

## FEATURES

- ◆ Tension and/or Compression
- ◆ Small design easy to mount
- ◆ Wide temperature range in option
- ◆ Amplifier Integrated optional
- ◆ Easy to customize signal and design

## APPLICATIONS

- ◆ Dynamic strain cylinder regulation
- ◆ Miniature press-fit device
- ◆ Fatigue test benches
- ◆ Robotics regulation
- ◆ Small size actuators

## XFTC300

### Miniature Load Cell

#### SPECIFICATIONS

- ◆ Ranges 0-2N to 0-2kN [0.4 lbf to 400 lbf]
- ◆ High Stiffness
- ◆ Threaded Male Mechanical Fitting
- ◆ Linearity < 0,5% FS

The **XFTC300** series has been specifically developed to measure tension and/or compression in static and dynamic applications. The miniature size and light-weight facilitate testing where these conditions are necessary.

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.

For sensors with a range of between 2 and 2kN, a high-level output model is available. With two male threads, the **XFTC300** is easily installed in industrial or OEM applications. A strain relief spring strengthens the cable output.

On request, Instruction documents can be provided to ease the selection and use of our sensors and provide helpful tips.



**STANDARD RANGES**

<b>Ranges in N (FS)</b>	2 - 5 - 10 - 20 - 50	100	200	500 – 1k	2k
<b>Ranges in lbf</b>	0.4 - 1 - 2 - 4 - 10	20	40	100 – 200	400
<b>Stiffness in N/m</b>	3.8x10 <sup>5</sup> to 4.7x10 <sup>7</sup>	7.9x10 <sup>7</sup>	2.2x10 <sup>8</sup>	3.4x10 <sup>8</sup> to 9.6x10 <sup>8</sup>	2.7x10 <sup>9</sup>
<b>Stiffness in lbf/ft</b>	2.6x10 <sup>4</sup> to 3.2x10 <sup>5</sup>	5.4x10 <sup>5</sup>	1.5x10 <sup>7</sup>	2.3x10 <sup>7</sup> to 6.6x10 <sup>7</sup>	1.9x10 <sup>8</sup>
<b>Material</b>	Aluminum		Stainless Steel		

**PERFORMANCE SPECIFICATIONS (typical values at temperature 23±3°C)**

<b>Parameters</b>	
Operating Temperature Range (OTR)	-40 to 120° C [-40 to 248° F]
Compensated Temperature Range (CTR)	0 to 60° C [32 to 140° F]
Thermal Zero Shift in CTR	<2% F.S. / 50° C [/100° F]
Thermal Sensitivity Shift in CTR	<2% of reading / 50° C [/100° F]
<b>Over-Range</b>	
Without Damage	2 to 4 x F.S.
Without Destruction	3 to 6 x F.S.
<b>Accuracy</b>	
Linearity	≤±0.5% F.S.
Hysteresis	≤±0.5% F.S.

