Honeywell

Pressure Sensors

FS01/FS03 Force Sensors

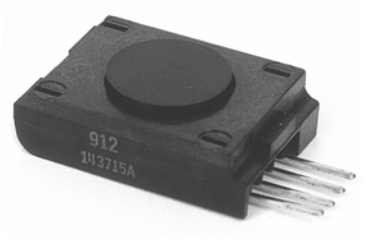
FS Series

FEATURES

- 0 to 1.5 pounds and 0 to 3.0 pound ranges
- High-level output range
- Temperature compensated
- Calibrated zero and span
- Small size
- Low noise

TYPICAL APPLICATIONS

- Medical infusion pumps
- Ambulatory noninvasive pump pressure
- Occulsion detection
- Kidney dialysis machines
- Load and compression sensing
- Variable tensions control



The FS01/FS03 sensors are special low cost, peizoresistive-based force sensors. These high-level voltage output, calibrated, and temperature compensated sensors give an accurate and stable output over a 5 °C to 50 °C [41 °F to 122 °F] temperature range. They offer simple operation from a single 5.0 Vdc supply. Operation from any DC supply voltage, up to 12.0 Vdc, is acceptable.

The FS01/FS03 sensors feature an integrated circuit sensor element and laser trimmed think film ceramic in a small plastic housing. Their extremely small size enables the use of multiple sensors in limited available space. This package also provides excellent corrosion resistance and isolation to external package stress.

⚠ 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 is for reference only. Do not use this document as a product installation guide.
- 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.

PRESSURE SENSOR SPECIFICATIONS

	Max. Ratings
Supply voltage, Vs	12.0 Vdc
Maximum over load	3.18 kg [7 lbs]
Lead temperature (soldering 2-4 seconds)	220 °C [428 °F]

ENVIRONMENTAL SPECIFICATIONS

Compensated temperature	5 °C to 50 °C [41 °F to 122 °F]
Operating temperature	0 °C to 70 °C [0 °F to 158 °F]
Storage temperature	-20 °C to 85 °C [13 °F to 185 °F]
Humidity limits	0% RH to 95% RH

STANDARD FORCE RANGES

			Full-Scale Span		
Part Number	Operating Force	Maximum Force	Min.	Typ.	Max.
FS01	0 lbs to 1.5 lbs [0 kg to 0.68 kg]	7 lbs	2.85 Vdc	3.0 Vdc	3.15 Vdc
FS03	0 lbs to 3.0 lbs [0 kg to 1.36 kg]	7 lbs	2.85 Vdc	3.0 Vdc	3.15 Vdc

PERFORMANCE SPECIFICATIONS

	Min.	Typ.	Max.	Unit
Zero force offset	0.95	1.0	1.05	Vdc
Full scale span [2]	2.85	3.0	3.15	Vdc
Linearity	–	± 1.0	± 3.0	%FSS
Hysteresis [3]	–	± 0.5	–	%FSS
Temp effect on Span (0 °C to 50 °C [0 °F to 122 °F]) [4]	–	± 1.0	± 2.5	%FSS
Temp. effect on Offset (0 °C to 50 °C [0 °F to 122 °F]) [4]	–	± 1.0	± 2.5	%FSS
Creep [5]	–	0.5	–	%FSS
Long-term stability of Offset and Span [6]	–	± 1.0	–	%FSS

Specification Notes:

Note 1: Reference conditions (unless otherwise noted): Supply voltage, Vs = 5 Vdc; T_A = 25 °C [77 °F]

Note 2: Full-scale Span is the algebraic difference between the output voltage at full-scale load and the output at zero load. Span is ratiometric to the supply voltage.

