

178A Model Low Differential Pressure Transmitter

alpha 阿尔法
微差压传感器 · From USA



Model 178A series are low range differential pressure transmitters with capacitive sensors. The patented stainless diaphragm sensor provides good corrosion resistance, excellent repeatability and long term stability.

Each unit features an associated LCD display and a stainless steel panel. With IP65/NEMA 4 rated aluminum die casting enclosures, the series are rugged and reliable, good for various fields.

The pressure range is from 0.1 in. WC to 100 in. WC. Both unidirectional and bidirectional are offered. The output can be 4 to 20mA, fully protected against short circuit and incorrect wiring. All units are temperature compensated. The temperature range covers from 2 to 60 , and the thermal effect is less than $\pm 0.05\text{FS}/$. The accuracy can be $\pm 0.8\%FS$, $\pm 0.4\%FS$, $\pm 0.25\%FS$ at room temperature.

Model 178A Specifications

Performance Data	Standard	Optional	Optional
Accuracy * (at room temp)	$\pm 0.80\%FS$	$\pm 0.40\%FS$	$\pm 0.25\%FS$
Non-Linearity (BFSL)	$\pm 0.77\%FS$	$\pm 0.37\%FS$	$\pm 0.24\%FS$
Hysteresis	$\pm 0.20\%FS$	$\pm 0.10\%FS$	$\pm 0.05\%FS$
Non-Repeatability	$\pm 0.10\%FS$	$\pm 0.10\%FS$	$\pm 0.05\%FS$
Thermal Effects (Per)	$\pm 0.05\%FS$	$\pm 0.03\%FS$	$\pm 0.02\%FS$
Compensated Range	2 to 60		
Maximum Line Pressure	15PSI (100kPa)		
Overpressure	$\pm 15\text{PSI}$ (100kPa)		
Long Term Stability	$\pm 0.5\% FS/YR$		
Warm-up Time	5 seconds to meet specifications		
Position Effect	Each unit is calibrated in the vertical position. For best accuracy, press the zero button to tare 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	0°C to 60°C
Storage Temperature	-40°C to 85°C
Pressure Fittings	3/16", 6.5mm or 8.0mm O.D. Barbed Brass
Electrical Termination	Pluggable Terminal Block with PG-9 Strain Relief
Output adjustment	Press the zero button three secs to tare the unit
Pressure Media	Typically Air or Similar Non-conducting Gases
Enclosure	Die-cast aluminum and SS304 panel
Weight	450g
Installation	Embedded Installation

Applications:

- HVAC and VAV Control
- Medical Instruments and Equipments
- Environmental Pollution Control
- Clean Rooms and Isolation Rooms
- Power Plant Air Flow Monitor and Control
- Textile Machinery
- Furnace Air Flow Control
- Gas Pipe Air Flow Monitor and Control
- Mine Air Flow Monitor and Control

Features:

- Robust Metal Housing
- 4 Digit LCD Display
- Stainless Steel Panel and Embedded Installation
- Up to 15 PSI Overpressure on All Ranges
- Mis-wiring Full Protection
- RoHS Compliant
- Pressure Ranges as low as 10 Pa only

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Model 178A Specifications

Electrical Data (Current)

Circuit	2-Wire (+EXC,-EXC), Incorrect Wiring Protection
Output	4-20mA
Bidirectional output at Zero	12mA
Excitation	16-32VDC(see diagram 2 for maximum loop resistance)
External Load	0-800 OHM

