Vibro-Meter
Vibration Switch CVS 100

CHARACTERISTICS

- ▼ Vibration velocity

- ▼ Suitable for Universal use
  can be mounted: Horizontal, Vertical or at any other angle

- ▼ Housing Aluminum or Stainless Steel
  ATEX approved.

- ▼ Analog Output 4…+20mA

- ▼ RAW- Signal output 100 mV/g

- ▼ 1 or 2 Relays

GENERAL

The vibration switch CVS 100 allows a cost effective realization of vibration monitoring for stand-alone machines and auxiliary aggregates (e.g. fans, pumps, centrifuges, mills, gears, etc.), on whose functions important Installations or processes are depending. It allows, among other things, the monitoring according to DIN ISO 10816 Part 1-7.

Utilized for this are the Vibrations of main machine parts (pillow blocks, foundations, casings) converted by rugged acceleration pick ups in electrical signals and processed and assessed with integrated electronics.
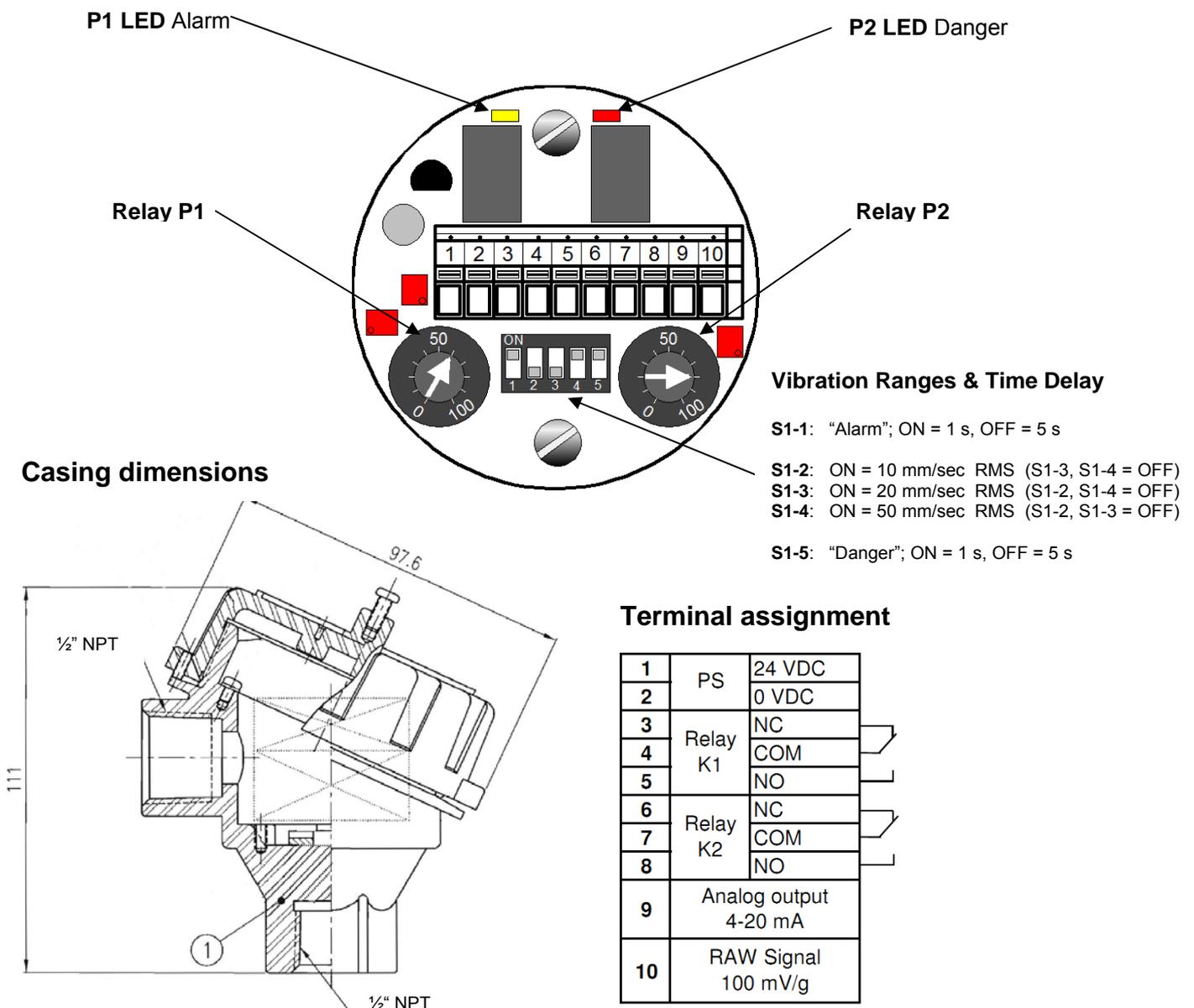
The signal- and processing electronics is fitted together with the acceleration sensor into aluminum housing, fitted directly onto the machine to be observed.

One or two adjustable level detectors with selectable response delay is allowing the signalization of „Alarm" and „Danger" via appropriate dry contacts of assigned relays.

