

161 Model Low Differential Pressure Transducer

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instruments



The Model 161 Series are low range differential pressure transducers and transmitters. Each unit features a stainless steel pressure sensor, a stainless steel back cover and a plastic enclosure, which meets the NEMA 1 requirement. The electrical terminal screws and adjustment holes are concealed beneath a detachable plastic cap. All units are fully protected against short circuiting and incorrect wiring .

The Model 161 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 the Model 161 Pressure Transducer is available in two versions: 0 to 5VDC and 0 to 10VDC, where 0VDC is true zero without offset. The output of Model 161 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.

Additionally, our unique production setup allows us to accommodate special orders for nonstandard pressure ranges (e.g. -0.5"WC to +3.5"WC) .

Model 161 Specifications

Performance Data

Accuracy* (at room temp)	Standard ±0.60%FS	Optional ±0.40% FS	Optional ±0.25%FS
Non-Linearity (BFSL)	±0.55%FS	±0.37%FS	±0.24%FS
Hysteresis	±0.20%FS	±0.10%FS	±0.05%FS
Non-Repeatability	±0.10%FS	±0.10%FS	±0.05%FS
Thermal Effects: Zero/Span Shift (°F)	±0.03%FS	±0.02%FS	±0.015%FS
Compensated Range	40 to 170°F (4 to 77°C)		
Maximum Line Pressure	15PSI(100kPa)		
Overpressure	15PSI(100kPa) in Positive or Negative Direction for all Ranges		
Stability	±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, 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	0 to 170°F (-18 to 77°C)
Storage Temperature	-40 to 185°F (-40 to 85°C)
Electrical Termination	Terminal Strip
Pressure Fittings	3/16" O.D. barbed brass for 1/8" I.D. push-on tubing(standard). 6.5mm and 8mm O.D. barbed brass(optional)
Zero & Span Adjustment	Accessible under the small cap
Pressure Media	Typically air or similar non-conducting gases
Enclosure	Stainless Steel and PC+ABS Alloy, 94V-0 Rated
Weight	4.0OZ/113g
Installation	See Diagram 1 for outline and dimensions.

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

- 15 PSI Over Pressure
- Incorrect Wiring Protection
- Nonstandard Pressure Ranges
- True Zero Output for Voltage Unit
- RoHS Compliant

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Model 161 Specifications

Electrical Data (Voltage)

Circuit 3-Wire (+EXC, -EXC, OUTPUT), Protected against incorrect wiring
 Excitation 12-32VDC/12-30VAC
 Output* 0-5VDC, 0-10VDC
 Output Impedance ≤ 5.0 OHMS

- * Zero output: factory set at ± 35 mV(0-5VDC), ± 70 mV(0-10VDC)
 Span output: factory set at ± 35 mV(0-5VDC), ± 70 mV(0-10VDC)
 Calibrate with a 50K OHM load. Operable with a load greater than 5K OHM for 0-5VDC output, greater than 10K OHM for 0-10VDC output.

Electrical Data (Current)

Circuit 2-Wire (+EXC, -EXC), Protected against incorrect wiring
 Excitation 12-32VDC (see diagram 2 for maximum loop resistance)
 Output** 4-20mA
 Bidirectional Output at Zero 12mA as standard
 External Load 0-1000 OHM

- * Zero output: factory set at ± 0.11 mA
 Span output: factory set at ± 0.11 mA
 Calibrated with a 250 OHM load and a 24VDC supply voltage.

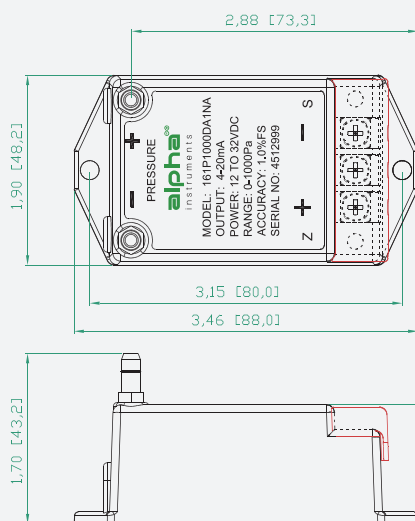
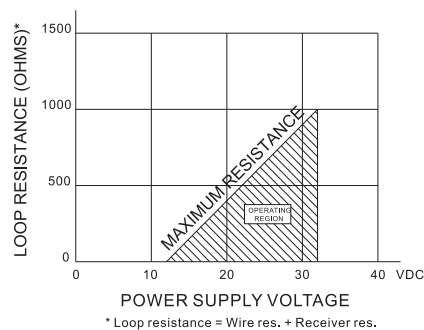
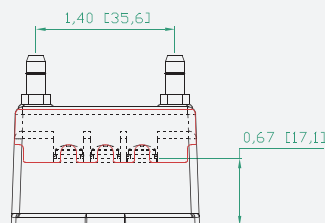


Diagram 1

DIMENSIONS ARE IN: INCH [mm]

- * A UNIT WITH CURRENT OUTPUT AND 3/16" PRESSURE FITTINGS IS SHOWN.



Ordering Information

Code all blocks in table.

Example: 161W00R1DA6NA for 161 Transmitter, 0-0.1 in. WC Range, Unidirectional, 4-20mA Output, 0.6% Accuracy, No Calibration Certificate, 3/16" Barbed Brass Pressure Fittings.

1 6 1

Model
161

Unit

P: Pascal
W: in. W.C.

Range

NNNN

Pressure Type

Differential
D: Unidirectional
B: Bidirectional

Output

A: 4-20mA
B: 0-5VDC
C: 0-10VDC

Accuracy

6: 0.6%FS
4: 0.4%FS
2: 0.25%FS

Certificate

Y: (with)
N: (without)

Pressure Fitting

A: 3/16"
B: 8mm
E: 6.5mm
(Barbed Brass)

Pressure Unit/Range/Type

in. W.C. (Unidirectional)

W00R1D=0 to 0.1 in. W.C.
 W0R25D=0 to 0.25 in. W.C.
 W00R5D=0 to 0.5 in. W.C.
 W0001D=0 to 1 in. W.C.
 W02R5D=0 to 2.5 in. W.C.
 W0005D=0 to 5 in. W.C.
 W0010D=0 to 10 in. W.C.
 W0025D=0 to 25 in. W.C.
 W0050D=0 to 50 in. W.C.
 W0100D=0 to 100 in. W.C.

in. W.C. (Bidirectional)

W0R05B=-0.05 to 0.05 in. W.C.
 W00R1B=-0.1 to 0.1 in. W.C.
 W0R25B=-0.25 to 0.25 in. W.C.
 W00R5B=-0.5 to 0.5 in. W.C.
 W0001B=-1.0 to 1.0 in. W.C.
 W02R5B=-2.5 to 2.5 in. W.C.
 W0005B=-5.0 to 5.0 in. W.C.
 W0010B=-10 to 10 in. W.C.
 W0025B=-25 to 25 in. W.C.
 W0050B=-50 to 50 in. W.C.

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
 P2500B=-2500 to 2500 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.