Compression

- **Heavy duty Pan-cake load cell**
- **Standard ranges 10 to 1000 kN [2 to 200 klbf]**
- **Very high stability**
- **Aluminum or Stainless steel**
- **High IP protection available**
- **High Level Output Model with Integrated Amplifier**

DESCRIPTION

The **FN3000** measures tension and compression in standard ranges from 0-10 kN to 0-1000 kN The mechanical design and gauge placement minimizes transverse effects. Depending on the range, the **FN3000** is constructed in aluminium alloy or stainless steel and is available with numerous options. It is suitable for test bench applications and used in many hostile environments and can be customized for increased protection.

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

- Static and dynamic applications
- Tension and Compression
- Linearity 0.1% F.S.
- Integrated Amplifier optional
- IP65 optional

APPLICATIONS

- Process control equipment
- Weighing calibration tool
- Fatigue tests benches
- Hydraulic press regulation
- Laboratory and Research

STANDARD RANGES

Ranges in N	10k	25k	50k	100k	200k	500k	1000k
Ranges in lbf	2k	5k	10k	20k	40k	100k	200k
Stiffness in N/m	$2.5x10^8$	$5x10^8$	$1x10^9$	$2x10^9$	$3x10^9$	$5x10^9$	$7x10^9$
Stiffness in lbf/ft	$1.7x10^7$	$3.4x10^7$	$6.9x10^7$	$1.4x10^8$	$2.1x10^8$	$3.4x10^8$	$4.8x10^8$
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.)	0-10 to 0-1000 kN [0-2 to 0-200 klbf]
Over-Range	
Without Damage	1.5 x F.S.
Without Destruction	3 x F.S.
Accuracy	
Linearity	±0.1%F.S.
Hysteresis	±0.1%F.S.

Electrical Characteristics

Model	FN3000	FN3000-A1	FN3000-A2
Supply Voltage	10Vdc	10 – 30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output [4]	±2mV/V typical	±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. Materials: Body in stainless steel or aluminium alloy depending on F.S.; aluminum cover
3. Protection Index: IP50 (other protection levels 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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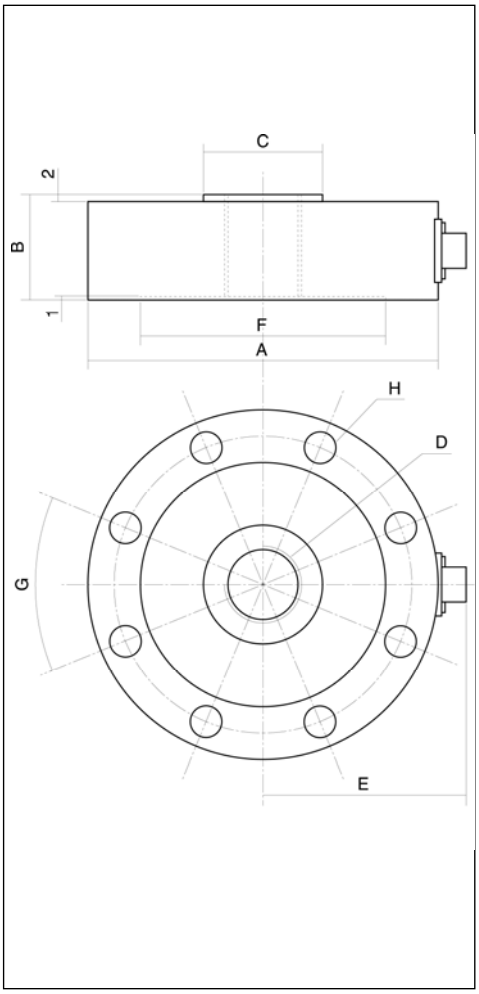
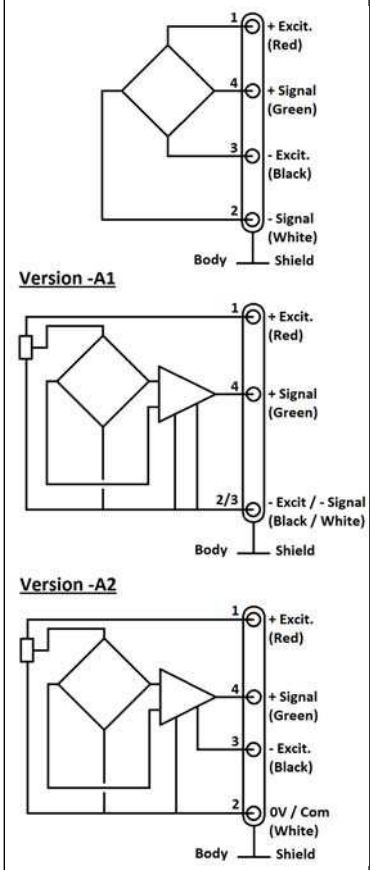
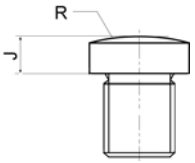
DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



