

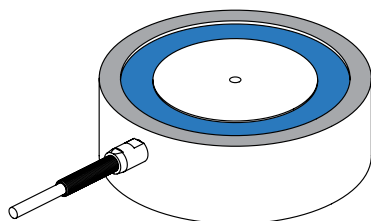
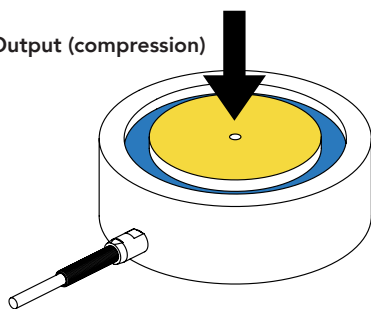


## FEATURES

- Fast response time
- Robust strain relief
- Compatible in load washer applications
- Offered in a variety of capacities and inner diameters

- Non-loading surface, do not contact
- Active End
- Fixed End

+ Output (compression)



## SPECIFICATIONS

### PERFORMANCE

Nonlinearity	±0.5% of RO
Hysteresis	±0.5% of RO
Nonrepeatability	±0.5% of RO

### ELECTRICAL

Rated Output (RO)	2 mV/V nom
Excitation (VDC or VAC)	18 max
Bridge Resistance	700 Ohm nom
Insulation Resistance	≥500 MOhm @ 50 VDC
Connection	#24 AWG, 4 conductor, braided shielded Teflon cable, 10 ft [3 m] long
Wiring/Connector Code	WC1

### MECHANICAL

Capacities	15000 lb* [66723 N]*, 30000 lb* [133440 N]*, 50000 lb* [222400 N]*
Weight (approximate)	26 oz [737 g]
Safe Overload	150% of RO
Deflection	0.002 in [0.05 mm] nom
Material	17-4 PH stainless-steel
IP Rating	IP64

### TEMPERATURE

Operating Temperature	-60 to 200°F (-50 to 93°C)
Compensated Temperature	60 to 160°F (15 to 72°C)
Temperature Shift Zero	±0.005% of RO/°F (0.01% of RO/°C)
Temperature Shift Span	±0.005% of Load/°F (0.01% of Load/°C)

### CALIBRATION

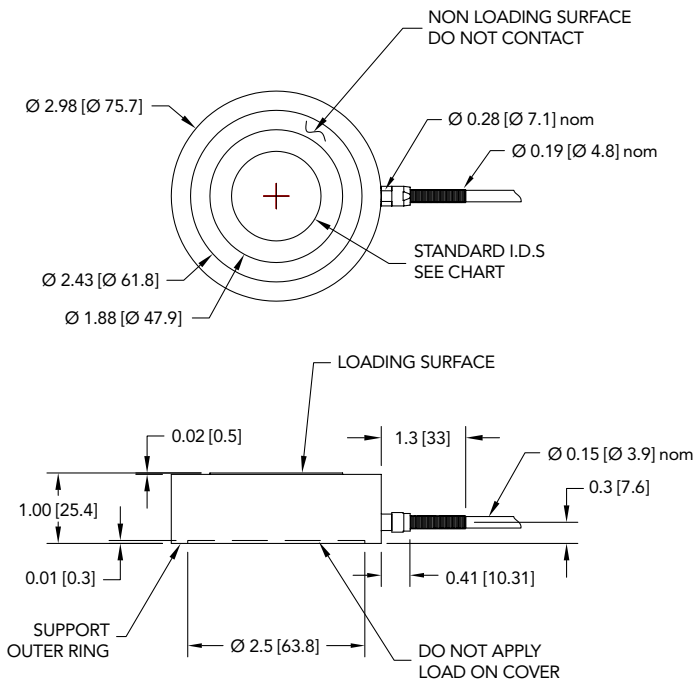
Calibration Test Excitation	10 VDC
Calibration (standard)	5-pt Compression
Shunt Calibration Value	100 kOhm

