



bar AST4530 PVDF/PTFE Submersible Pressure Transducer

OVERVIEW

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





PERFORMANCE @ 25°C (77°F)

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

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 132°F)
TC Zero	<±2.0% of FS
TC Span	<±2.0% of FS

Other

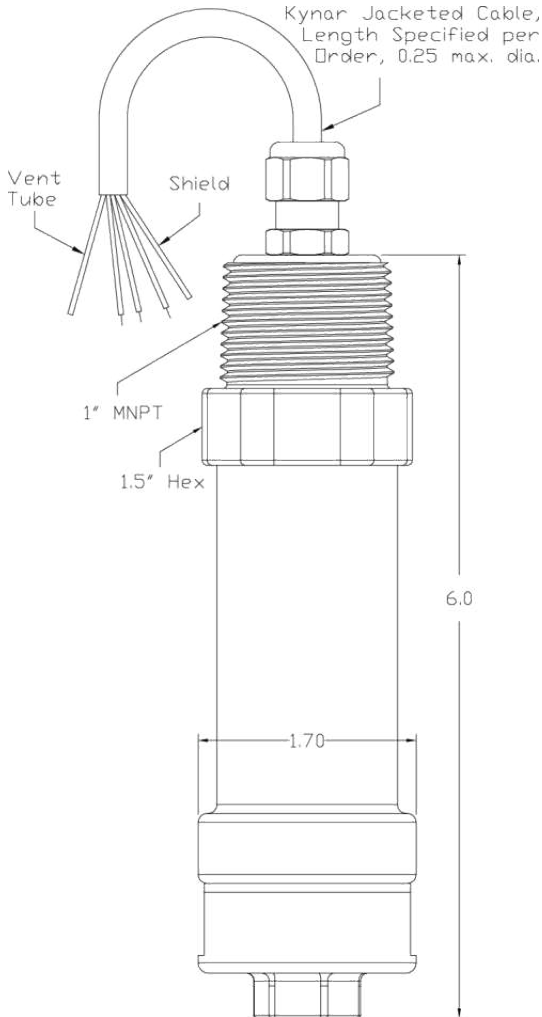
Shock	100G, 11 msec, 1/2 sine
Vibration	10G peak, 20 to 2000 Hz.
EMI/RFI Protection	Yes
Rating	IP-68
Fill Fluids	Glycol / Silicone Oil

ELECTRICAL DATA

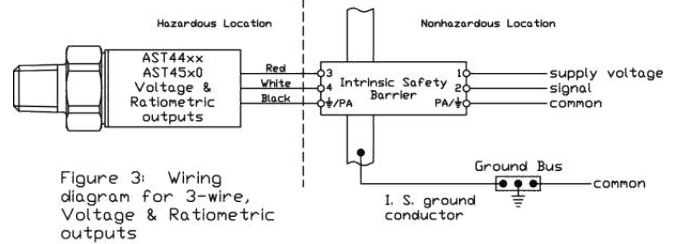
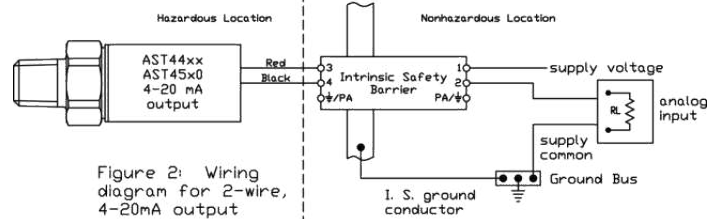
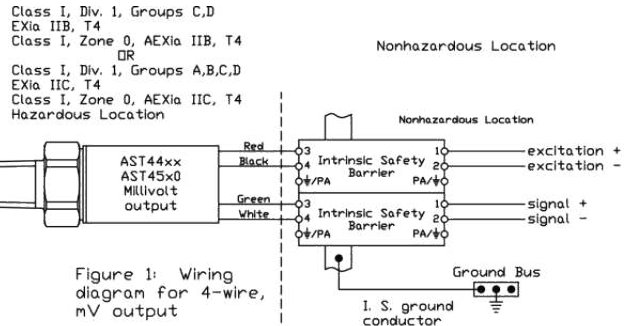
Output	4-20mA	1-5VDC
Excitation	10-28VDC	10-28VDC
Output Impedance	>10k Ohms	<100 Ohms, Nominal
Current	20mA, typical	<10mA
Consumption		
Bandwidth	(-3dB): DC to 250 Hz	(-3dB): DC to 1kHz
Output Noise	-	<2mV RMS
Zero Offset:	<±1% of FS (<±4% 1PSI)	<±1% of FS (<±4% 1PSI)
Span Tolerance:	<±2% of FS (<±4%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



DIMENSIONS



CSA APPROVED BARRIER INSTALLATION / A08949



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:

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

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

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



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 range code. *2.5 and 7.5 PSI Sensor must be ordered in inches of H ₂ O.							
PSIG	CODE		Ft of Water Column @ 4°C (approx.)	CODE			
0-30	00030	P	6	00072	H		
0-20	00020	P	10	00120	H		
0-15	00015	P	20	00240	H		
0-10	00010	P	30	00360	H		
0-7.5*	00208*	H	50	00600	H		
0-5	00005	P					
0-2.5*	00069*	H					
Pressure Unit B= Bar H= Inches H ₂ O K= kg/cm ² P= PSI							
Outputs (contact factory for 0.5-2.5V non-ratiometric (3-5VDC) 1= 0.5-4.5V ratiometric 3= 1-5V 4= 4-20mA							
Electrical 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)