General Purpose Pressure Transmitter with Silicon cell

**Model:** P105 (Circular Connector)

P106 (DIN Connector) P107 (Flying Leads) P108 (General Head)



### **Advantages**

- Pressure transmitter for industrial applications
- Measuring ranges from 0.1 to 500bar
- Piezoresistive silicon measuring cell
- Excellent accuracy and long term stability
- 200% proof pressure
- Various choice of electrical connection



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
- Machine tools and automatic machinery
- Flow control
- Oil and off-shore industry
- Equipments for chemical and petrochemical industry
- Engine monitoring and control
- Fire fighting equipments and braking systems for railway



## Descriptions

P100 series pressure transmitter is a signal conditioned media-isolated high precision pressure transmitter that can be used for a wide variety of applications. The transmitter has a water resistant, stainless steel housing for complete protection from harsh environments. Its 4~20mA current output is ideal for remote monitoring of both primary and secondary process variables. It has been designed as an advanced device for measuring pressure of gases and liquids in industrial applications. It is 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.

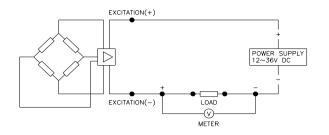
The pressure to be measured acts through thin corrosion resistant stainless steel 316L diaphragm on a silicon measuring element. The pressure transmitting medium is silicon oil. The measuring element contains diffused piezoresistive resistors which are connected into a Wheatstone bridge. The output signal of this bridge is temperature compensated and converted into a standardized current or voltage output signal.

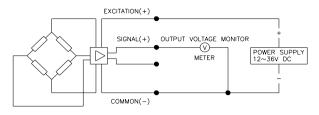
# **Specification**

Input							
	Diazoresistivo genera	l cilicon proceuro conco					
Technology	0~0.1 to 0~500 bears	Piezoresistive general silicon pressure sensor  0~0.1 to 0~500 bar relative pressure					
Pressure ranges	0~1 to 500bar absolu						
Pressure reference							
Overload	Gauge, absolute, vacuum and compound  2x full scale without damage						
	2x full scale without d	amage					
Output	Line and lifted		Unamplified				
Floatrical convention to the	Unamplified						
Electrical connection type	2-wire technique 3 or 4-wire technique						
Full scale output signal	20mA	±0.1%	5V	±0.1% ±0.1%			
Zero measured output		$\frac{4mA}{O}$ $\pm 0.1\%$ $\frac{\pm 0.1}{O}$ $\pm 0.1\%$ $\pm $					
Floatrical Creation	Other signals available	e on request					
Electrical Specification	104\/ DC/40_0C\/ DC\						
Excitation voltage	24V DC(12~36V DC) 450Ω at 24V						
Load resistance max @ 24V							
Influence of excitation	0.01% FSO/V						
Power ripple	≤500mV P-P						
Reverse polarity	Protected						
Shock resistance	0 1	nance after 10Gs for 11m	15				
Vibration	0.1G (1m/s/s) maximu	um					
Response time(10~90%)	≤2 milliseconds	anan /Civad valua hu da	f= 1\				
Adjustment	±10% FSO/zero and	span (Fixed value by de	rauit)				
Performance Specification	0.50/.500						
Accuracy	≤ ±0.5% FSO						
Non-linearity	±0.300% FSO typical						
Repeatability	±0.05% FSO typical						
Pressure hysteresis	±0.05% FSO typical						
Long term stability	±0.3% FSO over 6 month						
Cutoff frequency(-3 d B)	≤2KHz						
Reference temperature	25 °C						
Operating temperature range	0~60 °C						
Storage temperature range	-20~70°C						
Thermal sensitivity shift		erence to 25°C typical					
Thermal zero shift		erence to 25°C typical					
Thermal hysteresis	$\leq \pm 0.3\%$ FSO in refe	erence to 25°C typical					
Physical Specification	DT4/4 DT0/0 DT4/0	November 11 mars of					
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 cor						
Materials	Diaphragm : Stainless steel 316L						
	Housing (Body): Stainless steel 304						
		Process connection: Stainless steel 316  Terminal head for P108 Model: Aluminium Dia casting (ALDC)					
	Terminal head for P108 Model : Aluminium Die-casting (ALDC) Gasket O-ring : Viton (HNBR, CSM, etc.)						
		(HNBR, CSM, etc.)					
Enclosure rating	IP65	0.51					
Influence of mounting position		0.5bar should be mounte	ed vertically				
Weight	Approx. (270g)						
Options	Cooling Fin						
- 1	Siphon tube						

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

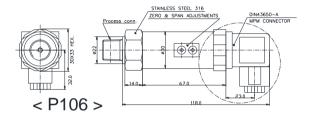
- ② Vented gauge units must breathe dry, non corrosive gases.
- ③ Connector version is vented through the removed pin, cable versions are vented through a vent tube inside the cable sleeve

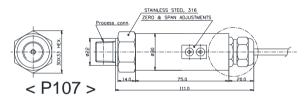


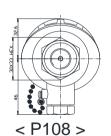


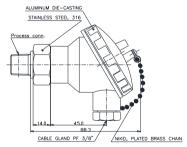
# **Dimension (mm)**

# STANLESS STEEL 316 ZERO & SPAN ADJUSTMENTS MIL(MS3106A10SC-35) < P105 > 142.0 511.0

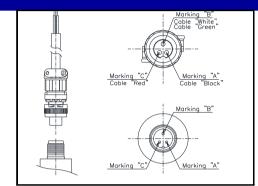




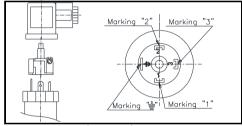




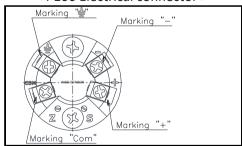
# **Electrical connection**



< P105 Electrical connector >



< P106 Electrical connector >



< P108 Electrical connector >

# • Wiring diagrams

E : Excitation S : Signal C : Common

	System		Wire	
	Conn.	2	3	4
Р	Red	E +	E +	E +
1	Black	E -	C -	E -
0	Green		S +	S +
_	White			S -
5	GND	Shielded	Shielded	Shielded
Р	1	E +	E +	E +
1	3	E -	C -	E -
0	4		S +	S +
6	GND	Shielded	Shielded	S -

