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Operating Manual RS1K

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For more information and help about this product please scan the QR-Code or choose the following link: RS1K.

Operating manual, Quick guide, Datasheet, Connection diagram, CAD Data
Firmwareupdates, FAQ, Videos about installation and settings, Certificates

- Vibrator control, multi-time relay for controlling vibrators in extraction systems

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1 General Notes

Compliance with the following instructions is mandatory to ensure the functionality and safety of the product. If the following instructions given especially but not limited for general safety, transport, storage, mounting, operating conditions, commissioning and disposal / recycling are not observed, the product may not operate safely and may cause a hazard to the life and limb of users and third parties.

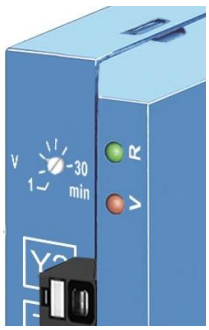
Deviations from the following requirements may therefore lead both to the loss of the statutory material defect liability rights and to the liability of the buyer for the product that has become unsafe due to the deviation from the specifications.

2 Display and controls

1. LED green Vibration process

2. LED red Delay time

3. Delay time V / tv adjustable



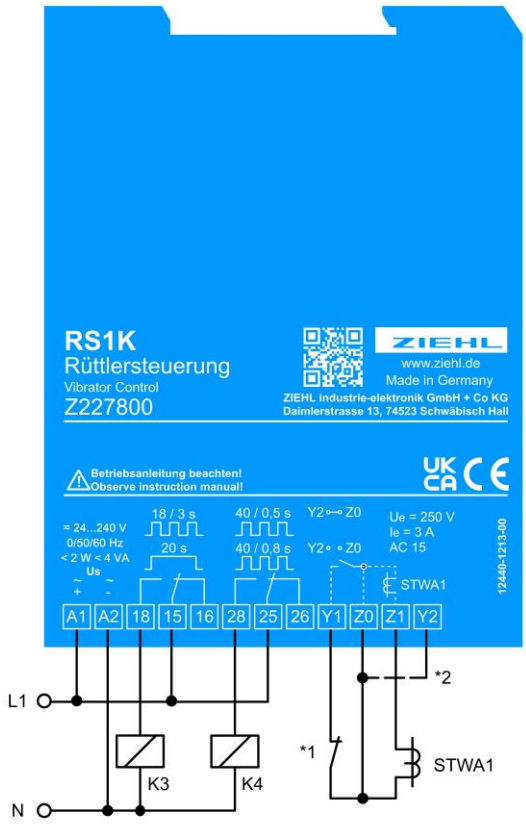
3 Application and short description

The RS1K vibrator control is a compact multi-time relay for controlling vibrators in extraction systems. Closing an external contact starts the delay time. Alternatively, the power consumption of the extraction motor can be evaluated with a current transformer STWA1 or STWA1H. After the adjustable delay time has elapsed, the relay controls the vibrator. Continuous vibrating and pulse vibrating are possible. LEDs indicate the operating state.
To operate extraction systems optimally, the filters, which become clogged with sawdust, chips, or dust, need to be vibrated free from time to time. The vibrating process must not take place during extraction or during the fan's run-down time. If extraction is started during the vibrating process, it must be stopped immediately. Therefore, an adjustable delay time expires before the start of a vibrating process, allowing the fan to wind down. This also allows short operational breaks to be bridged without vibrating each time.

