

FEATURES

- ◆ Small design easy to mount
- ◆ Optional IP rating improvement
- ◆ Extended temperature range available
- ◆ Other male/female threads available

APPLICATIONS

- | | |
|---|---|
| ◆ Strain measurement on finger-like command | ◆ |
| ◆ Connector and cable traction tests | ◆ |
| ◆ Miniature press-fit device | ◆ |
| ◆ Robotics regulation | ◆ |
| ◆ Small size actuators | ◆ |

XFTC310

Miniature Load Cell

SPECIFICATIONS

- ◆ **Range from 0-2N to 0-2KN**
[0.4 lbf to 400 lbf]
- ◆ **Tension and Compression**
- ◆ **High Overload Capacity**

The **XFTC310** series has been specifically developed to measure tension and compression in static and dynamic applications. The miniature size and lightweight 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 optimises the load cell's performance at low ranges and frequencies.

TE CONNECTIVITY designed other mechanical interfaces such as standard as **XFTC300** with two male threads and **XFTC320** with two female threads.

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

STANDARD RANGES

Ranges in N (FS)	2 - 5 - 10 - 20 - 50	100	200	500 to 1k	2k
Ranges in lbf	0.4 - 1 - 2 - 4 - 10	20	40	100 to 200	400
Over-range	x4	x3	x3	x3	x2
Stiffness in N/m	3.8x10 ⁵ to 4.7x10 ⁷	7.9x10 ⁷	2.2x10 ⁸	3.4x10 ⁸ to 9.6x10 ⁸	2.7x10 ⁹
Stiffness in lbf/ft	2.4x10 ⁴ to 3.2x10 ⁵	5.4x10 ⁵	1.5x10 ⁷	2.3x10 ⁷ to 6.6x10 ⁷	1.9x10 ⁸
Materials	Aluminum		Stainless Steel		

PERFORMANCE SPECIFICATIONS (typical values at temperature 23±3°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]
Thermal Zero Shift in CTR	<2% F.S. / 50° C [100° F]
Thermal Sensitivity Shift in CTR	<2% of reading / 50° C [100° F]
Over-Range	
Without Damage	2 to 4 x F.S.
Without Destruction	3 to 6 x F.S.
Accuracy	
Linearity	≤±0.5% F.S.
Hysteresis	≤±0.5% F.S.