Wiring Schematic



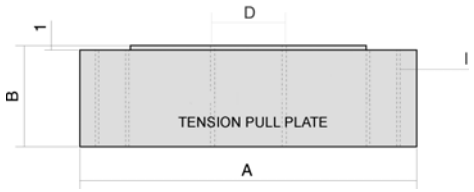
EH: Hemispherical Load Button



Dimensions in mm

F.S.	J	R
10 KN	12	80
25 KN	12	80
50 KN	12	80
100 KN	20	250
200 KN	20	250
500 KN	30	400
1000 KN	60	400

FF: Tension pull plate



Dimensions in mm [inch]

Ranges in N [in lbf]	10k [2k]	25k [5k]	50k [10k]	100k [20k]	200k [40k]	500k [100k]	1000k [200k]
A	100 [3.94]			150 [5.91]		195 [7.68]	272 [10.71]
B	30 [1.18]			40 [1.57]		60 [2.36]	80 [3.15]
C	34 [1.34]			65 [2.56]		87 [3.43]	120 [4.72]
D (Thread)	M20x1.5			M32x2		M56x2	M80x3
E	65 [2.56]			90 [3.54]		106 [4.17]	150 [5.91]
F	70 [2.76]			100 [3.94]		143 [5.63]	186 [7.32]
G	45°			30°		22.5°	
H	8x8.2 /Φ85			12x10.4 /Φ125		16x16.2 /Φ169	16x24.5 /Φ229
I	M8 /Φ85			M10 /Φ125		M16 /Φ169	M24 /Φ229
Screw-down (m.kg)	2.2	2.5	2.5	5	5	15	50
Screw-down in lbf/ft	15.9	18.1	18.1	36.2	36.2	108.5	361.7

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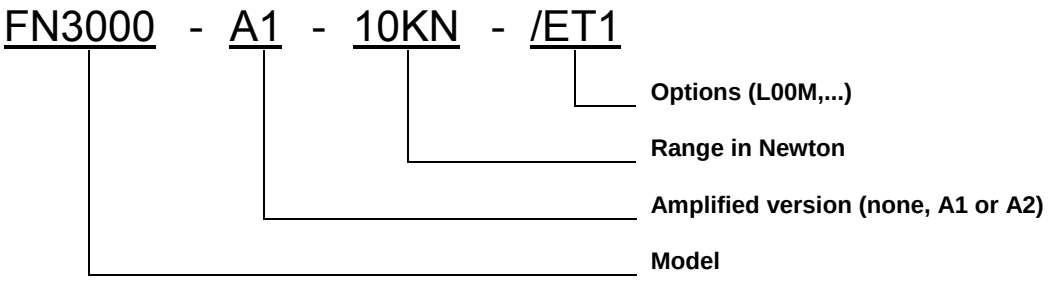
OPTIONS

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)
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

NORTH AMERICA

Measurement Specialties, Inc.
Vibration Design Center
32 Journey - Suite 150
Aliso Viejo, CA 92656
United States USA
Tel: 1-949-716-0877
Fax: 1-949-916-5677
t&m@meas-spec.com

EUROPE

Measurement Specialties
(Europe), Ltd.
26 Rue des Dames
78340 Les Clayes-Sous-Bois,
France
Tel: +33 (0) 130 79 33 00
Fax: +33 (0) 134 81 03 59
cs.lcsb@meas-spec.com

ASIA

Measurement Specialties
(China), Ltd.
No. 26 Langshan Road
Shenzhen High-Tech Park (North)
Nanshan District, Shenzhen
518057
China
Tel: +86 755 3330 5088
Fax: +86 755 3330 5099
pfg.cs.asia@meas-spec.com