Identification and Overview

EZ Pressure Sensor, Low Pressure Ranges

The EZ Low Pressure Sensor is a true differential pressure transmitter that provides ±1 inches WC (±250 Pascals) in 10 field selectable ranges (see specifications). The EZ enclosure is designed for DIN rail, Snaptrack or surface mounting. Five output ranges of 0 to 5, 1 to 5, 0 to 10 and 2 to 10 VDC and 4 to 20 mA are also field selectable for all pressure ranges. The wiring terminal block is pluggable.

Pressure units of inches of Water Column or Pascals are field selectable.

Part #: N1-ZPS-LR-EZ-NT-IN-A

N1-ZPS-LR-EZ-NT-PA-A

Specifications

Power:
7 to 40 VDC (4 to 20 mA Output)
7 to 40 VDC or 6 to 28 VAC (0 to 5 or 1 to 5 VDC Output)
12 to 40 VDC or 9 to 28 VAC (0 to 10 or 2 to 10 VDC Output)

Power Consumption:
20 mA max, DC only at 4 to 20 mA Output
4.9 mA max DC at 0 to 5 or 0 to 10 VDC Output
0.12 VA max AC at 0 to 5 or 0 to 10 VDC Output

Load Resistance:
4 to 20 mA Output 850 Ω Maximum @ 24 VDC
0 to 5, 1 to 5, 0 to 10, 2 to 10 VDC Output 6Ω min.

System Accuracy:
±0.25% FS at 72°F (22°C)
±0.005" WC (±1.24 Pa)

Stability: ±0.25% F.S. per year

Overpressure:
Proof: 100" WC (3.6 PSI)
Burst: 300" WC (10.82 PSI)

Media: Clean, dry, non-corrosive gases

Compensated Temperature Range:
32 to 122°F (0 to 50°C)

Environmental Operating Range:
14°F to 140°F (-10°C to 60°C)

Storage Temp.: –40 to 203°F (-40 to 95°C)

Humidity: 0 to 95% RH, non-condensing

Wiring:
Removable terminal block (14 to 24 AWG)*
2 wires (4 to 20mA Current loop)*
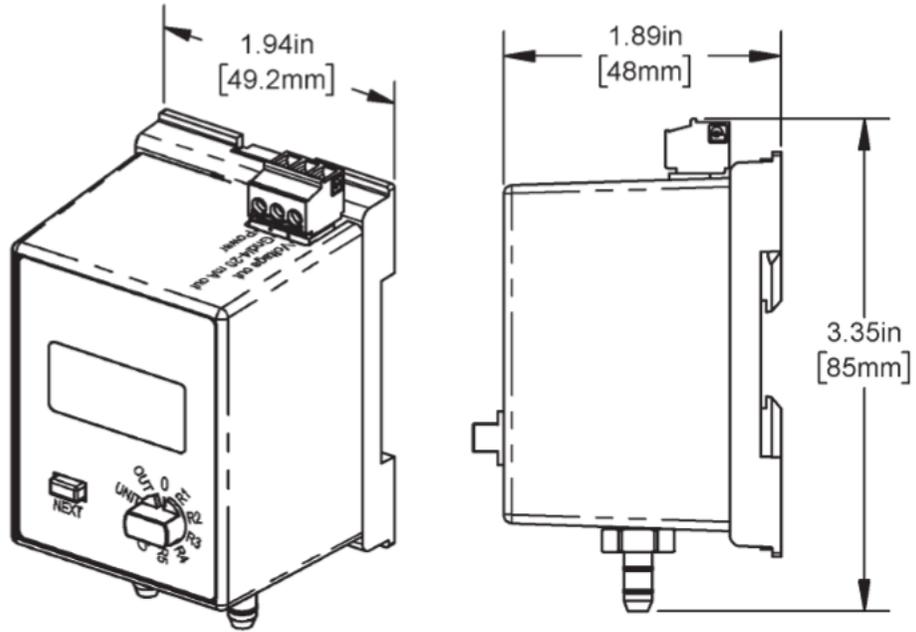3 wires (AC or DC powered, Voltage out)*

Port Size: 1/4" barb (1/8" to 3/16" I.D.)

