



XFL212R

Compression Miniature Load Cell

SPECIFICATIONS

- Ranges from 0-5 to 0-500N [0-1 to 100 lbf]
- Extremely Flat 3,5 mm [0.14"]
- Diameter Only 12 mm [0.49"]
- Integrated Spherical Load Button

The **XFL212R** series is an extraordinarily thin miniature load cell with a temperature compensation module integrated into the output cable. This design allows TE CONNECTIVITY to manufacture extremely small sensors without sacrificing thermal zero and sensitivity performance.

The **XFL212R** measures strain during compression in static and dynamic applications. Unlike sensors with flat force application surfaces, the **XFL212R** incorporates a spherical load button, which assures more precise loading and in return more accurate measurements.

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 its performance at low ranges and frequencies. The sensor is available in aluminum alloy or stainless steel, depending on the full scale range and can withstand considerable overloads.

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

FEATURES

- Load Washer Model
- Flat sensor
- High Stiffness
- Integrated Spherical Load Button
- Other designs available on request

APPLICATIONS

- Strain table measurement
- Micro component assembly tools
- Mechanical switches control
- Laboratory
- Robotic

STANDARD RANGES

| Ranges (FS) | | Material | Stiffness | | Overrange | | Linearity | Hysteresis |
|-------------|-----|-----------------|----------------------|----------------------|----------------|---------------------|------------|------------|
| N | Lbf | | In N/m | In lbf/ft | Without Damage | Without Destruction | | |
| 5 | 1 | Aluminum | 5.78x10 ³ | 8.66x10 ⁵ | x2 | x3 | < ±1% F.S. | < ±1% F.S. |
| 10 | 2 | Aluminum | 5.26x10 ³ | 1.90x10 ⁶ | | | | |
| 20 | 4 | Aluminum | 4.76x10 ³ | 4.20x10 ⁶ | | | | |
| 50 | 10 | Aluminum | 4.68x10 ³ | 1.07x10 ⁷ | | | | |
| 100 | 20 | Aluminum | 4.92x10 ³ | 2.03x10 ⁷ | | | | |
| 200 | 40 | Stainless Steel | 4.97x10 ³ | 4.02x10 ⁷ | | | | |
| 500 | 100 | Stainless Steel | 8.88x10 ³ | 5.63x10 ⁷ | | | | |

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

| Ranges (FS) | | Operating Temperature Range (OTR) | | Compensated Temperature Range (CTR) | | Th. ZeroShift in CTR /50°C | Th. Sensitivity Shift in CTR /50°C |
|-------------|-----|-----------------------------------|--------------|-------------------------------------|-------------|----------------------------|------------------------------------|
| N | Lbf | Celsius | Fahrenheit | Celsius | Fahrenheit | | |
| All ranges | | -40 to 120°C | -40 to 250°F | 0 to 60°C | 32 to 140°F | < ±2%FS | < ±2% |

ELECTRICAL CHARACTERISTICS

| Ranges (FS) | | Natural Frequency response | Power supply | Sensitivity "FSO" | Offset | Input Impedance Ze | Output Impédance Zs |
|-------------|-----|----------------------------|--------------|-------------------|----------|--------------------|---------------------|
| bar | Psi | | | | | | |
| 5 | 1 | | 10 Vdc | 12 mV/V | < ±1mV/V | 1500 Ω | 500 Ω |
| 10 | 2 | | | 12 mV/V | | | |
| 20 | 4 | | | 12 mV/V | | | |
| 50 | 10 | | | 12 mV/V | | | |
| 100 | 20 | | | 12 mV/V | | | |
| 200 | 40 | | | 12 mV/V | | | |
| 500 | 100 | | | 15 mV/V | | | |

