



INTRINSICALLY SAFE Pressure Transducer / Transmitter AST4400

Overview

The AST4400 is a stainless steel pressure transducer with a wide variety of options. With its rugged construction and best price-to-performance ratio in the industry, the AST4400 is the solution for pressure measurement in Intrinsically Safe areas.

Benefits

- Class I Div 1 Intrinsically Safe Groups C, D when installed with an approved barrier
- ATEX / IECEx: Class I Zone 0 Exia IIB T4 Ga (Ta = -40°C to +80°C)
- High Strength Stainless Steel Construction
- No Oil, Welds or Internal O-rings
- Wide Operating Temperature
- Pressures up to 20,000 PSI
- Low Static and Thermal Errors
- Unparalleled Price and Performance
- Compatible with Wide Variety of Liquids and Gases

Applications

- Industrial OEM Equipment
- HVAC/R Equipment
- Water Management
- Control Panels
- Pneumatics
- Hydraulic Systems
- Data Loggers

Environmental Data

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

Operating Ambient	-40 to 80°C (-40 to 176°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, 80-2700 MHz 80% 1kHz AM Modulation
EN61000-4-4	Electrical Fast Transient/Burst	±0.5 kV, ±1 kV, ±2 kV on DC Mains
	Immunity	±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	ТҮР	MAX	UNITS	NOTES
Accuracy	-0.25		+0.25	%Span	1
Zero Error	-1.0		+1.0	%Span	2
Span Error	-2.0		+2.0	%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 40,000 (whichever is less)		PSI	7
Compensated Temp. Range		0 - 55° (32 to 132°)		°C (°F)	

Electrical Data

Model		AST4400	
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	Ω008-0	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.

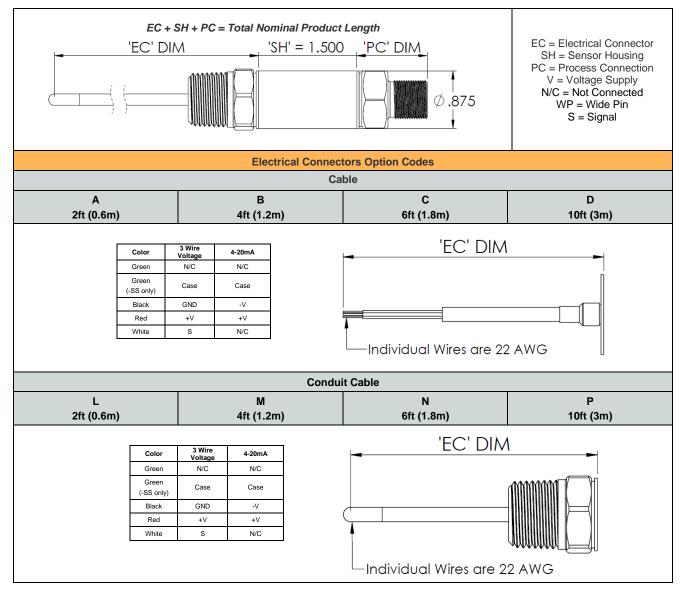
5. The maximum variation of full-scale span within the compensated temperature range relative to 25°C.

