SP38D Monosilicon pressure sensor

I: Description

The core sensor is high precision monosilicon technology with SP38D, it can be built-in static pressure and temperature compensation, which maximum improves the static pressure and temperature performance of the sensor. With high overload and high static pressure, high static pressure up to 40MPa. SP38D is suitable for all kinds of harsh environment, the working temperature is -40~85°C.

SP38D monosilicon pressure sensor is widely used in process control, environmental control, flow control, hydraulic and pneumatic equipment, servo valve and transmission, chemical products and chemical industry as well as medical instrument and so on.

- Accurate filling fluid technology
- Dual diaphragm overload structure
- High long term stability <±0.05%F.S./year
- Very low pressure and temperature hysteresis
- Optional for built-in static sensor, temperature sensor
- Optional for multiple isolation diaphragm material, widely meet the anti-aggressive requirements
- Compact design, easy encapsulation

II: Technical specifications:

Pressure range and Static Pressure

Type	Range	Code	One side overload pressure	Static pressure
SP38D	-3-3kPa	302	0.3MPa	7MPa
SP38D	-6-6kPa	602	16MPa	25MPa
SP38D	-40-40kPa	403	16MPa	40MPa
SP38D	-250-250kPa	254	16MPa	40MPa
SP38D	-0.5-1MPa	105	16MPa	40MPa

Technical specifications	
Power supply	5V (typ) ,12V (max)
Working temperature	-40℃ ~ +85℃
Storage temperature	-50℃ ~+125℃
Output voltage	60~140mV (3kPa:50~120mV)
Temperature Effect On Zero	± 0.05% F.S./℃
Temperature Effect On Span	-0.2 ± 0.05% F.S./℃
Temperature hysteresis	< ± 0.1% F.S. (10kPa ≤ Nominal value ≤ 10MPa)
	± 0.5%F.S. (Nominal value < 10kPa)
Pressure hysteresis	< ± 0.05% F.S.
Long term drift	< ± 0.05% F.S./year
Linearity error[1,2]	< ± 0.3% F.S. (10kPa ≤ Nominal value ≤ 10MPa)
	< ± 1.3%F.S. (Nominal value < 10kPa)
Static pressure affect	< ± 0.1% /10MPa (10kPa ≤ Nominal value ≤ 10MPa)
	< ± 0.15%/10MPa (Nominal value < 10kPa)
Diaphragm material	316L/ hastelloy C
Mechanical connection for housing	M27×2(M), 2 3/16-16 UNS, M56×1.5 (M)

Note:

1)End point straight line setting

2)Pressure applied onto the H side of the sensor

III:Wiring diaphragm and Dimensions

Wiring diagram

Wiring color	Definition	
	Figure 1	Figure2
Black	V+	V+
Yellow	T	T
Red	S+	S+
Blue	S−	S−
White	V−	V−

