Miniature Pressure Transmitter

Model : P354 (Ceramic cell with Mini DIN Connector)
P356 (Ceramic cell with DIN Connector)
P364 (Silicon cell with Mini DIN Connector)
P366 (Silicon cell with DIN Connector)

WISE SENSOR

Advantages

- Miniature pressure transmitter for industrial applications
- Extremely corrosion resistant
- Rugged piezoresistive ceramic or silicon measuring cell
- Shock and vibration resistant
- Miniature design
- Measuring ranges
  - Ceramic sensor : 0~2 to 0~50 kgf / cm^2
  - Silicon sensor : 0~0.1 to 0~350 kgf / cm^2

Applications

The transmitters can be used for a wide range of applications in process control, automatic machinery and hydraulic or pneumatic system design.

- Standard hydraulic and pneumatic equipments
- Process control
- Machine tools and automatic machinery
- Monitoring systems
- Servo valves and drives
- Chemical and petrochemical industry
- Air and gas compressors
- Loading and brake systems

P354 / P364

P356 / P366

Descriptions

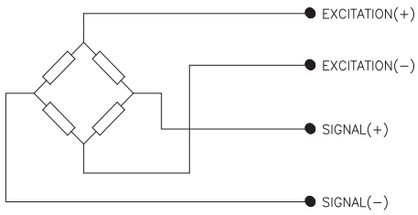
P3XX series miniature designed pressure transmitter meets the requirements for a general purpose, reliable and economical pressure measurements for industrial and process control installations. This pressure transmitter measures of gases and liquids in industrial applications and is available wide range of pressure in 0.1 to 350 bar relative or absolute pressure. It is extremely versatile and suitable for measuring dynamic and static pressure. The built-in piezoresistive silicon or ceramic measuring cell is highly corrosion resistant, stable and an excellent price / performance ratio. The transmitters are available with either 2-wire current or 3-wire voltage output. The measuring principle of ceramic sensor is that 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. In case of isolated silicon sensor, 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 resistors which are connected into a Wheatstone bridge. The output signal of this bridge is converted into a standardized current or voltage output signal.

Specification

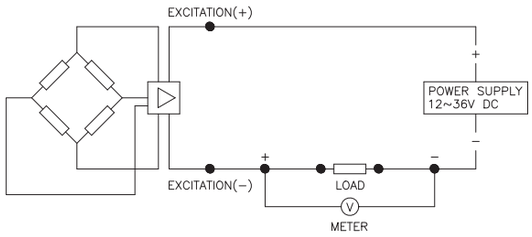
Input		
Model	P354 / P356	P364 / P366
Technology	Piezoresistive ceramic pressure sensor	Piezoresistive silicon pressure sensor
Pressure ranges	0~2 to 0~50 kgf / cm^2 relative	0~0.1 to 0~350 kgf / cm^2 relative pressure
	0~1 to 50 kgf / cm^2 absolute	0~1 to 350 kgf / cm^2 absolute pressure
Pressure reference	vacuum Gauge, absolute compound	
Overload	1.5x full scale without damage	2x full scale without damage
Output		
Unamplified	2.0~6.5m V / V	-2~152mm V / V
	4~20mA current (2-wire)	
Amplified	1~5V voltage (3 or 4-wire)	
	Other signals available on request	
Electrical Specification		
Excitation voltage	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	≤ 20g	≤ 10g
Response time (10~90%)	≤ 5 milliseconds	≤ 5 milliseconds
Adjustment	None	
Performance Specification		
Accuracy	≤± 0.5% FSO	≤± 0.25% FSO
Linearity,Hysteresis & Repeatability	± 0.2~0.5% FSO typical	± 0.25% FSO typical
Stability	± 0.3% FSO / a@25°C	± 0.2% 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°	0~82°C
Thermal sensitivity shift	≤± 0.04%/ °C typical	≤± 0.03% FSO typical
Thermal zero shift	≤± 0.02% FSO / °C typical	≤± 0.2% FSO typical
Physical Specification		
Process connection	PT1/4, PT3/8, PT1/2 male thread	
	PF1/4, PF3/8, PF1/2 male thread	
	Female thread & other connections available on request	
Process media	Gases and liquids compatible with	
Materials of Diaphragm	Ceramic Al2 O3, 96%	Stainless steel 316L
Housing	Stainless steel 316	Stainless steel 316
Gasket O-ring	Viton, HNBR, Kalez, etc.	
Enclosure rating	IP65	
Influence of mounting position	Not critical	~20kPa : ≤± 0.5% FSO 20kPa~ : ≤± 0.2% FSO Under 0.5 kgf / cm^2, mounting vertically
Weight	Approx. (147g)	
Options	Cooling Fin	
	Siphon tube	

Note : ① For high pressure measurement, thin film pressure transducer with this model also available.
② Cable version : 1.5m standard length, 4-wire, shielded with integral vent tube.
③ Vented gauge units must breathe dry, non - corrosive gases.

