AST5100 *Wet/Wet*

Low Differential Pressure Transmitter

Overview

The AST5100 Wet - Wet Differential Pressure transmitter is your accurate pressure sensing device for low differential pressure. With a differential pressure range as low as 0 to 5" water column (12.5mbar), this product can be used to measure flow across an orifice, differential across a filter, tank level, or gauge pressure. Using LVDT technology and AST's advanced electronics, the AST5100 delivers accurate, repeatable measurements.

Benefits

- Accurate Low Pressure Measurement
- Excellent Repeatability
- Wide Range of Liquids and Gases including:
  Water, Natural Gas, Hydrocarbon Fuels, Air and Non-Corrosive Gases

Applications

- Liquid Level Control including Bubbler systems
- Climate Control
- Energy Management
- Air-fuel Ratio including Measurement for Furnaces
- Vapor Recovery
- Leak Detection
- Air or liquid Filtration
- Flow Measurement

Wetted Materials

Nickel Alloy 52, Ni-Span C, Viton, 304 Stainless Steel, Aluminum 6061, RoHS Solder, Loctite 680 (meets NSF61)

Performance @ 25°C (77°F)	
Accuracy	<± 1.0% of FS
Stability	± 0.5%FS, typ
Line Pressure Max	200 PSI
Burst Pressure	2000 PSI
Pressure Cycles	>100,000 Cycles

Environmental Data	
Temperature Range	
Operating Range	-40 to 80°C (-40 to 175°F)
Storage Temperature	-40 to 100°C (-40 to 212°F)
Thermal Limits	
Compensated Range	0 to 55°C (30 to 130°F)
Temp. Comp. Zero	<±1.5%
Temp. Comp. Span	<±1.5%
Other	
Reverse Polarity	Yes

Electrical Data		
Output	**0-5V Three Wire**	**4-20mA**
Excitation	10-28VDC	10-28VDC
Current Consumption	< 10mA	-
Output Noise	< 1mV, RMS	< 0.0035mA, RMS
Output Load	5k Ohms, min.	0-800 Ohms@10-28 VDC
Bandwidth	5Hz	5Hz
Output Change with Input Voltage Change	<0.1% from 10 to 32 VDC	-
Zero Offset	< ± 1% FS	< ± 1% FS
Span Tolerance	< ± 1.5% FS	< ± 1.5% FS

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Ordering Information

AST5100 J 00050H 4 Y 5 000

Series Type

Process Connection
J= 1/8" Female NPT

Pressure Range (See Chart)

Pressure Unit
H= Inches H_2O
P= PSI

Outputs
2= 0-5V 3-wire
4= 4-20mA

Electrical
Y= M12x1 Eurofast Connector

Wetted Material
5= Nickel Alloy 52, Ni-Span C, Viton, 304 Stainless Steel, Aluminum 6061, RoHSSolder, Loctite 680 (meets NSF61)

Options
00= No Special Options

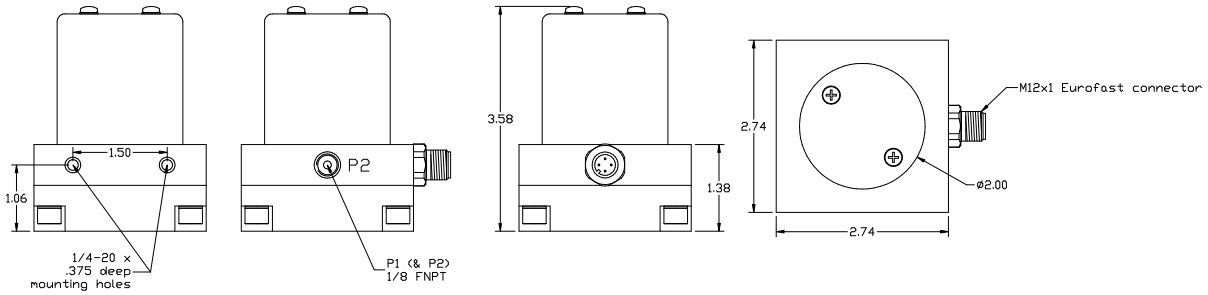
Differential Pressure	Pressure Range Code	Proof Pressure (P1>P2)	Proof Pressure (P2>P1)
0-5 inch H_2O (12.5 mbar)	00005H	5 PSI	3 PSI
0-10 inch H_2O (25 mbar)	00010H	5 PSI	3 PSI
0-20 inch H_2O (50 mbar)	00020H	8 PSI	5 PSI
0-50 inch H_2O (125.5 mbar)	00050H	15 PSI	10 PSI
0-100 inch H_2O (249 mbar)	00100H	35 PSI	25 PSI
0-200 inch H_2O (498 mbar)	00200H	35 PSI	25 PSI
0-15 PSID (1034 mbar)	00015P	75 PSI	50 PSI

The over-pressure specification is the maximum pressure the AST5100 can see without damage. Any pressure applied over the listed numbers will likely damage the sensor and will, at minimum, cause a permanent zero shift. Over-pressure between 2X span and the numbers listed applied to port P1 will likely cause no permanent harm. Over-pressure of between 2X span and the numbers listed applied to port P2 may cause a temporary zero shift. To recover from a zero shift caused by negative over-pressure to P2 within the listed limits, apply a positive over-pressure P1 to just under the listed limit for a duration of 5 minutes. Remove the over-pressure and check the zero with no pressure applied. If the zero has not recovered, repeat the positive over-pressure and recheck zero. If it has not recovered after the second try, the zero has been permanently shifted. Contact the factory.

Mating PUR 22 AWG Cable Assembly	
Part Number	Cable Length
A10089	4 feet (1 m)
A10090	10 feet (4 m)

Pins	Conductor Colors	0-5V 3-wire	4-20mA
Pin 1	Brown	+V	+V
Pin 2	White	N/C	N/C
Pin 3	Blue	-V	-V
Pin 4	Black	V Out	N/C

Dimensional Data



Installation Guidelines

The AST5100 must be mounted on a flat surface within ± 15° to the ideal 0° plane to maintain specifications. Do not Overtighten the pressure connections or insert any objects in P1 or P2 to avoid damaging the sensing element. When using isolation valves, both should be mounted close to the sensor. For liquid level and wet applications, install bleed screw adapters close to P1 and P2 so that trapped air can be purged if needed. For optimum performance, always make sure pressure is equalized within the pressure range chart ranges. The AST5100 has asymmetric protection on P1 and P2.

Warranty

Workmanship - AST, Inc. pressure transmitters have a limited one-year warranty to the original purchaser. AST, Inc. will replace or repair, free of charge, any defective transmitter. This warranty does not apply to any units that have been modified; misused, neglected or installed where the application exceeds published ratings. AST's sensors are made with pride in New Jersey, USA. If in the area please feel free to stop by for a visit!

Installation/Applications - The purchaser is responsible for media compatibility, functional adequacy, and correct installation of the transmitter.