\*Commonly stocked capacities

### CONFORMITY

RoHS	EU 2015/863
CE	EN55011; EN61326-1

**DIMENSIONS inches [mm]**



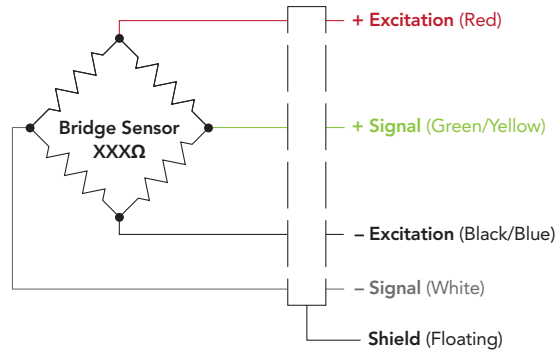
**INNER DIAMETER**

ID	Dimension <sup>+0.01</sup> <sub>-0.00</sub> [ <sup>+0.25</sup> <sub>-0.00</sub> ]
1/8	0.134 [3.40]
3/16	0.197 [5.01]
1/4	0.259 [6.58]
3/8	0.384 [9.75]
7/16	0.447 [11.35]
1/2	0.509 [12.93]
5/8	0.634 [16.10]
3/4*	0.769 [19.53]
7/8	0.894 [22.71]
1	1.019 [25.88]
1 1/4*	1.269 [32.23]

\*Commonly stocked inner diameters

**WIRING CODE (WC1 WITH SHIELD)**

RED	+ EXCITATION
BLACK	- EXCITATION
GREEN	+ SIGNAL
WHITE	- SIGNAL
SHIELD	FLOATING



**Note:** While torquing bolts, high tension forces will occur during installation, which could result in overloading the sensor. FUTEK recommends connecting the sensor to a system in order to monitor the applied forces. FUTEK is not liable or responsible for the mishandling of the sensor during installation.

**CAPACITIES : CABLE TYPE**

ITEM #	lb	KN	IP	Nominal ID
FSH04234	2000	8.896	IP64	3/4 in [19.05 mm]
FSH04247	2000	8.896	IP64	1-1/4 in [31.75 mm]
FSH04240	5000	22.241	IP64	7/8 in [22.22 mm]
FSH04876	30000	133.45	IP64	1-1/4 in [31.75 mm]
FSH04246	50000	222.41	IP64	1 in [25.4 mm]
FSH04253	50000	222.41	IP64	1-1/4 in [31.75 mm]

Drawing Number: F11427-B

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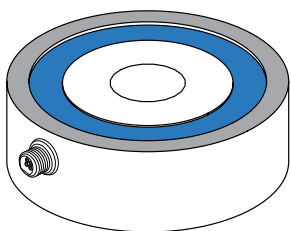
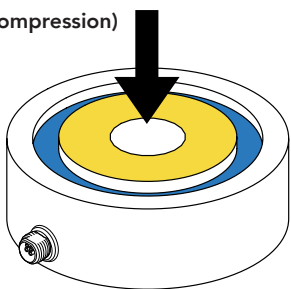


## FEATURES

- Compatible in load washer applications
- Offered in a variety of capacities and inner diameters
- Low power consumption
- Fast response ( $\mu$ s) and low deflection
- Environmental Protection, IP67 Rated
- Water Resistant and Outdoor Rated
- Quick Disconnect Cable

- Non-loading surface, do not contact
- Active End
- Fixed End

+ Output (compression)



## SPECIFICATIONS

### PERFORMANCE

Nonlinearity	$\pm 0.5\%$ of RO
Hysteresis	$\pm 0.5\%$ of RO $\pm 1\%$ of RO (50,000 lbs)
Nonrepeatability	$\pm 0.5\%$ of RO

### ELECTRICAL

Rated Output (RO)	2 mV/V nom
Excitation (VDC or VAC)	18 max
Bridge Resistance	700 Ohm nom
Insulation Resistance	$\geq 500$ MOhm @ 50 VDC
Connection	4 Position Micro Receptacle
Wiring Code	CC19

### MECHANICAL

Capacities	Refer to online store for available capacities (up to 50,000 lbs) and ID Size Combinations.
Weight (approximate)	26 oz [737 g]
Safe Overload	150% of RO
Deflection	0.002 in [0.05 mm] nom
Material	17-4 PH stainless-steel
IP Rating	IP67

### TEMPERATURE

Operating Temperature	-60 to 200°F (-50 to 93°C)
Compensated Temperature	60 to 160°F (15 to 72°C)
Temperature Shift Zero	$\pm 0.005\%$ of RO/°F (0.01% of RO/°C)
Temperature Shift Span	$\pm 0.005\%$ of Load/°F (0.01% of Load/°C)

