



American Sensor Technologies

Your Sensor Business Partner...



Hazardous Area Pressure Transducers





About Us



“The mission of American Sensor Technologies, Inc. is to be “your sensor business partner...”

American Sensor Technologies, Inc. (AST) was incorporated in New Jersey on January 9, 1997, by Richard E. Tasker, Michael P. Eldredge and Karmjit S. Sidhu, for the purpose of developing MEMS (Micro-Electro Mechanical Structures) pressure sensor products with their proprietary Krystal Bond™ Technology.

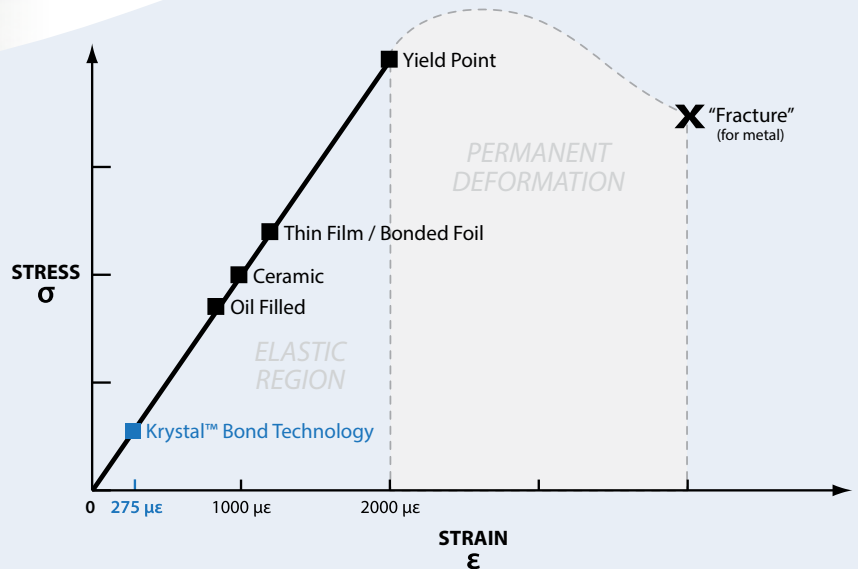
The dynamics of AST’s technologies allow its pressure sensing element to be packaged in virtually an unlimited number of configurations along with offering millivolt output pressure sensors, amplified voltage pressure transducers, or current output pressure transmitters. Products can be offered from our standard catalog or modified into a semi-custom or custom package for OEM applications.

AST manufactures its pressure sensor products and related items under an ISO 9001:2008 certified quality system.

Our Technology

With an operating strain at less than fifteen percent (15%) of the metal's yield point, the AST pressure sensor cell has less fatigue, higher proof/burst pressure capability, and excellent long term stability. A simple example of this is inflating and deflating a balloon several times. The stretching and distortion depends on the thickness of the balloon.

The principles of pressure measurement are the same. As a diaphragm is pressurized closer to the yield point, a transformation in the shape occurs, changing the output over time. Krystal Bond™ Technology would be similar to trying to stretch a balloon as thick as a car tire.



“American Sensor Technologies, Inc. will meet or exceed customer expectations for quality, delivery and performance. We will meet applicable regulatory requirements. We are committed to growing, improving and enhancing our processes, products and people.”

Contents



Non-Incendive

AST4300	Pressure Transducer up to 20,000 PSI	1-2
AST43LP	Low Pressure Transducer 0-1 to 0-15 PSIG	3-4

Intrinsically Safe with Approved Barrier

AST4400	Pressure Transducer up to 20,000 PSI Groups C, D	5-6
	Hammer Union Pressure Transmitter	7-10
AST4401	Approved for Groups A, B, C, D	11-12
AST44LP	Low Pressure Transducer 0-1 to 0-15 PSIG Groups C, D	13-14
AST4500 / AST4510	0-1 to 0-100 PSI Submersible Pressure Transducer	15-16
AST4520	Flush Diaphragm Submersible Pressure Transducer	17-18
AST4530	PVDF Submersible Pressure Transducer	19-20

Barrier Drawings

Barrier Drawings	Barrier Installation, UL & CSA Approved	21-22
------------------	---	-------

Explosion-Proof

AST4600	Standard Pressure Transducer	23-24
AST46HA	0.1% Accuracy Pressure Transmitter	25-26
AST46PT	0.1% Pressure Transducer with Temperature Output	27-28
AST46SW	SPDT Solid State Pressure Switch	29-30
AST46DS	Low Power Pressure Transducer with Display	31-32
AST53ED/AST53EN	High Line, Low Differential Pressure Transmitter	33-34
AST54ED/AST54EN	Differential Pressure Transducer	35-36

Dimensional Data

Process Connection & Electrical Connection Options	37-38
--	-------

Non-Incendive



AST4300 Pressure Transducer / Transmitter



The AST4300 is a stainless steel pressure transducer / transmitter for use in hazardous areas. In addition to its rugged construction and best price-to-performance ratio in the industry, the AST4300 is the solution for pressure measurement for a variety of applications.

Benefits

- Class I Div 2 Groups A, B, C, D
- ATEX / IECEx: Ex nA IIC T4 Gc (Ta = -40°C to 85°C) for conduit electrical connections
- High Strength Stainless Steel Construction
- No Oil, Welds or Internal O-rings
- Wide Operating Temperature
- Pressures from Vacuum to 20,000 PSI
- Low Static and Thermal Errors
- Unparalleled Price and Performance
- Compatible with Wide Variety of Liquids and Gases
- EMI/RFI Protection

Applications

- Refrigeration
- Water Management
- Industrial OEM Equipment
- Oil & Gas Platforms
- Pressure Instrumentation
- Process Control
- Gas Compression & Storage
- Test Stands
- Oxygen Delivery Systems
- Hydrogen Fuel (316L)

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 132°F)
TC Zero	<±1.5% of FS
TC Span	<±1.5% of FS

Other

Shock	EN 60068-2-27
Vibration	EN 60068-2-6, 60068-2-64, and IEC 68-2-32
EMI/RFI Protection:	Yes
Rating:	IP-66, min

Performance @ 25°C (77°F)

Accuracy*	< ±0.25% BFSL (<±0.5% from 7,500 up to 20,000 PSI)
Stability (1 year)	±0.25% FS, typical
Over Range Protection	2X Rated Pressure
Burst Pressure	5X or 40,000 PSI (whichever is less)
Pressure Cycles	> 100 Million

* Accuracy includes non-linearity, hysteresis & non-repeatability

Electrical Data

Output	4-20mA	1-5VDC, 1-6VDC	0.5-4.5V Ratiometric
Excitation	10-28VDC	10-28VDC	5VDC, regulated
Output Impedance	>10k Ohms	<100 Ohms, Nominal	<100 Ohms, Nominal
Current Consumption:	20mA, typical	5mA, typical	5mA, typical
Bandwidth	(-3dB): DC to 250 Hz	(-3dB): DC to 1kHz	(-3dB): DC to 1kHz
Output Noise:	-	<2mV RMS	<2mV RMS
Zero Offset:	<±1% of FS	<±1% of FS	<±1% of FS
Span Tolerance:	<±2% of FS	<±1.5% of FS	<±1.5% of FS
Output Load:	0-800 Ohms@10-28VDC	10k Ohms, Min.	10K Ohms, Min.
Reverse Polarity Protection	Yes	Yes	Yes



Ordering Information

AST 4300

A

00500

P

4

L

1

000

-SS

Series Type

Process Connection

A= 1/4" NPT Male I= 1/4" NPT Female**
 B= 1/8" NPT Male* P= 1/2" MNPT**
 C= 1/4" BSPP Male W= F250C Female Autoclave***

*Not available under 50PSI (not available in 316L) **Pressures up to 15,000 PSI
 ***Pressures from 10,000 to 20,000 PSI, not available in 316L

Pressure Measurement

Insert 5-digit pressure code

Pressure Unit

B= Bar K= kg/cm² P= PSI

Outputs

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

Electrical

I= DIN 43650A N= Conduit fitting, Cable 6 ft. (1.8 m)
 L= Conduit fitting, Cable 2 ft. (0.6 m) P= Conduit fitting, Cable 10 ft. (3.0 m)
 M= Conduit fitting, Cable 4 ft. (1.2 m) 4 = Mini-Fast (CSA Only)

Wetted Material

0= 17-4PH 2= Inconel 718 (consult factory on availability)
 1= 316L 4= Hastelloy C276 (consult factory on availability)

Options

000= No Options

Approval

(Left Blank)= UL ANSI/ISA 12.12.01 Class I Div 2 Non-Incendive Groups A, B, C, D (formerly UL1604)
 -SS= Add "-SS" for CSA213 Class I Div 2 Non-Incendive Groups A, B, C, D and ANSI/ISA 12.27.01 Single Seal Approval
 -Z= Add "-Z" for CRN Registered to ANSI/ASME B31.3. Contact factory for material, pressure, and process connection options (includes -SS approvals)

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

Pressure Ranges[†]

PSIG Measurement	-14.7 to 25**	Pressure Code	V0025**
	0-25		00025
	0-50		00050
	0-100		00100
	0-150		00150
	0-200		00200
	0-250		00250
	0-500		00500
	0-1,000		01000
	0-2,500		02500
	0-5,000		05000
	0-7,500		07500
	0-10,000		10000
CSA ONLY		CSA ONLY	
0-15,000	15000	0-20,000	20000

BARG Measurement	-1 to 2**	Pressure Code	V0002**
	0-2		00002
	0-5		00005
	0-7		00007
	0-10		00010
	0-20		00020
	0-35		00035
	0-50		00050
	0-100		00100
	0-250		00250
	0-350		00350
	0-500		00500
	0-700		00700

[†]Typical ranges. All ranges between 0-25 PSI and 0-20,000 PSI available.
^{**}Compound ranges up to -14.7 to 500 PSI available. Please consult factory.

Non-Incendive



AST43LP > Low Pressure Transducer / Transmitter



The AST43LP is a low pressure Class I Division 2 stainless steel pressure transmitter for use in hazardous areas. In addition to its rugged construction and the best price-to-performance ratio in the industry, the AST43LP is the solution for low pressure measurement for a variety of applications.

