

FN2420 Compression Load Cell



- Compression Design
- 20 to 0-5000 kN [4 to 1000 klb]
- Very High Stiffness
- Optional Build in Amplifier

DESCRIPTION

The FN2420 is a high accuracy compression load cell often used in applications involving calibration presses. It comes with many options, including a concave loading fixture and an integrated amplifier for high-level output. The FN2420's design and optional concave loading fixture minimize transverse effects. Constructed in stainless steel, the sensor is suitable for use 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

- Full Scale Range : from 0-20 to 0-5000 kN (0-4 to 0- 1000 klb)
- Linearity : <0.1% F.S.
- For Compression Use (e.g. calibration presses)
- High Level Output Model with Integrated Amplifier
- Optional: Load Button

APPLICATIONS

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

STANDARD RANGES

F.S. Ranges in N	20k	50k	100k	200k	500k	1000k	2000k	3000k	5000k
F.S. Ranges in lbf	4k	10k	20k	40k	100k	200k	400k	600k	1000k
Stiffness in N/m	3.3×10^8	7.4×10^8	1.2×10^9	2×10^9	3×10^9	6×10^9	9×10^9	1×10^{10}	1.5×10^{10}
Stiffness in lbf/ft	2.2×10^7	5×10^7	8.2×10^8	3.3×10^8	1.3×10^8	4×10^8	6×10^8	6.8×10^8	1×10^9

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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.)	0-20 to 0-5000 kN [0-4 to 0-1000 klbf]
Over-Range	
Without Damage	1.5 x F.S.
Without Destruction	3 x F.S.
Accuracy	
Combined Non-Linearity & Hysteresis	±0.25% F.S.

Electrical Characteristics

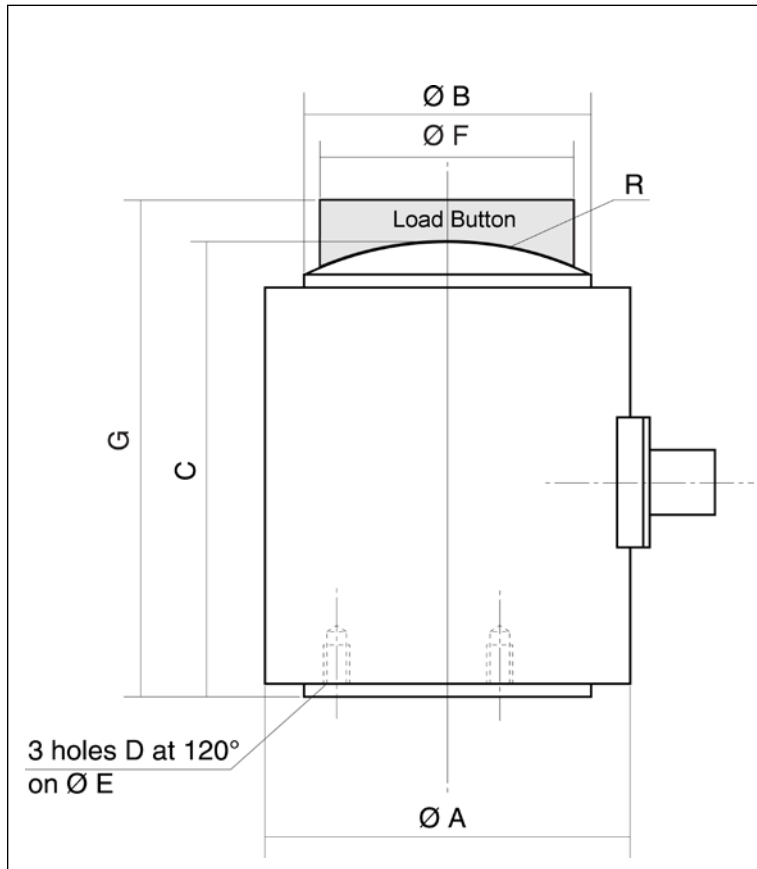
Model	FN2420	FN2420-A1	FN2420-A2
Supply Outage	10Vdc	10–30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output	2mV/V	4V ±5% F.S.	5V ±5% F.S.
Zero Offset	±5% F.S.	0.5V ±5% F.S.	0V ±5% F.S.
Input Impedance/Consumption	350 to 700Ω	<50mA	<50mA
Output Impedance	350 to 700Ω	<10Ω	<10Ω
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

