

# FN2420 Compression Load Cell



- **Compression Design**
- **Ranges from 20 to 0-5000 kN [4 to 1000 lbf]**
- **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 lbf)
- 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

<b>F.S. Ranges in N</b>	20k	50k	100k	200k	500k	1000k	2000k	3000k	5000k
<b>F.S. Ranges in lbf</b>	4k	10k	20k	40k	100k	200k	400k	600k	1000k
<b>Stiffness in N/m</b>	3.3x10 <sup>8</sup>	7.4x10 <sup>8</sup>	1.2x10 <sup>9</sup>	2x10 <sup>9</sup>	3x10 <sup>9</sup>	6x10 <sup>9</sup>	9x10 <sup>9</sup>	1x10 <sup>10</sup>	1.5x10 <sup>10</sup>
<b>Stiffness in lbf/ft</b>	2.2x10 <sup>7</sup>	5x10 <sup>7</sup>	8.2x10 <sup>8</sup>	3.3x10 <sup>8</sup>	1.3x10 <sup>8</sup>	4x10 <sup>8</sup>	6x10 <sup>8</sup>	6.8x10 <sup>8</sup>	1x10 <sup>9</sup>

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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

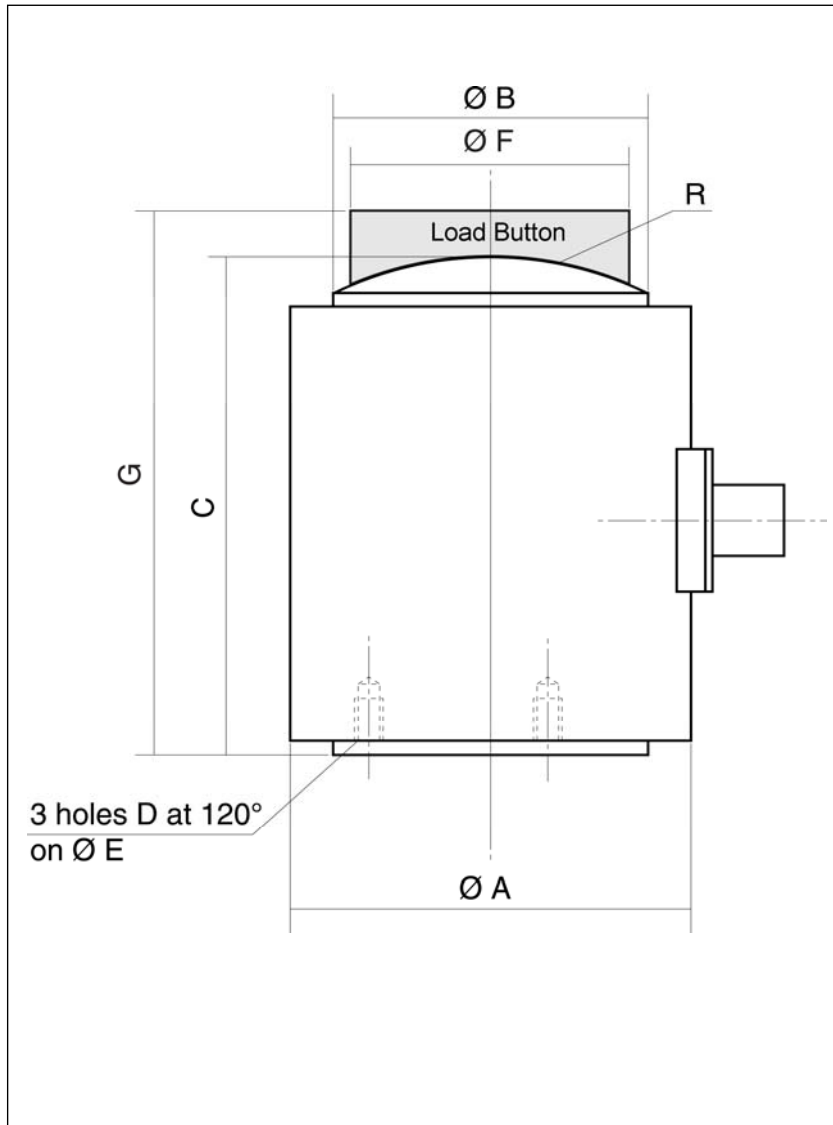
Model	FN2420	FN2420-A1	FN2420-A2
Supply Voltage	10Vdc	10–30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output <sup>4</sup>	2mV/V	4V ±5% F.S.	5V ±5% F.S.
Zero Offset <sup>4</sup>	±5% F.S.	0.5V ±5% F.S.	0V ±5% F.S.
Input Impedance/Consumption	350 to 700Ω	<50mA	<50mA
Output Impedance	350 to 700Ω	1 kΩ <sup>5</sup>	1 kΩ <sup>5</sup>
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