Benefits

- Class I Div 2 Groups A, B, C, D
- ATEX / IECEx: Ex nA IIC T4 Gc (Ta = -40°C to 85°C) for conduit electrical connections
- High Strength Stainless Steel Construction
- No Welds or Internal O-rings
- Wide Operating Temperature
- Pressures from 0-1 to 0-15 PSI
- Low Static and Thermal Errors
- Unparalleled Price and Performance
- Compatible with Wide Variety of Liquids and Gases
- EMI/RFI Protection

Applications

- Flare Gas
- Water Management
- Industrial OEM Equipment
- Oil & Gas Platforms
- Pressure Instrumentation
- Process Control
- Gas Compression & Storage
- Test Stands
- Oxygen Delivery Systems
- External Tank Level

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 132°F)
TC Zero	<±1.5% of FS
TC Span	<±1.5% of FS
Other	
Shock	EN 60068-2-27
Vibration	EN 60068-2-6, 60068-2-64, and IEC 68-2-32
EMI/RFI Protection:	Yes
Rating:	IP-66, min

Performance @ 25°C (77°F)

Accuracy*	< ±0.25% BFSL (< ±0.5% BFSL for 0-1 PSI)
Stability (1 year)	±0.25% FS, typical
Over Range Protection	2X Rated Pressure
Burst Pressure	5X or 75 PSI (whichever is less)
Pressure Cycles	> 100 Million

* Accuracy includes non-linearity, hysteresis & non-repeatability

Electrical Data

Output	4-20mA	1-5VDC, 1-6VDC	0.5-4.5V Ratiometric
Excitation	10-28VDC	10-28VDC	5VDC, regulated
Output Impedance	>10k Ohms	<100 Ohms, Nominal	<100 Ohms, Nominal
Current Consumption:	20mA, typical	5mA, typical	5mA, typical
Bandwidth	(-3dB): DC to 250 Hz	(-3dB): DC to 1kHz	(-3dB): DC to 1kHz
Output Noise:	-	<2mV RMS	<2mV RMS
Zero Offset:	<±1% of FS	<±1% of FS	<±1% of FS
Span Tolerance:	<±2% of FS	<±1.5% of FS	<±1.5% of FS
Output Load:	0-800 Ohms@10-28VDC	10k Ohms, Min.	10K Ohms, Min.
Reverse Polarity Protection	Yes	Yes	Yes



Ordering Information

AST43LP
A
00005
P
4
L
1
000
-SS

Series Type

Process Connection

A= 1/4" NPT Male P= 1/2" MNPT
 C= 1/4" BSPP Male T= G1/2 Male with Flush
 I= 1/4" NPT Female Diaphragm (see options)

Pressure Measurement

Insert 5-digit pressure code

Pressure Unit

H= Inches H₂O P= PSI

Outputs

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

Electrical

I= DIN 43650A N= Conduit fitting, Cable 6 ft. (1.8 m)
 L= Conduit fitting, Cable 2 ft. (0.6 m) P= Conduit fitting, Cable 10 ft. (3.0 m)
 M= Conduit fitting, Cable 4 ft. (1.2 m) 4 = Mini-Fast (CSA Only)

Wetted Material

1= 316L 4= Hastelloy (consult factory on availability)

Options

000= No Options

Approval

(Left Blank)= UL ANSI/ISA 12.12.01 Class I Div 2 Non-Incendive Groups A, B, C, D (formerly UL1604)
 -SS= Add "-SS" for CSA213 Class I Div 2 Non-Incendive Groups A, B, C, D and ANSI/ISA 12.27.01 Single Seal Approval

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

Pressure Ranges

PSIG Measurement	0-1	Pressure Code	00001
	0-2.5*		00069
	0-5		00005
	0-7.5*		00208
	0-10		00010
	0-15		00015

*2.5 and 7.5 PSI Sensor must be ordered in inches of H₂O.

Intrinsically Safe



AST4400 Pressure Transducer / Transmitter



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

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 132°F)
TC Zero	<±1.5% of FS
TC Span	<±1.5% of FS

Other

Shock	EN 60068-2-27
Vibration	EN 60068-2-6, 60068-2-64, and IEC 68-2-32
EMI/RFI Protection:	Yes
Rating:	IP-66, min

**For UL certified barrier drawing, see A01657.
For CSA certified barrier drawing, see A08949.**

Performance @ 25°C (77°F)

Accuracy*	< ±0.25% BFSL (<±0.5% from 7,500 up to 20,000 PSI)
Stability (1 year)	±0.25% FS, typical
Over Range Protection	2X Rated Pressure
Burst Pressure	5X or 40,000 PSI (whichever is less)
Pressure Cycles	> 100 Million

*Accuracy includes non-linearity, hysteresis & non-repeatability

Electrical Data

Output	4-20mA	1-5VDC, 1-6VDC	0.5-4.5V Ratiometric
Excitation	10-28VDC	10-28VDC	5VDC, regulated
Output Impedance	>10k Ohms	<100 Ohms, Nominal	<100 Ohms, Nominal
Current Consumption:	20mA, typical	5mA, typical	<10mA
Bandwidth	(-3dB): DC to 250 Hz	(-3dB): DC to 1kHz	(-3dB): DC to 1kHz
Output Noise:	-	<2mV RMS	<2mV RMS
Zero Offset:	<±1% of FS	<±1% of FS	<±1% of FS
Span Tolerance:	<±2% of FS	<±1.5% of FS	<±1.5% of FS
Output Load:	0-800 Ohms@10-28VDC	10k Ohms, Min.	10K Ohms, Min.
Reverse Polarity Protection	Yes	Yes	Yes

Hammer Union - 1502



Pressure Transmitter



The hammer union pressure transmitter is a US manufactured pressure transmitter with Weco™ process connections. Offered with 4-20mA output signals, this design features high shock and vibration resistance, with testing up to 1000G. Pressure is measured from an Inconel 718 sensing element using MEMS silicon based strain gages to produce accurate repeatable measurements. The cage design allows for protection of both the connector and mating connector. The modular enclosure allows for simple factory replacement of the transmitter at a fraction of the cost of the whole assembly.

Benefits

- Modular design
- Cage protection for connector and mating cable
- Inconel 718 sensing element
- SIL2 available
- Easy to carry
- Non-clogging port

Performance @ 25°C (77°F)

Accuracy*	< ±0.5% BFSL
Stability (1 year)	±0.25% FS, typical
Over Range Protection	2X Rated Pressure, Minimum
Burst Pressure	5X or 40,000 PSI (whichever is less)
Pressure Cycles	> 100 Million

* Accuracy includes non-linearity, hysteresis & non-repeatability

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 132°F)
TC Zero	< ±1.5% of FS
TC Span	< ±1.5% of FS

Other

Shock	1,000g, 0.5ms half sine wave
Vibration	EN 60068-2-6, 60068-2-64, and IEC 68-2-32
EMI/RFI Protection:	Yes
Rating:	IP-66, min

Electrical Data

Output	4-20mA
Excitation	10-28VDC
Output Impedance	>10k Ohms
Current Consumption:	20mA, typical
Bandwidth	(-3dB): DC to 250 Hz
Output Noise:	-
Zero Offset:	< ±1% of FS
Span Tolerance:	< ±2% of FS
Output Load:	0-800 Ohms@10-28VDC
Reverse Polarity Protection	Yes

Ordering Information

AST4400
X
15000
P
4
R
2
601
-SS

Series Type

Process Connection
X = Special - See option codes

Pressure Measurement
Insert 5-digit pressure code

PSIS Measurement	6,000	Pressure Code	06000
	10,000		10000
	15,000		15000
	20,000		20000

Pressure Unit
B= Bar (contact factory)
P= PSI

Outputs
4= 4-20mA (2 wire loop powered)

Electrical
R= 6- Pin Bendix (PT06A) (see Option 601)
Y = M12x1

Wetted Material
2= Inconel 718 Sensor / 316L SS

Options
600= Weco™ 1502 Cage Assembly
601= Weco™ 1502 Cage Assembly, Bendix A=+V, B=-V, D and F=Case Ground

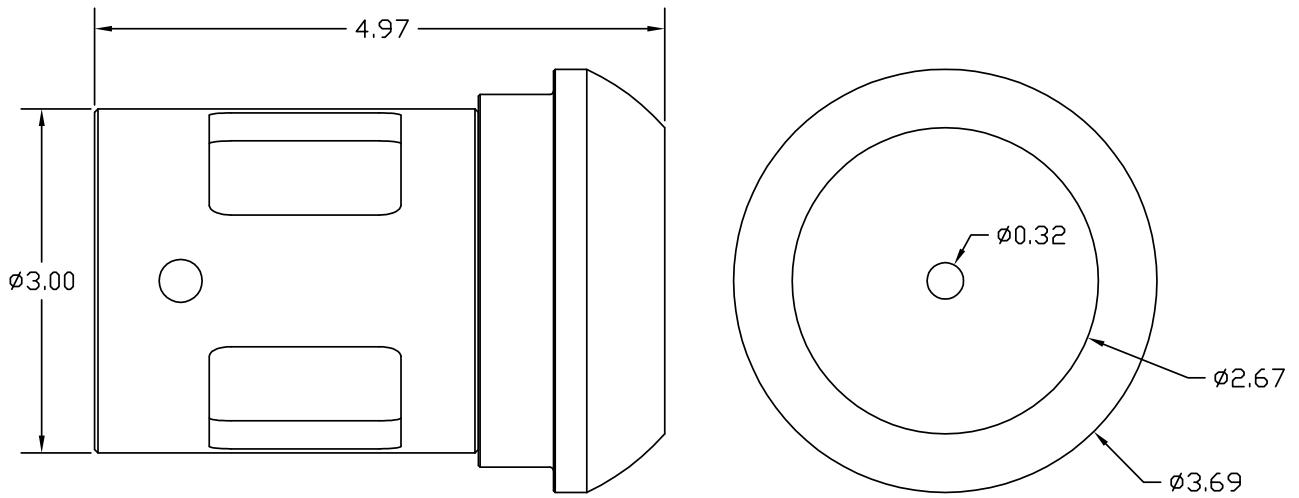
Approval
-SS= CSA157 Class I Div 1 Grps C, D Intrinsically Safe, ANSI/ISA 12.27.01 Single Seal and ATEX/IECEx Exia IIB Class I, Zone 0, T4
-SL= Same as -SS + SIL2 Certification

WECO is a registered trademark of FMC Technologies, Inc.

Hammer Union



Pressure Transmitter

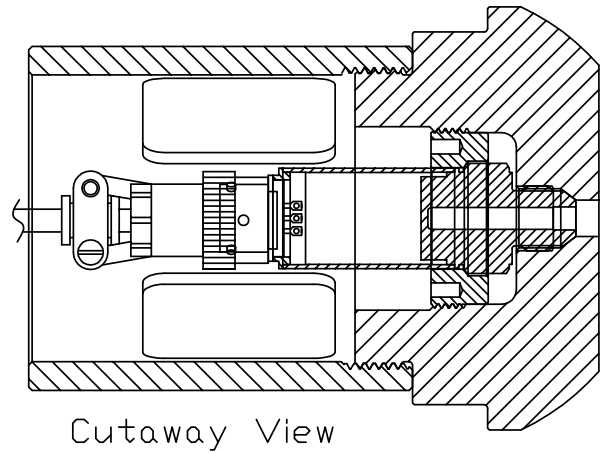
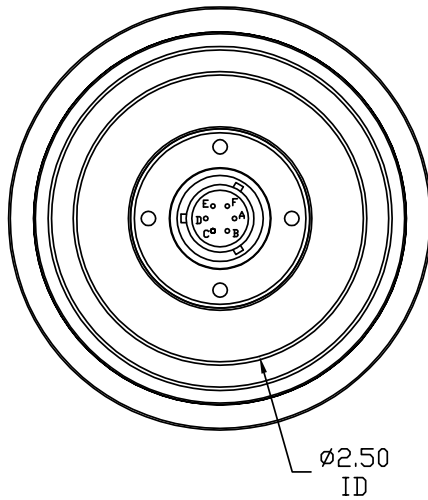


Hammer Union



Pressure Transmitter

Bendix PT06A
Connector Standard
for Non Hazardous and
Intrinsically Safe
A= +V
B= -V
D or F= Case Ground



Intrinsically Safe



AST4401 Pressure Transducer / Transmitter



The AST4401 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 AST4401 is the solution for pressure measurement in Intrinsically Safe areas.