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FUNCTIONAL DESCRIPTION

The signal of the internal accelerometer is led via an amplifier and integrator as well as a bandpass filter and rectifier for further processing. The measuring ranges are selectable by dip switch. The analogue signal available here is calibrated as the effective value of the vibration velocity (mm/s effective). The signal acts on two adjustable level detectors and is available as an analogue value in the form of 4...+20mA. A raw signal of 100mV/g is also available on the terminal strip. The changeover contacts of the associated relay enable the setting up of signal circuits (Alarm / Danger).
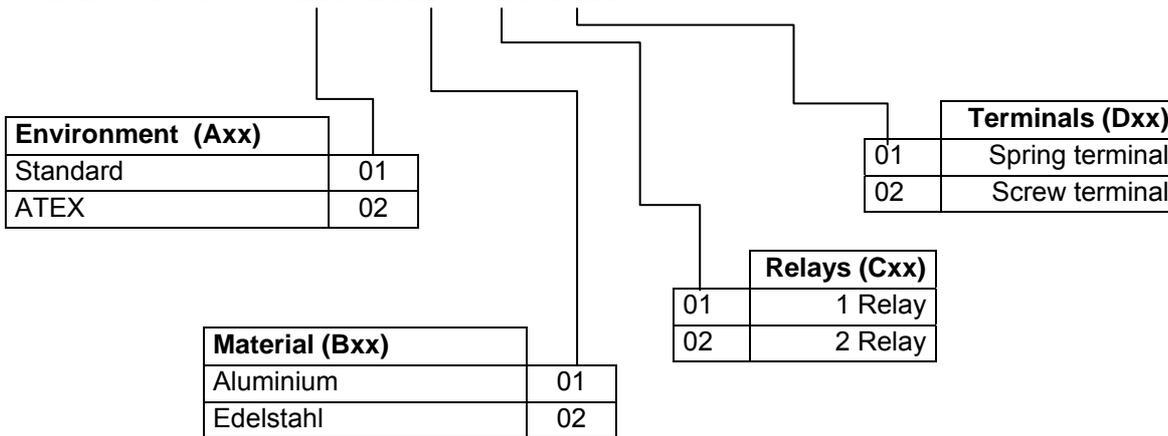
MECHANICAL DIAGRAM

P1 LED Alarm   **P2 LED** Danger

Relay P1   **Relay P2**

Vibration Ranges & Time Delay

S1-1: "Alarm"; ON = 1 s, OFF = 5 s

S1-2: ON = 10 mm/sec RMS (S1-3, S1-4 = OFF)
S1-3: ON = 20 mm/sec RMS (S1-2, S1-4 = OFF)
S1-4: ON = 50 mm/sec RMS (S1-2, S1-3 = OFF)

S1-5: "Danger"; ON = 1 s, OFF = 5 s

Casing dimensions

97.6

½" NPT

111

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½" NPT

Terminal assignment

1	PS	24 VDC
2		0 VDC
3	Relay K1	NC
4		COM
5		NO
6	Relay K2	NC
7		COM
8		NO
9	Analog output 4-20 mA	
10	RAW Signal 100 mV/g	

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SPECIFICATIONS

Performance	
Vibration Range (Select via DIP switch)	10, 20 or 50 mm/s RMS
Frequency Range	10 Hz…1000 Hz (-3 dB)
Analog Output	4…+20 mA
Load Output	≤ 500 Ω
RAW-Signal	100 mV/g
RAW-Signal Load	≥ 20 kΩ
Environment	
Operating temperature range	-30°C…+70 °C
Storage temperature range	-40°C…+80 °C
Enclosure classification	IP 68 housing
EC – type Certificate No. (Housing) Rating	BSI 07 ATEX 1532458U Ex d IIC T6, Ex tD A21 T100°C
Electrical	
Sensor Type	Accelerometer
Power Required	20…+30 V_{DC}
Current Draw	< 50 mA
Electrical Connectors	10x spring terminal, SPTA 1,5/10-3,81 (1,5mm^2) (option D 01) 10x screw terminals (option D 02)
Relay	
Switch Contact Capacity	UL 30VDC-1A / 65VDC-0,46A /150VAC-0,46A
Relay Function	non-latching
Threshold Set Point	10%...100% of Alarm Set Point
Normally Energized (NE)	Fail safe
Time Delay	1sec or 5 sec
Physical	
Housing Material	Aluminum (option B 01), Epoxy paint RAL9006 grey Stainless Steel 1.4404 (SS 316) (option B 02)
Cable Connection	½" NPT, Brass (for A02 version) , IP66 SIRA 06 ATEX 1188 X SIRA 07 ATEX 4327 X ½" NPT, polyamide (for A01 version) , IP68
Weight	1.6 kg (Stainless Steel), 0.7 kg (Aluminum)
Size (height x width)	111 x 100 mm
Mounting Thread (using Adapter)	M12x1,75 15 mm deep

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Indicators / Controls	
Alarm LED	Yellow
Danger LED	Red

ORDERING CODE

VMD-CVS100–Axx–Bxx–Cxx–Dxx

Environment (Axx)	
Standard	01
ATEX	02

Material (Bxx)	
Aluminium	01
Edelstahl	02

Relays (Cxx)	
01	1 Relay
02	2 Relay

Terminals (Dxx)	
01	Spring terminal
02	Screw terminal

Example:

VMD-CVS100–A01–B01–C01-D01

A01	=	Standard version
B01	=	Aluminum housing
C01	=	1 Relay
D01	=	Spring terminal

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Subject to change without notice

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