



INSTALLATION GUIDE

SETRA SYSTEMS MODEL 265

DIFFERENTIAL PRESSURE TRANSDUCER

1.0 GENERAL INFORMATION

Every Model 265 has been tested and calibrated before shipment. Specific performance specifications are shown on page 3 of this Guide.

Setra Systems 265 pressure transducers sense differential or gage (static) pressure and convert this pressure difference to a proportional high level analog output for both unidirectional and bidirectional pressure ranges. Two standard output versions are offered: A voltage output of 0 to 5 VDC or a current output of 4 to 20mA. Optional voltage outputs are available. Check the label on the unit to confirm the excitation and output.

2.0 MECHANICAL INSTALLATION

2.1 Media Compatibility

Model 265 transducers are designed to be used with air or nonconducting gases. **Use with liquids or corrosive gases will damage the unit.**

2.2 Environment

The operating and compensated temperature limits of the 265 are 0°F to +150°F (-18°C to +65°C).

2.3 Pressure Fittings

The Model 265 is supplied with two factory installed 1/4" O.D. pressure fittings for the pressure signal connection and typically installed with 1/4" push-on tubing. Both the positive (high) pressure port and the reference (low) pressure port are located on the front of the unit, labeled "HIGH" and "LOW" respectively. For best results (shortest response times), 3/16" I.D. tubing is suggested for tubing lengths up to 100 feet long, 1/4" I.D. for tubing lengths up to 100 feet long, 1/4" I.D. for tubing lengths up to 300 feet, and 3/8" I.D. for tubing lengths up to 900 feet.

3.0 ELECTRICAL INSTALLATION

If the Model 265 is supplied with the optional Conduit Enclosure, access the electrical terminations by removing the cover.

3.1 Voltage Output Units

The Model 265 voltage output is a 3-wire circuit, with three terminals available for wiring. These terminals have the designation COM, OUT and EXC (see Diagram 1).

[Note: The "-" designation above COM and the "+" designation above EXC are designations for the current output terminals.] The -Excitation and -Output are commoned on the circuit (see Diagram 2). The 265 voltage output can operate from 9-30 VDC excitation. The 265 has a 0-5 output.

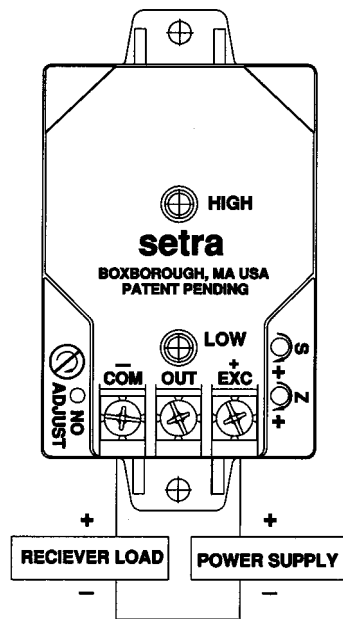


Diagram 1

Voltage Circuit Diagram

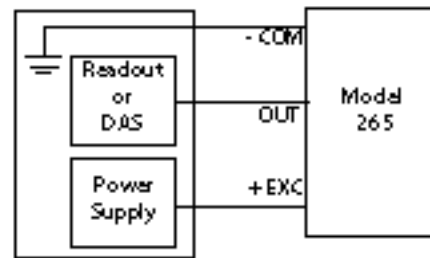


Diagram 2

- +EXC Connected to positive terminal of DC power supply.
- GND Connect as the reference for power supply and output signal.
- +SIG Connect to positive terminal of control or pressure monitor.

3.2 Current Output Units

The Model 265 is a two-wire loop-powered 4 to 20mA current output unit (see Diagram 3). The current flows into + terminal and returns back to the power supply through the -terminal (see Diagram 3). The power supply must be a DC voltage source with a voltage range between 9 and 30 measured between terminal + and - terminals. The unit is calibrated at the factory with a 24 VDC loop supply voltage and a 250 ohm load.