Benefits

- ATEX / IECEx: Class I Zone 0 Exia IIC T4 Ga (Ta = -40°C to +80°C)
- High Strength Stainless Steel Construction
- No Oil, Welds or Internal O-rings
- Wide Operating Temperature Range
- Ranges up to 20,000 PSI
- Low Static and Thermal Errors
- Unparalleled Price and Performance
- Compatible with Wide Range of Liquids and Gases
- EMI/RFI Protection

Applications

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

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 132°F)
TC Zero	<±1.5% of FS
TC Span	<±1.5% of FS

Other

Shock	EN 60068-2-27
Vibration	EN 60068-2-6, 60068-2-64, and IEC 68-2-32
EMI/RFI Protection:	Yes
Rating:	IP-66, min

**For UL certified barrier drawing, see A01657.
For CSA certified barrier drawing, see A08949.**

Performance @ 25°C (77°F)

Accuracy*	< ±0.25% BFSL (<±0.5% from 7,500 up to 20,000 PSI)
Stability (1 year)	±0.25% FS, typical
Over Range Protection	2X Rated Pressure
Burst Pressure	5X or 40,000 PSI (whichever is less)
Pressure Cycles	> 100 Million

*Accuracy includes non-linearity, hysteresis & non-repeatability

Electrical Data

Output	4-20mA	1-5VDC, 1-6VDC	0.5-4.5V Ratiometric
Excitation	10-14.5VDC	10-14.5VDC	5VDC, regulated
Output Impedance	>10k Ohms	<100 Ohms, Nominal	<100 Ohms, Nominal
Current Consumption:	20mA, typical	5mA, typical	<10mA
Bandwidth	(-3dB): DC to 250 Hz	(-3dB): DC to 1kHz	(-3dB): DC to 1kHz
Output Noise:	-	<2mV RMS	<2mV RMS
Zero Offset:	<±1% of FS	<±1% of FS	<±1% of FS
Span Tolerance:	<±2% of FS	<±1.5% of FS	<±1.5% of FS
Output Load:	0-800 Ohms@10-28VDC	10k Ohms, Min.	10K Ohms, Min.
Reverse Polarity Protection	Yes	Yes	Yes

Ordering Information

AST4401
A
00500
P
4
L
1
000
-SS

Series Type

Process Connection

A= 1/4" NPT Male	I= 1/4" NPT Female**
B= 1/8" NPT Male*	P= 1/2" MNPT**
C= 1/4" BSPP Male	W= F250C Female
F= 7/16"-20 UNF Male*	Autoclave***

*Not available under 50PSI (not available in 316L) **Pressures up to 15,000 PSI
***Pressures from 10,000 to 20,000 PSI, not available in 316L

Pressure Measurement

Insert 5-digit pressure code

Pressure Unit

B= Bar K= kg/cm² P= PSI

Outputs

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

Electrical

A= 2 ft. (0.6m)	E= Mini DIN 43650C	M= Conduit, Cable 4 ft. (1.2 m)*
B= 4 ft. (1.2m)	F= Packard Metripack 150 3-Pin	N= Conduit, Cable 6 ft. (1.8 m)*
C= 6 ft. (1.8m)	I= DIN 43650A	P= Conduit, Cable 10 ft. (3 m)*
D= 10 ft. (3.0m)	L= Conduit, Cable 2 ft. (0.6 m)*	Y= M12x1 Eurofast
		4 = Mini-Fast (CSA Only)

Wetted Material

0= 17-4PH	2= Inconel 718 (consult factory on availability)	
1= 316L	4= Hastelloy C276 (consult factory on availability)	

Options

000= No Options

Approval

(Left Blank)= UL ANSI/ISA 12.12.01 Class I Div 1 Intrinsically Safe Groups A, B, C, D (formerly UL913)
 -SS= CSA157 Class I Div 1 Grps C, D Intrinsically Safe, ANSI/ISA 12.27.01 Single Seal and ATEX/IECEx Exia IIC Class I, Zone 0, T4
 -Z= CRN Registered to ANSI/ASME B31.3. Contact factory for material, pressure, and process connection options (includes -SS approvals)

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

Pressure Ranges⁺

PSIG Measurement	-14.7 to 25**	Pressure Code	V0025**
	0-25		00025
	0-50		00050
	0-100		00100
	0-150		00150
	0-200		00200
	0-250		00250
	0-500		00500
	0-1,000		01000
	0-2,500		02500
0-5,000	05000		
0-7,500	07500		
0-10,000	10000		
CSA ONLY	0-15,000	CSA ONLY	15000
	0-20,000		20000

BARG Measurement	-1 to 2**	Pressure Code	V0002**
	0-2		00002
	0-5		00005
	0-7		00007
	0-10		00010
	0-20		00020
	0-35		00035
	0-50		00050
	0-100		00100
	0-250		00250
0-350	00350		
0-500	00500		
0-700	00700		

⁺Typical ranges. All ranges between 0-25 PSI and 0-20,000 PSI available.
 **Compound ranges up to -14.7 to 500 PSI available. Please consult factory.

Intrinsically Safe



AST44LP > Low Pressure Transducer / Transmitter



The AST44LP is a stainless steel pressure transducer with a wide variety of options. With its rugged construction and the best price-to-performance ratio in the industry, the AST44LP is the solution for low pressure measurement in Intrinsically Safe areas.

Benefits

- Class 1 Div 1 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 Internal O-rings
- Wide Operating Temperature
- Pressures from 0-1 to 0-15 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
- Vapor Recovery
- Data Loggers
- External Tank Levels

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 132°F)
TC Zero	<±1.5% of FS
TC Span	<±1.5% of FS

Other

Shock	EN 60068-2-27
Vibration	EN 60068-2-6, 60068-2-64, and IEC 68-2-32
EMI/RFI Protection:	Yes
Rating:	IP-66, min

**For UL certified barrier drawing, see A01657.
For CSA certified barrier drawing, see A08949.**

Performance @ 25°C (77°F)

Accuracy*	< ±0.25% BFSL (< ±0.5% BFSL for 0-1 PSI)
Stability (1 year)	±0.25% FS, typical
Over Range Protection	2X Rated Pressure
Burst Pressure	5X or 75 PSI (whichever is less)
Pressure Cycles	> 100 Million

*Accuracy includes non-linearity, hysteresis & non-repeatability

Electrical Data

Output	4-20mA	1-5VDC	1-6VDC
Excitation	10-28VDC	10-28VDC	10-28VDC
Output Impedance	>10k Ohms	<100 Ohms, Nominal	<100 Ohms, Nominal
Current Consumption:	20mA, typical	5mA, typical	5mA, typical
Bandwidth	(-3dB): DC to 250 Hz	(-3dB): DC to 1kHz	(-3dB): DC to 1kHz
Output Noise:	-	<2mV RMS	<2mV RMS
Zero Offset:	<±1% of FS	<±1% of FS	<±1% of FS
Span Tolerance:	<±2% of FS	<±1.5% of FS	<±1.5% of FS
Output Load:	0-800 Ohms@10-28VDC	10k Ohms, Min.	10k Ohms, Min.
Reverse Polarity Protection	Yes	Yes	Yes

Ordering Information

AST44LP

A

00005

P

4

E

1

000

-SS

Series Type

Process Connection

A= 1/4" NPT Male
C= 1/4" BSPP Male

I= 1/4" NPT Female
P= 1/2" MNPT

Pressure Measurement

Insert 5-digit pressure code

Pressure Unit

H= Inches H₂O P= PSI

Outputs

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
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= Bendix 6 Pin
4 = Mini-Fast (CSA Only)
Y= M12x1

Wetted Material

1= 316L 4= Hastelloy (consult factory on availability)

Options

000= No Options

Approval

(Left Blank)= UL ANSI/ISA 12.12.01 Class I Div 1 Intrinsically Safe Groups C, D (formerly UL913)
-SS= CSA157 Class I Div 1 Grps C, D Intrinsically Safe, ANSI/ISA 12.27.01 Single Seal and ATEX/IECEx Exia IIC Class I, Zone 0, T4

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

Pressure Ranges

PSIG Measurement	0-1	Pressure Code	00001
	0-2.5*		00069
	0-5		00005
	0-7.5*		00208
	0-10		00010
	0-15		00015

*2.5 and 7.5 PSI Sensor must be ordered in inches of H₂O.

Submersible Liquid Level Sensors



AST4500

AST4510



For UL certified barrier drawing, see A01657.
For CSA certified barrier drawing, see A08949.

The AST4500 and AST4510 submersible liquid level sensors are approved to **UL/cUL913 (CSA 157) Class I Div 1, Groups C and D** for use in intrinsically safe areas with an approved barrier. It is also certified for **ATEX / IECEx Class I Zone 0 Exia IIB T4 Ga** (Ta = -40°C to +80°C). For pressure ranges from 0-1 to 0-100 PSI that require a wide range of media compatibility, the submersible series is an excellent solution to level monitoring for indoor and outdoor applications.

The AST4500 and AST4510 level sensors are completely sealed for submersion, yet vented through the cable to correct for barometric pressure changes. The welded housing is tested in-house via a helium leak tester to ensure proper protection. The conductors of the cable are also isolated from the outside environment to keep the sensor operational for long-term use.

With a removable nose cone, the AST4500 and AST4510 series can be also be installed outside of the tank through a 1/4" NPT pipe connection. In this configuration, the sensor continuously monitors the tank level through a threaded connection outside the tank, yet remains fully submersible for applications with flood prone environments or severe wash-down conditions. Available with voltage or 4-20mA output signals, AST can provide a cost effective solution for level monitoring for a variety of applications.

