



General Type Isolation-Film Pressure Sensor

(Model No. WPAK69)

Manual Version: 1.0

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Zhengzhou Winsen Electronics Technology CO., LTD

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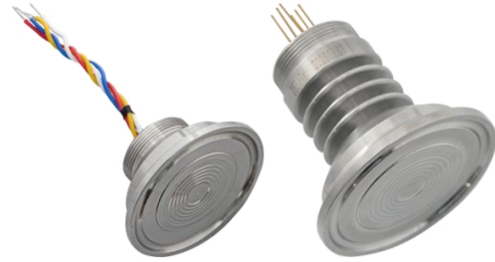
Please keep the manual properly, in case you need help during the usage in the future.

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WPAK69 General Type Isolation-Film Pressure Sensor

Product Description

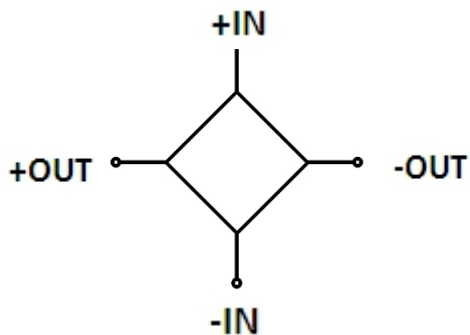
WPAK69 is clamp type pressure sensor with one-stage silicon oil filling technology. Pressure to the diaphragm is transmitted to the pressure chip through silicon oil, and the compensation circuit corrects the pressure signal to a linear electrical signal. The exposed stressed diaphragm on the end face of the clamp directly feels the pressure, which can prevent scaling, unsanitary, viscous pressure blockage and other problems. It is widely used in food, medicine, wine and other hygienic industries and in occasions where the measuring medium may scale.



Picture 1: Sensor

Equivalent circuit diagram

Four wire (Compensation)



Technical parameters

Detection range	-100kPa~0~10kPa...10MPa	
Pressure Reference	Gauge Pressure/Absolute Pressure/Sealed Gauge Pressure	
Power supply	1.5mA	Can be customized
input resistance	Constant current: 2kΩ~5KΩ; Constant Voltage : 3kΩ~18kΩ	
Electrical Connection	Pin or Wiring	
Compensation Temperature	0℃~60℃、-10℃~70℃	≤35kPa: 0℃~60℃, >35kPa: -10℃~70℃
Working Temperature	-40℃~120℃	
Storage Temperature	-40℃~125℃	
Insulation resistance	≥200MΩ/250VDC	
Response Time	≤1ms	Up to 90%FS
Measuring Medium	Liquid and Gas	
Mechanical vibration	20g (20~5000HZ)	
Shock Resistance	100g (10ms)	
Lifespan	10×10 ⁶ (Pressure Cycle)	

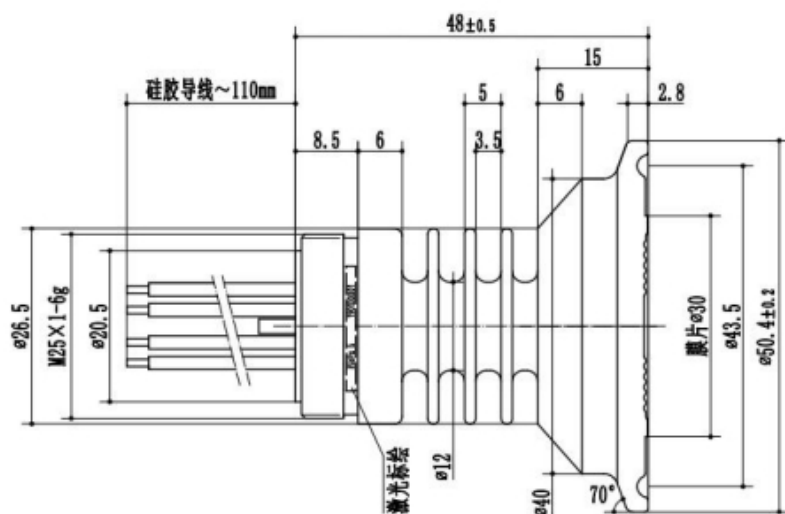
Structural Performance Index	
Diaphragm material	316L
Housing Material	316L
Infused Liquid	Silicone oil
Oil	MCT(Medium chain triglycerides)

Basic Parameter Index						
Item	Condition	Min	Special	Max	Unit	Remarks
Non-linear		-0.3	± 0.25	0.3	%FS	Note(1)
Hysteresis		-0.05	± 0.03	0.05	%FS	
Repeatability		-0.05	± 0.03	0.05	%FS	
Zero Point Output		-2	± 1	2	mV	
Full-Range Output	1.5mA ,10kPa	20			mV	
	1.5mA,other range	50	90	150		
Zero Point Temperature Drift	10kPa	-2	± 1.5	2	%FS	Note(2)
	Other Detection Range	-1.5	± 0.75	1.5		
Sensitivity Drift		-1.5	± 0.75	1.5	%FS	Note(2)
Heat Hysteresis		-0.075	± 0.05	0.075	%FS	Note(3)
Stability		-0.3	± 0.2	0.3	%FS/Year	

Notes:

- (1) Based on BFSL least square method.
- (2) In temperature r compensation ange, $0^{\circ}\text{C} \sim 60$ and $-10^{\circ}\text{C} \sim 70^{\circ}\text{C}$ is refer to 30°C ; $-20^{\circ}\text{C} \sim 85^{\circ}\text{C}$ is refer to 32.5°C .
- (3) After high and low temperature, return to the reference temperature.

Dimension& Electrical Connection



Detection Ranges

Detection Range					
Range Code	Pressure Type	Detection Range	Overload Pressure	Burst pressure	O-ring
10k	G	0~10kPa	300% FS	600% FS	NBR
20k	G	0~20kPa	300% FS	600% FS	NBR
35k	G、A	0~35kPa	300% FS	600% FS	NBR
70k	G	0~70kPa	300% FS	600% FS	NBR
100k	G、A	0~100kPa	200% FS	500% FS	NBR
160k	G、A	0~160kPa	200% FS	500% FS	NBR
250k	G、A	0~250kPa	200% FS	500% FS	NBR
500k	G、A	0~500kPa	200% FS	500% FS	NBR
1M	G、A、S	0~1MPa	200% FS	500% FS	NBR
1.6M	G、A、S	0~1.6MPa	200% FS	500% FS	NBR
2.5M	G、A、S	0~2.5MPa	200% FS	500% FS	NBR
4M	S	0~4MPa	200% FS	400% FS	NBR
6M	S	0~6MPa	200% FS	400% FS	FKM
10M	S	0~10MPa	200% FS	400% FS	FKM

Cautions

- The detection range should be within $\pm 30\%$ FS for over range or down range application,.
- The pressure types includes gauge pressure, absolute pressure and sealing pressure.
- Please confirm the system's max overload. The maximum overload of the system should be less than the overload protection limit of the sensor, otherwise it may reduce the lifespan or bring damage to the core .
- Do not touch the diaphragm with any hard objects, it may break the diaphragm.
- The material and manufacturing process of the negative pressure core are different from the positive pressure core, the gauge pressure core cannot be used to replace the negative pressure core.
- Please carefully read the manual before installation, to avoid damage to the product caused by wrong installation.

- Incorrect may cause danger and personal injury.
- When pulling out the core from the shell, do not pull the wire and pin.