Product overview

Condition Monitoring
Machine protection
in accordance with DIN ISO 10816 and DIN ISO 20816
Bearing status parameter for roller bearing diagnostic
in accordance with DIN ISO 13373-3

HAUBER
ELEKTRONIK

汉矢德传感器（上海）有限公司 T：150 210 98804 www.hauber-elektronik.cn

HAUBER-Elektronik stands for the development and manufacturing of high quality sensors for vibration monitoring units.

- For extreme requirements with the necessary certifications
- With outputs for various options to analyse vibration conditions
- Cost-effective standard products for vibration monitoring units
- Easy to use
- Customer-specific solutions for vibration monitoring units

Your safety is what motivates us

Customs from many industry sectors rely on our measuring technology. HAUBER-Elektronik is thus an integral part of the automobile industry, to OEM manufacturers of industrial plants, railway and power plant technology and the pharmaceuticals industry.






Protection for people and machinery

Vibration monitoring units and diagnostics in industrial applications

Vibration measuring technology is used today in a wide variety of plants and machinery to detect damage early. Along with ventilators and pumps, sensors from HAUBER-Elektronik are also used in mills and turbines. In these cases, the sensor primarily serves to prevent imbalances or misalignments, detect wear processes early on and make optimum use of the service life of components. In production, a status monitoring unit ensures high process safety, product quality and system availability.

Other areas of application includes centrifuges, cooling towers and vibrating feeder units. The most frequent use is for protection of personnel, which our SIL2 certified monitoring units can do. The sensors, however, are also used to control or monitor status.

Prevent imbalances ✓

Detect damage ✓

Protect personnel ✓

Compact vibration monitoring units

The configurable series HE050/HE055 also measures temperature in addition to vibration speed and acceleration. Optional with IO link and SIL1.

Features

- Two freely configurable outputs
- Output 1: IO link or digital switching output
- Output 2: Analogue current output (4-20 mA) or digital switching output. Many adjustment options
- Configurable frequency range
- Optional Functional Safety SIL 1
- Certifications: see overview

Series HE05X

	HE050	HE055
Vibration speed	✓	✓
Temperature measurement	✓	✓
Vibration acceleration	✓	✓
Analog and switching output	configurable	configurable
IO link	optional	✓
Bearing status parameter		✓

Series HE050 for standard vibration monitoring units and for situations with tight spaces. The product also offers the option to operate by purely digital means via IO link and a large amount of flexibility with many configuration options.

The vibration monitoring units from the HE055 series generate a bearing status parameter (crest factor) in accordance with DIN ISO 13373-3 and are thus extremely well suited for roller bearing diagnostics.

Analog vibration monitoring unit for potentially explosive areas

This series of extremely reliable vibration monitoring units is presented in high-quality stainless steel. We offer these vibration monitoring units in a variety of frequency and measuring ranges to protect and monitor rotating machinery. Various Ex versions are available as well.

Features

- Operating principle: Two-wire system
- Measurement parameters: Effective value (rms) of the vibration speed in mm/s, in accordance with DIN ISO 2954, vibration acceleration in g and temperature in °C
- Interference-free DC signal from 4-20 mA, proportional to the measuring range of the monitoring unit
- Certifications: see overview

Series HE10X

Series HE10X with integrated cable and flexible metal tubing (optional)

	HE100	HE101	HE102	HE103
1 - 1000 Hz / 10 - 1000 Hz	☑	☑	☑	☑
Analog output	☑	☑	☑	☑
Two-wire	☑		☑	☑
Vibration speed	☑	☑		☑
Vibration acceleration			☑	
Temperature		☑		
Averaging time 60s				☑
Explosion protection	optional	optional	optional	optional

The HE100 series is used to measure and monitor absolute bearing vibrations in machines in line with DIN ISO 10816.

The HE101-type vibration monitoring unit is used to measure and monitor absolute bearing vibrations and temperatures in machines in line with the standard DIN ISO 10816.

The HE102 series is used to measure and monitor the absolute bearing vibration (acceleration) of machinery.

The unit's special feature is its extended averaging time of 60 s to ensure that the measurement is not influenced by stochastic environmental factors.

Vibration monitoring unit with SIL2 and explosion protection

The HE20X-type vibration monitoring unit is used to measure and monitor the absolute vibration acceleration of machinery.

Features

- Two limit values and associated delay timings can be adjusted separately.
- Interference-free DC signal from 4-20 mA, proportional to the measuring range of the monitoring unit.
- Certifications: see overview

Series HE2XX with M12 connector

Vibration and bearing status monitoring unit with SIL2 and explosion protection

The HE25X-type vibration monitoring unit is used to measure and monitor the absolute vibration acceleration of machinery. It also generates a bearing status parameter for roller bearing diagnostics in accordance with DIN ISO 13373-3.

