

Installation Instructions for the FS Series Force Sensor

ISSUE 2

PK 88870

⚠ 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.

PERFORMANCE CHARACTERISTICS at 10 ± 0.01 Vdc, 25 °C

Parameter	Min.	Typ.	Max.
Excitation*	—	10 Vdc	12 Vdc
Response time	—	—	1.0 ms
Input resistance**	—	5.0 K ohms	—
Output resistance**	—	5.0 K ohms	—
Weight	—	2.0 grams	—
ESD (direct contact - terminals and plunger)	10 kVolts	—	—

* Non-compensated force sensors, excited by constant current (1.5 mA) instead of voltage, exhibit partial temperature compensation of Span.

** Measured using a 1 mA current.

DESCRIPTION

Catalog Listing	Force Range (grams)
FSG-15N1A	1,500

ENVIRONMENTAL SPECIFICATIONS

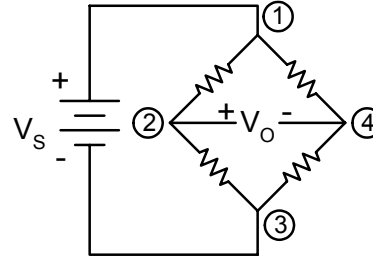
Operating temperature	-40 °C to 85 °C [-40 °F to 185 °F]
Storage temperature	-55 °C to 105 °C [-67 °F to 221 °F]
Shock	Qualification tested to 150 g
Vibration	Qualification tested 0 kHz to 2 kHz, 20 g sine

LASER BRAND: G15N1A or FSG15N1A

DATE STAMP CODE

2002	10	(Note: Alternate date code is 102002)	
	10	=	Week in the year
	2002	=	Year

EXCITATION SCHEMATIC



Pin 1 = V_s (+)

Pin 2 = Output + (V_2)

Pin 4 = Output - (V_4)

Pin 3 = Ground (-)

Pin 1 is notched

Pin 2 is next to Pin 1, etc.

FS SERIES CIRCUIT

1. Circled numbers refer to sensor terminals (pins). Pin 1 is designated with a notch.
2. The force sensor may be powered by voltage or current. Maximum supply voltage is not to exceed 12 volts. Maximum supply current is not to exceed 1.6 mA. Power is applied across Pin 1 and Pin 3.
3. The sensor output should be measured as a differential voltage across Pin 2 and Pin 4 ($V_o = V_2 - V_4$). The output is ratiometric to the supply voltage. Shifts in supply voltage will cause shifts in output. Neither Pin 2 nor Pin 4 should be tied to ground or voltage supply

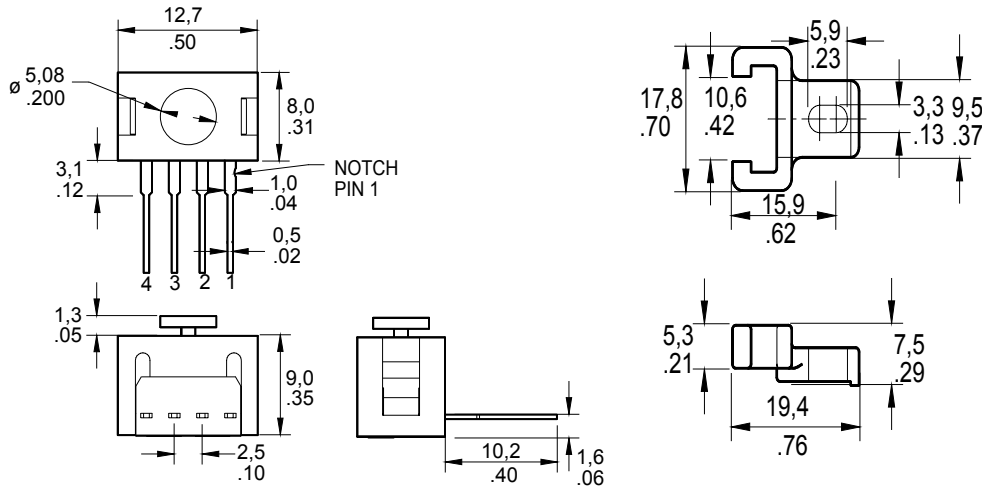
SOLDERING

Soldering temperature should not exceed 315 °C. Soldering duration should not exceed 2.5 seconds per lead. When PC board mounting, provide terminal stand-off clearance of at least 0.040 in from the soldering surface. Heat sinking is also recommended.

CLEANING

Proper cleaning fluids should be selected, based on the type of contaminants to be removed. Honeywell recommends alcohols or fluorinated solvent.

MOUNTING DIMENSIONS (dimensions for reference only) mm/in



MOUNTING

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

Mounting bracket mounting torque:
0,21 Nm - 0,56 Nm [2-5 in. lb].

APPLYING FORCE

Evaluation of the sensor is to be performed using dead-weight or compliant 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 sensor performance and maintains operation within design specifications.

ACCESSORY

Catalog Listing	Description
PC15132	Plastic mounting bracket

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:

1-800-537-6945 USA
1-800-737-3360 Canada
1-815-235-6847 International

FAX

1-815-235-6545 USA

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