FS20

Low Force Compression Load Cell



SPECIFICATIONS

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

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

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.

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

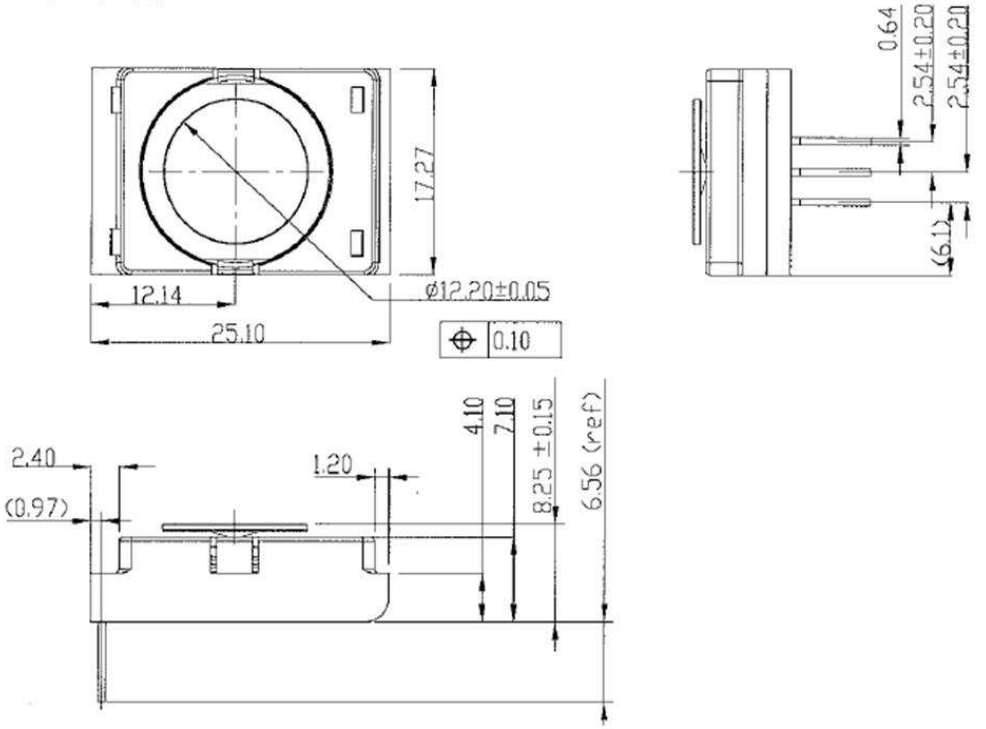
1. Maximum temperature error over compensated range with respect to 25°C

CE Compliance

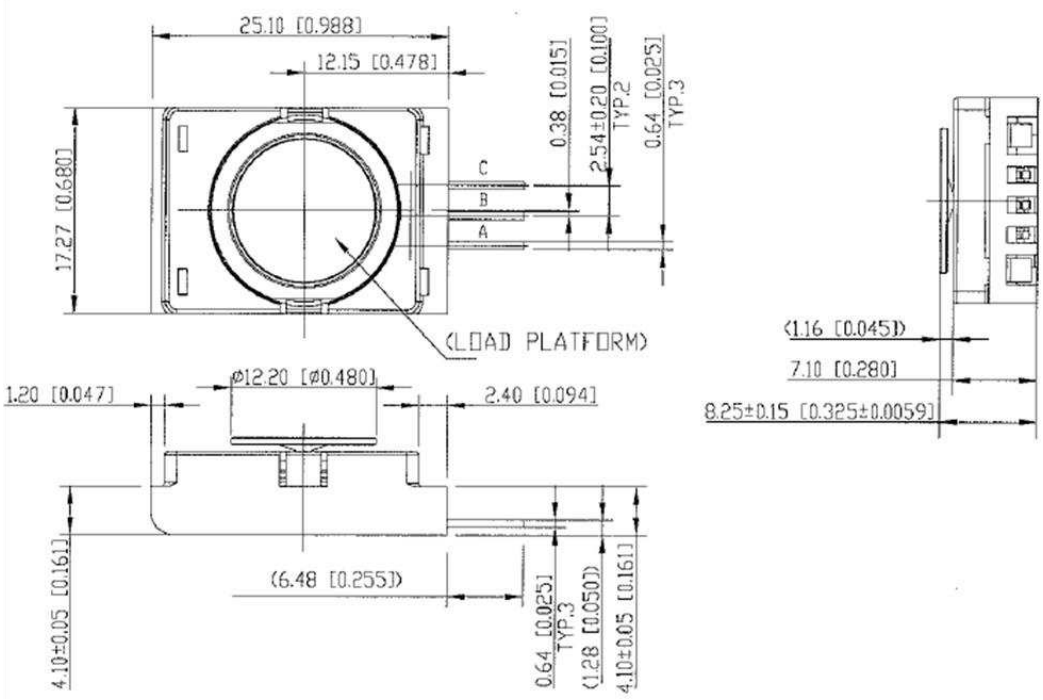
IEC61000-4-2 [4 KV/4 KV (Air/Contact)]
IEC61000-4-3 (3 V/m)
IEC55022 Class A

DIMENSIONS

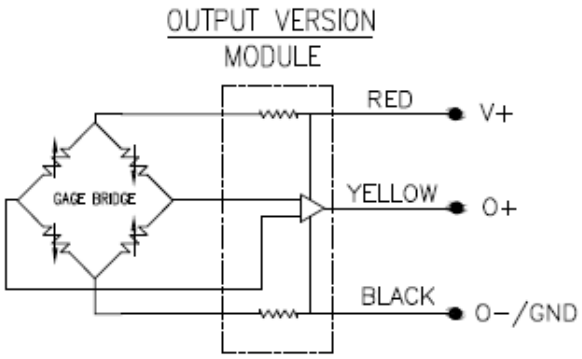
Vertical Pin



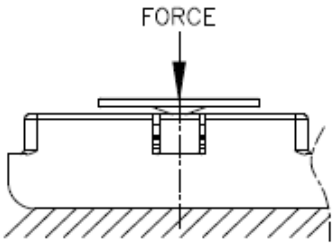
Horizontal Pin



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.

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