

178 Model Low Differential Pressure Transmitter

alpha[∞]
instruments



The Model 178 Series are low range differential pressure transmitters. Each unit features a push-activated ZERO function and an associated LCD display. With a convenient push button, the zero calibration can be performed without any additional equipment. It is with NEMA 4 (IP-65) rated aluminum enclosures, they are very rugged and very reliable.

The Model 178 Series are available for full scale pressure range from 0 to 0.1"WC till 0 to 100"WC. Both unidirectional and bidirectional pressure ranges are offered.

The output of Model 178 Pressure Transmitter is 4 to 20 mA. All units are temperature compensated. The accuracy can be 0.6%, 0.4% or 0.25% at room temperature.

The patented variable capacitance pressure sensor is constructed by stainless steel and glass, no glue or other organics. That provides excellent performance, corrosion resistance and long-term stability.

Model 178 Specifications

Performance Data	Standard	Optional	Optional
Accuracy* (at room temp)	±0.60%FS	±0.40%FS	±0.25%FS
Non-Linearity (BFSL)	±0.55%FS	±0.37%FS	±0.20%FS
Hysteresis	±0.20%FS	±0.10%FS	±0.10%FS
Non-Repeatability	±0.10%FS	±0.10%FS	±0.10%FS
Thermal Effects: Zero/Span Shift (°F)	±0.025%FS	±0.02%FS	±0.015%FS
Compensated Range	35 to 140°F (2 to 60°C)		
Maximum Line Pressure	15PSI(100kPa)		
Overpressure	15PSI(100kPa) in Positive or Negative Direction for all Ranges		
Stability	±0.5% FS/YR		
Warm-up shift	±0.1%FS		
Position Effect	Each unit is calibrated in the vertical position. For best accuracy, adjust zero of the unit if it is mounted in other position. It is not necessary to adjust the sensitivity.		

* RSS of Non-Linearity, Hysteresis, and Non-Repeatability.

Environmental Data and Physical Description

Operating Temperature	32 to 140° F(0 to 60°C)
Storage Temperature	-40 to 185°F (-40 to 85°C)
Electrical Termination	Pluggable Terminal Block with PG-9 Strain Relief
Pressure Fittings	3/16", 6.5mm or 8.0mm O.D. Barbed Brass for Push-on Tubing
Zero & Span Adjustment	Push button for Zero, Potentiometer for span
Pressure Media	Typically Air or similar non-conducting Gases
Enclosure	Die-cast aluminum, rated NEMA 4/IP65.
Weight	11.5OZ/330g
Installation	There are two 0.165 inch dia. mounting holes inside the enclosure. Two M4 X 12 pan head screws with washers and nuts are included in the box. See Diagram 1 for outline and dimensions. Stainless steel mounting plate with tabs is optional.

Applications:

- HVAC and VAV Control
- Clean Rooms and Isolation Rooms
- Duct Static Pressure Measurement
- Draft Control and Fume Hood Control
- Furnace Air Flow Control
- Power Plant Air Flow Monitor and Control

Features

- 3-1/2 Digit LCD Display
- Push Button Zero Calibration
- 15 PSI Over Pressure
- Incorrect Wiring Protection
- Rugged Aluminum Housing Rated NEMA 4/IP65
- RoHS Compliant

Visit us Online:

www.alphainstruments.com

E-mail: sales@alphainstruments.com

978-264-2966

Model 178 Specifications

Electrical Data (Current)

Circuit	2-Wire (+EXC, -EXC) , Protected against incorrect wiring
Excitation	16-32VDC (see diagram 2 for maximum loop resistance)
Output	4-20mA
Bidirectional Output at Zero	12mA as standard
External Load	0-800 OHM

- * Calibrated with a 250 OHM load and a 24VDC supply voltage
Span Factory Setting: +/-0.5%FS

