

# 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 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)

### 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% BFSL
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/cm<sup>2</sup>

H= Inches H<sub>2</sub>O

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 H<sub>2</sub>O  
Notes: Other pressures available. Contact Factory

# PVDF/PTFE Submersible Pressure Transducer

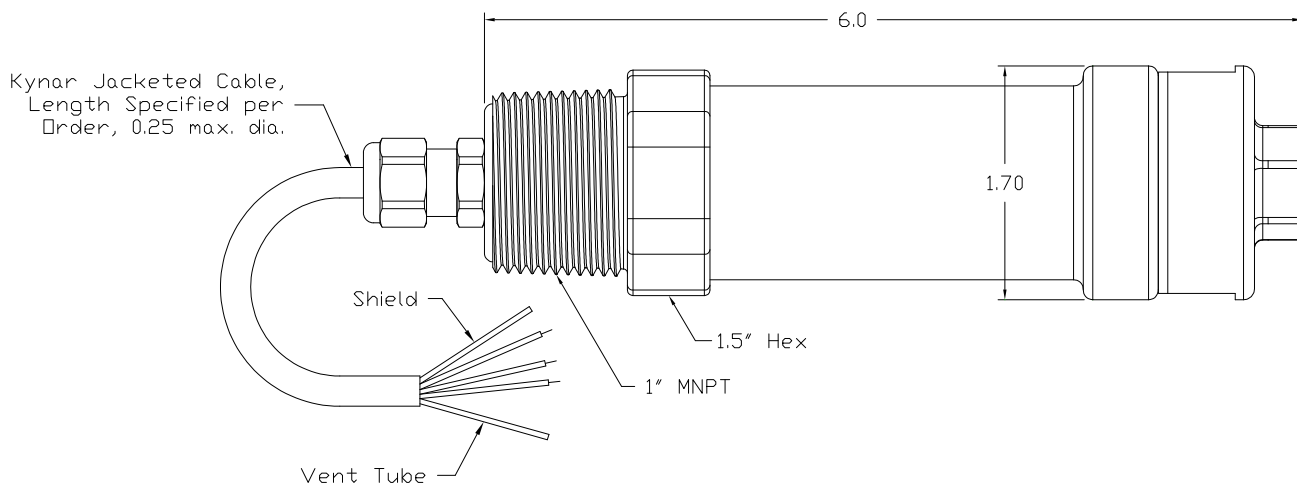


AST4530



+33 (0)1 46 91 93 32 **Capteurs et Systèmes de mesure**

59, rue Émile Deschanel - 92400 COURBEVOIE - France - Fax : 33 (0)1 46 91 93 39 - [contact@pm-instrumentation.com](mailto:contact@pm-instrumentation.com)

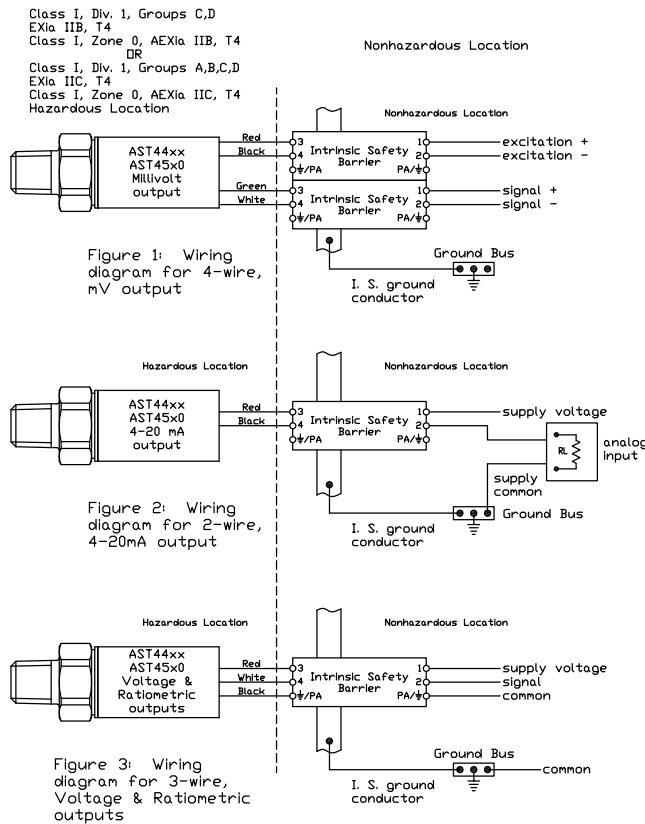


# PVDF/PTFE Submersible Pressure Transducer



AST4530

## 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  
V<sub>max</sub> = 28Vdc

Model AST4401  
Class I, Div. 1, Groups A,B,C,D; EXIa IIC, T4; Class I, Zone 0, AEXIa IIC, T4  
V<sub>max</sub> = 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
P <sub>max</sub> = 625 mW I <sub>max</sub> = 93 mA C <sub>i</sub> = 0.391 uF L <sub>i</sub> = 0	P <sub>max</sub> = 625 mW I <sub>max</sub> = 93 mA C <sub>i</sub> = 0.434 uF L <sub>i</sub> = 155 uH	P <sub>max</sub> = 625 mW I <sub>max</sub> = 93 mA C <sub>i</sub> = 0.643 uF L <sub>i</sub> = 0	P <sub>max</sub> = 625 mW I <sub>max</sub> = 93 mA C <sub>i</sub> = 0.649 uF L <sub>i</sub> = 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:
 
$$V_{oc} \text{ or } U_o \leq V_{max}$$

$$I_{sc} \text{ or } I_o \leq I_{max}$$

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

$$C_a \text{ or } C_o \geq C_i + C_{cable}$$

$$L_a \text{ or } L_o \geq L_i + L_{cable}$$
- 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.