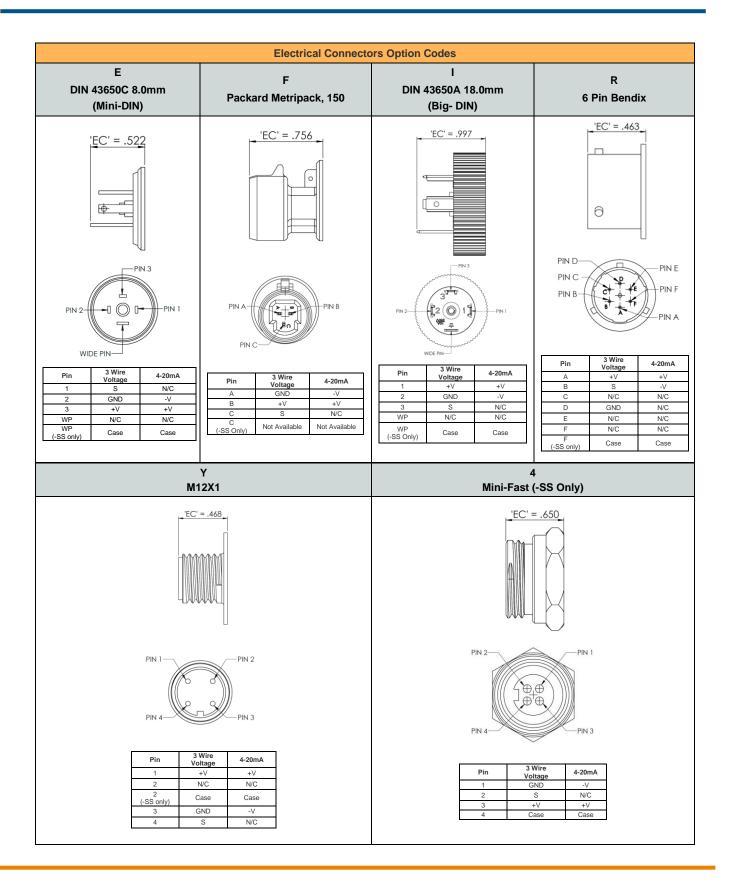
6. The maximum pressure that can be safely applied to the product tor it to remain in specification once pressure is returned to the operating pressure range.

7. The maximum pressure that can be applied without causing escape of the pressure media.

Dimensions & Electrical Connection

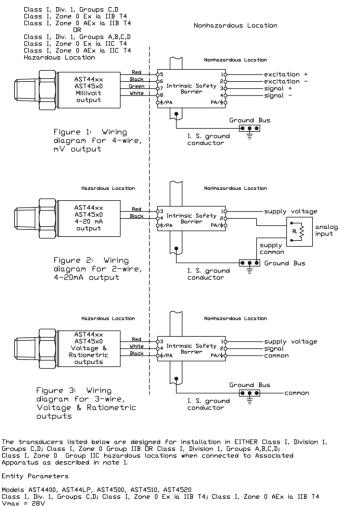
Unless otherwise specified, all dimensions are in inches





	Pressure Port	Option Codes	
A 1/4 NPT Male	B 1/8 NPT Male	C 1/4 BSPP Male	F 7/16 – 20 UNF Male
'PC' = 1.069	'PC' = .975	'PC' = .987	'PC' = .978
I 1/4 NPT Female	P 1/2 NPT Male	W F250C Female Autoclave	
'PC' = .669	'PC' = 1.172	'PC' = 1.870	

UL Approved Barrier Installation / A01657



1.

Model AST4401 Class J. Div. 1, Groups A,B,C,D; Class I, Zone O Ex ia IIC T4; Class I, Zone O AEx ia IIC T4 Vrax = 14.5V

4-20mA with	4-20mA with	All EXCEPT 4-20mA	All EXCEPT 4-20mA
integral	upto 1000ft of	with integral	with upto 150ft of
connector	integral cable	connector	integral cable
Pmax = 651 mW	Pmax = 651 mW	Pmax = 651 mW	Pmax = 651 mW
Imax = 93 mA	Imax = 93 mA	Imax = 93 mA	Imax = 93 mA
Ci = 0.391 uF	Ci = 0.434 uF	Ci = 0.643 uF	Ci = 0.649 uF
Li = 0 uH	Li = 0 uH	Li = 0 uH	Li = 0 uH

Isc or Io is the total current available from the Associated Apparatus under any condition

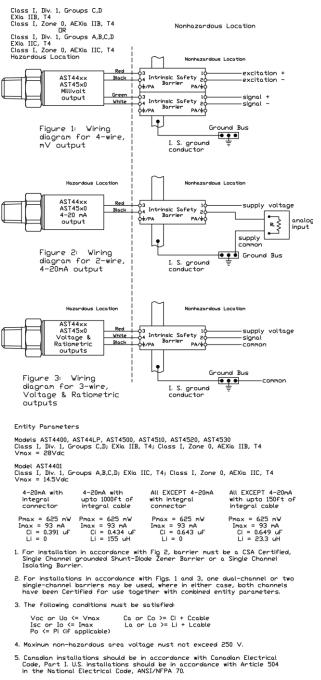
The following conditions must be satisfied:
Voc or Uo <= Vmax Ca or Co >= Ci + Ccable Isc or Io <= Imax La or Lo >= Li + Lcable
Po <= Pi (if applicable)
Total customer cable length for 4-20mA transmitters not to exce
Total customer cable length for all other transmitters not to ex

eed 4000ft xceed 150ft. Total customer cable length for all other transmitters not to exceed Where the cable capacitance and inductance per foot are not known, the following values shall be used: Ccable = 60pF/ft, Lcable = 0.2uH/ft