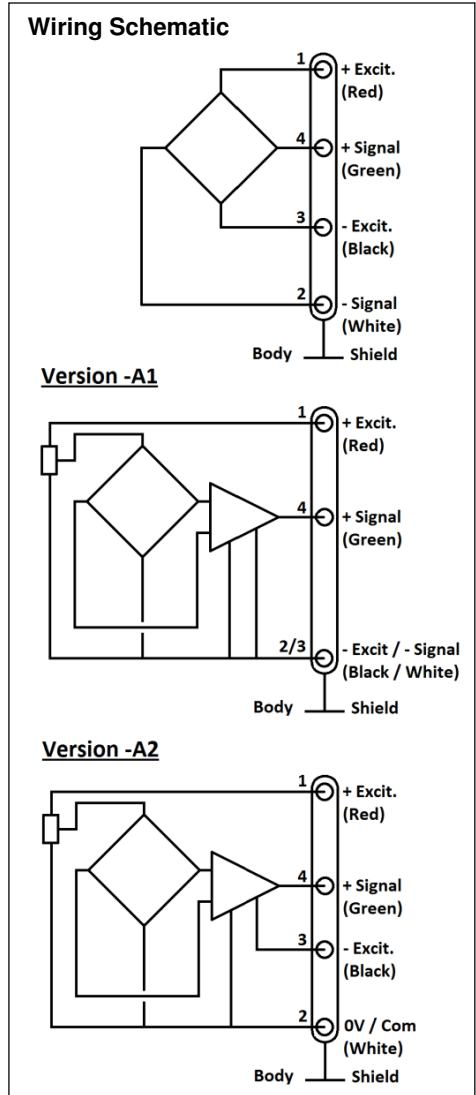
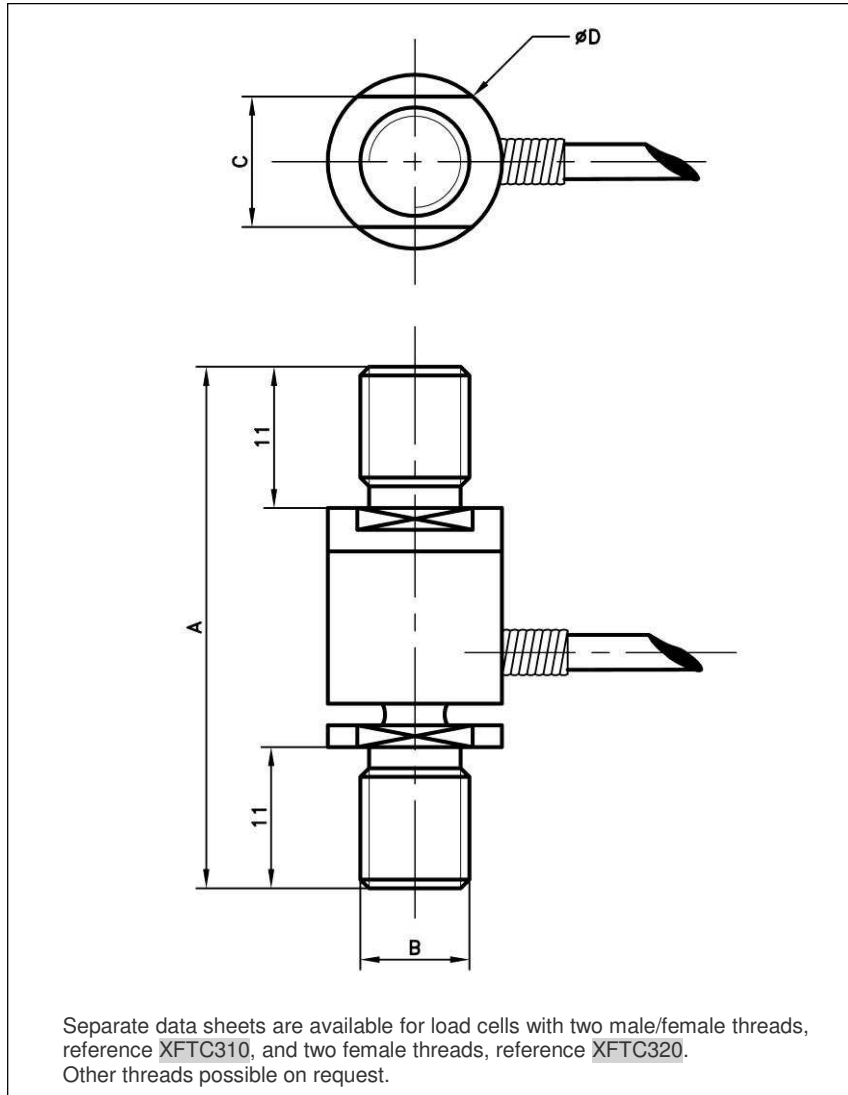
**Electrical Characteristics**

Model	XFTC300 <sup>1</sup>	XFTC300-A1 <sup>3</sup>	XFTC300-A2 <sup>3</sup>
Supply Voltage	1 to 10 Vdc regulated	10 to 30Vdc	±15Vdc (±12 to ±18Vdc)
Sensitivity “FSO” <sup>2</sup>	±10mV/V	±2V ±0.2V	±5V ±0.2V
Zero Offset <sup>2</sup>	<±10mV	2.5V ±0.2V	0V ±0.2V
Input Impedance/Consumption	1000 to 3000Ω	<30mA	<30mA
Output Impedance	500 to 1000Ω	<1 kΩ <sup>7</sup>	<1 kΩ <sup>7</sup>
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

