

# SMART PRESSURE TRANSMITTER (501P)

- HART Protocol communication interface
- 0.075% inaccuracy and non-linearity
- High Rangeability
- 0 – 0.0016 bar (1.6kPa) till -1/0 -600 bar
- Automatic temperature compensation
- 4 - 20 mA output
- True non-interactive zero and span
- Local zero and span adjustment
- Totally Field configurable with keypad
- Bright Backlit LCD indicator
- Adjustable damping
- Indication in engineering units
- AISI 316L or Hastelloy C Wetted P
- Robust design
- Small and light weight
- Weather-proof housing IP67
- Intrinsically safe as option
- Explosion Proof as option



## DESCRIPTION



ABUS 501P Smart Pressure Transmitter uses as its measuring principle, the well known and field proven technique of sensing a crystal silicon chip and a diaphragm micro-machined into the chip, enhanced by microprocessor based electronics.

Designed for process control applications, these 2-wire transmitters generate a 4-20 mA signal proportional or characterized to the applied pressure. This signal can be transmitted over a pair of twisted wires through long distances (limited only by the wire resistance and load). Remarkable features of the transmitters are its 0.075% inaccuracy and non-linearity, 20:1 rangeability, compactness and light weight.

The pressures are directly applied to the isolating diaphragm that provide isolation and resistance against process fluid corrosion. Being microprocessor based, the electronic circuit is extremely versatile and accurate. Combined with the sensor precision, it provides the high accuracy and rangeability.

Transmitter performance is improved by continuous monitoring of the sensor temperature and corresponding auto corrections.

A local display permits easy reading and writing of data and easy configuration of device parameter without requiring Hart Communicator.

## TECHNICAL SPECIFICATIONS

### Functional Specifications

<b>Process Fluid</b>	: Liquid, gas or vapor
<b>Range</b>	: 0-0,0016 to -1-0-600 bar
<b>Output signal</b>	: Two wire 4-20, 20-4 mA and HART protocol
<b>Power supply</b>	: 12 -45 VDC
<b>Load limitation</b>	: 0-600 for 24VDC
<b>Indicator</b>	: LCD Indicator
<b>Hazardous area</b>	: IP67 weather-proof, intrinsically safe and explosion proof EEx ia, EExd IIC, T6, T5, to EN 50.014, EN 50.018 and EN 50.020 for Zon 0 IIA, IIB, IIC
<b>Zero and span</b>	: Non-interactive local adjustment
<b>Ambient Temp.</b>	: -20 to 80°C display -10 to 70°C
<b>Process Temp.</b>	: -20 to 80/130°C, -65 to 150°C, 0 to 200, 0-350°C
<b>Storage Temp.</b>	: -40 to 85°C
<b>Turn-on time</b>	: Performs within specifications in less than 120 milliseconds after power is applied
<b>Overpressure</b>	: 400%
<b>Humidity limits</b>	: 0 – 100% RH
<b>Damping Adj.</b>	: Adjustable
<b>Configuration</b>	: By push button on the transmitter or HC, PC using HART Protocol

