DIFFERENTIAL

Pressure Transducer
AST5400 | AST54ED | AST54EN

Overview

AST5400 wet/wet differential pressure transducers can measure the differential pressure of liquids or gases with line pressures up to 5,000 PSI (350 bar) and a turn-down ratio of 15 to 1. Using Krystal Bond Technology, the AST5400 differential pressure transducer contains no silicone oil, O-rings, or welds. The low strain level on the diaphragm results in accurate, repeatable measurements.

The AST5400 wet/wet differential pressure transducer is commonly used to measure differential pressure across filters or calculate flow across an orifice plates. With its digital compensation, the AST5400 DP offers excellent linearity and performance over temperature.

The electronics offer a failsafe condition on the output signal.

The AST5400 DP can be manufactured using 316L, 17-4 PH, Inconel 718, or Hastelloy C276 and is available for hazardous locations.

Benefits

- Explosion Proof and Non-Incendive Available
- ABS (American Bureau of Shipping) Approved
- Krystal Bond™ Technology
- ASIC Compensation
- Turn-Down Capability
- Both or Either Pressure Port Can See Full Line Pressure - No Expensive Balancing Valves Required
- Line Pressure up to 5,000 PSI (350 Bar)
- Smart Electronics with Failure Condition Protection
- Wide Variety of Materials for Various Liquids and Gases

Applications

- Oil / Gas Equipment
- Building Automation
- Fuel Systems
- Hydraulics
- Hydrogen (316L only)
- Labs / Metrology
- Compression Systems
- Military Vehicles
- HVAC/R Systems
- Desalination Equipment (Inconel 718 Recommended)

Performance @ 25°C (77°F) [% of FS]

Total Error Band*	<± 1% of Line Pressure
Maximum Line Pressure	5,000 PSI (350 Bar)
Proof Pressure	2X Line pressure**
Burst Pressure	5X Line pressure
Pressure Cycles	> 100 Million

*Typical Values shown; Combined effects of Zero Offset, Span Tolerance, Thermal Zero, Thermal Span, Non-linearity, Repeatability and Hysteresis.
**For higher line pressures, contact factory.

Environmental Data

Temperature

Operating	-20 to 70ºC (-4 to 158ºF)
Storage	-55 to 120°C (-67° to 248°F)

0-100% relative humidity, non-condensing

Thermal Limits

Compensated Range	-20 to 70ºC (-4 to 158ºF)

Other

Shock	100G, 10msec, 1/2 sine
Vibration	10G peak, 20 to 2000Hz
EMI/RFI Protection:	Yes
IP Class:	IP-66; IP-67 Optional

Electrical Data

Output	4-20mA	1-5V, 0-5V, 1-6V	1-10V, 0-10V
Excitation	10-28VDC	10-28VDC	15-28VDC
Current Consumption	-	< 15mA	< 15mA
Sampling Rate	200Hz	200Hz	200Hz
Output Load	< 1mV, RMS	< 1mV, RMS	< 1mV, RMS
Output Noise	0-800 Ohms@10-28VDC	5k Ohms, min.	5k Ohms, min.
Reverse Polarity Protection	Yes	Yes	Yes

Approvals

AST54ED

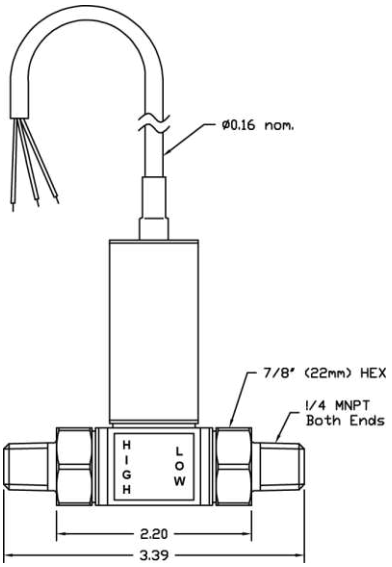
Class I, Div 1, Groups A,B,C,D Explosion Proof / Class II, Div 1, Groups E,F,G; Class III, Div 1
ATEX and IECEx
Ex db IIC T5 Gb, Ex tb IIIC T100°C Db