Features

- Two limit values and associated delay timings can be adjusted separately.
- Interference-free DC signal from 4-20 mA, proportional to the measuring range of the monitoring unit.
- Bearing status parameter for roller bearing diagnostic in accordance with DIN ISO 13373-3.
- Certifications: see overview

Series HE2XX (opened) with cable

	HE200	HE205	HE250	HE255
1 - 1000 Hz / 10 - 1000 Hz	☑	☑	☑	☑
Analog and switching output	☑	☑	☑	☑
Vibration speed	☑		☑	
Vibration acceleration	☑	☑	☑	☑
Bearing status parameter			☑	☑
Window function		☑		☑
	The two relay outputs will signal any exceeding of the relevant defined limit values. This can be used to generate a pre-alarm and a main alarm. Measurement parameter: The effective value (rms) of the vibration speed (mm/s) or vibration acceleration (g).	The two relay outputs will signal the occurrence of any values above or below the limit values of the defined window area (window function). This can be used to generate an alarm. Measurement parameter: The effective value (rms) of vibration acceleration (g).	The two relay outputs will signal any exceeding of the relevant defined limit values. This can be used to generate a pre-alarm and a main alarm. Measurement parameter: The effective value (rms) of the vibration speed (mm/s).	The two relay outputs will signal the occurrence of any values above or below the limit values of the defined window area (window function). This can be used to generate an alarm. Measurement parameter: The effective value (rms) of vibration acceleration (g).

Sensor certification

☑ *Not available until further notice*

			HE050	HE055	HE100	HE101	HE102	HE103	HE200	HE205	HE250	HE255
Conformity	Europe	CE	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
	International	IEC	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
	Great Britain	UKCA	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
	Russia and Kazakhstan	EAC	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
	United States and Canada	cULus Ord. Loc.	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Explosion protection zone 1/21	Europe	ATEX			☑	☑	☑	☑	☑	☑	☑	☑
	International	IECEx			☑	☑	☑	☑	☑	☑	☑	☑
	Great Britain	UKCA Ex			☑	☑	☑	☑	☑	☑	☑	☑
	Russia and Kazakhstan	EACEX			☑	☑	☑	☑	☑	☑	☑	☑
	Brazil	INMETRO							☑	☑	☑	☑
	China	CCC			☑	☑	☑	☑	☑	☑	☑	☑
Explosion protection zone 2/22	Europe	ATEX							☑	☑	☑	☑
	International	IECEx							☑	☑	☑	☑
	Great Britain	UKCA Ex							☑	☑	☑	☑
	Russia and Kazakhstan	EACEX							☑	☑	☑	☑
	United States and Canada	cULus Haz. Loc. Div 2			☑	☑	☑	☑	☑	☑	☑	☑
	Brazil	INMETRO							☑	☑	☑	☑
	China	CCC							☑	☑	☑	☑
Metrological certificate	Russia		☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
	Belarus		☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
	Kazakhstan		☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Functional Safety	IEC 61508 SIL1		☑	☑								
	IEC 61508 SIL2								☑	☑	☑	☑
IO link	IEC 61131-9		☑	☑								

Evaluation electronics and portable measuring instrument

In addition to vibration monitoring units, HAUBER-Elektronik also provides a variety of evaluation electronics. These display the analog signals from our vibration monitoring units and form independent machinery protection systems with them.

Series 650

Suitable for HE101 | Measuring channels 1

Pre- and main alarm | Display

The series 650 evaluation electronics are used to record and monitor the output currents (4-20 mA) of type-HE101 vibration monitoring units.
The evaluation electronics are housed in a 20-pin DIN rail housing.

Series 652

Suitable for HE100 | Measuring channels 2

Pre- and main alarm | Display

The series 652 evaluation electronics are used to record and monitor the output currents (4-20 mA) of type-HE100 vibration monitoring units.
The evaluation electronics are housed in a 20-pin DIN rail housing.

Series 400

Suitable for HE100 | Measuring channels 1

Portable measuring instrument

The series 400 displays the effective value of the vibration speed. The vibration monitoring units from the HE100 series can be connected. This means that the overall vibration at or above 1 Hz and/or 10 Hz up to 1000 Hz can be measured.

Sensor cable and accessories

You'll find everything you need for your special application at HAUBER-Elektronik to properly assembly vibration monitoring units and evaluation electronics for industrial use: cables, connectors, mounting adapters and magnets for mobile use.

