

AST4400 *Intrinsically Safe Pressure Transducer / Transmitter*



UL Approved for Hazardous Locations with Approved Barrier

Overview

The AST4400 is a media isolated stainless steel pressure sensor 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

- **UL/cUL 913 (CSA 157)** Class 1 Div 1 Groups C, D when installed with an approved barrier
- High Strength Stainless Steel Construction
- No Oil, Welds or Internal O-rings
- Wide Operating Temperature
- Pressure up to 10,000 PSI
- Low Static and Thermal Errors
- Unparalleled Price and Performance
- Compatible with Various of Liquids and Gases
- EMI/RFI Protection

Applications

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



Environmental Data

Temperature

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

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-66

Performance @ 25°C (77°F)

Accuracy*	< ±0.25% BFLS (< ±0.5% BFLS for 7,500 & 10,000 PSI)
Stability (1 year)	±0.25% FS, typical
Over Range Protection	2X Rated Pressure
Burst Pressure	5X or 20,000 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

AST4400 A 00500 P 4 E 0 000

Series Type

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

Pressure Measurement

Insert pressure from chart

Pressure Unit

B= Bar K= kg/cm²r 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. (0.6 m) L= DIN 43650A*
B= 4 ft. (1.2 m) L= Conduit fitting, Cable 2 ft.*
C= 6 ft. (1.8 m) M= Conduit fitting, Cable 4 ft.*
D= 10 ft. (3.0 m) N= Conduit fitting, Cable 6 ft.*
E= Mini DIN 43650 P= Conduit fitting, Cable 10 ft.*
F= Packard Metripack 150 3-Pin Conn. R= 6 Pin PT06A-10-6S Bendix
Y= M12X1

Wetted Material

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

Options

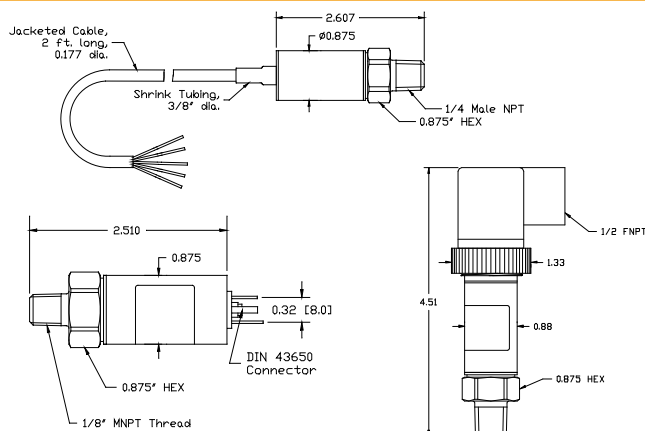
000= No special options

*Not available under 50PSI, or in 316L

**Wiring information available at: <http://www.astensors.com/wiring.php>

*Also approved to UL/cUL 1604 Class I Div 2, Group A, B, C, D without requiring a barrier; contact AST for A11028 mating connector.

Dimensional Data



Warranty

Workmanship - AST, Inc. pressure transmitters have a limited one-year warranty to the original purchaser. AST, Inc. will replace or repair, free of charge, any defective transmitter. This warranty does not apply to any units that have been modified; misused, neglected or installed where the application exceeds published ratings. The AST4400 pressure sensor with 316L material is compatible with hydrogen, but does not carry the rating for Group B. For hydrogen applications, contact the factory for AST4300, AST4401, & AST4600 model information. AST's sensors are made with pride in New Jersey, USA. If in the area please feel free to stop by for a visit!

Installation/Applications - The purchaser is responsible for media compatibility, functional adequacy, and correct installation of the transmitter.

Pressure Ranges

PSIG Measurement	Pressure Code	BARG Measurement	Pressure Code
-14.7 to 30**	V0030	-1 to 2**	V0002
0-25	00025	0-2	00002
0-50	00050	0-5	00005
0-100	00100	0-10	00010
0-200	00200	0-20	00020
0-250	00250	0-50	00050
0-300	00300	0-100	00100
0-500	00500	0-250	00250
0-1,000	01000	0-350	00350
0-1,500	01500	0-500	00500
0-2,500	02500	0-700	00700
0-3,000	03000	Typical ranges. All ranges between 0-25 PSI and 0-10,000 PSI available. **Compound ranges up to -14.7 to 500 PSI available. Please consult factory.	
0-5,000	05000		
0-7,500	07500		
0-10,000	10000		

Barrier Installation

Class 1, Div. 1, Groups C, D Hazardous Location Nonhazardous Location A01657

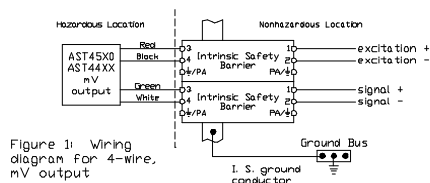


Figure 1: Wiring diagram for 4-wire, mV output

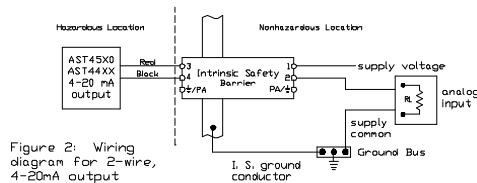


Figure 2: Wiring diagram for 2-wire, 4-20mA output

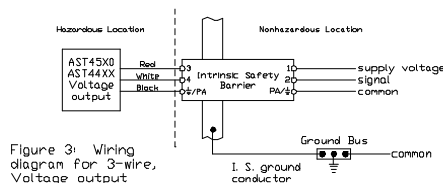


Figure 3: Wiring diagram for 3-wire, Voltage output

The transducers listed below are designed for installation in a Class I, Division 1 hazardous location when connected to Associated Apparatus as described in note 1.

Entity Parameters

V_{max} = 28Vdc
I_{max} = 175mA
C₁ = 0.44μf
L₁ = 0

I_{max} is the total current available from the Associated Apparatus under any condition.

Notes:

1. Associated Apparatus shall provide intrinsically safe connections which meet the following parameters:

V_{oc} or V_t ≤ V_{max} Co ≥ C₁ + C_{leads}
I_{sc} or I_t ≤ I_{max} Lo ≥ L₁ + L_{leads}

2. Control Room apparatus shall not generate in excess of 250V (U_{max}).

3. Installation should be in accordance with Article 504 in the National Electrical Code, ANSI/NFPA 70.