

XFU400 Miniature Load Cell



- 0-500N to 0-5kN [100Lbf to 1kLbf]
- Tension and/or Compression
- Spherical Plain Rod-End Bearings
- Excellent Accuracy
- For Static and Dynamic Applications

DESCRIPTION

Available in a range of measurements and a variety of mounting threads, the XFU400 is easily installed. Its miniature size facilitates testing where space is at a premium. The sensing element is fitted with a fully temperature compensated Wheatstone bridge equipped with high stability micro-machined silicon strain gages. The XFU400 is used in applications that require a spherical plain rod-end bearing and has the capacity of accepting a full scale range of up to 5 kN [1 kLbf].

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

- Based on standard rod end bearings
- Low deflection
- Easy to integrate
- Fast response time
- For Static and Dynamic Applications

APPLICATIONS

- Linkage forces
- Machine tool
- Automotive systems test
- Robotics and effectors

STANDARD RANGES

F.S. Ranges in N	500	1k	3k	4k	5k
F.S. Ranges in Lbf	100	200	600	800	1k
Stiffness in N/m	3.4×10^8	5.5×10^8	1.2×10^9	1.4×10^9	1.9×10^9
Stiffness in Lbf/ft	2.3×10^7	3.8×10^7	8.2×10^7	9.6×10^7	1.3×10^8

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PERFORMANCE SPECIFICATIONS

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

PARAMETERS	
Operating Temperature Range (OTR)	-40 to 120 °C [-40 to 248 °F]
Compensated Temperature Range (CTR)	0 to 60 °C [32 to 140 °F]
Zero Shift in CTR	<2% F.S. / 50 °C [100 °F]
Sensitivity Shift in CTR	<2% of reading / °C [2 °F]
Range (F.S.)	0-500N to 0-5kN [0-100Lbf to 0-1kLbf]
Over-Range	
Without Damage	1.5 x F.S.
Without Destruction	2 x F.S.
Accuracy	
Linearity	≤±0.3% F.S
Hysteresis	≤±0.2% F.S

Electrical Characteristics

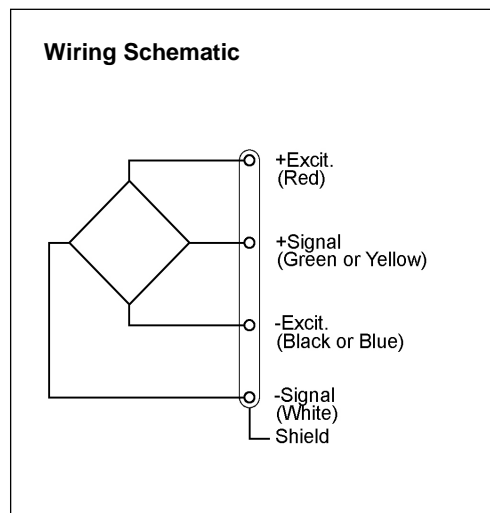
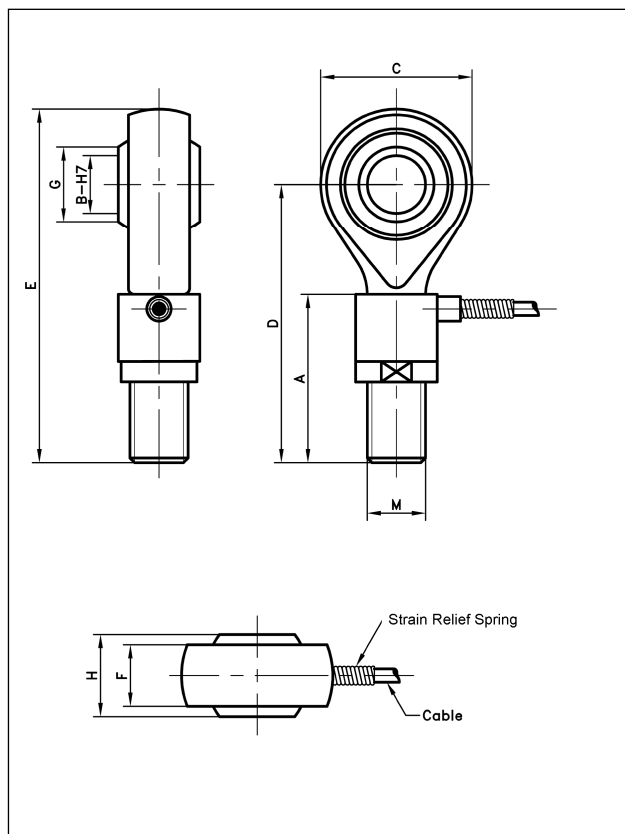
Model	XFU400
Supply Outage	10Vdc
F.S. Output	10mV/V
Zero Offset	<±10 mV
Input Impedance/Consumption	1000 to 3000Ω
Output Impedance	500 to 1000Ω
Insulation under 50Vdc	≥100MΩ

