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## Explosion Proof Type Pressure Transmitter with Local Display

**Model :** P700 (Stainless steel silicon cell, Standard head)  
P710 (Stainless steel silicon cell, Miniature head)



### Advantages

- High precision pressure transmitter with local display for industrial applications
- Measuring ranges from 500mmH<sub>2</sub>O to 350bar ( $\pm 0.25\%$  of FS)
- Measuring ranges from 400bar to 1000bar ( $\pm 0.5\%$  of FS)
- Advanced piezoresistive silicon cell
- Excellent accuracy and long term stability
- Extremely high proof pressure
- LED 4 digit display with 4-20mA 2-wire current output signal



P700



P710

### Applications

The P700 series pressure transmitter is ideal for measurements which require a local display and a need to communicate with remote data acquisition equipment in industrial applications. The 2-wire 4 to 20mA signal can be transmitted over great distance with negligible loss of accuracy.

- Standard hydraulic and pneumatic
- Regulation system of transmission line of LPG and LNG
- Machine tools, water treatment and flow control
- Oil and off-shore industry
- Equipments for chemical and petrochemical industry
- Automation system and plant engineering
- Liquid level measurement

### Certificate

Ex d IIC T6 (IP65)

### Descriptions

P700/P710 series pressure transmitter with local display is a signal conditioned, media-isolated pressure transmitter that can be used for a wide variety of applications. The transmitter offers the convenience and easy installation of an LED display with the full capabilities of a highly accurate 4-20mA 2-wire system design. The 2-wire 4 to 20mA output signal can be transmitted over great distances with negligible loss of accuracy. The stainless steel surfaces make it compatible with a wide variety of gases and liquids and can be protected from harsh environment. They are extremely versatile and suitable for measuring dynamic or static pressure. 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 through thin corrosion resistant stainless steel 316L diaphragm on a silicon measuring element. The pressure transmitting medium is silicon oil. The measuring element contains diffused piezoresistive resistances which are connected into a Wheatstone bridge. The output signal of this bridge is temperature compensated and converted into a standardized current or voltage output signal.

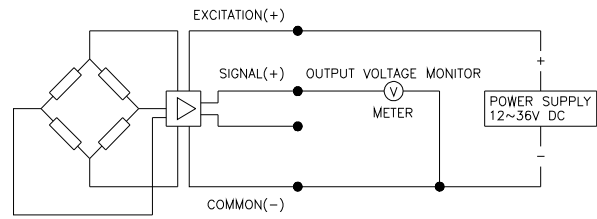
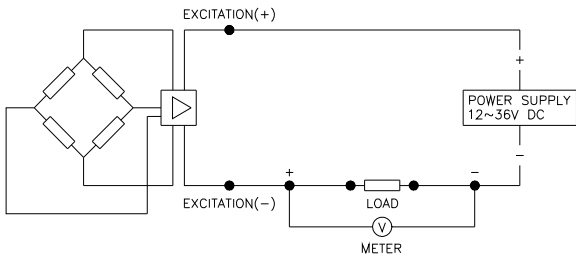
## Specification

