

For additional information, see the accompanying data sheet for this transducer.

**Ordering Information**

PACKAGING	RANGE	OUTPUT
274 (enclosure mount)	R1 (" wc) 0 to 0.10 / -0.05 to 0.05	<b>mA</b> 4 - 20 mA two-wire
275 (panel mount)	R2 (" wc) 0 to 1.0 / 0 to 0.5 / 0 to 0.25 / -0.5 to 0.5 / -0.25 to 0.25 / -0.125 to 0.125	<b>VDC</b> 0 - 5 or 0 - 10 VDC (field selectable)
	R3 (" wc) 0 to 5.0 / 0 to 2.5 / 0 to 1.25 / -2.5 to 2.5 / -1.25 to 1.25 / -0.625 to 0.625	
	R4 (" wc) 0 to 30 / 0 to 15 / 0 to 7.5 / -15.0 to 15.0 / -7.5 to 7.5 / -3.75 to 3.75	
	R5 (pa) 0 to 25 / -12.5 to 12.5	
	R6 (pa) 0 to 250 / 0 to 125 / 0 to 62.5 / -125 to 125 / -62.5 to 62.5 / -31.25 to 31.25	
	R7 (pa) 0 to 1250 / 0 to 625 / 0 to 312.5 / -625 to 625 / -312.5 to 312.5 / -156.25 to 156.25	
	R8 (pa) 0 to 7500 / 0 to 3750 / 0 to 1875 / -3750 to 3750 / -1875 to 1875 / -937.5 to 937.5	

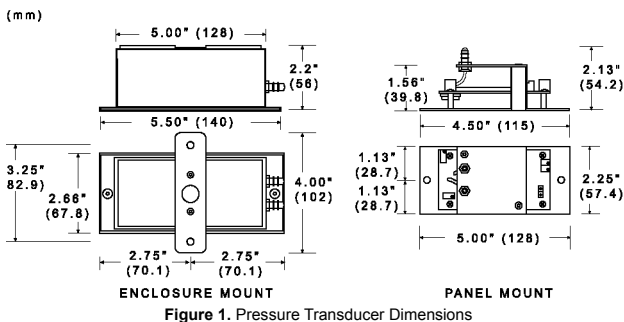
**Dimensions**


Figure 1. Pressure Transducer Dimensions

**Specifications**

- Accuracy\*:**  $\pm 1\%$  FS
- Overpressure:** 10 PSID
- Supply Voltage:** 12 - 40 VDC;  
12 - 35 VAC (VDC output transducers only)
- Supply Current:** 10 mA maximum for VDC output transducers; 20 mA maximum for mA output transducers
- Enclosure:** 18 gage C.R. steel NEMA 4 (IP65) or panel mount chassis
- Finish:** Baked-on enamel PMS2GR88B
- Compensated Temperature Range:** 25°F to 150°F (-4°C to 65°C)
- T. C. Error:**  $\pm 0.0125\%/^{\circ}\text{F}$  (0.2%/°C)
- Operating Temperature Range:** 0°F to 175°F (-18°C to 80°C)
- Media Compatibility:** Clean dry air or any inert gas
- Environmental:** 10 to 90% RH non-condensing
- Termination:** Unpluggable screw terminal block
- Wire Size:** 12 gauge maximum
- Load Impedance:** 1.6K ohms maximum at 40 VDC (mA output transducers)  
1K ohms minimum (VDC output transducers)
- Weight:** Enclosure mount: 1.0 lb. (.45 kg);  
Panel mount: 0.5lbs. (.25 kg)

\* Includes nonlinearity and non-repeatability.

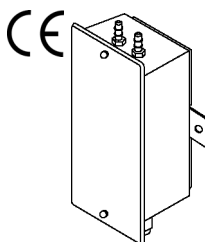


Figure 2. Enclosure Mount Transducer

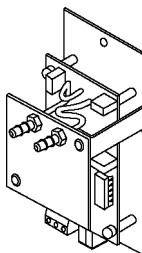


Figure 3. Panel Mount Transducer

**Installation**
**Inspection**

Inspect the transducer packaging for signs of damage. If damaged, notify the carrier immediately.

