

Installation Guide

Alpha Instruments Model 175 Differential Pressure Transducers

Every Model 175 has been tested and calibrated before shipment.

Alpha Instruments M175 pressure transducers sense differential or gauge (static) pressure and convert this pressure difference to a proportional high level analog output for both unidirectional and bidirectional pressure ranges. Three standard output versions are offered: Voltage output of 0 to 5 VDC, 0 to 10VDC and current output of 4 to 20mA.

Media Compatibility:

Model 175 transducers are designed to be used with air or nonconducting gases. Use with liquids or highly corrosive gases may damage the unit.

Environmental Requirement:

Operating Temperature	0 ~ 170°F (-18 ~ 77°C)
Compensated Temperature Range	35 ~ 170°F (2 ~ 77°C)
Temperature Drift	<0.025%FS/°F (<0.045%FS/°C)

Pressure Fittings:

The Model 175 is designed to be used with 1/8" I.D. push-on tubing. The positive (high) pressure port and the reference (low) pressure port are labeled "+" and "-" respectively.

Electrical Installation (Voltage Output):

The Model 175V is a 3-wire device, with 0-5 or 0-10VDC output. The power supply and signal references are common (See Diagram 2). The detachable terminal block accepts 14 to 26 AWG wires. It has the designation "+", "0" and "-" (See Diagram 1).

The 175V can operate from 13-32VDC excitation. The unit is calibrated at the factory with a 24 VDC power, 50KΩ load resistor.

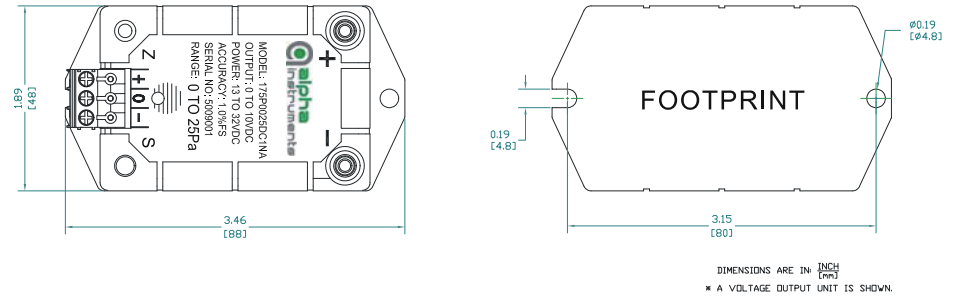


Diagram 1

Electrical Installation(Current Output):

The Model 175C is a two-wire loop-powered 4 to 20mA current output unit and delivers rated current into any external load of 0 to 950 ohms. The detachable terminal block accepts 14 to 26 AWG wires. It has the designation of "+" and "-" (See Diagram 1). The current flows into the "+" terminal and returns back to the power supply through the "-" terminal (See Diagram 3). The center Terminal should be ignored.

The 175C can operate from 13-32VDC excitation. The unit is calibrated at the factory with a 24 VDC loop supply voltage and a 250ohm load.

Voltage Circuit Diagram

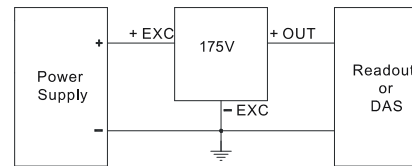


Diagram 2

Current Circuit Diagram

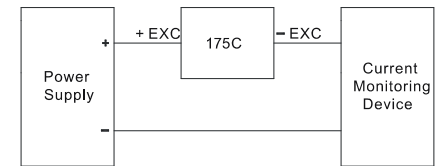


Diagram 3

The below table shows the maximum wire and receiver resistances as a function of supply voltage.

V _{min}	V _{max}	R _{min}	R _{max}	RL at Supply Voltage (Vs)
13	32	0	950	RL ≤ 50(Vs - 13)

For Example: Voltage is 24VDC, RL ≤ 50(24-13)=550Ω, the load resistance should not exceed 550Ω.

Zero Calibration:

1. The 175 transducer is installed. Let the power on for one minute or longer to eliminate the warm up shift. No pressure is applied to either pressure port. The LED color should be green.
2. Use a pen, a pencil or a screw driver to push the zero button and hold it down, the LED color changes to red.
3. When the LED color changes back to green, release the push button, the zero calibration is done.
4. If the transducer is damaged, zero calibration can not be accomplished, the LED will flash between red and green.

RETURNING PRODUCTS FOR REPAIR:

Please contact Alpha Instruments before returning unit for repair to review information relative to your application.

The material should be carefully packaged and shipped prepaid to:

Alpha Instruments Inc.
131 Nonset Path
Acton, MA 01720, USA
Attn: Repair Department

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

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

Notes: Please remove any pressure fittings and plumbing that you have installed and enclose any required mating electrical connectors and wiring diagrams. Alpha Instruments will repair and return of the unit as soon as possible. Non-warranty repairs will not be made without customer approval and a purchase order to cover repair charges.

LIMITED WARRANTY AND LIMITATION OF LIABILITY:

Alpha Instruments warrants its products to the original consumer purchase for a period of three years from the date of sale, as shown in Alpha Instruments' shipping documents.

Within the warranty period, Alpha Instruments will repair or replace products found to be defective in materials or workmanship free of charge, if the following conditions meet:

- a) the product has not been subjected to abuse, neglect, accident, incorrect excitation, improper installation or servicing.
- b) the product has not been repaired or altered by anyone except Alpha Instruments.
- c) the serial number or date code has not been removed, defaced or otherwise changed.
- d) Alpha Instruments is notified in advance of and the product is returned to Alpha Instruments transportation prepaid.

Alpha Instruments' 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. Alpha Instruments' liability for all other breaches is limited to a refund of the purchased price. In no instance shall Alpha 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 Alpha Instruments any other liability in connection with the sale of its products.

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