

## DIFFERENTIAL PRESSURE SENSOR

For Additional Information See PR-282 Data Sheet

### SPECIFICATIONS

- Accuracy\*:** ±1% FS
- Overpressure:** 300% of rated range
- Burst Pressure:** 500% of rated range
- Maximum Static Pressure:** 200% of DP range
- Supply Voltage:** 12-40 VDC  
 12-35 VAC (VDC output units only)
- Supply Current:** VDC Units - 10 mA max.  
 mA Units - 20 mA max.
- Load Impedance:** 3K ohms max. at 40 VDC (mA output units)  
 1K ohms min. (VDC output units)
- Enclosure:** 16 Ga Steel - NEMA 1
- Finish:** Baked on Enamel - PMS2GR88B
- EMC Conformance:** EN 55022, 55024, 61000-3-3,  
 61000-4-2, 3, 4, 5, 6 & 11
- Compensated Temp Range:** 0°F - 180°F (-18°C-82°C)
- T.C. Error:** ±0.025%/°F (.03%/°C)
- Media Compatibility:** Liquid/gases compatible to 316L SS
- Port Connection:** 1/8" NPT
- Environmental:** 10-90%RH Non-Condensing
- Termination:** Unpluggable screw terminal block
- Wire Size:** 12 Ga max.
- Weight:** 1.7 lbs. (.75 kg)

\* Includes linearity, repeatability, hysteresis, stability and temp compensation

U.S. PATENT NO. 6484587

### ORDERING INFORMATION: PR-282-

OUTPUT	PRESSURE RANGE	SUPPLY VOLTAGE
1) 0-1 VDC	1) 0-20 psid	A) 24 VDC
2) 0-5 VDC	2) 0-30 psid	B) 24 VAC
3) 0-10 VDC	3) 0-50 psid	
4) 4-20 mA (2-wire)*	4) 0-100 psid	
	5) 0-200 psid	
	6) 0-300 psid	
	7) Custom	

OUTPUT TYPE	OUTPUT AVERAGING	OUTPUT CLIPPING
1) Direct	2) Without	B) Without

\* Available with 24VDC supply voltage only



### INSTALLATION

**Inspection** Inspect the package for damage. If damaged, notify the appropriate carrier immediately. If undamaged, open the package and inspect the device for obvious damage. Return damaged products.

- Requirements**
- Tools (*not provided*)
    - Digital Volt-ohm Meter (DVM)
    - Appropriate screwdriver for mounting screws
    - Appropriate drill and drill bit for mounting screws
  - Appropriate accessories
  - Four #8 self-tapping mounting screws (*not provided*)
  - Training: Installer must be a qualified, experienced technician

#### Warning:



- Do not use on oxygen service, in an explosive/hazardous environment, or with flammable/combustible media.
- Disconnect power supply before installation to prevent electrical shock and equipment damage.
- Make all connections in accordance with the job wiring diagram and in accordance with national and local electrical codes. Use copper conductors only.

#### Caution:



- Use electrostatic discharge precautions (e.g., use of wrist straps) during installation and wiring to prevent equipment damage.
- Avoid locations where severe shock or vibration, excessive moisture or corrosive fumes are present.
- Do not exceed ratings of the device.

### Mounting

Refer to **Figure 5** for mounting dimensions.

- Remove the transducer cover using a Phillips head screwdriver.
- Select the mounting location.
- Mount transducer on a vertical surface with four #8 self-tapping screws (not provided).
- Pull wires through bottom of enclosure and make necessary connections.
- Replace cover and make pneumatic connections.

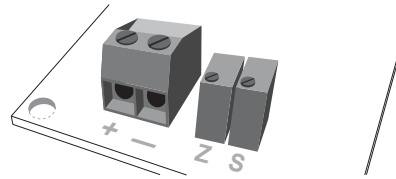
### Wiring

Use maximum 12 AWG wire for wiring terminals. Refer to **Figures 1, 2, 3, & 4** for wiring information.