Enclosure Material: ABS Plastic, UL94 V-0

Mounting: DIN Rail, Snaptrack or Surface

Agency: RoHS, UL

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Dimensional Drawing

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Mounting

The EZ Mount Base has mounting tabs that can be extended or pushed in for the three mounting methods.

DIN Rail Mounting, Figs 1-2:

1. Pull out the blue mounting tabs.

2. Catch the EZ mount hook on DIN rail as shown in Fig 3.

3. Rotate the EZ pressure module down until the bottom mounting tab snaps into place on the DIN rail.

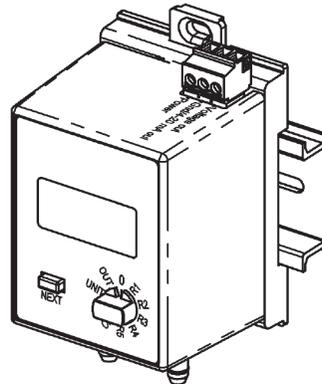4. Connect wires and pressure lines as needed.
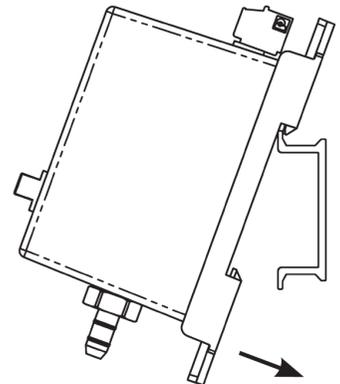

Figure 1: DIN Rail Mounting with Tab Out

Figure 2: Catch the EZ mount hook on the edge of the DIN Rail, then rotate into place

Snaptrack Mounting, Fig 3:

1. Push in the blue mounting tabs.

2. Snap the EZ Mount base into the board slots in the 2.75 inch snaptrack.

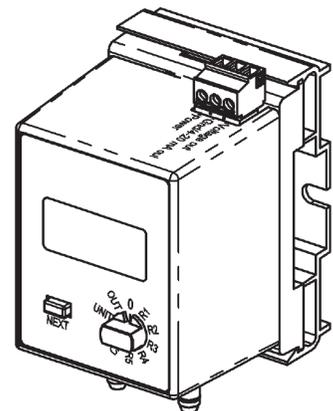3. Connect wires and pressure lines as needed.

Surface Mounting, Fig 4:

1. Pull out the blue mounting tabs.

2. Place the EZ Pressure unit against the surface and mark the screw holes.

3. Drill 1/8" pilot holes for #8 flathead screws.

4. Screw unit to the surface. The holes in the blue mounting tabs are elongated to allow for alignment.
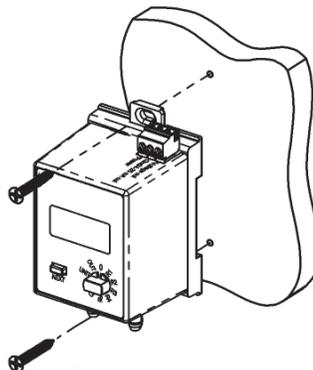
5. Connect wires and pressure lines as needed.

Figure 4: Surface Mounting with Tabs Out

Figure 3: Snaptrack Mounting with Tabs In

Pressure Connections

The Pressure ports are 1/4" barbed fittings.

1. Connect the high pressure to the port labeled High

2. Connect the low pressure to the port labeled Low

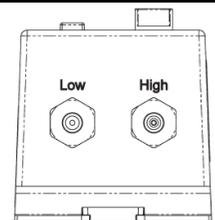The output will be the pressure difference between the high and low port.

Figure 5: Pressure Port Connections

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Wiring Termination

⚠️ **Warning**	Wire the product with power disconnected. Proper supply voltage, polarity and wiring connections are important to a successful installation. Not observing these recommendations may damage the product and void the warranty.

💡 **Tip**	The terminals use a rising block screw terminal to hold the wires. It is possible for the block to be in a partially up position allowing the wire to be inserted under the block. Be sure that the connector screws are turned fully counterclockwise before inserting the wire. Lightly tug on each wire after tightening to verify proper termination.