Benefits

- High Strength Stainless Steel Construction
- No Internal O-rings
- Wide Operating Temperature
- Pressures up to 100 PSI
- Low Static and Thermal Errors
- Unparalleled Price and Performance
- New Conduit Fitting at Electrical Connection
- Survives Harsh Environments
- Compatible with Wide Variety of Liquids
- EMI/RFI Protection
- ABS (American Bureau of Shipping) Approved

Applications

- Ground Water Level
- Bio-Fuels
- Salt Water Holding Tanks
- Gasoline & Diesel Fuel Tanks
- Fertilizer Tanks
- Earthen & Concrete Dams
- Irrigation Equipment
- Ballast Tanks
- Oil Tanks
- Waste Water Canals

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 (<±2.5%, typ. for 1PSI)
TC Span	<±1.5% of FS (<±2.5%, typ. for 1PSI)

Other

Shock	100G, 11 msec, 1/2 sine
Vibration	10G peak, 20 to 2000 Hz.
EMI/RFI Protection:	Yes
Rating:	IP-68

Performance @ 25°C (77°F)

Accuracy*	< ±0.25% BFSL (<±0.5% BFSL for 0-1 PSI)
Stability (1 year)	±0.25% FS, typical
Over Range Protection	2X Rated Pressure
Burst Pressure	5X or 1,250 PSI (whichever is less)
Pressure Cycles	> 50 Million

Electrical Data

Output	4-20mA	1-5VDC
Excitation	10-28VDC	10-28VDC
Output Impedance	>10k Ohms	<100 Ohms, Nominal
Current Consumption:	20mA, typical	<10mA
Bandwidth	(-3dB): DC to 250 Hz	(-3dB): DC to 1kHz
Output Noise:	-	<2mV RMS
Zero Offset:	<±1% of FS (<±4% 1PSI)	<±1% of FS (<±4% 1PSI)
Span Tolerance:	<±2% of FS (<±4% 1PSI)	<±1.5% of FS (<±4% 1PSI)
Output Load:	0-800 Ohms@10-28VDC	10k Ohms, min
Reverse Polarity Protection	Yes	Yes

Flush Diaphragm Submersible Liquid Level Sensor



AST4520



The AST4520 Flush Submersible liquid level sensor is the cost effective solution for level monitoring of turbulent tanks with viscous media. Approved to **UL/cUL913 Class 1 Division 1 IS, Groups C and D with an approved barrier**, the product ensures a safe, reliable source for level measurement. The AST4520 is also certified to ATEX / IECEx Class I Zone 0 Exia IIB T4 Ga (Ta = -40°C to +80°C).

The AST4520 is offered with pressure ranges from 0-2.5 to 0-15 PSIG. The AST4520 steel cage front end design allows for proper flow of liquids while keeping the sensor at the bottom of the tank or well. With an engraved stainless steel housing and Kynar PVDF cable, this sensor is built to handle the toughest environments.

Benefits

- Engraved Housing
- Protective Steel Cage Assembly
- Kynar PVDF Cable
- Compatible with Wide Variety of Chemicals
- Ruggedly Designed for Harsh Waste Water Environments
- Suitable for Waste, Salt, Brackish, or Fresh Water Systems
- EMI/RFI and Reverse Polarity Protection
- Lightning and Surge Protection
- Competitively Priced for OEM Applications
- ABS (American Bureau of Shipping) Approved

Applications

- Lift Stations - Wastewater, Storm Water, Industrial Applications
- Food Tanks
- Viscous Media Tanks
- Heavy Oil

*For UL certified barrier drawing, see A01657.
For CSA certified barrier drawing, see A08949.*

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
Other	
Shock	100G, 11 msec, 1/2 sine
Vibration	10G peak, 20 to 2000 Hz.
EMI/RFI Protection:	Yes
Rating:	IP-68

Performance @ 25°C (77°F)

Accuracy*	< ±0.25% BFSL
Stability (1 year)	±0.25% FS, typical
Over Range Protection	2X Rated Pressure
Burst Pressure	5X or 1,250 PSI (whichever is less)
Pressure Cycles	> 50 Million

Electrical Data

	Output 4-20mA	1-5VDC
Excitation	10-28VDC	10-28VDC
Output Impedance	>10k Ohms	<100 Ohms, Nominal
Current Consumption:	20mA, typical	<10mA
Bandwidth	(-3dB): DC to 250 Hz	(-3dB): DC to 1kHz
Output Noise:	-	<2mV RMS
Zero Offset:	<±1% of FS	<±1% of FS
Span Tolerance:	<±2% of FS	<±1.5% of FS
Output Load:	0-800 Ohms@10-28VDC	10k Ohms, min
Reverse Polarity Protection	Yes	Yes



Ordering Information

AST4520

Y

00005

P

4

X

1

353

-SS

Series Type

Process Connection

Y= G1/2 with steel cage

T= G1/2 flush diaphragm without steel cage

Pressure Range

Insert 5-digit pressure code

Pressure Unit

H= Inches H2O P= PSI

Outputs

3= 1-5V 4= 4-20mA (2 wire loop powered)

Electrical

X= Optional Length (see options)

Wetted Material

1 = 316L Sensor / 304 SS Housing / Kynar Cable

Options Cable Lengths:

353 = 25 ft. (7.62 m)

354 = 50 ft. (15.24 m)

355 = 75 ft. (22.86 m)

Approval

(Left Blank)= UL ANSI/ISA 12.12.01 Class I Div 1 Intrinsically Safe Groups C, D (formerly UL913)

-SS= CSA157 Class I Div 1 Grps C, D Intrinsically Safe, ANSI/ISA 12.27.01 Single Seal and ATEX/IECEX Exia IIC Class I, Zone 0, T4

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

Pressure Ranges

AST4520	Gauge PSIG	Pressure Code	Feet of Water Column @ 4°C (approx.)
	0-15	00015	34.60
	0-10	00010	23.07
	0-7.5*	00208*	17.30
	0-5	00005	11.53
	0-2.5*	00069*	5.77

*2.5 and 7.5 PSI Sensor must be ordered in inches of H₂O.

PVDF/PTFE Submersible Pressure Transducer



AST4530



For CSA certified barrier drawing, see A08949.

The AST4530 submersible pressure transducer is constructed using PVDF material and a PTFE diaphragm. Designed to measure liquid level of corrosive liquids, the AST4530 features submersible PVDF cable, cord grip and housing. The AST4530 features a conduit connection for turbulent installations such as on-board ships, turbulent tanks, and rail cars.

Voltage and 4-20mA output signals allow users to interface for low current consumption or long distance transmission applications.

The AST4530 is CSA157 certified to Class I Div 1, Groups C and D for use in intrinsically safe areas with an approved barrier, ANSI/ISA 12.27.01 Single Seal Approved and ATEX / IECEx Exia IIB Class I, Zone 0, T4.

CAN/CSA C22.2 No 60079-0:11, ANSI/ISA 60079-0:09, CAN/CSA E60079-11:02, ANSI/ISA 60079-11:11, CAN/CSA C22.2N.157-92, UL 913 (6th Edition)

Benefits

- ABS (American Bureau of Shipping) Approved
- Class I Zone 0 Exia IIB T4 Ga (Ta = 0°C to +60°C)
- Excellent liquid and gas compatibility
- Cost effective alternative to ultrasonic & radar sensor technologies
- Works with reflective liquids
- Will not fail due to vapor
- No galvanic corrosion or risk of bacteria

Applications

- Chemical totes
- Salt water holding tanks
- Process plants
- Rail-car liquid level monitoring
- Storage tanks

Environmental Data

Temperature

Operating	0 to 60°C (32 to 140°F)
Storage	0 to 80°C (32 to 176°F)

0-100% relative humidity, non-condensing

Thermal Limits

Compensated Range	0 to 55°C (32 to 131°F)
TC Zero: <±2.0% of FS	TC Span: <±2.0% of FS

Other

Shock	100G, 11 msec, 1/2 sine
Vibration	10G peak, 20 to 2000 Hz.
EMI/RFI Protection:	Yes
Rating:	IP-68
Fill Fluids	Glycol / Silicone Oil

Performance @ 25°C (77°F)

Accuracy*	< ±0.5% BFS
Over Range Protection	2X Rated Pressure
Burst Pressure	5X or 1,250 PSI (whichever is less)
Pressure Cycles	> 50 Million

* Accuracy includes non-linearity, hysteresis & non-repeatability

Electrical Data

Output	4-20mA	1-5VDC	0.5-4.5V Ratiometric
Excitation	10-28VDC	10-28VDC	5VDC, regulated
Output Impedance	>10k Ohms	<100 Ohms, Nominal	<100 Ohms, Nominal
Current Consumption:	20mA, typical	3mA, typical	3mA, typical
Bandwidth	(-3dB): DC to 250 Hz	(-3dB): DC to 1kHz	(-3dB): DC to 1kHz
Output Noise:	-	<2mV RMS	<2mV RMS
Zero Offset:	<±1% of FS	<±1% of FS	<±1% of FS
Span Tolerance:	<±1% of FS	<±1% of FS	<±1% of FS
Output Load:	0-800 Ohms@10-28VDC	10k Ohms, min	10k Ohms, min
Reverse Polarity Protection	Yes	Yes	Yes

Ordering Information

AST4530
I
00020
P
4
X
9
354

Series Type

Process Connection
I= 1/4" FNPT
(Not intended for threaded installation.)

Pressure Range
Insert 5-digit pressure code

Pressure Unit
B= Bar K= kg/cm²
H= Inches H₂O P= PSI

Outputs
1= 0.5-4.5V ratiometric 3= 1-5V 4= 4-20mA

Electrical *(for wiring information visit: <http://www.astensors.com/wiring.php>)*
X= See Options Below

Wetted Material
9= PVDF / PTFE / Viton

Options Cable Lengths:
 353 = 25 ft. (7.62 m) 354 = 50 ft. (15.24 m) 355 = 75 ft. (22.86 m)

Pressure Ranges

PRESSURE PSIG	0-30	PRESSURE CODE	00030	P
	0-20		00020	P
	0-15		00015	P
	0-10		00010	P
	0-7.5*		00208*	H
	0-5		00005	P
	0-2.5*		00069*	H

Feet of Water Column @ 4°C (approx.)	6	PRESSURE CODE	00072	H
	10		00120	H
	20		00240	H
	30		00360	H
	50		00600	H

*Requires 'H' pressure unit for inches H₂O
 Notes: Other pressures available. Contact Factory

Barrier Installation, UL Approved

A01657

AST4400, AST4401, AST44LP, AST4500/4510, AST4520

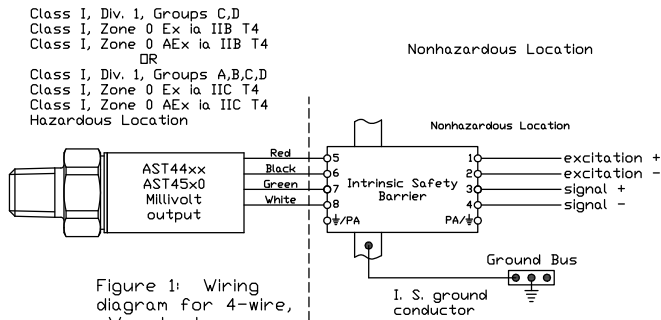


Figure 1: Wiring diagram for 4-wire, mV output

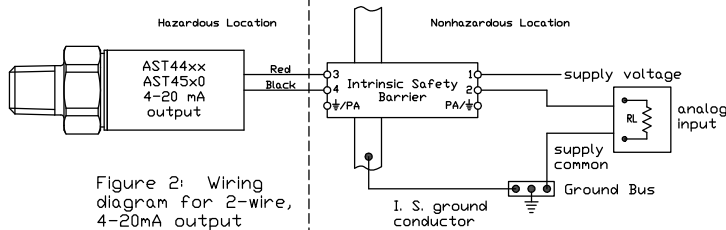


Figure 2: Wiring diagram for 2-wire, 4-20mA output

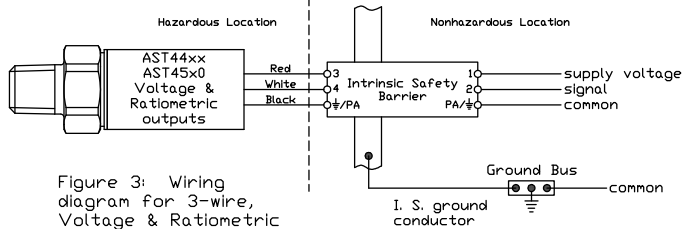


Figure 3: Wiring diagram for 3-wire, Voltage & Ratiometric outputs

The transducers listed below are designed for installation in EITHER Class I, Division 1, Groups C,D; Class I, Zone 0 Group IIB OR Class I, Division 1, Groups A,B,C,D; Class I, Zone 0 Group IIC hazardous locations when connected to Associated Apparatus as described in note 1.