*(Wiring Instructions continued on pages 2 and 3.)*

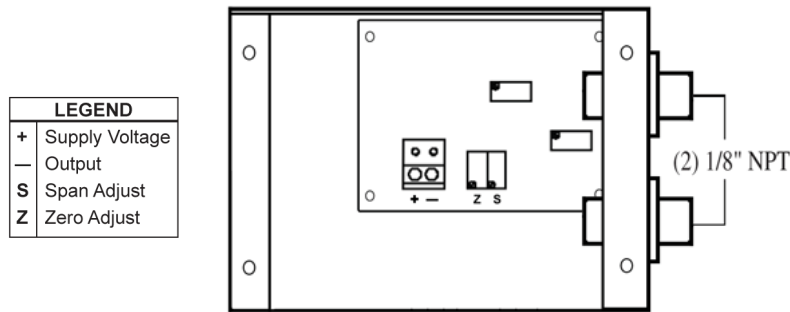
**DIFFERENTIAL PRESSURE SENSOR**

**mA Output**



**Wiring PR-282 Units with mA Output**

*PR-282 Differential Pressure Transducer with mA Output*



The PR-282 pressure transducers with 4-20 mA output units are powered with a 12-40 VDC supply.

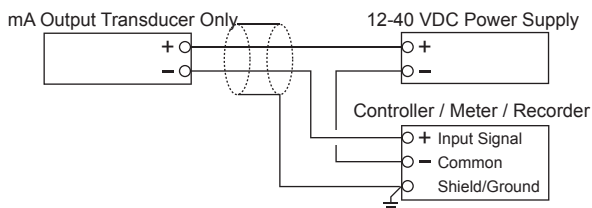
The following describes the proper wiring of these pressure transducers with mA output:

1. Remove the terminal block by carefully pulling it off the circuit board.
2. Locate the [+] and [-] terminal markings on the board.
3. Attach the supply voltage to the [+] lead.
4. Connect the 4-20 mA output ([-] terminal) to the controller's input terminal.
5. Ensure that the power supply common is attached to the common bus of the controller.
6. Re-insert the terminal block to the circuit board and apply power to the unit.
7. Check for the appropriate output signal using a DVM set on DC milliamps connected in series with the [-] terminal.

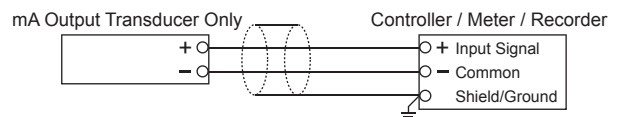
**TYPICAL APPLICATIONS (wiring diagrams)**

**Figure 1** and **Figure 2** illustrate typical wiring diagrams for the PR-282, 4-20 mA, 2-wire, Differential Pressure Transducer.

**Figure 1 - Wiring for mA Differential Pressure Transducers with External DC Power Supply**

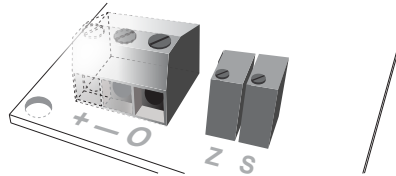


**Figure 2 - Wiring for mA Differential Pressure Transducers where the Controller or Meter has an Internal DC Power Supply**



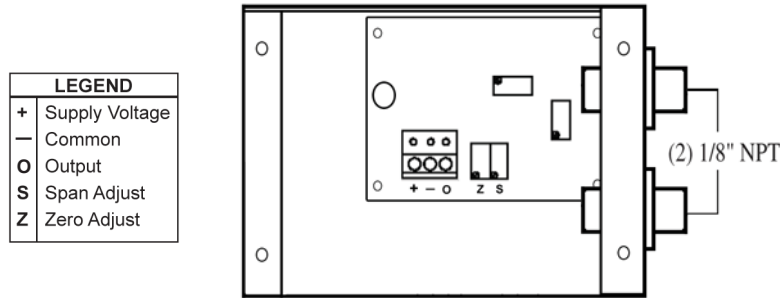
**DIFFERENTIAL PRESSURE SENSOR**

**VDC Output**



**Wiring PR-282 Units with VDC Output**

*PR-282 Differential Pressure Transducer with VDC Output*



The PR-282 pressure transducers with VDC output can be powered with either a 12-40 VDC or 12-35 VAC.

The following describes the proper wiring of these pressure transducers with VDC output:

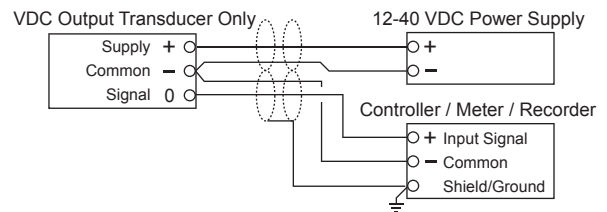
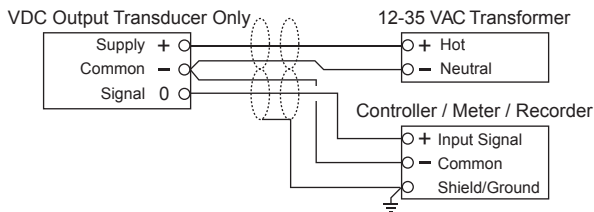
1. Remove the terminal block by carefully pulling it off the circuit board.
2. Locate the [+], [-] and [O] terminal markings on the board.
3. Attach the power wires to the [+] and [-] terminals. The [-] terminal is also the negative terminal.
4. Connect the [O] terminal, which is the positive VDC output terminal, to the controller's input terminal.
5. Re-insert the terminal block to the circuit board and apply power to the unit.
6. Check the appropriate VDC output using a voltmeter set on DC volts connected to the [O] and [-] terminals.