**Requirements**

- Tools (not provided):
  - Digital volt-ohm meter (DVM)
  - Appropriate screwdriver for mounting screws
  - Appropriate drill and drill bit for mounting screws
- Appropriate accessories
- Two #8 self-tapping mounting screws (not provided)
- Training: Installer must be a qualified and experienced technician



**WARNING!**

- Disconnect the power supply before installing the transducer. Failure to do so can result in electrical shock and equipment damage.

- Make all connections in accordance with the job wiring diagram and national and local electrical codes. Use only copper conductors.
- Use electrostatic discharge precautions such as wrist straps when installing and wiring the transducer.
- Avoid installing the transducer in locations where severe shock, vibration, excessive moisture, or corrosive fumes are present. NEMA 4 housings are primarily intended for outdoor use to provide a degree of protection against windblown dust, rain, and hose-directed water.
- Do not exceed ratings for the transducer.

**Mounting**

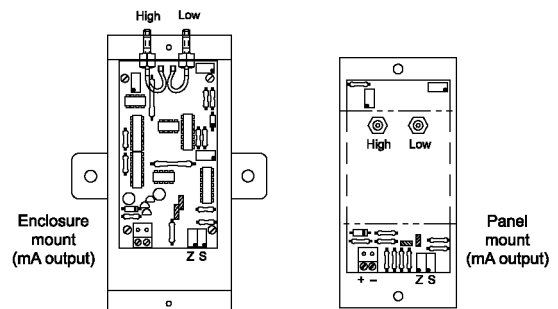
1. Remove the transducer cover using a Phillips screwdriver.
2. Select the mounting location.
3. Mount the transducer on a vertical surface with two number eight self-tapping screws (not provided).
4. Pull the wires through the bottom of the enclosure and make the necessary connections.
5. Replace the cover and make the pneumatic connections.

**Wiring**

Use 12 AWG wire maximum for wiring terminals. Use flexible 1/4-inch outer diameter (5/32-inch inner diameter) tubing for the high and low pressure connections. See Figures 6 to 9 for wiring diagrams and Figures 10 and 11 for jumper designations.

**Wiring for mA Output**

1. Remove the blue terminal block by carefully pulling it off the circuit board. See Figure 4.
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. Reinsert the terminal block to the circuit board and apply power to the transducer.
7. Check for the appropriate output signal by using a DVM set to DC milliamps connected in series to the [-] terminal.



**Legend**  
 S = Span Adjust  
 Z = Zero Adjust  
 + = Supply Voltage  
 - = Output

Figure 4. Pressure Transducer With mA Output

**Wiring for VDC Output**

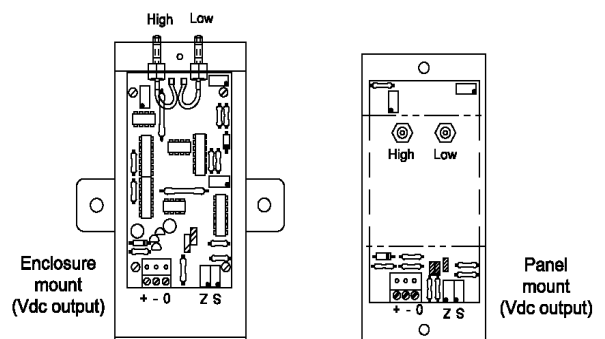
The VDC output low pressure transducer is field selectable for 0 - 5 VDC or 0 - 10 VDC output and can be powered with either 12 - 40 VDC or 12 - 35 VAC.

