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
- 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)
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

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 H_2O
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= Add "-SS" for CSA157 Class I Div 1 Groups C, D Intrinsically Safe and ANSI/ISA 12.27.01 Single Seal Approval and SIRA ATEX Exia IIB 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	Pressure Code
0-1	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 H_2O.

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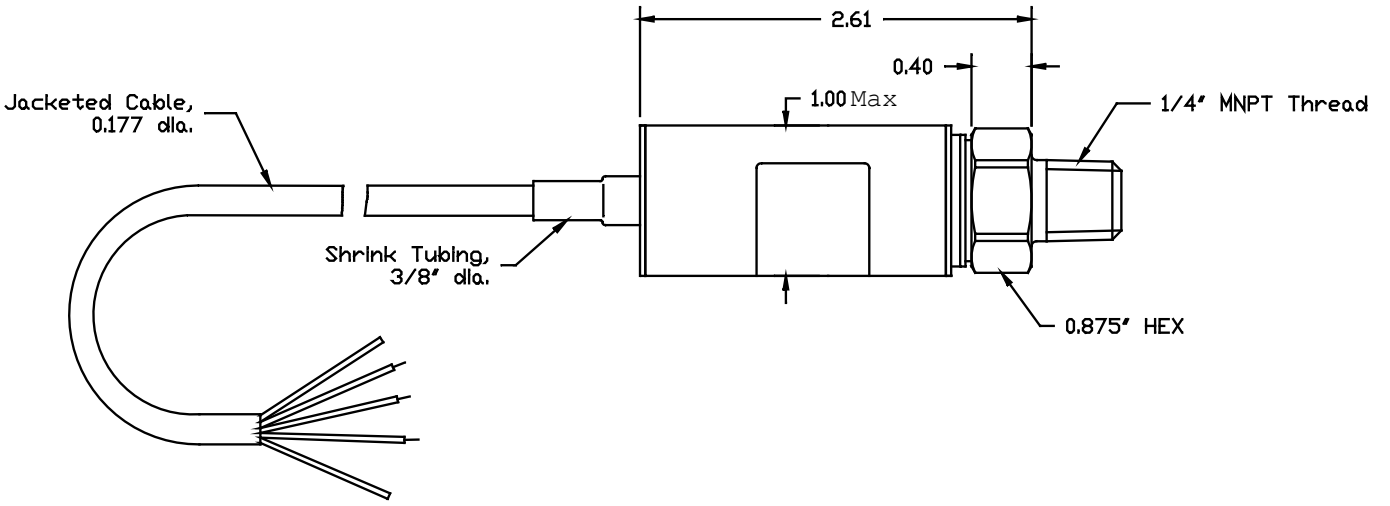

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UL Approved Barrier Installation / A01657

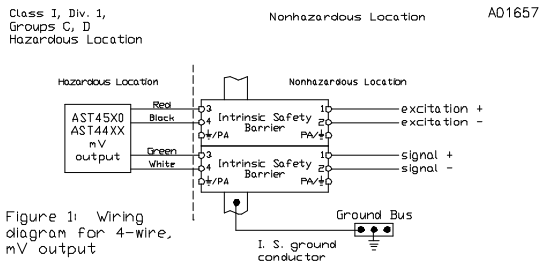

Figure 1: Wiring diagram for 4-wire, mV output

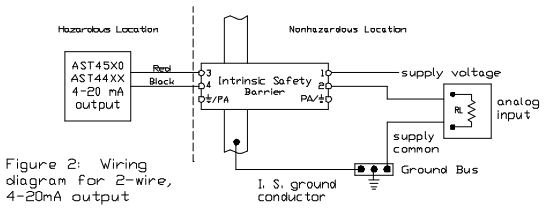

Figure 2: Wiring diagram for 2-wire, 4-20mA output

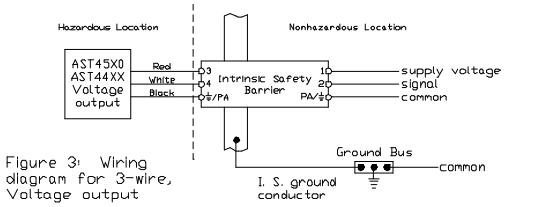

Figure 3: Wiring diagram for 3-wire, Voltage output

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

Entity Parameters
Vmax = 28Vdc
Imax = 175mA — Imax is the total current available from the Associated Apparatus under any condition.
Ci = 0.44uf
Li = 0

Notes:
1. Associated Apparatus shall provide intrinsically safe connections which meet the following parameters.
Voc or Vt ≤ Vmax — Ca ≥ Ci + Ccables
Isc or It ≤ Imax — La ≥ Li + Lcables

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

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

CSA Approved Barrier Installation / A08949

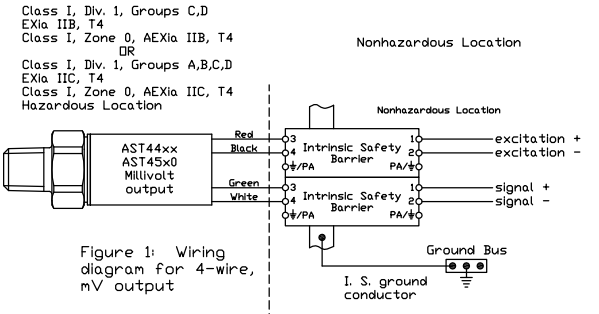

Figure 1: Wiring diagram for 4-wire, mV output

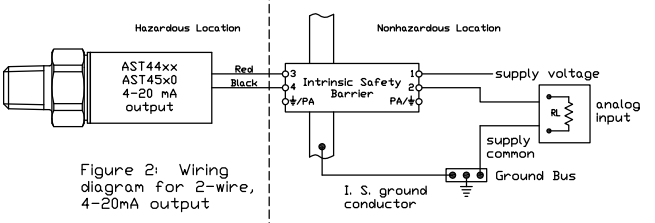

Figure 2: Wiring diagram for 2-wire, 4-20mA output

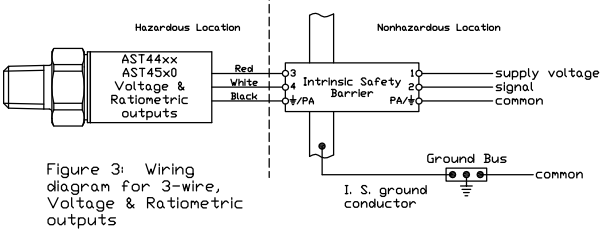

Figure 3: Wiring diagram for 3-wire, Voltage & Ratiometric outputs

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	Pmax = 625 mW	Pmax = 625 mW	Pmax = 625 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	Li = 155 uH	Li = 0	Li = 23.3 uH

1. 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.

2. 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.

3. 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)

4. Maximum non-hazardous area voltage must not exceed 250 V.

5. 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.

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.

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