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|  Member of GHM GROUP | PRODUCT TECHNICAL SPECIFICATION | |
| | HD2030MSP | |
| | Rev.: 0.1 | Date: 20/11/2017 |

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| Title: TECHNICAL SPECIFICATION OF A SEAT ACCELEROMETER FOR THE MEASUREMENT OF WHOLE-BODY TRANSMITTED VIBRATIONS IN PASSENGER AND WORK VEHICLES | |
| Catalogue code: HD2030MSP | Family: Accelerometers |

Description



HD2030MSP is a low profile seat pad accelerometer suitable for the measurement of vibrations transmitted by seats to the occupants of passenger and work vehicles. The mechanical design is compliant with the requirements of ISO 10326-1. The seat pad consist of a thin circular rubber pad housing a low profile tri-axial accelerometer. The accelerometer is suitable for the measurement of human exposure to whole-body vibrations, according to ISO 2631, ISO 10326-1, ISO 7096 and ISO 8041. The transducer is based on MEMS technology and the electrical interface is IEPE/ICP compatible for reliable signal transmission.

The device measures the acceleration imparted to the body in three orthogonal axes with a sensitivity of 100 mV/(m/s²) nominally. The triaxial accelerometer HDWBV-100, mounted at the center of the rubber pad HD2030PAD, contains the MEMS and the IEPE electronics within an anodized aluminum housing. The accelerometer is provided with a threaded hole, suitable for sensor calibration, and a 4-pin M5 connector compatible with HD2030.CAB3B cables.

Reference markets are:

- **Control of vibration risk at work for drivers of passenger and work vehicles**
- **Measurement of vibrations in the automotive industry**
- **Laboratory measurements**

Technical specifications

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| MODEL | HD2030MSP |
| Sensing element | MEMS |
| Number of axis | 3 |
| PERFORMANCE | |
| Sensitivity @ 15.915 Hz | 100 mV/(m/s ²) |
| Range F.S. (@24V supply voltage) | ± 50 (m/s ²) |
| Frequency response (f3dB) | 0.2 Hz ÷ 700 Hz |
| Frequency response (f10%) | 0.4 Hz ÷ 350 Hz |
| Frequency response (f5%) | 0.6 Hz ÷ 230 Hz |
| Resonant frequency (MEMS transducer) | > 5 kHz |
| Linearity error (FSO) | ± 0.5 % |
| Transverse sensitivity | < 5% |
| Residual noise 0.4 Hz ÷ 100 Hz | 10 mm/s ² |
| ELECTRICAL | |
| Output | IEPE |
| Compliance (supply) voltage range | +18 to +28 V |
| Constant current supply | 2 mA ÷ 4 mA |
| Output bias voltage | 13.0 V ÷ 15.0 V |
| Output impedance | <100 ohm |
| Ground isolation | Case grounded |
| ENVIRONMENTAL | |
| Shock limit | 1000 G |
| Operating temperature range | -20°C ÷ 60°C |
| Temperature coefficient | 0.01 %/°C |
| Protection rating | IP65 |
| PHYSICAL | |
| Weight | 250 g |
| Size | 250 mm diameter, 12mm height |
| Connector | 4-pin M5 |
| Material | Anodized aluminum accelerometer inserted in a rubber pad |