

INSTRUCTION MANUAL VIBRATION SWITCH CVS 100 M2



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1.0 General description

The vibration switch CVS 100 M2 allows a low-priced realisation of vibration control for stand-alone machines and auxiliary aggregates (e.g. fans, pumps, centrifuges, mills, gears, etc.), on whose functions important big-Installations or process-bounds are depending. Among other things it allows observation according to VDI 2056 and ISO 2372.

Utilized for this are the Vibrations of important machine parts (pillow blocks, foundations, casings) covered by rugged velocity feeders in electrical signals and processed and assessed with integrated electronics.

This signal- and adjust electronics is fitted together with the velocity feeder into an aluminium casing, fitted directly onto the machine to be observed.

Two independent adjustable level switches with eligible response delay are allowing the volt free signaling of "warning" and "alarm" via appropriate assigned relays.

2.0 Functional description

The signal of the velocity feeder is passed via a band-pass filter (10-1000 Hz) and is amplified in an amplifier up to the utilizing required level. An additional integrator enables displacement controlling alternative.

The measuring ranges and measuring units selection is made by jumpers. The DC-output signal available after the rectifying is calibrated in RMS. It has an effect on two adjustable level switches, whose response time is set by jumpers either to 1sec. or to 5sec. The assigned relays' change-over contacts enable the signal-circuit assembly (warning/alarm).

3.0 Installation and fixing

When mounting the vibration switch see to it that a special attention is directed to the duly fit of the casing cover and the screwed cable gland when mounted outside or in dusty or damp environment respectively.

To avoid damages of the vibration switch CVS 100 M2 the following vibrations mustn't be exceeded:

- Vibration from 10 to 2000 Hz, 15g
- shock 150g

The fixing is made by the thread M12. The starting torque has not to exceed 10Nm. It is to pay attention to a flat fixing surface. The use of split washers and gears is not allowed.

According to the design the measuring direction of the vibration switch CVS 100 M2 is vertical or horizontal.

4.0 Electrical supply

4.1 Auxiliary voltage and output signal

The auxiliary voltage 24 VDC has to be installed on the terminals No. 1 and 2. There is no galvanic separation between the auxiliary voltage and the output signal.

Terminal 1 power supply 24 V_{DC}
Terminal 2 power supply 0 V and output signal 0 V
Terminal 9 output signal 0 / 4...+20 mA
The output signal 0 / 4...+20 mA is on terminal No. 9.

Please note further Information in Chapter 5.0

4.2 Relay-output

The relay-outputs are on the terminals No. 3-5 and 6-8.

Relay – warning K 1

Terminal 3	NC
Terminal 4	COM
Terminal 5	NO

Relay – alarm K 2

Terminal 6	NC
Terminal 7	COM
Terminal 8	NO

Please note the relays normally are energized and the LEDs are flashing.

The terminal block is to pull off for electrical connection and setup.

5.0 Settings

5.1 Benchmarking size and measuring range

The measuring ranges (Velocity or displacement), measuring units' and the level switches time delays' selection is made by jumper.

<u>Benchmarking size</u>	<u>plug-in bridges</u>
Velocity	S 2 – 1
Displacement	S 2 – 2
Measuring range – velocity	
2 mm/s	S 1 – 1
5 mm/s	S 1 – 2
10 mm/s	S 1 – 3
20 mm/s	S 1 – 4
50 mm/s	S 1 – 5 (or special range)
Measuring range – displacement	
20 μ mp	S 1 – 1
50 μ mp	S 1 – 2
100 μ mp	S 1 – 3
200 μ mp	S 1 – 4
500 μ mp	S 1 – 5

Attention !

When changing the plug-in bridges the appliance has to unconnected to voltage.

5.2 Level switch

Time delay	
Relay - Warning K 1	
1 second	S 4 closed
5 second	S 4 open

Time delay	
Relay - Alarm K 2	
1 second	S 5 closed
5 second	S 5 open

5.3 Output signal

The selection of the output signal 0... +20 mA or 4... +20 mA is made by S3.

0... + 20 mA	S 3 - 1
4... + 20 mA	S 3 - 2

6.0 Technical data

Measuring direction:	vertical or horizontal (please take into account when ordering)
Amplifier:	AC-amplifier with rectifier and filter
Measuring range:	Velocity: 2, 5, 10, 20, 50 [mm/s] (RMS) Displacement: 20, 50, 100, 200, 500 [$\mu\text{m p}$]
Frequency range:	10 Hz ... 1000 Hz
Output signal::	0/4 ... +20 mA $R_{\text{Last}} \leq 500 \Omega$ proportional velocity or Displacement, calibrated in RMS [mm/s] or peak value [$\mu\text{m p}$]
Level detector:	2 piece, limit adjustable in range of 5 ... 100 % of measuring range end (Fail-Safe function, relay normally energized)
Time delay:	Adjustable 1 sec. or 5 sec.

