



KE-25

Micro Pore Water Pressure
Sensor or Transducer/User Manual

Beijing Keanley Technology Co.,Ltd



Introduction

To necessarily measure the pressure in situ due to the requirements for the measured flow field and placement position, and to reproduce the variation pattern of the pulsating flow field without interfering with the flow field state, there are always strict requirements for the miniaturization of the external dimensions of the sensor. The KE-25 micro pore water pressure sensor and transducer are designed for the above working conditions. This series of products, with ceramic filters and stainless steel structures, adopt micro machined silicon membranes core components and high-precision integrated electronic components, using advanced international miniaturization production and packaging technologies. The sensor chip and circuit board are exquisitely and ingeniously packaged, with small volume, compact structure, light weight, which are sturdy and durable, and have excellent measurement accuracy, reliability, stability, and dynamic and static characteristics. This series of products is particularly suitable for various model tests and on-site applications such as geotechnical simulation, centrifuge simulation, landslide and debris flow experiments, slope experiments, dam monitoring, blasting experiments, etc. They have been widely used in many model tests and on-site application fields such as civil engineering, geomechanics, earthquake monitoring, etc.



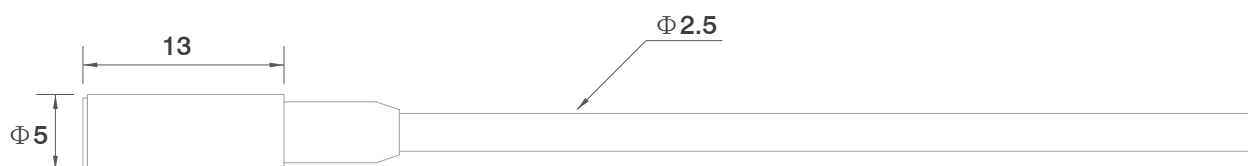
KE-25 connection

Features

- Wide measuring range: any measuring range from -100KPa to 100MPa;
- High precision: up to 0.1% FS;
- Small volume: the minimum diameter is 2.54mm and the length is 3.77mm;
- Temperature range: from low temperature -40 °C to high temperature 120 °C (special up to +175 °C);
- High frequency response: dynamic sensor with high frequency response and fast response, natural frequency of 20KHz~2MHz;
- Strong adaptability: good long-term stability, resistant to various harsh environments;
- Customizable: measuring range size, appearance and dimension, performance parameters, accuracy grade, output type, cable length and other parameters can all be customized.

Dimensions (customizable)

Unit: mm



Performance parameter

Measuring range	Any measuring range between -100Kpa and 100MPa can be customized
Overload capacity	1.2, 1.5, 2, 3, and 5 times full range (the strength of overload capacity is determined by the size of the measuring range)
Pressure type	Gauge pressure or absolute pressure
Measuring media	Gas or liquid compatible with 316 stainless steel
Comprehensive accuracy	$\pm 0.1\%FS$, $\pm 0.2\%FS$, $\pm 0.3\%FS$
Long-term stability	Typical: $\pm 0.1\% FS/year$, Maximum: $\pm 0.2\% FS/year$
Natural frequency	20KHZ~2MHZ, The frequency response is related to the measuring range size
Working temperature	Generally: $-40\text{ }^{\circ}\text{C} \sim 85\text{ }^{\circ}\text{C}$, Special: $-40\text{ }^{\circ}\text{C} \sim 125\text{ }^{\circ}\text{C}$
Zero temperature drift	Typical: $\pm 0.02\%FS/^{\circ}\text{C}$, Maximum: $\pm 0.05\%FS/^{\circ}\text{C}$
Sensitivity temperature drift	Typical: $\pm 0.02\%FS/^{\circ}\text{C}$, Maximum: $\pm 0.05\%FS/^{\circ}\text{C}$
Power supply range	12~32VDC (generally 24VDC) , $\pm 15\text{VDC}$ Dual power supply, customizable power supply voltage
Signal output	mV, 4~20mA Dual power supply, zero power supply, customizable power supply voltage of ~5VDC, 1-5VDC, -5-5VDC, RS485, can be specially customized
Insulation resistance	$\geq 1000M\Omega$ (at 100VDC)
Housing protection	The sensor and cable are waterproof as a whole, with a protection grade of IP68
Resolution	Infinitesimal (theoretically), 1/100000 (generally)
Interface and housing	Stainless steel 1Cr18Ni9Ti



Model selection

KE-25											KE-25 micro pore water pressure sensor or transducer																																																																																							
		Code		Pressure type																																																																																														
		g		Gauge pressure																																																																																														
		a		Absolute pressure																																																																																														
		Measuring range		Any measuring range from -100KPa to 100MPa can be chosen																																																																																														
		Code		Cable length																																																																																														
		L1		Standard 3m																																																																																														
		L2		Customized length																																																																																														
		Code		Comprehensive accuracy (linearity + repeatability + hysteresis)																																																																																														
		1		±0.3%FS																																																																																														
		2		±0.2%FS																																																																																														
		3		±0.1%FS																																																																																														
		Code		Signal output																																																																																														
		A1		4~20mA																																																																																														
		V1		mV output																																																																																														
		V2		0~5V																																																																																														
		RS		RS485																																																																																														
		V0		Special customization																																																																																														
		Code		Probe shape																																																																																														
		F1		M8*1 external thread																																																																																														
		F2		M5*1 external thread																																																																																														
		F3		Φ 5 input type																																																																																														
		F4		Φ 8 input type																																																																																														
		F0		Customized housing																																																																																														
		Code		Cable type																																																																																														
		W1		Φ Cable with leather sheath																																																																																														
		W2		Φ Cable without leather sheath																																																																																														
		W0		Customized cable																																																																																														
KE-25											-											g-											0~50Kpa											- L1											- 2											V2											F3											W1										