Notes

1. Electrical Termination: 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)

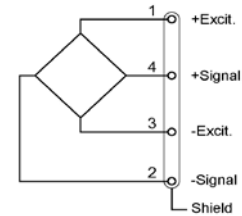
FN2420 Compression Load Cell

DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)

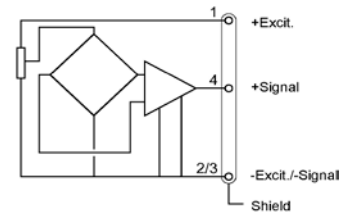


Wiring Schematic

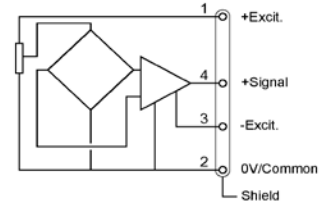
FN2420



FN2420-A1



FN2420-A2



Dimensions in mm [inch]

F.S. Ranges in N [lbf]	20k [4k]	50k [10k]	100k [20k]	200k [40k]	500k [100k]	1000k [200k]	2000k [400k]	3000k [600k]	5000k [1000k]
A	30 [1.18]	35 [1.38]	42 [1.65]	54 [2.13]	78 [3.07]	98 [3.86]	128 [5.04]	154 [6.06]	196 [7.72]
B	20 [0.79]	25 [0.98]	32 [1.26]	44 [1.73]	68 [2.68]	87 [3.43]	112 [4.41]	134 [5.28]	172 [6.77]
C	40 [1.57]	45 [1.77]	55 [2.17]	65 [2.56]	90 [3.54]	110 [4.33]	140 [5.51]	170 [6.69]	220 [8.66]
D (Thread)	M2.5	M3	M4	M4	M6	M6	M6	M8	M10
E	15 [0.59]	20 [0.79]	25 [0.98]	35 [1.38]	55 [2.17]	75 [2.95]	100 [3.94]	120 [4.72]	150 [5.91]
R	30 [1.18]	40 [1.57]	50 [1.97]	80 [3.15]	100 [3.94]	120 [4.72]	200 [7.87]	300 [11.81]	400 [15.75]
F*	15 [0.59]	19 [0.75]	26 [1.02]	35 [1.38]	54 [2.13]	69 [2.72]	98 [3.86]	118 [4.65]	129 [5.08]
G*	50 [1.97]	55 [2.17]	70 [2.76]	85 [3.35]	115 [4.53]	140 [5.51]	180 [7.09]	215 [8.46]	275 [10.83]

* Load Button

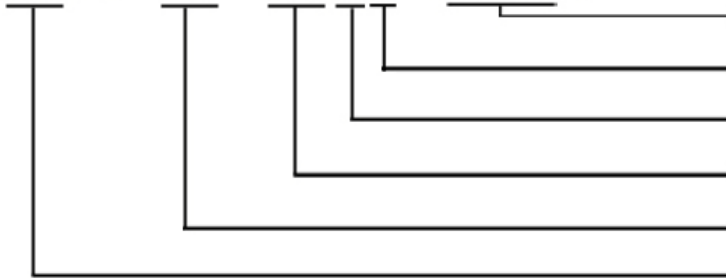
FN2420 Compression Load Cell

OPTIONS

A1 : Tension output with unipolar power supply
A2 : Tension output with bipolar power supply
ET1 : CTR -20 to 100° C [-4 to 212° F] OTR = CTR
ET2 : CTR -40 to 120° C [-40 to 248° F] OTR = CTR
ET3 : CTR -40 to 150° 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

ORDERING INFO

FN2420 - A1 - 100KN -/ET1/PE



Other Options (ET1, ET3, etc.)

Unit (N=Newtons)

Multiplier (K for ranges >1000)

Range

Power Supply Reference (None, A1, or A2)

Model

RECOMMENDED ACCESSORIES

GA : Load Button

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
pfg.cs.emea@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

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