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Vibration Switch CVS 100 LC

Instruction Manual

INSTRUCTION MANUAL VIBRATION SWITCH CVS 100 LC



Ihr kompetenter Ansprechpartner / Your competent contact partner * * * seit 1958 * * *

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2.0 General description

The vibration switch CVS 100 LC 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 (pillowblocks, 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 (or optional stainless steel casing), fitted directly onto the machine to be observe.

An adjustable level switch with eligible response delay is allowing the volt free signaling via a relay.

3.0 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.

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

4.0 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 LC 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.

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According to the design the measuring direction of the vibration switch CVS 100 LC is vertical and horizontal.

5.0 Electrical supply

5.1 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 VDC
Terminal 2 power supply 0 V and output signal 0 V
Terminal 6 output signal 4..+20 mA

The output signal 4..+20 mA is on terminal No. 6.

Please note further Information in Chapter 6.0

5.2 Relay-output

The relay-output is on the terminals No. 3 – 5.

Relay – warning K 1

Terminal 3 NC
Terminal 4 COM
Terminal 5 NO

Please note the relay is normally energized and the LED is flashing.

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

6.0 Settings

6.1 Measuring range

The measuring ranges' and the level switches' time delays' selection is made by jumper.

Measuring range - velocity

2 mm/s	S 1 – 1
5 mm/s	S 1 – 2
10 mm/s	S 1 – 3

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20 mm/s	S 1 – 4
50 mm/s	S 1 – 5 (or special range)

Attention !

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

6.2 Level switch

Time delay	
Relay K 1	
1 second	S 4 closed
5 seconds	S 4 open

7.0 Technical data

Measuring direction:	vertical or horizontal (please take into account when ordering)
Amplifier circuit:	AC-Amplifier with filter and rectifier
Measuring range:	velocity 2, 5, 10, 20, 50 [mm/s] (effective)
Frequency range:	10 Hz... 1000 Hz
Output signals:	Proportional the velocity, calibrated in effective [mm/s]
Current output:	4.. + 20 mA $R_{Load} < 500 \text{ Ohm}$
Level switch:	1 piece, limit value adjustable in range of 5.. 100 % of respective measuring range end (fail-safe function, relay normally energized)
Time delay:	adjustable 1 or 5 sec
Relay contact safe load:	(change-over contact) Turn-on voltage max.: 150 VDC / 125 VAC Switching current max.: 1A Constant limited current max.: 1A Rupturing capacity max.: 30 W / 60 VA
Power supply:	24 VDC +/- 20 % 30 mA (no galvanic separation)

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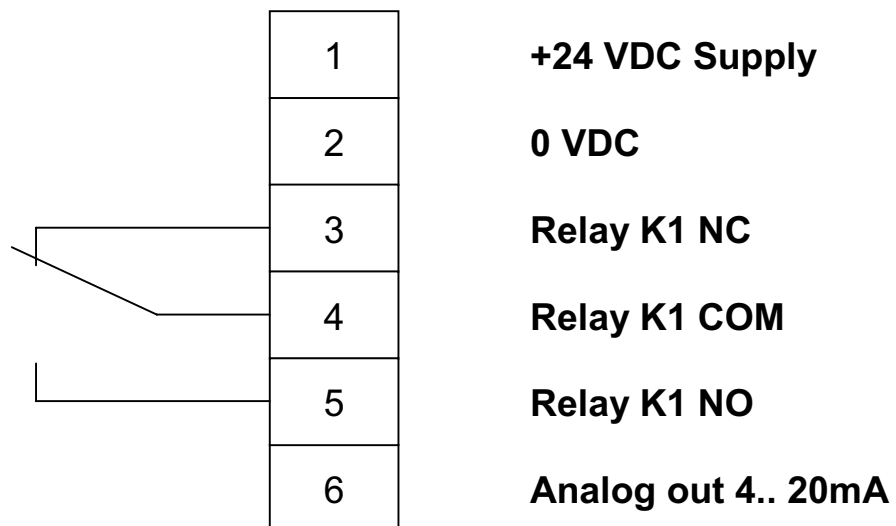
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Power consumption:	approximately 0,5 VA
Temperature range:	-20 .. +70°C (working temperature) -30 .. +70°C (storage range)
Casing measurement:	135 x 90 mm (height x diameter)
Material:	Aluminium AL Si 12/Cu or stainless steel 1.4305 (optional)
Fixing:	M12, 10 mm deep wrench 27 mm starting torque max. 10 Nm
Screwed cable gland:	1 x M20 x 1,5
System of protection:	IP 55
Weight:	approximately 0,62 kg (aluminium casing) approximately 1,70 kg (stainless steel casing)