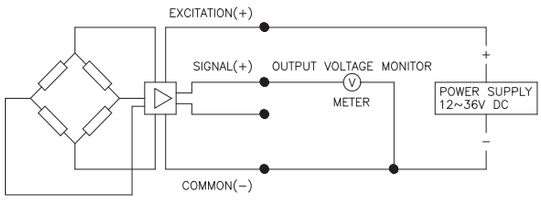
System connection for unamplified



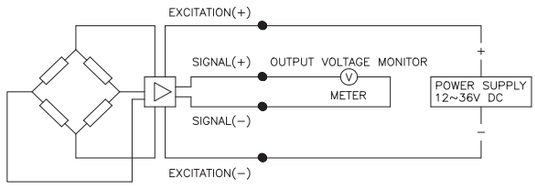
System connection for 2-wire transmitter



System connection for 3-wire transmitter

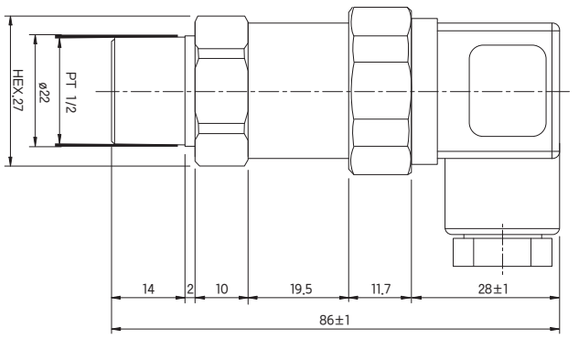


System connection for 4-wire transmitter

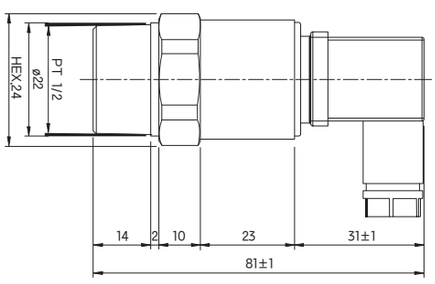


Dimension (mm)

P356 / P366



P354 / P364



Electrical connection

E : Excitation
S : Signal
C : Common

DIN connector

System / Color	2-Wire	3-Wire	4-Wire
1	E +	E +	E +
2	E -	C -	E -
3		S +	S +
GND	Shielded	Shielded	S -

Mini DIN connector

System / Color	2-Wire	3-Wire	4-Wire
1	E +	E +	E +
2	E -	C -	E -
3		S +	S +
GND	Shielded	Shielded	S -

Ordering Information

Miniature Pressure Transmitter

1. Base model

P35	Piezoresistive ceramic sensor
P36	Piezoresistive silicon sensor

2. Electrical connection type

4	Mini DIN connector
6	DIN connector

3. Pressure reference

R	Relative pressure
A	Absolute pressure

4. Process connection type "1"

M	Male thread
F	Female thread

5. Process connection type "2"

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

6. Process connection size

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

7. Accuracy

H	± 0.25% F.S.O (with silicon cell)
S	± 0.5% F.S.O (with ceramic cell)

8. Measuring range

01	0~0.1 kgf / cm^2, bar(Only available P364 and P366)	0~0.01 Mpa(Only available P364 and P366)
02	0~0.2 kgf / cm^2, bar(Only available P364 and P366)	0~0.02 Mpa(Only available P364 and P366)
03	0~0.5 kgf / cm^2, bar(Only available P364 and P366)	0~0.05 Mpa(Only available P364 and P366)
04	0~1 kgf / cm^2, bar(Only available P364 and P366)	0~0.1 Mpa(Only available P364 and P366)
05	0~2 kgf / cm^2, bar	0~0.2 Mpa
06	0~5 kgf / cm^2, bar	0~0.5 Mpa
07	0~10 kgf / cm^2, bar	0~1 Mpa
08	0~20 kgf / cm^2, bar	0~2 Mpa
09	0~35 kgf / cm^2, bar	0~3.5 Mpa
10	0~50 kgf / cm^2, bar	0~5 Mpa
11	0~100 kgf / cm^2, bar(Only available P364 and P366)	0~10 Mpa(Only available P364 and P366)
12	0~200 kgf / cm^2, bar(Only available P364 and P366)	0~20 Mpa(Only available P364 and P366)
13	0~350 kgf / cm^2, bar(Only available P364 and P366)	0~35 Mpa(Only available P364 and P366)
xx	Other calibration ranges available on request	

9. Unit

K	Calibration in kgf / cm^2
A	Calibration in Mpa
B	Calibration in bar
X	Other units available on request

10. Output signal / Electrical connection type

A1	4~20mA, DC, 2-wire output
A2	4~20mA, DC, 4-wire output
B1	1~5V, DC, 3-wire output
B2	0~5V, DC, 3-wire output
B3	0~10V, DC, 3-wire output

11. Option

N	None options
C	Cooling Fin
S	Siphon tube
X	Other accessories available on request

P36	6	R	M	T	H	07	01	K	A1	N	Sample ordering code

Specifications subject to change without notice