*Calibrated with a 250 OHM load and 24VDC supply voltage

*Zero Setting: Factory set at $\pm 0.5\%$ FS

*Span Setting: Factory set at $\pm 0.5\%$ FS

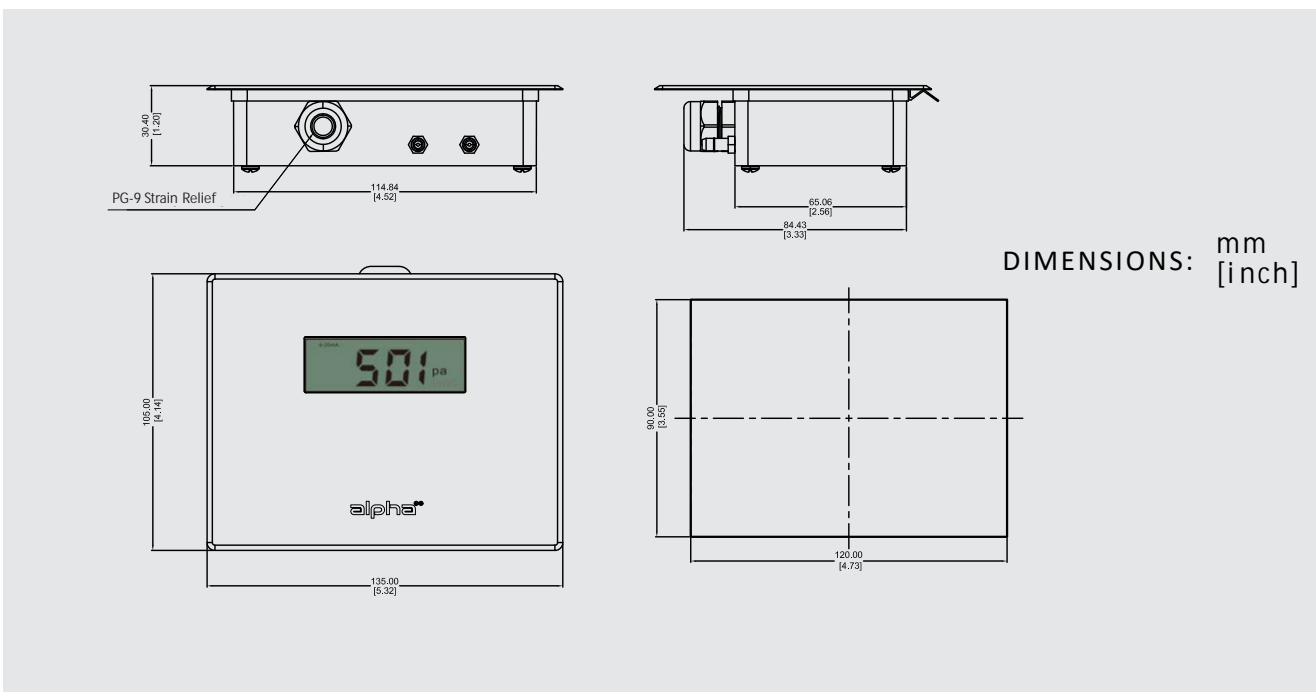
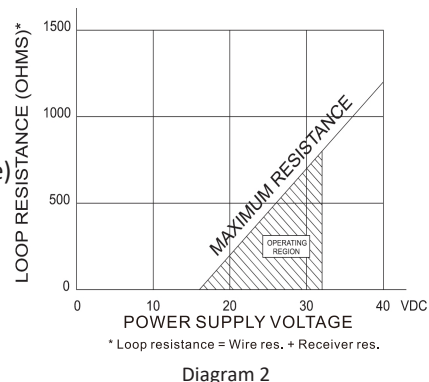


Diagram 1

Example: 178AW00R1DA8NA for 178A Transmitter, 0 to 0.1 in. WC Range, Unidirectional, 4-20mA Output, 0.8%FS Accuracy, No Calibration Certificate, 3/16" Barbed Brass Pressure Fittings

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Model	Unit	Range	Pressure Type	Output	Accuracy	Certificate	Pressure Fitting	
	P: Pascal W: in. W.C.	NNNN	D: Unidirectional B: Bidirectional	A: 4-20mA	8: 0.8%FS 4: 0.4%FS 2: 0.25%FS	Y: With N: Without	A: 3/16" B: $\phi 8$ C: $\phi 6.5$ (Barbed Brass)	

Pressure Unit/Range/Type

in. W.C. (Unidirectional)

W0R1D=0 to 0.1 in. WC
W0R25D=0 to 0.25 in. WC
W0R5D=0 to 0.5 in. WC
W001D=0 to 1 in. WC
W02R5D=0 to 2.5 in. WC
W0005D=0 to 5 in. WC
W0010D=0 to 10 in. WC
W0025D=0 to 25 in. WC
W0050D=0 to 50 in. WC
W0100D=0 to 100 in. WC

in. W.C. (Bidirectional)

W0R05B=-0.05 to 0.05 in. WC
W00R1B=-0.1 to 0.1 in. WC
W0R25B=-0.25 to 0.25 in. WC
W00R5B=-0.5 to 0.5 in. WC
W0001B=-1 to 1 in. WC
W02R5B=-25 to 25 in. WC
W0005B=-5 to 5 in. WC
W0010B=-10 to 10 in. WC
W0025B=-25 to 55 in. WC
W0050B=-50 to 50 in. WC

Pascal (Unidirectional)

P0025D=0 to 25 Pa
P0050D=0 to 50 Pa
P0100D=0 to 100 Pa
P0250D=0 to 250 Pa
P0500D=0 to 500 Pa
P1000D=0 to 1000 Pa
P2500D=0 to 2500 Pa
P5000D=0 to 5000 Pa
P100CD=0 to 10000 Pa
P250CD=0 to 25000 Pa

Pascal (Bidirectional)

P0010B=-10 to 10 Pa
P0025B=-25 to 25 Pa
P0050B=-50 to 50 Pa
P0100B=-100 to 100 Pa
P0250B=-250 to 250 Pa
P0500B=-500 to 500 Pa
P1000B=-1000 to 1000 Pa
P1250B=-1250 to 1250 Pa
P2000B=-2000 to 2000 Pa
P5000B=-5000 to 5000 Pa
P100CB=-10000 to 10000 Pa