



Model 206

Operating Instructions

Setra Systems, Inc.
159 Swanson Road, Boxborough, MA 01719
800.257.3872 • www.setra.com



1.0 General Information

Every Model 206 has been tested and calibrated before shipment. Setra Systems Model 206 pressure transducers sense gauge and vacuum pressure and convert this pressure difference to a proportional high level analog output. Two standard output and excitation versions are offered:

Excitation	Output
9 to 30 VDC	4 to 20 mA (must observe polarity)
12 to 28 VDC	0.1 to 5.1 VDC (reverse wire protection up to 22VDC excitation to the output lead)

2.0 Mechanical Installation

2.1 Media Compatibility

Model 206 transducers are designed to be used with any gases or liquids compatible with 17-4 PH stainless steel.

2.2 Environment

The operation temperature limits of the 206 are -40° to +185°F (-40 to +85°C).
The compensated temperature range is -4 to +176°F (-20 to +80°C).

2.3 Pressure Fittings

Typically, standard pipe fittings and procedures should be used. However, for pressure ranges in excess of 500 PSIG (35 Bar) we suggest the use of a sealant such as Loctite Hydraulic Sealant. Excessive torquing of metal fittings may cause a slight zero shift. The use of plastic fittings typically results in no noticeable zero shift. Torquing does not appreciably affect linearity or sensitivity.

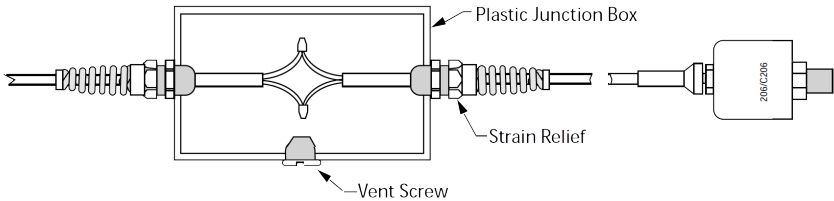
2.4 Venting

The reference pressure in a sealed gage transducer will vary due to changes in temperature, atmospheric pressure, humidity, etc. This change affects the overall accuracy of the unit. To compensate all gage and compound 206 units are vented to atmosphere using the following methods based on the electrical termination used.

2.4.1 Cable Termination and Hirschmann Models

All 206 models with a cable termination or Hirschmann connector vent through the cable to maintain proper accuracy. Connection to the unit should be made in a junction box that is vented to atmosphere, with care taken to ensure that the end of the cable is not blocked or sealed.

The following junction box configuration is a recommended method for connecting to 206 units in order to achieve a moisture resistant and vented connection.



Termination	Junction Box	Strain Relief
Part Number:	Q1388PCE	3237 Heyco Flex fitting
Dimensions:	4.92" x 2.95" x2.95"	2.50" Long
Manufacturer:	Hoffman Engineering Co. 900 Ehlen Drive Anoka, MN 55303 (612) 421-2240	Heyco Kenilworth, NJ 07033 (201) 245-0033 (800) 526-4182

- Drill one ½" dia. Hole at each of the junction box for cable strain reliefs.
- Drill and tap one ½" – 13 NC hole in bottom of junction box and install loosely one ½" – 13 NC plastic or stainless steel screw. The clearance between threads serves as ventilation.
- Install cable strain reliefs in ½" holes.
- Mount junction box and install cables.
- A desiccant pack can be placed in the junction box for additional humidity protection.

NOTES:

The above directions are for cable termination models. Hirschmann and conduit connections require slight modifications at the discretion of the installer.

Terminal Block Connections

All 206 models with terminal block connections are vented through a porous plug on the connected; no additional venting is required during installation.