Table 1: EZ Pressure Sensor Termination			
Output Signal	**Power Terminal**	**Gnd/4-20mA Terminal**	**Voltage Output Terminal**
4 to 20 mA	7 to 40 VDC	4 to 20 mA Signal To Controller Analog Input	Not Used
0 to 5 VDC	7 to 40 VDC or 6 to 28 VAC	To Controller Ground	0 to 5 VDC Signal To Controller Analog Input
1 to 5 VDC	7 to 40 VDC or 6 to 28 VAC	To Controller Ground	1 to 5 VDC Signal To Controller Analog Input
0 to 10 VDC	12 to 40 VDC or 9 to 28 VAC	To Controller Ground	0 to 10 VDC Signal To Controller Analog Input
2 to 10 VDC	12 to 40 VDC or 9 to 28 VAC	To Controller Ground	2 to 10 VDC Signal To Controller Analog Input

4 to 20 mA, "Two Wire" Operation

1. Connect the EZ Pressure's [Power] terminal to a DC voltage of 7 to 40 VDC.

2. Connect the [Gnd/4-20 mA Out] terminal to a 4 to 20mA input on your controller.

3. The [Voltage Out] terminal is not used for 4 to 20 mA signaling.

0 to 5, 1 to 5, 0 to 10 or 2 to 10 V, "Three Wire" Operation

1. Connect the EZ Pressure's [Power] terminal to:

   - 7 to 40 VDC or 6 to 28 VAC (for 0 to 5 or 1 to 5 VDC output units)

   - 12 to 40 VDC or 9 to 28 VAC (for 0 to 10 or 2 to 10 VDC output units).

2. Connect the terminal labeled [Gnd/4-20 mA Out] to the controller's ground.

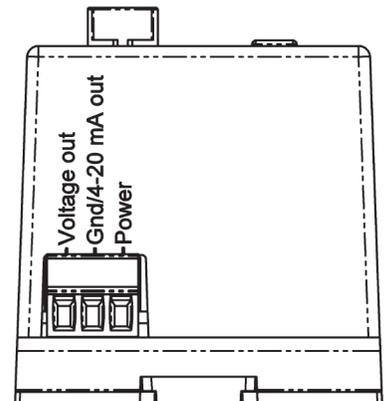3. Connect the [Voltage Out] terminal to an analog input configured for voltage input.

Figure 6: Wiring Terminations

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Front Panel Operation

The rotary switch is used to select the pressure range, bi-directional or uni-directional pressure range, output range or to auto zero the unit. The notch in the knob indicates the switch position. The rotary switch in Fig. 8 is indicating 0 (zero), showing that the switch is in the Auto Zero position.
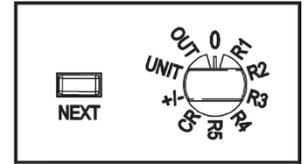
Pressing the NEXT button toggles between values when the rotary switch is in the [+/-] bi-directional or uni-directional pressure or [OUT] output range position. The NEXT button is also used to initiate [0] Auto Zero or change the display mode.

Auto Zero Select (Table 2)

1. Connect the high and low ports together with a short length of tubing without kinks.

2. Place the rotary switch into the [0] position. The display will show Aut0.

3. Press the NEXT button. The display will show a series of progress bars starting with one bar and ending with four.

4. When the Auto Zero is complete, the display will show "done" for about 4 seconds, then Aut0.

5. Return the rotary switch to the desired pressure range (see Pressure Range Select).

Table 2: Auto Zero Display Sequence			
Rotary Switch Position	Initial Display	After Pushing NEXT button	When Complete
	Aut0		donE

Output Range Select (Table 3)

1. Place the rotary switch into the [OUT] position.

2. Press the NEXT button until the desired output range is showing on the display.

3. Return the rotary switch to the desired pressure range (see Pressure Range Select).

Table 3: Output Range Select Display Sequence					
Rotary Switch Position	4 to 20 mA Output	0 to 5 VDC Output	1 to 5 VDC Output	0 to 10 VDC Output	2 to 10 VDC Output
	4-20	0-5	1-5	0-10	2-10

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Pressure Range Select (Table 4)

Rotate the rotary switch to any of the positions labeled [R1] through [R5] or [CR] for a Custom Range. (Note: Custom Range units will have the pressure range printed on the label.) The display will show the pressure range for 2 to 4 seconds, and then the display shows the differential pressure across the ports.