4 Overview of functions

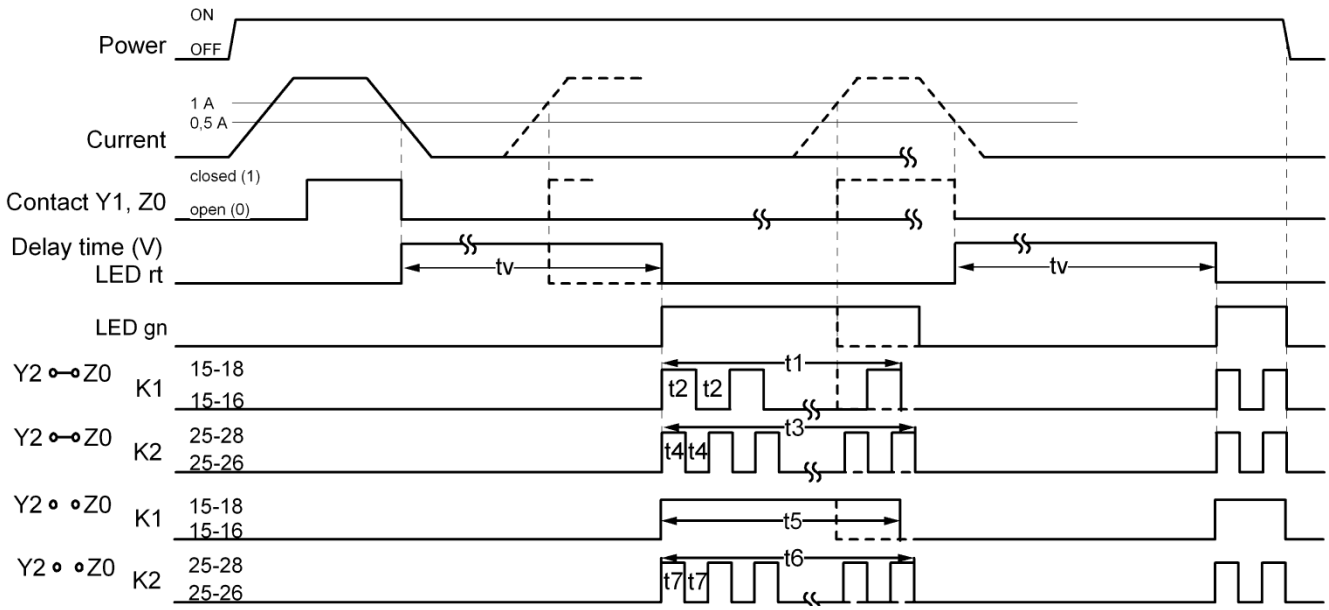
- Starting the delay time by opening a contact at Y1/Z0 (e.g., from the contactor of the extraction motor)
- Starting the delay time by current transformer STWA1 / STWA1H at Z0/Z1 (e.g., L1 from the extraction motor)
- Adjustable delay time 1 ... 30 min.
- Vibrating functions selectable with input Y2/Z0.
- Relay K1: Continuous vibrating 20 s or pulse vibrating 18 s in 3 s intervals
- Relay K2: Pulse vibrating 40 s with 0.5 s interval or 0.8 s interval (for controlling solenoid valves)
- LED (red) signals delay time
- LED (green) signals vibrating process
- Automatic interruption of the vibrating process when extraction starts.

5 Connecting diagram



*1: Absaugung EIN
*2: Auswahl Rüttelfunktion

6 Function Chart



tv: Delay time; t1 = 18 s; t2 = 3 s; t3 = 40 s; t4 = 0,5 s; t5 = 20 s; t6 = 40 s; t7 = 0,8 s

7 Important Information

DANGER!
Hazardous voltage!
Will cause death or serious injury. Turn off and lock out all power supplying this device before working on this device.

To use the equipment flawless and safe, transport and store properly, install and start professionally and operate as directed.
Only let persons work with the equipment who are familiar with installation, start and use and who have appropriate qualification corresponding to their function. They must observe the contents of the instructions manual, the information which are written on the equipment and the relevant security instructions for the setting up and the use of electrical units.
The equipment is built according to DIN VDE/EN/IEC and checked and leave the plant according to security in perfect condition. If, in any case the information in the instructions manual is not sufficient, please contact our company or the responsible representative.
In order to maintain this status, you must observe the safety regulations entitled “caution” in this operating manual. Failures to follow the safety regulations can result in death, personal injury or property damage to the device itself and to other devices and facilities.
To maintain this condition, you must observe the safety instructions in this instruction manual titled “Important Information”. Failure to follow the safety instructions may result in death, personal injury, or property damage to the equipment itself and other equipment and facilities.
Instead of the industrial norms and regulations written in this instruction manual valid for Europe, you must observe out of their geographical scope the valid and relevant regulations of the corresponding country.

Pay attention to the maximum permissible temperature when installing in a switch cabinet. Ensure sufficient distance from other devices or heat sources. If cooling is impeded, e.g., by the close proximity of devices with increased surface temperature or obstruction of the cooling air flow, the permissible ambient temperature decreases.

