



INDUSTRIAL OEM

Pressure Transducer

AST4000

Overview

The AST4000 OEM pressure transducer / transmitter remains the most popular configuration. With its welded stainless steel housing and various electrical connections, the AST4000 can be packaged for virtually any OEM pressure transducer application. Voltage and current output signals are available and all products.

Benefits

- High Strength Stainless Steel Construction
- No Oil, Welds or Internal O-rings
- Wide Operating Temperature
- Pressures up to 10,000 PSI
- Low Static and Thermal Errors
- Unparalleled Price and Performance
- Compatible with Wide Variety of Liquids and Gases
- EMI/RFI Protection
- UL/cUL 508 Approved (with housing)

Applications

- Industrial OEM Equipment
- Water Management
- Pneumatics
- Hydrogen Storage
- Sub Sea Pressure
- HVAC/R Equipment
- Control Panels
- Hydraulic Systems
- Data Loggers

Environmental Data

Ambient Temperature: 25°C (77°F) (Unless otherwise specified)

Operating Ambient	-40 to 85°C (-40 to 185°F)
Storage	-40 to 100°C (-40 to 212°F)

Electromagnetic Compatibility (EMC)

Standard	Description	Test Value
EN55011	Radiated Emissions	Class A, 30-1000 MHz
EN61000-4-2	Electrostatic Discharge Immunity	±8 kV Air Discharge ±4 kV Contact Discharge, VCP, HCP
EN61000-4-3	Radiated Electromagnetic Field Immunity	10V/m, 30-2700 MHz 80% 1kHz AM Modulation
EN61000-4-4	Electrical Fast Transient/Burst Immunity	±0.5 kV, ±1 kV, ±2 kV on DC Mains ±0.5 kV, ±1 kV on I/O Ports
EN61000-4-5	Surge Immunity	±0.5 kV, ±1 kV, on I/O Ports & DC Lines
EN61000-4-6	Conducted immunity	10V rms, 0.15-80 MHz, DC Mains 10V rms, 0.15-80 MHz, I/O Ports 80% 1kHz AM Modulation
EN61000-4-8	Power Frequency Magnetic Field Immunity Test	30 A/m @ (50Hz, 60Hz) 3 orthogonal orientations

Shock, Vibration & Ingress Protection (IP)

Standard	Description	Test Value
EN 60067-2-27	Shock Test	500m/s ² , 6ms, half sine-wave, 6 shocks (3/direction), horizontal and vertical axis, 12 total shocks
EN 60068-2-6	Sinusoidal Vibration	5-25 Hz, 2mm, 25-150 Hz, 50m/s, Sweep rate: 1 octave/min, Duration: 24 hours/axis (48 hours total), horizontal and vertical axis
EN 60068-2-64	Random Vibration	10-2000 Hz, vibration level: 0.0314 (m/s ²) ² /Hz, 24 hrs/axis (48 hrs total), 2 directions: horizontal and vertical
IEC 60068-2-32	Drop Test	Drop of 1 meter to floor made of concrete. Dropped twice on the threaded end and two times perpendicular to the threaded end.
IP-66	Ingress Protection	Dust-tight, protected against powerful water jets

Performance

Ambient Temperature: 25°C (77°F) (Unless otherwise specified)

Parameters	MIN	TYP	MAX	UNITS	NOTES
Accuracy	-0.5		+0.5	%Span	1
Zero Error	-1.0		+1.0	%Span	2
Span Error	-1.5		+1.5	%Span	3
Thermal Error, Zero	-1.5		+1.5	%Span	4
Thermal Error, Span	-1.5		+1.5	%Span	5
Stability (1 year)		±0.25		%Span	
Proof Pressure		2X Rated Pressure		PSI	6
Burst Pressure		5X Rated Pressure or 20,000 (whichever is less)		PSI	7
Compensated Temp. Range		0 - 55° (32 to 132°)		°C (°F)	

