XFC200R Miniature Load Cell

- **Range from 0-2N to 0-10kN [0-0.4 lbf to 0-2 klbf]**
- **Compression**
- **High Stiffness**
- **Integrated Spherical Load Button**
- **For Static and Dynamic Applications**
- **High Overload Capacity**

DESCRIPTION

The miniature size and lightweight of the XFC200R facilitates testing where these conditions are necessary. Unlike sensors with flat force application surfaces, the XFC200R incorporates a spherical load button resulting in more precise measurements. Its high stiffness, for the size and measurement ranges, allows measurements in dynamic applications. A strain relief spring strengthens the cable output. The sensing element is fitted with a fully temperature compensated Wheatstone bridge equipped with high stability micro-machined silicon strain gages.

With many years of experience as a designer and manufacturer of sensors, Measurement Specialties, Inc. often works with customers to design or customize sensors for specific uses and testing environments.

To meet your needs we also offer complete turnkey systems. The matched components (sensor, power, amplifier and digital display) are formatted, calibrated and ready for immediate use.

FEATURES

- High accuracy for low ranges
- Integrated Spherical Load Button
- High Stiffness
- Small design
- Other designs available on request

APPLICATIONS

- Robotics and effectors
- Micro component assembly tools
- Keyboard and phone buttons control
- Laboratory
- Mechanical switches control

STANDARD RANGES

Range in N	2 - 5	10 - 20 - 50	100 - 200	500 - 1000	2k	5k – 10k
Range in lbf	0.4 - 1	2 - 4 - 10	20 - 40	100 - 200	400	1k – 2k
Stiffness in N/m	$3.7x10^5$ to $1.4x10^6$	$6.1x10^6$ to $6.6x10^7$	$1.1x10^8$ to $3.2x10^8$	$2.1x10^8$	$7.3x10^8$	$1.2x10^9$ to $2.2x10^9$
Stiffness in lbf/ft	$2.5x10^4$ to $9.6x10^4$	$4.2x10^5$ to $4.5x10^6$	$7.5x10^6$ to $2.2x10^7$	$2.9x10^7$ to $1.4x10^7$	$5.0x10^7$	$8.2x10^7$ to $1.5x10^8$
Materials	Aluminum		Stainless Steel	Aluminum	Stainless Steel	

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PERFORMANCE SPECIFICATIONS

Ambient Temperature: 20±1° C (unless otherwise specified)

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]
Zero Shift in CTR	<2% F.S. / 50° C [100°F]
Sensitivity Shift in CTR	<2% of reading / 50° C [100°F]
Range (F.S.)	0-2 N to 0-10 kN [0-0.4 lbf to 0-2k 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	XFC200R
Supply Outage	10Vdc
F.S. Output	100 mV typical (50 mV for 500 N; [100 lbf] model)
Zero Offset	<±10 mV
Input Impedance/Consumption	1000 to 3000Ω
Output Impedance	500 to 1000Ω
Insulation under 50Vdc	≥100MΩ

Notes

1. Electrical Termination: Shielded cable with 4 Teflon wires (AWG36/28), standard length 2 m [6.5 ft] with strain relief spring
2. Material: Body in stainless steel or aluminum alloy
3. Protection Index: IP50