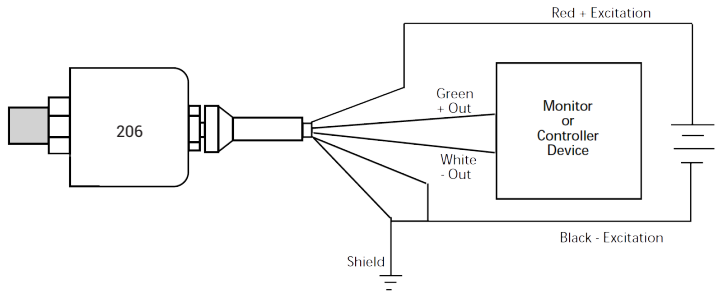
3.0 Electrical Installation

The Model 206 is available in the following electrical terminations:

- 2 foot cable (additional length available)
- 3-screw terminal block
- Hirschmann connector
- 1/2" conduit

3.1 Voltage Output Units

Wiring for cable, Hirschmann and conduit model 206 transducers with voltage output is as follows:



Cable & Conduit	Hirschmann Pin Designation	Connection to electrical system
Red	#1	+Excitation; connect to 12-28 VDC power supply.
Green	#3	+Output; connect to controller or monitor.
White	#2	- Output; connect to controller or monitor.
Black	#2	-Excitation; connect to return of 12-28 VDC power supply.
Shielding	#4	Connect to system or earth ground.

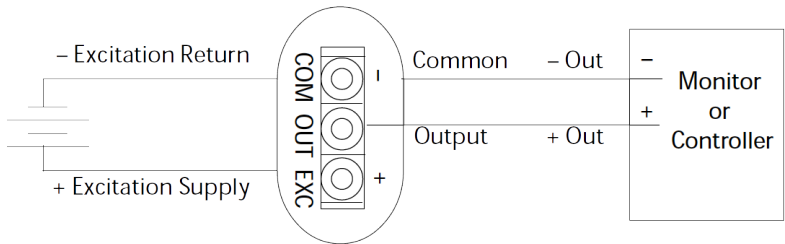
NOTE 1:

Model 206 can be wired as a three wire device by connecting -output and -excitation and shield to a common ground. However, accuracy will be reduced because of voltage drops in the leads.

NOTE 2:

Mating Hirschmann connects #GDM3009J, Hirschmann #932214-100 with GDM3-16 Hirschmann Gasket #731531-002 are not provided by Setra Systems, unless ordered separately as an option.

Voltage output Model 206 with a 3 screw terminal block have excitation, output and common termination pouts clearly marked, wiring is as follows.



3.2 Current Output Units

Current output model 206 are true 2-wire, 4-20 mA current output devices and deliver rated current into an external load of 0-800 Ω . Cable termination models have a 2-wire cable where red is positive and black is negative. On the Hirschmann connector, pin 1 is positive; pin 2 is negative and pin 4 is the ground/shield. Terminal block units have outputs label + for positive and – for negative, the center terminal may be used for shielding.

NOTE:

All 4-20 mA current output units are designed to have current flow in one direction only- PLEASE OBSERVE POLARITY. We suggest that the electrical cable shield be connected to the system's loop circuit ground to improve electrical noise rejection.

4.0 Calibration

Every model 206 is factory calibrated and should require no field adjustment. Whenever possible, any zero and/or span offsets should be corrected by software adjustments in the user's control system. However, both zero and span adjustments are accessible by removing the pan head screws and turning the zero and span potentiometer screws inside. Pan Head screws should be replaced after adjustment to maintain enclosure rating.

Voltage output units are factory calibrated into a 50 K Ω load. Voltage units are operable into a 5000 Ω load or greater. The zero factory setting is ± 50 mV.

Current outputs units (4-20 mA) are factory calibrated with a 24 VDC loop to supply voltage and a 250 Ω load. The zero factory setting is ± 0.08 mA. The span (full scale) factory settings is ± 0.16 mA. Zero and span adjustment are approximately ± 1.0 mA.

5.0 Returning products for repair

Please contact a Setra application engineer (800-257-3872, 978-263-1400) before returning unit for repair to review information relative to your application. Many times only minor field adjustments may be necessary. When returning a product to Setra, the material should be carefully packaged and shipped prepaid to:

Setra Systems, Inc.
159 Swanson Road
Boxborough, MA 01719-1304
Attn: Repair Department

To ensure prompt handling, please supply the following information and include it inside the package or returned material:

- Name and phone number of person to contact.
- Shipping and billing instructions.
- Full description of the malfunctions.
- Identify any hazardous material used with the product.

