



## SUBMERSIBLE

### Pressure & Temperature Transmitter AST45PT

#### Overview

The AST45PT is a combined pressure and temperature transmitter for accurate liquid level measurement.

For pressure ranges from 0-1 to 100 PSI that require a wide range of media compatibility, the AST45PT submersible series is an excellent solution to monitor level and temperature for indoor and outdoor 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
- Rugged Design
- New Conduit Fitting at Electrical Connection
- Compatible with Wide Variety of Liquids
- EMI/RFI Protection

#### Applications

- Ground Water Level Measurement
- Earthen & Concrete Dams
- Liquid Tanks
- Irrigation
- Environmental Sites
- Building Automation Controls
- Waste Water Canals

## Environmental Data

### Ambient Temperature: 25°C (77°F) (Unless otherwise specified)

<b>Operating Ambient</b>	-40 to 85°C (-40 to 185°F)
<b>Storage</b>	-40 to 100°C (-40 to 212°F)

### Shock, Vibration & Ingress Protection (IP)

Standard	Description	Test Value
EN 60067-2-27	Shock Test	500m/s <sup>2</sup> , 6ms, half sine-wave, 6 shocks (3/direction), horizontal and vertical axis, 12 total shocks
EN 60068-2-6	Sinusoidal Vibration	5-25 Hz, 2mm, 25-150 Hz, 50m/s, Sweep rate: 1 octave/min, Duration: 24 hours/axis (48 hours total), horizontal and vertical axis
EN 60068-2-64	Random Vibration	10-2000 Hz, vibration level: 0.0314 (m/s <sup>2</sup> ) <sup>2</sup> /Hz, 24 hrs/axis (48 hrs total), 2 directions: horizontal and vertical
IEC 60068-2-32	Drop Test	Drop of 1 meter to floor made of concrete. Dropped twice on the threaded end and two times perpendicular to the threaded end.
IP-68	Ingress Protection	Dust-tight, protected against the effects of continuous immersion in water

### Electromagnetic Compatibility (EMC)

Standard	Description	Test Value
EN55011	Radiated Emissions	Class A, 30-1000 MHz ±8 kV Air Discharge
EN61000-4-2	Electrostatic Discharge Immunity	±4 kV Contact Discharge, VCP, HCP
EN61000-4-3	Radiated Electromagnetic Field Immunity	10V/m, 30-2700 MHz 80% 1kHz AM Modulation ±0.5 kV, ±1 kV, ±2 kV on DC Mains
EN61000-4-4	Electrical Fast Transient/Burst Immunity	±0.5 kV, ±1 kV on I/O Ports
EN61000-4-5	Surge Immunity	±0.5 kV, ±1 kV on I/O Ports & DC Lines 10 V rms, 0.15-80 MHz, DC Mains
EN61000-4-6	Conducted Immunity	10 V rms, 0.15-80 MHz, I/O Ports 80% 1kHz AM Modulation
EN61000-4-8	Power Frequency Magnetic Field Immunity Test	30 A/m @ (50Hz, 60Hz) 3 orthogonal orientations

**Performance**

**Ambient Temperature: 25°C (77°F) (Unless otherwise specified)**

Parameters	MIN	TYP	MAX	UNITS	NOTES
Accuracy (Pressure)	-0.25		+0.25	%Span	1
Accuracy (Temperature)	-2.0		+2.0	%TEB	8
Zero Error	-0.5		+0.5	%Span	2
Span Error	-0.5		+0.5	%Span	3
Thermal Error, Zero	-1.5		+1.5	%Span	4
Thermal Error, Span	-1.5		+1.5	%Span	5
Stability (1 year)		±0.25		%Span	
Proof Pressure		2X Rated Pressure		PSI	6
Burst Pressure		5X Rated Pressure		PSI	7
Compensated Temp. Range		0 – 55° (32 to 132°)		°C (°F)	

