



## FC23

### Compression Load Cell

#### SPECIFICATIONS

- ◆ 50 – 2000 lbf Ranges
- ◆ High Level or mV
- ◆ Interchangeable
- ◆ Compact Load Button Design
- ◆ Industry Standard Packaging
- ◆ CE Compliance

The **FC23** is a high compression force sensor that creates new markets previously unrealizable due to cost and performance constraints. The FC23 offers normalized zero and span for interchangeability and is thermally compensated for changes in zero and span with respect to temperature.

The FC23 incorporates MEAS' proprietary Microfused™ technology which employs micromachined silicon piezoresistive strain gages fused with high temperature glass to a high performance stainless steel substrate. Microfused™ technology eliminates age-sensitive organic epoxies used in traditional load cell designs providing excellent long term span and zero stability. The FC23 measures direct force and is therefore not subject to lead-die fatigue failure common with competitive designs which use a pressure capsule embedded within a silicone gel-filled cavity. Operating at very low strains, Microfused™ technology provides an essentially unlimited cycle life expectancy, superior resolution, and high over-range capabilities.

The FC23 brings your OEM product to life whether you need thousands or millions of load cells annually. Although the standard model is ideal for a wide range of applications, our dedicated design team at our Load Cell Engineering Center is ready to provide you with custom designs for your OEM applications.

Please refer to models FS20 and FC22 for lower force applications.

#### FEATURES

- ◆ Interchangeable
- ◆ Low Noise
- ◆ Robust: High Over-Range Capability
- ◆ High Reliability
- ◆ Low Deflection
- ◆ Low Off Center Errors
- ◆ Fast Response Time
- ◆ Long Cycle Life Expectancy

#### APPLICATIONS

- ◆ Batch Weighing
- ◆ Robotics End-Effectors
- ◆ Variable Force Control
- ◆ Load and Compression Sensing
- ◆ Assembly Line Force Measurement
- ◆ Pumps
- ◆ Hoist and Winch Loads
- ◆ Weighing

## STANDARD RANGES

Range	lbf
0 to 0050	*
0 to 0100	*
0 to 0250	*
0 to 0500	*
0 to 1000	*
0 to 2000	*

## PERFORMANCE SPECIFICATIONS

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

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Span (Uncompensated)	95	100	105	mV	1
Span (Unamplified)	95	100	105	mV	1
Span (Amplified)	3.8	4.0	4.2	V	1
Zero Force Output (Uncompensated)	-50	0	50	mV	1
Zero Force Output (Unamplified)	-20	0	20	mV	1
Zero Force Output (Amplified)	0.3	0.5	0.7	V	1
Accuracy (non linearity, hysteresis, and repeatability)	-1		1	%Span	2
Input Resistance (Unamplified)		3		kΩ	
Input Resistance (Uncompensated)		2.2		kΩ	
Output Resistance (Unamplified & Uncompensated)		2.2		kΩ	
Temperature Error – Span (Amplified & Unamplified)	-2.5	±1	2.5	%Span	3
Temperature Error – Zero (Amplified & Unamplified)	-2.5	±1	2.5	%Span	3
Supply Voltage (Uncompensated)	2	3.3	6.7	V	1
Supply Voltage (Unamplified)	2	5	10	V	1
Supply Voltage (Amplified)	4.5	5	5.5	V	1
Response Time (10% to 90%)		1.0		ms	
Long Term Stability (1 year)		±1		%Span	
Maximum Overload			2.5X	Rated	
Compensated Temperature	0		50	°C	
Operating Temperature	-40		+85	°C	
Storage Temperature	-40		+85	°C	
Isolation Resistance (250Vdc)	50			MΩ	
Deflection at Rated Load			0.05	mm	
Humidity	0		90	%RH	
Weight		47.23		grams	

For custom configurations, consult factory.

