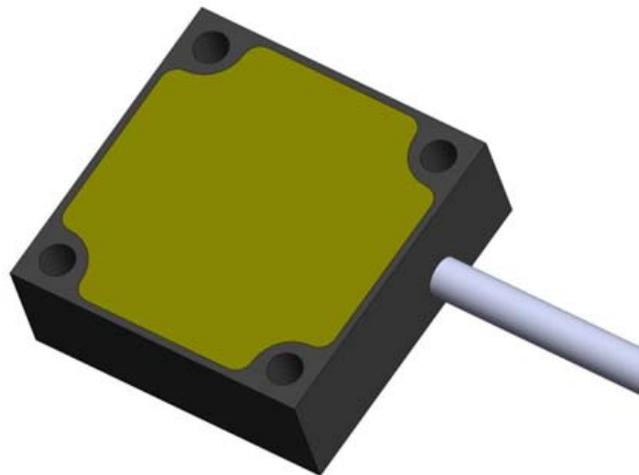


Operating instructions



Acceleration sensor SWS-20 for vibratory conveyor

Art. no.: 90.0210.62



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In your own interest:

Please read these instructions and keep them in a safe place.
Please observe and follow the safety information.

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1 General

In this manual, you will find all important information regarding the mounting, connection and operation of your SWS-20 sensor.

In addition, you will find information as well as important warnings for your safety.

Please observe:

Sensors of the SWS-20 series are specially adapted acceleration sensors in vibratory conveyor applications.

1.1 The product

Acceleration sensor for an vibration frequency of 4 to 200 Hz

Light weight

Aluminum housing

Suitable for control units of the FS 26 series

1.2 Guide for these instructions

Used signal words and symbols

Symbol	Signal word	Meaning
	Important note	Here, important information or a tip is given concerning the function.
	Important tip	

1.3 Safety-related information for the user

These instructions contain the required information for the intended use of the device described herein. They are directed toward technically qualified personnel.

Qualified personnel are people who have been authorized by persons responsible for the safety of the system to execute the required activities and are able to recognize potential dangers and avoid them based on their training, experience and instruction, as well as their knowledge of relevant standards, regulations, accident prevention regulations and operating conditions (definition of skilled personnel according to IEC 364).

The following safety information is for your protection, the protection of third parties as well as the protection of the device. You should therefore observe it under all circumstances.

- Disconnect the power supply before installation or dismantling work, as well as when changing a fuse or making changes to the setup.
- Observe the valid accident prevention and safety regulations for your specific application.

Operating environment

- Do not install the sensor near devices which generate strong electromagnetic fields. The function could be disturbed as a result.
Also avoid environments which are very hot, cold or wet.

Power supply

- Only connect the device to a socket prepared for the sensor.

The device

- For safety and licensing reasons (CE), it is not permitted to convert and/or modify the device without authorization.
- The device meets the valid low-voltage and EMC directive.



2 Application

The SWS-20 acceleration sensor is especially suitable for measuring the vibration acceleration of vibratory conveyor systems. It is designed for conveying frequencies of 4...200 Hz.

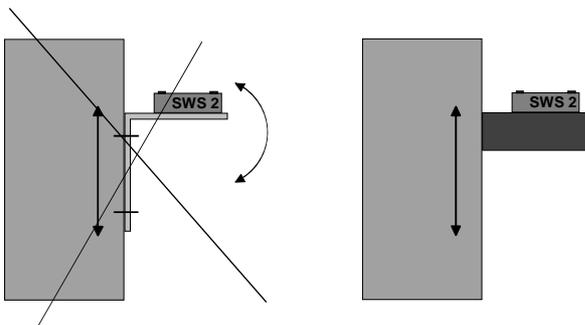
The sensor works on a micro-mechanical basis (MEM) and is equipped with a filter tuned to the useful frequency range and a downstream amplifier and impedance converter. The measured value is depicted as an AC voltage proportional to the acceleration.

All components are accommodated in a robust aluminum housing and are completely encapsulated. The electrical connection is realized by a 4-pin M12 plug.

3 Mounting the acceleration sensor

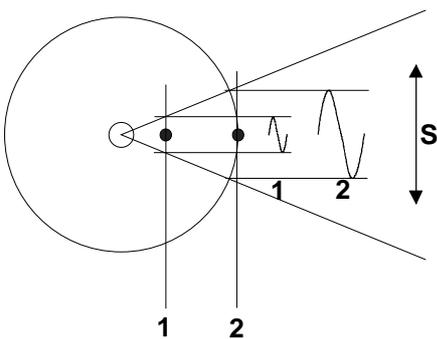
There are 4 externally accessible bores available for fastening the sensor. These are separated from the housing interior.

The acceleration sensor should report the movement and acceleration value of the conveyor back to the control circuit of the control device. It is therefore very important that no additional secondary vibrations are measured which are caused by unfavorable sensor installation.



The sensor should ideally be mounted in the direction of vibration at the same inclination as the springs of the conveyor on a massive mounting block, which does not generate any natural vibrations.