Entity Parameters

Models AST4400, AST44LP, AST4500, AST4510, AST4520

Class I, Div. 1, Groups C,D; Class I, Zone 0 Ex ia IIB T4; Class I, Zone 0 AEx ia IIB T4
Vmax = 28V

Model AST4401

Class I, Div. 1, Groups A,B,C,D; Class I, Zone 0 Ex ia IIC T4; Class I, Zone 0 AEx ia IIC T4
Vmax = 14.5V

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

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

1. The following conditions must be satisfied:

$$V_{oc} \text{ or } U_o \leq V_{max} \quad C_a \text{ or } C_o \geq C_i + C_{cable}$$

$$I_{sc} \text{ or } I_o \leq I_{max} \quad L_a \text{ or } L_o \geq L_i + L_{cable}$$

$$P_o \leq P_i \text{ (if applicable)}$$

Total customer cable length for 4-20mA transmitters not to exceed 4000ft.
Total customer cable length for all other transmitters not to exceed 150ft.
Where the cable capacitance and inductance per foot are not known, the following values shall be used: Ccable = 60pF/ft, Lcable = 0.2uH/ft

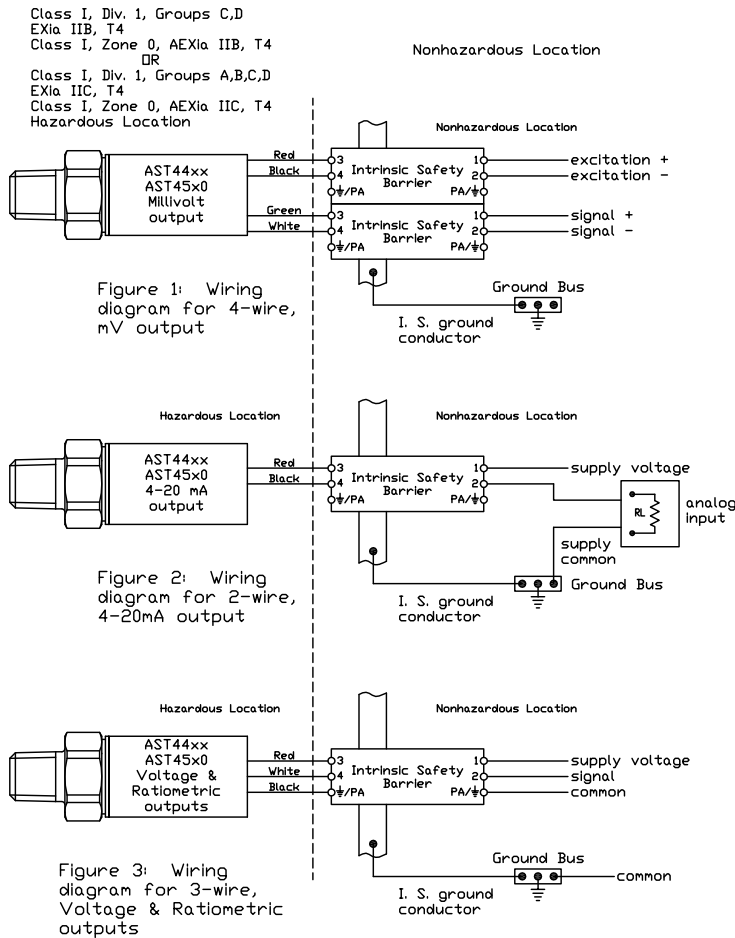
2. Control Room apparatus shall not generate in excess of 250V (Umax).

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, ANSI/NFPA 70.

Barrier Installation, CSA Approved

A08949

AST4400, AST4401, AST44LP, AST4500/4510, AST4520, AST4530



Entity Parameters

Models AST4400, AST44LP, AST4500, AST4510, AST4520, AST4530
Class I, Div. 1, Groups C,D; EXIa IIB, T4; Class I, Zone 0, AEXIa IIB, T4
Vmax = 28Vdc

Model AST4401
Class I, Div. 1, Groups A,B,C,D; EXIa IIC, T4; Class I, Zone 0, AEXIa IIC, T4
Vmax = 14.5Vdc

4-20mA with integral connector	4-20mA with upto 1000ft of integral cable	All EXCEPT 4-20mA with integral connector	All EXCEPT 4-20mA with upto 150ft of integral cable
Pmax = 625 mW Imax = 93 mA CI = 0.391 uF LI = 0	Pmax = 625 mW Imax = 93 mA CI = 0.434 uF LI = 155 uH	Pmax = 625 mW Imax = 93 mA CI = 0.643 uF LI = 0	Pmax = 625 mW Imax = 93 mA CI = 0.649 uF LI = 23.3 uH

- For installation in accordance with Fig 2, barrier must be a CSA Certified, Single Channel grounded Shunt-Diode Zener Barrier or a Single Channel Isolating Barrier.
- For installations in accordance with Figs. 1 and 3, one dual-channel or two single-channel barriers may be used, where in either case, both channels have been Certified for use together with combined entity parameters.
- The following conditions must be satisfied:

V_{oc} or $U_o \leq V_{max}$	C_a or $C_o \geq C_i + C_{cable}$
I_{sc} or $I_o \leq I_{max}$	L_a or $L_o \geq L_i + L_{cable}$
$P_o \leq P_i$ (if applicable)	
- Maximum non-hazardous area voltage must not exceed 250 V.
- 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, ANSI/NFPA 70.
- 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.
- See user manual for installation conditions.

Explosion-Proof



AST4600 Standard Pressure Transducer



Constructed with a simple-yet-rugged design, the AST4600 Explosionproof Pressure Transducer/Transmitter stands up to a variety of applications where price and performance are critical.

Factory Sealed Gauge Pressure Transducer

- Pressures from 100 to 20,000 PSI
- CSA approved for use in hazardous areas including:
 - UL1203/FM3615 Class I Zone 1 Group IIC
 - Class I Div 1 Groups A, B, C, D Explosionproof
 - Class II Div 1 Groups E, F, G Dust Ignition-proof

Vented Gauge Pressure Transducer

- Pressures from 1 to 1,000 PSI Gauge
- CSA approved for use in hazardous areas including:
 - Class I Zone 1 Group IIC
 - Class I Div 1 Groups A, B, C, D Explosionproof

Benefits

- ATEX / IECEx: Class I, Zone 1, Ex d IIC T5 Gb (Ta = -40°C to 85°C)
- ANSI/ISA-12.27.01.2003 Certified "Single Seal" (no secondary seal required)
- ABS (American Bureau of Shipping) Approved
- All Stainless Steel Construction
- Wide Operating Temperature
- Low Static and Thermal Errors
- Rugged Design Withstands Harsh Environments
- Suitable for High Shock and Vibration

Applications

- Available in Exotic Alloys (Consult Factory for Inconel 718 or Hastelloy C276)

Applications

- Industrial OEM & Hydrogen Equipment
- Natural Gas Compressors
- Refrigeration
- Pipe Line Instrumentation
- Marine & Offshore
- Pressure Instrumentation
- Oil Platforms
- Well Head Pressure
- Power Generation
- Mining Applications
- Energy & Water Management

Environmental Data

Temperature	
Operating Ambient	-40 to 85°C (-40 to 185°F)
Operating Media	-55 to 125°C (-65 to 250°F)
Storage	-55 to 105°C (-67 to 221°F)
0-100% relative humidity, non-condensing	
Thermal Limits	
Compensated Range	0 to 55°C (30 to 130°F)
TC Zero: <±1.5% of FS	TC Span: <±1.5% of FS
Other	
Shock	EN 60068-2-27
Vibration	EN 60068-2-6, 60068-2-64, and IEC 68-2-32
EMI/RFI Protection:	Yes
Rating:	IP-65 (vented), IP-66(factory sealed)

Performance @ 25°C (77°F)

Accuracy*	< ±0.25% BFSL (<±0.5% from 7,500 up to 20,000 PSI)		
Stability (1 year)	±0.25% FS, typical		
Over Range Protection	2X Rated Pressure		
Burst Pressure	5X or 50,000 PSI (whichever is less)		
Pressure Cycles	> 100 Million		

*Accuracy includes non-linearity, hysteresis & non-repeatability

Electrical Data

Output	4-20mA	1-5VDC, 1-6VDC	0.5-4.5V ratiometric
Excitation	10-28VDC	10-28VDC	5VDC regulated
Output Impedance	>10k Ohms	<100 Ohms, Nominal	<100 Ohms, Nominal
Current Consumption:	25mA, typical	5mA, typical	<10mA
Bandwidth	(-3dB): DC to 250 Hz	(-3dB): DC to 1kHz	(-3dB): DC to 1kHz
Output Noise:	-	<2mV RMS	< 2mV RMS
Zero Offset:	<±1% of FS	<±1% of FS	<±1% of FS
Span Tolerance:	<±2% of FS	<±1.5% of FS	<±1.5% of FS
Output Load:	0-800 Ohms@10-28VDC	5k Ohms, Min.	10K Ohms, Min.
Reverse Polarity Protection	Yes	Yes	Yes

Ordering Information

AST4600
A
1
0000
P
4
T
1
000
-Z

Series Type

Process Connection*
 A= 1/4" NPT Male (up to 10,000 PSI)
 F= 7/16"-20 UNF Male (up to 10,000 PSI)
 I= 1/4" NPT Female (up to 15,000 PSI)
 P= 1/2" NPT Male (up to 15,000 PSI)
 W= F250C Female Autoclave (10,000 to 20,000 PSI)
* for other ports contact factory, "W" not available in 316L