**TYPICAL APPLICATIONS (wiring diagrams)**

**Figure 3 and Figure 4** illustrate typical wiring diagrams for the PR-282, 0-5/0-10 VDC Differential Pressure Transducer.

**Figure 3 - Wiring for VDC Differential Pressure Transducers when applied with External AC Supply**

**Figure 4 - Wiring for VDC Differential Pressure Transducers when applied with External DC Supply**





**DIFFERENTIAL PRESSURE SENSOR**

- CHECKOUT**
1. Verify that the unit is mounted in the correct position.
  2. Verify appropriate input signal and supply voltage.



**CAUTION:** Never connect 120 VAC to these transducers. Never connect AC voltage to a unit intended for DC supply.

3. Verify appropriate configuration range.

**Transducer Operation**

This is a rough functional check only.

1. Adjust the pressure to obtain maximum output signal for appropriate range.
2. Output should be 20 mA or 5 or 10 VDC.
3. Adjust the pressure to obtain minimum output signal.
4. Output should be 4 mA or 0 VDC.

**NOTE:** The PR-282 is a highly accurate device. For applications requiring a high degree of accuracy, the use of laboratory quality meters and gauges are recommended.

- CALIBRATION** All units are factory calibrated to meet or exceed published specifications. If field adjustment is necessary, follow the instructions below.

**Calibration of PR-282 mA Units**

1. Connect terminals [+] and [-] to the appropriate power source.
2. Connect the DVM in series on the [-] terminal.
3. Apply low pressure to the unit and carefully adjust the zero trimmer (Z) to obtain desired low output.
4. Apply high pressure to the unit and adjust span trimmer [S] to obtain the desired high output pressure.
5. Repeat steps 3 and 4 until desired calibration is achieved.

**Calibration of PR-282 VDC Units**

1. Connect terminals [+] and [-] to the appropriate power source. The [-] terminal is also the negative output terminal.
2. Connect the DVM on DC volts across [O] and [-] terminal.
3. Apply low pressure to the unit and carefully adjust the zero trimmer (Z) to obtain desired low output.
4. Apply high pressure to the unit and adjust span trimmer [S] to obtain the desired high output pressure.
5. Repeat steps 3 and 4 until desired calibration is achieved.

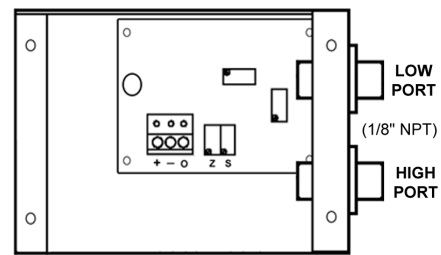
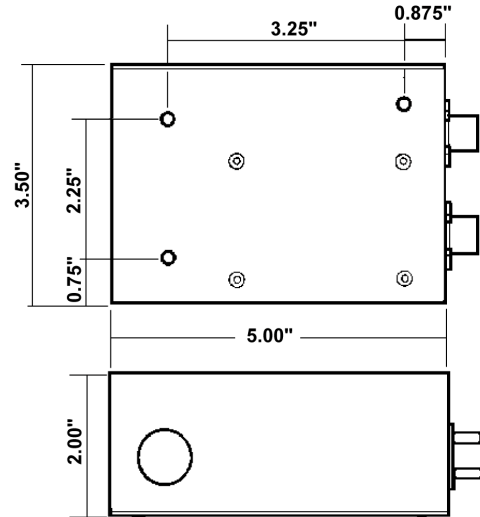
- MAINTENANCE** Regular maintenance of the total system is recommended to assure sustained optimum performance.

- FIELD REPAIR** None. Replace with a functional unit.

- WARRANTY** See Data Sheet for additional information.

**DIMENSIONAL DATA**

Figure 5 - PR-282 Differential Pressure Transducer dimensions shown in inches.



For Technical / Application Assistance call your nearest office

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