

# XFL225D Miniature Load Cell



- 0-10 N to 0-5 kN [0-2 lbf to 0-1 klbf]
- Compression
- Very Flat
- Diameter 25mm [0.98"]
- Load Washer Model
- For Static and Dynamic Applications
- Strain Relief Spring

## DESCRIPTION

The XFL225D series is a very flat miniature load cell with a temperature compensation module integrated into the output cable. This design allows Measurement Specialties, Inc. to manufacture extremely small sensors without sacrificing thermal zero and sensitivity performance.

The sensing element is fitted with a fully temperature compensated Wheatstone bridge equipped with high stability micro-machined silicon strain gages. The XFL225D is developed for measuring large full scale ranges up to 5000N; 1000 lbf and can withstand considerable overloads. It can measure strain during compression in static and dynamic applications. A strain relief spring strengthens the cable output. This sensor is available in a load washer model (the diameter of the hole is 8.2 mm) to measure bolt tightening forces.

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

- Small size
- Flat sensor
- Inside hole  $\Phi$  8mm or flat surface
- Other designs as special on request
- Temperature compensated

## APPLICATIONS

- Strain table measurement
- Micro component assembly tools
- Screw and insert test benches
- Press fit monitoring
- Laboratory

## STANDARD RANGES

<b>F.S. Ranges in N</b>	10 – 20 – 50 - 100	200 – 500 – 1k	2k – 5k
<b>F.S. Ranges in lbf</b>	2 – 4 – 10 - 20	40 – 100 - 200	400 – 1k
<b>Stiffness in N/m</b>	$1.1 \times 10^5$ to $5.8 \times 10^6$	$2.0 \times 10^7$ to $7.3 \times 10^8$	$2.0 \times 10^7$ to $7.3 \times 10^8$
<b>Stiffness in lbf/ft</b>	$6.9 \times 10^3$ to $4.0 \times 10^5$	$1.4 \times 10^5$ to $5.0 \times 10^7$	$1.4 \times 10^5$ to $5.0 \times 10^7$
<b>Material</b>	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.)	0-10 N to 0-5 kN [0-2 lbf to 0-1000 lbf]
Over-Range	
Without Damage	2 x F.S.
Without Destruction	3 x F.S.
Accuracy	
Linearity	≤±1% F.S.
Hysteresis	≤±1% F.S.