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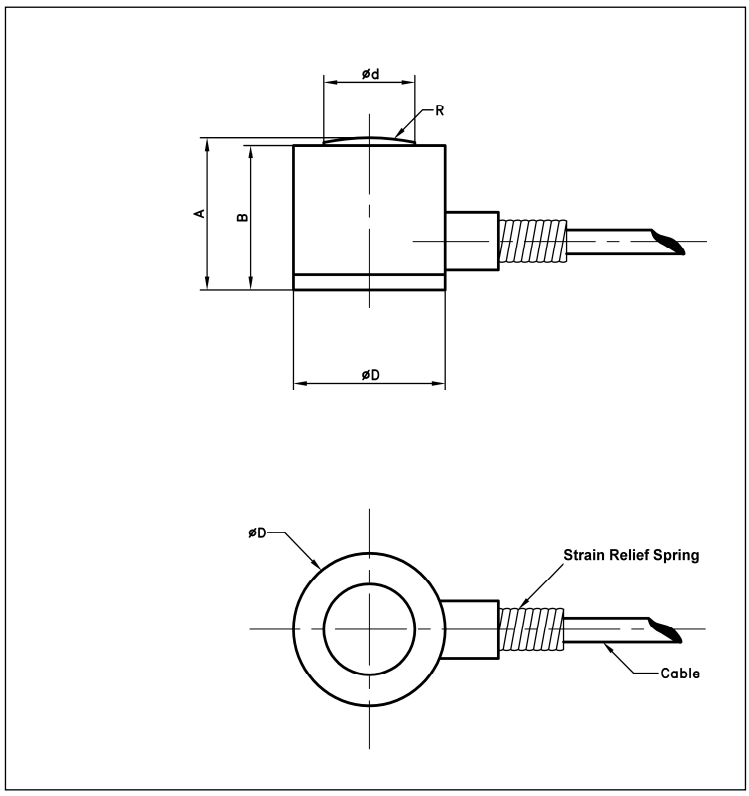
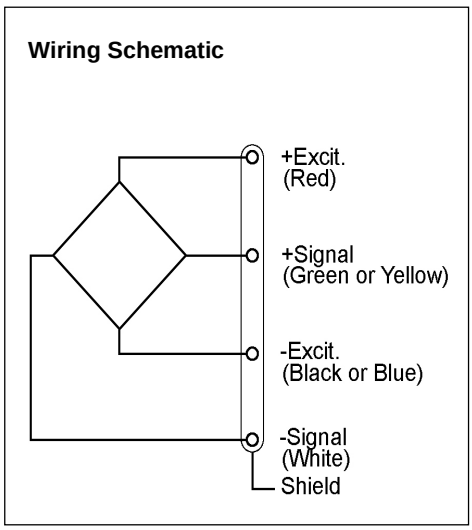
DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)





Dimensions in mm [inch]

F.S. Ranges in N [in lbf]	2-5 [0.4 - 1]	10 - 20 -50 [2 - 4 - 10]	100 - 200 [20 - 40]	500 - 1000 [100 - 200]	2000 [400]	5000 - 10000 [1000 - 2000]
A	10 [0.39]					16 [0.63]
B	9,5 [0.37]					15 [0.59]
Diameter D	10 [0.39]					16 [0.63]
Diameter d	3 [0.12]	5 [0.2]		6 [0.24]		12 [0.47]
R	15 [0.59]					30 [1.18]
Material	Aluminum	Aluminum	Stainless steel	Aluminum	Stainless steel	Stainless steel
Stiffness in lbf/ft	$2.5x10^4$ to $9.6x10^4$	$4.2x10^5$ to $4.5x10^6$	$7.5x10^6$ to $2.2x10^7$	$2.9x10^7$ to $1.4x10^7$	$5.0x10^7$	$8.2x10^7$ to $1.5x10^8$
Over range w/o damage	x4	x4	x3	x2	x2	x2
Over range w/o destruction	x6	x6	x5	x3	x3	x3

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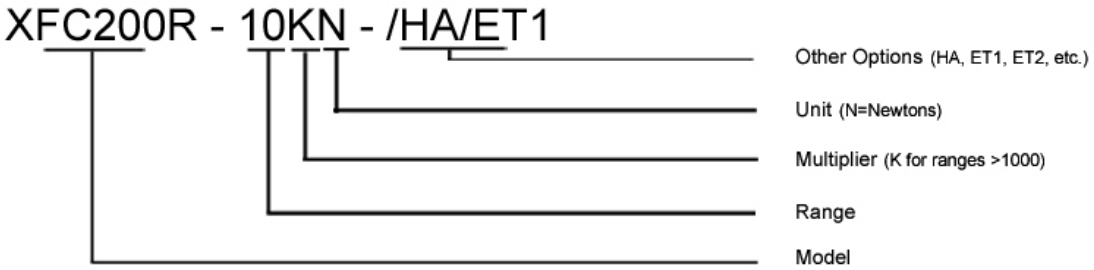
OPTIONS

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
HA	: Accuracy (CNL&H) ≤ ±0.5% F.S.
LC"x"	: Additional cable length to standard length (in m) (**Note** : "X" = Custom value)
* Order Flat Force application surface with reference **XFC200**.	

ORDERING INFO



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