

## 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 [1/100° F]
Thermal Sensitivity Shift in CTR	<2% of reading / 50° C [1/100° F]
Range (F.S.)	0-2N to 0-2kN [0-0.4 lbf to 0-400 lbf]
<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.

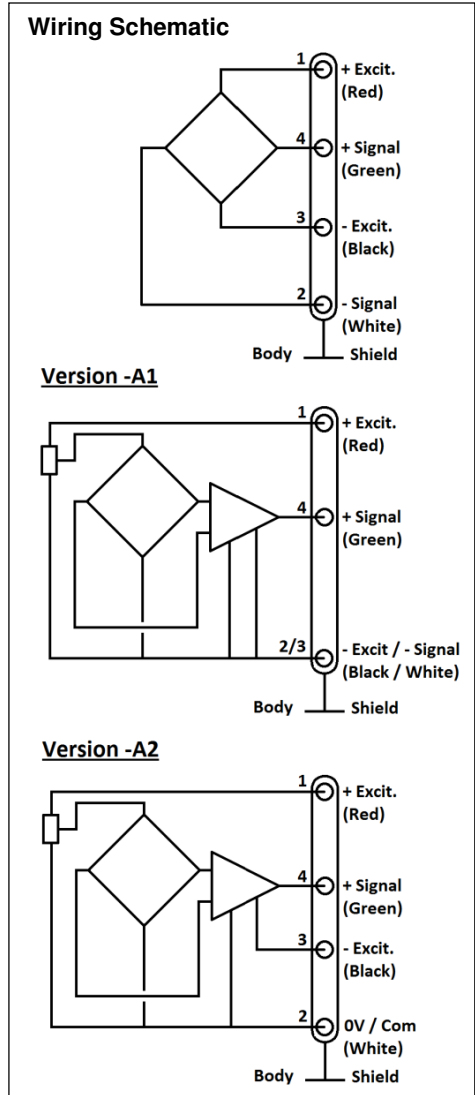
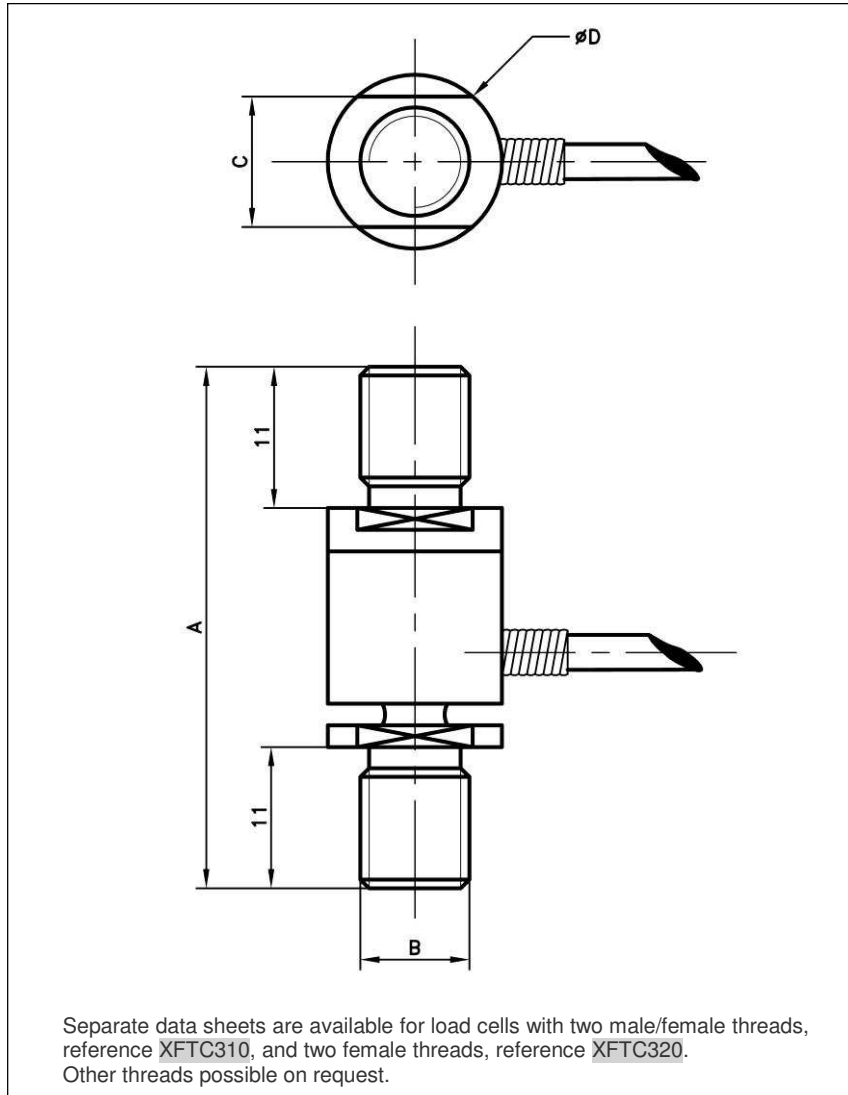
**Electrical Characteristics**

<b>Model</b>	<b>XFTC300</b>	<b>XFTC300-A1</b>	<b>XFTC300-A2</b>
Supply Voltage	10Vdc	10 – 30Vdc	±15Vdc (±12 to ±18Vdc)
Sensitivity "FSO" <sup>5</sup>	±10mV/V	±2V ±0.2V	±5V ±0.2V
Zero Offset <sup>5</sup>	<±1mV/V	2.5V ±0.2V	0V ±0.2V
Input Impedance/Consumption	1000 to 3000Ω	<30mA	<30mA
Output Impedance	500 to 1000Ω	<1 kΩ <sup>6</sup>	<1 kΩ <sup>6</sup>
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

**Notes**

- Shielded cable with 4 wires (AWG36/28), standard length 2 m [6.5 ft] with strain relief spring
- 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)
- Protection Index: IP50 (other levels available on request)
- A1 and A2 options are only available for ranges 500N, 1kN and 2kN
- Standard output signal, custom outputs available on request
- Output impedance standard, available <100Ω on request.
- 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

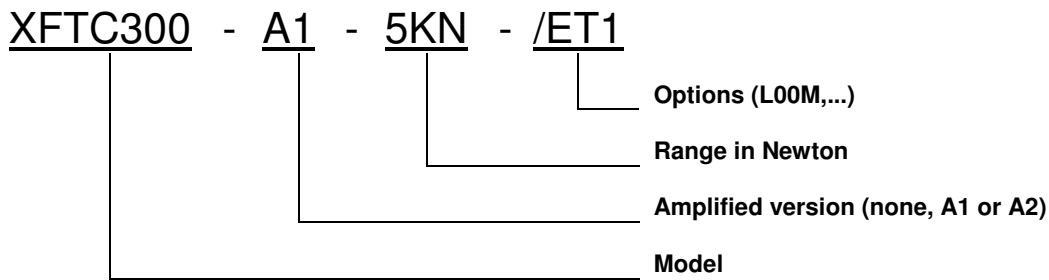
## XFTC300

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>L00M</b>	: special cable length, replace "00" with total length in meters

### ORDERING INFO



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