Pressure Range
 G= Gauge Pressure**
 V= Gauge Pressure (Vacuum Calibrated)**
 0= Sealed Gauge up to 9,999 PSI
 1= Sealed Gauge up 10,000 to 19,999 PSI
 2= Sealed Gauge 20,000 PSI
** Not suitable for Class II

Insert Pressure Code

Pressure Unit
 B= Bar K= kg/cm² P= PSI

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

Electrical
 T= 2ft. 18 AWG wires U= 4ft. 18 AWG wires W= 2 Meter 18 AWG wires

Wetted Material*
 0= 17-4PH 1= 316L 2= Inconel 718 4= Hastelloy C276
* Consult factory on availability of Inconel 718 and Hastelloy C276

Options
 000= No Options

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

Pressure Ranges

Pressure PSI	0-1	Pressure Code Vented	G	0001
	0-2.5**		G	0069
	0-5		G	0005
	0-7.5**		G	0208
	0-10		G	0010
	0-15		G	0015
	0-25		G	0025
	0-50		G	0050
	0-100		G	0100
	0-200		G	0200
	0-500		G	0500
	0-1,000		G	1000

Pressure PSI	0-100	Pressure Code Factory Sealed	0	0100
	0-200		0	0200
	0-500		0	0500
	0-1,000		0	1000
	0-1,500		0	1500
	0-2,500		0	2500
	0-3,000		0	3000
	0-5,000		0	5000
	0-7,500		0	7500
	0-10,000		1	0000
	0-15,000		1	5000
	0-20,000		2	0000

Wiring

Output	Red	Black	White	Green
Voltage	+V Supply	-V Supply	Output	Case Ground
4-20mA	+V Supply	-V Supply	Not Used	Case Ground

For U.S. installations, sensor case ground (green wire) must be bonded to ground according to Article 501 & 505 of the NEC.

**2.5 and 7.5 PSI units must be ordered in inches of H₂O

Explosion-Proof



AST46HA > High Accuracy 0.1% Pressure Transducer



Constructed with a simple-yet-rugged design, the AST4600 Explosionproof Pressure Transducer/Transmitter stands up to a variety of applications where price and performance are critical.

Factory Sealed Gauge Pressure Transducer

- Pressures from 100 to 20,000 PSI
- CSA approved for use in hazardous areas including:
 - UL1203/FM3615 Class I Zone 1 Group IIC
 - Class I Div 1 Groups A, B, C, D Explosionproof
 - Class II Div 1 Groups E, F, G Dust Ignition-proof

Vented Gauge Pressure Transducer

- Pressures from 1 to 1,000 PSI Gauge
- CSA approved for use in hazardous areas including:
 - Class I Zone 1 Group IIC
 - Class I Div 1 Groups A, B, C, D Explosionproof

Benefits

- ATEX / IECEx: Class I, Zone 1, Ex d IIC T5 Gb (Ta = -40°C to 85°C)
- ANSI/ISA-12.27.01.2003 Certified "Single Seal" (no secondary seal required)
- ABS (American Bureau of Shipping) Approved
- ASIC Compensation
- Superb Temperature Performance
- Wide Operating Temperature
- Excellent Accuracy
- High Proof and Burst Pressure
- Available in Exotic Alloys (Consult Factory for Inconel 718 or Hastelloy C276)

Applications

- Well Optimization
- Oil and Gas Pipelines
- Drilling Platforms
- Marine & Offshore
- CNG / Hydrogen Fill Stations
- Paint Booths
- Remote Telemetry Unit
- Cold Climate Drilling & Mining
- Panel Instrumentation

Environmental Data

Temperature

Operating Ambient	-40 to 85°C (-40 to 185°F)
Operating Media	-55 to 125°C (-65 to 250°F)
Storage	-55 to 105°C (-67 to 221°F)
0-100% relative humidity, non-condensing	

Thermal Limits

Compensated Range	-20 to 70°C (-4 to 158°F)
TC Zero: <±0.5% FS	TC Span: <±0.5% FS

Other

Shock	EN 60068-2-27
Vibration	EN 60068-2-6, 60068-2-64, and IEC 68-2-32
EMI/RFI Protection:	Yes
Rating:	IP-65 (vented), IP-66(factory sealed)

Performance @ 25°C (77°F)

Accuracy*	<±0.1% BFSL
Stability (1 year)	±0.1% FS, typical
Over Range Protection*	2X Rated Pressure
Burst Pressure	5X Rated Pressure
Pressure Cycles	> 100 Million

* Accuracy includes non-linearity, hysteresis & non-repeatability, * For higher proof pressures, contact factory

Electrical Data

Output	4-20mA	0-5V, 1-5V, 1-6V	0-10V, 1-10V	0.5-4.5V Ratiometric
Excitation	10-28VDC	10-28VDC	15-28VDC	5VDC, Regulated
Current Consumption	-	<10mA	<10mA	<10mA
Sampling Rate	400Hz	400Hz	400Hz	400Hz
Output Noise	<1mV, RMS	<1mV, RMS	<1mV, RMS	<1mV, RMS
Zero Offset	<±0.5% FS	<±0.5% FS	<±0.5% FS	<±0.5% FS
Span Tolerance	<±0.5% FS	<±0.5% FS	<±0.5% FS	<±0.5% FS
Output Load	0-800 Ohms@10-28VDC	5k Ohms, min.	5k Ohms, min.	5k Ohms, min.
Reverse Polarity Protection	Yes	Yes	Yes	Yes

Explosion-Proof



AST46PT > Pressure / Temperature Transmitter



Constructed with a simple-yet-rugged design, the AST4600 Explosionproof Pressure Transducer/Transmitter stands up to a variety of applications where price and performance are critical.

Factory Sealed Gauge Pressure Transducer

- Pressures from 100 to 20,000 PSI
- CSA approved for use in hazardous areas including:
 - UL1203/FM3615 Class I Zone 1 Group IIC
 - Class I Div 1 Groups A, B, C, D Explosionproof
 - Class II Div 1 Groups E, F, G Dust Ignition-proof

Vented Gauge Pressure Transducer

- Pressures from 1 to 1,000 PSI Gauge
- CSA approved for use in hazardous areas including:
 - Class I Zone 1 Group IIC
 - Class I Div 1 Groups A, B, C, D Explosionproof

Benefits

- ATEX / IECEx: Class I, Zone 1, Ex d IIC T5 Gb (Ta = -40°C to 85°C)
- ANSI/ISA-12.27.01.2003 Certified "Single Seal" (no secondary seal required)
- ABS (American Bureau of Shipping) Approved
- ASIC Compensation
- Superb Temperature Performance
- Wide Operating Temperature
- Excellent Accuracy
- High Proof and Burst Pressure
- Available in Exotic Alloys (Consult Factory for Inconel 718 or Hastelloy C276)

Applications

- Well Optimization
- Oil and Gas Pipelines
- Drilling Platforms
- Marine & Offshore
- CNG / Hydrogen Fill Stations
- Paint Booths
- Remote Telemetry Unit
- Cold Climate Drilling & Mining
- Panel Instrumentation

Environmental Data

Temperature

Operating Ambient	-40 to 85°C (-40 to 185°F)
Operating Media	-55 to 125°C (-65 to 250°F)
Storage	-55 to 105°C (-67 to 221°F)

0-100% relative humidity, non-condensing

Thermal Limits

Compensated Range	-20 to 70°C (-4 to 158°F)
TC Zero: <±0.5% FS	TC Span: <±0.5% FS

Other

Shock	EN 60068-2-27
Vibration	EN 60068-2-6, 60068-2-64, and IEC 68-2-32
EMI/RFI Protection:	Yes
Rating:	IP-65 (vented), IP-66(factory sealed)

Performance @ 25°C (77°F)

Accuracy*	<±0.1% BFSL
Accuracy (Temp.)*	±2%TEB
Stability (1 year)	±0.1% FS, typical
Over Range Protection*	2X Rated Pressure
Burst Pressure	5X or 50,000 PSI (whichever is less)
Pressure Cycles	> 100 Million

* Accuracy includes non-linearity, hysteresis & non-repeatability, * For higher proof pressures, contact factory

Electrical Data

Output	4-20mA	0-5V, 1-5V, 1-6V	0-10V, 1-10V	0.5-4.5V Ratiometric
Excitation	10-28VDC	10-28VDC	15-30VDC	5VDC, Regulated
Current Consumption	-	<10mA	<10mA	<10mA
Sampling Rate	400Hz	400Hz	400Hz	400Hz
Output Noise	<1mV, RMS	<1mV, RMS	<1mV, RMS	<1mV, RMS
Zero Offset	<±0.5% FS	<±0.5% FS	<±0.5% FS	<±0.5% FS
Span Tolerance	<±0.5% FS	<±0.5% FS	<±0.5% FS	<±0.5% FS
Output Load	0-800 Ohms@10-28VDC	5k Ohms, min.	5k Ohms, min.	5k Ohms, min.
Reverse Polarity Protection	Yes	Yes	Yes	Yes

Explosion-Proof



AST46SW > SPDT Solid State Pressure Switch



The Model 46SW is a high accuracy Explosion-proof Pressure Switch, designed for use in a variety of applications. Applying digital compensation, this product offers top performance over a wide temperature range. Utilizing Krystal Bond Technology™, the sensing element will measure pressure in the most extreme temperature conditions. Where other sensor technologies will freeze or boil, the AST46SW uses a one piece stainless steel sensor to offer continuous operation. If linearity and repeatability are critical for your application, this product will exceed your expectations at an affordable price.