2. Control Room aparatus shall not generate in excess of 250V (Umax).

3. Canadian installations should be in accordance with Canadian Electrical Code, Part I. U.S. installations should be in accordance with Article 504 in the National Electrical Code, ANSJ/NFPA 70.

CSA Approved Barrier Installation / A08949



6. A grounding method is not provided by the manufacturer as part of the integral design of the Transducer. For units which are connected through a grounded shunt diode safety barrier, ensure that the transducer is mounted to a surface which is at the same potential as the barrier ground.

7. See user manual for installation conditions

Note: Float unused wires in cable. Insure that these wires are electrically isolated from other conductors

Available Process Connection, Material Configurations & Pressure Codes

17-4PH PSI

	Pressure Range	PSI			Process	S Connectio	on Code		
Pressure Range	Code	Unit	Α	В	С	F	l I	Р	W
-14.7 - 25	V0025	Р	✓	Х	✓	Х	√	✓	Х
-14.7 - 50	V0050	Р	✓	✓	✓	✓	1	✓	Х
-14.7 - 100	V0100	Р	✓	✓	✓	✓	1	✓	Х
-14.7 - 150	V0150	Р	✓	✓	✓	✓	✓	✓	Х
-14.7 - 200	V0200	Р	✓	✓	✓	✓	✓	✓	Х
-14.7 - 250	V0250	Р	✓	✓	✓	✓	√	✓	Х
-14.7 - 500	V0500	Р	✓	✓	✓	✓	1	✓	Х
0 - 25	00025	Р	✓	Х	✓	Х	1	✓	Х
0 - 50	00050	Р	✓	✓	✓	✓	✓	✓	Х
0 - 100	00100	Р	✓	✓	✓	✓	√	✓	Х
0 - 150	00150	Р	✓	✓	✓	✓	✓	✓	Х
0 - 200	00200	Р	✓	✓	✓	✓	✓	✓	Х
0 - 250	00250	Р	✓	✓	✓	✓	✓	✓	Х
0 - 500	00500	Р	✓	✓	✓	✓	✓	✓	Х
0 - 1,000	01000	Р	✓	✓	✓	✓	√	✓	Х
`0 - 2,500	02500	Р	✓	✓	✓	✓	1	✓	Х
0 - 5,000	05000	Р	✓	✓	✓	✓	1	1	Х
0 - 7,500	07500	Р	Х	Х	✓	✓	✓	✓	Х
0 - 10,000	10000	Р	Х	Х	Х	Х	Х	Х	✓

17-4PH Bar

Drossura Danga	Pressure Range	BAR			Process	s Connectio	on Code		
Pressure Range	Code	Unit	Α	В	С	F	L.	Р	W
-1 to 2	V0002	В	✓	✓	✓	✓	✓	✓	Х
-1 to 5	V0005	В	√	√	✓	✓	✓	✓	Х
-1 to 7	V0007	В	✓	√	✓	✓	✓	✓	Х
-1 to 10	V0010	В	√	√	✓	✓	✓	✓	Х
-1 to 20	V0020	В	✓	✓	~	✓	✓	✓	Х
0-2	00002	В	✓	✓	✓	✓	✓	✓	Х
0-5	00005	В	✓	✓	~	✓	✓	✓	Х
0-7	00007	В	√	√	✓	✓	✓	✓	Х
0-10	00010	В	✓	✓	✓	✓	✓	✓	Х
0-20	00020	В	✓	✓	✓	✓	✓	✓	Х
0-35	00035	В	✓	✓	✓	✓	✓	✓	Х
0-50	00050	В	✓	✓	✓	✓	✓	✓	Х
0-100	00100	В	✓	✓	✓	✓	✓	✓	Х
0-250	00250	В	✓	✓	✓	✓	✓	✓	Х
0-350	00350	В	✓	✓	✓	✓	✓	✓	Х
0-500	00500	В	✓	✓	✓	✓	✓	✓	Х
0-700	00700	В	✓	✓	✓	✓	✓	✓	Х