	System	Wire			
	Conn.	2	3	4	
Р	Red	E +	E +	E +	
1	Black	E -	C -	E -	
0	Green		S +	S +	
Ŭ	White			S -	
7	GND	Shielded	Shielded	Shielded	
Р	+	E +	E +	E +	
1	-	E -	C -	E -	
0	Com		S +	S +	
8	GND	Shielded	Shielded	S -	

DIN Connector   Din Capital   Din Capital	Orde	ring In	forn	nati	on					
Base mode	Hiah Pr	ecision	res	sure	Tra	nsm	itter			
DIN Connector   DIN Connecto	1. Base r	nodel		· · · ·						
Pilying lead(1.5m cable)   Ceneral Head	2105									
Calibration in Maja   Calibration in majac	<sup>2</sup> 106									DIN Connector
2. Pressure reference R R A Absolute pressure  3. Process connection type "1" M F M I F M I F M I F M I F M I Male thread I F F I N I NPT thread I NPT thread I S I NPT thread I I I I I I I I I I I I I I I I I I I	P107									
Relative pressure  3. Process connection type "1" M	2108 □	ل_		لــــــإ						General Head
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Male thread   Female thread		K L			-	-				Absolute pressure
Male thread   Female thread			rocos	e cor	noci	tion t	VDQ "	1"		Absolute pressure
Female thread   A. Process connection type "2"			10000	5 001	IIIECI	וטוו נ	ype			Male thread
A. Process connection type "2"		F								
T			4 P	roces	S COI	nnec	tion t	/ne ":	)"	Tomale tiread
N			ΓŦ		00.	1	1	, 50		PT thread as standard
PF thread			Ń							
5. Process connection size  1			F							PF thread
1			Χ							Other process connections available on request
3   3/8"   3/8"   3/8"   1/2"   X   Other units available on request				5. Pr	oces	SS CO	nnect	ion s	ize	
1/2"   Other units available on request				1						1/4"
X         Other units available on request           6. Accuracy         1 ± 0.5% F.S.O           7. Measuring range         01 0 ~ 0.10 bar           02 0 ~ 0.20         03 0 ~ 0.35           04 0 ~ 0.50         04 0 ~ 0.50           05 0 0 1         06 0 2           07 0 ~ 5         08 0 ~ 10           09 0 0 ~ 20         0 ~ 35           11 0 0 ~ 35         11 0 ~ 250           12 0 ~ 100         13 0 ~ 250           14 0 ~ 350         15 0 ~ 500           15 0 ~ 500         15 0 ~ 500           15 0 ~ 600         15 0 ~ 600           15 0 ~ 600         15 0 ~ 600           15 0 ~ 600         15 0 ~ 600           15 0 ~ 600         15 0 ~ 600           15 0 ~ 600         15 0 ~ 600           15 0 ~ 600         15 0 ~ 600           15 0 ~ 600         15 0 ~ 600           15 0 ~ 600         15 0 ~ 600           15 0 ~ 600         15 0 ~ 600           15 0 ~ 600         15 0 ~ 600           15 0 ~ 600         15 0 ~ 600           15 0 ~ 600         15 0 ~ 600           15 0 ~ 600         15 0 ~ 600           15 0 ~ 600         15 0 ~ 600           15 0 ~ 600         15 0 ~ 600				2						
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09						07				0~5
10						08				
11										
12 0 ~ 100 13 0 ~ 250 14 0 ~ 350 15 0 ~ 500  xx Other calibration ranges available on request  8. Unit  M Calibration in mmH2O  K Calibration in kgf/cm2  A Calibration in Mpa  B Calibration in bar  P Calibration in psi  X Other units available on request										
13										
14 0 ~ 350 15 0 ~ 500  xx Other calibration ranges available on request  8. Unit  M Calibration in mmH <sub>2</sub> O  K Calibration in kgf/cm2  A Calibration in Mpa  B Calibration in bar  P Calibration in psi  X Other units available on request										0 ~ 100
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XX Other calibration ranges available on request  8. Unit  M Calibration in mmH2O  K Calibration in kgf/cm2  A Calibration in Mpa  B Calibration in bar  P Calibration in psi  X Other units available on request						14				0 ~ 500
8. Unit  M										Other calibration ranges available on request
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A Calibration in Mpa B Calibration in bar P Calibration in psi X Other units available on request										Calibration in kgf/cm2
B Calibration in bar P Calibration in psi X Other units available on request										Calibration in Mpa
X Other units available on request							В			
							Р			Calibration in psi
							Χ			
9. Output signal / Electrical connection type									utput	signal / Electrical connection type
A1 4~20mA, DC, 2-wire output										
A2 4~20mA, DC, 4-wire output										4~20mA, DC, 4-wire output
B1 1~5V, DC, 3-wire output										1~5V, DC, 3-wire output  Output  Only evallable D106 and D107V
B2 0~5V, DC, 3-wire output (Only available P106 and P107) B3 0~10V, DC, 3-wire output (Only available P106 and P107)								B5 R5		0~3v, DC, 3-wire output (Only available P100 and P107)
10. Option								DS	10 (	
N None options									NI	None ontions
C Cooling Fin										
S Siphon tube										
X Other accessories available on request									X	Other accessories available on request