

# FX1901 OEM Compression Load Cell



- High Reliability Design for OEM, Appliance and Medical Applications
- 10 – 100 lbf Ranges
- Compact Coin Cell Package
- Anti-Rotation Mounting Features

## DESCRIPTION

The FX1901 units are intended for OEM use in laboratory, hospital or consumer product applications, establishing a breakthrough price/performance value for compression load cells. The FX1901 is a 1% load cell device with full scale ranges of 10, 25, 50 or 100lbf compression. This new, low-cost technology enables force sensing in a whole new class of "smart" consumer and medical products.

MEAS' proprietary Microfused™ technology, derived from demanding aerospace applications, employs micro-machined piezoresistive strain gages fused with high temperature glass to a high performance stainless steel force measuring flexure. Microfused™ technology eliminates age-sensitive organic epoxies used in traditional load cell designs, providing excellent long term span and zero stability. Operating at very low strains, Microfused™ technology provides an essentially unlimited cycle life expectancy, superior resolution, high over-range capabilities and a ratiometric span of 20 mV/V. The combination of stamped flexures and micro miniaturized MEMs strain gages permits low costs to be achieved in high volume OEM applications ranging from disposable medical devices to durable appliances and exercise equipment.

## FEATURES

- Small
- Low Noise
- Robust: High Over-Range
- High Reliability
- mV Output: 20 mV/V Nominal
- Low Deflection
- Fast
- Essentially Unlimited Cycle Life

## APPLICATIONS

- Assembly Forces
- Physical Therapy Devices
- Patient Weight
- Hand Tool Forces
- Chiropractic and Exercise Equipment
- Consumables Monitoring: Copy Equipment and Vending systems
- Appliance Payload Monitoring: Washers, Dryers, Water Weight, Extraction Efficiency
- Appliance Unbalance Monitoring

## STANDARD RANGES

Range	lbf
0 to 10	•
0 to 25	•
0 to 50	•
0 to 100	•

# FX1901 OEM Compression Load Cell

## PERFORMANCE SPECIFICATIONS

Supply Voltage: 5.0V, Ambient Temperature: 25°C (unless otherwise specified)

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Span	16	20	24	mV/V	1
Zero Force Output		±15		mV	1
Accuracy (non linearity, hysteresis and repeatability)		±1		%Span	2
Input Resistance		3		kΩ	
Output Resistance		2.2		kΩ	
Temperature Error – Zero		±8		%Span	3
Temperature Error – Span		±2.5		%Span	3
Long Term Stability (1 year)		±1		%Span	
Maximum Overload			2.5X	Rated	
Compensated Temperature	0		50	°C	
Operating Temperature	0		50	°C	
Storage Temperature	-40		+85	°C	
Excitation Voltage	2	5	10	Vdc	
Isolation Resistance (250Vdc)	50			MΩ	
Deflection at Rated Load			0.05	mm	
Humidity	0		90	%RH	
Weight		8.1		grams	

For custom configurations, consult factory.

### Notes

1. Ratiometric to supply.
2. Best fit straight line.
3. Maximum temperature error over compensated range with respect to 25°C.

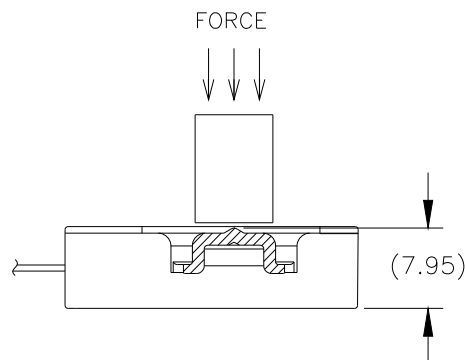
### CE Compliance

IEC61000-4-2 [4 kV/ 4 kV (Air/Contact)]

IEC61000-4-3 (3 V/m)

