WPAK64 Mini-Size Diffused Silicon Pressure Sensor

(Model No. WPAK64)

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WPAK64 Mini-Size Diffused Silicon Pressure Sensor

Product Description

WPAK64 series is a pressure core encapsulated by high precision imported diffused silicon pressure sensitive chip and mature manufacturing technology. It is the core component for manufacturing pressure sensor and pressure transmitter.As a high performance pressure sensitive element, it can be easily amplified signal and integrated to a transmitter with standard signal output.

WINSEN Elec can undertake special customization according to the needs of users, such as full welded structure, wide temperature compensation, customized shape, high reliability, strong impact and vibration resistance pressure sensors, to provide reliable solutions for a variety of applications.

Picture 1：Sensor

Main features：

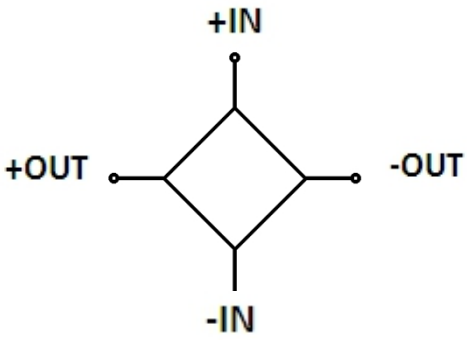
- All stainless steel 316L package, anti-erosion
- wide temperature compensation-10~+70℃
- Constant current and constant voltage excitation are optional
- Normalized output available
- Glue-filled and moisture-proof circuit board

Application:

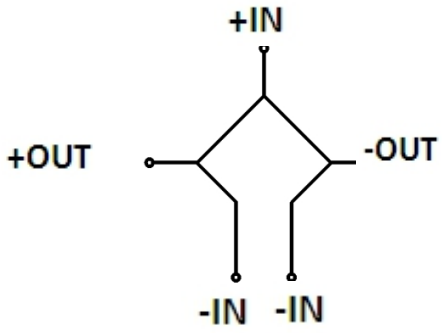
- Process control system
- Pressure calibration instrument
- Hydraulic system
- Biomedical instruments
- Hydraulic system and valve
- Liquid level measurement
- Military equipment
- Refrigeration equipment and HAVC system
- Ships and navigation
- Aircraft and Avionics Systems

Equivalent circuit diagram

（1）Four wire（Compensation）



（2）Five wire（Uncompensated）



Technical parameters

Detection range	-100kPa～0～10kPa…25MPa	
Pressure Reference	Gauge Pressure/Absolute Pressure/Sealed Gauge Pressure	
Power supply	1.5mA or 10V	
input resistance	Constant current：2kΩ～5KΩ；	
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
Seal Ring	NBR

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		
	10V,10kPa	30				
	10V,other range	60	100	110		
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	

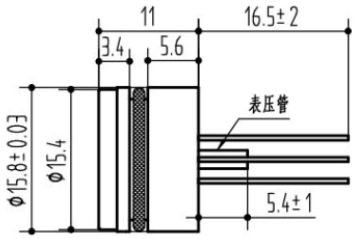
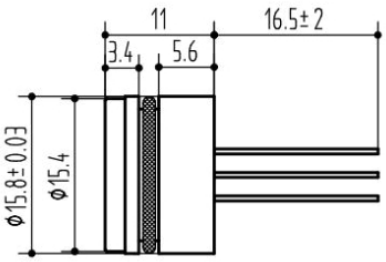
Notes:

(1) Based on BFSL least square method.

(2) In temperature r compensation ange,0℃～60 and -10℃～70℃ is refer to 30℃;-20℃～85℃ is refer to 32.5℃.

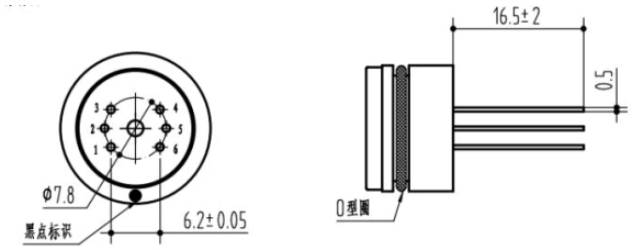
(3) After high and low temperature, return to the reference temperature.

Dimension

Gauge Pressure 10kPa～3MPa	Absolute pressure &Sealing Pressure 100kPa～25MPa
	

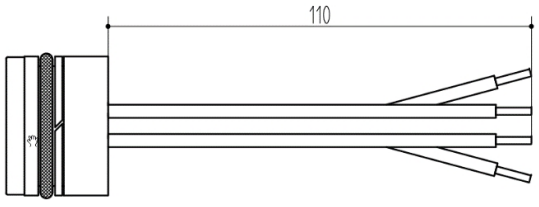
Electrical Connection (Unit :mm)

6-Pin Lead-out



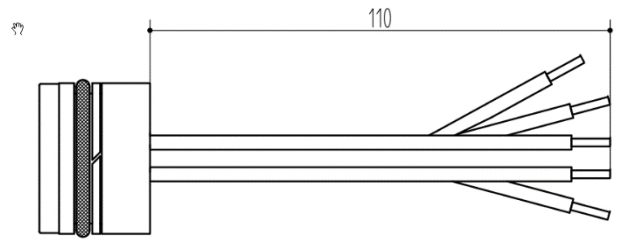
Pin	Definition
3	Power Positive(IN+)
5	NC
2	Output Positive(OUT+)
4	Output Negative(OUT-)
1	Power Negative(IN-)
6	Power Negative(IN-)

4-Line Lead-out



Line Colour	Definition
Red	Power Positive(IN+)
Black	Power Negative(IN-)
Yellow	Output Positive(OUT+)
White	Output Negative(OUT-)

5-Line Lead-out



Line Color	Definition
Red	Power Positive(IN+)
Black	Power Negative(IN-)
Black	Power Negative(IN-)
Yellow	Output Positive(OUT+)
White	Output Negative(OUT-)

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	NBR
10M	S	0～10MPa	200％FS	400％FS	NBR
16M	S	0～16MPa	200％FS	400％FS	NBR
25M	S	0～25MPa	150％FS	400％FS	NBR

Cautions

■ The detection range should be within ± 30% FS for over range or down range application,.

■The pressure types includs 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.

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