

Model 178A Installation Guide

Model 178A pressure transducers sense pressure difference between the two pressure ports and convert it to a proportional high level analog output for either unidirectional and bidirectional pressure ranges. The standard output is 4 to 20mA.

Media Compatibility:

Model 178A transducers are designed to be used with air or non-conducting gases. Use with liquids or highly corrosive gases may damage the unit.

Environmental Requirement:

Operating Temperature 32 ~ 140°F (0 ~ 60°C)

Pressure Fittings:

The standard Model 178A is designed to connect with 3/16" I.D. push-on tubing. 8mm barbed brass pressure fittings and other possible pressure fittings are optional. The positive (high) pressure port and the reference (low) pressure port are labeled as "+" and "-" respectively. For best results (quick response), the suggested length of 3/16" I.D. tubing is less than 82 feet (25 meters), 1/4" I.D. tubing is less than 246 feet (75 meters).

Electrical Connection:

The Model 178A is a two-wire loop-powered 4 to 20mA current output unit and delivers rated current into any external load of 0 to 800 ohms. The detachable terminal block accepts 16 to 26 AWG wires. It has the designation of "+EXC" and "-EXC" (See Diagram 1). The current flows into the "+EXC" terminal and returns back to the power supply through the "-EXC" terminal (See Diagram 2). The 178A can operate from 16-32VDC power supply. The factory calibration is performed with a 24 VDC power supply and a 250ohm load.

Installation:

To mount model 178A properly, it is suggested to open a hole on a wall or a panel. The size is 117mm wide and 105mm high. First do the electrical and pressure connection, then use silicone or other adhesive to secure the unit in place.

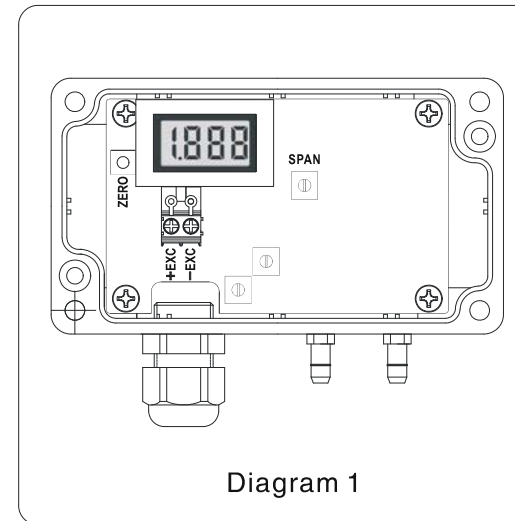


Diagram 1

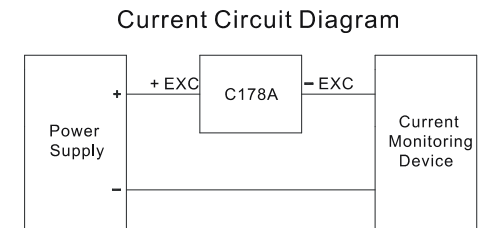


Diagram 2

The following chart 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 (V_s)
16	32	0	800	$RL \leq 50(V_s - 16)$

For Example: Voltage is 24VDC, $RL \leq 50(24-16) = 400\Omega$, the load resistance should not exceed 400Ω.

Zero Calibration:

1. Position 178A transducer to the same orientation as it will be installed, keep power on for one minute or longer to eliminate the warm up shift. Do not apply pressure to either pressure port .
2. If the LCD shows "000". There is no need to do anything.
3. If the LCD does not show "000", press "Z" button down. Wait until the LCD shows "000" and hold it for 3 seconds. Release "Z" button.

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.
468 Great Road
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.
- 4.

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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