

## XFTC321 Miniature Load Cell



- 0-500N to 0-10kN [0-100 Lbf to 2 kLbf]
- 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

- Aluminium 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

<b>F.S. Ranges in N</b>	500-1k	2k	5k-10k
<b>F.S. Ranges in Lbf</b>	100-200	400	1k-2k
<b>Stiffness in N/m</b>	$3 \times 10^7$	$1 \times 10^8$	$2 \times 10^9$ to $4 \times 10^9$
<b>Stiffness in Lbf/ft</b>	$2.1 \times 10^6$ to $4.1 \times 10^6$	$6.9 \times 10^6$	
<b>Materials</b>	Aluminium	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. /60 °C [108 °F]
Sensitivity Shift in CTR	<2% of reading / 60 °C [108 °F]
Range (F.S.)	0-500N to 0-10kN [0-100 Lbf to 0-2kLbf]
<b>Over-Range</b>	
Without Damage	2 x F.S.
Without Destruction	3 x F.S.
<b>Accuracy</b>	
Linearity	≤±0.5% F.S.
Hysteresis	≤±0.5% F.S.

#### Electrical Characteristics

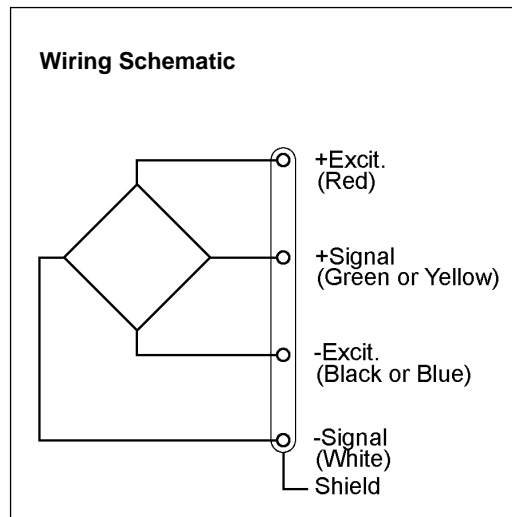
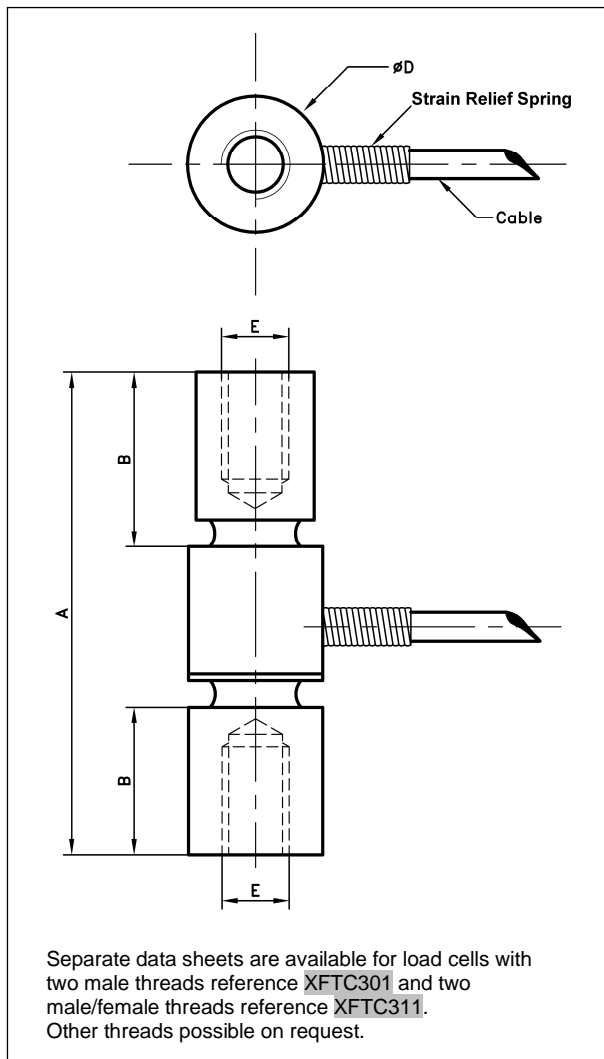
Model	XFTC321
Supply Outage	10Vdc
F.S. Output	100mV, 50mV for 100Lbf model
Zero Offset	<±10 mV
Input Impedance/Consumption	1000 to 3000Ω
Output Impedance	500 to 1000Ω
Insulation under 50Vdc	≥100MΩ

#### Notes

1. Shielded cable with 4 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 female threaded studs M5 or [10-32 UNF], M10 or [3/8-24 UNF] (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]

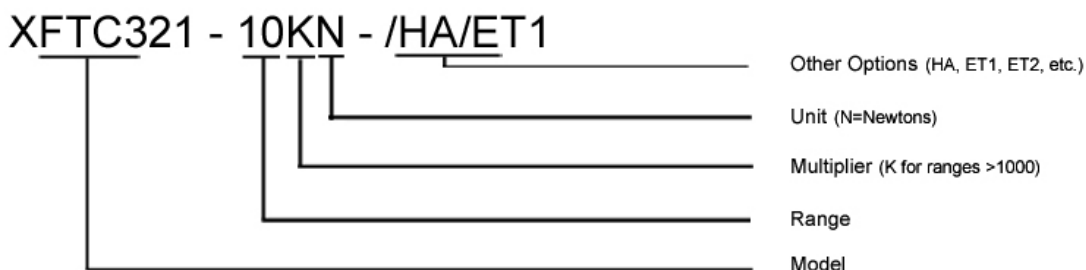
Full Scale Range in N [in Lbf]	500-1k [100 - 200]	2k [400]	5k-10k [1k - 2k]
A	36 [1.42]		46 [1.81]
B	11 [0.43]		13 [0.51]
C	12.5 [0.49]		14 [0.55]
$\varnothing D$	10 [0.9]		16 [0.63]
E (Thread)	M5		M10
Material	Aluminium	Stainless Steel	Stainless Steel
Stiffness in N/m	$3 \times 10^7$	$1 \times 10^8$	$2 \times 10^9$ to $4 \times 10^9$
Stiffness in Lbf/ft	$2.1 \times 10^6$ to $4.1 \times 10^6$	$6.9 \times 10^6$	$1.4 \times 10^8$ to $2.7 \times 10^8$

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### OPTIONS

<b>ET1</b> : CTR -20 to 100 °C [-4 to 212 °F]
<b>ET2</b> : CTR -40 to 120 °C [-40 to 248 °F] OTR = CTR
<b>ET3</b> : CTR -40 to 150 °C [-40 to 302 °F] stainless steel only OTR=CTR
<b>HA</b> : Accuracy (CNL&H) $\leq \pm 0.5\%$ F.S.
<b>LC"x"</b> : Additional cable length to standard length (in m) ( <b>Note</b> : "X" = Custom value)

### ORDERING INFO



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