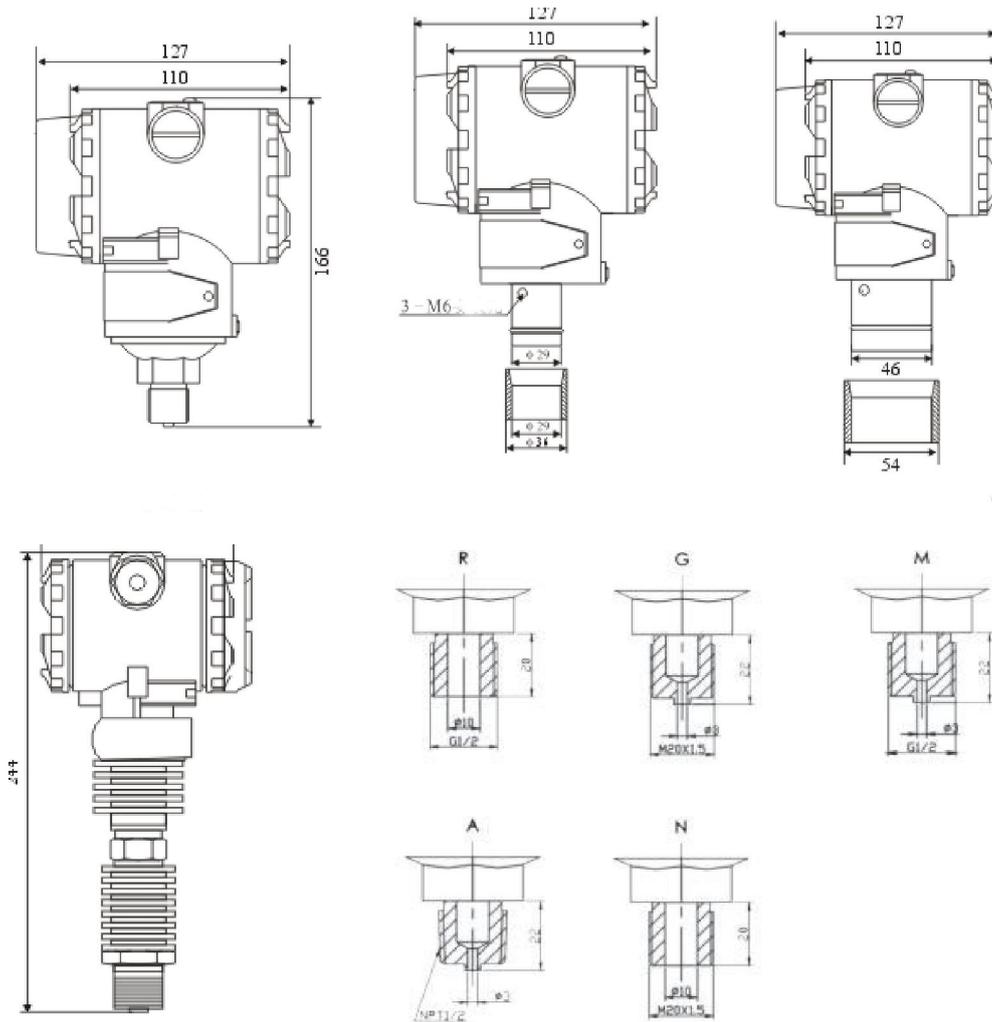
### Performance Specifications

<b>Resolution</b>	: ±0.01 %
<b>Inaccuracy</b>	: ±0.075%
<b>Temperature effect</b>	: ±0.1 %/10K Zero and Span
<b>Power Supply effect</b>	: Negligible between 12 and 45 VDC
<b>Mounting Effect</b>	: Any position, No span effect
<b>EMC</b>	: EN 50081-1, EN 50082-2, 89/336/EEC

### Physical Specifications

<b>Electrical Connection</b>	: ½" – 14 NPT
<b>Process Connection</b>	: M G1/2, M20, G½NPT, cassette type
<b>Wetted parts</b>	: AISI 316L or Hastelloy
<b>Filling fluid</b>	: Silicone oil
<b>Electronic housing</b>	: Injected aluminum with polyester painting (RAL 5014) NEMA 4X, IP66
<b>Identification plate</b>	: 304 SST
<b>Approximate weight</b>	: 1.6 kg
<b>Mounting</b>	: Directly supported by piping or optionally with mounting bracket for 2" pipes or with direct or remote seats

## Dimensions



## ORDERING INFORMATION

### 501P

SENSOR	TYPE	MATERIAL	CONNECTION	DISPLAY	TYPE	RANGE
A1 Standard	W Weather Proof	1 316L	R G ½" hole 10mm	A None	G Gauge	X Specify
A2 With Flanged Diaphragm	P Explosion proof	2 304S	G M20 hole 3mm	B LCD	A Absolute	
	I Intrinsically safe	4 Hastelloy C	M G ½" hole 3mm			
			A ½" 14 NPT			
			N M20 hole 10mm			
			P ½" NPT (F)			
			Y Other (A2, other)			

\* **NOTE:** Below Code to be used only with Type(A2) Flanged Diaphragm

Code	Size	Specification	FLANGE SIZE (MM)			BOLT HOLE (MM)		
			Diameter	A**	B***	Amount	Diameter	Distribution Diameter
A	3"	150lb	190.5	30	66	4	19	152
B	4"	150lb	228.6	30	89	8	19	190
C	3"	300lb	209.6	35	66	8	22.2	168
D	4"	300lb	254	38	89	8	22.2	200

\*\* Flange Thickness

\*\*\* Effective Diaphragm Area

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