



Representative photograph, actual product appearance may vary.

Due to regional agency approval requirements, some products may not be available in your area. Please contact your regional Honeywell office regarding your product of choice.

FSS1500NSB

Force Sensors; Series FSS; Non-compensated; Force Range: 0 to 1500 g

Features

- Compact commercial grade package
- True surface mount package
- Maximum peak reflow temperature 260 °C [500 °F]
- Robust performance characteristics
- Adaptable product design
- Precision force sensing
- Electrically ratiometric output
- Extremely low deflection (30 microns typ. @ Full Scale)
- High ESD resistance 10 kV
- Signal conditioning available
- Optional terminal configurations

Typical Applications

- Medical infusion pumps
- Ambulatory non-invasive pump pressure
- Occlusion detection
- Kidney dialysis machines
- Load and compression sensing
- Variable tension control
- Robotic end-effectors
- Wire bonder equipment

Description

The FSS Series Sensors provide precise, reliable force sensing performance in a compact commercial grade package. The sensor features a proven sensing technology that utilizes a specialized piezoresistive micro-machined silicon sensing element. The low power, unamplified, noncompensated Wheatstone bridge circuit design provides inherently stable mV outputs over the force range.

Force sensors operate on the principle that the resistance of silicon implanted piezoresistors will increase when the resistors flex under any applied force. The sensor concentrates force from the application, through the stainless steel plunger, directly to the silicon sensing element. The amount of resistance changes in proportion to the amount of force being applied. This change in circuit resistance results in a corresponding mV output level.

The sensor package design incorporates a patented modular construction. The use of innovative elastomeric technology and engineered molded plastics results in load capacities of 4.5/5.5 kg over-force. The stainless steel plunger provides excellent mechanical stability and is adaptable to a variety of applications. Various electric interconnects can accept prewired connectors, printed circuit board mounting, and surface mounting. The unique sensor design also provides a variety of mounting options including mounting brackets, as well as application specific mounting requirements.

Mounting

Sensor output characteristics do not change with respect to mounting orientation. Care should be taken not to obstruct the vent hole in the bottom of the housing. Improper venting may result in unstable output.

Applying Force

Evaluation of the sensor is to be performed using deadweight or compliance force. Application of a rigid, immobile force will result in output drift (decrease) as elastomeric seals relax. Off-center plunger loading has minimal effect on FSS ball plunger sensor performance and maintains operation within design specifications.

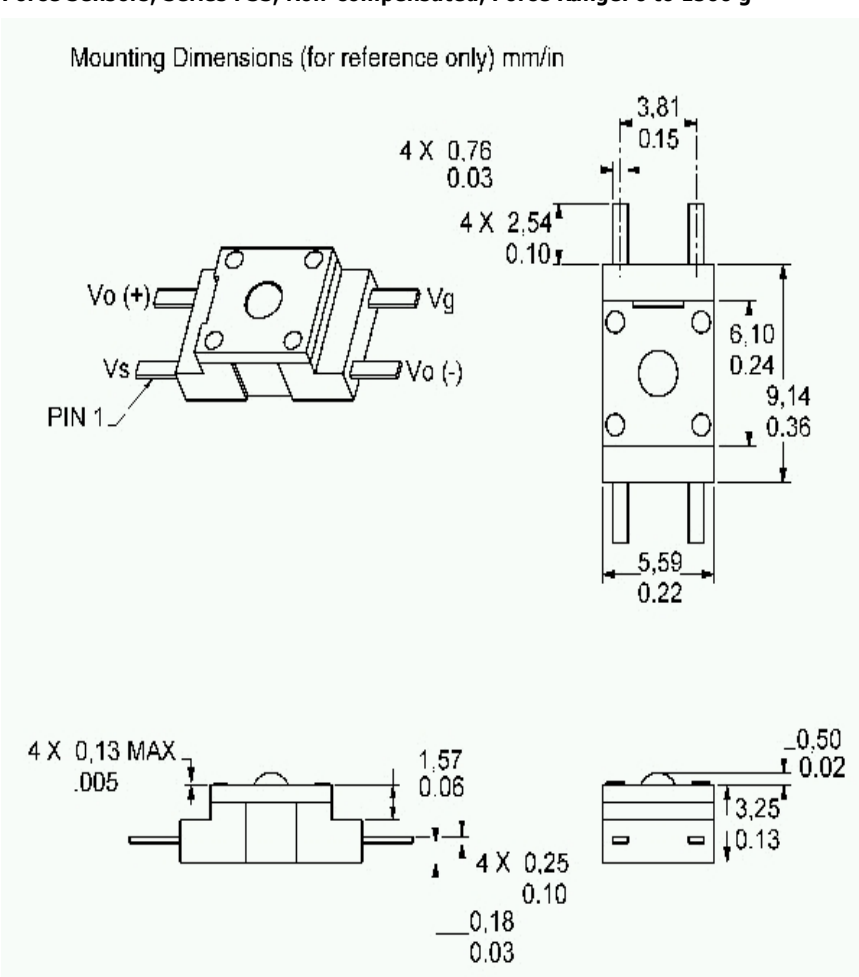
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Product Specifications	
Sensitivity	0.10 mV/g min., 0.12 mV/g typ., 0.14 mV/g max.
Operating Force (O.F.)	0 to 1500 g
Supply Voltage	5.0 Vdc typ., 6.0 Vdc max.
Null Offset	± 15 mV
Linearity	± 1.5% Span, Best Fit Straight Line
Null Shift over Temperature	± 0.5 mV typ.
Sensitivity Shift over Temperature	± 5.5% Span
Input Resistance	4.0 kOhm min., 5.0 kOhm typ., 6.0 kOhm max.
Output Resistance	4 kOhm min., 5 kOhm typ., 6 kOhm max.
Overforce	4,500 g
ESD	8 kV
Operating Temperature Range	-40 °C to 85 °C [-40 °F to 185 °F]
Storage Temperature Range	-40 °C to 100 °C [-40 °F to 212 °F]
Vibration	10 Hz to 2 kHz, 20 g, sine
Shock	150 g, 6 ms, half sine
Solderability	5 s @ 315 °C per lead
Availability	Global
Comment	Typical application: noninvasive pressure sensing with tubing. MCTF 20 million @ 50 °C
UNSPSC Code	411121
UNSPSC Commodity	411121 Transducers
Packing Style	Blister pack
Series Name	FSS Series

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WARNING
PERSONAL INJURY
 DO NOT USE these products as safety or emergency stop devices, or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

WARNING
MISUSE OF DOCUMENTATION

- The information presented in this product sheet (or catalog) is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.