Input		
Model	P700 / P710	P700/P710
Technology	Piezoresistive silicon pressure sensor	Piezoresistive silicon high pressure sensor
Pressure ranges	0 ~ 0.05 to 350kgf/cm <sup>2</sup> relative pressure	0~400 to 1000 bar relative pressure
	0 ~ 1 to 350kgf/cm <sup>2</sup> absolute pressure	0~400 to 1000 bar absolute pressure
Pressure reference	Gauge, absolute, vacuum and compound	
Overload	3x full scale without damage	3x full scale without damage (4x burst pressure)
Output		
Current output signal	4~20mA DC 2-wire technique	
Voltage output signal	1~5V DC 3-wire technique	
	Other signals available on request	
Local display	LED 4 digit	
Electrical Specification		
Excitation voltage	24V DC(12~36V DC)	
Load resistance max @ 24V	500Ω at 24V	
Influence of excitation	0.01% FSO/V	
Power ripple	≤500mV P-P	
Reverse polarity	Protected	
Shock resistance	No change in performance after 10Gs for 11ms	
Response time (10~90%)	≤2 milliseconds	
Adjustment	±10% FSO/zero and span	
Performance Specification		
Accuracy	≤ ±0.25% FSO	≤ ±0.5% FSO
Non-linearity	±0.100 FSO typical	±0.250% FSO typical
Repeatability	±0.015 FSO typical	±0.020% FSO typical
Pressure hysteresis	±0.010 FSO typical	±0.050% FSO typical
Long term stability	±0.3% FSO over 6 month	±0.1% FSO over 6 month
Cutoff frequency(-3 d B)	≤2KHz	
Reference temperature	35 °C	25 °C
Operating temperature range	-40~125°C	-40~125°C
Compensated temperature range	0~82°C	-20~82°C
Thermal sensitivity shift	≤ ± 0.2% FSO in reference to 35 °C typical	≤ ± 0.05% FSO
Thermal zero shift	≤ ± 0.2% FSO in reference to 35 °C typical	
Thermal hysteresis	≤ ± 0.1% FSO in reference to 35 °C typical	
Physical Specification		
Process connection	PT1/4" , PT3/8" , PT1/2" male thread	
	PF1/4" , PF3/8" , PF1/2" male thread	
	Other connections available on request	
Process media	Compatible with stainless steel 316	
Materials wetted by process	Diaphragm : stainless steel 316L	
	Housing : Aluminum Die-casting	
	Gasket O-ring : Viton (HNBR, CSM, etc.)	None
Enclosure rating	IP65	
Explosion protection	Ex d IIC T6	
Influence of mounting position	Under 0.5kgf/cm <sup>2</sup> , mounting vertically	Not critical
Weight	Approx. 802g (P700) , 600g (P710)	
Options	Sealed diaphragm with thread connection	
	Sealed diaphragm with flange mounting	
	Siphon tube	
	Sealed diaphragm with capillary	

Note : If it is installed in explosive atmosphere, the covers should be kept tight when circuit alive.

## System connection for 2-wire transmitter

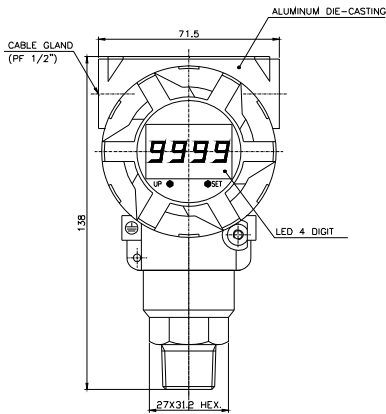
## System connection for 3-wire transmitter



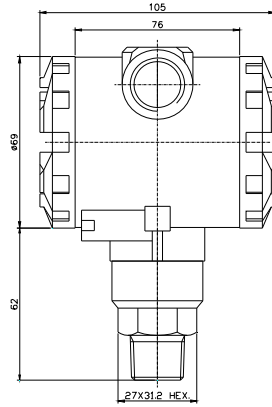
## Dimension (mm)

