008-0751-00
Rev. C

INSTALLATION MANUAL FOR THE FP5000 INTRINSICALLY SAFE TRANSMITTERS, OPTION CODE 2AR

⚠PERSONAL INJURY WARNING
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
The operator of this instrument is advised that if the equipment is used in a manner not specified in this manual, the protection provided by the equipment may be impaired.
Failure to comply with these instructions could result in death or serious injury.

CAUTION
Only qualified, service-trained personnel who are aware of the hazards involved should connect external wiring to these products.

CAUTION
Use supply wires suitable for 5 °C above surrounding ambient.

⚠ WARNING
Explosion Hazard - Do not disconnect equipment unless power has been switched off or the area is known as non-hazardous.

⚠ WARNING
Explosion Hazard - Substitution of components may impair suitability for Class I, Division 1.

Honeywell

DESCRIPTION

The Honeywell Model FP5000 with option code 2AR is an "Intrinsically Safe" certified media-isolated piezoresistive silicon pressure transmitter, offering 4 mA to 20 mA electrical output for reading pressure over the specified full-scale pressure span and temperature range. It is compensated for sensor offset, sensitivity, temperature effects, and non-linearity to offer improved thermal stability and accuracy. Hastelloy® C276 and 316L stainless steel wetted parts provide durability with abrasive or corrosive media.

NORMAL USE

Although there are variations within the series of sensors, the nominal weight
of the assembly is approximately 5.3 oz [150 g]. High surface temperatures can remain in place and the unit should be checked before removing the unit from service if it was operated at high temperatures. Suitable gloves are recommended for handling the unit under those conditions.

SPECIFIC CONDITIONS OF USE

The FP5000 Pressure Sensor does not withstand a 500 Vrms dielectric strength test between the circuits and the earth ground. This is due to presence of transient protection devices that activate above 33 Vdc and protect the transmitter from overvoltage damage. This is intended behavior and must be taken into account during installation.

GENERAL REQUIREMENTS AND CAUTIONS

1. All electrical and pressure connections should be compatible with the model specifications.
2. Installation should occur only when input electrical power is off and line pressure is at zero.
3. All products should be protected from direct or continued exposure to fluids at the electrical connection to eliminate possible deterioration of the product's electrical connection and corrosion that will impede product performance.
4. At no time should an object be inserted into the pressure port or pressed against the sensing area to deflect the sensor (to test or simulate pressure), as this may result in permanent damage to the sensing diaphragm.
5. Do not remove the transmitter when it is under pressure, if it is hot, or if it exposes harmful gases.

6. Transmitter case should be connected to ground to protect it from electromagnetic interference.

INSTALLATION REQUIREMENTS AND CAUTIONS

1. When using mating parts made of stainless steel, use a thread sealant with anti-seize properties to prevent thread galling. Ensure the sealant is rated for the application.
2. Ensure torque specifications are determined for the specific application. Mating materials and thread sealants can result in significantly different torque values from one application to the next.
3. Ensure that the proper mating electrical connector with a seal is used to connect the transmitter. Improper or damaged seals can compromise ingress protection, leading to short circuits.
4. Always hand-start transmitters into the hole to prevent cross threading and damage.
5. Use appropriate tools (such as an open-ended wrench or deep-well socket) to install transmitters.
6. Ensure that torque is not applied to the electrical connector.
7. To ensure proper environmental sealing and electrical connections when using a connector, follow the connector manufacturer's installation guidelines.
8. Prohibit freezing of media in pressure port. Unit should be drained (mount in vertical position with electrical termination upward) to prevent possible overpressure damage from frozen media.
9. Any electrical device may be susceptible to damage when exposed to static electrical charges. To avoid damage to the product, observe the following:
    - Operator/installer should follow the proper ESD (electrostatic discharge) protection procedures before handling the pressure transmitter.
    - Ground the transmitter's body BEFORE making any electrical connections.

MOUNTING DIMENSIONS

Refer to the FP5000 datasheet for detailed mounting dimensions.

