# 730AM1

## Miniature tri-axial IEPE accelerometer

## Description

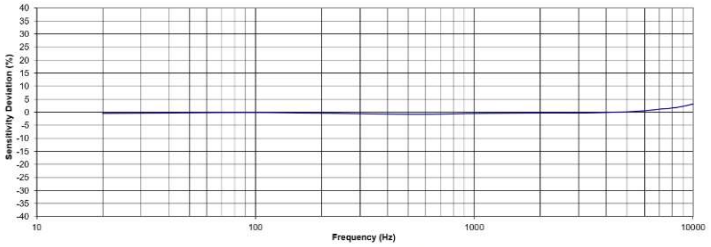
Model 730AM1 is an IEPE tri-axial accelerometer designed for miniature applications. The accelerometer uses shear piezo electronical element which provides a wide operating frequency range. The IEPE sensor combines outstanding crystals and low noise integral microelectronics to achieve very low sensitivity variation over the operating temperature range, compared to other sensing element designs. The shear element technology also ensures high immunity to base strain errors. The accelerometer uses a welded titanium construction for low mass and a light weight 4 pin connector, or integral cable assembly for lower mass and wider frequency operation. Excellent frequency response, both low and high frequency, provide the user with a tri-axial accelerometer ideally suited for structural and component testing, modal analysis and general laboratory vibration work. The miniature cube size of this accelerometer enables the test engineer or technician to measure the accelerations of three orthogonal axes of vibration simultaneously on lightweight structures. All variations provide reliable measurements and long-term stability.

## Features

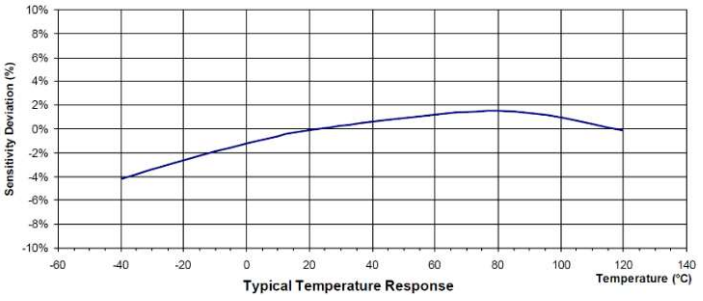
- Extended bandwidth
- Flexible cable exit
- Adhesive or screw mounting
- Hermetic sealed
- Annular shear mode
- Wide frequency response
- Mounting ground isolated

## Application

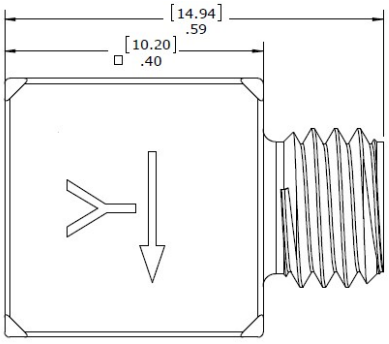
- Aircraft testing
- Shock testing
- Road testing
- Modal analysis

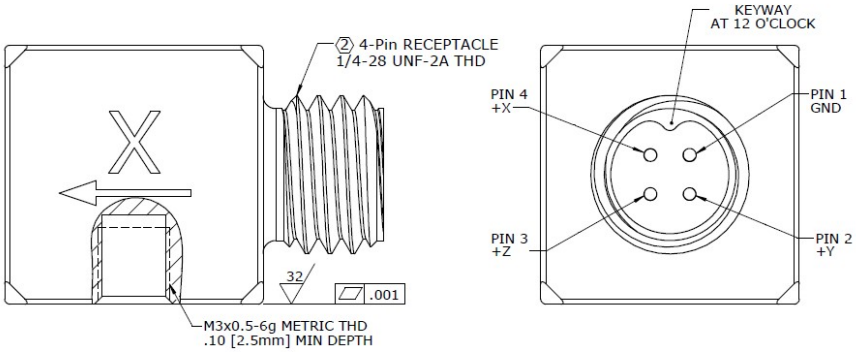



Typical Frequency Response




Typical Temperature Response



## Specification

Typical at +24°C (+75°F), 24Vdc, 4 mA and 100Hz, unless otherwise stated.

