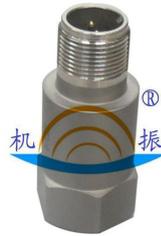




上海测振自动化仪器有限公司

SHANG HAI CE ZHEN AUTOMATION INSTRUMENT CO.,LTD

Model: YD30 Accelerometer



Brief Introduction

YD30 Accelerometer is an integrated transducer that processing acceleration sensitive elements on a polycrystalline silicon by micro-machine with conversion, measurement and amplifier circuit. It can measure the acceleration of direct current that up to 2.5KHz within $\pm 1g \sim \pm 18g$. It has excellent stability, reliability and strong anti-jamming capability. As the common acceleration transducer need to calibrate on the standard vibration table, brings lots of inconvenience to the users. YD30 Accelerometer is much better than that. With the use of advanced microelectronic processing technology and capacitance measuring principle, it can obtain excellent low frequency responses, adjust the transducer by gravity acceleration g. Its built-in self-checking system can easily check itself normal or not.

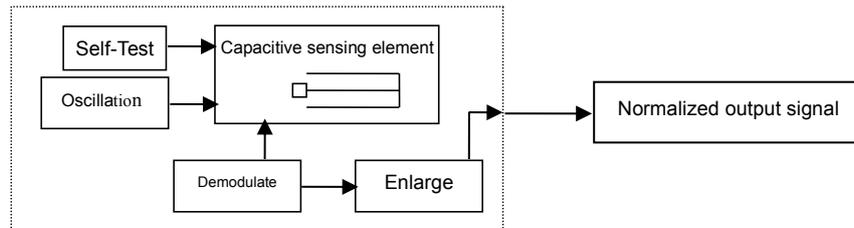
Range of Application

- 1. Equipment vibration measurement:** YD30 Accelerometer is widely used in various industries equipment working condition monitoring. The vibration value when the device is running is an important index for measuring the equipment running normal or not. YD30 Accelerometer can measure the vibration value from direct current to 2KHz, the output signal will give an accurate visual instructions for equipment's amplitude by filtering and detection.
- 2. Impact measurement:** Widely used in automobile airbag and seat belts system. YD30 Accelerometer will be impact when a crash happens, then it will output a pulse signal that in proportion to the impact acceleration within 1 ms, when the impact acceleration reaches a certain value, the signal will make the airbag outbreak or lock the seat belt to protect the people in the automobile.
- 3. Dip Angle measurement:** When accelerometer is placed gradient, the output value of

accelerometer is the component of gravity acceleration on the accelerometer gauging spindle, it means there is anti-sine functional relation between output and slant angle, when the slant angle is small, it is linear relationship approximately.

Working Principle

YD30 Accelerometer is based on capacitive measurement principle to measure acceleration. Its output signal is proportional to the acceleration. The diagram is as follow:



Micromachining on a silicon chip

Technique Data

Measuring range: 20mV/g.....3V/g (customized)

Non linearity: 0.2% FS

Frequency response: 0 ~ 2 kHz (-3 dB)

Temperature drift: $\leq 0.01\% / ^\circ\text{C}$ (-20~+125 $^\circ\text{C}$)

Power supply: +24 V (2~10 mA constant current)

Maximum impact tolerable: 10000g

Output: 0~5 V

Output signal:AC:0~5V

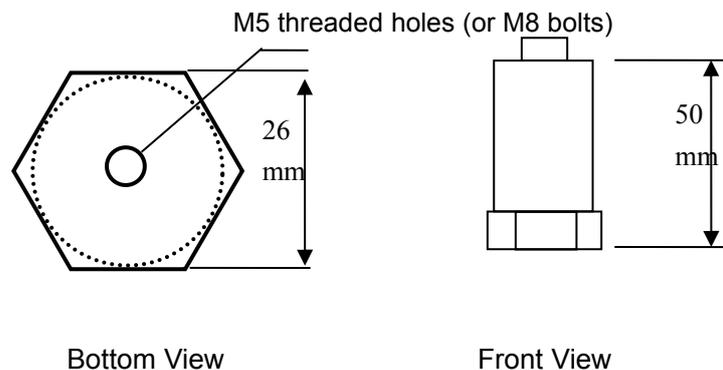
Working temperature:-20~+80 $^\circ\text{C}$

IP Grade:Ip64

Shell material:stainless steel or other material you like

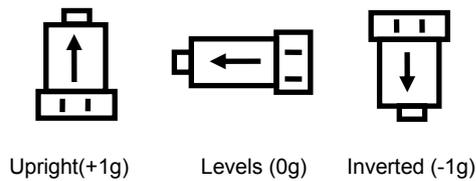
Installation Method

Fasten it on the device by bolt.



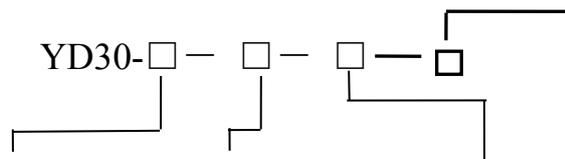
Calibration Method

There is no secondary calibration for YD30 Accelerometer under normal circumstances. If it is necessary, measure the actual sensitivity by gravitational acceleration g, adjust it by the second instrument. For example, the measure range for one accelerometer is $\pm 2g$, standard sensitivity is 1V/g, make it perpendicular to the horizontal plane, the output direct current voltage is 2.5V and put it on level, the output direct current voltage is 1.55V, then the actual sensitivity of the accelerometer is $(2.5-1.55)V/g$.



Schematic calibration

Type Selection



Lead way:
 00(K):Directly lead. "K" means armored
 01: Aviation plug

Sensitivity		Thread	Cable length	
100	100mV/g	M5	01	1M
200	200mV/g	M8	02	2M
		M8*1	03	3M
	
			10	10M

Selection sample: YD30-100-M8-02-00
 Means: YD30 Accelerometer sensitivity 100mv/g, Thread :M8
 2m Directly Lead