

FC23

Compression Load Cell

SPECIFICATIONS

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

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

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.

STANDARD RANGES

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

PERFORMANCE SPECIFICATIONS

Unless otherwise specified: Supply Voltage: 5.0V, Ambient Temperature: 25°C

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Span (mV)	95	100	105	mV	1
Span (Amplified)	3.8	4.0	4.2	V	1
Zero Force Output (mV)	-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 (mV)		3.0		kΩ	
Output Resistance (mV)		2.2		kΩ	
Temperature Error – Span (Amplified & mV)	-2.5	±1	2.5	%Span	3
Temperature Error – Zero (Amplified & mV)	-2.5	±1	2.5	%Span	3
Supply Voltage (mV)	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	

For custom configurations, consult factory.

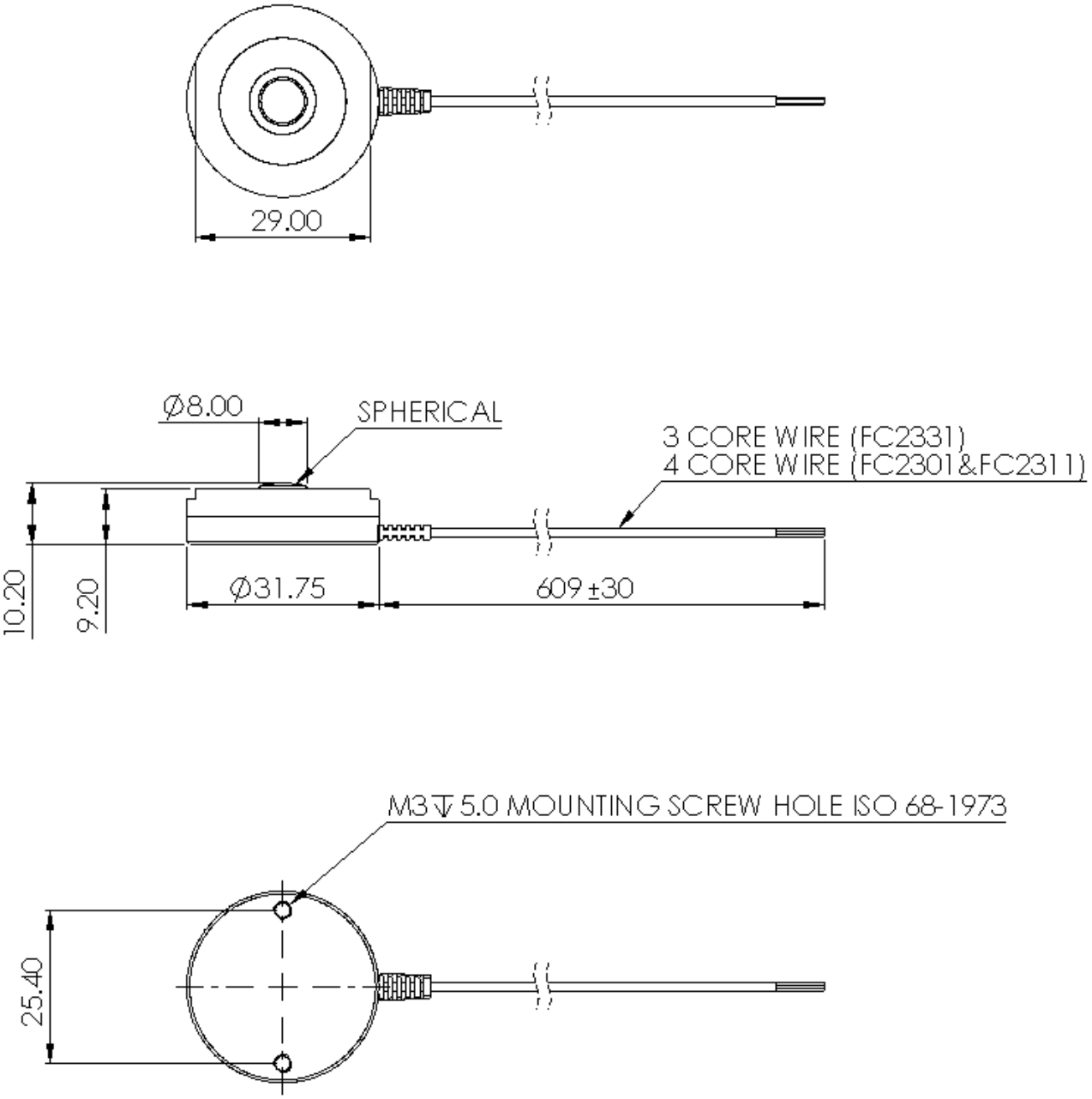
Notes

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

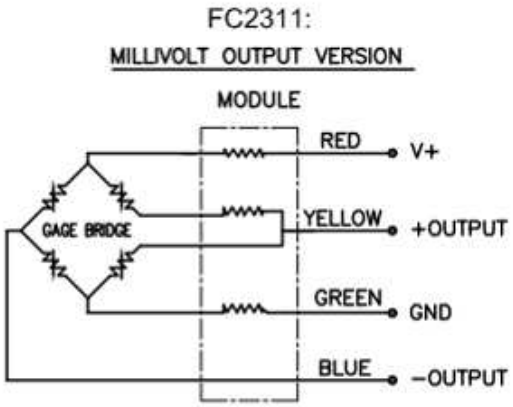
CE Compliance

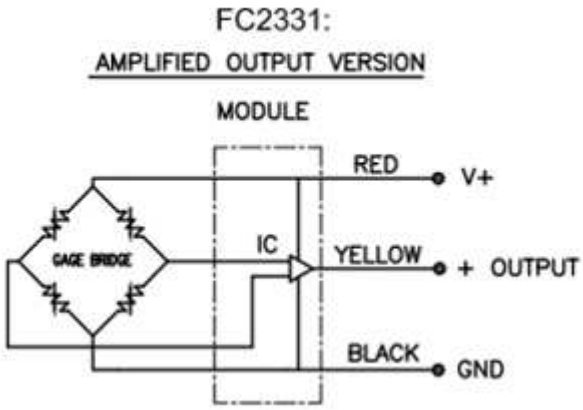
IEC61000-4-2: [4kV/ 4 kV (Air/Contact)]
IEC61000-4-3: (3 V/m)

DIMENSIONS


29.00
Ø8.00
SPHERICAL
3 CORE WIRE (FC2331)
4 CORE WIRE (FC2301&FC2311)
10.20
9.20
Ø31.75
609 ±30
M3↧5.0 MOUNTING SCREW HOLE ISO 68-1973
25.40

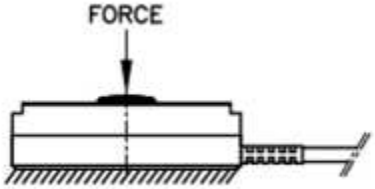
CONNECTIONS





WIRE NOTE:

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



ORDERING INFORMATION

FC23 3 1 – 0000 – 0100 - N

Outputs	
1	20 mV/V
3	0.5 – 4.5 V

Connection	
1	2ft Cable

Type	
0000	Standard Production
SXXX	Special
XXXX	EWR Customize

Force Units	
L	Lbf
N	Newtons

Multiplier	
-	None
K	X1000

Force Range (L)	Force Range (N)
0050	0250
0100	0500
0250	1000
0500	2500
1000	5000
2000	0010 K (Multiplier)

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

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

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

TE.com/sensorsolutions

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