

5.3

Monitoring and Measurement

VS10
VS11
VS12

Vibration Switches / USB Transmitters

VS10/VS11/VS12:



Application

The VS1x has functions which are not found in common vibration switches.

All devices can be programmed via a USB port.

They feature peak and RMS vibration monitoring with selectable frequency limits. There is a relay output for switching external loads. In addition models VS11 and VS12 allow monitoring in frequency domain. The frequency spectrum is measured and compared to individual amplitude limits in 10 user-selectable frequency ranges.

The VS12 has an external USB socket. It can be directly connected to PCs for quick and simple vibration measurements.

The devices include piezoelectric accelerometers providing high precision, good resolution and a wide frequency range.

Typical applications are:

- Vibration monitoring of motors, fans, pumps, compressors etc. to ISO 10816 / 20816
- Quality control in production
- Emergency shut-off in production installations where vibration may endanger personnel and equipment
- Monitoring vibrations as part of process control
- Protection of fragile goods during transportation
- Vibration monitoring at rail vehicles
- Safety switch at doors, gates etc.

Properties

- Monitors vibration acceleration and velocity
- 60 frequency ranges from 0.1 to 10 000 Hz for RMS and peak values programmable
- Frequency analysis from 2 Hz to 1000 / 10 000 Hz (VS11/12)
- Indication of warning and alarm by flashing LEDs (VS10 / VS11)
- Teach-in function for automatic threshold setting
- Rugged aluminum case
- Water proof to IP67
- Simple attachment with M8 stud bolt

Technical Data

	VS10	VS11	VS12
RMS / peak monitoring	yes	yes	yes
Monitoring in frequency domain (FFT)	no	yes	yes
LEDs for warning and alarm	green / red	green / red	no
External USB connector	no	no	yes
Measuring range	Acceleration: 0.1 - 1000 m/s ² ; velocity: frequency dependent		
Filters for RMS / peak acceleration	High pass: 0.1/2/5/10/20/50/100/200/500/1000 Hz; Low pass: 0.1/0.2/0.5/1/2/5/10 kHz		
Filters for RMS / peak velocity	High pass: 2/5/10 Hz; Low pass: 1 kHz		
FFT frequency range and resolution	-	2 to 1000 or 20 to 10 000 Hz; 360 lines	
FFT limits	-	10 adjustable frequency intervals with magnitude limits	
Relay output	PhotoMOS relay; SPST; max. 60 V / 0.5 A (AC/DC); close or break function programmable		
Teach-in function	Button for automatic threshold setting		-
Relay connection	Screw terminals		Binder 711 8 pin socket
Alarm duration / hold time	0 - 99 s / 0 - 9 s		
Interface	USB 2.0 full speed for parametrization and measurement; CDC mode/virtual COM port		
USB connection	Internal micro USB socket	Internal micro USB socket	8 pin socket Binder 711
PC software	Program for parametrization and measurement (VS12); LabView programming example		
Power supply	USB (5 V) or 5 to 30 V DC; < 100 mA		
Protection grade	IP67		
Operating temperature range	-40 .. 80 °C -40 .. 176 °F		
Dimensions (Ø x height)	50 mm x 52 mm	50 mm x 52 mm	50 mm x 36 mm
Attachment	M8 stud; 8 mm long; coupling face: Ø 25 mm		
Weight	160 g 5.6 oz	160 g 5.6 oz	125 g 4.4 oz
Optional accessories	Micro USB cable for programming VS1x-USB		USB cable VS12x-USB (5 m)

Specifications subject to change without prior notice.

Terminal blocks for supply / relay output and USB socket (VS10/VS11)

