

FN2420 Compression Load Cell



- **Compression Design**
- **20 to 0-5000 kN [4 to 1000 kLbf]**
- **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 kLbf)
- 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

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	<2.10 ⁴ / °C of reading (<1.10 ⁴ / °F of reading)
Range (F.S.)	0-20 kN to 0-5000 kN [0-4 klf to 0-1000 klf]
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

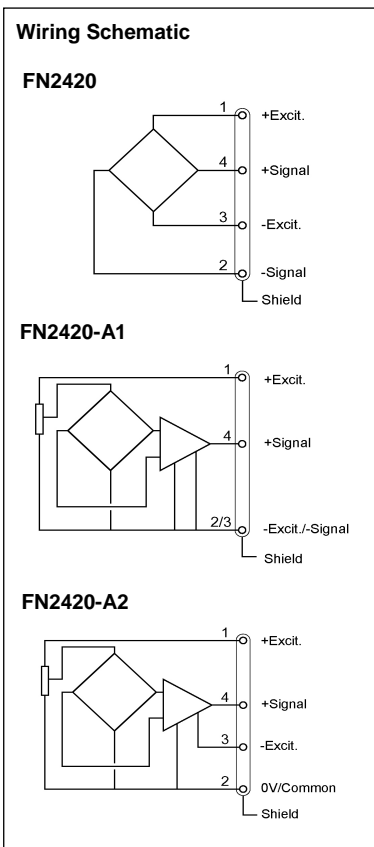
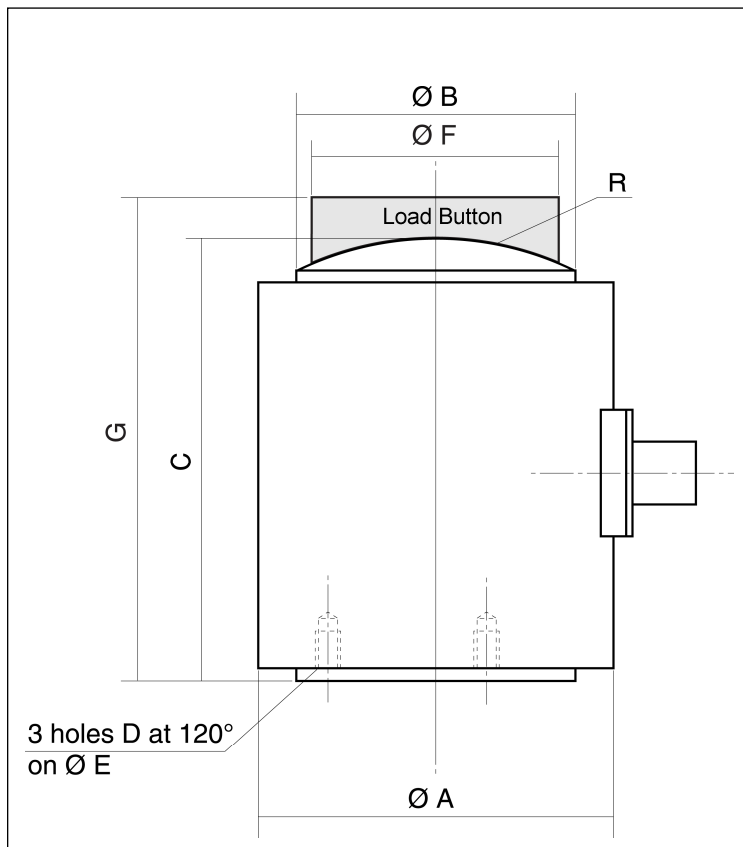
Model	FN2420	FN2420-A1	FN2420-A2
Supply Outage	10Vdc	10–30Vdc	±15Vdc (±12 to ±18Vdc)
F.S. Output	2mV/V	0.5 to 4.5V	±5V
Zero Offset	±5% F.S.	0.5V ±5% F.S.	0V ±5% F.S.
Input Impedance/Consumption	350 to 700Ω	<50mA	<50mA
Output Impedance	350 to 700Ω	<10Ω	<10Ω
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

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)



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]
Ø 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]
Ø 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]
Ø 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 : Unipolar Tension
A2 : Bipolar Tension
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



RECOMMENDED ACCESSORIES

GA : Load Button

The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. Measurement Specialties, Inc. reserves the right to make changes without further notice to any product herein. Measurement Specialties, Inc. makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does Measurement Specialties, Inc. assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. Measurement Specialties, Inc. does not convey any license under its patent rights nor the rights of others.