1. Remove the blue terminal block by carefully pulling it off the circuit board. See Figure 5.
2. Locate the [+], [-], and [0] terminal markings on the board.
3. Attach the power wires to the [+] and [-] terminals. The [-] terminal is also the negative output terminal.
4. Connect the [0] terminal, which is the positive VDC output terminal, to the controller's input.
5. Reinsert the terminal block to the circuit board and apply power to the transducer.
6. Check the appropriate VDC output by using a DVM set to DC volts connected to the [0] and [-] terminals.



**CAUTION!**

- If using grounded AC, ensure that the hot wire is on the [+] terminal. In addition, if using a controller without built-in isolation, use an isolation transformer to supply the transducer.
- This transducer contains a half-wave rectifier power supply and must not be powered from transformers powering other devices with non-isolated full-wave rectifier power supplies.
- When multiple transducers are powered from the same transformer, damage will result unless all 24-gauge power leads are connected to the same power lead on all transducers. Maintain the correct phasing when powering more than one transducer from a single transformer.



**Legend**  
 S = Span Adjust  
 Z = Zero Adjust  
 + = Supply Voltage (Hot)  
 - = Common (Neutral)  
 0 = Input

Figure 5. Pressure Transducer With VDC Output

## Typical Applications (wiring diagrams)

Figures 6 and 7 illustrate typical wiring diagrams for the mA output low pressure transducer.

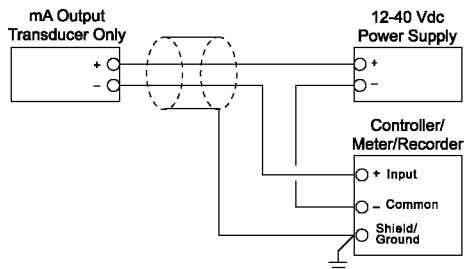


Figure 6. Wiring mA Output Transducers With an External DC Power Supply

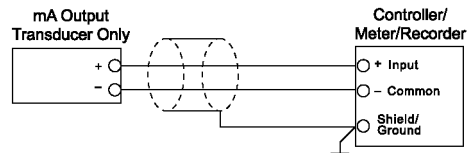


Figure 7. Wiring mA Output Transducers Where the Controller or Meter Has an Internal DC Power Supply

Figures 8 and 9 illustrate typical wiring diagrams for the VDC output low pressure transducer.

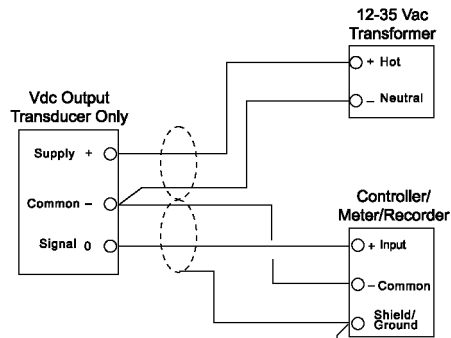


Figure 8. Wiring VDC Output Transducers With an External AC Power Supply

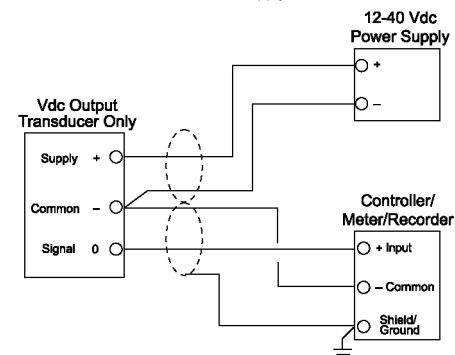


Figure 9. Wiring VDC Output Transducers With an External DC Power Supply

## Adjustments

### Jumper Configuration

Jumper configuration varies according to the output type of the low pressure transducer. Range configurations are shown in Table 1. Jumper selections for mA output low pressure transducers are shown in Figure 10; jumper selections for VDC output low pressure transducers are shown in Figure 11.