| Measurement range | ±50 | ±100 | ±200 | ±500 | g |
|---|---|---|---|---|---|
| Sensitivity, ±15% | 100 | 50 | 25 | 10 | mV/g |
| Frequency response, ±5% | 0.5~10000 | 0.5~10000 | 0.5~10000 | 0.5~10000 | Hz |
| Frequency response, ±10% | 0.3~12000 | 0.3~12000 | 0.3~12000 | 0.3~12000 | Hz |
| Resonant frequency | 42 | 42 | 42 | 42 | kHz |
| Transverse sensitivity | <5 | <5 | <5 | <5 | % |
| Temperature response | ±10 | ±10 | ±10 | ±10 | % |
| Non-linearity | ±1 | ±1 | ±1 | ±1 | %FSO |
| Residual noise (2 Hz to 20 KHz) | 0.0016 | 0.002 | 0.002 | 0.002 | Equiv. g RMS |
| Operating & storage temperature | -55 to +85°C | -55 to +85°C | -55 to +85°C | -55 to +85°C | °C |
| Shock limit | 5000 | 5000 | 5000 | 5000 | g |

| Parameters | Value | Units |
|---|---|---|
| Bias voltage (room temperature) | 8 to 12 | Vdc |
| Bias voltage (operating temperature) | 6 to 13 | Vdc |
| Output impedance | <100 | Ω |
| Full scale output voltage | ±5 | V |
| Insulation resistance (@100Vdc) | >100 | MΩ |
| Supply (compliance) voltage | 18 to 30 | Vdc |
| Supply current | 2 to 10 | mA |
| Humidity | Hermetically sealed | |
| Case material | Titanium alloy | |
| Sensing element | Piezo ceramic | |
| Weight | 4.1 | Grams |
| Mounting torque | 16 (1.8) | lb-in (N-m) |

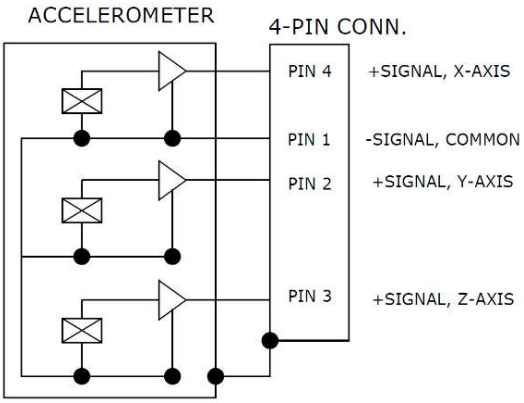
## Accessories

Calibration certificate included.

| Part Number | Description | Availability |
|---|---|---|
| PM0117 | M3X8.0 cup point set screw | Included |
| 13M4-3 | 3 meter mating cable with 4 pins mating connector to 3X BNC(male) connector | Optional |
| MB0028 | Adhesive mounting adapter | Optional |
| MB0006 | Magnet mounting adapter(base ground) | Optional |
| MB0018 | Magnet mounting adapter(isolated) | Optional |
| IN-03 | 3 channels IEPE signal conditioner | Optional |
| IN-91 | Portable vibration analyzer | Optional |
| IN-3062 | 8 channels data acquisition system | Optional |

## Measurement configuration

| Sensor | Mating cable | Signal conditioner | BNC cable | Data acquisition | Computer |
|---|---|---|---|---|---|
|  |  |  |  |  |  |




## Ordering information

| **730** | **AM1** | **-** | **50** |
|---|---|---|---|
| **Model** | Output signal | - | Range |
| **730** | A=IEPE output<br>M1=Extended frequency range | - | 50=50g<br>100=100g<br>200=200g<br>500=500g |