INDUSTRIAL OEM

AST4400 Pressure Transmitter

316L PSI

Descente Descen	Pressure Range	PSI			Process	S Connectio	on Code		
Pressure Range	Code	Unit	Α	В	С	F	L.	Р	W
-14.7 - 25	V0025	Р	✓	Х	✓	Х	✓	✓	Х
-14.7 - 50	V0050	Р	✓	Х	✓	✓	~	✓	Х
-14.7 - 100	V0100	Р	✓	Х	✓	✓	~	✓	Х
-14.7 - 150	V0150	Р	✓	Х	✓	✓	~	✓	Х
-14.7 - 200	V0200	Р	✓	Х	✓	✓	~	✓	Х
-14.7 - 250	V0250	Р	✓	Х	✓	✓	~	✓	Х
-14.7 - 500	V0500	Р	✓	Х	✓	✓	~	✓	Х
0 - 25	00025	Р	✓	Х	✓	Х	~	✓	Х
0 - 50	00050	Р	✓	Х	✓	✓	✓	✓	Х
0 - 100	00100	Р	✓	Х	✓	✓	~	✓	Х
0 - 150	00150	Р	✓	Х	✓	✓	~	✓	Х
0 - 200	00200	Р	✓	Х	✓	✓	~	✓	Х
0 - 250	00250	Р	✓	Х	✓	✓	~	✓	Х
0 - 500	00500	Р	✓	Х	✓	✓	✓	✓	Х
0 - 1,000	01000	Р	✓	Х	✓	✓	✓	✓	Х
0 - 2,500	02500	Р	✓	Х	✓	✓	~	✓	Х
0 - 5,000	05000	Р	✓	Х	✓	✓	~	✓	Х
0 - 7,500	07500	Р	✓	Х	✓	✓	~	✓	Х
0 - 10,000	10000	Р	✓	Х	✓	✓	✓	✓	Х
0 - 15,000	15000	Р	Х	Х	Х	✓	✓	Х	Х
0 - 20,000	20000	Р	Х	Х	Х	Х	Х	Х	✓

316L Bar

Dressure Denge	Pressure Range	BAR			Process	s Connectio	on Code		
Pressure Range	Code	Unit	Α	В	С	F	l I	Р	W
-1 to 2	V0002	В	✓	Х	✓	✓	✓	✓	Х
-1 to 5	V0005	В	✓	Х	1	✓	✓	✓	Х
-1 to 7	V0007	В	✓	Х	✓	✓	✓	✓	Х
-1 to 10	V0010	В	✓	Х	✓	✓	✓	✓	Х
-1 to 20	V0020	В	✓	Х	✓	✓	✓	✓	Х
0-2	00002	В	✓	Х	✓	✓	✓	✓	Х
0-5	00005	В	✓	Х	✓	✓	✓	✓	Х
0-7	00007	В	✓	Х	✓	✓	✓	✓	Х
0-10	00010	В	✓	Х	✓	✓	✓	✓	Х
0-20	00020	В	✓	Х	✓	✓	✓	✓	Х
0-35	00035	В	✓	Х	✓	✓	✓	✓	Х
0-50	00050	В	✓	Х	✓	✓	✓	✓	Х
0-100	00100	В	1	Х	✓	✓	1	✓	Х
0-250	00250	В	✓	Х	✓	✓	✓	✓	Х
0-350	00350	В	✓	Х	✓	✓	✓	✓	Х
0-500	00500	В	✓	Х	✓	✓	✓	✓	Х
0-700	00700	В	✓	Х	✓	✓	✓	✓	Х