## Electrical connection

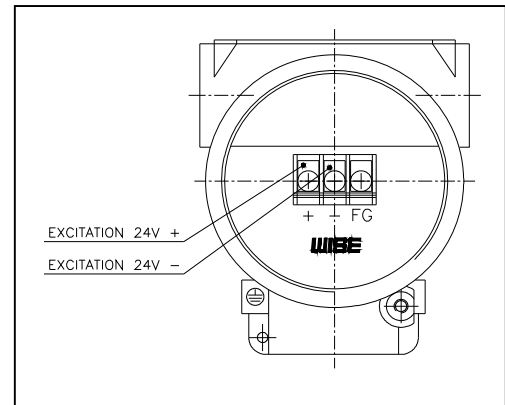
### P700 Front View



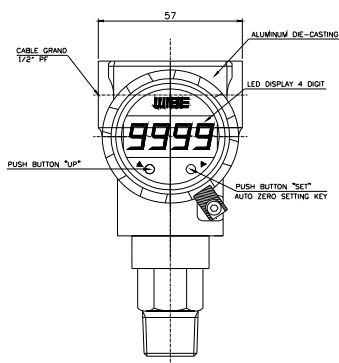
### P700 Side View



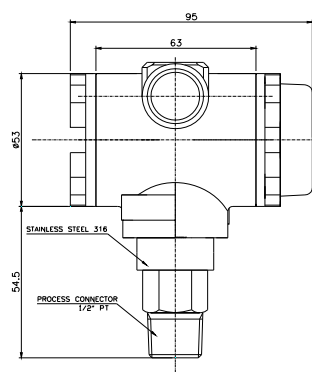
### P700 Terminal Block



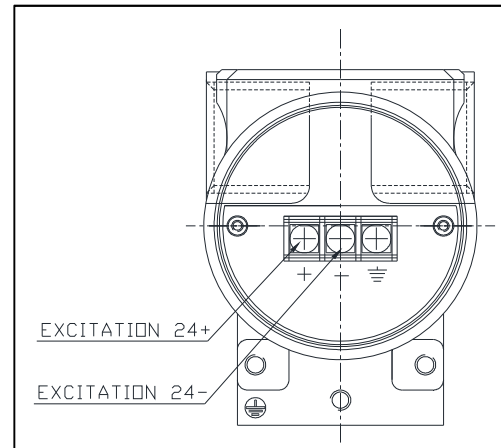
### P710 Front View



### P710 Side View



### P710 Terminal Block



## Ordering Information

### Explosion Proof Type Pressure Transmitter with Local Display

#### 1. Base model

P700										Piezoresistive silicon sensor (Standard head)
P710										Piezoresistive silicon sensor (Miniature head)

#### 2. Pressure reference

R										Relative pressure
A										Absolute pressure

#### 3. Process connection type "1"

M										Male thread
F										Female thread

#### 4. Process connection type "2"

T										PT thread as standard
F										PF thread
X										Other process connections available on request

#### 5. Process connection size

1										1/4"
2										3/8"
3										1/2"
X										Other units available on request

#### 6. Accuracy

H										±0.25% F.S.O (with silicon cell)
K										±0.5% F.S.O (with high pressure silicon cell)

#### 7. Measuring range

01										0 - 500 mmH <sub>2</sub> O
02										0 - 1000
03										0 - 5000
04										0 - 1 kg/cm <sup>2</sup>
05										0 - 2
06										0 - 5
07										0 - 10
08										0 - 20
09										0 - 50
10										0 - 100
11										0 - 200
12										0 - 350
13										0 - 400 bar (Only available to Accuracy code "K")
14										0 - 600 (Only available to Accuracy code "K")
15										0 - 700 (Only available to Accuracy code "K")
16										0 - 800 (Only available to Accuracy code "K")
17										0 - 900 (Only available to Accuracy code "K")
18										0 - 1000 (Only available to Accuracy code "K")
xx										Other calibration ranges available on request

#### 8. Unit

M										Calibration in mmH <sub>2</sub> O
K										Calibration in kgf/cm <sup>2</sup>
A										Calibration in Mpa
B										Calibration in bar
P										Calibration in psi
X										Other units available on request

#### 9. Output signal / Electrical connection type

C										4-20mA, DC, 2-wire output
V										1-5V DC, 3-wire output
X										Other signal available on request

#### 10. Option

N										None options
T										Sealed diaphragm with thread
F										Sealed diaphragm with flange mounted
C										Sealed diaphragm with capillary
S										Siphon tube
X										Other accessories available on request

P700	R	M	T	2	H	01	K	C	N	Sample ordering code
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Specifications subject to change without notice