### Electrical Characteristics

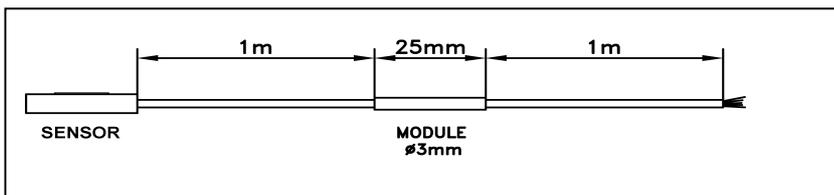
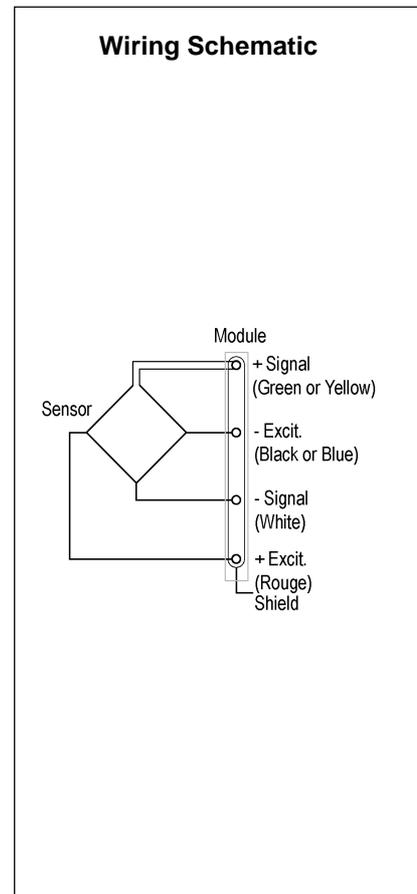
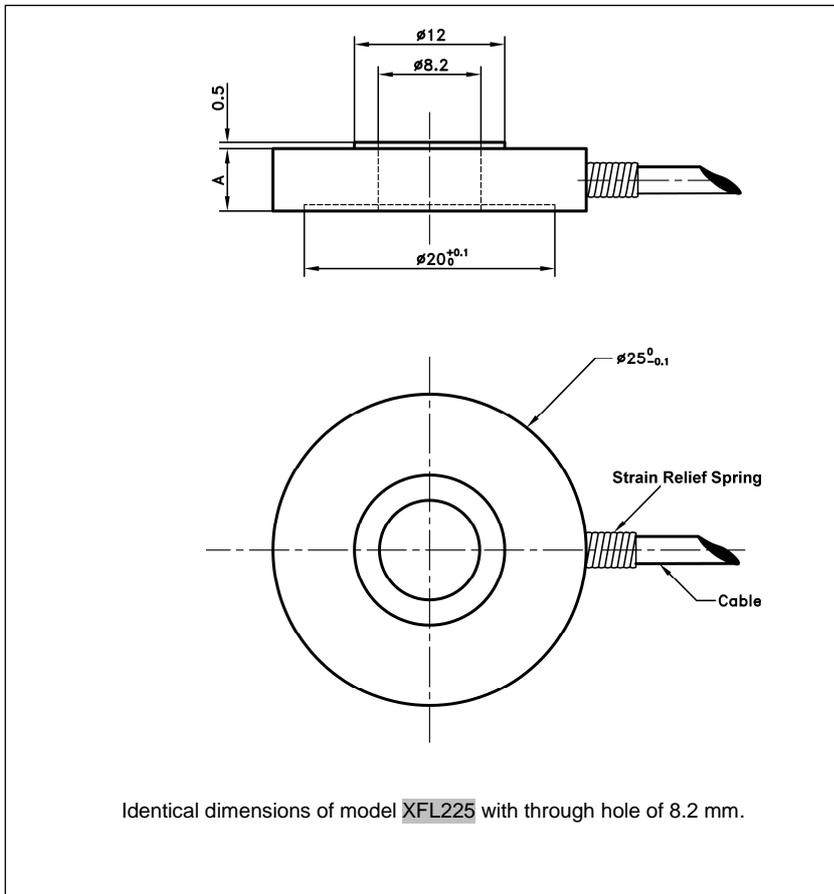
Model	XFL225D
Supply Outage	10Vdc
F.S. Output	100 mV
Zero Offset	<±10 mV
Input Impedance/Consumption	1000 to 3000Ω
Output Impedance	500 to 1000Ω
Insulation under 50Vdc	≥100MΩ

### Notes

1. Electrical Termination: Cable: Shielded cable with 4 Teflon wires (AWG36), standard length 2 m [6.5 ft] with strain relief spring ; Compensation module at 1m [3.25 ft] from transducer
2. Material: Body in stainless steel or aluminum alloy depending on F.S.
3. Protection Index: IP50

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## DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)



Dimensions in mm [inch]

### Mechanical Characteristics

F.S. Ranges in N [in lbf]	10 - 20 - 50 - 100 [2 - 4 - 10 - 20]	200 - 500 - 1000 [40 - 100 - 200]	2000 - 5000 [400 - 1000]
A	3 [0.12]		5 [0.2]
Material	Aluminum Alloy	Stainless Steel	Stainless Steel
Stiffness in N/m	$1.1 \times 10^5$ to $5.8 \times 10^6$	$2.0 \times 10^7$ to $7.3 \times 10^8$	$2.0 \times 10^7$ to $7.3 \times 10^8$
Stiffness in lbf/ft	$6.9 \times 10^3$ to $4 \times 10^5$	$1.4 \times 10^6$ to $5 \times 10^7$	$1.4 \times 10^6$ to $5 \times 10^7$

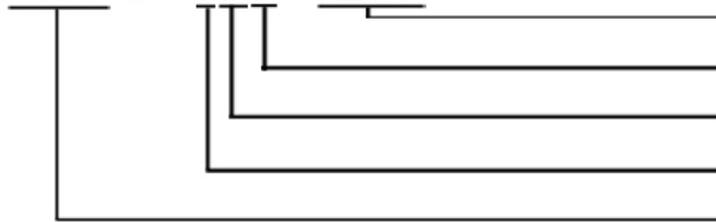
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## OPTIONS

<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
<b>LC"x"</b>	: Additional cable length to standard length (in m) ( <b>Note</b> : "X" = Custom value)
* Order Flat Force application surface without through hole with reference <b>XFL225</b> .	

## ORDERING INFO

XFL225D - 5KN - /ET1



Other Options (ET1, ET2, etc.)

Unit (N=Newtons)

Multiplier (K for ranges >1000)

Range

Model

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