Electrical Data

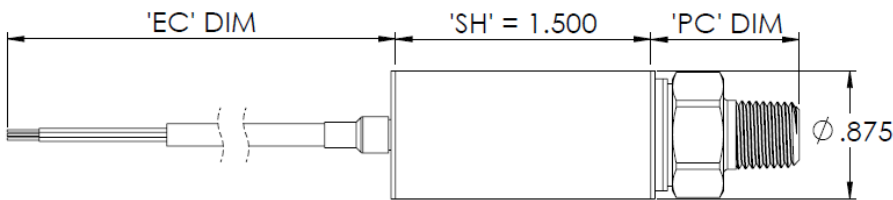
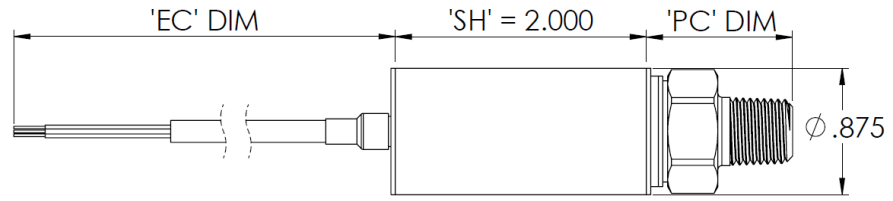
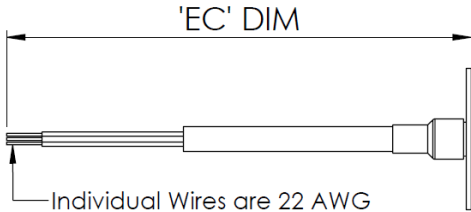
Model	AST4000		
Output	4-20mA	1-5V, 1-6V	0.5-4.5V Ratiometric
Excitation	10-28VDC	10-28VDC	5.0 ± 0.5VDC
Output Impedance	> 10k Ω	< 100 Ω	< 100 Ω
Current Consumption	-	<10mA	<10mA
Output Noise	-	<2mV RMS	<2mV RMS
Output Load	0-800Ω	10k Ω Min.	10k Ω Min.
Reverse Polarity Protection	Yes	Yes	Yes
Bandwidth	DC-250 Hz	DC-1kHz	DC-1kHz

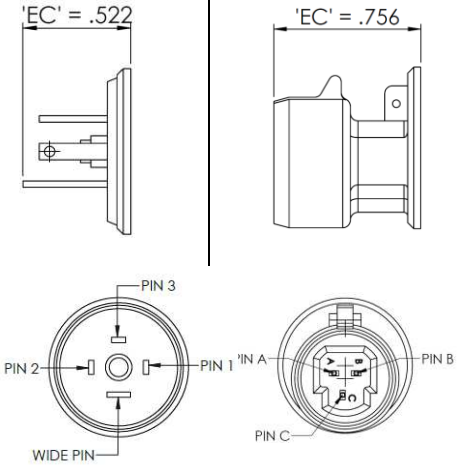
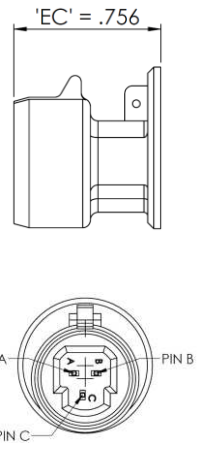
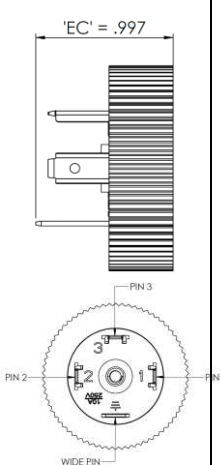
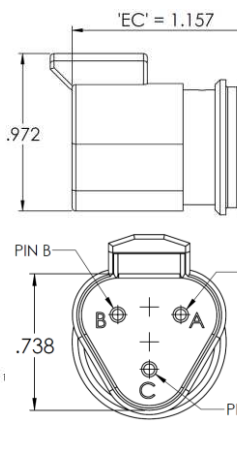
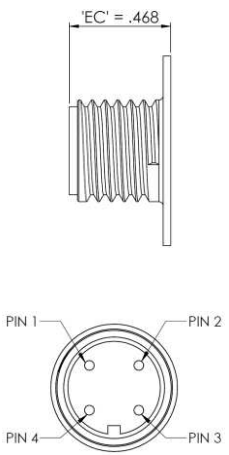
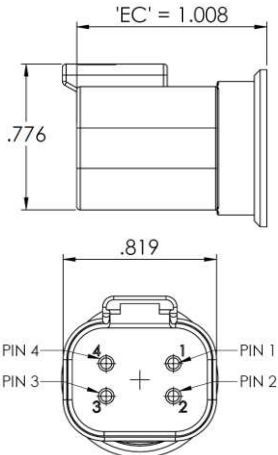
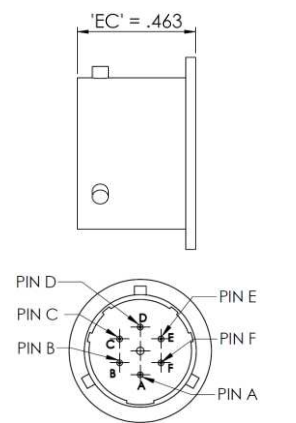
Notes

