

## PVS 3 pump vibration sensor

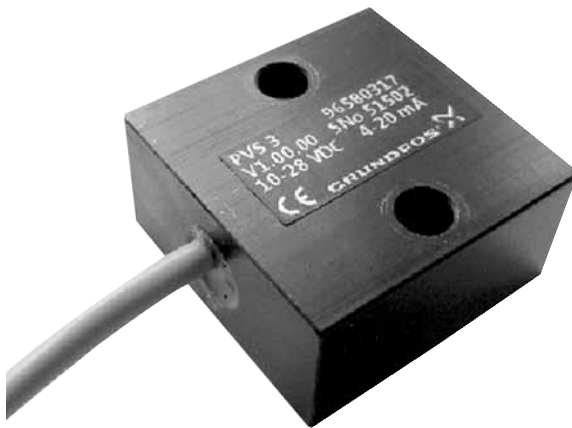


Fig. 1 PVS 3 pump vibration sensor

### Application

The PVS 3 sensor is intended for use in medium- and large-size Grundfos wastewater products. The products can be ordered with the PVS 3 sensor mounted as an option.

The sensor is also available as a kit for mounting in other pumps.

The sensor adds to the many possibilities of efficient condition monitoring in Grundfos wastewater pumps.

The sensor monitors the vibration level of the pump in order to protect the pump and the pipe system from damage. A change in the vibration level is an indication of an abnormal situation. The reason for this can be a clogged impeller, worn bearings, closed discharge valve, etc. indicating that a service inspection should be carried out before the pump or the pipe system is damaged.

### Product description

The sensor continuously measures the vibrations of the pump in the final installation. Usually vibrations are related to speed of rotation.

The sensor is a 2-wire, 4-20 mA transmitter consisting of the following main sections:

- 3-axes, 2g linear accelerometer with digital interface
- 8-bit microcontroller
- Output current generator.

The microcontroller reads the digital output of the accelerometer at 640 Hz sampling rate per axis.

The microcontroller processes the 3-axes acceleration data into an analogue 4-20 mA output proportional to the RMS value of the total velocity.

### Installation

The PVS 3 sensor is designed for mounting in the junction box of the pump motor. As the sensor measures the total velocity, the mounting direction is not important. There are two 6.5 mm fixing holes at 27 mm distance in the sensor body. The sensor must be firmly mounted on the pump structure with a tight connection on an even surface.

The sensor must only be mounted in dry atmospheres and must not be submerged in any liquid.

### Electrical connection

A 2-wire screened cable is permanently connected to the sensor:

Brown wire: Positive supply

White wire: Negative supply

Screen: To be connected to ground.

### Technical data

|                      |                                                          |
|----------------------|----------------------------------------------------------|
| Output signal:       | 4-20 mA corresponding to<br>0-20 mm/s RMS total velocity |
| Measuring frequency: | 2-160 Hz                                                 |
| Supply voltage:      | 12-28 VDC, PELV                                          |
| Breakdown voltage:   | ± 30 VDC                                                 |
| Ambient temperature: | 0-70 °C                                                  |
| Cable length:        | 10 m                                                     |
| Enclosure class:     | IP68                                                     |
| Dimensions:          | 45 x 40 x 20 mm                                          |
| Weight               | 300 g                                                    |

### Product numbers

Built into pump from factory. Please contact Grundfos.

Kit for fitting in the field:

96580317: PVS 3, vibration sensor.

96692419: Documentation for PVS 3.

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Subject to alterations.