**Electrical Data**

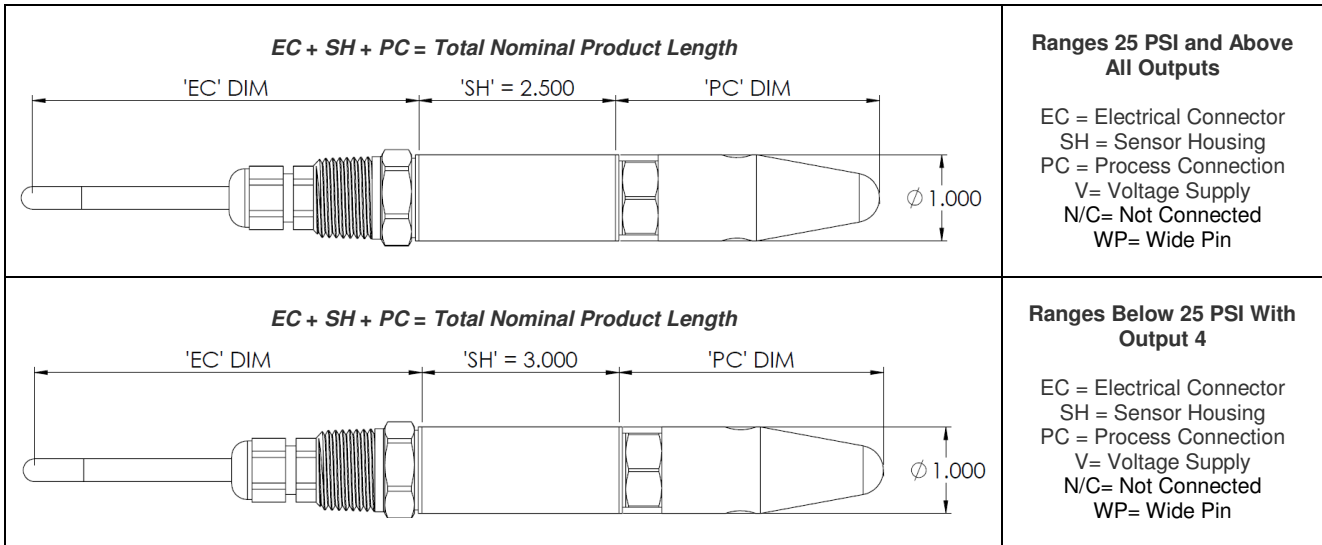
Model	AST45PT	
Output	4-20mA	1-5V
Excitation	10-28VDC	10-28VDC
Output Impedance	> 10k Ω	< 100 Ω
Current Consumption	-	<10mA
Output Noise	-	<1mv RMS
Output Load	0-800Ω	5k Ω Min.
Reverse Polarity Protection	Yes	Yes
Sampling Rate	400 Hz	400 Hz

**Notes**

1. The maximum deviation from a best fit straight line (BFSL) fitted to the output measured over the pressure range at 25°C. Includes all errors due to pressure non-linearity, hysteresis, and non-repeatability. Span is the algebraic difference between full scale output and zero pressure offset.
2. The maximum variation from the ideal offset measured at 25°C.
3. The maximum variation from the ideal full-scale span measured at 25°C.
4. The maximum variation of offset within the compensated temperature range relative to 25°C.
5. The maximum variation of full-scale span within the compensated temperature range relative to 25°C.
6. The maximum pressure that can be safely applied to the product for it to remain in specification once pressure is returned to the operating pressure range.
7. The maximum pressure that can be applied without causing escape of the pressure media.
8. The deviation from a straight line fitted through the compensated temperature end points expressed a percentage of the temperature output range.

