PRESSURE LOW

Differential Transmitter
AST5100

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
  - ✓ 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)

Installation Guidelines

The AST5100 must be mounted on a flat surface within ± 15° to the ideal 0° plane to maintain specifications. Do not over tighten 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.

Performance @ 25°C (77°F)

Accuracy	< ±1.0% FS (Accuracy includes non-linearity, hysteresis & non-repeatability)
Stability (1 year)	±0.5% FS, typical
Burst Pressure	2000 PSI

Environmental Data

Temperature

Operating	-40 to 80°C (-40 to 176°F)
Storage	-40 to 100°C (-40 to 212°F)

0-100% relative humidity, non-condensing

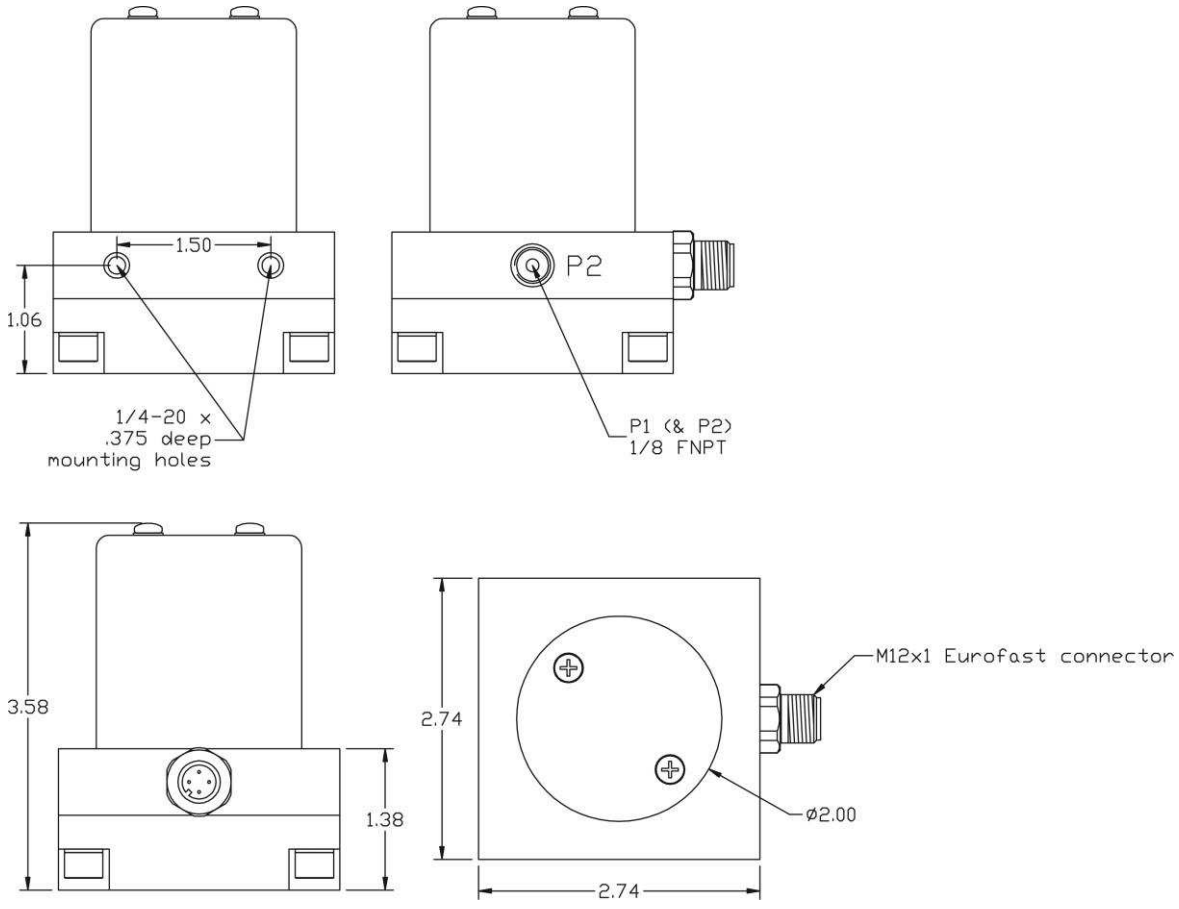
Thermal Limits

Compensated Range	0 to 55°C (32 to 131°F)
TC Zero	< ±1.5% of FS
TC Span	< ±1.5% of FS

Electrical Data

Output	4-20mA	0-5V Three Wire
Excitation	10-28VDC	10-28VDC
Output Impedance with Input Voltage Charge	-	< 0.1% from 10 to 32 VDC
Current Consumption:	-	< 10mA
Bandwidth	5Hz	5Hz
Output Noise	< 0.0035mA, RMS	< 1mV RMS
Zero Offset:	< ±1% FS	< ±1% FS
Span Tolerance:	< ±1.5% FS	< ±1.5% FS
Output Load:	0-800 Ohms@10-28 VDC	5k Ohms, Min.
Reverse Polarity	Yes	Yes

Dimensions



Ordering Information

AST5100	J	00050	H	4	Y	5	000

Series Type

Process Connection
J= 1/8" NPT Female

Pressure Range
See Chart

Pressure Unit
H= Inches H_2O
P= PSI

Outputs
2= 0-5V 3-wire
4= 4-20mA (2 wire loop powered)

Electrical
Y= M12x1

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

Options
000= No Special Options

Pressure Ranges

Differential Pressure	Pressure 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

Mating PUR 22 AWG Cable Assembly	
Part Number	**Cable Length**
A10089	4 feet (1 m)
A10090	10 feet (3 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

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.

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