INDUSTRIAL OEM

AST4400 Pressure Transmitter

Inconel PSI

Decession Deces	Pressure Range Code	DCI II. it	Process Connection Code								
Pressure Range		PSI Unit	Α	В	С	F	l I	Р	W		
-14.7 - 25	V0025	Р	✓	Х	Х	Х	Х	~	Х		
-14.7 - 50	V0050	Р	✓	Х	Х	Х	Х	~	Х		
-14.7 - 100	V0100	Р	✓	Х	Х	Х	Х	~	Х		
-14.7 - 150	V0150	Р	√	Х	Х	Х	Х	~	Х		
-14.7 - 200	V0200	Р	√	Х	Х	Х	Х	~	Х		
-14.7 - 250	V0250	Р	√	Х	Х	Х	Х	~	Х		
-14.7 - 500	V0500	Р	√	Х	Х	Х	Х	~	Х		
0 - 25	00025	Р	✓	Х	Х	Х	Х	~	Х		
0 - 50	00050	Р	✓	Х	Х	Х	Х	~	Х		
0 - 100	00100	Р	✓	Х	Х	Х	Х	~	Х		
0 - 150	00150	Р	✓	Х	Х	Х	Х	~	Х		
0 - 200	00200	Р	✓	Х	Х	Х	Х	~	Х		
0 - 250	00250	Р	✓	Х	Х	Х	Х	~	Х		
0 - 500	00500	Р	✓	Х	Х	Х	Х	✓	Х		
0 - 1,000	01000	Р	✓	Х	Х	Х	Х	~	Х		
0 - 2,500	02500	Р	✓	Х	Х	Х	Х	~	Х		
0 - 5,000	05000	Р	✓	Х	Х	Х	Х	✓	Х		
0 - 7,500	07500	Р	✓	Х	Х	Х	Х	~	Х		
0 - 10,000	10000	Р	✓	Х	Х	Х	Х	~	Х		
0 - 15,000	15000	Р	Х	Х	Х	Х	~	~	Х		
0 - 20,000	20000	Р	Х	Х	Х	Х	Х	Х	✓		

Inconel Bar

Durana Damas	Pressure Range	BAR			Proces	s Connecti	on Code		
Pressure Range	Code	Unit	Α	В	С	F	l I	Р	W
-1 to 2	V0002	В	✓	Х	Х	Х	Х	✓	Х
-1 to 5	V0005	В	✓	Х	Х	Х	Х	√	Х
-1 to 7	V0007	В	✓	Х	Х	Х	Х	~	Х
-1 to 10	V0010	В	✓	Х	Х	Х	Х	✓	Х
-1 to 20	V0020	В	✓	Х	Х	Х	Х	~	Х
0-2	00002	В	✓	Х	Х	Х	Х	~	Х
0-5	00005	В	✓	Х	Х	Х	Х	✓	Х
0-7	00007	В	✓	Х	Х	Х	Х	✓	Х
0-10	00010	В	✓	Х	Х	Х	Х	✓	Х
0-20	00020	В	✓	Х	Х	Х	Х	√	Х
0-35	00035	В	✓	Х	Х	Х	Х	√	Х
0-50	00050	В	✓	Х	Х	Х	Х	√	Х
0-100	00100	В	✓	Х	Х	Х	Х	√	Х
0-250	00250	В	✓	Х	Х	Х	Х	✓	Х
0-350	00350	В	✓	Х	Х	Х	Х	✓	Х
0-500	00500	В	✓	Х	Х	Х	Х	✓	Х
0-700	00700	В	✓	Х	Х	Х	Х	✓	Х

