

Vibration Switches / USB Transmitters

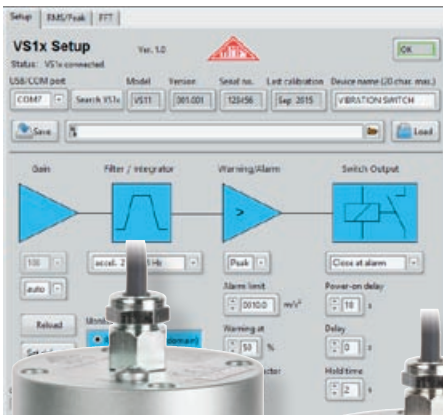


Monitoring and Measurement

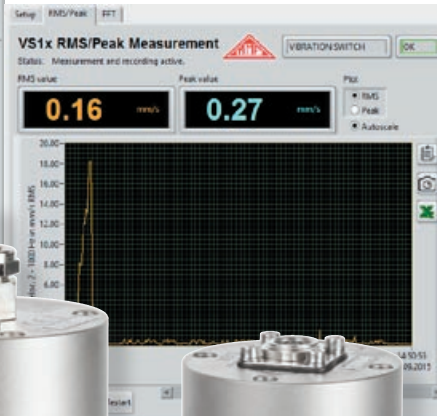
NEU
NEW

VS10
VS11
VS12

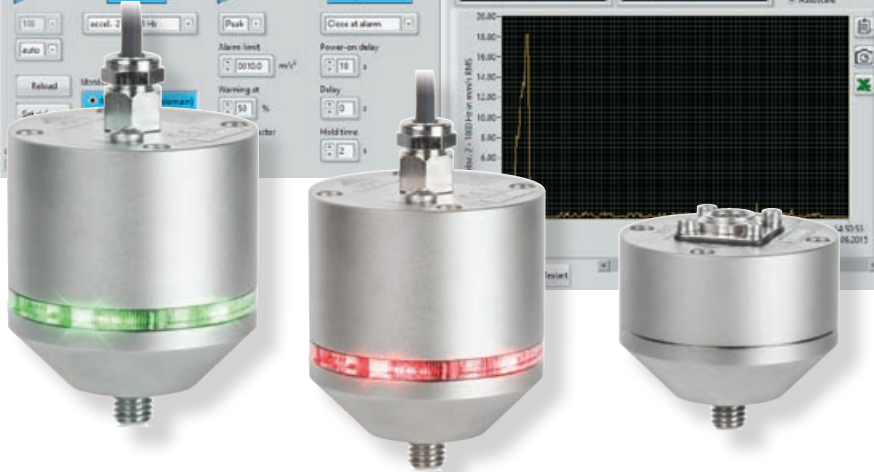
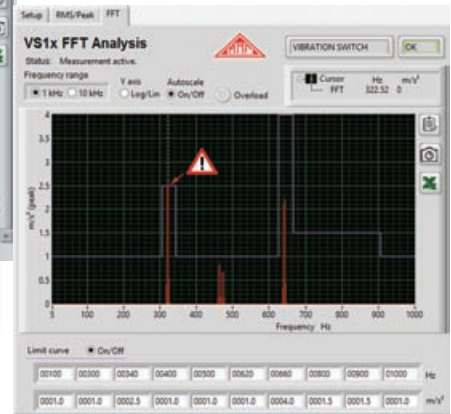
VS10/VS11/VS12:



VS11/VS12:



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
- 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

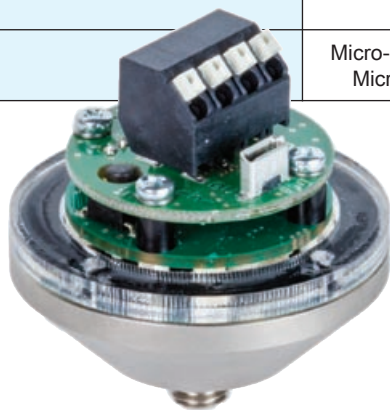
- Monitors vibration acceleration and velocity
- 60 frequency ranges from 0.1 to 10 000 Hz for RMS and peak values programmable
- Frequency analysis from 2 Hz to 1000 / 10 000 Hz (VS11/12)
- Indication of warning and alarm by flashing LEDs (VS10 / VS11)
- Teach-in function for automatic threshold setting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

