



FS20

Low Force Compression Load Cell

SPECIFICATIONS

- 500 to 5000 Grams-Force
- Amplified Output
- Interchangeable
- Industry Standard Packaging
- CE Compliance

The FS20 is a low compression force sensor that creates new markets previously unrealizable due to cost and performance constraints. The FS20 offers normalized zero and span for interchangeability and is thermally compensated for changes in zero and span with respect to temperature.

The FS20 incorporates TE's 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 FS20 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 FS20 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 the FC22 and FC23 for higher force applications.

FEATURES

- Small Size, Low Noise
- Robust, High Reliability
- High Over-Range Capability
- Low Deflection
- Essentially Unlimited Cycle Life Expectancy
- Low Off Center Errors
- Fast Response Time
- Industry Standard Packaging
- 500 to 5000 Grams-Force Range
- Reverse Polarity Protected

APPLICATIONS

- Robotics End-Effectors
- Variable Force Control
- Load and Compression Sensing
- Medical Pumps
- Contact Sensing
- Weighing
- Household Appliances

STANDARD RANGES

Range	Grams-Force
0 to 0500	•
0 to 0750	•
0 to 1000	•
0 to 1500	•
0 to 2000	•
0 to 3000	•
0 to 5000	•

PERFORMANCE SPECIFICATIONS

Supply Voltage: 5.0V, Ambient Temperature: 25°C (unless otherwise specified). TE Connectivity reserves the right to update and change these specifications without notice.

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Excitation Voltage	4.975	5	5.025	Vdc	
Zero Output (FS2030)	0.45	0.5	0.55	Vdc	
Zero Output (FS2050)	0.95	1	1.05	Vdc	
Output Span (FS2030)	3.9	4	4.1	Vdc	
Output Span (FS2050)	2.9	3	3.1	Vdc	
Non-Linearity	-1		1	%FSO	
Zero Return	-0.80		0.80	%FSO	
Span Repeat	-0.80		0.80	%FSO	
Hysteresis	-0.80		0.80	%FSO	
Thermal Zero Shift	-0.05		0.05	%FSO/°C	1
Thermal Sensitivity Shift	-0.05		0.05	%FSO/°C	1
Zero Drift	-0.5		0.5	%FSO	3 minutes
Creeping	-0.5		0.5	%FSO	3 minutes
Isolation Resistance (250Vdc)	50			MΩ	
Safe Load Limit	2.5X			Rated	
Operating Temperature	-40		+85	°C	
Storage Temperature	-40		+85	°C	
Compensated Temperature	0		50	°C	
Humidity	0		90	%RH	
Deflection at Rated Load			0.05	mm	
Endurance		1.0 E+6		FS cycles	

For custom configurations, consult factory.

Notes

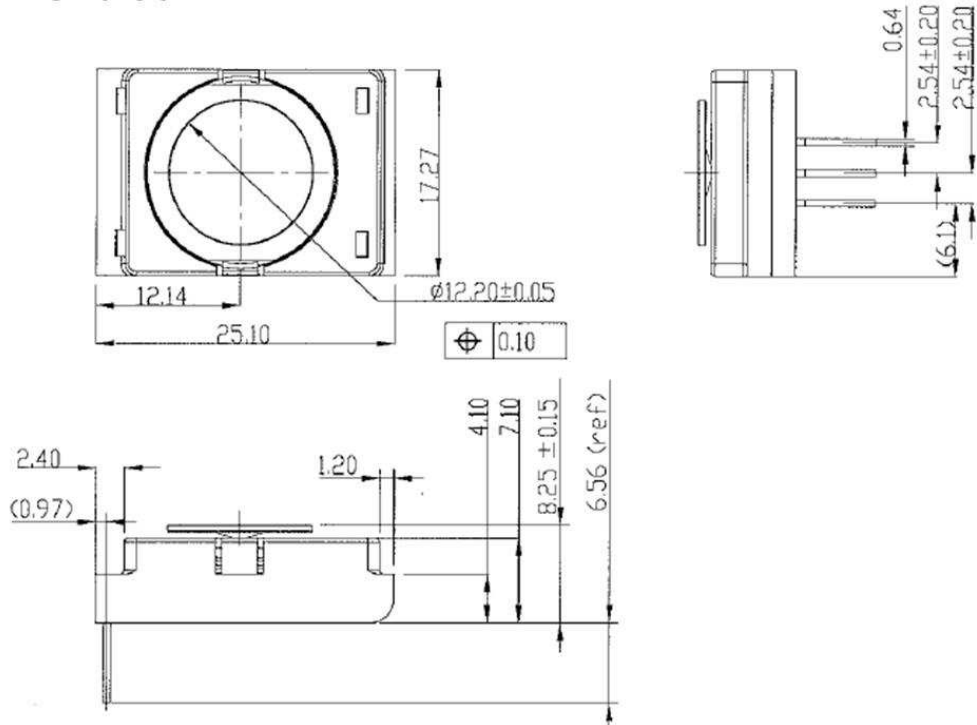
1. Maximum temperature error over compensated range with respect to 25°C

