

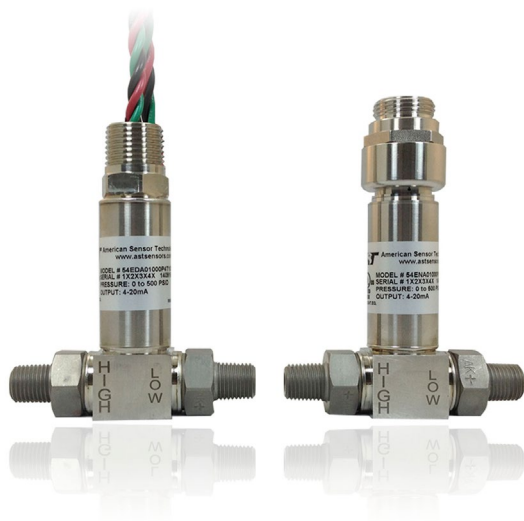
# Differential Pressure Transducer



AST5400

AST54ED

AST54EN



The AST5400 differential pressure (DP) transducer can measure line pressures up to 5,000 PSI with a turndown ratio of 15 to 1. Using Krystal Bond™ Technology, the AST5400 contains no silicone oil, O-rings, or welds. This MEMS pressure sensor technology completely isolates the media to the pressure ports, thus eliminating contamination risk. The low strain level on the diaphragm results in accurate, repeatable measurements. The AST5400 can be used to measure differential pressure across a filter, monitor level in a sealed or vented tank, or calculate flow across an orifice plate.

With its digital compensation, this series offers excellent linearity and performance over temperature. The electronics now offer a fail safe condition on the output signal. If the transducer were to experience a fault condition, the transducer can be programmed to rail the output signal to 10% below the minimum or 10% above maximum output signal to notify the user of an issue and protect the system from undesirable conditions. The AST5400 also offers excellent flexibility in its configuration, allowing for a variety of sensor materials and pressure ports.

## 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 a variety of 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 (Inconel718 Recommended)

## Approvals

**Class I, Div 1, Groups A,B,C,D Explosion Proof**

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

## Environmental Data

### Temperature

Operating	-20 to 70°C ( -4 to 158°F)
Storage	-50 to 125°C (-58 to 257°F)

### Thermal Limits

Compensated Range	-20 to 70°C ( -4 to 158°F)
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### Other

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

## Performance @ 25°C (77°F)

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.

## Electrical Data

Output	4-20mA	1-5V, 0-5V, 1-6V	1-10V, 0-10V	0.5-4.5V Ratiometric
Excitation	10-28VDC	10-28VDC	15-28VDC	5VDC, Regulated
Current Consumption	-	< 15mA	< 15mA	< 15mA
Sampling Rate	200Hz	200Hz	200Hz	200Hz
Output Noise	< 1mV, RMS	< 1mV, RMS	< 1mV, RMS	< 1mV, RMS
Output Load	0-800 Ohms@10-28VDC	5k Ohms, min.	5k Ohms, min.	5k Ohms, min.
Reverse Polarity Protection	Yes	Yes	Yes	Yes

## Ordering Information

**54** **ED** **A** **01000** **P** **5** **Y** **0** **0500** **H** **000** **-Z**

### Series Type

#### Approval

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

#### Process Connection

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

#### Line Pressure

Insert 5-digit code chart

#### Pressure Unit

B= Bar K= kg/cm<sup>2</sup> P= PSI H= Inches H<sub>2</sub>O

#### Output

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

#### Electrical Connection (see table)

Subject to Approval Type Selected

#### Wetted Material

0= 17-4PH 1= 316L 2= Inconel 718 4= Hastelloy C276

#### 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

#### Approval

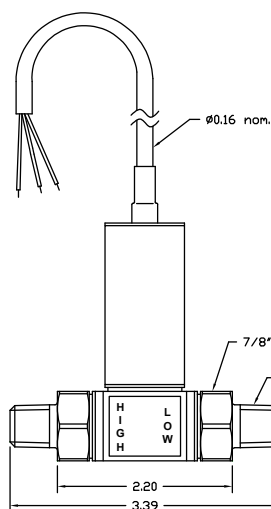
-Z= Add "-Z" for CRN Registered to ANSI/ASME B31.3.  
Contact factory for material, pressure, and process connection options

		Line Pressure*						
		50	100	300	500	1000	2000	5000
	CODE	00050	00100	00300	00500	01000	02000	05000
Differential Pressure Range* (PSID)	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						✓

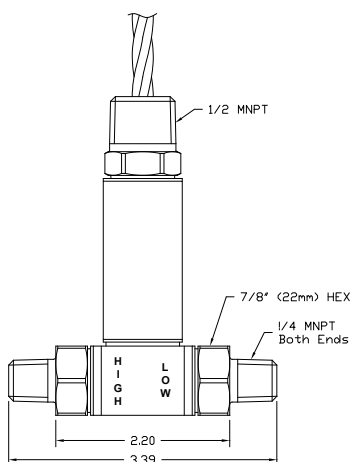
\*Other pressures available; contact factory.

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	*		*
M	Conduit, 4ft.	*		*
N	Conduit, 6ft.	*		*
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	*		*

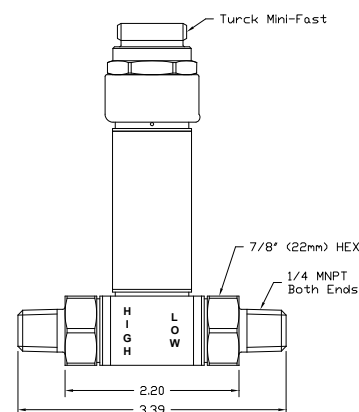
## Dimensional Data



5400



54ED



54ED