

XFTC311 Miniature Load Cell



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

DESCRIPTION

The **XFTC311** 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 male/female threads, the **XFTC311** 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

- Male/female M5 and M10 threaded
- Tension and/or Compression
- Optional IP rating improvement
- Extended temperature use as option
- Optional improved global accuracy

APPLICATIONS

- Strain measurement on finger-like command
- Small size actuators
- Miniature press-fit device
- Robotics control measurement
- Laboratory

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	2.1×10^6 to 4.1×10^6	6.9×10^6	1.4×10^8 to 2.7×10^8
Materials	Aluminium	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

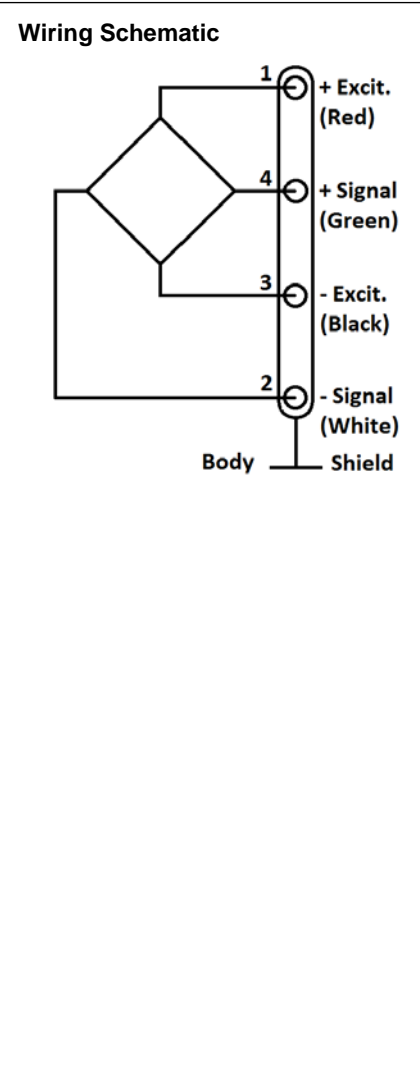
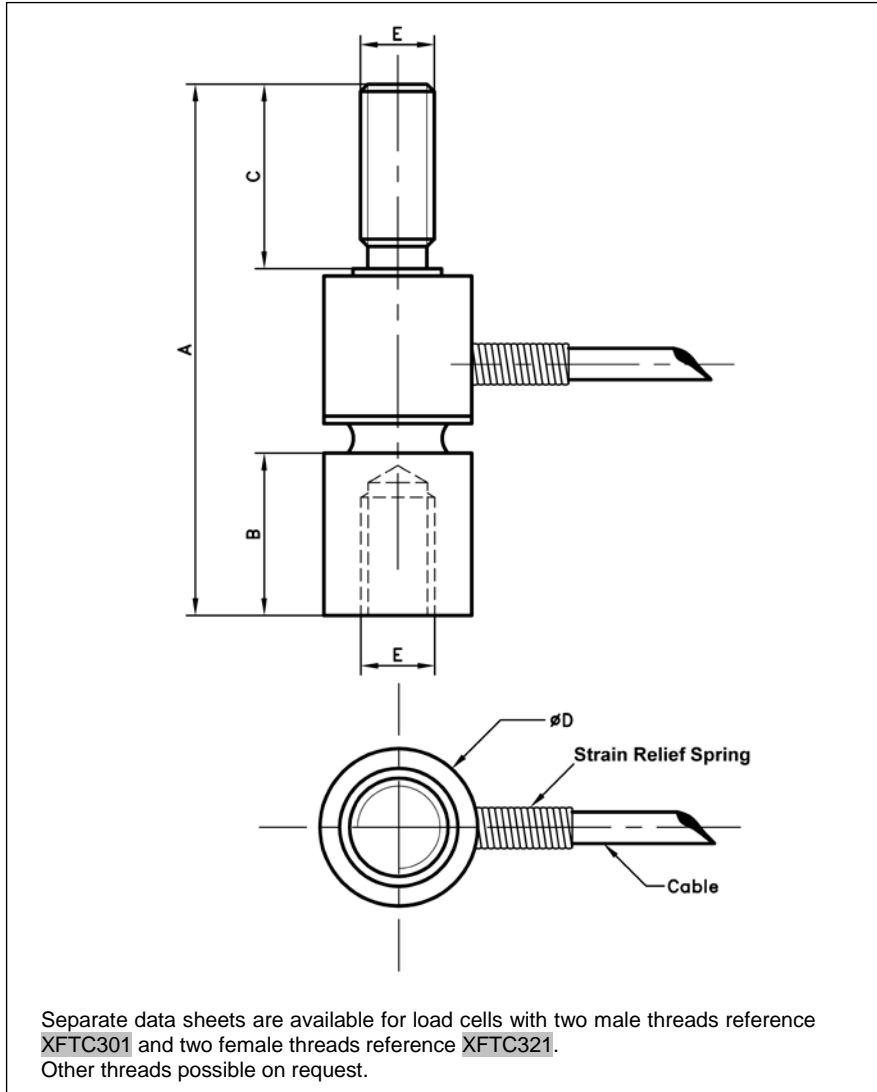
Model	XFTC311
Supply Voltage	10Vdc
F.S. Output	±100mV, ±50mV for 500N model
Zero Offset	<±10mV
Input Impedance/Consumption	1000 to 3000Ω
Output Impedance	500 to 1000Ω
Insulation under 50Vdc	≥100MΩ

Notes

1. Shielded cable with 4 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]

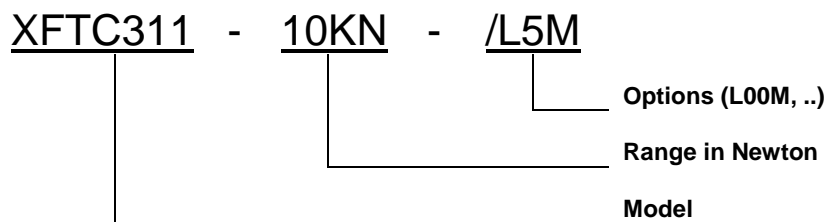
Full Scale Range in N [in lbf]	500 – 1000 [100 – 200]	2000 [400]	5000 – 10000 [1000 – 2000]
A	36 [1.42]		46 [1.81]
B	11 [0.43]		13 [0.51]
C	12.5 [0.49]		14 [0.55]
Ø D	10 [0.39]		16 [0.63]
E Thread	M5		M10
Internal depth	8 [0.31]		10 [0.39]
Material	Aluminum Alloy	Stainless Steel	
Stiffness in N/m	3×10^7	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]
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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