NOTES:

Please remove any pressure fittings and plumbing that you have installed and enclose any required mating electrical connectors and wiring diagrams.

Allow approximately 3 weeks after receipt at Setra for the repair and return of the unit. Non-warranty repairs will not be made without customer approval and a purchase order to cover repair charges.

Calibration Services

Setra maintains a complete calibrations facility that is traceable to the National Institute of Standards and Technology (NIST). If you would like to recalibrate or recertify your Setra pressure transducers or transmitters, please call our Repair Department at 800-257-3872 (978-263-1400) for scheduling.

6.0 Limited warranty & limitation of repair

SETRA warrants its products to be free from defects in materials and workmanship, subject to the following terms and conditions: Without charge, SETRA will repair or replace products found to be defective in materials or workmanship within the warranty period; provided that:

- a) the product has not been subjected to abuse, neglect, accident, incorrect wiring not our own, improper installation or servicing , or use in violation of instructions furnished by SETRA;
- b) the product has not been repaired or altered by anyone except SETRA or its authorized service agencies;
- c) the serial number or date code has not been removed, defaced, or otherwise changed; and
- d) examination discloses, in the judgment of SETRA, the defect in materials or workmanship developed under normal installation, use and service;
- e) SETRA is notified in advance of and the product is returned to SETRA transportation prepaid.

Unless otherwise specified in a manual or warranty card, or agreed to in a writing signed by a SETRA officer, SETRA pressure and acceleration products shall be warranted for one year from date of sale.

The foregoing warranty is in lieu of all warranties, express, implied or statutory, including but not limited to, any implied warranty of merchantability for a particular purpose.

SETRA's liability for breach of warranty is limited to repair or replacement, or if the goods cannot be repaired or replaced, to a refund of the purchase price.

SETRA's liability for all other breaches is limited to a refund of the purchase price. In no instance shall SETRA be liable for incidental or consequential damages arising from a breach of warranty, or from the use or installation of its products.

No representative or person is authorized to give any warranty other than as set out above or to assume for SETRA any other liability in connection with the sale of its products.

7.0 Return of Setra Systems Product - Declaration (Form 206ERN)

EXPECTED RETURN NUMBER _____

You must:

- Know about all of the substances which have been used and produced in the product before you complete this Declaration.
- Contact your supplier if you have any questions and for an ERN Number.
- Send this form to your supplier with the return of the product.

SECTION 1: Product

A. Model Number _____

B. Serial Number _____

C. Has the product been used, tested or operated?

☐ Yes - Go to Section 2

☐ No - Go to Section 4

SECTION 2: Substances in Contact with the Product

A. Radioactive* ☐ Yes ☐ No

B. Biologically Active ☐ Yes ☐ No

C. Dangerous to Human Health and Safety? ☐ Yes ☐ No

*Note: Your supplier will not accept delivery of any products that are contaminated with radioactive substances, unless you:

- Decontaminate the products
- Provide proof of decontamination

YOU MUST CONTACT YOUR SUPPLIER FOR ADVICE BEFORE YOU RETURN SUCH PRODUCTS

If you have answered "no" to all of these questions, go to Section 4.

Substance Name	Chemical Symbol	Precautions Required (eg: use protective gloves, etc.)	Actions Required After Spillage or Human Contact
1.			
2.			
3.			
4.			
5.			
6.			

SECTION 3: List of Substances in Contact with the Product

SECTION 4: Return Information

Reason for return and symptoms of malfunction: _____

If you have a warranty claim:

- Who did you buy the product from?: _____
- Give the supplier's invoice number or your purchase order number: _____

SECTION 5: Declaration

Print your Name: _____ Print Your Job Title: _____

Print Your Company Name: _____

Print Your Address: _____

Telephone Number: _____ Date of Product Return: _____

I have made reasonable inquiry and I have supplied accurate information in this Declaration.
I have not withheld any information. I have followed the Return of Setra Systems Product Procedure.

Signed: _____ Date: _____