Accelerometer Users' Manual

➢ Description：

Accelerometers is a case-mounted seismic sensor in general purpose. It is a piezoelectric sensor fixed in hot molded body. This structure makes the accelerometers extremely durable, well-suited for harsh industrial environments. Two-pin screw-type connector on top of sensor allows easy disassembly of the sensor cable. Bottom of the sensor has a M6 threaded female connector, allowing a variety of installation methods.

➢ Principle of Operation:

IEPE are piezoelectric sensors with built-in electronics. In them, a semiconductor circuit converts the high impedance signal from the piezoelectric sensor into a low impedance voltage signal that is easier to transmit.

➢ Specifications：

Sensitivity: 100mV/9.8m/s2 (100mV/g REF.) ~ ±5% at 100Hz, and 25°C
Acceleration Range: 490m/s2 (50g REF.)pk
Vibration Limit: 4,900m/s2 (500g REF.)pk
Shock Limit: 9,800m/s2 (1,000g REF.)pk
Amplitude Nonlinearity: 1.0%
Max. Shock Energy: 4J (intrinsically safe)
Natural Frequency: 30kHz
Frequency Response: 2 to 5,000Hz±10%, 1 to 10,000Hz±3dB
Transvers Sensitivity: Max. 5%
Output Impedance: 100Ω(typical)
Power Supply: 20 to 25.5VDC, 2 to 10mA (intrinsically safe)
Grounding Case isolated, internally shielded
Temperature Response :Within ±10% (Around the operating temperature range)
Range of Temperature at: Explosion Proof
Protection Rating: IP67 Sealing Hermetic
Broadband Electrical Noise：Less than 0.147m/s2 (0.015g) rms
Electrical Isolation (Pin to Case)：600Vrms
Mounting Torque：2.8N • m (25in-lb)
Weight：71g (2.5oz)
Housing Material：304 series stainless steel
Electric connector: direct lead
Environmental indicators：Operating and Storage Temperature：-50 ℃ to +120 ℃
Relative humidity：100% relative humidity, non-flooding
Shock Survivability：When a fall from 3 feet to compete polyethylene based film covering on the floor, the sensitivity variation is less than 5%

➢ Installation

STEP 1: First, prepare a smooth, flat mounting surface and then drill and tap a mounting hole

in the center of this area

STEP 2: Wipe clean the mounting surface and spread on a light film of grease, oil, or similar coupling fluid prior to installation.

Adding a coupling fluid improves vibration transmissibility by filling small voids in the mounting surface and increasing the mounting stiffness

STEP 3: Hand-tighten the sensor/mounting stud to the machine, then secure the sensor with a torque wrench to the mounting surface by applying the recommended mounting torque.

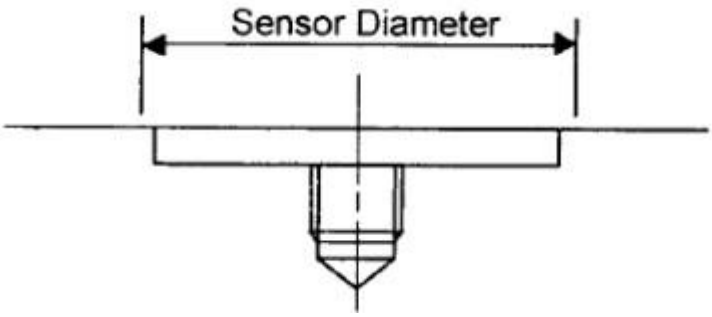

Figure 1 Screw mounting diagram

➢ Wiring Method

Connections to the sensor require two leads: one for the power and signal, and the other for the common and signal return. Often, coaxial cables are used

since only two conductors are needed. With coaxial cables, however, erroneous signals can be introduced into sensor systems through ground loops, electromagnetic interference, or radio frequency interference (EMI or RFI). To avoid ground loops, there should only be one ground in the system.

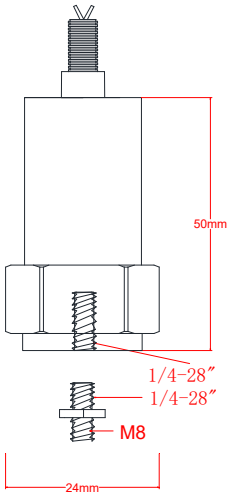

Figure 2 Sensor Dimensions

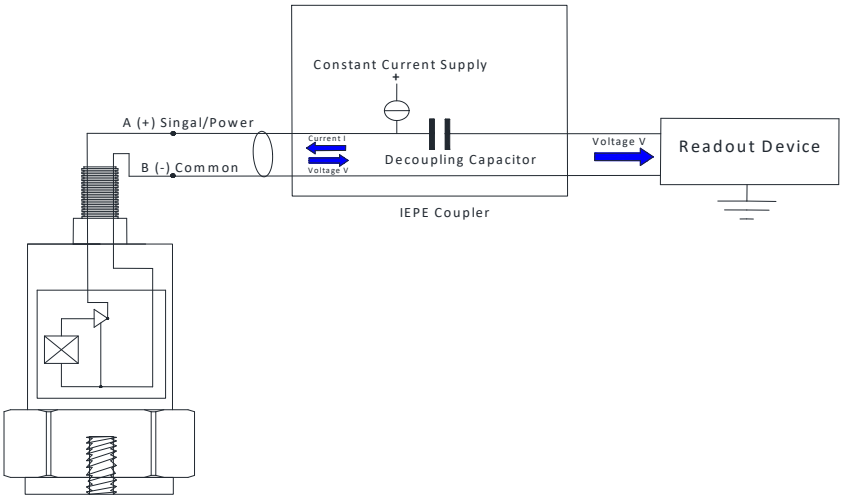

Figure 3 Sensor principle and wiring diagram