

IEPE-type accelerometers

These sensors are suited for measurement of absolute machine vibrations in industrial environments. Due to the very low cutoff frequency, they are particularly suitable for very slowly rotating machinery components such as the main bearings of a wind turbine.



Left to right: sensor with MIL connector, with M12 connector, with 2-pin MIL connector

Features

- Voltage output according to IEPE standard
- $f_{\min.}$: 0,1 Hz – ideal for machines running at low speeds
- Two connector types: M12 or MIL
- IP 67 when cable connector is locked
- Permanent installation on the machine
- High temperature version, $T_{\max.}$: 150°C

Ordering information

Item No.	Reference	Description
5149576	VIB 6.172	Accelerometer (IEPE) with MIL connector
5149733	VIB 6.210	Accelerometer (IEPE) with M12 connector
6019422	VIB 6.520	Industrial accelerometer, standard version, 2-pin MIL

Accessory

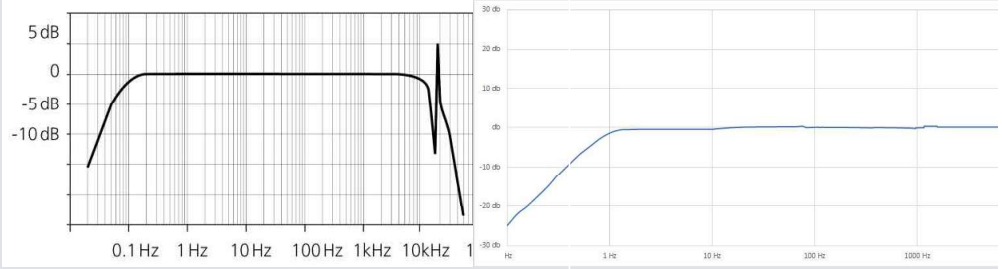
VIB 6.172 is delivered together with an M8 hexagon socket set screw. The set screw may be replaced using the available optional mounting adapters. In VIB 6.210, the mounting threads are fixed to the sensor casing.

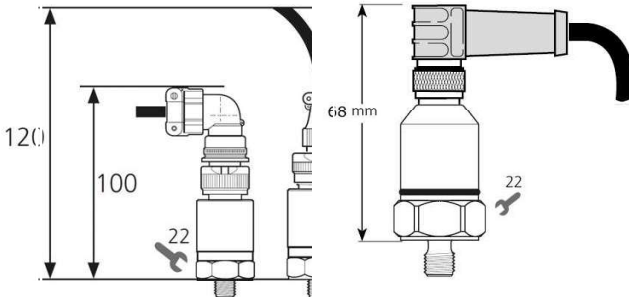
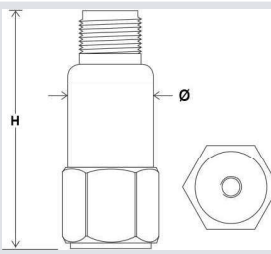
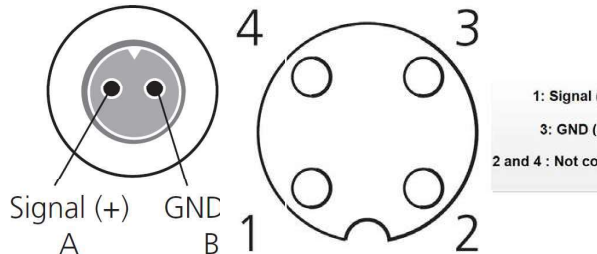
Item No.	Description / Group
Miscellaneous	"Mounting adapters for vibration sensors", p. 106
Miscellaneous	"Sensor cable with 2-pin MIL connector", p. 151 , for VIB 6.172
VIB 5.449-ICP	"Cable adapter for VIBXPERT II", p. 127
6019446	Cable adapter for IEPE accelerometer, 0.15 m, TNC to 2-pin MIL (VIB 5.038-0.15), for VIB 6.520 and VIBXPERT 3

TECHNICAL INFORMATION

Technical data

Parameter	VIB 6.172	VIB 6.210	VIB 6.520
MEASUREMENT			
Signalling system	Integrated Electronic Piezo Electric (IEPE)		
Sensitivity	10.2 mV/ ms ⁻² (100mV/g); Reference: 159 Hz; 25 °C / 77 °F		100 mV/g ±5% Reference: at 80 Hz; 22 °C / 72 °F

Parameter	VIB 6.172	VIB 6.210	VIB 6.520
Frequency range $\pm 5\%$	1 Hz to 6 kHz		2 Hz to 14 kHz
Frequency range $\pm 10\%$	0.5 Hz to 8 kHz		1.5 Hz to 16 kHz
Frequency range $\pm 3\text{dB}$	0.1 Hz to 10 kHz		0.8 Hz to 19 kHz
Resonance frequency	17 kHz; > 10 dB damped	15 kHz; > 10 dB damped	28 kHz
Frequency response			
Linearity range, $\pm 10\%$	$< 686 \text{ ms}^{-2}$ (<70 g)		$\pm 785 \text{ ms}^{-2}$ ($\pm 5\%$)
Temperature range	-40 °C to 120 °C (-40 °F to 248 °F)	-40 °C to 85 °C (-40 °F to 185 °F)	-55 °C to 150 °C (-67 °F to 303 °F)
ELECTRICAL			
Power supply	2 - 10 mA / 24 V DC ($\pm 10\%$)	2 - 10 mA / 18 - 30 V DC	0.5-8 mA / 18-30 V DC
Bias, DC output	12 V DC $\pm 0,5$ V		10-12 V DC
Grounding	insulated from machine ground, internal shielding		
Transverse sensitivity	$< 5\%$		
Temperature transient sensitivity	$< 0.07\%/K$		---
Magnetic field sensitivity	$< 1 \text{ ms}^{-2}/T$ (at 50 Hz)		---
Base strain sensitivity	$< 0.1 \text{ m/s}^2/\mu\text{m/m}$		---
Electrical noise, rms	1 mm/s^2 (0.1 Hz - 10 kHz)	1.5 mm/s^2 (0.1 Hz - 10 kHz)	$< 0.001 \text{ ms}^{-2}$
Output impedance	$< 10 \Omega$	$< 100 \Omega$	$< 200 \Omega$
MECHANICAL			
Case material	Stainless steel VA 1.4305		Stainless steel VA 1.4404
Sensing element/Construction	---	---	PZT/Shear
Environmental protection	IP67 with cable connector locked		

Parameter	VIB 6.172	VIB 6.210	VIB 6.520
Mounting	M8 threaded screw or mounting adapter		
Cable connector	2-pin MIL-C5015	M12, 4-pin, A-coded	2-pin MIL
Shock limit	< 50 km/s ²		
Weight	85 g (3 oz)	72 g (2.5 oz)	52 g (1.8 oz)
Mounting height, mm			
Dimensions	---	---	 H = 46 mm (2 1/4") Ø = 17 mm (43/64") AF = 17 mm (43/64")
Pin allocation	 1: Signal (+) 2: GND (-) 3: Signal (-) 4: GND (-) 2 and 4 : Not connected Pin A +ve Power (White) Pin B 0 V (Black)		