Sensor cables and connectors

High quality shielded sensor cable and connector for safe use in industrial environments. Available in various designs to suit the application.

Flexible metal tubing

Perfect protection for sensor cables, includes sensor adapters for the toughest applications in industrial environments. Seamless protection for sensor cables. This metal protector is suitable for series HE10X, HE20X and HE25X.

Assembly accessories

Threads are available in both metric and inch variants depending on the requirements and customer preferences. We offer a magnet with high tractive force for mobile measurements. An EMC adapter for insulating the sensor housing from the machine potential is also available.

Rubber nozzles

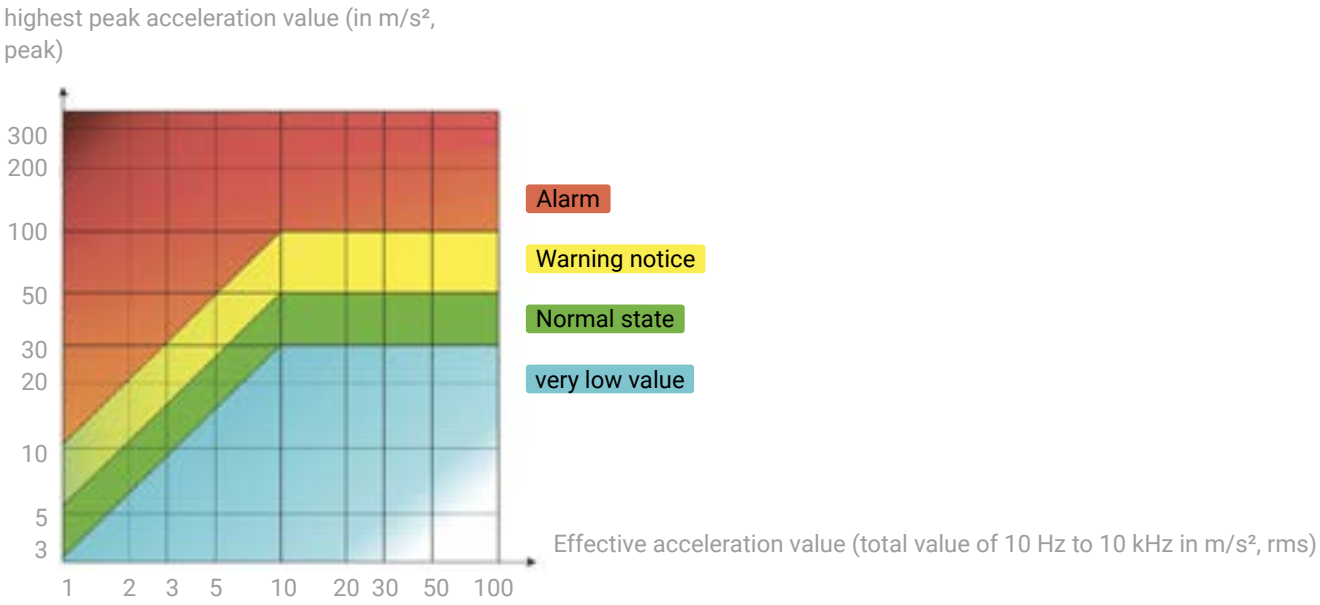
A rubber nozzle protects the sensor as well as the cable connection from mechanical impact and prevents moisture from penetrating. We especially recommend the rubber nozzle for use with sensors outdoors. Available for all vibration monitoring units

Bearing status parameter for roller bearing diagnostic in accordance with DIN ISO 13373-3

The vibration monitoring units HE055 and HE250 also offer the option for roller bearing diagnostics in accordance with DIN ISO 13373-3, in addition to monitoring the vibration speed in accordance with DIN ISO 10816.

In this standardised procedure, proven in practice, the ratio of the effective acceleration value (m/s² [rms]) to the peak acceleration value (m/s² [peak]) is observed in a range from 10 Hz to 10 kHz.

This is called "crest factor" and, based on the norm, is divided into four ranges that represent the bearing status parameter.



This simple, meaningful method offers advantages over other, more complex methods of determining the roller bearing status.

Evaluation of this method does not require any other analysis instruments (such as tachometers) or software. Because our sensors provide bearing status monitoring as an additional measurement parameter, no other sensors are required to measure the vibration speed, for example. A dual sensor saves you the need for all the peripherals that come with attaching a second sensor.

The lower cost and the ease of evaluation that makes this method comprehensible to anyone are also pivotal criteria.

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