

XFTC301 Miniature Load Cell



- 0-500 N to 0-10kN [0-100Lbf to 0-2kLbf]
- Tension and/or Compression
- High Stiffness
- For Static and Dynamic Applications
- Threaded Male Mechanical Fitting
- Strain Relief Spring

DESCRIPTION

The XFTC301 series has been specifically developed to measure tension and compression in static and dynamic applications. The miniature size facilitates testing where space is at 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 threaded male studs, the XFTC301 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

- Option IP rating improvement
- Very small size
- Aluminium and stainless steel version
- For static and dynamic applications
- Other threads in option

APPLICATIONS

- Micro mechanic equipment
- Robotics and effectors
- Laboratory
- Spring testing device

STANDARD RANGES

| | | | |
|----------------------------|---|-------------------|--|
| F.S. Ranges in N | 500-1000 | 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

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 0-10kN [0-100Lbf 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

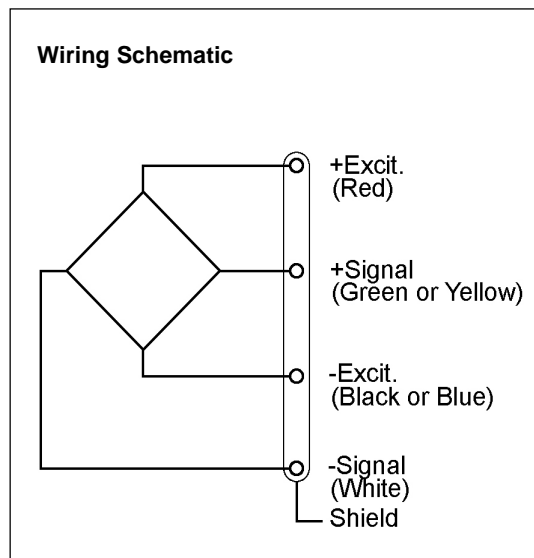
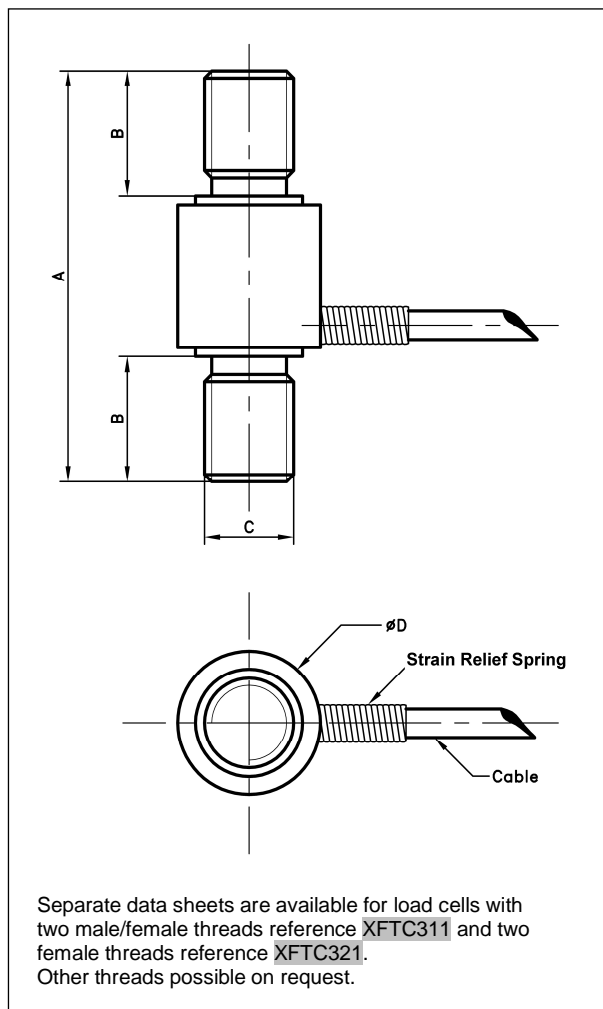
| | |
|-----------------------------|------------------------------|
| Model | XFTC301 |
| Supply Outage | 10Vdc |
| F.S. Output | 100mV, 50mV for 100Lbf Model |
| Zero Offset | <±10mV |
| Input Impedance/Consumption | 1000 to 3000Ω |
| Output Impedance | 500 to 1000Ω |
| Insulation under 50Vdc | ≥100MΩ |

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 stainless steel or aluminum alloy depending on F.S.; Two male threads M5 or [10-32 UNF], M10 or [3/8-24 UNF] depending on F.S. (metric thread is standard)
3. Protection Index: IP50 (other levels available on request)

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DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



Dimensions in mm [inch]

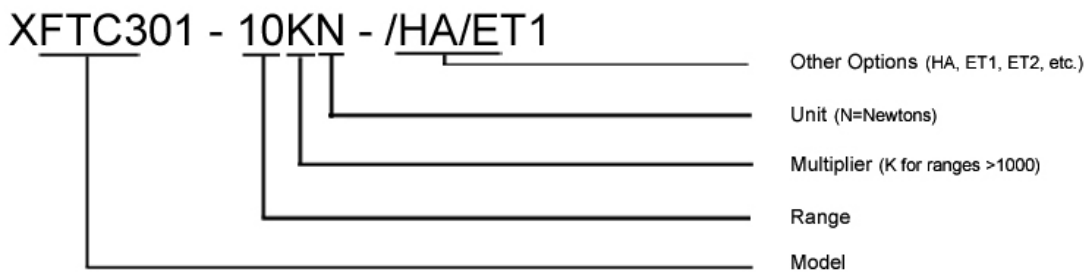
| Full Scale Range in N in [Lbf] | 500 – 1000 [100 – 200] | 2000 [400] | 5000 – 10000 [1000 – 2000] |
|-----------------------------------|-------------------------------|-------------------|--|
| A | 36 [1.42] | | 46 [1.81] |
| B | 12.5 [0.49] | | 14 [0.55] |
| C (Thread) | M5 | | M10 |
| Ø D | 10 [0.39] | | 16 [0.63] |
| Material | Aluminium Alloy | Stainless Steel | |
| Stiffness in N/m | 3×10^7 | 1×10^8 | 2×10^9 to 4×10^9 |
| Stiffness in lb/ft | 2.10^6 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] OTR = CTR |
| ET3 : CTR -40 to 150 °C [-40 to 302 °F] OTR=CTR sta inless steel only |
| HA : Accuracy (CNL&H) ±0.5% F.S. (for models ≥20 Lbf) |
| LC"x" : Additional cable length to standard length (in m) (Note : "X" = Custom value) |

ORDERING INFO



Shenzhen High-Tech Park (North)

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