IEC55022 Class A

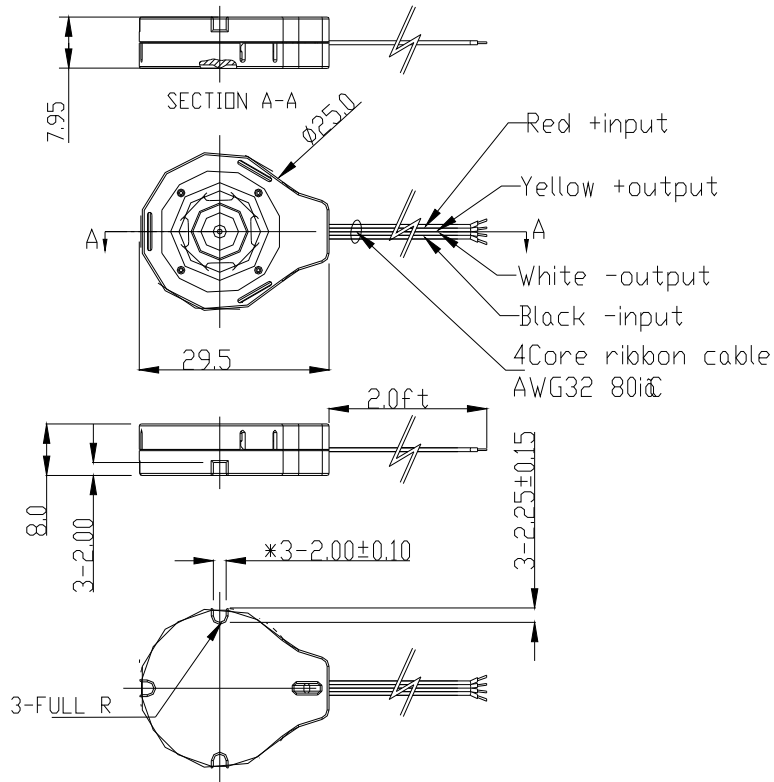
## FORCE APPLICATION



LOAD MUST ONLY BE APPLIED TO THE  
CONCENTRATOR TIP IN THE CENTER OF  
THE SENSOR TO MAINTAIN ACCURACY

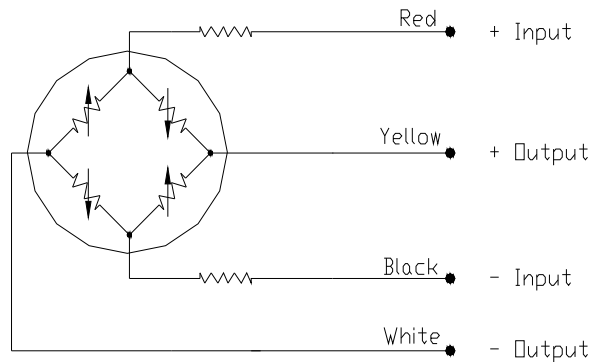
# FX1901 OEM Compression Load Cell

## DIMENSIONS



## CONNECTIONS

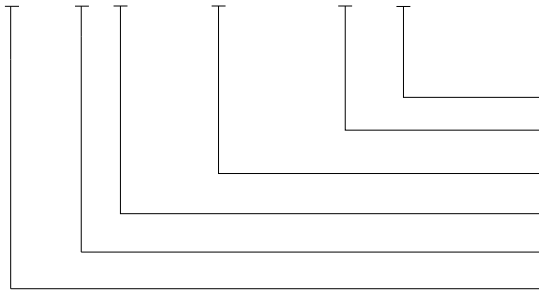
### LOAD CELL



# FX1901 OEM Compression Load Cell

## ORDERING INFORMATION

FX19 0 1 - 0001 - 100 L



Units (L = lbf)  
 Force Range  
 Specials (0001 = Standard, nnnn = Custom Design)  
 Connection (1 = 2ft Cable)  
 Output (0 = 20mV)  
 Model

### NORTH AMERICA

Measurement Specialties  
 45738 Northport Loop West  
 Fremont, CA 94538  
 Tel: 1-800-767-1888  
 Fax: 1-510-498-1578  
 Sales: [pfg.cs.amer@meas-spec.com](mailto:pfg.cs.amer@meas-spec.com)

### EUROPE

Measurement Specialties  
 (Europe), Ltd.  
 26 Rue des Dames  
 78340 Les Clayes-sous-Bois, France  
 Tel: +33 (0) 130 79 33 00  
 Fax: +33 (0) 134 81 03 59  
 Sales: [pfg.cs.emea@meas-spec.com](mailto:pfg.cs.emea@meas-spec.com)

### ASIA

Measurement Specialties  
 (China), Ltd.  
 No. 26 Langshan Road  
 Shenzhen High-Tech Park (North)  
 Nanshan District, Shenzhen 518107  
 China  
 Tel: +86 755 3330 5088  
 Fax: +86 755 3330 5099  
 Sales: [pfg.cs.asia@meas-spec.com](mailto:pfg.cs.asia@meas-spec.com)

The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. Measurement Specialties, Inc. reserves the right to make changes without further notice to any product herein. Measurement Specialties, Inc. makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does Measurement Specialties, Inc. assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. Measurement Specialties, Inc. does not convey any license under its patent rights nor the rights of others.