

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

Ranges in N (FS)	2 - 5 - 10 - 20 - 50	100	200	500 – 1k	2k
Ranges in lbf	0.4 - 1 - 2 - 4 - 10	20	40	100 – 200	400
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	2.6x10 ⁴ to 3.2x10 ⁵	5.4x10 ⁵	1.5x10 ⁷	2.3x10 ⁷ to 6.6x10 ⁷	1.9x10 ⁸
Material	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 [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]
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.

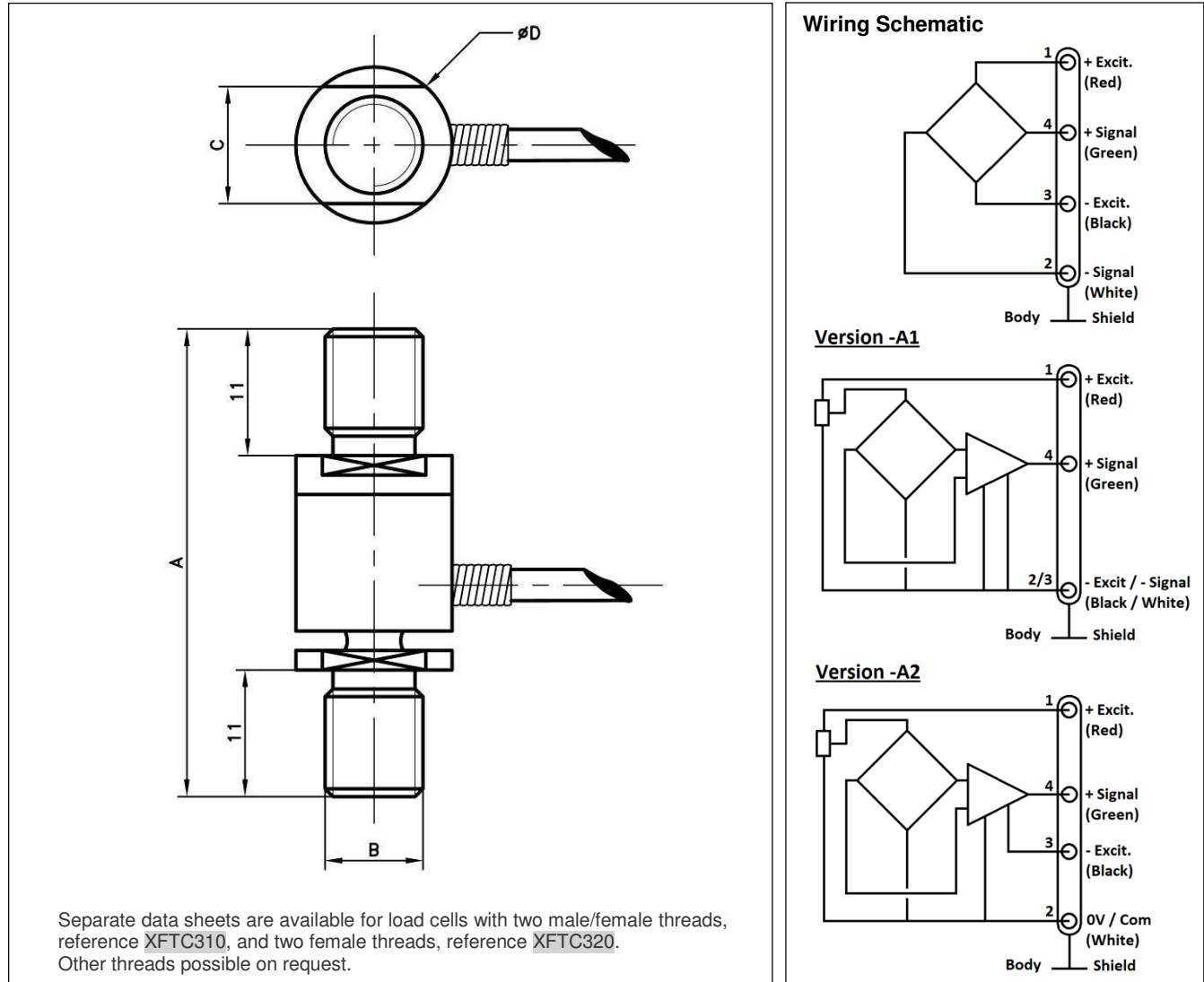
Electrical Characteristics

Model	XFTC300	XFTC300-A1	XFTC300-A2
Supply Voltage	10Vdc	10 – 30Vdc	±15Vdc (±12 to ±18Vdc)
Sensitivity "FSO" ⁵	±10mV/V	±2V ±0.2V	±5V ±0.2V
Zero Offset ⁵	<±1mV/V	2.5V ±0.2V	0V ±0.2V
Input Impedance/Consumption	1000 to 3000Ω	<30mA	<30mA
Output Impedance	500 to 1000Ω	<1 kΩ ⁶	<1 kΩ ⁶
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥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., ; Two male threads M5 or [10-32 UNF], M10 or [3/8-24 UNF] depending on F.S. (metric thread is standard)
3. Protection Index: IP50 (other levels available on request)
4. A1 and A2 options are only available for ranges 500N, 1kN and 2kN
5. Standard output signal, custom outputs available on request
6. Output impedance standard, available <100Ω on request.
7. 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 ⁵ to 4.7x10 ⁷	7.9x10 ⁷ to 2.2x10 ⁸	3.4x10 ⁸ to 9.6x10 ⁸	2.7x10 ⁹
Stiffness in lbf/ft	2.4x10 ⁴ to 3.2x10 ⁶	5.4x10 ⁶ to 1.5x10 ⁷	2.3x10 ⁷ to 6.6x10 ⁷	1.9x10 ⁸
Over-range	x4	x3	x3	x2

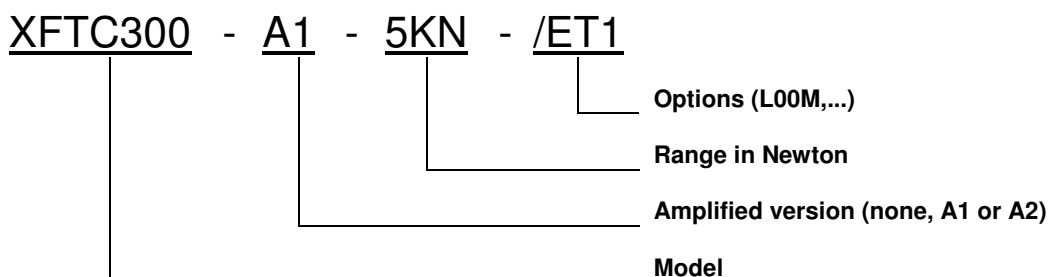
XFTC300

Miniature Load Cell

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) $\pm 0.5\%$ F.S. (for models $\geq 100\text{N}$; 20lbf)
TS	: Tolerance on F.S. output $\leq \pm 2\%$ F.S. (compatible with A1 and A2 versions only)
L00M	: special cable length, replace "00" with total length in meters

ORDERING INFO



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