

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

Ordering Information

RANGE	OUTPUT
R1 (psig) 0 to 100 / 0 to 50 / 0 to 25	mA 4 - 20 mA two-wire
R2 (psig) 0 to 300 / 0 to 150 / 0 to 75	VDC 0 - 5 or 0 - 10 VDC (field selectable)
R3 (psig) 0 to 500 / 0 to 250 / 0 to 125	
R4 (kPa) 0 to 700 / 0 to 350 / 0 to 175	
R5 (kPa) 0 to 2000 / 0 to 1000 / 0 to 500	
R6 (kPa) 0 to 3500 / 0 to 1750 / to 875	

Dimensions

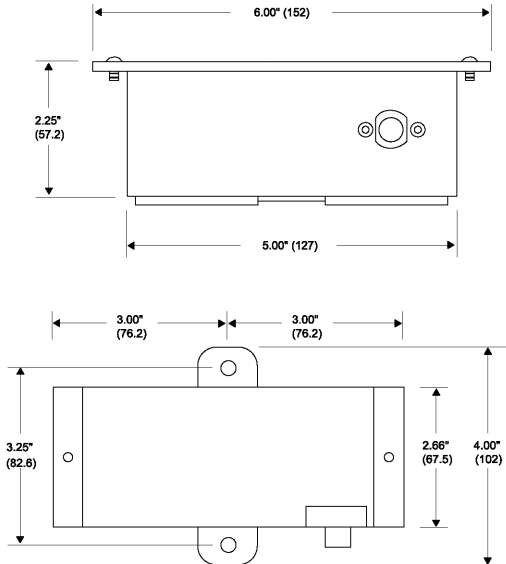


Figure 1. Pressure Transducer Dimensions

Specifications

Accuracy*: $\pm 1\%$ FS

Overpressure: 300%

Burst Pressure: 500%

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)

Finish: Baked-on enamel PMS2GR88B

Conformance: EMC Standards EN50082-1(1992), EN55014(1993)/EN60730-1(1992)

Compensated Temperature Range: 0°F to 180°F (-18°C to 82°C)

T. C. Error: $\pm 0.025\%/^{\circ}\text{F}$ (.03%/°C)

Media Compatibility: Liquids and gases compatible to 316L stainless steel

Port Connection: 1/8-inch NPT

Environmental: 10 to 90% RH non-condensing

Termination: Unpluggable screw terminal block

Wire Size: 12 gage maximum

Load Impedance: 1.6K ohms maximum at 40 VDC (mA output transducers);
1K ohms minimum (VDC output transducers)

Weight: Enclosure 1.0 lb. (.45 kg)

* Includes nonlinearity, hysteresis, and non-repeatability.

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!

- Do not use on oxygen service, use in an explosive or hazardous environment, or use with flammable or combustible material.
- 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

- Choose a vertical mounting surface for the pressure transducer.
- Orient the pressure transducer so that the 1/8-inch NPT connection points downward. See Figure 1.
- Remove the transducer cover using a Phillips screwdriver.
- Mount the pressure transducer using two #8 self-tapping screws (not provided).
- Pull the wires through the bottom of the enclosure and make the necessary connections.
- Replace the transducer cover and make the pneumatic connections.

Wiring

Use 12 AWG wire maximum for wiring terminals and copper or stainless steel tubing for transducer connections. See Figures 5 to 8 for wiring diagrams and Figures 9 and 10 for jumper designations.

Wiring for mA Output

The mA output pressure transducer must be powered with a 12 - 40 VDC power supply. See Figure 3.

- Remove the blue terminal block by carefully pulling it off the circuit board.
- Locate the [+] and [-] terminal markings on the board.
- Attach the supply voltage to the [+] lead.
- Connect the 4 - 20 mA output [-] terminal to the controller's input terminal.
- Ensure that the power supply common is attached to the common bus of the controller.
- Reinsert the terminal block to the circuit board and apply power to the transducer.
- Check for the appropriate output signal by using a DVM set to DC milliamps connected in series to the [-] terminal.

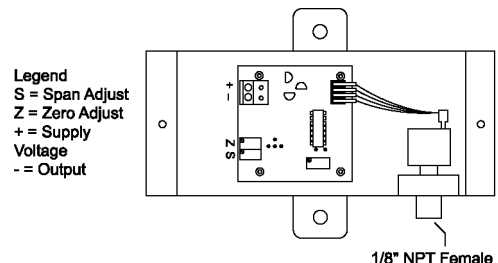


Figure 3. Pressure Transducer With mA Output

Wiring for VDC Output

The VDC output 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. See Figure 4.

- Remove the blue terminal block by carefully pulling it off the circuit board.
- Locate the [+], [-], and [0] terminal markings on the board.
- Attach the power wires to the [+] and [-] terminals. The [-] terminal is also the negative output terminal.
- Connect the [0] terminal, which is the positive VDC output terminal, to the controller's input terminal.
- Reinsert the terminal block to the circuit board and apply power to the transducer.
- 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-gage 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.