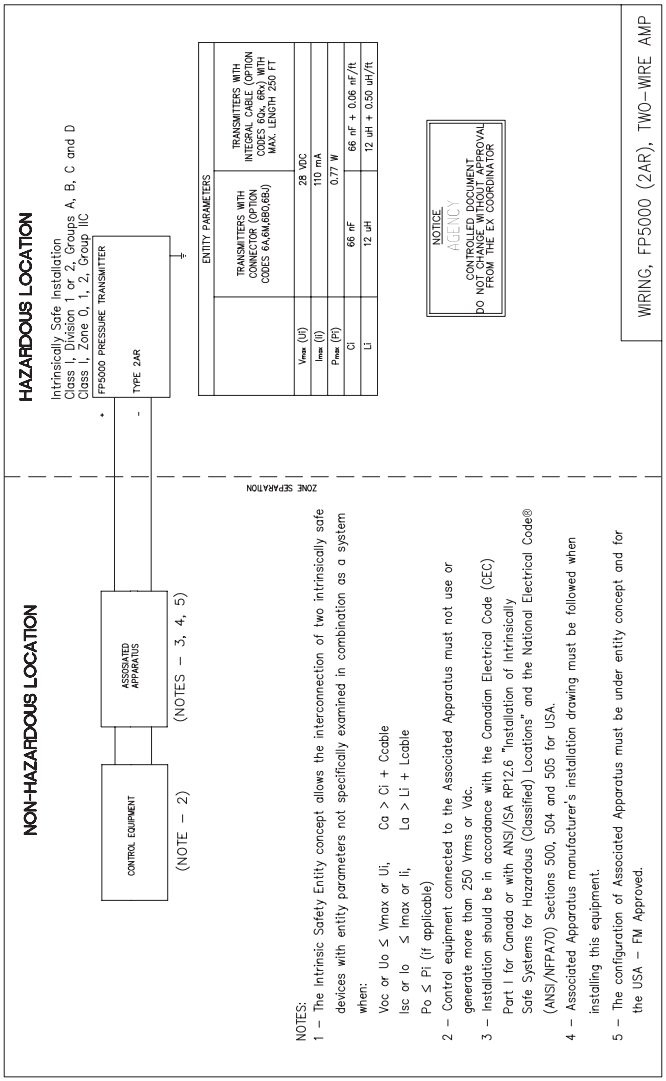
TABLE 1. MODEL SPECIFICATIONS

CHARACTERISTIC	MEASURE
Input	9 Vdc to 28 Vdc
Output	4 mA to 20 mA
Electrical connector	This product is available in multiple electrical connector configurations. Refer to the product datasheet for information regarding the options available
Pressure connection	This product is available in multiple pressure port configurations. Refer to the product datasheet for information regarding the options available
Pressure ranges	Pressure ranges from 10 in-H_2O [0.36 psi] up to 5000 psi. Refer to the product datasheet for information regarding the option codes available
Maximum surface temperature	The product can reach maximum surface temperature of 135°C [275°F] under fault conditions at ambient temperature of 85°C [185°F] and maximum surface temperature of 100°C [212°F] under fault conditions at ambient temperature of 40°C [104°F]

INTRINSICALLY SAFE INSTALLATION

The products with option code “2AR” have been certified for “Intrinsically Safe”. This insures that a circuit operated under normal and specified fault conditions is not capable of causing ignition of the prescribed explosive atmosphere. The certification is valid when the sensor has been installed as per the installation drawings referenced in this section.

FIGURE 1. WIRING, FP5000 2AR, TWO-WIRE AMP



ZERO ADJUSTMENT

Zero output of pressure transmitter can be adjusted through a potentiometer accessible after demounting the electrical connector wherever the connector is demountable.

Option code 6M (DIN A connector mounted with locking nut)

1. Disconnect the electrical connection from the sensor.
2. Remove the locking nut.
3. Pull the connector plate out by ~1 inch.
4. Connect the connector to power supply and meter as per Figure 1.
5. Adjust the zero-output signal using the potentiometer.
6. Disconnect the connector from the power supply and meter.
7. Place the connector plate on the sensor while gently pushing internal wires inside. Ensure that O-ring is clean and correctly installed between sensor body and connector plate.
8. Secure the connector plate in place using the locking nut.

Option code 6A, 6BO, 6Q, 6BJ (mounted with 4 socket head screws):

1. Disconnect the electrical connection from the sensor.
2. Remove the four (4) socket head screws mounted on connector plate.
3. Pull the connector plate out by ~1 inch.
4. Connect the connector to power supply and meter per connection diagram.
5. Adjust the zero-output signal using the potentiometer.
6. Disconnect the connector from the power supply and meter.
7. Place the connector plate on the sensor while gently pushing internal wires inside. Ensure that O-ring is clean and correctly installed between sensor body and connector plate.
8. Secure the connector plate in place using four (4) socket head screws.

MAINTENANCE

These sensors do not need any special scheduled maintenance. It is recommended that the pressure port and electrical connector be cleaned from time to time to provide long life. Protecting the product from continued exposure to moisture or fluids at the electrical connection will eliminate premature internal failure of the product.