**Notes**

1. Sensors are calibrated with 10Vdc power supply as standard.
2. Signal goes positive in tension with standard wiring configuration. Custom outputs available on request
3. A1 and A2 options are only available for ranges 500N, 1kN and 2kN
4. Shielded cable with 4 wires (AWG36/28), standard length 2 m [6.5 ft] with strain relief spring
5. 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)
6. Protection Index: IP50 (other levels available on request)
7. Output impedance standard, available <100Ω on request.
8. CE conformance according to EN 61010-1, EN 50081-1, EN 50082-1

**DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)**



**Dimensions in mm [inch]**

Range in N [in lbf]	2 - 5 - 10 - 20 -50 [0.4 - 1 - 2 - 4 - 10]	100 - 200 [20 - 40]	500 - 1000 [100 - 200]	2000 [400]
A	36 [1.42]	36 [1.42]	46 [1.81]	46 [1.81]
B (Thread)	M5	M5	M10	M10
C	8 [0.31]	8 [0.31]	12 [0.47]	16 [0.63]
Ø D	10 [0.39]	10 [0.39]	16 [0.63]	20 [0.79]
Material	Aluminum Alloy	Stainless Steel		
Stiffness in N/m	3.8x10 <sup>5</sup> to 4.7x10 <sup>7</sup>	7.9x10 <sup>7</sup> to 2.2x10 <sup>8</sup>	3.4x10 <sup>8</sup> to 9.6x10 <sup>8</sup>	2.7x10 <sup>9</sup>
Stiffness in lbf/ft	2.4x10 <sup>4</sup> to 3.2x10 <sup>6</sup>	5.4x10 <sup>6</sup> to 1.5x10 <sup>7</sup>	2.3x10 <sup>7</sup> to 6.6x10 <sup>7</sup>	1.9x10 <sup>8</sup>
Over-range	x4	x3	x3	x2

## XFTC300

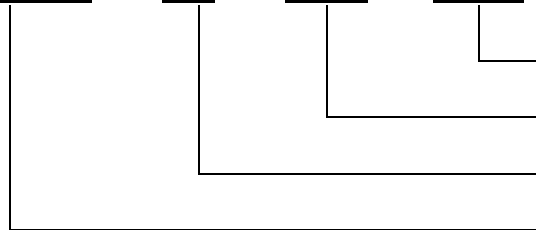
Miniature Load Cell

### OPTIONS

<b>A1</b> : Tension output with unipolar power supply (only available for ranges 500N, 1kN and 2kN)
<b>A2</b> : Tension output with bipolar power supply (only available for ranges 500N, 1kN and 2kN)
<b>ET1</b> : CTR -20 to 100° C [-4 to 212° F]
<b>ET2</b> : CTR -40 to 120° C [-40 to 248° F]
<b>ET3</b> : CTR -40 to 150° C [-40 to 302° F] OTR=CTR (option not compatible with A1 and A2 versions)
<b>HA</b> : Accuracy (CNL&H) ±0.5% F.S. (for models ■100N; 20lbf)
<b>TS</b> : Tolerance on F.S. output ↑±2% F.S. (compatible with A1 and A2 versions only)
<b>V00</b> : Non-standard power supply calibration, replace "00" with value in Volt (standard 10Vdc, unamplified sensor only)
<b>L00M</b> : special cable length, replace "00" with total length in meters

### ORDERING INFO

XFTC300 - A1 - 5KN - /ET1



Options (L03M, V05...)

Range in Newton

Amplified version (none, A1 or A2)

Model



#### NORTH AMERICA

Measurement Specialties, Inc.,  
a TE Connectivity Company  
Phone: +1 800 522 6752  
Email: [customercare.frm@te.com](mailto:customercare.frm@te.com)

#### EUROPE

Measurement Specialties (Europe), Ltd.  
a TE Connectivity Company  
Phone: +31 73 624 6999  
Email: [customercare.lcsb@te.com](mailto:customercare.lcsb@te.com)

#### ASIA

Measurement Specialties (China), Ltd.,  
a TE Connectivity Company  
Phone +86 400 820 6015  
Email: [customercare.shzn@te.com](mailto:customercare.shzn@te.com)

#### TE.com/sensorsolutions

Measurement Specialties, Inc., a TE Connectivity company.

Measurement Specialties, TE Connectivity, TE Connectivity (logo) and EVERY CONNECTION COUNTS are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2015 TE Connectivity Ltd. family of companies All Rights Reserved.