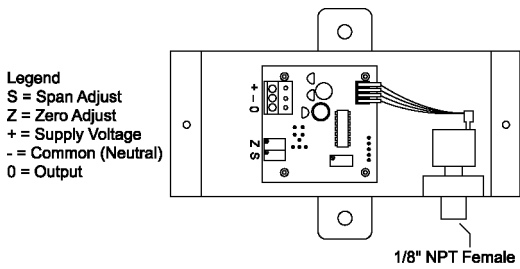


Figure 4. Pressure Transducer With VDC Output

Typical Applications (wiring diagrams)

Figures 5 and 6 illustrate typical wiring diagrams for an mA output pressure transducer.

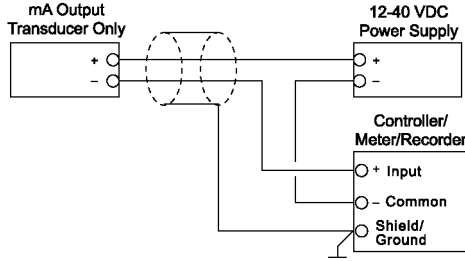


Figure 5. Wiring mA Output Pressure Transducers With an External DC Power Supply

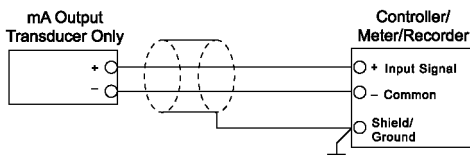


Figure 6. Wiring mA Output Pressure Transducers Where the Controller or Meter Has an Internal DC Power Supply

Figures 7 and 8 illustrate typical wiring diagrams for the VDC output pressure transducer.

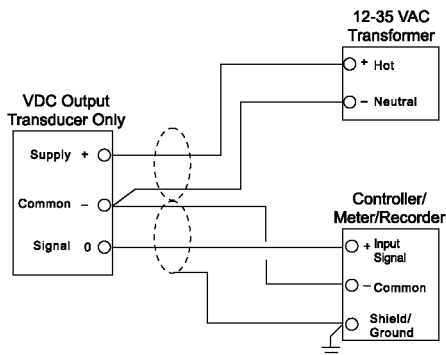


Figure 7. Wiring VDC Output Pressure Transducers With an External AC Power Supply

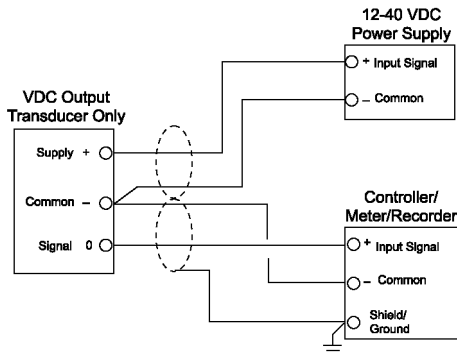


Figure 8. Wiring VDC Output Pressure Transducers With an External DC Power Supply

Adjustments

Jumper Configuration

Jumper configuration varies according to the output type of the pressure transducer. Range configurations for pressure transducers are shown in Table 1. Jumper selections for mA output pressure transducers are shown in Figure 9; jumper selections for VDC output transducers are shown in Figure 10.

Table 1. Jumper Range Configurations

Range	A	B	C
R1	0 to 100	0 to 50	0 to 25
R2	0 to 300	0 to 150	0 to 75
R3	0 to 500	0 to 250	0 to 125
R4	0 to 700	0 to 350	0 to 175
R5	0 to 2000	0 to 1000	0 to 500
R6	0 to 3500	0 to 1750	0 to 875

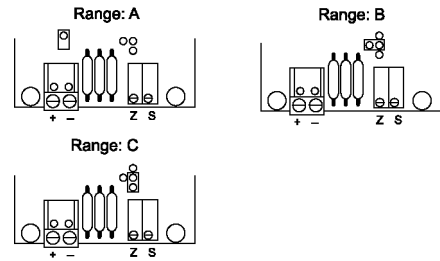


Figure 9. Jumper Selections for Pressure Transducers With mA Output

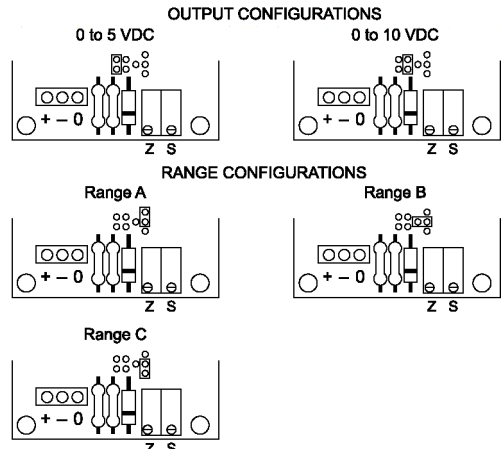


Figure 10. Jumper Selections for Pressure Transducers With VDC Output

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 mA Output Pressure Transducers

1. Connect the [+] and [-] terminals 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

1. Connect the [+] and [-] terminals 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 pressure transducer.

Field Repair

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

Warranty

See the accompanying data sheet for additional information. For technical / application assistance, call your nearest office.

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