Caution!
Before connecting the device to mains voltage, make sure that the control voltage Us on the side type plate matches the mains voltage connected to the device!

Caution!
Only 1 current-carrying conductor must be led through the transformer STWA1!

8 Installation

The device can be mounted:

- on a 35 mm mounting rail according to EN 60715
- with M4 screws for wall mounting (additional latch required)

9 Commissioning

- Connect the device according to the connection diagram
- Assign relay outputs as needed

10 Error search

- Check if the control voltage at terminal A1, A2 is correctly applied and matches the device voltage specified on the side type plate.

11 Technical data

Control voltage Us:	AC/DC 24 – 240 V; 0/50/60 Hz	
Tolerance	AC 20 - 264 V; 45 - 62 Hz	DC 20,4 - 297 V
Power consumption:	< 4 VA	< 1 W
Inputs Z1-Z0		
Transformer connection	1x STWA1 or STWA1H	
Overload capacity STWA1	Max. 100A continuous, max. 300A for 10 s	
Switch-on threshold	Ion ≥ AC 1 A	
Switch-off threshold	Ion ≤ AC 0.4 A	
Tolerance	± 20 %	
Inputs Y1-Z0, Y2-Z0		
Terminal voltage, -current	18 V; 3 mA	
Delay time	1 … 30 min (± 20%) adjustable	
Relay outputs, K1, K2	2x 1 changeover	
Switching voltage	max. AC 300V; DC 300V	
Minimum voltage/current	12 V 10 mA	
Conventional thermal current Ith	max. 5 A	
Current per terminal	max. 5 A	
Switching capacity (resistive load)	max. 1250 VA max. 120 W at DC 24 V	
Operating category switching capacity	AC-15 Ie = 3 A Ue = 250 V DC-13 Ie = 2 A Ue = 24 V DC-13 Ie = 0.2 A Ue = 240 V	
Test conditions	EN 61010-1	
Rated impulse withstand voltage	4000 V	
Overvoltage category	III	
Degree of pollution	2	
Rated insulation voltage Ui	300 V	
Duty cycle	100 %	
EMC tests	EN 61326-1 industrial environment	
Interference emission	EN 61326-1; CISPR 11 Class B	
Interference immunity	EN 61326-1	
Fast transient interference variables (burst)	EN 61000- 61000 - 4± 4.5 kV Pulse 5/50 ns, f = 5 kHz, t = 15 ms, T = 300 ms	
High-energy surge voltages (surge)	IEC 61000-4-5 ±1 kV	
Installation conditions		
Permissible ambient temperature	-20 °C ... +60 °C	
Permissible storage temperature	-20 °C …+70 °C	
Installation height	< 2000 m above sea level.	
Climate resistance	5-85% rel. humidity, no condensation	
Permissible wiring temperature	-5 °C …+70 °C	
Vibration resistance EN 60068-2-6	10…57 Hz ±0.75 mm 57…150 Hz 1g	

Reliability – failure rate	EN 61709/ SN29500		
Ambient conditions	Local operation in dry rooms		
Operation time 24/7/365	8760 h/y		
Failure rate (FIT) Tu = Tref (component not in operation)	Tu = 40 °C 1181 FIT 96 years	Tu = 60°C 2287 FIT 49 years	Tu = 80°C 4681 FIT 24 years

