

XFTC321 Miniature Load Cell



- Range from 0-500N to 0-10kN [0-100 lbf to 2 klf]
- Tension and/or Compression
- High Stiffness
- For Static and Dynamic Applications
- Threaded Female Mechanical Fitting

DESCRIPTION

The **XFTC321** series has been specifically developed to measure tension and compression in static and dynamic applications. The 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 use of silicon strain gages optimizes the load cell's performance at low ranges and frequencies. A strain relief spring strengthens the cable output. With two female threads, the **XFTC321** is easily installed in industrial or OEM applications.

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

- Aluminum or stainless steel body
- Tension and Compression
- Heavy duty
- Sealed version optional
- Easy to customize threads

APPLICATIONS

- Dynamic strain cylinder regulation
- Miniature press-fit device
- Laboratory
- Robotics regulation
- Small size actuators

STANDARD RANGES

| | | | |
|----------------------------|---|-------------------|--|
| F.S. Ranges in N | 500 - 1k | 2k | 5k - 10k |
| F.S. Ranges in lbf | 100 - 200 | 400 | 1k - 2k |
| Stiffness in N/m | 3×10^7 | 1×10^8 | 2×10^9 to 4×10^9 |
| Stiffness in lbf/ft | 2.10×10^6 to 4.1×10^6 | 6.9×10^6 | 1.4×10^8 to 2.7×10^8 |
| Materials | Aluminum Alloy | Stainless Steel | |

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PERFORMANCE SPECIFICATIONS

All values are typical at temperature 20±1°C

| 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 / 50° C [/100° F] |
| Range (F.S.) | 0-500N to 0-10kN [0-100 lbf to 0-2klbf] |
| Over-Range | |
| Without Damage | 2 x F.S. |
| Without Destruction | 3 x F.S. |
| Accuracy | |
| Linearity | ≤±0.5% F.S. |
| Hysteresis | ≤±0.5% F.S. |

Electrical Characteristics

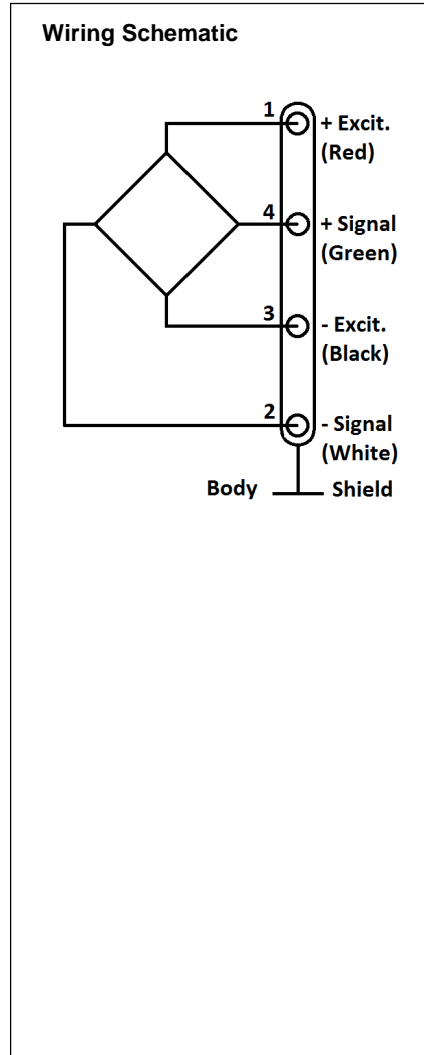
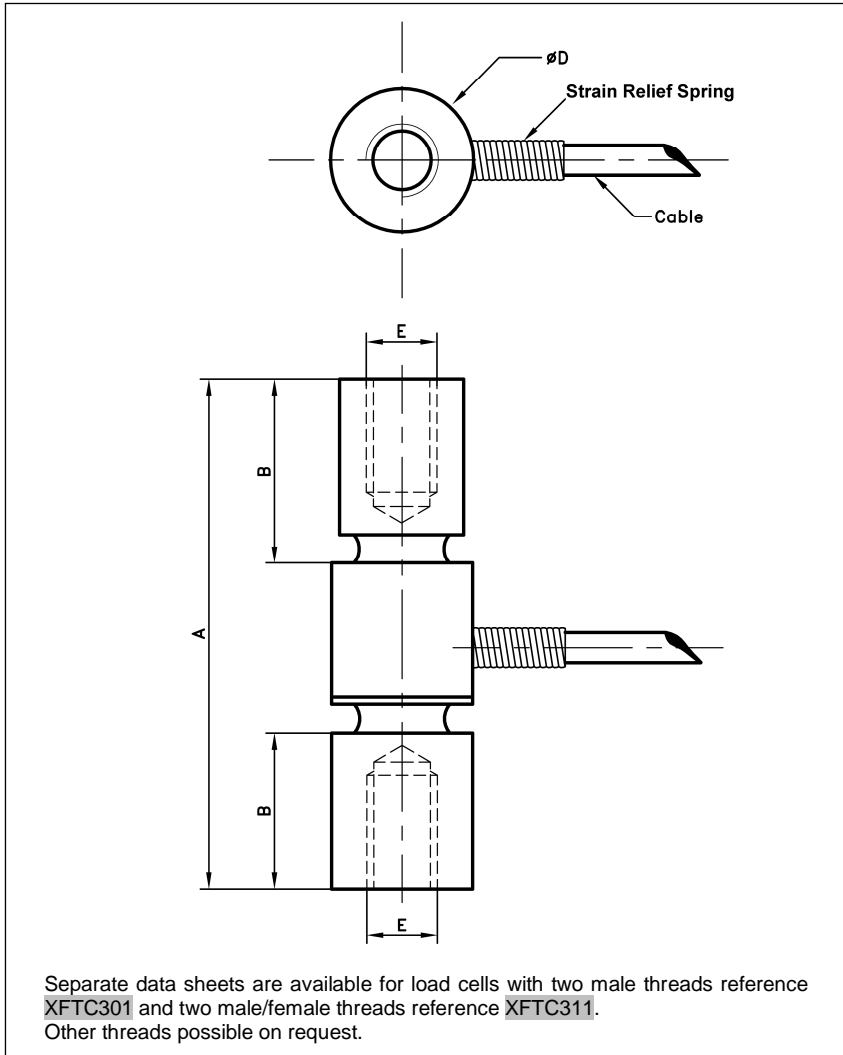
| | |
|-----------------------------|------------------------------|
| Model | XFTC321 |
| Supply Voltage | 10Vdc |
| F.S. Output | ±100mV, ±50mV for 500N model |
| Zero Offset | <±10 mV |
| Input Impedance/Consumption | 1000 to 3000Ω |
| Output Impedance | 500 to 1000Ω |
| Insulation under 50Vdc | ≥100MΩ |