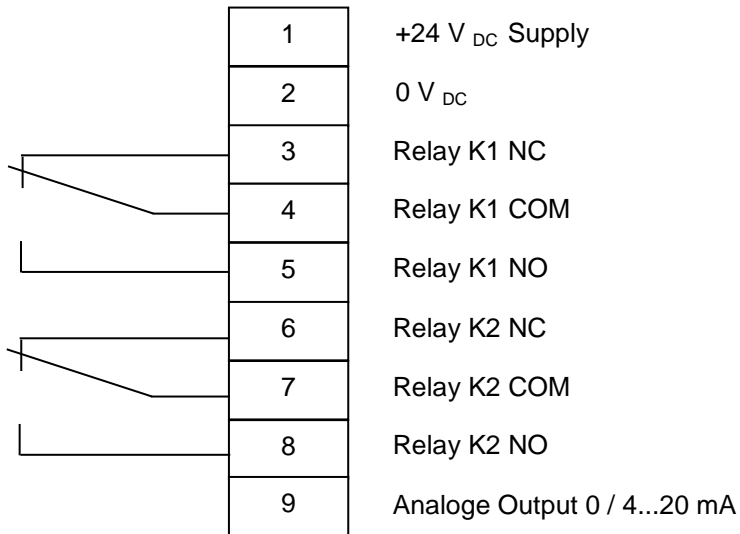
Relay contact safe load (change-over contact):

Turn-on voltage max.:	150 V _{DC} / 125 V _{AC}
Switching current max.:	1 A
Constant limited current	1 A
Rupturing capacity max.:	30 W / 60 VA

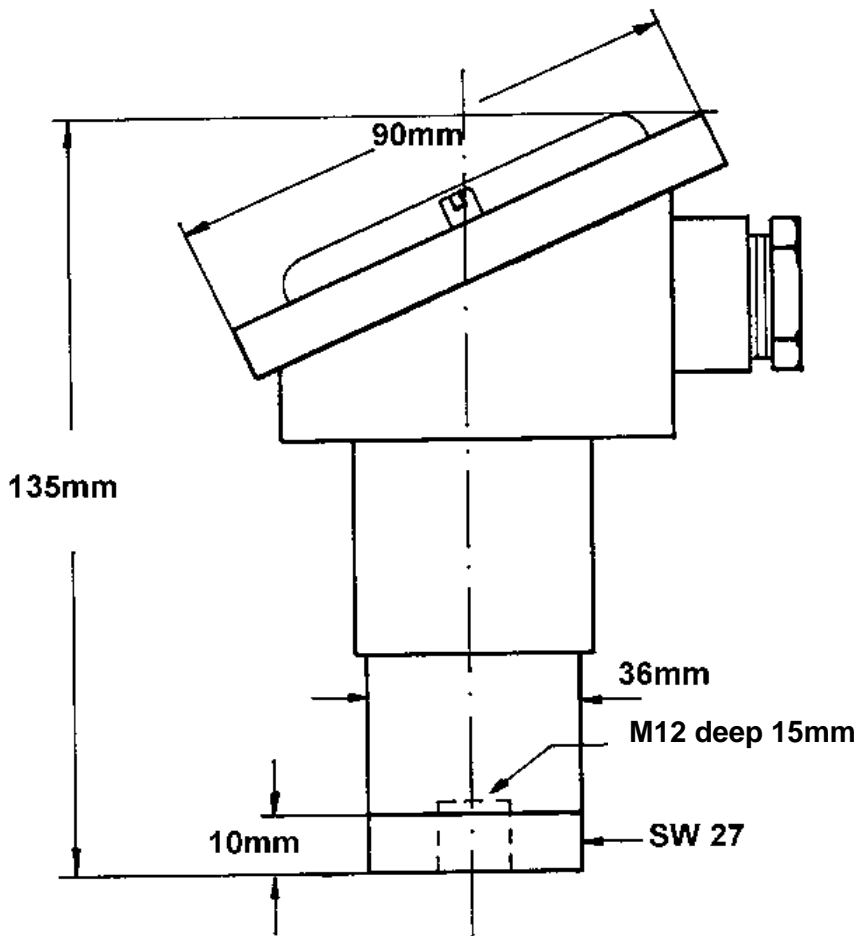
Device data:

Supply:	Voltage: 24 V _{DC} +/-20 % approx. 30 mA no galvanic separation
Temperature range:	-20 ... +70 °C working temperature -30 ... +70 °C storage range
Casing dimensions:	135 x 90 mm (height x diameter)
Material:	Aluminum AL Si 12/Cu
Mounting:	M12, 15 mm deep, wrench 27, starting torque 10 Nm
Screwed cable gland:	1 pc. M20 x 1,5
Protection class:	IP 55
Weight:	Approx. 0,62 kg

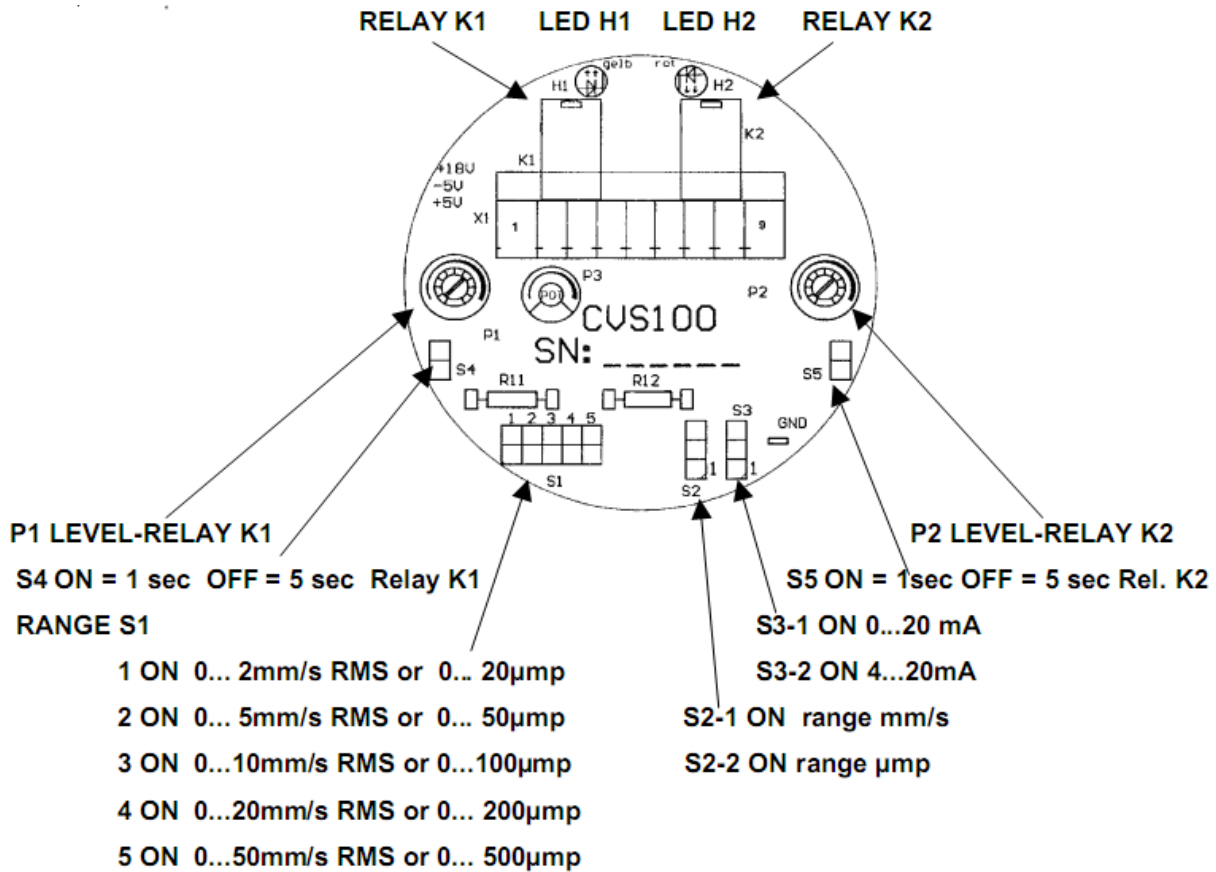
7.0 Terminal connecting



8.0 Dimensioned drawing



9.0 Position diagram – adjustable elements



Subject to change without notice.

Sales Offices

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