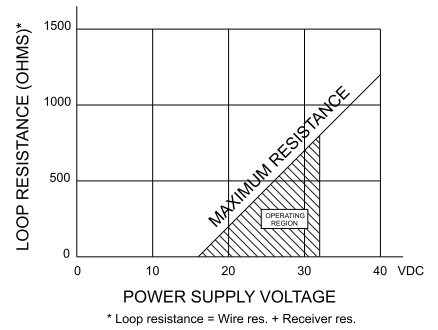
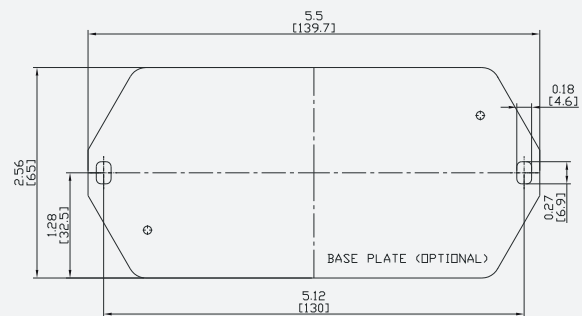
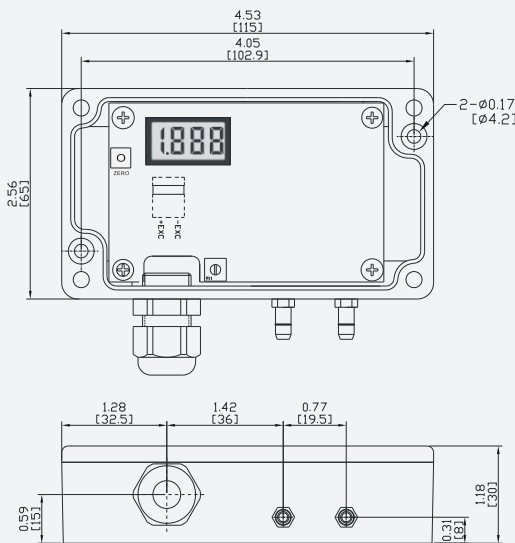


Diagram 2



DIMENSIONS ARE IN: $\frac{\text{INCH}}{\text{mm}}$
* A CURRENT OUTPUT UNIT IS SHOWN.

Diagram 1

Ordering Information Code all blocks in table.

Example: 178W00R1DA6NA for 178 Transmitter, 0~0.1 in. WC Range, Unidirectional, 4-20mA Output, 0.6% Accuracy, No Calibration Certificate, 3/16" Barbed Brass Pressure Fittings, with LCD Display.

Model	Unit	Range	Pressure Type	Output	Accuracy	Certificate	Pressure Fitting
178	P: Pascal W: in. W.C.	NNNN	Differential D: Unidirectional B: Bidirectional	A: 4-20mA	6: 0.6%FS 4: 0.4%FS 2: 0.25%FS	Y: (with) N: (without)	A: 3/16" B: 8mm E: 6.5mm (Barbed Brass)
Pressure Unit/Range/Type							
in. W.C. (Unidirectional)		in. W.C. (Bidirectional)		Pascal (Unidirectional)		Pascal (Bidirectional)	
W00R1D=0 to 0.1 in. WC		W0R05B=-0.05 to 0.05 in. WC		P0025D=0 to 25 Pa		P0010B=-10 to 10 Pa	
W0R25D=0 to 0.25 in. WC		W00R1B=-0.1 to 0.1 in. WC		P0050D=0 to 50 Pa		P0025B=-25 to 25 Pa	
W00R5D=0 to 0.5 in. WC		W0R25B=-0.25 to 0.25 in. WC		P0100D=0 to 100 Pa		P0050B=-50 to 50 Pa	
W0001D=0 to 1 in. WC		W00R5B=-0.5 to 0.5 in. WC		P0250D=0 to 250 Pa		P0100B=-100 to 100 Pa	
W02R5D=0 to 2.5 in. WC		W0001B=-0.1 to 1 in. WC		P0500D=0 to 500 Pa		P0250B=-250 to 250 Pa	
W0005D=0 to 5 in. WC		W02R5B=-2.5 to 2.5 in. WC		P1000D=0 to 1000 Pa		P0500B=-500 to 500 Pa	
W0010D=0 to 10 in. WC		W0005B=-5 to 5 in. WC		P2500D=0 to 2500 Pa		P1000B=-1000 to 1000 Pa	
W0025D=0 to 25 in. WC		W0010B=-10 to 10 in. WC		P5000D=0 to 5000 Pa		P1250B=-1250 to 1250 Pa	
W0050D=0 to 50 in. WC		W0025B=-25 to 25 in. WC		P100CD=0 to 10000 Pa		P2000B=-2000 to 2000 Pa	
W0100D=0 to 100 in. WC		W0050B=-50 to 50 in. WC		P250CD=0 to 25000 Pa		P5000B=-5000 to 5000 Pa	
						P100CB=-10000 to 10000 Pa	

* Specifications subject to change without notice. If you don't see what you need here, please contact us.