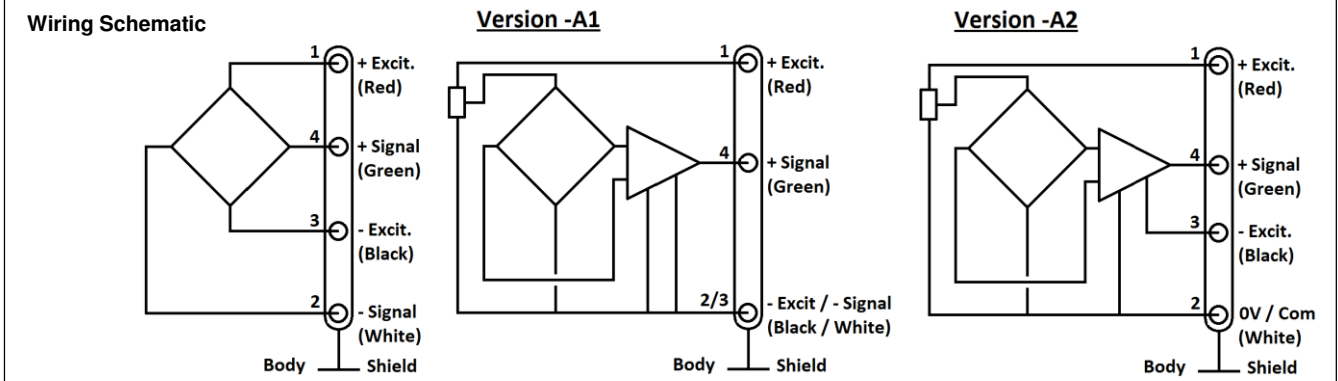
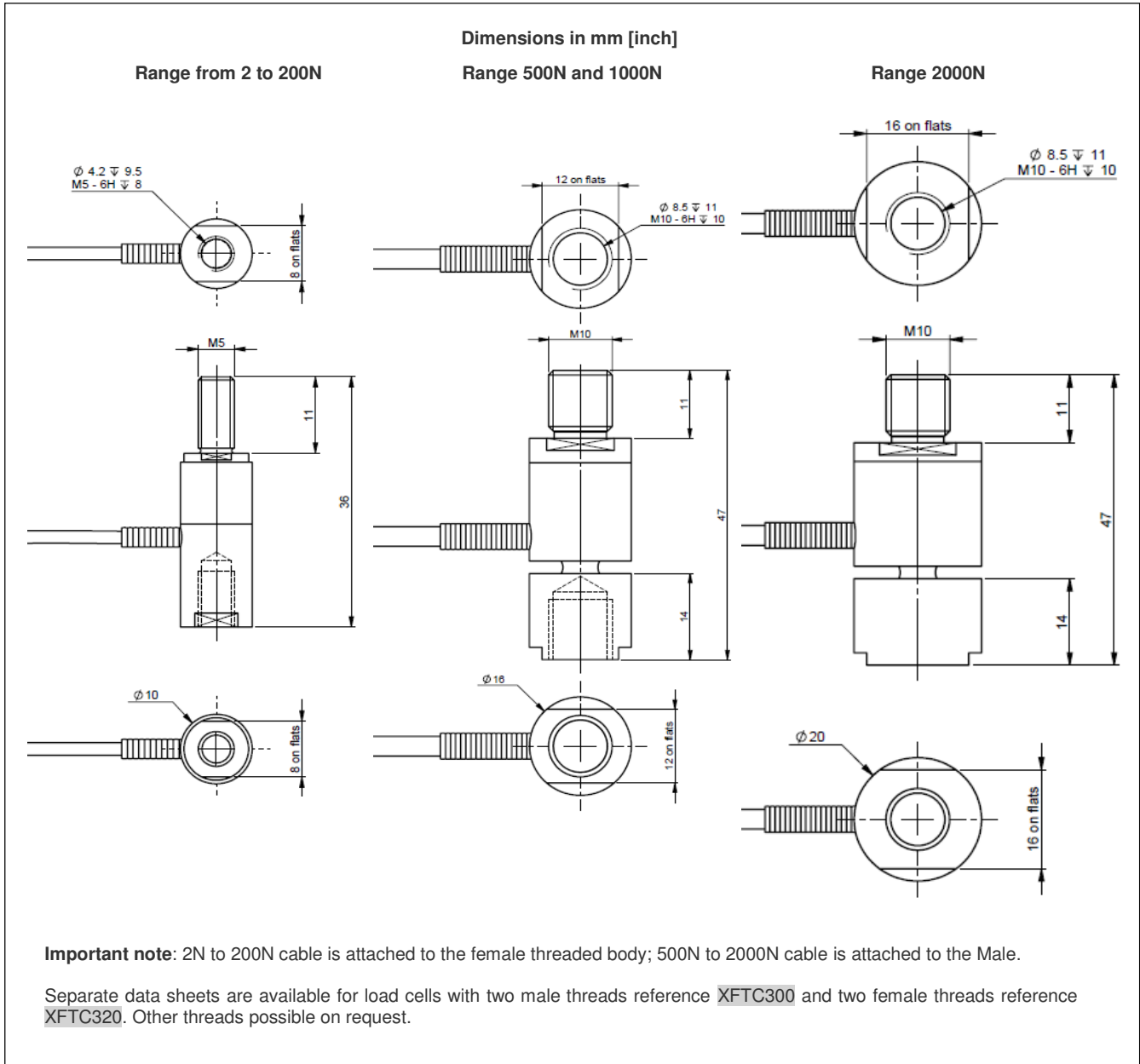
Electrical Characteristics

Model	XFTC310 ¹	XFTC310-A1 ³	XFTC310-A2 ³
Supply Voltage	1 to 10 Vdc regulated	10 to 30Vdc	±15Vdc (±12 to ±18Vdc)
Sensitivity "FSO" ²	±10mV/V	±2V ±0.2V	±5V ±0.2V
Zero Offset ²	<±10mV	2.5V ±0.2V	0V ±0.2V
Input Impedance/Consumption	1000 to 3000Ω	<30mA	30mA
Output Impedance	500 to 1000Ω	1 kΩ ⁷	1 kΩ ⁷
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

Notes

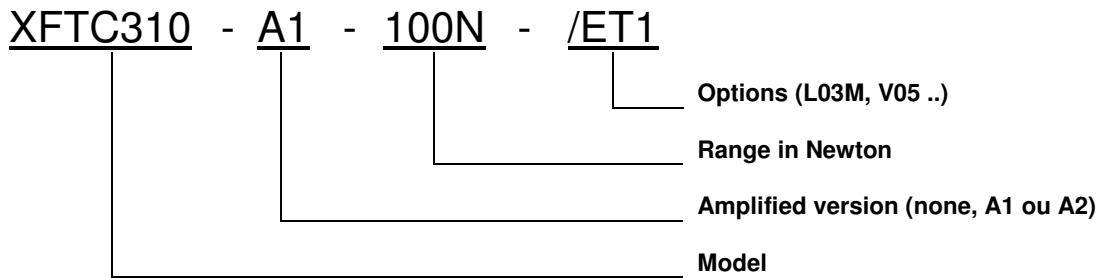
1. Sensors are calibrated with 10Vdc power supply as standard.
2. Signal goes positive in tension with standard wiring configuration. Other signal output on request
3. A1 and A2 options are only available for ranges 500N, 1kN and 2 kN
4. Shielded cable with 4 wires (AWG36/28), standard length 2 m [6.5 ft] with strain relief spring
5. Material: Body in stainless steel or aluminum alloy depending on F.S. ; Two male/ female 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 < 100Ω on request
8. CE conformance according to EN 61010-1, EN 50081-1, EN 50082-1

DIMENSIONS & WIRING SCHEMATIC (IN METRIC)



OPTIONS

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

ORDERING INFO**NORTH AMERICA**

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