Table 1. Jumper Range Configurations

Range	A	B	C	D	E	F	G	H
R1	0 to .10	-.05 to .05	—	—	—	—	—	—
R2	—	—	0 to 1.0	0 to 5	0 to 25	-.05 to .05	-.25 to .25	-.125 to .125
R3	—	—	0 to 5.0	0 to 2.5	0 to 1.25	-2.5 to 2.5	-1.25 to 1.25	-.625 to .625
R4	—	—	0 to 30	0 to 15	0 to 7.5	-15.0 to 15.0	-7.5 to 7.5	-3.75 to 3.75
R5	0 to 25	-12.5 to 12.5	—	—	—	—	—	—
R6	—	—	0 to 250	0 to 125	0 to 62.5	-125 to 125	-62.5 to 62.5	-31.25 to 31.25
R7	—	—	0 to 1250	0 to 625	0 to 312.5	-625 to 625	-312.5 to 312.5	-156.25 to 156.25
R8	—	—	0 to 7500	0 to 3750	0 to 1875	-3750 to 3750	-1875 to 1875	-937.5 to 937.5

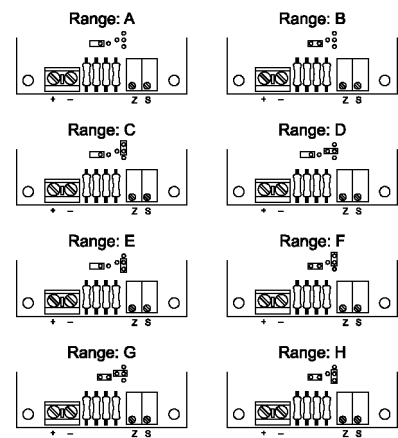


Figure 10. Jumper Selections for Pressure Transducers With mA Output

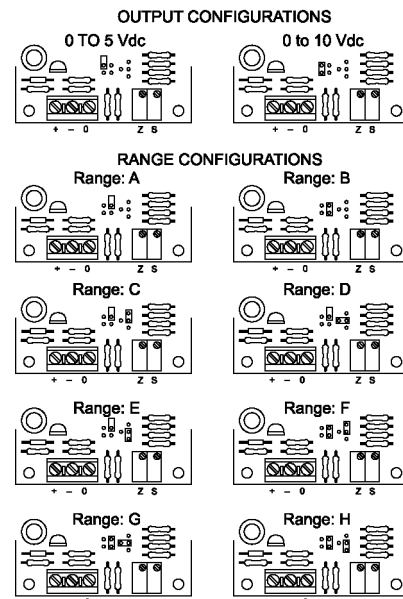


Figure 11. Jumper Selections for Pressure Transducers With VDC Output

## Checkout

1. Verify that the transducer is mounted in the correct position.
2. Verify the appropriate input signal and supply voltage.
3. Verify the appropriate configuration range.



CAUTION!

- Never connect 120 VAC to the pressure transducer. AC voltage should never be connected to a transducer intended for a DC power supply.

## Transducer Operation

1. Adjust the pressure to obtain the maximum output signal for the appropriate range.
2. Ensure that output is either 20 mA or 5 or 10 VDC.
3. Adjust the pressure to obtain a minimum output signal.
4. Ensure that output is either 4 mA or 0 VDC.

Note:

This pressure transducer is a highly accurate device. For applications requiring a high degree of accuracy, use laboratory quality meters and gages.

## Calibration

All transducers are factory calibrated to meet or exceed published specifications. If field adjustment is necessary, follow these instructions:

### Calibration of All Pressure Transducers

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

### Calibration of VDC Output Pressure Transducers Only

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 the [0] and [- ] terminals.
3. Apply low pressure to the transducer and carefully adjust the zero trimmer [Z] to obtain the desired low output pressure.
4. Apply high pressure to the transducer and adjust the span trimmer [S] to obtain the desired high output pressure.
5. Repeat steps 3 and 4 until the transducer is fully calibrated.

## Maintenance

Perform regular maintenance on the total system to ensure the sustained optimum performance of the low pressure transducer.

## Field Repair

Do not attempt to repair the low pressure transducer. Replace a malfunctioning transducer with a functional transducer if necessary.

## Warranty

See the accompanying data sheet for additional information.

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