In regular operation, the magnitude of the output signal directly determines the maximum vibration amplitude of the conveyor.



In the case of circular conveyors, it makes sense to mount as far as possible on the outer diameter, so that a vibration path as great as possible is measured. If the sensor signal is too small, the control range of the nominal value is greatly restricted.

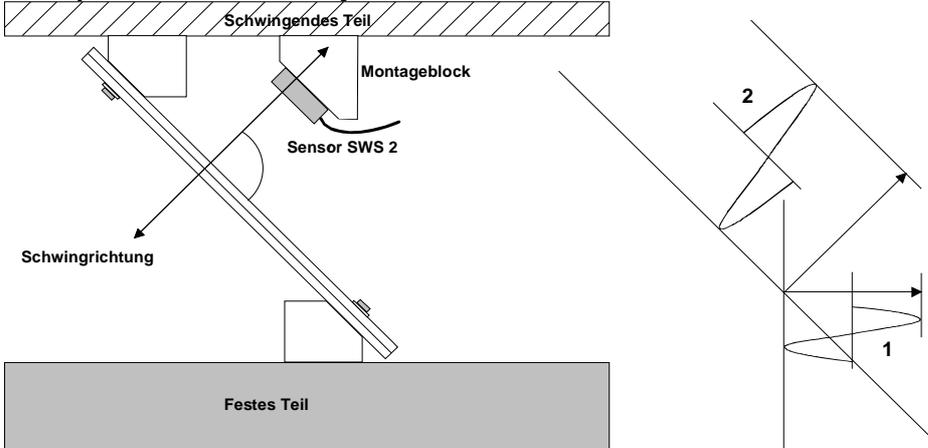
S = vibration path

Mounting point 1 = small vibration amplitude

Mounting point 2 = large vibration amplitude

Example with circular conveyor

Example with linear conveyoyr



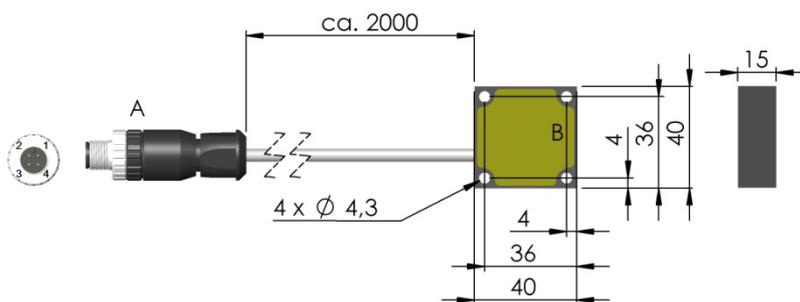
1. Small amplitude in the case of vertical mounting
2. Larger amplitude in the case of mounting at the same angle of inclination as the springs

The control device and the sensor fastened to the conveyor form a closed control circuit, whereby the signal provided by the sensor has a decisive influence on the control range of the nominal value, i.e., the controller controls the conveyor such that the actual value (conveying capacity or vibration intensity) corresponds to the specified nominal value.

The sensor measures the current acceleration of the conveyor. A sinusoidal output voltage results. The acceleration increases with increasing vibration frequency. At high frequencies and small vibration amplitudes, the sensor output signal can be greater than for small frequencies and larger vibration amplitudes.

Due to the very different acceleration values of the various conveyors, there can be great differences in the returned signals under certain circumstances. When mounting the sensor, it must be made sure that an actual value between 8.00 - 9.99 g is reached in normal operation.

3.1 Overview and dimensions



- A - M12 plug, 4-pin
- B - Acceleration sensor SWS-20

3.2 Connecting the acceleration sensor

Connect the acceleration sensor to the available socket on the control device.

 <p style="text-align: center;">SWS-20</p>	<p>Pin 1 - +24V= (brown wire)</p> <p>Pin 2 - Not connected</p> <p>Pin 3 - GND (blue wire)</p> <p>Pin 4 -Output (white wire)</p>
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4 Technical data

Operating voltage	10-30V= 24 V=
Measuring range	20 g
Output	300 mV / g short-circuit-proof
Recommended Oscillating frequency range	4 ... 200 Hz
Operating temperature	-20 ..+50° C
cable connection	Cable length 2m
Protection class	IP 65

5 Maintenance and cleaning

The sensor works maintenance-free.

6 Disposal

The sensor must not be disposed of in the normal household waste.

Users are obligated to bring old devices to a disposal point for old electrical and electronic devices. The separate collection and proper disposal of your old devices helps to conserve natural resources and ensures recycling, which protects human health and the environment. Information about where you can find disposal points for your old devices can be obtained from your city administration or local waste disposal facility.



7 Service

If you have any questions or problems, please contact the supplier directly.
Manufacturer: fimotec-fischer GmbH & Co.KG: Tel.: 0049-7424-884-0



Note

Please keep the following information ready, since otherwise service cannot be provided:

- Your company with address
- Your name and contact data, such as telephone number and e-mail address
- Complete designation of the device
- Serial number (FBxx-xxxx-xx or HW20xxxx)
- The direct supplier of your device or machine in which the device is integrated.