

ASV8 is a single-axis vibration switch with the function of emergency disconnection or signalling with the following properties:

- measuring ranges of vibrations are adjusted in production in **common industrial ranges**
- evaluation of the **effective value of the speed of vibrations**
- adjustable **disconnection level according to the application requirement**
- adjustable **disconnection delay**
- **On Modbus communication is available measured value**
- **wide range of supply voltage, low consumption**
- suitable element for **automation of operation**
- **calibration option**
- **industrial design**



Description

The ASV8 vibration switch is a sensor with a built-in electronic system which measures vibration, compares them with the adjustable value of the level and in the case of exceeding this level, connects or disconnects the semi-conductor switch. At the same time the measured value is sent over serial communications RS-485. The value of the vibrations for connection and disconnection, as well as the parameters of the sensor, is adjustable from the producer or the user connection to the PC. The ASV8 is designed for machines and equipment which are not recommended or considered economic to apply a comprehensive diagnostic or control system.

Specification

The sensor can be used for the automatic disconnection of the machine, signalling of operation of the machine or for emergency signalling of excessive vibrations. It is recommended for checking the operation or protection of smaller operation-free machines – ventilators, pumps, engines, vibration machines, smaller centrifuges and other industrial equipment, as well as for equipment mounted on various means of transport and portable working machines where it can monitor the vibrations of various built-in aggregates.

Preferably, it is possible to interconnect the sensors by communication bus and power supply and create a communication channel with the flow of data from the entire set of sensors.

Measured value, measuring ranges

The ASV8 sensor measures the effective value (rms) or bi-deviation (p-p) of the speed of vibrations in the frequency bank 5Hz to 1.5kHz. The measuring range is adjusted in production; standard produced ranges are 0÷20 mm/s, 0÷50 mm/s, 0÷100 mm/s (rms). In this measuring range the emergency level and other functions (see below) can be set.

Construction

The sensor equipped with an M12 connector is produced in the stainless rotationally symmetric cylindrical housing. Sensor is connected by a industry cable, which has a built-in indicators in connector - LEDs which indicates power status, sensor switching, and activity of communication.

Application

The switch is connected to the measuring object by thread M8x10 so that the axis of the connector is identical with the direction for measuring vibrations. The location for the reading of vibrations should be selected in such a manner that the value of the vibrations corresponds to the value of the vibrations of the machine and, at the same time, in this place there is the minimum dynamic deformation of the measured surface and the place should be located away from the direct affection of fast changes of temperature. During the operation it is necessary to comply with the working conditions of the sensor.

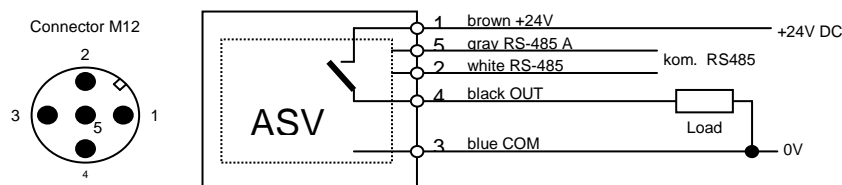
Connection

The sensor is supplied by DC voltage 10-28V, it can be used for a car supply network.

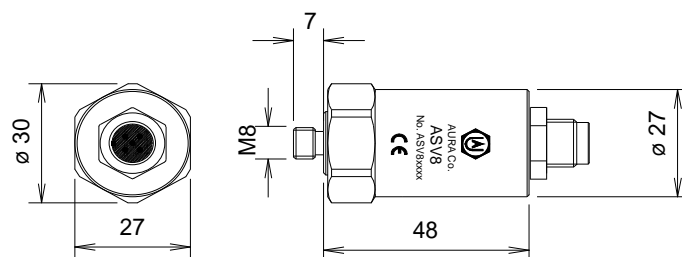
Numbers of connector outlets and colours of cable conductors:

- 1 - brown – plus pole of supply
- 2 - white – communication RS485, B
- 3 - blue – minus pole of supply COM
- 4 - black – output of switch towards minus pole OUT
- 5 - gray – communication RS485, A

The load is connected between the COM and the OUT of the sensor, it is possible to switch, e.g. the control relay coil, signalling bulb or siren. Then the load must be designed so that the maximum switching current and voltage on the switch are not exceeded.



ASV8 dimensions



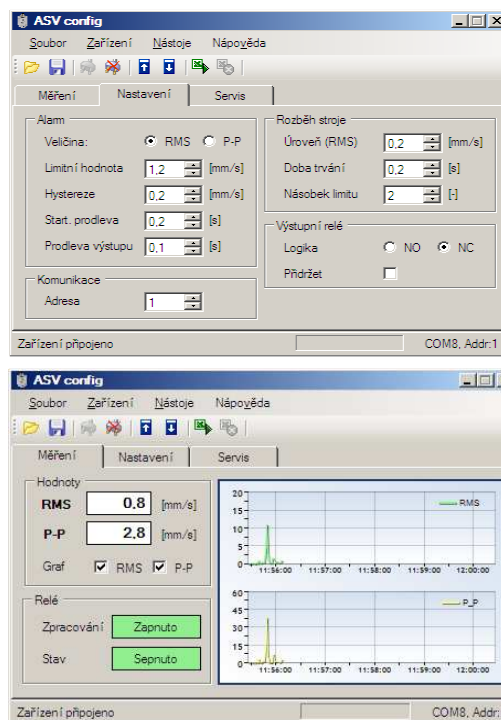
Setting

The ASV8 vibration switch is set according to the requirements of the client directly in production. In addition, it is possible to supply configuration software for PC (ASV manager) with the HW converter RS485/USB through which the user can change parameters. RS485/USB converter is connected to the sensor pins COM KOM A and KOM B, and simultaneously the sensor must be connected to the 24 V DC power supply.

The adjusted parameters are:

- 1) emergency level of vibrations
- 2) hysteresis of the connection
- 3) emergency switching delay (alarm)
- 4) logistics for switching of accident (connected, disconnected, permanent or impulse switching)
- 5) option for increase of the emergency level during the activation and deactivation of the alarm
- 6) delay after the activation of the supply of the switch when vibrations are not evaluated.

In addition to the option for the adjustment of the parameters, both measured values of vibrations are measured (rms and p-p) along with the alarm status.



Specification for ordering

Type:	ASV8
Measuring range:	20, 50, 100 mm/s
Cable length:	Standard 5m , or by order
Number of pieces of the same type	

ASV8 technical specification

Measured value:	effective speed of vibrations (rms) bi-deviation of vibrations (p-p)
Measuring ranges of vibrations:	20 mm/s, 50 mm/s, 100 mm/s (rms)
Frequency range:	5 ÷ 1,500 Hz
Emergency level of switching:	0-100% of measuring range
Supply:	10 ÷ 28 V DC / 10mA
Current and voltage of the switch:	< 500mA, < 50V DC
Electric connection	cable with M12 connector M12, length according to order
EMC compatibility	is declared within the CE mark
Temperature range:	-25°C ÷ +85°C (+100°C)
Coverage:	IP65
Material of the housing	Stainless Steel