PDK Piezoresistive Differential Pressure Transmitter

Features

- Full stainless steel construction, compact size, easy installation;
- Using piezoresistive differential pressure sensor, 316L isolated diaphragm;
- Temperature compensation and aging, stable performance;
- Zero and span adjustable outside;
- Ex-proof version for PDK is also available, can be ordered basing on requirement;
- Ship-use product conforms to CCS Rules of Classification of Sea-going Steel Ships（2006）; ship-use certificate is approved;
- CE and ROHS certificates

Introduction

- PDK uses piezoresistive differential pressure sensor as sensing element. Silicon oil is filled in between die and two diaphragms, when measured differential pressure is added on two diaphragm, the pressure could be transferred onto die through silicon oil. Sensor die connects with amplifier circuit through wires, using semi-conductor's piezoresistive effect, transforming differential pressure signal into electric signal. The whole product is used for differential pressure measurement of petroleum, chemi-industry, power station and hydrology, etc.

Specification

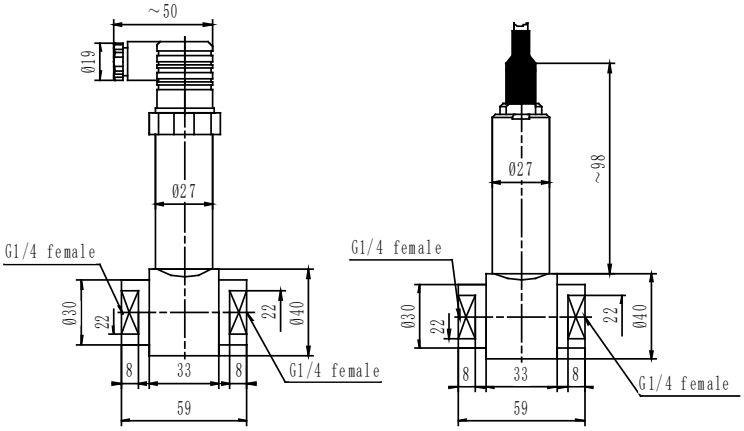
Range code	0A	02	03	07	08	09	10	12	13
Unit	kPa						MPa		
Measure range	0～35	0～70	0～100	0～200	0～350	0～700	0～1	0～2	0～3.5
+overpressure	70	150	200	400	700	1400	2.0	4.0	7.0
-overpressure	35	70	100	200	350	700	1.0	1.0	1.0
Max.static pressure	≤20MPa								

Specification

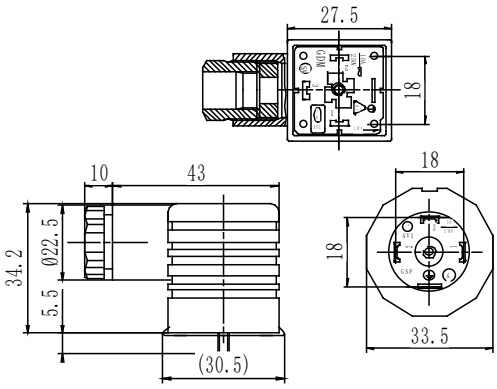
		Min.	Typ.	Max.	Unit
Accuracy	0～100kPa		0.25	0.5	%FS
	200～3500kPa		0.25	0.5	
Zero Thermal error	0～100kPa		0.75	1.25	±%FS , @25 ℃
	200～3500kPa		0.5	0.75	
FS Thermal error	0～100kPa		0.75	1.25	
	200～3500kPa		0.5	0.75	
Stability	≤200kPa		0.5		%FS/ year
	≤3500kPa		0.2		
Static pressure effect			0.05		±%FS, each 100kPa
Compensation temp.			0～50		℃
Operation temp.			-10～80		
Storage temp.			-40～120		

Electric Characteristic	Power supply: 2-wire 15～28VDC 3-wire 15～28VDC Output signal: 2-wire 4～20mADC 3-wire 0/1～5VDC，0～10/20mADC Electric connection: plug connection or Φ7.2mm 7-pin cable Response time (10%～90%): ≤1ms Insulation resistor: 100MΩ，50VDC
Construction Material	Housing: stainless steel 1Cr18Ni9Ti Diaphragm: stainless steel 316L O-ring: Viton Filled liquid: silicon oil Pressure port: G1/4 female
Environment Condition	Shock effect: ≤1% at 3gRMS, 30～2000Hz Impact: ≤1% at 100g, 10ms Media: liquid or gas which is compatible with construction material
Outline Construction	Unit: mm

