

# 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 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

<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>

# FN2420 Compression Load Cell

## PERFORMANCE SPECIFICATIONS

**Ambient Temperature: 20±1° C (unless otherwise specified)**

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	±0.1% F.S.

### Electrical Characteristics

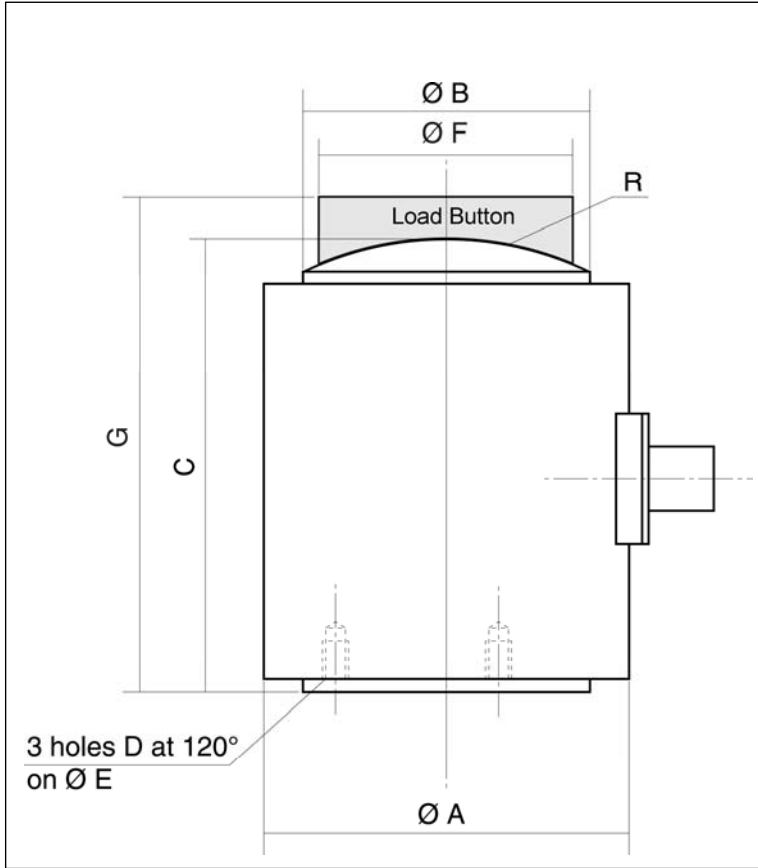
Model	FN2420	FN2420-A1	FN2420-A2
Supply Outage	10Vdc	10–30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output	2mV/V	4V ±5% F.S.	5V ±5% F.S.
Zero Offset	±5% F.S.	0.5V ±5% F.S.	0V ±5% F.S.
Input Impedance/Consumption	350 to 700Ω	<50mA	<50mA
Output Impedance	350 to 700Ω	<10Ω	<10Ω
Insulation under 50Vdc	≥100MΩ	≥100MΩ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

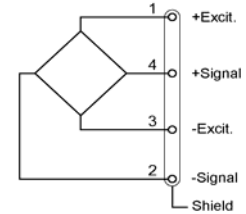
# FN2420 Compression Load Cell

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

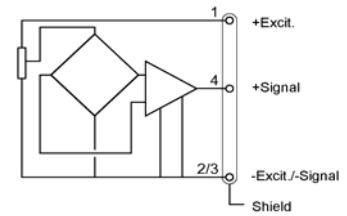


### Wiring Schematic

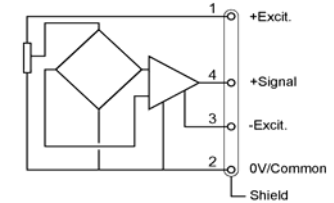
#### FN2420



#### 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

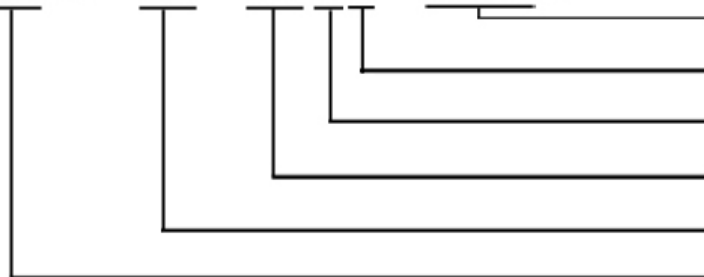
# FN2420 Compression Load Cell

## OPTIONS

<b>A1</b> : Unipolar Tension
<b>A2</b> : Bipolar Tension
<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

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

<b>GA</b> : Load Button
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