**Dimensions & Electrical Connection**

Unless otherwise specified, all dimensions are in inches



**Electrical Connectors Option Codes**

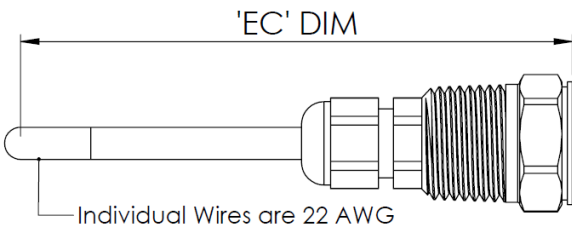
**Cable**

<b>N</b> 6ft	<b>P</b> 10ft	<b>X</b> Optional Length (See Options)
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**Optional Lengths**

<b>140</b> 15ft (4.6m)	<b>075</b> 20ft (6.1m)	<b>074</b> 25ft (7.6m)	<b>004</b> 35ft (10.7m)
<b>130</b> 40ft (12.2m)	<b>065</b> 50ft (15.2m)	<b>003</b> 100ft (30.5m)	<b>050</b> 150ft (45.7m)

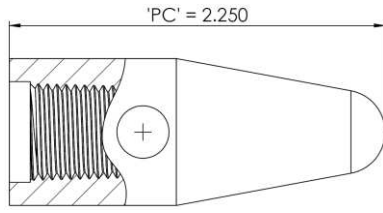
Color	3 Wire Voltage	4-20mA*
Green	Signal (Temperature)	+Temperature
Black	-Vsupply	-Pressure
Red	+Vsupply	+Pressure
White	Signal (Pressure)	-Temperature



\*For units with loop-powered 4-20mA output, the pressure loop must be powered, or the temperature output will not operate.

**Pressure Port Option Codes**

**L**  
**1/4 FNPT, Nose Cone**



Legend	
✓	Standard Available
X	Not Available

**Available Process Connection, Material Configurations & Pressure Codes**

**316L PSI**

Pressure Range	Pressure Range Code	PSI Unit	Process Connection Code
			L
0 - 1	00001	P	✓
0 - 5	00005	P	✓
0 - 10	00010	P	✓
0 - 15	00015	P	✓
0 - 25	00025	P	✓
0 - 50	00050	P	✓
0 - 100	00100	P	✓

**316L H2O**

Pressure Range	Pressure Range Code	H2O Unit	Process Connection Code
			L
0 - 24	00024	H	✓
0 - 48	00048	H	✓
0 - 69	00069	H	✓
0 - 100	00100	H	✓
0 - 120	00120	H	✓
0 - 208	00208	H	✓
0 - 240	00240	H	✓
0 - 360	00360	H	✓
0 - 600	00600	H	✓
0 - 1380	01380	H	✓
0 - 2770	02770	H	✓

\*See Ordering Information for list of options.

# INDUSTRIAL OEM

## AST45PT Pressure Transmitter

### Ordering Information

<b>AST45PT</b>	<b>1</b>	<b>L</b>	<b>0005</b>	<b>P</b>	<b>4</b>	<b>X</b>	<b>1</b>	<b>N</b>	<b>065</b>
<b>Temperature Output Range</b> 1= -40 to 85°C (-40 to 185°F) 2= -40 to 125°C (-40 to 250°F) 3= 0 to 70°C (30 to 158°F) 4= -55 to 125°C (-65 to 250°F) 5= -18 to 93°C (0-200°F)									
<b>Process Connection</b> L= Front End Cone (Removable)									
<b>Pressure Range</b> Insert Pressure Range Code (see table for availability)									
<b>Pressure Unit</b> H= Inches H <sub>2</sub> O P= PSI									
<b>Output</b> 3= 1-5V 4= 4-20mA									
<b>Electrical Connection</b> N= Conduit fitting, Cable 6 ft. P= Conduit fitting, Cable 10 ft. X= Optional Length (see options)									
<b>Wetted Material</b> 1= 316L / 304 / Hytrel (cable) / Kynar (cord grip)									
<b>Fail Condition</b> N= Not Specified H= Fail High L= Fail Low									
<b>Option Codes</b>									
140= 15 ft. (4.6 m)	074= 25 ft. (7.6 m)	130= 40 ft. (12.2 m)	003= 100 ft. (30.5 m)						
075= 20 ft. (6.1 m)	004= 35 ft. (10.7 m)	065= 50 ft. (15.2 m)	050= 150 ft. (45.7 m)						

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