Notes

1. Shielded cable with 4 wires (AWG36/28), standard length 2 m [6.5 ft] with strain relief spring
2. Material: Body in stainless steel or aluminum alloy depending on F.S.
3. Protection Index: IP50 (other levels available on request)
4. CE conformance according to EN 61010-1, EN 50081-1, EN 50082-1

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DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



Dimensions in mm [inch]

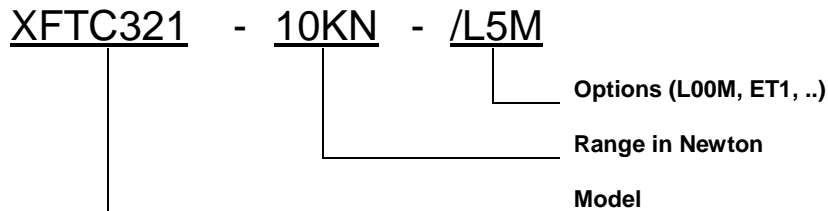
| Full Scale Range in N [in lbf] | 500-1k [100 - 200] | 2k [400] | 5k-10k [1k - 2k] |
|-----------------------------------|--|-------------------|--|
| A | 36 [1.42] | | 46 [1.81] |
| B | 11 [0.43] | | 13 [0.51] |
| C | 12.5 [0.49] | | 14 [0.55] |
| Ø D | 10 [0.39] | | 16 [0.63] |
| E Thread | M5 | | M10 |
| Internal depth | 8 [0.31] | | 10 [0.39] |
| Material | Aluminum | Stainless Steel | Stainless Steel |
| Stiffness in N/m | 3×10^7 | 1×10^8 | 2×10^9 to 4×10^9 |
| Stiffness in lbf/ft | 2.1×10^6 to 4.1×10^6 | 6.9×10^6 | 1.4×10^8 to 2.7×10^8 |

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OPTIONS

| | |
|-------------|--|
| ET1 | : CTR -20 to 100° C [-4 to 212° F] |
| ET2 | : CTR -40 to 120° C [-40 to 248° F] |
| ET3 | : CTR -40 to 150° C [-40 to 302° F] OTR=CTR |
| HA | : Accuracy (CNL&H) $\leq \pm 0.5\%$ F.S. |
| L00M | : special cable length, replace "00" with total length in meters |

ORDERING INFO



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