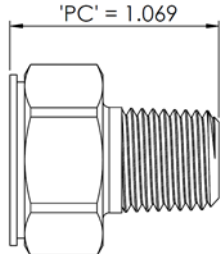
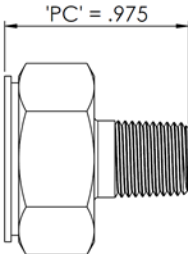
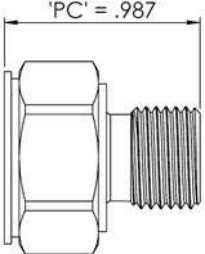
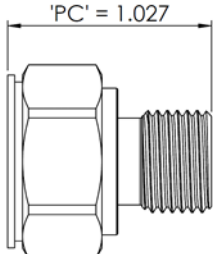
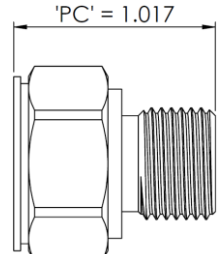
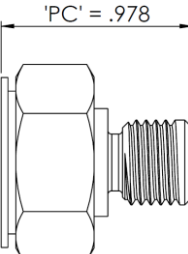
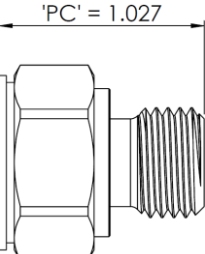
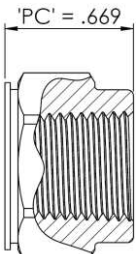
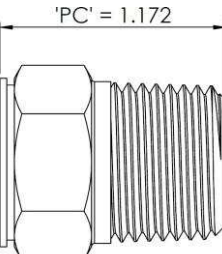
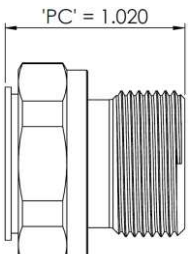
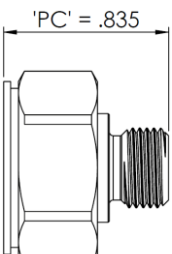
1. The maximum deviation from a best fit straight line (BFSL) fitted to the output measured over the pressure range at 25°C. Includes all errors due to pressure non-linearity, hysteresis, and non-repeatability. Span is the algebraic difference between full scale output and zero pressure offset.
2. The maximum variation from the ideal offset measured at 25°C.
3. The maximum variation from the ideal full-scale span measured at 25°C.
4. The maximum variation of offset within the compensated temperature range relative to 25°C.
5. The maximum variation of full-scale span within the compensated temperature range relative to 25°C.
6. The maximum pressure that can be safely applied to the product for it to remain in specification once pressure is returned to the operating pressure range.
7. The maximum pressure that can be applied without causing escape of the pressure media.