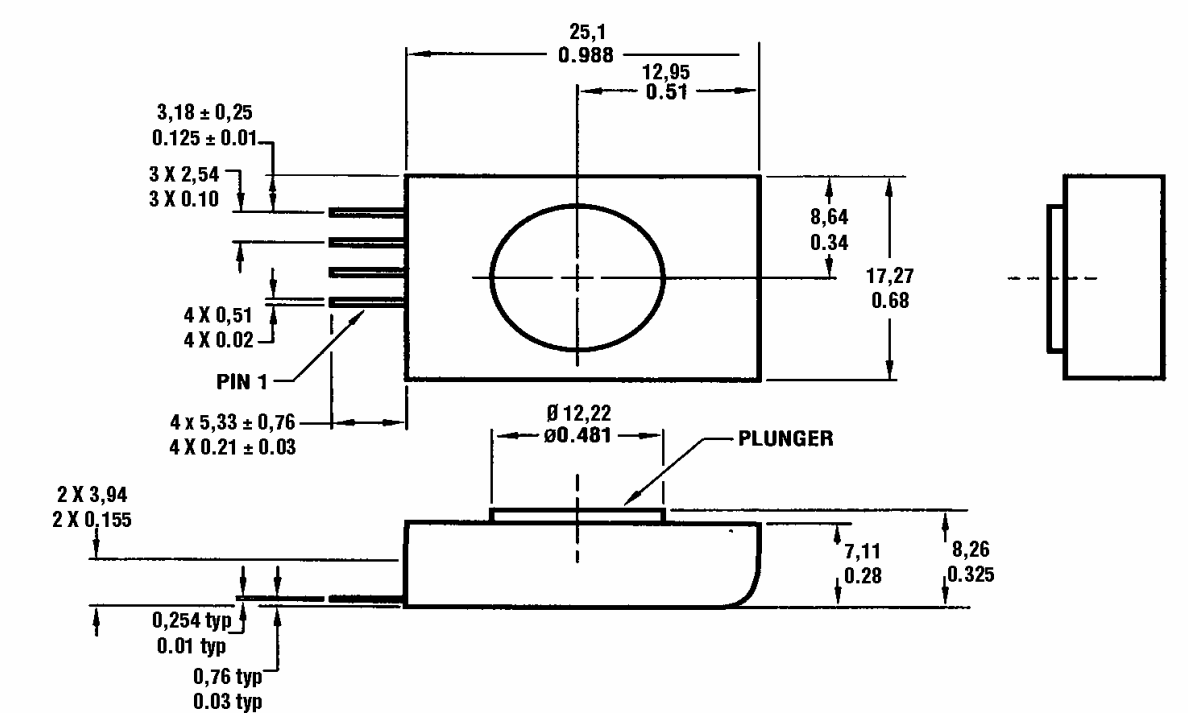
Note 3: Hysteresis is the maximum output difference at any point within the operating pressure range for increasing and decreasing load.

Note 4: Maximum error band of the offset voltage and the effort band of span, relative to the 25 °C [77 °F] reading.

Note 5: Maximum difference in output at full-scale load in a 20 minute period.

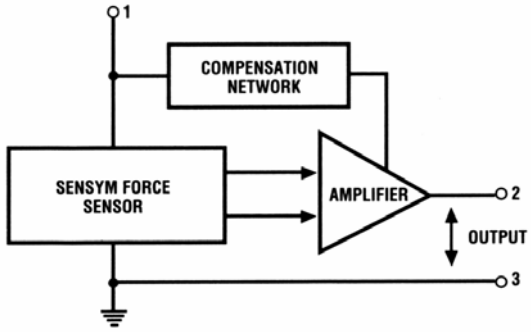
Note 6: Maximum difference in output within any operating force after 1 million force cycles

DIMENSIONAL DRAWING
(FOR REFERENCE ONLY)

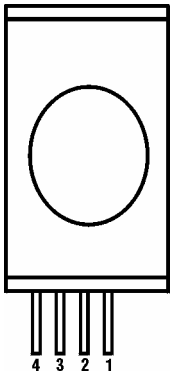


Tolerances, unless otherwise noted
± 0.01 for two decimal places
± 0.005 for three decimal places

EQUIVALENT CIRCUIT



ELECTRICAL CONNECTION PINOUT



Pin 1 = + Supply
Pin 2 = + Output
Pin 3 = - Output/Ground
Pin 4 = N/C

Pressure Sensors

FS01/FS03 Force Sensors

FS Series

ORDER GUIDE

Part Number	Force Range
FS01	0 lbs to 1.5 lbs [0 kg to 0.68 kg]
FS03	0 lbs to 3.0 lbs [0 kg to 1.36 kg]

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. **The foregoing is Buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

For application assistance, current specifications, or name of the nearest Authorized Distributor, contact a nearby sales office. Or call:

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1-815-235-6847 International

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008092-1-EN IL50 GLO 1103 Printed in USA
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