### Notes

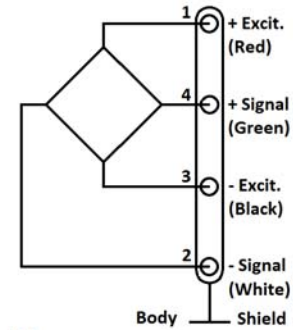
1. Electrical Termination: Connector output including mate
2. Materials: Body in stainless steel or aluminium alloy depending on F.S.; aluminum cover
3. Protection Index: IP50 (other protection levels on request)
4. Other signal output on request
5. Output impedance < 100Ω on request
6. CE conformance according to EN 61010-1, EN 50081-1, EN 50082-1

# FN2420 Compression Load Cell

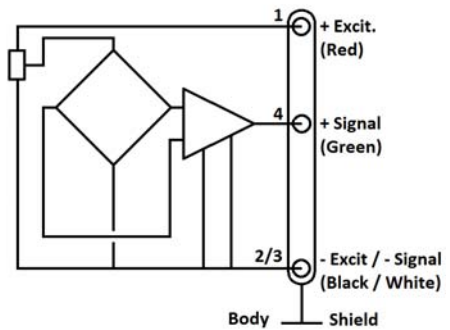
## DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



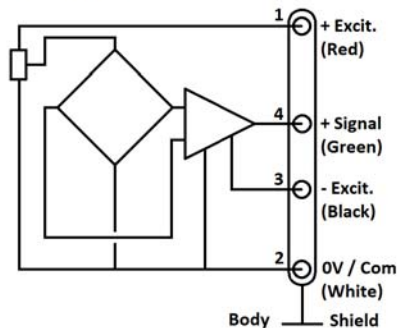
### Wiring Schematic



### Version -A1



### Version -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]

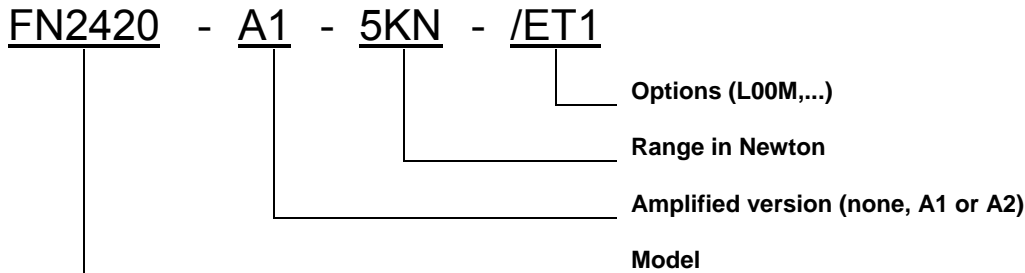
\* Load Button

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## OPTIONS

<b>A1</b> : Amplified Tension output with unipolar power supply
<b>A2</b> : Amplified Tension output with bipolar power supply
<b>ET1</b> : CTR -20 to 100° C [-4 to 212° F] OTR = CTR
<b>ET2</b> : CTR -40 to 120° C [-40 to 248° F] OTR = CTR
<b>ET3</b> : CTR -40 to 150° C [-40 to 302° F] OTR = CTR ( <b>Note</b> : ET3 not available with A1 and A2 options)
<b>PE</b> : Cable Gland Termination with 2 m [6.5 ft] cable

## ORDERING INFO



## RECOMMENDED ACCESSORIES

<b>GA</b> : Load Button
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### 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](mailto: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](mailto: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](mailto:pfg.cs.asia@meas-spec.com)

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