CE Compliance

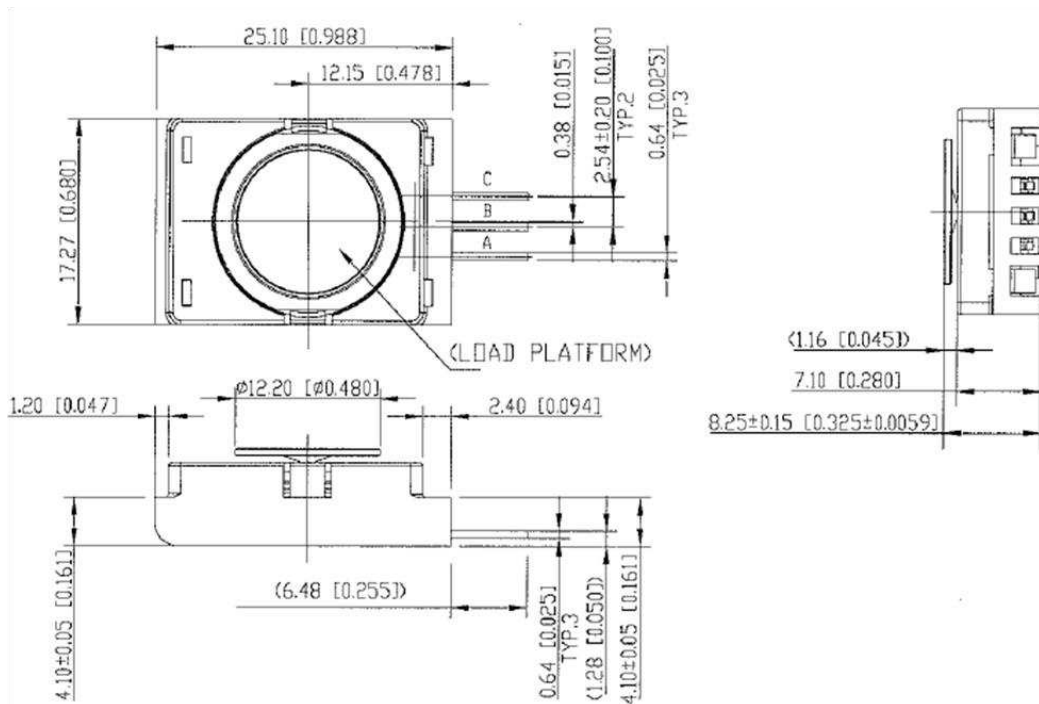
IEC61000-4-2 [4 KV/4 KV (Air/Contact)]
 IEC61000-4-3 (3 V/m)
 IEC55022 Class A

DIMENSIONS

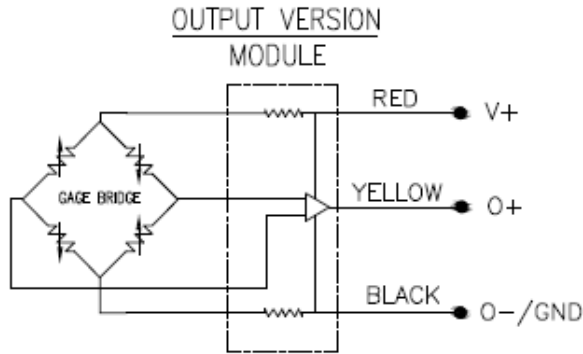
Vertical Pin



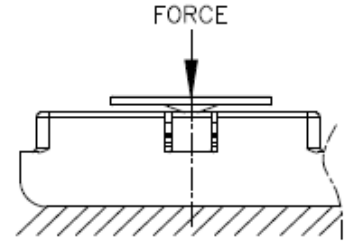
Horizontal Pin



CONNECTIONS



PIN OUT NOTES:
 A: O- / GROUND
 B: O+
 C: V+



ORDERING INFORMATION

FS20	5	0	-	0000	-	1000	-	G
Model	Output	Connection	-	Specials	-	Force Range	Multiplier	Units
FS20	3 = 0.5 – 4.5V 5 = 1 – 4V	0 = Pin output	-	0000 000X (see below clarification)	-	0500 0750 1000 1500 2000 3000 5000	- = None	G = Gram-Force

Clarification:

Code 0000 means that the pin configuration is horizontal

Code 000X means that the pin configuration is vertical.

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

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:](#)

[FS2050-0000-3000-G](#) [FS2050-0000-0500-G](#) [FS2030-0000-1500-G](#)