Figure 1

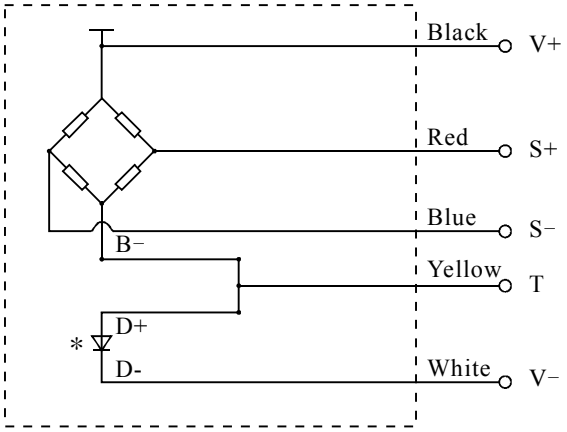
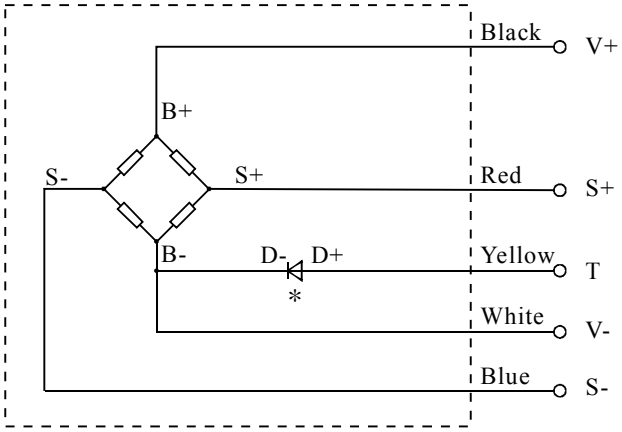
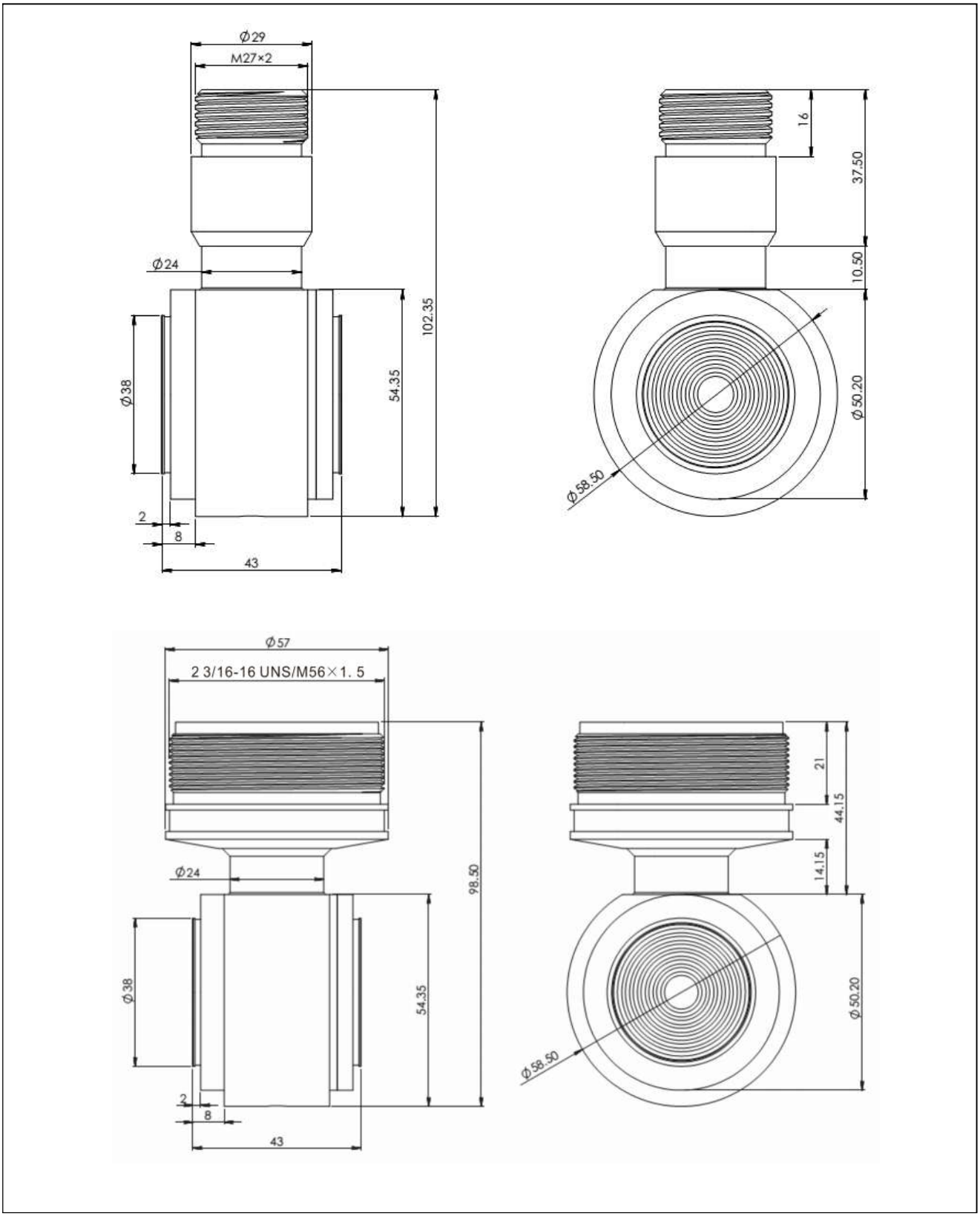


Figure 2



IV: Dimension (mm)



V:Selection table

Item	Code	Description
Model	SP38D	Monosilicon pressure sensor
Seperator	-	**Following detail specifications**
Structure	S	Standard
Pressure range	302	3kPa(one side overload pressure：0.3MPa，static pressure：7MPa)
	602	6kPa (one side overload pressure：16MPa，static pressure：25MPa)
	403	40kPa (one side overload pressure：16MPa，static pressure：40MPa)
	254	250kPa (one side overload pressure：16MPa，static pressure：40MPa)
	105	1MPa (one side overload pressure：16MPa，static pressure：40MPa)
Pressure type	D	Differential
	G	Gauge
	A	Absolute (40kPa-1MPa)
Diaphragm material	S	SUS316L
	H	Hastelloy C
Fill fluid	D	Silicon oil (-45~205℃)
	F	Fluorocarbon oil(-20~120℃)
Mechanical connection for housing	2	M27×2(M), SUS304
	4	M56×1.5(M),SUS304
	5	2 3/16-16 UNS, SUS304
Sensor seal	F	FKM
Wiring	W1	Figure 1 (wiring diagram)
	W2	Figure 2 (wiring diagram)
Example	SP38D-S602DSD2FW1	