### CALIBRATION

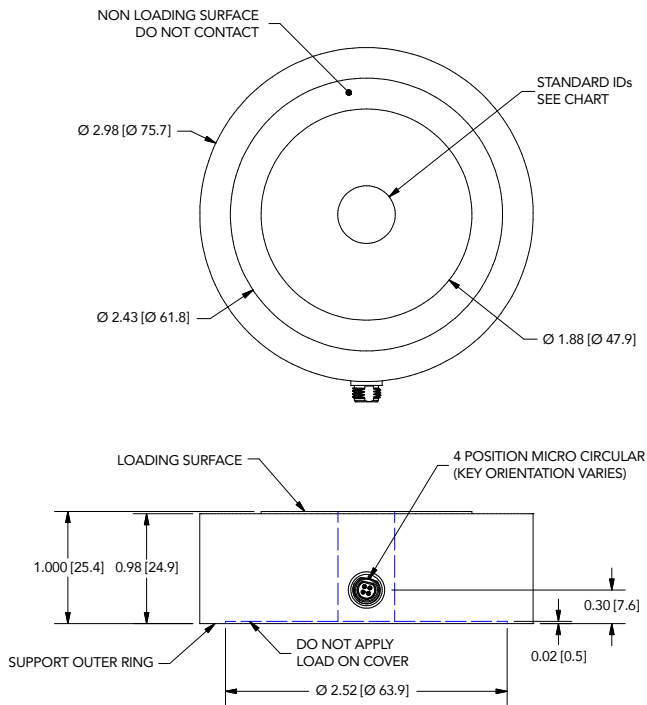
Calibration Test Excitation	10 VDC
Calibration (standard)	5-pt Compression
Shunt Calibration Value	100 kOhm

### CONFORMITY

RoHS	EU 2015/863
CE	EN55011; EN61326-1

## DIMENSIONS inches [mm]

TOLERANCE:  
 .X ± 0.1" [2.5]  
 .XX ± 0.01" [0.25]  
 .XXX ± 0.005" [0.127]



## FUTEK 4 PIN MICRO CIRCULAR (CC19)

1	+ EXCITATION	Red
2	- EXCITATION	Black
3	- SIGNAL	White
4	+ SIGNAL	Green



**Note:** While torquing bolts, high tension forces will occur during installation, which could result in overloading the sensor. FUTEK recommends connecting the sensor to a system in order to monitor the applied forces. FUTEK is not liable or responsible for the mishandling of the sensor during installation.

## CAPACITIES : CONNECTOR TYPE

ITEM #	lb	KN	IP	Nominal ID
FSH04678	5000	22.21	IP67	1 in [25.4 mm]
FSH04684	5000	22.21	IP67	1-1/4 in [31.75 mm]
FSH04690	5000	22.21	IP67	1-1/2 in [38.1 mm]
FSH04670	10000	44.48	IP67	3/4 in [19.05 mm]
FSH04679	10000	44.48	IP67	1 in [25.4 mm]
FSH04685	10000	44.48	IP67	1-1/4 in [31.75 mm]
FSH04680	15000	66.72	IP67	1 in [25.4 mm]
FSH04686	15000	66.72	IP67	1-1/4 in [31.75 mm]
FSH04667	20000	88.96	IP67	5/8 in [15.88 mm]
FSH04671	20000	88.96	IP67	3/4 in [19.05 mm]
FSH04687	20000	88.96	IP67	1-1/4 in [31.75 mm]
FSH04675	30000	133.45	IP67	7/8 in [22.22 mm]
FSH04681	30000	133.45	IP67	1 in [25.4 mm]
FSH04688	30000	133.45	IP67	1-1/4 in [31.75 mm]
FSH04662	50000	222.41	IP67	3/8 in [9.53 mm]
FSH04665	50000	222.41	IP67	1/2 in [12.7 mm]
FSH04673	50000	222.41	IP67	3/4 in [19.05 mm]
FSH04676	50000	222.41	IP67	7/8 in [22.22 mm]
FSH04689	50000	222.41	IP67	1-1/4 in [31.75 mm]

## INNER DIAMETER (Actual)

ID	Dimension <sup>+0.01</sup> <sub>-0.00</sub> [ <sup>+0.25</sup> <sub>-0.00</sub> ]
3/8	0.384 [9.75]
1/2	0.509 [12.93]
9/16	0.572 [14.53]
5/8	0.634 [16.10]
3/4	0.769 [19.53]
7/8	0.894 [22.71]
1	1.019 [25.88]
1 1/4	1.269 [32.23]

Drawing Number: F11552

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RoHS



U.S. Manufacturer