Notes

1. Shielded cable with 4 Teflon wires (AWG36/28), standard length 2 m [6.5 ft] with strain relief spring
2. Material: Body in zinc coated and passivated steel
3. Protection Index: IP50 (other levels available on request)

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DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



Dimensions in mm [inch]

Full Scale Range in N [in Lbf]	500 [100]	1000 [200]	3000 [600]	4k [800]	5k [1k]
Threading	M4	M5	M8	M10	M12
A	18 [0.71]	20 [0.79]	25 [0.98]	29 [1.14]	33 [1.3]
B	4 [0.16]	5 [0.2]	8 [0.31]	10 [0.39]	12 [0.47]
C	14 [0.55]	16 [0.63]	22 [0.87]	26 [1.02]	30 [1.18]
D	30 [1.18]	33 [1.3]	42 [1.65]	48 [1.89]	54 [2.13]
E	37 [1.46]	41 [1.61]	53 [2.09]	61 [2.4]	69 [2.72]
F	2.25 [0.089]	6 [0.24]	9 [0.35]	10.5 [0.41]	12 [0.47]
G	6.46 [0.25]	7.71 [0.3]	10.4 [0.41]	12.92 [0.51]	15.43 [0.61]
H	7 [0.28]	8 [0.31]	12 [0.47]	14 [0.55]	16 [0.63]
Stiffness in N/m	3.4x10 ⁸	5.5x10 ⁸	1.2x10 ⁹	1.4x10 ⁹	1.9x10 ⁹
Stiffness in Lbf/ft	2.3x10 ⁷	3.8x10 ⁷	8.2x10 ⁷	9.6x10 ⁷	1.3x10 ⁸

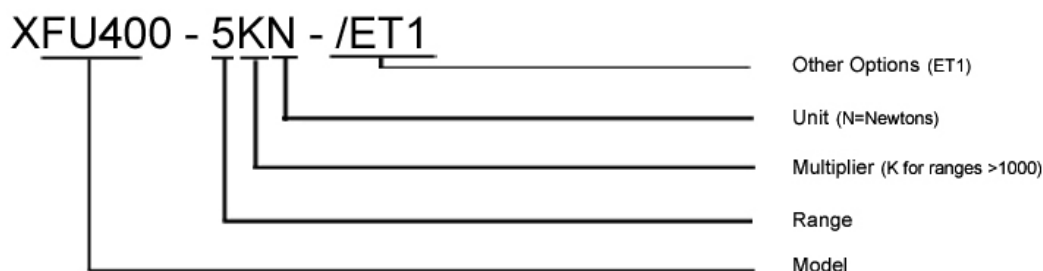
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OPTIONS

ET1 : CTR -20 to 100 °C [-4 to 212 °F]

LC“x”: Additional cable length to standard length (in m) (**Note** : “X” = Custom value)

ORDERING INFO



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