### Notes

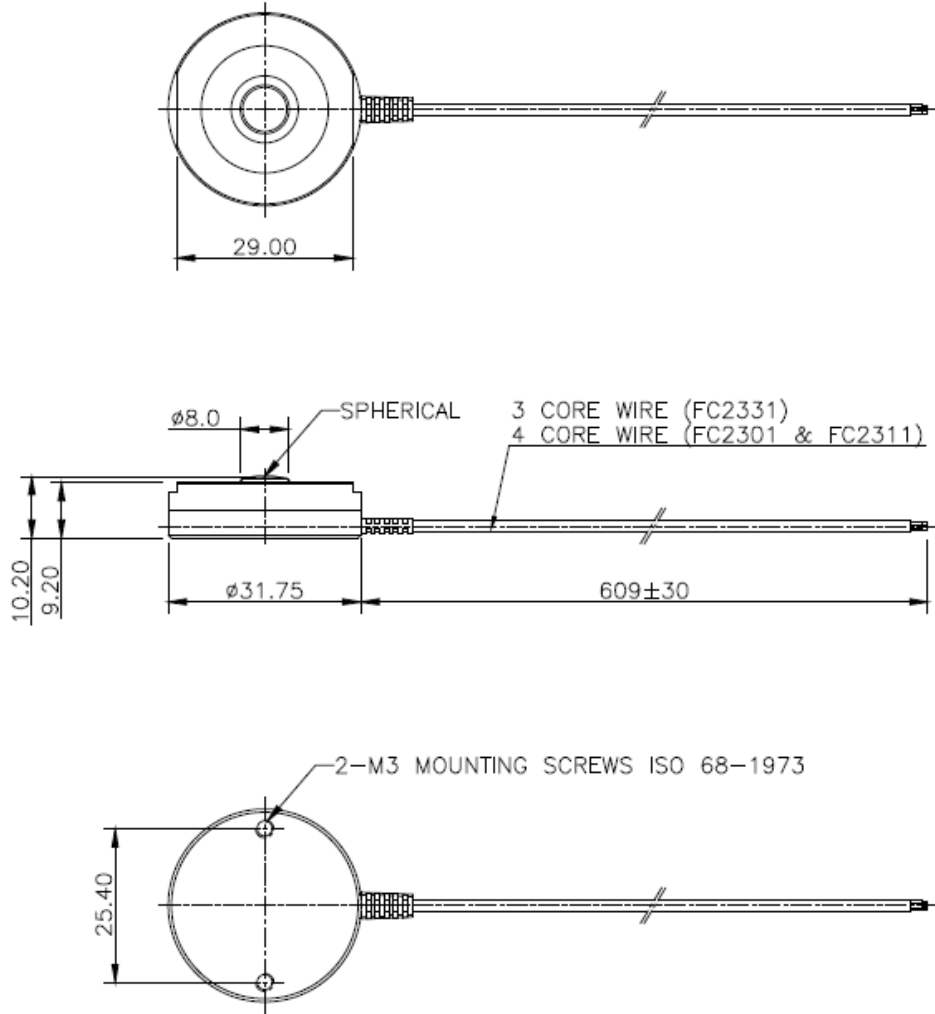
1. Ratiometric to supply.
2. Best fit straight line.
3. Maximum temperature error over compensated range with respect to 25°C.

### CE Compliance

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

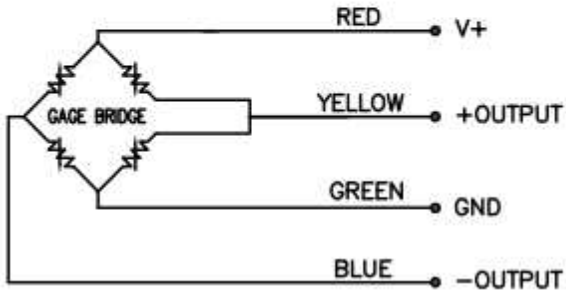
IEC61000-4-3: (3 V/m)