Dimensions & Electrical Connection

Unless otherwise specified, all dimensions are in inches

<i>EC + SH + PC = Total Nominal Product Length</i> 		Ranges 25 PSI and Above EC = Electrical Connector SH = Sensor Housing PC = Process Connection V= Voltage Supply N/C= Not Connected WP= Wide Pin S=Signal																
<i>EC + SH + PC = Total Nominal Product Length</i> 		Ranges Below 25 PSI EC = Electrical Connector SH = Sensor Housing PC = Process Connection V= Voltage Supply N/C= Not Connected WP= Wide Pin S=Signal																
Electrical Connectors Option Codes																		
Cable																		
A 2ft (0.6m)	B 4ft (1.2m)	C 6ft (1.8m)	D 10ft (3m)															
<table><tr><th>Color</th><th>3 Wire Voltage</th><th>4-20mA</th></tr><tr><td>Green</td><td>N/C</td><td>N/C</td></tr><tr><td>Black</td><td>GND</td><td>-V</td></tr><tr><td>Red</td><td>+V</td><td>+V</td></tr><tr><td>White</td><td>S</td><td>N/C</td></tr></table>		Color	3 Wire Voltage	4-20mA	Green	N/C	N/C	Black	GND	-V	Red	+V	+V	White	S	N/C	<i>'EC' DIM</i>  Individual Wires are 22 AWG	
Color	3 Wire Voltage	4-20mA																
Green	N/C	N/C																
Black	GND	-V																
Red	+V	+V																
White	S	N/C																

Electrical Connectors Option Codes (Cont'd)											
E DIN 43650C 8.0mm (Mini-DIN)			F Packard Metripack, 150			I DIN 43650A 18.0mm (Big- DIN)			K Deutsch, DT04-3P		
											
Pin	3 Wire Voltage	4-20mA	Pin	3 Wire Voltage	4-20mA	Pin	3 Wire Voltage	4-20mA	Pin	3 Wire Voltage	4-20mA
1	S	N/C	A	GND	-V	1	+V	+V	A	+V	
2	GND	-V	B	+V	+V	2	GND	-V	B	GND	
3	+V	+V	C	S	N/C	3	S	N/C	C	S	
WP	N/C	N/C				WP	N/C	N/C			
Y M12X1			Z Deutsch, DT04-4P			R 6 Pin Bendix					
											
Pin	3 Wire Voltage	4-20mA	Pin	3 Wire Voltage	4-20mA	Pin	3 Wire Voltage	4-20mA			
1	+V	+V	1	+V	+V	A	+V	+V			
2	N/C	N/C	2	GND	-V	B	S	-V			
3	GND	-V	3	S	N/C	C	N/C	N/C			
4	S	N/C	4	N/C	N/C	D	GND	N/C			
						E	N/C	N/C			
						F	N/C	N/C			

Pressure Port Option Codes			
A 1/4 NPT Male	B 1/8 NPT Male	C 1/4 BSPP Male	D G1/4 Male
 'PC' = 1.069	 'PC' = .975	 'PC' = .987	 'PC' = 1.027
E 9/16 – 18 UNF Male	F 7/16 – 20 UNF Male	G M14X1.5 Male	I 1/4 NPT Female
 'PC' = 1.017	 'PC' = .978	 'PC' = 1.027	 'PC' = .669
P 1/2 NPT Male	T G1/2 Male	U 1/8 BSPP Male	
 'PC' = 1.172	 'PC' = 1.020	 'PC' = .835	

Legend	
✓	Standard Available
X	Not Available

Available Process Connection, Material Configurations & Pressure Codes

17-4PH PSI

Pressure Range	Pressure Range Code	PSI Unit	Process Connection Code										
			A	B	C	D	E	F	G	I	P	T	U
-14.7 - 25	V0025	P	✓	X	✓	X	X	X	X	✓	✓	✓	X
-14.7 - 50	V0050	P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-14.7 - 100	V0100	P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-14.7 - 150	V0150	P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-14.7 - 200	V0200	P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-14.7 - 250	V0250	P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-14.7 - 500	V0500	P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0 - 25	00025	P	✓	X	✓	X	X	X	X	✓	✓	✓	X
0 - 50	00050	P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0 - 100	00100	P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0 - 150	00150	P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0 - 200	00200	P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0 - 250	00250	P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0 - 500	00500	P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0 - 1,000	01000	P	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0 - 2,500	02500	P	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓
0 - 5,000	05000	P	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓
0 - 7,500	07500	P	✓	✓	✓	✓	✓	✓	X	✓	✓	X	✓
0 - 10,000	10000	P	✓	✓	✓	✓	✓	✓	X	✓	✓	X	✓