Uni-Directional or Bi-Directional Range Select (Table 5)

All pressure ranges can be made uni-directional or bi-directional.

1. Place the rotary switch into the [+/-] position. The directional mode will show on the display.

2. Press the NEXT button until the desired mode is showing on the display.

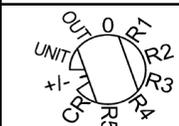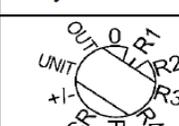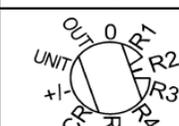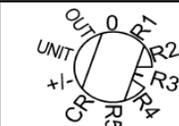3. Return the rotary switch to the desired pressure range.

Table 5: Uni-Directional or Bi-Directional Mode Display		
Rotary Switch Position	Uni-Directional Pressure	Bi-Directional Pressure
	Un1	-b1

Table 4: Low Pressure Range Select Display Sequence		
Rotary Switch Position	Inches W.C.	Pascals
	0.1 In	30. Pa
	0.25 In	50. Pa
	0.5 In	100. Pa
	0.75 In	175. Pa
	10 In	250. Pa
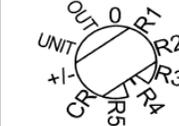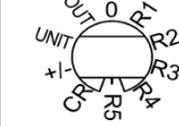
Unit Mode Select

You have the ability to toggle between Inches W.C. and Pascals by pressing the next button when the rotary switch is in the UNIT position. When the unit is measuring in Inches W.C. the unit will display In. When the unit is measuring in Pascals the unit will display PA.

Figure 7: Rotary Switch Position for Unit Mode Selection
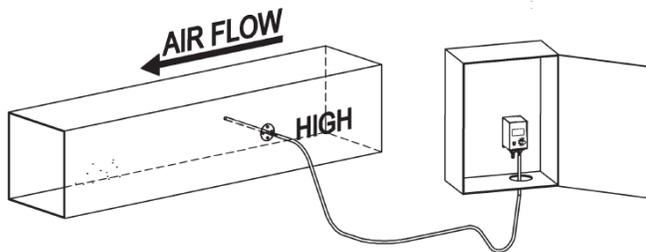
Typical Applications

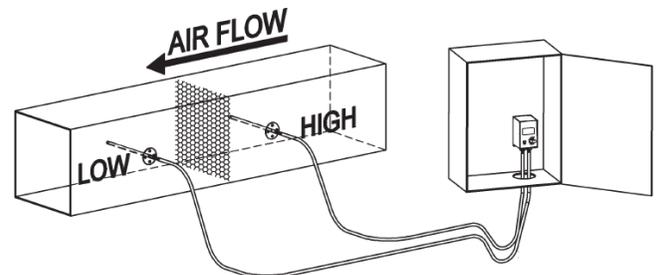*Figure 9: Duct static pressure monitoring with the EZ Low Pressure Sensor mounted in a panel with a static probe in the duct*

Figure 8: Air filter pressure drop monitoring with the EZ Low Pressure Sensor mounted in a panel with two static pressure probes

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Tip	Form a drip loop in the tubing to prevent condensation from reaching the sensor.

Troubleshooting

POSSIBLE PROBLEMS:	POSSIBLE SOLUTIONS:
Display does not light	Check power connections for proper power (see specifications below).
Output stuck either high or low or not tracking pressure properly.	Remove pressure from ports and perform Auto Zero procedure

Appendix – Symbols Key

Warning	Potential for death, serious injury, or permanent damage to a system.

Caution	Potential for injury, damage to a system, or system failure.

Tip	Useful information not related to injury or system damage.

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