INDUSTRIAL OEM

AST4400 Pressure Transmitter

Hastelloy PSI

Droccuro Pongo	Pressure Range Code		Process Connection Code								
Pressure Range		PSI Unit	А	В	С	F	- I	Р	W		
-14.7 - 25	V0025	Р	✓	Х	✓	Х	Х	✓	Х		
-14.7 - 50	V0050	Р	✓	Х	✓	Х	Х	✓	Х		
-14.7 - 100	V0100	Р	~	Х	√	Х	Х	✓	Х		
-14.7 - 150	V0150	Р	~	Х	√	Х	Х	✓	Х		
-14.7 - 200	V0200	Р	~	Х	✓	Х	Х	✓	Х		
-14.7 - 250	V0250	Р	~	Х	✓	Х	Х	✓	Х		
-14.7 - 500	V0500	Р	~	Х	✓	Х	Х	✓	Х		
0 - 25	00025	Р	~	Х	✓	Х	Х	✓	Х		
0 - 50	00050	Р	~	Х	✓	Х	Х	✓	Х		
0 - 100	00100	Р	~	Х	✓	Х	Х	✓	Х		
0 - 150	00150	Р	~	Х	✓	Х	Х	✓	Х		
0 - 200	00200	Р	~	Х	✓	Х	Х	✓	Х		
0 - 250	00250	Р	~	Х	✓	Х	Х	✓	Х		
0 - 500	00500	Р	~	Х	✓	Х	Х	✓	Х		
0 - 1,000	01000	Р	✓	Х	✓	Х	Х	✓	Х		
0 - 2,500	02500	Р	✓	Х	✓	Х	Х	✓	Х		
0 - 5,000	05000	Р	~	Х	✓	Х	Х	✓	Х		
0 - 7,500	07500	Р	✓	Х	✓	Х	Х	✓	Х		
0 - 10,000	10000	Р	✓	Х	✓	Х	Х	✓	Х		
0 - 15,000	15000	Р	Х	Х	✓	Х	Х	✓	Х		
0 - 20,000	20000	Р	Х	Х	Х	Х	Х	Х	Х		

Hastelloy Bar

	Pressure Range	BAR			Process	S Connectio	on Code		
Pressure Range	Code	Unit	Α	В	С	F	l I	Р	W
-1 to 2	V0002	В	✓	Х	✓	Х	Х	✓	Х
-1 to 5	V0005	В	✓	Х	~	Х	Х	✓	Х
-1 to 7	V0007	В	✓	Х	~	Х	Х	✓	Х
-1 to 10	V0010	В	✓	Х	~	Х	Х	✓	Х
-1 to 20	V0020	В	✓	Х	~	Х	Х	✓	Х
0-2	00002	В	✓	Х	~	Х	Х	✓	Х
0-5	00005	В	✓	Х	✓	Х	Х	✓	Х
0-7	00007	В	✓	Х	✓	Х	Х	✓	Х
0-10	00010	В	✓	Х	✓	Х	Х	✓	Х
0-20	00020	В	✓	Х	✓	Х	Х	✓	Х
0-35	00035	В	✓	Х	~	Х	Х	✓	Х
0-50	00050	В	✓	Х	~	Х	Х	✓	Х
0-100	00100	В	✓	Х	~	Х	Х	✓	Х
0-250	00250	В	✓	Х	✓	Х	Х	✓	Х
0-350	00350	В	✓	Х	✓	Х	Х	✓	Х
0-500	00500	В	✓	Х	√	Х	Х	✓	Х
0-700	00700	В	✓	Х	√	Х	Х	✓	Х
0-1,000	01000	В	Х	Х	✓	Х	Х	✓	Х

*See Ordering Information for list of options.

Ordering Information

AST4400		А	00500	Р	4	L	1	000	-SS
Process Connection A= 1/4" NPT Male B= 1/8" NPT Male C= 1/4" BSPP Male F= 7/16"-20 UNF Male	I= 1/4" NPT Female P= 1/2" NPT Male W= F250C Female Autoclave								
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 Connection A= 2 ft. (0.6m) B= 4 ft. (1.2m) C= 6 ft. (1.8m) D= 10 ft. (3.0m) E= Mini DIN 43650C F= Packard Metripack 150 3-Pir I= DIN 43650A	L= Conduit, Cable 2 ft. (0.6 m) M= Conduit, Cable 4 ft. (1.2 m) N= Conduit, Cable 6 ft. (1.8 m) P= Conduit, Cable 10 ft. (3 m) R= 6- Pin Bendix Y= M12x1 4 = Mini-Fast (-SS Only)								
Wetted Material 0= 17-4PH 1= 316L 2= Inc	conel 718 4= Hastelloy C276								
Option Codes 000= No Options									
Approval Type									
-SS Intrinsically Safe when inst 12.27.01 Single Seal and A									
-Z pressure, and process con	SME B31.3. Contact factory for material, nection options (includes -SS approvals)								
Leave (formerly UL913) Blank	ss I Div 1 Intrinsically Safe Groups C, D								
Not available for Electrical	Connection 4								

Note: CSA approved products require case/earth ground electrical connection. See wiring installation sheet for further details

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