17-4PH Bar

Pressure Range	Pressure Range Code	BAR Unit	Process Connection Code										
			A	B	C	D	E	F	G	I	P	T	U
-1 to 2	V0002	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-1 to 5	V0005	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-1 to 7	V0007	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-1 to 10	V0010	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
-1 to 20	V0020	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0-2	00002	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0-5	00005	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0-7	00007	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0-10	00010	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0-20	00020	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0-35	00035	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0-50	00050	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0-100	00100	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓
0-250	00250	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓
0-350	00350	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓
0-500	00500	B	✓	✓	✓	✓	✓	✓	X	✓	✓	X	✓
0-700	00700	B	✓	✓	✓	✓	✓	✓	X	✓	✓	X	✓

316L PSI

Pressure Range	Pressure Range Code	PSI Unit	Process Connection Code										
			A	B	C	D	E	F	G	I	P	T	U
-14.7 - 25	V0025	P	✓	X	✓	X	✓	X	X	✓	✓	X	X
-14.7 - 50	V0050	P	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
-14.7 - 100	V0100	P	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
-14.7 - 150	V0150	P	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
-14.7 - 200	V0200	P	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
-14.7 - 250	V0250	P	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
-14.7 - 500	V0500	P	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0 - 25	00025	P	✓	X	✓	X	✓	X	X	✓	✓	X	X
0 - 50	00050	P	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0 - 100	00100	P	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0 - 150	00150	P	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0 - 200	00200	P	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0 - 250	00250	P	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0 - 500	00500	P	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0 - 1,000	01000	P	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0 - 2,500	02500	P	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0 - 5,000	05000	P	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0 - 7,500	07500	P	✓	X	✓	X	✓	✓	X	✓	✓	X	X
0 - 10,000	10000	P	✓	X	✓	X	✓	✓	X	✓	✓	X	X

316L Bar

Pressure Range	Pressure Range Code	BAR Unit	Process Connection Code										
			A	B	C	D	E	F	G	I	P	T	U
-1 to 2	V0002	B	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
-1 to 5	V0005	B	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
-1 to 7	V0007	B	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
-1 to 10	V0010	B	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
-1 to 20	V0020	B	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0-2	00002	B	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0-5	00005	B	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0-7	00007	B	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0-10	00010	B	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0-20	00020	B	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0-35	00035	B	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0-50	00050	B	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0-100	00100	B	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0-250	00250	B	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0-350	00350	B	✓	X	✓	✓	✓	✓	X	✓	✓	X	X
0-500	00500	B	✓	X	✓	X	X	✓	X	✓	✓	X	X
0-700	00700	B	✓	X	✓	X	X	✓	X	✓	✓	X	X