Benefits

- ATEX / IECEx: Class I, Zone 1, Ex d IIC T5 Gb (Ta = -40°C to 85°C)
- CSA30 (UL1203 / FM3615) Class I Div 1 and Zone 1 Group IIC Explosionproof - Groups A, B, C, D
- ANSI 12.27.08-1 Single Seal Approved
- ASIC Compensation
- Superb Temperature Performance
- Wide Operating Temperature
- Excellent Accuracy
- High Proof and Burst Pressure
- Factory Sealed

Applications

- Well Optimization
- Oil and Gas Pipelines
- Drilling Platforms
- CNG / Hydrogen Fill Stations
- Paint Booths
- RTU
- Combustion Controls

Environmental Data

Temperature

Operating	-40 to 85°C (-40 to 185°F)
Storage	-50 to 105°C (-58 to 221°F)

0-100% relative humidity, non-condensing

Thermal Limits

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

Other

Shock	100G, 11 msec, 1/2 sine
Vibration	10G peak, 20 to 2000 Hz.
EMI/RFI Protection:	Yes
Rating:	IP-66

Performance @ 25°C (77°F)

Error Tolerance	≤±1.0% BFS of line pressure
Over range Protection	2X rated line pressure, standard*
Burst Pressure	5X or 60,000PSI of line pressure, whichever is less
Pressure Cycles	> 100 million full pressure cycle

*For higher proof pressures, contact factory

Electrical Data

Excitation	10-28VDC
Current Consumption	<10mA
Set Point	See Chart on page 2
Output Load	1 Amp., Resistive
Reverse Polarity Protection	Yes

Ordering Information

46SW
A
05
P
E
T
1
G
00025
R
05
000
-Z

Series Type

Process Connection
 A= 1/4"-18 Male NPT
 B= 1/8"-27 Male NPT
 C= 1/4"BSPP
 W= F250C Female Autoclave

System Pressure
 Insert 2 digit code (chart 1)

Pressure Unit
 P= PSI

Switch Configurations
 E= SPDT [Form C]

Electrical Connection
 T= 2ft. 18 AWG wires
 U= 4ft. 18 AWG wires
 W= 2 Meter 18 AWG wires

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

Pressure Reference
 0= Sealed Gauge
 G= Vented Gauge Pressure

Switching Point Pressure: Insert 5 digit code (chart 2) [5-95% of system line pressure]

Switching Direction
 F= Falling
 R= Rising

Hysteresis: Insert 2 digit code (example: 1% is 01) [1% of line pressure minimum]

Options
 No Options= 000

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

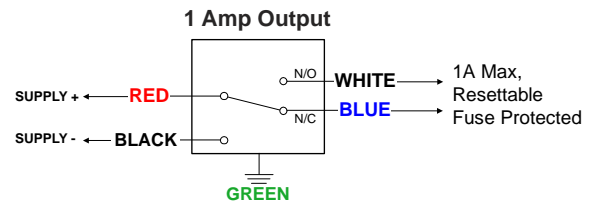
Pressure Ranges

Chart 1			
System Pressure ⁺	50	Code	01
	100		02
	250		03
	500		04
	1000		05
	3000		06
	5000		07
	7500		08
	10,000		09
	15,000		10
	20,000		11

Chart 2			
Switching Pressure ⁺	25	Code	00025
	50		00050
	100		00100
	250		00250
	500		00500
	1,000		01000
	2,500		02500
	5,000		05000
	10,000		10000

⁺For pressures not shown, please consult factory.

Wiring



Explosion-Proof Pressure Transducer / Transmitter with Display



AST46DS

CSA Certified: Class I & II Division 1 & 2 | Class III



AST46DS explosion proof pressure transducers features the latest advances in transducer technology. With a power supply as low as an 8VDC and low current consumption, the AST46DS can operate in remote areas with minimal power. The re-zeroing function, allows for field calibration in a safe environment to further enhance well site or system readings. Pressure ranges are available up to 20,000 PSI; these explosion-proof pressure transducers and transmitters are designed for all common oil and gas pressures from shallow to deep wells.

- Explosion Proof: Class I & II Division 1 / 2 Groups A, B, C, D, E, F, G
- Class III Division 1 & 2
- ATEX and IECEx Ex d IIC
- ANSI/ISA 12.27.01-2003 Single Seal Approved
- ABS (American Bureau of Shipping) Approved
- Display Units: PSI | Bar | kpa | Mpa | kg/cm² | in WC | Volts | mA

Benefits

- Low current consumption voltage output
- Re-zero push-button functionality
- Display pressure units or output signal
- Accurate, repeatable sensor technology
- Rugged design
- Withstands harsh outdoor environments
- Available in exotic alloys
- High quality, NEMA 4X case and finish
- withstands salt spray and outdoor environments

Applications

- SCADA systems
- Wellhead systems
- Compressor systems and stations
- Pipeline instrumentation
- Power generation equipment
- Offshore platforms
- Oil & gas pressure monitoring
- Test systems

Environmental Data

Temperature	Operating	-40 to 85°C (-40 to 185°F)
	Display Operating	-30 to 80°C (-22 to 176°F)
	Storage	-55 to 105°C (-67 to 221°F)
	0-100% relative humidity, non-condensing	
Thermal Limits	Compensated Range	0 to 55°C (30 to 130°F)
	TC Zero	<±1.0% of FS
	TC Span	<±1.0% of FS
Other	Shock	100G, 11 msec, 1/2 sine
	Vibration	10G peak, 20 to 2000 Hz.
	EMI/RFI Protection:	Yes
	Enclosure Rating:	Suitable for Outdoors; Type 4X Rated
	Pollution Degree	2 (interior of enclosure)
	Measurement (Installation) Category	I
Altitude	2000m	

Performance @ 25°C (77°F)

Accuracy*	< ±0.25% BFSL
Stability (1 year)	±0.25% FS, typical
Over Range Protection	2X Rated Pressure
Burst Pressure	5X Rated Pressure or 45,000 PSI, whichever is less
Pressure Cycles	> 100 Million

Electrical Data

Output	4-20mA	1-5VDC
Excitation	8-28VDC	8-28VDC
Output Impedance	>10k Ohms	<100 Ohms, Nominal
Current Consumption:	25mA, typical	2mA, typical
Bandwidth	(-3dB): DC to 1kHz	(-3dB): DC to 1kHz
Output Noise:	-	<2mV RMS
Zero Offset:	<± 0.5% of FS	<± 0.5% of FS
Span Tolerance:	<± 1.0% of FS	<± 1.0% of FS
Output Load:	0-800 Ohms@8-28VDC	5k Ohms, Min.
Reverse Polarity Protection	Yes	Yes

Ordering Information

AST46DS
P
G
0500
P
3
2
1
000
-Z

Series Type

Process Connection

A= 1/4" NPT Male
 I= 1/4" NPT Female
 P= 1/2" NPT Male
 W= F250C Autoclave Female

Pressure Reference

G= Vented* (0-499 PSI)
 V= Vented - Vacuum Calibrated* (-14.7 up to 500 PSI)
 0= Non-Vented (0-500 to 9,999 PSI)
 1= Non-Vented (10,000 to 19,999 PSI)
 2= Non-Vented (20,000 PSI)

Pressure Measurement

Insert - 4 digit pressure code

Pressure Unit

B= Bar K= kg/cm² P= PSI H=Inches H₂O

Outputs

3= 1-5V (3 Wire + Case Connection)
 4= 4-20mA (Loop Powered + Case Connection)

Electrical

2= Terminal Blocks (1/2" FNPT Conduit Connections - standard)

Sensor Material

0= 17-4PH 2= Inconel 718 (contact factory for availability)**
 1= 316L** 4= Hastelloy C276 (contact factory for availability)**

Options

000= No Options

Approval

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

*Not suitable for Class II; Sensing element corrects for barometric pressure through base sensor assembly.

**NACE MR0175/ISO 15156 compatible material

Pressure Ranges

Low Pressure

PSIG Measurement	Pressure Code	Pressure Code	
		Material	Pressure Code
0-1	G	0001	
0-2.5*	G	0069	
0-5	G	0005	
0-7.5*	G	0208	
0-10	G	0010	
0-15	G	0015	

*2.5 and 7.5 PSI Sensor must be ordered in inches of H₂O. Pressures from 0-1 to 0-15PSI are not suitable for hydrogen. 316L and Hastelloy C276 are the only material options.

High Pressure

PSIG Measurement	Pressure Code	Pressure Code	
		Material	Pressure Code
-14.7 to 25	V	0025	
-14.7 to 30	V	0030	
-14.7 to 50	V	0050	
0-25	G	0025	
0-50	G	0050	
0-100	G	0100	
0-200	G	0200	
0-500	0	0500	
0-1,000	0	1000	
0-3000	0	3000	
0-5,000	0	5000	
0-7,500	0	7500	
0-10,000	1	0000	
0-15,000	1	5000	
0-20,000	2	0000	

For pressure 10,000 PSI and up, use pressure reference digit to specify first number. Example, AST46DSP15000P4X1000 = 15,000 PSI pressure range. Display for 20,000 PSI pressure range has maximum reading of 19,999 PSI.

Differential Pressure Transducer



AST5300

AST53ED

AST53EN



The AST5300 offers low differential pressure measurement ranges in high line pressure applications with excellent burst pressure capabilities. The AST5300 has no oil filled cavities and no internal o-rings to fail, making it ideal for food and beverage, oil & gas, pharmaceuticals, semiconductor industries and cold ambients.

Benefits

- ABS (American Bureau of Shipping) Approved
- Oil free - no containment issues
- Wide operating temperature
- Wide range of liquid & gas compatibility
- Compact size
- **Explosion Proof Rated (AST53ED)**
 - CSA30 Class I Zone 1 Group IIC
 - Class I Division 1 Groups A, B, C, D
 - Class II Division 1 Groups E, F and G
 - Class III Division 1
- **Non-Incendive Rated (AST53EN)**
 - CSA213 Class I Division 2 Groups A, B, C, D
 - ANSI/ISA 12.27.01 Single Seal Device

Applications

- Flow measurement
- High Purity Gases
- Tank level monitoring
- Ballast measurement
- Filtration
- Cryogenics

Environmental Data

Temperature

Operating	-40 to 85°C (-40° to 185°F)
Storage	-55 to 120°C (-67° to 248°F)
Media	-55 to 125°C (-67° to 257°F)
Compensated Range	-5 to 65°C (23° to 149°F)
	<±1.0% of FS (10 PSID)
Total Thermal Error	<±1.5% of FS (5 to 9 PSID)
	<±1.0% of FS (1 PSID) ♦

Performance @ 25°C (77°F) [% of FS]

Line Pressure (Common)	1,500 PSI, maximum (see page 2)
Burst Pressure	5,000 PSI, minimum
Proof Pressure (5-10 PSID)	500 PSI
Proof Pressure (1 PSID)	150 PSI ♦
Linearity	<± 0.2% BFSL
Zero Offset	<± 1.0%
Span Tolerance	<± 0.5%

Electrical Data

Output	0-5V, 1-5V Three Wire	4-20mA	0.5-4.5V Ratiometric
Excitation	10-28VDC	10-28VDC	5VDC, reg
Current Consumption:	<10mA	-	<10mA
Output Load:	10k Ohms	0-800 Ohms	10k Ohms
EMI / RFI Protection	100V/m	100V/m	100V/m
Reverse Polarity Protection	Yes	Yes	Yes

Ordering Information

AST53 ED DP 0010 P 4 W 8 000

Series Type

Approval

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

Mounting / Pressure Connection

DP= Threaded Fittings (1/4" FNPT)

Differential Pressure

0001= 1 PSI ♦ 0008= 8 PSI
0005= 5 PSI 0009= 9 PSI
0006= 6 PSI 0010= 10 PSI
0007= 7 PSI

Pressure Unit

P= PSI

Output

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

Electrical Connection (see table)

Subject to Approval Type Selected

Wetted Material

8= 316L & Inconel x750

Options

00= No Special Options

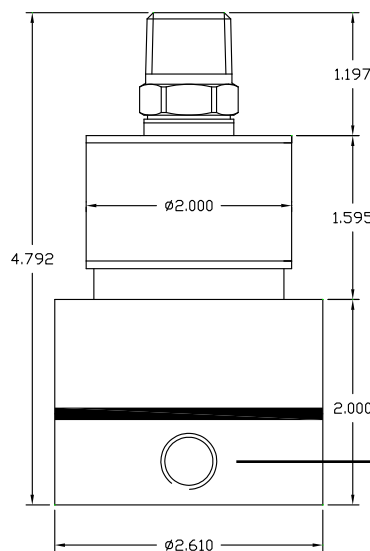
Electrical Connection Table		00	ED	EN
I	DIN 43650-A	*		*
M	Conduit, 4ft.	*		*
N	Conduit, 6ft.	*		*
R	6-Pin Bendix PT06	*		
T	Conduit, 18AWG, 24 in		*	
U	Conduit, 18AWG, 48 in		*	
W	Conduit, 18AWG, 2m		*	
Y	M12 4-Pin	*		

LINE PRESSURE

The line pressure specification is the maximum pressure the AST5300 can see without damage. Any pressure applied over the listed number will likely damage the transducer and will, at minimum, cause a permanent zero shift. Line pressure should be applied evenly to both ports during start up and shut down. [A Line pressure of 500 psi or less can be applied to one pressure port with the other port at 0psi and will not cause a zero shift of the output. Pressure above 500 PSI to one side may cause a temporary zero shift.]