Dimension



Plug Connection type　　Cable Connection



Plug Outline and Pin Arrangement

Electric Connection

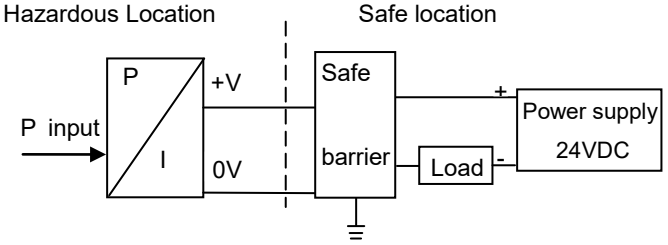
Plug Connection

Pin	2-wire	3-wire
1	（+V）	（+V）
2	（0V+/OUT ）	（+OUT ）
3	Null	（GND ）

Cable Connec

Wire color	2-wire	3-wire
Black	（+V）	（+V）
Red	（0V/+OUT ）	（+OUT ）
White	Null	（GND ）

Exia transmitter is used in explosive environment;intrinsic safe system shall be composed by transmitter and safe barrier in the electrical connection.Be sure the safe barrier and power supply instrument are applied in a safe area. Exia proof transmitter is used in Hazardous zones, be cautious it is grounded. Please see the following picture:



Transmitter explosion proof（≤35kPa）
Exia II BT6 Ga
Ui=28VDC　Ii=93mADC
Li≈0.1mH　Ci≈0.29μF　Pi=0.65W
Transmitter explosion proof （>35kPa）
Exia II CT6
Ui=28VDC　Ii=93mADC
Li≈0.1mH　Ci≈0.044μF　Pi=0.65W

Barrier explosion proof
Exia II C
Uo=28VDC　Io=93mADC　Po=0.65W

Barrier explosion proof
Exia II C
Uo=28VDC　Io=93mADC　Po=0.65W

PDK Series Ordering Code

		Code	Specification							
1.		PDK	Series							
			Pressure range: kPa or MPa							
2.			Code	Pressure range kPa	overpressure kPa +	overpressure kPa -	Code	Pressure range kPa/MPa	overpressure +	overpressure -
		X[0～X] kPa or MPa	0A	0～35	70	35	09	0～700 kPa	1400	700 kPa
			02	0～70	150	70	10	0～1 MPa	2	1 MPa
			03	0～100	250	100	11	0～2 Mpa	4	1 MPa
			07	0～200	400	200	13	0～3.5 Mpa	7	1 MPa
			08	0～350	700	350				
			Output signal							
3.		E	4～20mA DC							
		F	1～5V DC							
		J	0～5V DC							
		Q	0～10mA DC							
		U	0～20mA DC							
		V	0～10V DC							
			Construction material							
4.			Diaphragm		Pressure port		Housing			
		22	SS 316L		SS		SS			
		24	SS316L		SS316L		SS316L			
			Others							
5.		C1	G1/4 female (Standard process connection)							
Electrical Connector		B1	Plug connection							
		B2	Cable connection Default length: 1.5m							
Digital Display (Optional)		M3	3 1/2 LCD digital indicator (only 4～20mADC)							
		M4	3 1/2 LED digital indicator (only 4～20mADC)							
Others Optional		I	Intrinsic safe version Exia Ⅱ CT6 (＞35kPa) / Exia Ⅱ BT6G a (≦35kPa)							
		T	Ship-use							

Order Note:

1. We suggest to install tri-valve between the measured point and transmitter to protect the media adding on transmitter's positive and negative cavities slowly;
2. We suggest to make two pressure ports horizontally to reduce installation direction effect;
3. Please pay attention that the static pressure should be less than 20Mpa, transmitter positive and negative cavity should be in the rating pressure range;
4. Please note ex-proof, M3 or M4 options in the order if the user needs ;
5. Digital indicator information, please refer to MPM480 datasheet;
6. If the user has special requirement, please feel free to contact our company.