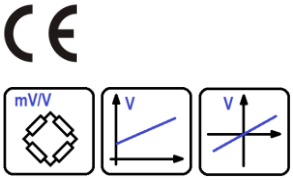
XFTC320

Miniature Load Cell

SPECIFICATIONS

- **Ranges from 0-2N to 0-2kN [0.4 lbf to 400 lbf]**
- **Tension and Compression**
- **High Overload Capacity**



FEATURES

- Heavy duty
- Sealed version available as option
- Integrated Amplifier optional

APPLICATIONS

- Strain measurement on finger-like command
- Underwater robots control command
- Miniature press-fit device
- Fatigue tests benches
- Small size actuators

The **XFTC320** 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 optimises the load cell's performance at low ranges and frequencies. For sensors with a range of between 500 N and 2 kN [100 and 400lbf], a high-level output model is available.

With two female threads, the **XFTC320** 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 (FS)	0.4 - 1 - 2 - 4 - 10	20 - 40	100 - 200	400
Stiffness in N/m	$3.8x10^5$ to $4.7x10^7$	$7.9x10^7$ to $2.2x10^8$	$3.4x10^8$ to $9.6x10^8$	$2.7x10^9$
Stiffness in lbf/ft	$2.6x10^4$ to $3.2x10^5$	$5.4x10^5$ to $1.5x10^7$	$2.3x10^7$ to $6.6x10^7$	$1.9x10^8$
Materials	Aluminum	Stainless Steel		

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

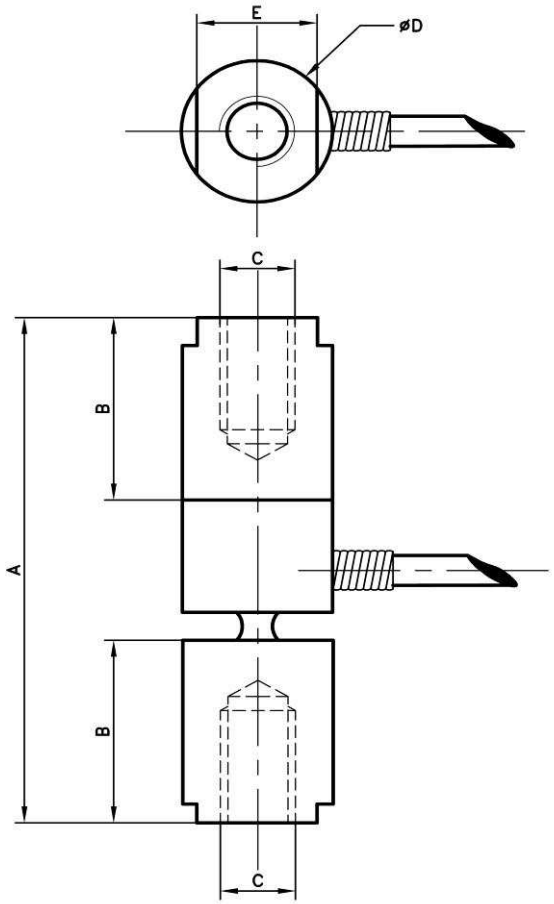
PARAMETERS	
Operating Temperature Range (OTR)	-40 to 120° C [-40 to 248° F]
Compensated Temperature Range (CTR)	0 to 60º C [32 to 140° F]
Thermal Zero Shift in CTR	<2% F.S. / 50º C [/100° F]
Thermal Sensitivity Shift in CTR	<2% of reading / 50º C [/100° F]
Over-Range	
Without Damage	2 to 4 x F.S.
Without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

Electrical Characteristics

Model	**XFTC320** [1]	**XFTC320-A1** [3]	**XFTC320-A2** [3]
Supply Voltage	1 to 10 Vdc reg.	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[6]	<1 kΩ[6]
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ

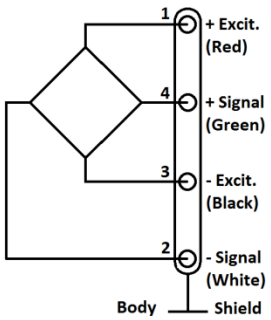
Notes
1. Sensors are calibrated with 10Vdc power supply as standard.
2. Signal goes positive in tension with standard wiring configuration. Other signal output on request
3. A1 and A2 options are only available for ranges 500N, 1kN and 2 kN
4. Shielded cable with 4 wires (AWG36/28), standard length 2 m [6.5 ft] with strain relief spring
5. Material: Body in stainless steel or aluminum alloy depending on F.S.
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)

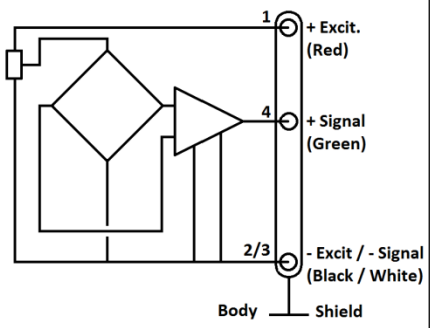


Separate data sheets are available for load cells with two male threads reference XFTC300 and two male/female threads reference XFTC310.
Other threads possible on request.

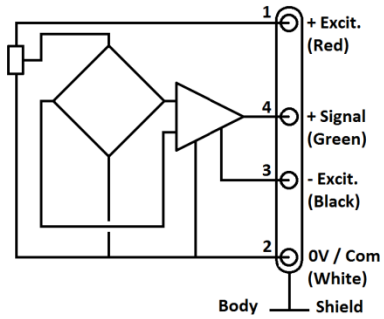
Wiring Schematic



Version -A1



Version -A2



Dimensions in mm [inch]

Full Scale 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]		46 [1.81]	47 [1.85]
B	13 [0.51]		14 [0.55]	
C *Thread*	M5		M10	
Internal depth	8 [0.31]		10 [0.39]	
Ø D	10 [0.39]		16 [0.63]	20 [0.79]
E	8 [0.31]		12 [0.47]	16 [0.63]
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 $9.6x10^8$	$2.7x10^9$
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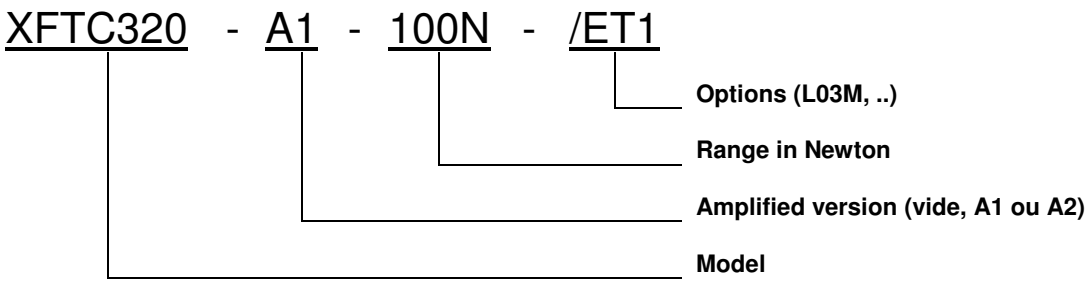
Over-range	x4	x3	x3	x2

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 100º C [-4 to 212° F]
ET2 : CTR -40 to 120º C [-40 to 248° F]
ET3 : CTR -40 to 150º C [-40 to 302° F] OTR=CTR (option not compatible with A1 and A2 versions)
ET3 : CRT -40 à 150° C PUT=PCT
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



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