**DIMENSIONS**

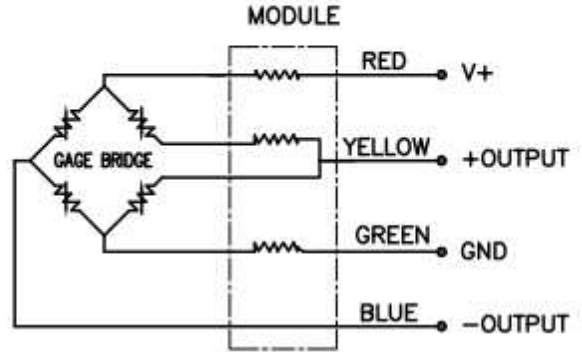


**CONNECTIONS**

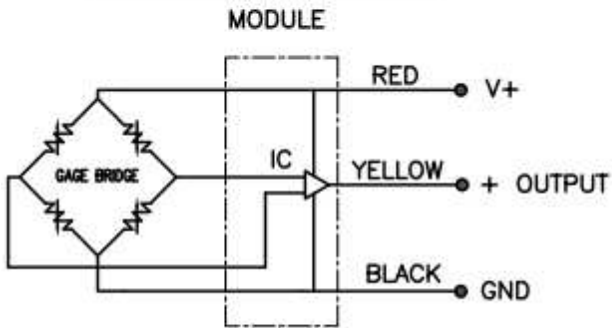
**FC2301:**  
MILLIVOLT OUTPUT VERSION



**FC2311:**  
MILLIVOLT OUTPUT VERSION

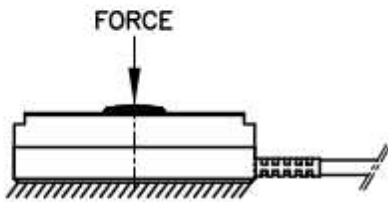


**FC2331:**  
AMPLIFIED OUTPUT VERSION



**WIRE NOTE:**

P/N	WIRE CONNECTIONS
FC2301 FC2311	4 CORE WIRE (AWG32 OR AWG34, 125°C, 300V) YELLOW: +OUTPUT BLUE: -OUTPUT RED: V+ GREEN: GND
FC2331	3 CORE WIRE (AWG32 OR AWG34, 125°C, 300V) RED: V+ YELLOW: +OUTPUT BLACK: GND



**ORDERING INFORMATION**

<b>FC23</b>	<b>3</b>	<b>1</b>	<b>- 0000</b>	<b>- 500</b>	<b>-</b>	<b>L</b>
<b>Model Name</b>						
<b>Output</b>						
0=Uncompensated	3=0-100mV					
3=0.5-4.5V						
<b>Connection</b>						
1=2ft Cable						
<b>Specials</b>						
0000						
<b>Force Range</b>						
0050	0100	0250				
0500	1000	2000				
<b>Multiplier</b>						
"-"]=None	K=x1000					
<b>Units</b>						
L=lbf	N=Newtons					

**NORTH AMERICA**

Measurement Specialties, Inc.,  
 a TE Connectivity company  
 45738 Northport Loop West  
 Fremont, CA 94538  
 Tel: +1 800 767 1888  
 Fax: +1 510 498 1578  
[customercare.frmt@te.com](mailto:customercare.frmt@te.com)

**EUROPE**

MEAS France SAS,  
 a TE Connectivity company  
 26 Rue des Dames  
 78340 Les Clayes-sous-Bois, France  
 Tel: +33 (0) 130 79 33 00  
 Fax: +33 (0) 134 81 03 59  
[customercare.lcsb@te.com](mailto:customercare.lcsb@te.com)

**ASIA**

Measurement Specialties (China) Ltd.,  
 a TE Connectivity company  
 No. 26 Langshan Road  
 Shenzhen High-Tech Park (North) Nanshan District,  
 Shenzhen, 518057  
 China  
 Tel: +86 755 3330 5088  
 Fax: +86 755 3330 5099  
[customercare.shzn@te.com](mailto:customercare.shzn@te.com)

**TE.com/sensorsolutions**

Measurement Specialties, Inc., a TE Connectivity company.

Measurement Specialties, TE Connectivity, TE Connectivity (logo) and EVERY CONNECTION COUNTS are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2015 TE Connectivity Ltd. family of companies All Rights Reserved.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

## [TE Connectivity:](#)

[FC23-1-1-0000-0100](#) [FC23-1-1-0000-1000](#) [FC23-1-1-0000-0500](#) [FC23-1-1-0000-2000](#) [FC23-1-1-0000-0050](#) [FC23-1-1-0000-0250](#) [FC2331-0000-0650-L](#) [FC2331-0000-0250-L](#) [FC2311-0000-0050-L](#) [FC2311-0000-0500-L](#) [FC2331-0000-1000-L](#) [FC2311-0000-2000-L](#) [FC2311-0000-1000-L](#) [FC2311-0000-0250-L](#) [FC233100000100L](#) [FC2311-0000-0500-N](#)