

# Corrosive Environment Pressure Transmitter

## Advantages

- Pressure transmitter for highly corrosive environments
- Extremely corrosion resistant ceramic diaphragm ( $\text{Al}_2\text{O}_3$  96%)
- Measuring ranges from 250mmH<sub>2</sub>O to 20kgf/cm<sup>2</sup> relative or absolute pressure
- Rugged piezoresistive or capacitive ceramic measuring cell
- Shock and vibration resistant
- Wetted part and housing of teflon

## Applications

This transmitter is specially designed for a highly corrosive environmental condition where stainless steel could not be applied such as...

- Process control and monitoring in corrosive environment
- Chemical and petrochemical industry
- Corrosive liquid level measurement
- Plating and dyeing process controls

## General Description



P600 series pressure transmitter has been designed as an advanced device for measuring pressure of corrosive gases and liquids in industrial applications. It is extremely versatile and suitable for measuring static pressure. The built-in ceramic measuring cell is highly corrosion resistant, stable and has an excellent price / performance ratio. Thanks to their high natural frequency and the rugged construction, the P600 transmitter withstands high shock and vibration. The transmitters are available as absolute and relative pressure types with either 2-wire current or 3-wire voltage output. The pressure to be measured acts without transmitting liquid on a stable, corrosion resistant ceramic measuring cell. Piezoresistive resistors are attached to the cell and connected into a Wheatstone bridge configuration. The output signal of this bridge is converted into a standardized current or voltage output signal.

Input		
Model	P617 / P619	P647 / P649
Technology	Piezoresistive ceramic pressure sensor	Capacitive ceramic pressure sensor
Pressure ranges	0~0.2 to 20kgf/cm <sup>2</sup> relative	0~250mmH <sub>2</sub> O to 20kgf/cm <sup>2</sup> relative
	0~1 to 20kgf/cm <sup>2</sup> absolute	0~0.2 to 20kgf/cm <sup>2</sup> absolute
Overload	1.5 × full scale without damage	6 × full scale without damage

Output				
	Current output		Voltage output	
Electrical connection type	2-wire technique		3 or 4-wire technique	
Full scale output signal	20mA	±0.5%	5V	±0.5%
Zero measured output	4mA	±0.05%	1V	±0.05%
Other signals available on request				

Electrical Specifications		
Excitation voltage	12~36V DC	
Load resistance max@24V	500 $\Omega$ at 24V	
Influence of excitation	0.01% FSO/V	
Power ripple	≤500mV P-P	
Reverse polarity	Protected	
Shock resistance	≤20g	
Response time	1.5ms	1ms
Adjustment	±10% FSO/zero and span	±20% FSO/zero and span

Performance Specifications		
Accuracy	≤±0.5% FSO	≤±0.2% FSO
Linearity, Hysteresis & Repeatability	±0.2...0.4% FSO typical	±0.1...0.15% FSO typical
Stability	±0.3% FSO/a @25° C	
Cutoff frequency(-3 d B)	≤2kHz	
Reference temperature	25° C	25° C
Operating temperature range	-40~125° C	-40~125° C
Compensated temperature range	0~70° C	-20~80° C
Thermal sensitivity shift	≤±0.015%/° C typical	≤±0.05% FSO typical
Thermal zero shift	≤±0.02% FSO/° C typical	≤±0.1% FSO typical
Long term stability	±0.3% FSO over 6 months	Max. annual error 0.1%

Physical Specifications	
Process connection	PT1/2" male thread(standard)
	PF1/2" male thread or manometer port
	Other connections available on request
Process media	Gases and liquids compatible with ceramic Al <sub>2</sub> O <sub>3</sub> , 96%
Materials wetted by process	Diaphragm : Ceramic Al <sub>2</sub> O <sub>3</sub> , 96%
	Housing : Teflon or aluminum die-casting
	Gasket O-ring : Teflon or viton (HNBR, CSM, etc.)
Local display (P619,P649)	LED 31/2 digit
Enclosure rating	IP65
Influence of mounting position	Not critical
Weight	Approx.(950g)
Options	Local display with terminal head
	Explosion protection : Ex d IIC T6

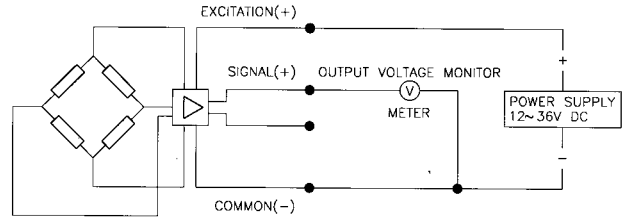
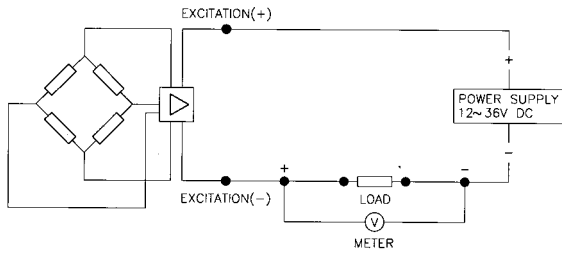
Note : ① Cable version : 1.5m standard length, 4-wire, shielded with integral vent tube

② Vented gauge units must breathe dry, non - corrosive gases.

③ Connector version is vented through the removed pin, cable versions are vented through a vent tube inside the cable sleeve

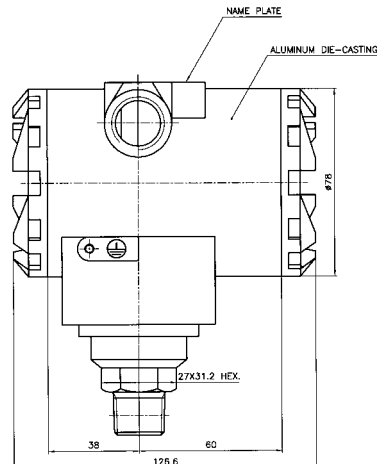
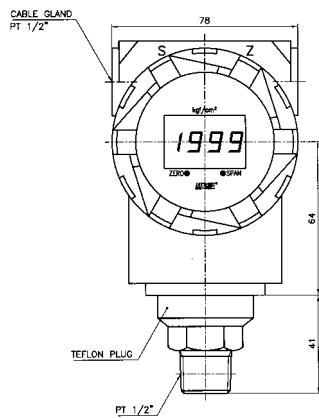
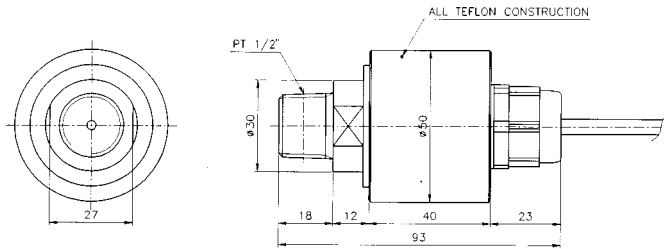
## System connection for 2-wire transmitter

## System connection for 3-wire transmitter



## Dimension

## Electrical connection



E : Excitation  
S : Signal  
C : Common

## Integrated cable

System Color	2-wire	3-wire	4-wire
Red	E +	E +	E +
Black	E -	C -	E -
Green		S +	S +
White			S -
⌊	Shielded	Shielded	Shielded

## Terminal head