Current Circuit Diagram

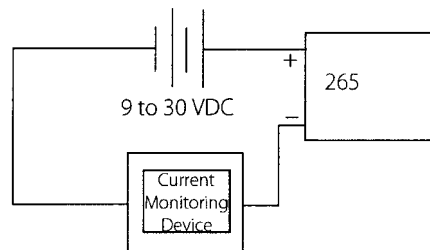


Diagram 3

4.0 CALIBRATION

The 265 transducer is factory calibrated and should require no field adjustment. Generally, the mounting position will have a zero shift effect on ranges below 1" WC. Whenever possible, any zero and/or span offsets should be corrected by software adjustment in the user's control system. However, both zero and span adjustments are accessible either on the front of the unit or by removing the optional conduit enclosure. The 265 transducer is calibrated in the vertical position at the factory.

4.1 Voltage Output Zero Adjustment

While monitoring the voltage between the positive output (OUT) and common (COM), and with both pressure ports open to atmosphere, the zero may be adjusted by turning the zero adjustment screw. (See Diagram 1 for location of zero adjustment.) For 0-5 VDC output units, the factory settings are 0.0 VDC ($\pm 50\text{mV}$) for unidirectional pressure ranges and 2.5 VDC ($\pm 50\text{mV}$) for bidirectional pressure ranges. Optional outputs are set at the same $\pm 1\%$ factory setting.

4.2 Voltage Output Span Adjustment (Complete the zero adjustment before setting span.)

Span or full scale output adjustments should only be performed by using an accurate pressure standard (electronic manometer, digital pressure gage, etc.), with at least comparable accuracy to the 265 transducer ($\leq \pm 1\%$ FS). With full range pressure applied to the high pressure port (reference port open to atmosphere), the span may be adjusted by turning the SPAN adjustment screw. (See Diagram 1 for location of the SPAN adjustment.) For 0-5 VDC output units, the factory settings are 5.0 VDC ($\pm 50\text{mV}$) for unidirectional and bidirectional ranges. Optional outputs are set at the same $\pm 1\%$ factory setting.

4.3 Current Output Zero Adjustment

While monitoring the current output between +EXC and OUT, and with both pressure ports open to atmosphere, the zero may be adjusted by turning the zero adjustment screw. (See Diagram 1 for location of zero adjustment.) The factory settings are 4mA (0.16mA) for unidirectional pressure ranges and 12mA (0.16mA) for bidirectional ranges.

4.4 Current Output Span Adjustment

Span or full scale output adjustments should only be performed by using an accurate pressure standard (electronic manometer, digital pressure gage, etc.) with at least comparable accuracy to the 265 transducer ($\leq \pm 1\%$ FS). With full range pressure applied to the high pressure port (reference port open to atmosphere), the span may be adjusted by turning the SPAN adjustment screw. (See Diagram 1 for location of SPAN adjustment.) The factory settings are 20mA (0.16mA) for unidirectional and bidirectional pressure ranges.

5.0 MODEL 265 PERFORMANCE SPECIFICATIONS

Accuracy RSS* (at constant temperature)	±1.0% FS	<u>Thermal Effects</u>	
Non-Linearity, BFSL	±0.98% FS	Compensated Range ∞F(∞C)	0 to +150 (-18 to+65)
Hysteresis	0.1% FS	Zero/Span Shift %FS/∞F(∞C)	0.033 (0.06)
Non-Repeatability	0.05% FS	Maximum Line Pressure	10 psi
*RSS of Non-Linearity, Non-Repeatability and Hysteresis		Overpressure	10 psi in positive or negative direction
		Warm-up Shift	±0.1% FS total
<u>Positive Effects</u> (Unit is factory calibrated at Og effect in the vertical position)			
Range	Zero Offset (%FS/G)		
0 to 1" WC	.22		
0 to 5" WC	.14		
0 to 30" WC	.06		

6.0 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 assure prompt handling, please supply the following information and include it inside the package of returned material:

1. Name and phone number of person to contact.
2. Shipping and billing instructions.
3. Full description of the malfunction.
4. Identify any hazardous material used with product.

Notes: Please remove any pressure fittings and plumbing that you have installed and enclose any required mating 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 calibration facility that is traceable to the National Institute of Standards & 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.

7.0 LIMITED WARRANTY AND LIMITATION OF LIABILITY

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 for 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 pre-paid.

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.