V _{av} 10 – 1000 Hz	45 mm/s			
	28 mm/s			
	18 mm/s			
	14.7 mm/s			Zone C/D 4,5 – 14,7 mm/s
	11.2 mm/s			
	9.3 mm/s		Zone B/C 1,8 – 9,3 mm/s	
	7.1 mm/s			
	4.5 mm/s	Zone A/B 0,71 – 4,5 mm/s		
	2.8 mm/s			
	1.8 mm/s			
1.12 mm/s				
0.71 mm/s				
0.45 mm/s				
0.28 mm/s				
	<div style="display: flex; justify-content: space-between;"> <div style="background-color: red; width: 15px; height: 15px; margin-right: 5px;"></div> Risk of machine damage <div style="background-color: yellow; width: 15px; height: 15px; margin-right: 5px;"></div> Restricted operation <div style="background-color: green; width: 15px; height: 15px; margin-right: 5px;"></div> Unrestricted long-term operation possible <div style="background-color: lightgreen; width: 15px; height: 15px; margin-right: 5px;"></div> Newly commissioned </div>			

Table 1: Typical Limit Values for Vibration Severity to ISO 10816-1

Technical Data

	VS10	VS11	VS12
Effektiv- / Spitzenwertüberwachung RMS / peak monitoring	ja yes	ja yes	ja yes
Überwachung im Frequenzbereich (FFT) Monitoring in frequency domain (FFT)	nein no	ja yes	ja yes
LEDs für Warnung und Alarm LEDs for warning and alarm	grün / rot green / red	grün / rot green / red	nein no
Externer USB-Anschluss External USB connector	nein no	nein no	ja yes
Messbereich Measuring range	Beschleunigung: 0,1 - 1000 m/s ² ; Geschwindigkeit: frequenzabhängig Acceleration: 0.1 - 1000 m/s ² ; velocity: frequency dependent		
Filter für Effektiv-/Spitzenwert der Beschleunigung Filters for RMS / peak acceleration	Hochpass: 0,1/2/5/10/20/50/100/200/500/1000 Hz; Tiefpass: 0,1/0,2/0,5/1/2/5/10 kHz 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		
Filter für Effektiv-/Spitzenwert der Geschwindigkeit Filters for RMS / peak velocity	Hochpass: 2/5/10/20/50 Hz; Tiefpass: 1 kHz High pass: 2/5/10/20/50 Hz; Low pass: 1 kHz		
FFT-Frequenzbereich und Auflösung FFT frequency range and resolution	-	2 bis 1000 oder 20 bis 10 000 Hz; 360 Linien 2 to 1000 or 20 to 10 000 Hz; 360 lines	
FFT-Grenzwerte FFT limits	-	10 frei wählbare Frequenzintervalle mit Grenzwertamplituden 10 adjustable frequency intervals with magnitude limits	
Relaisausgang Relay output	PhotoMOS-Relais; SPST; max. 60 V / 0,5 A (AC/DC); Öffner/Schließer programmierbar PhotoMOS relay; SPST; max. 60 V / 0.5 A (AC/DC); close or break function programmable		
Teach-In-Funktion Teach-in function	Taste zum Einmessen der Schaltschwelle Button for automatic threshold setting		-
Relaisanschluss Relay connection	Schraubklemmen Screw terminals		8-polige Buchse Binder 711 8 pin socket Binder 711
Alarmverzögerung / Alarmhaltezeit Alarm duration / hold time	0 - 99 s / 0 - 9 s		
Schnittstelle Interface	USB 2.0 Full Speed zur Parametrierung und Messung; CDC-Modus / virtuelles COM-Port USB 2.0 full speed for parametrization and measurement; CDC mode/virtual COM port		
USB-Anschluss USB connection	Micro-USB-Buchse innen Internal micro USB socket	Micro-USB-Buchse innen Internal micro USB socket	8-polige Buchse Binder 711 8 pin socket Binder 711
PC-Software PC software	Programm zur Parametrierung und Messung (VS12); Labview-Programmbeispiel Program for parametrization and measurement (VS12); LabView programming example		
Stromversorgung Power supply	USB (5 V DC) oder 5 bis 30 V DC; < 100 mA USB (5 V) or 5 to 30 V DC; < 100 mA		
Schutzgrad Protection grade	IP67		
Betriebstemperaturbereich Operating temperature range	-40 .. 80 °C -40 .. 176 °F		
Abmessungen (Ø x Höhe) Dimensions (Ø x height)	50 mm x 52 mm	50 mm x 52 mm	50 mm x 36 mm
Befestigung Attachment	M8-Gewindestutzen; 8 mm lang; Koppelfläche: Ø 25 mm M8 stud; 8 mm long; coupling face: Ø 25 mm		
Masse Weight	160 g 5.6 oz	160 g 5.6 oz	125 g 4.4 oz
Optionales Zubehör Optional accessories	Micro-USB-Kabel zur Programmierung VS1x-USB Micro USB cable for programming VS1x-USB		USB-Kabel VS12-USB (5 m) USB cable VS12x-USB (5 m)



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

Specifications subject to change without prior notice.

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