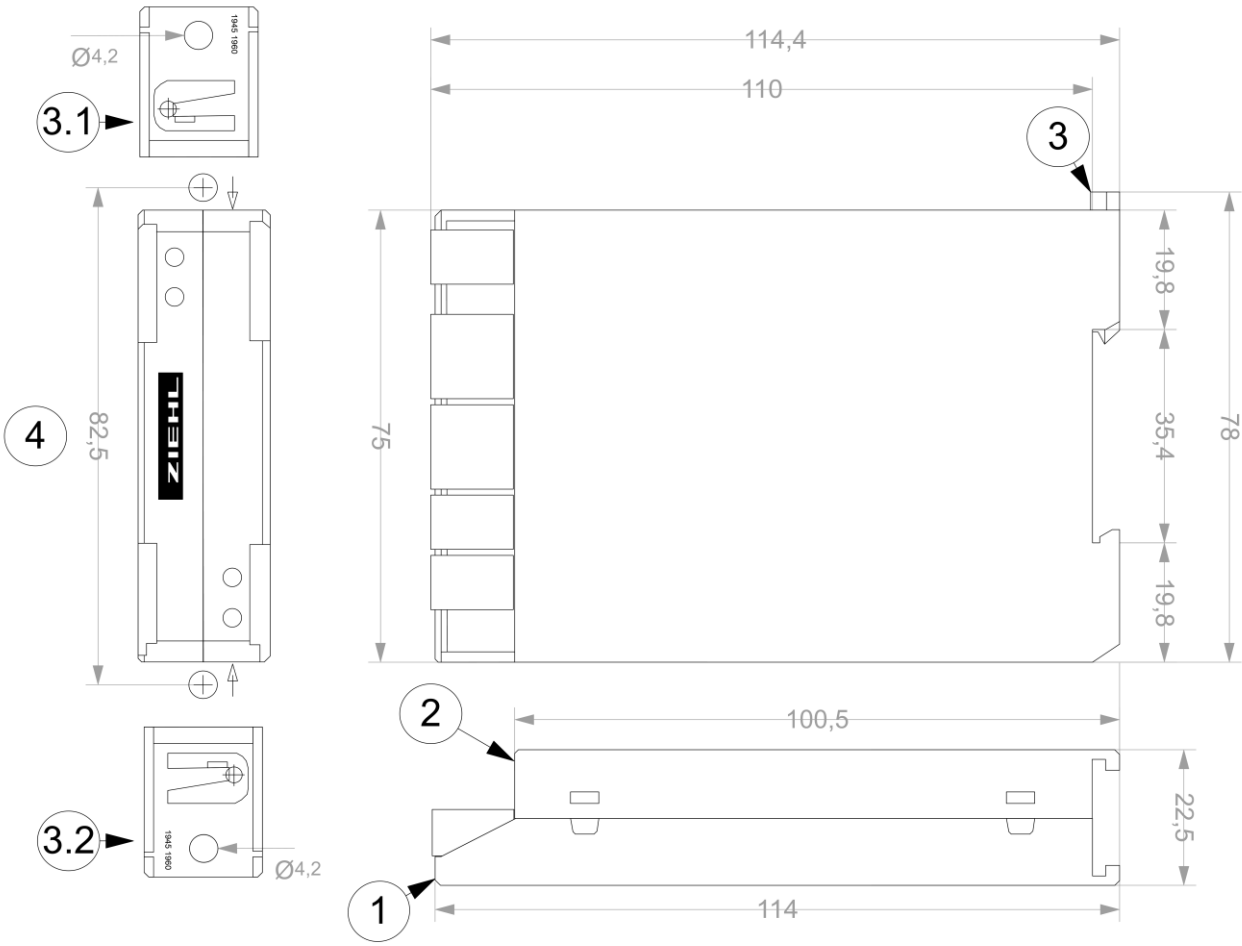
Connection type	Push-in spring-cage terminal
IP protection class Terminals	IP20
Operation type	Push button
Number of levels	1
Conductor cross-section solid	1 x 0.14 mm^2 … 1.5 mm^2 / AWG 28 … 16
Conductor cross-section finely stranded	1 x 0.14 mm^2 … 1.5 mm^2 / AWG 26 … 14
Conductor cross-section ferrule with collar	1 x 0.25 mm^2 … 0.75 mm^2
Conductor cross-section ferrule without collar	1 x 0.25 mm^2 … 1.5 mm^2
Stripping length	8 … 9 mm

Housing	Type K
Dimensions (W x H x D)	22.5 x 75 x 115 mm
Width	1 TE
IP protection class Housing	IP40
IK protection class Housing	IK06 (1 J impact energy)
Fastening	Snap-on mounting on mounting rail 35 mm to EN 60715 or screw fixing M 4
Installation position	optional
Weight	approx. 120 g

Subject to technical changes

12 Housing Type K

Bemaßungen in mm:



1. Bottom piece
2. Top piece
3. Bar
4. Holes for screw mounting

13 Disposal

Disposal should be carried out properly and in an environmentally friendly manner in accordance with legal provisions.
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