Inconel PSI

Pressure Range	Pressure Range Code	PSI Unit	Process Connection Code										
			A	B	C	D	E	F	G	I	P	T	U
-14.7 - 25	V0025	P	✓	X	X	X	X	X	X	X	✓	X	X
-14.7 - 50	V0050	P	✓	X	X	X	X	X	X	X	✓	X	X
-14.7 - 100	V0100	P	✓	X	X	X	X	X	X	X	✓	X	X
-14.7 - 150	V0150	P	✓	X	X	X	X	X	X	X	✓	X	X
-14.7 - 200	V0200	P	✓	X	X	X	X	X	X	X	✓	X	X
-14.7 - 250	V0250	P	✓	X	X	X	X	X	X	X	✓	X	X
-14.7 - 500	V0500	P	✓	X	X	X	X	X	X	X	✓	X	X
0 - 25	00025	P	✓	X	X	X	X	X	X	X	✓	X	X
0 - 50	00050	P	✓	X	X	X	X	X	X	X	✓	X	X
0 - 100	00100	P	✓	X	X	X	X	X	X	X	✓	X	X
0 - 150	00150	P	✓	X	X	X	X	X	X	X	✓	X	X
0 - 200	00200	P	✓	X	X	X	X	X	X	X	✓	X	X
0 - 250	00250	P	✓	X	X	X	X	X	X	X	✓	X	X
0 - 500	00500	P	✓	X	X	X	X	X	X	X	✓	X	X
0 - 1,000	01000	P	✓	X	X	X	X	X	X	X	✓	X	X
0 - 2,500	02500	P	✓	X	X	X	X	X	X	X	✓	X	X
0 - 5,000	05000	P	✓	X	X	X	X	X	X	X	✓	X	X
0 - 7,500	07500	P	✓	X	X	X	X	X	X	X	✓	X	X
0 - 10,000	10000	P	✓	X	X	X	X	X	X	X	✓	X	X

Inconel BAR

Pressure Range	Pressure Range Code	BAR Unit	Process Connection Code										
			A	B	C	D	E	F	G	I	P	T	U
-1 to 2	V0002	B	✓	X	X	X	X	X	X	X	✓	X	X
-1 to 5	V0005	B	✓	X	X	X	X	X	X	X	✓	X	X
-1 to 7	V0007	B	✓	X	X	X	X	X	X	X	✓	X	X
-1 to 10	V0010	B	✓	X	X	X	X	X	X	X	✓	X	X
-1 to 20	V0020	B	✓	X	X	X	X	X	X	X	✓	X	X
0 - 2	00002	B	✓	X	X	X	X	X	X	X	✓	X	X
0 - 5	00005	B	✓	X	X	X	X	X	X	X	✓	X	X
0 - 7	00007	B	✓	X	X	X	X	X	X	X	✓	X	X
0 - 10	00010	B	✓	X	X	X	X	X	X	X	✓	X	X
0 - 20	00020	B	✓	X	X	X	X	X	X	X	✓	X	X
0 - 35	00035	B	✓	X	X	X	X	X	X	X	✓	X	X
0 - 50	00050	B	✓	X	X	X	X	X	X	X	✓	X	X
0 - 100	00100	B	✓	X	X	X	X	X	X	X	✓	X	X
0 - 250	00250	B	✓	X	X	X	X	X	X	X	✓	X	X
0 - 350	00350	B	✓	X	X	X	X	X	X	X	✓	X	X
0 - 500	00500	B	✓	X	X	X	X	X	X	X	✓	X	X
0 - 700	00700	B	✓	X	X	X	X	X	X	X	✓	X	X
-1 to 2	V0002	B	✓	X	X	X	X	X	X	X	✓	X	X
-1 to 5	V0005	B	✓	X	X	X	X	X	X	X	✓	X	X

*See Ordering Information for list of options.

Ordering Information

AST4000

A

00500

P

4

E

0

000

Process Connection

A= 1/4" NPT Male
B= 1/8" NPT Male
C= 1/4" BSPP Male
D= G1/4 Male
E= 9/16 - 18 UNF Male
F= 7/16 - 20 UNF Male
G= M14x1.5 Male
I= 1/4" NPT Female
P= 1/2" NPT Male
S= 1/2" NPT Female
T= G1/2 Male
U= 1/8 BSPP Male

Pressure Range

Insert Pressure Range Code (see table for availability)

Pressure Unit

B=Bar P=PSI

Output

1= 0.5-4.5V ratiometric
3= 1-5V
4= 4-20mA (2 wire loop powered)
6= 1-6V

Electrical

A= 2 ft. (0.6m)
B= 4 ft. (1.2m)
C= 6 ft. (1.8m)
D= 10 ft. (3.0m)
E= Mini DIN 43650
F= Packard Metripack 150 3-Pin
I= DIN 43650A
K= Deutsch DT04-3 Pin
R= 6- Pin Bendix
Y= M12x1 Eurofast
Z= Deutsch DT04-4 Pin

Wetted Material

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

Options

000= No Options

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