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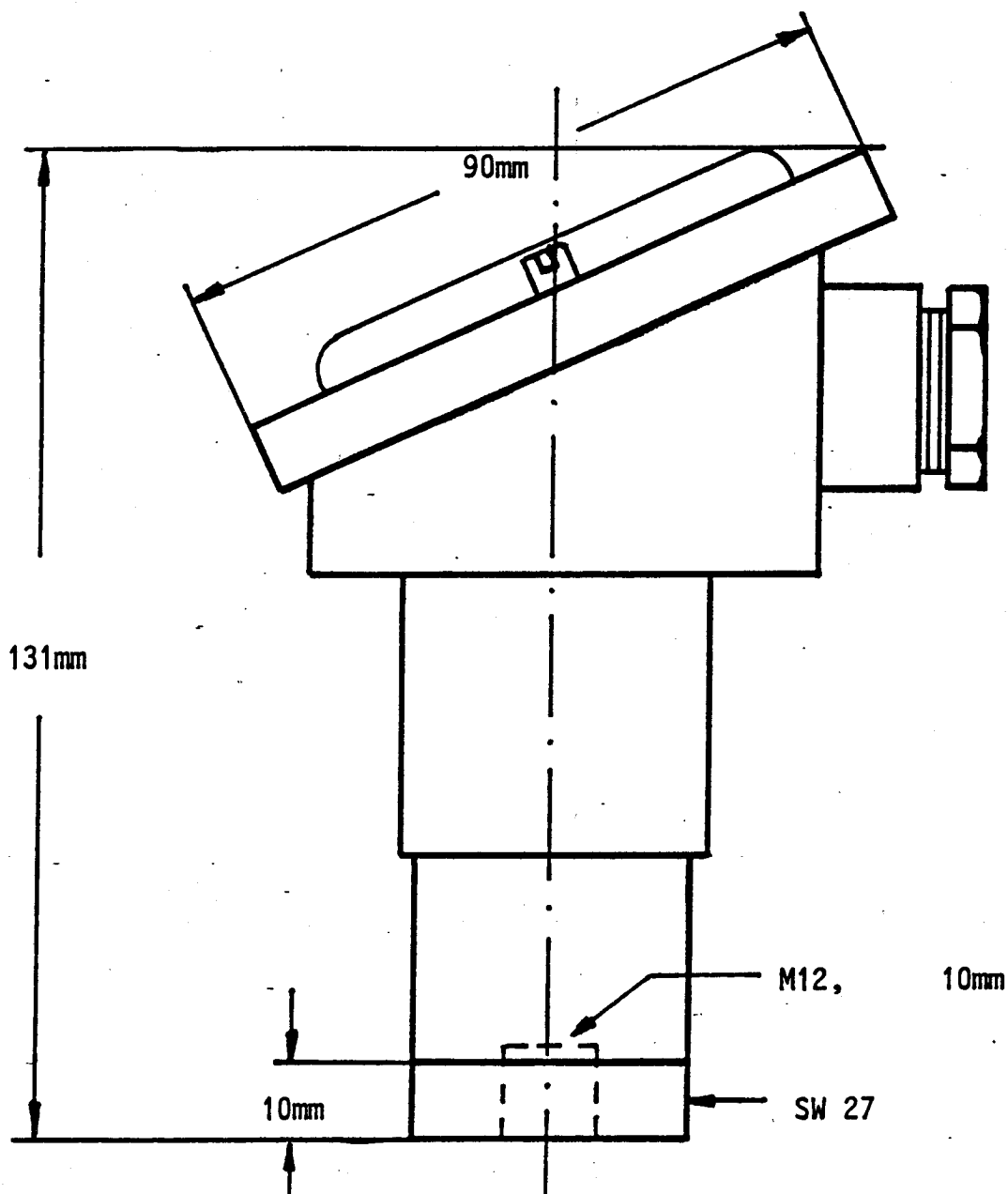
8.0 Terminal Connecting



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9.0 Dimensioned drawing 240 284 E1



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10.0 Position diagram – adjustable elements