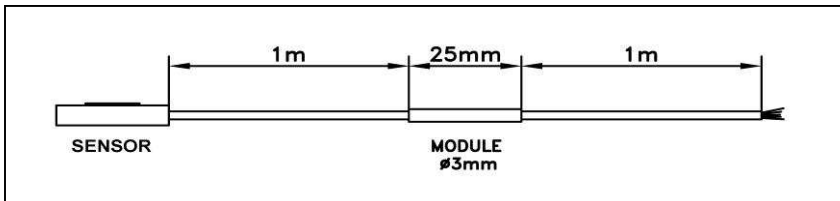
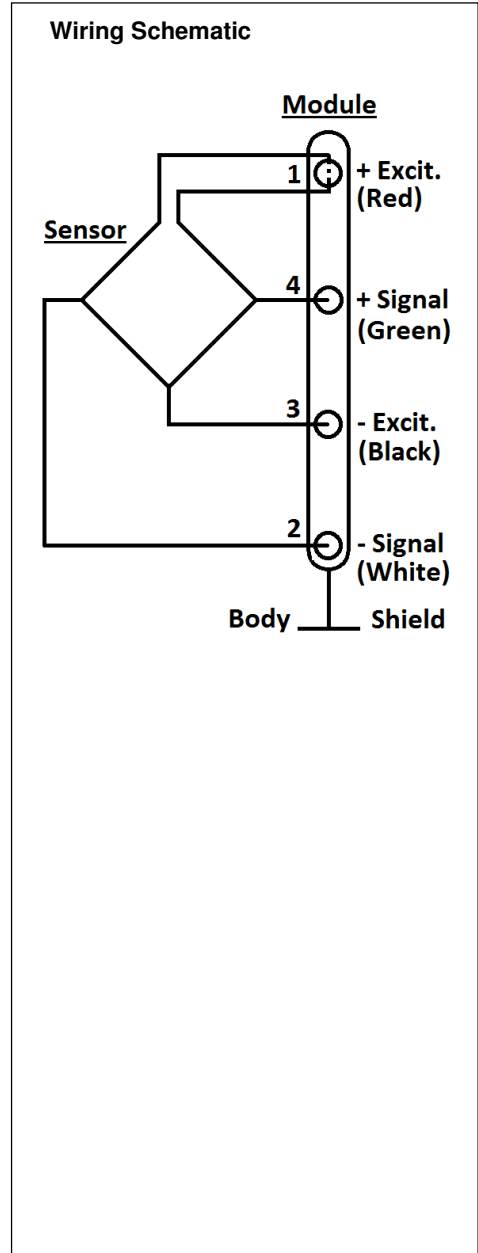
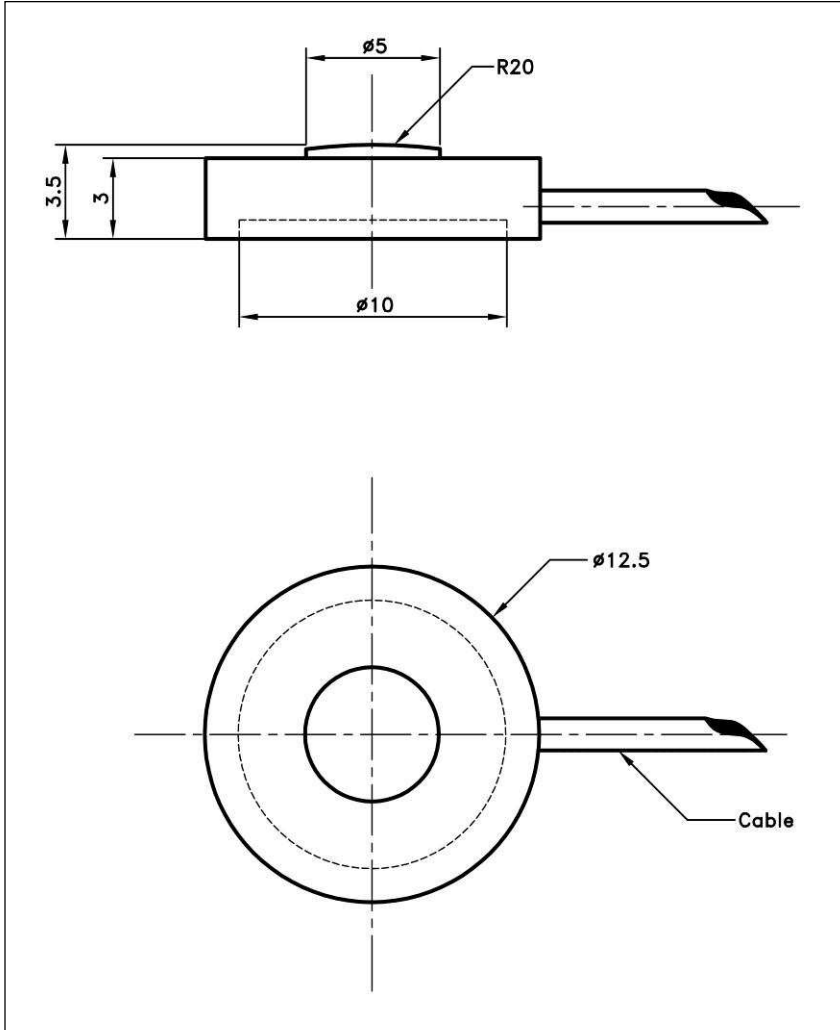
Notes

1. Electrical Termination: 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
3. Protection Index: IP50
4. CE conformance according to EN 61010-1, EN 50081-1, EN 50082-1

XFL212R

Miniature Load Cell

DIMENSIONS & WIRING SCHEMATIC (METRIC)



Dimensions in mm [inch]

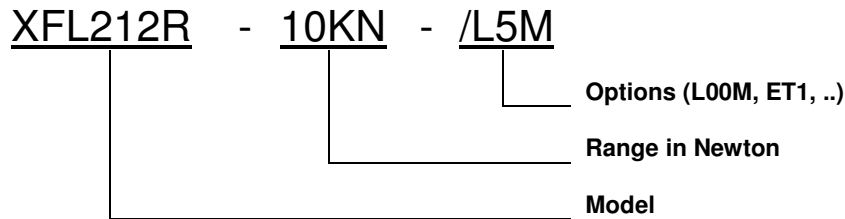
XFL212R

Miniature Load Cell

OPTIONS

| | |
|-----------------------------------------------------------------------|---------------------------------------------------------------------|
| Z0 | : CTR -20 to 20° C [- to -° F] |
| Z1 | : CTR -20 to 40° C [- to -° F] |
| Z2 | : CTR 20 to 80° C [- to -° F] |
| Z35 | : CTR 20 to 120° C [- to 248° F] OTR=CTR |
| L00M | : special cable length, replace "00" with total length in meters |
| M00M | : special module position, replace "00" with total length in meters |
| * Order Flat Force application surface with reference XFL212 . | |

ORDERING INFO



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