

Mobile industrial CLD accelerometer

This sensor is intended for vibration measurement on machinery within industrial environments using a portable data collector. Optional magnetic adapters for mounting at the measurement points are available.



Features

- 3-in-1 sensor: housing vibration, shock pulse (condition of roller bearings), cavitation
- Intrinsic safety, Zone 0, 1, 20
- f_{\min} : 0.3 Hz – ideal for machines running at low speeds
- Rigid mounting using threaded screws
- Current Line Drive (CLD) output for long cable use
- Immune to interference (Tandem-Piezo)

Industrial accelerometer for mobile data collection

Ordering information

Item No.	Reference	Industrial accelerometer for mobile data collection
5149479	VIB 6.142 R	Standard, mobile
5245636	VIB 6.142 EX0	Standard, mobile, intrinsically safe, hazardous areas Zones 0 and 20
5149507	VIB 6.147	Low speed, mobile

Accessories

Item No.	Reference	Description / Group
	Miscellaneous	"Mounting adapters for vibration sensors", p. 112
5147415	VIB 3.550	"Intrinsic safety barriers", p. 174

TECHNICAL INFORMATION

Technical data - VIB 6.14x (mobile)

Parameter	VIB 6.142	VIB 6.147
MEASUREMENT		
Signaling system	Current Line Drive, 3.5 mA static current with superimposed AC signal	
Transmission factor	1,0 $\mu\text{A}/\text{ms}^{-2} \pm 3\%$ (Ref.: 159 Hz; 25 °C)	5,35 $\mu\text{A}/\text{ms}^{-2} \pm 4\%$ (Ref.: 159 Hz; 25 °C)
Frequency range, $\pm 5\%$	2.5 Hz to 13 kHz	1 Hz to 3 kHz
Frequency range, $\pm 10\%$	1.6 Hz to 17 kHz	0.7 Hz to 8 kHz
Frequency range, $\pm 3\text{dB}$	1 Hz to 20 kHz	0.3 Hz to 10 kHz
Resonance frequency	36 kHz	17 kHz; > 20dB damped
Linearity range, $\pm 10\%$	$\pm 961 \text{ ms}^{-2}$	$\pm 450 \text{ ms}^{-2}$
Temperature range	-40 °C to 100 °C (-40 °F to 212 °F)	
ELECTRICAL		
Power supply	> 10 mA / 7-18 VDC	
Transverse sensitivity	< 5% at 10 kHz	
Temperature transient sensitivity	< 0.05 ms^{-2}/K	< 0.01 ms^{-2}/K
Magnetic field sensitivity	< 5 ms^{-2}/T (at 50 Hz)	< 1 ms^{-2}/T (at 50 Hz)
Base strain sensitivity	< 0.1 $\text{ms}^{-2}/\mu\text{m}/\text{m}$	
Electrical noise, rms	< 0.01 ms^{-2} from 2 Hz	< 0.002 ms^{-2} from 2 Hz
Output impedance	> 1 MOhm	> 300 kOhm
Insulation	> 10^9 MOhm	
MECHANICAL		
Case material	Stainless steel VA 1.4305	
Environmental protection	IP 65 with cable connector locked	
Cable connection	TNC socket	
Mounting	Magnetic holder / M5 thread	
Shock limit	< 250 kms^{-2}	< 50 kms^{-2}
Weight	39 g	38 g

Pre-assembled sensor cables and adapters for CLD accelerometers (portable devices)

These cables and adapters are used to connect CLD accelerometers to portable devices.



Sensor VIB 6.142 connected to VIBXPERT II using the spiral connection cable VIB 5.436

Suited for this portable device:

- VIBXPERT II

Suited for following types of sensors:

- CLD accelerometers with TNC cable connection
- "Wind" CLD accelerometer VIB 6.195

Ordering information

Item No.		Description
VIB 5.436		CLD accelerometer cable, spiral, 1.8 m, TNC connector to MiniSnap
VIB 5.437-2,9 VIB 5.437-5		CLD accelerometer cable, straight, 2.9 m or 5 m, TNC connector to MiniSnap
VIB 5.449-CLD		Adapter used to connect VIB 6.195 to portable measuring devices, 2-pin MIL-C5015 plug to TNC socket

Note: For cable lengths greater than 2.9 m, the EMC immunity of the signal path can be adversely affected.

TECHNICAL INFORMATION

Accessories

Item No.	Description
Miscellaneous	"Extension cable for analog measuring channel, portable devices", p. 145

Compatibility overview: Sensor cable – Measurement device

The following overview shows the type of sensor cable that may be connected to the corresponding device. For cables marked with (*), additional cables and/or adapters are required in the measurement chain.

Cable / Adapter	VIBXPERT II
VIB 5.436	✓
VIB 5.437-2,9 / -5	✓
VIB 5.449-CLD*	✓