To recover from a zero shift caused by negative over-pressure to "L" (low / downstream process connection) within the listed limits, apply a positive over-pressure "H" (high / upstream process connection) to 1,450 PSI for a duration of five 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.

Dimensional Data



Process Connections

DP = 1/4" FNPT

H = high / upstream pressure

L = low / downstream pressure

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.

Approvals	
AST54ED	AST54EN
Class I, Div 1, Groups A,B,C,D Explosion Proof / Class II, Div 1, Groups E,F,G; Class III, Div 1	Class I, Div 2, Groups A,B,C,D Non-Sparking
ATEX and IECEx Ex d IIC T5 Gb	ATEX and IECEx Ex nA IIC T5 Gc

Environmental Data	
Temperature	
Operating	-20 to 70°C (-4 to 158°F)
Storage	-50 to 125°C (-58 to 257°F)
0-100% relative humidity, non-condensing	
Thermal Limits	
Compensated Range	-20 to 70°C (-4 to 158°F)
Other	
Shock	100G, 10msec, 1/2 sine
Vibration	10G peak, 20 to 2000Hz
EMI/RFI Protection:	Yes
IP Class:	IP-66; IP-67 Optional

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)

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 O 0500 H 00 -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/cm² P= PSI H= Inches H₂O

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 11= Bi-Directional DP Range

Approval

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

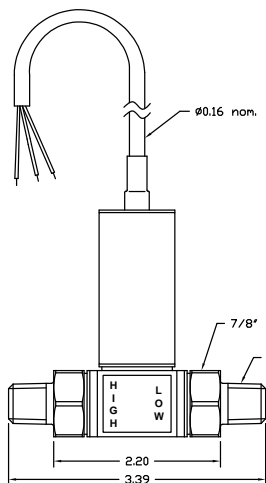
Line Pressure*

		50	100	300	500	1000	2000	5000
CODE		00050	00100	00300	00500	01000	02000	05000
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							✓

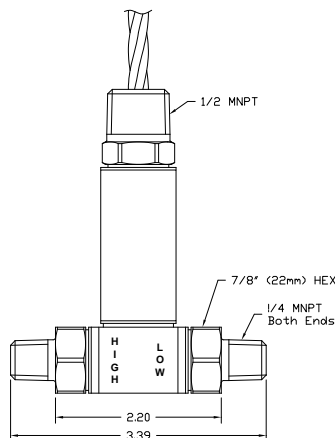
*Other pressures available; contact factory.

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	*		*

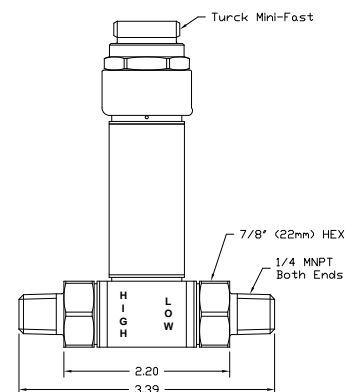
Dimensional Data



5400



54ED

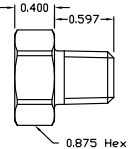
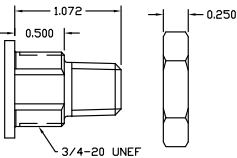
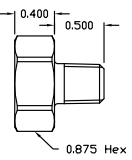
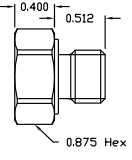
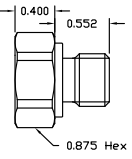
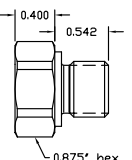
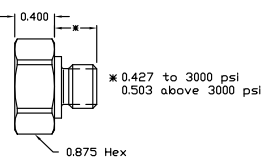


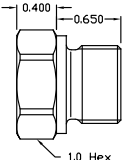
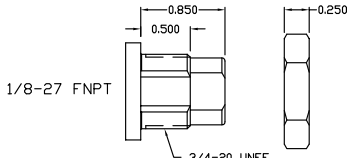
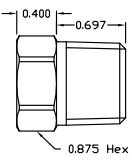
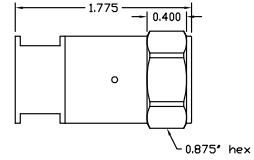
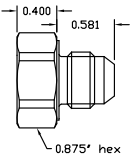
54EN

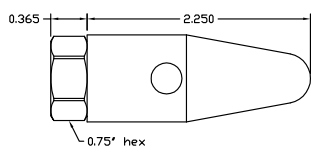
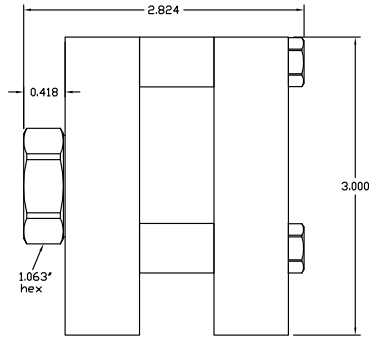
Dimensional Data



Process Connections

Threaded Connections		Letter
1/4" NPT Male		A
1/4" NPT Male (Panel Mount)		A
1/8" NPT Male		B
1/4 BSPP Male		C
G 1/4 Male		D
9/16-18 UNF Male		E
7/16-20 UNF Male		F

Threaded Connections		Letter
M20x1.5 Male		H
1/8" NPT Female (Panel Mount)		J
1/2" NPT Male		P
F250C Female Autoclave		W
9/16-18 UNF with 37° Flare (option code 153)		X

Submersible Ends		Letter
Submersible Nose Cone		L
Steel Cage		Y

Dimensional Data



Electrical Connections

Connector Options	Letter
DIN 43650 C	E
Packard Metripack 150	F
4 Pin Molex (millivolt / no housing only)	G
DIN 43650 A	I
DT04 3-Pin	K
6 Pin Bendix	R
M12x1	Y
DT04 4-Pin	Z
Mini-Fast	4

Cable Options	Letter(s)
Cable - Standard	A, B, C, D
Cable - AST4100	A, B, C, D
Conduit with Cable - Submersible	N, P, X
Conduit with Cable - Standard	L, M, N, P
Conduit with 18AWG Wires (explosion proof only)	T, U, W

Housings

Models	Max Dia.	Max Length	
AST4000 AST4200 AST4500 AST4510	.875"	1.75"	
AST4520 AST20HA AST20PT AST4700 AST4710 AST47XX	1.00"	2.25"	
AST4100	0.875"	1.25"	

Approvals & Standards



HAZARDOUS LOCATION

Explosion Proof

- CSA 30 Class I and II Division I Groups A, B, C, D, E, F, G
- ATEX Exd
- ANSI 12.27.01 - 2003
- ASME B31.3
- Canadian Registration Number (CRN)

Intrinsically Safe

- CSA 157 (UL 913) Class I Division 1 Groups A, B, C, D
- ATEX IECEX Exia IIB, IIC, T4
- CNEX Exia IIB
- CRN
- ANSI 12.27.01 - 2003

Non-Incendive

- CSA 213 (UL 1203) Class I Division 2 Groups A, B, C, D
- ATEX ExnA Class I, Zone 2
- CNEX Exn
- CRN
- ANSI 12.27.01 - 2003

OTHER STANDARDS

- ISO 9001:2008
- ABS Type Approval
- CE Certified
- ROHS Compliant

- EN 60068-2-27, EN 60068-2-6, 60068-2-64, and IEC 68-2-32

- EC79/2009
- HyWay 2/3 Environmental E/E-Component Test Requirement, DaimlerChrysler Joint
- Korean Gas Safety

Quality of Product

AST is committed to providing a proven product which meets all current specifications and through both design and manufacturing process, is free from defects in material and workmanship. Each unit has been thoroughly tested and inspected to ensure proper operation and possession of specified mechanical and electrical properties.

Specific Warranty Provisions

AST warrants that units shipped will be free from defects in material and workmanship for a period of one (1) year from date of shipment. In the event that warranty service is required, AST will, at its option, either repair or replace unit(s) or product(s) found to be defective, provided that they are returned, prepaid, to AST.

What This Warranty Does Not Cover

Warranty provisions cover only defects in material and workmanship provided by AST and does not cover damage from misuse, misapplication, abuse, accident, act of God, or non-AST alterations, modification, upgrade or improper return shipping, packaging or shipping damage. The purchaser is responsible for media compatibility, functional adequacy, and correct installation of the transmitter.

How is Warranty Service Obtained?

Warranty service may be obtained by calling AST at (973) 448-1901 and being prepared to provide unit type or part number, serial number or date code and a description of the problem being experienced. AST will attempt to solve the problem over the phone, but in the event that unit(s) or product(s) must be returned for evaluation and possible repair or replacement, instructions will be given for return of shipment to AST.

For the fastest response, complete the details requested on the following web page:

<http://www.astensors.com/rma-form.php>

In the event unit(s) or product(s) is/are returned and determined to have no defect or improper operation, an evaluation charge per unit may be billed to the customer.

Repair or Replacement is Your Only Remedy

Your only remedy under this warranty is repair or replacement of unit(s) or product(s) as described above. AST will not be liable for any incidental or consequential damages resulting from use or inability to use unit(s) or product(s) supplied. AST expressly disclaims any implied warranty of fitness for a particular purpose.

American Sensor Technologies

450 Clark Drive • Mount Olive • New Jersey • 07828 • USA

Phone: (973) 448-1901 • Fax: (973) 448-1905

www.astensors.com

Additional Literature Available from AST



Pressure
American Sensor Technologies
450 Clark Drive
Mount Olive, NJ 07828 USA
Phone: (973) 448-1901
Fax: (973) 448-1905
info@astensors.com
www.astensors.com

Position
Macro Sensors
7300 US Route 130 North, Building 22
Pennsauken, NJ 08110 USA
Phone: (856) 662-8000
Fax: (856) 317-1005
lvdts@macrosensors.com
www.macrosensors.com