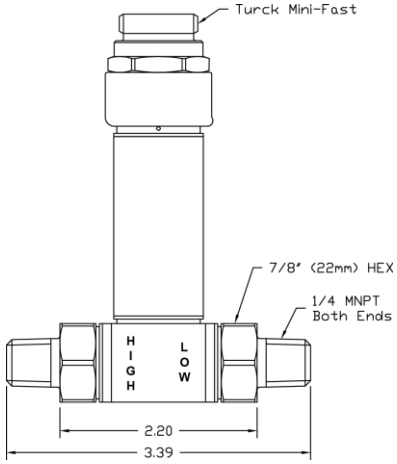
AST54EN

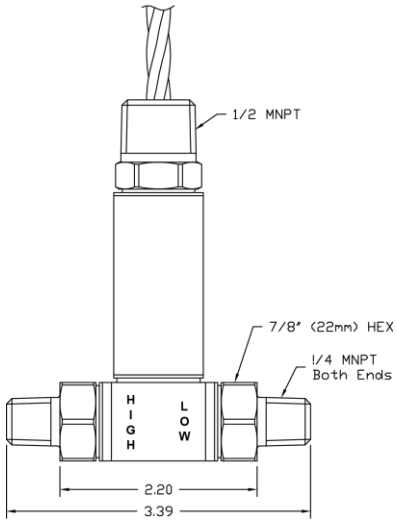
Class I, Div 2, Groups A,B,C,D Non-Sparking

ATEX and IECEx
Ex ec IIC T5 Gc, Ex tc IIIC T100°C Dc

Dimensions







Ordering Information

54	ED	A	01000	P	5	Y	0	0500	H	00	-Z

Series Type

Approval
ED= Explosion proof EN= Non-Incendive 00= OEM

Process Connection
A= 1/4" NPT Male F= 7/16-20 UNF Male
B= 1/8" NPT Male R= 7/16-20 UNF Female

Line Pressure Insert 5-digit code from chart

Pressure Unit
B= Bar H= Inches H_2O K= kg/cm^2 M= Millibar P= PSI

Output
1= 0.5-4.5V ratiometric 4= 4-20mA 6= 1-6V
2= 0-5V (3-wire) 5= 0-10V G= 1-10V
3= 1-5V

Electrical Connection (see table) Subject to Approval Type Selected

Wetted Material
0= 17-4PH 1= 316L 2= Inconel 718 3= Titanium 4= Hastelloy C276 6= Waspalloy

Differential Pressure Range
Insert 4-digit code from chart

Fail Condition
N= Not Specified H= Fail High L= Fail Low

Options
00= No Special Options 11= Bi-Directional DP Range

Approval
-Z= Add "-Z" for CRN Registered to ANSI/ASME B31.3.
Contact factory for additional material, pressure, and process connection options

Line Pressure*

Differential Pressure Range* (PSID)	CODE	50	100	300	500	1000	2000	5000
		00050	00100	00300	00500	01000	02000	05000
10	0010	✓	✓					
20	0020	✓	✓	✓				
50	0050		✓	✓	✓			
75	0075		✓	✓	✓	✓		
100	0100		✓	✓	✓	✓		
150	0150			✓	✓	✓		
200	0200			✓	✓	✓	✓	
300	0300			✓	✓	✓	✓	
500	0500				✓	✓	✓	✓
750	0750					✓	✓	✓
1000	1000						✓	✓
2000	2000						✓	✓
5000	5000							✓

***Other pressures available; contact factory.**

Approval

Electrical Connection Table		00	ED	EN
A	2 ft. (24 AWG)	✓		
B	4 ft. (24 AWG)	✓		
C	6 ft (24 AWG)	✓		
D	10 ft (24 AWG)	✓		
E	Mini DIN 43650C	✓		
I	DIN 43650-A	✓		**
L	Conduit, 2ft.	✓		✓
M	Conduit, 4ft.	✓		✓
N	Conduit, 6ft.	✓		✓
P	Conduit, 10ft	✓		✓
R	6-Pin Bendix PT06	✓		
T	Conduit, 18AWG, 24 in	✓	✓	
U	Conduit, 18AWG, 48 in	✓	✓	
W	Conduit, 18AWG, 2m	✓	✓	
Y	M12x1 4-Pin	✓		
4	Turck Mini-Fast	✓		**

****Class 1 Div 2 only**

NORTH AMERICA

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