APPLICABLE NATIONAL AND INTERNATIONAL STANDARDS

Electromagnetic Compatibility

- EN 61326-1
- EN 61326-2-3

Hazardous Location Standards used for US Approval

- FM3600, FM3610, FM3810
- ANSI/UL 60079-0
- ANSI/UL 60079-11
- UL 61010-1

Standards used for Canada Approval

- CAN/CSA C22.2 No. 60079-0
- CAN/CSA C22.2 No. 60079-11
- CAN/CSA C22.2 No. 61010-1

Standards used for ATEX Certification

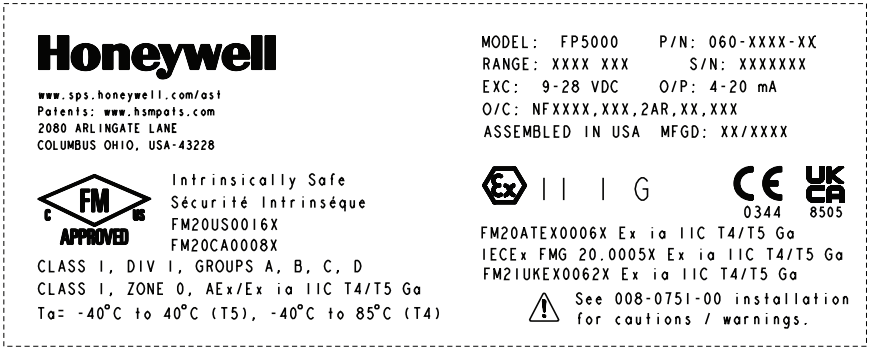
- EN IEC 60079-0
- EN 60079-11

Standards used for IECEx Certification

- IEC 60079-0
- IEC 60079-11

LABEL MARKING

The standard product label includes the following:



Honeywell Control Systems Ltd.,
Newhouse Industrial Estate,
Motherwell, Lanarkshire, ML1 5SB,
Scotland, United Kingdom.

Tel.: +44 (0)1698 481000
Fax: +44 (0)1698 481011

A subsidiary of Honeywell Control Systems Ltd.,

Registered Office: Honeywell House, Arlington Business Park, Bracknell, Berkshire, R12 1EB.

Registered No 217808 (England)

EU Declaration of Conformity

Honeywell Control Systems Ltd. hereby declare that the products identified below conform to the essential requirements of the EU Directive(s) listed below and that the products supplied are in conformity with the type described in any EU Type Examination Certificate (EU TEC) identified below.

Manufacturer: Honeywell Safety and Productivity Solutions
2080 Arlingate
Columbus
OH 43228-4112 USA

Product: Pressure Sensor
FP5000 Series with option 2AR

Directive (Amendments)	**Conformity Details**	
EMC 2014/30/EU	Standards applied:	EN 61326-1:2013 EN 61326-2-3:2013
ATEX 2014/34/EU	Standards applied:	EN IEC 60079-0:2018 EN 60079-11:2012
	EU TEC No:	FM20ATEX0006X
	Notified Body:	Notified Body ID 2809 FM Approvals Europe Limited, One Georges Quay Plaza Dublin, Ireland, D02 E440
	ATEX Markings	II 1 G Ex ia IIC T4/T5 Ga

Signed on behalf of Honeywell Control Systems Ltd. : .....
Gene Ottes, Quality Manager

DoC No: A548 **DoC Issue: 2** **DoC Date: 14/06/2021** **Page 1 of 2**

UK Declaration of Conformity

Honeywell Control Systems Ltd. hereby declare that the products identified below conform to the essential requirements of the UK Directive(s) listed below and that the products supplied are in conformity with the type described in any UK Type Examination Certificate (UK TEC) identified below. This declaration is issued under the sole responsibility of the manufacturer.

Manufacturer: Honeywell Safety and Productivity Solutions
2080 Arlingate
Columbus, OH 43228-4112
USA

Product: Pressure Sensor
FP5000 Series with option 2AR

Directive (Amendments)	**Conformity Details**	
Electromagnetic Compatibility Regulations 2016	Standards applied:	EN 61326-1:2013 EN 61326-2-3:2013
Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres Regulations	Standards applied:	EN IEC 60079-0:2018 EN 60079-11:2012
	UK TEC No:	FM21UKEX0062X
	Notified Body:	Notified Body ID 1725 FM Approvals Ltd, 1 Windsor Dials Berkshire, UK, SL4 1RS
	ATEX Markings	II 1 G Ex ia IIC T4/T5 Ga

Signed on behalf of Honeywell International Inc. :

Gene Ottes, Quality Manager

DoC No: B548 **DoC Issue: 1** **DoC Date: 19-May-2021** **Page 1 of 2**

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship during the applicable warranty period. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items that Honeywell, in its sole discretion, 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. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While Honeywell may provide application assistance personally, through our literature and the Honeywell web site, it is buyer's sole responsibility to determine the suitability of the product in the application.

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

FOR MORE INFORMATION

Honeywell Advanced Sensing Technologies services its customers through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing, or the nearest Authorized Distributor, visit sps.honeywell.com/ast or call +1 302 327 8920.

Honeywell
Advanced Sensing Technologies
830 East Arapaho Road
Richardson, TX 75081
www.honeywell.com

008-0751-00 | C | 01/22

Honeywell