Relay RNIV1

The **RNIV1** evaluation relay is a functional replacement for the ***NIV 101/A*** device (*Wilo*).
It has an input for conductivity-type electrodes to indicate a drop or reach of the conductive liquid (water) level (leakage detection) and an input for connecting a bimetallic thermal fuse, or a suitable PTC thermistor, to monitor motor overheating (e.g. pump). Both inputs are connected to one potential-free changeover contact of the relay. the function of which is shown in Fig. 2.
If the level drops or the motor overheats, the relay switches off.
The level alarm (yellow LED) is triggered if the resistance is <20kΩ, the temperature alarm (red LED) is triggered if the resistance is >2kΩ. The level alarm is reset if the resistance is >30kΩ, the temperature alarm is reset if the resistance is <300Ω.
If a bimetallic thermal fuse or PTC thermistor is not used, the terminals of this input must be short-circuited with a zero resistance.
The device can be supplied on request with the possibility of negating individual inputs and negating the resulting output, so that the relay switching logic can be set as desired (type **RNIV2**).
To prevent electrode degradation, the input measurement is performed using a small AC current. The supply voltage is 230VAC, 24VAC or 24VDC depending on the type.

Technical parameters

Supply voltage	RNIV1/230 = 230V/50Hz ±10% RNIV1/24AC = 24V/50Hz ±10% RNIV1/24DC = 24VDC ±10%
Power consumption	max. 0,5VA
Switching capacity	250 VAC / 6 A (cos φ = 1) 24 VDC / 6 A (cos φ = 1)
Delay	cca 2s
Minimum service life (number of cycles)	20×10^6
Galvanic isolation of relay outputs	yes < 250V
Range of working temperature and humidity	-10 ÷ 50°C / 10 ÷ 95 %RH without condensation
Range of recommended storage temp. / RH	10 ÷ 50 °C / 20 ÷ 60 %RH
Protection class housing / terminal	IP40 / IP20 (EN 60529)
Electrode, alarm	< 20 kΩ
Electrode, reset	> 30 kΩ
PTC sensor, alarm	> 2 kΩ
PTC sensor, reset	< 300 Ω
Type of terminal board	CLL (conductors max. 2,5 mm^2)
Housing material	Noryl UL 94 V-O, RAL 7035
Dimensions h x w x d	90 x 52 x 59 mm
Attachment	Mounting on DIN bar TS35

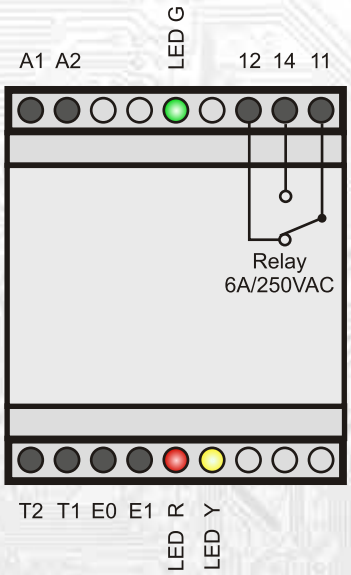
List of available types

Supply voltage	230V/50Hz	24V/50Hz	24VDC
Type	**RNIV1/230**	**RNIV1/24AC**	**RNIV1/24DC**

Inputs
1 x leakage detection (electrode)
1 x temperature sensor (bimetal or PTC)

Output
1 x potential-free changeover contact

Connection diagram (Fig. 1)



Terminals

A1.....Supply voltage (RNIV1/24DC... negative pole)
A2..... Supply voltage (RNIV1/24DC... positive pole)
11..... Relay output contact COM
12..... Relay output contact NC
14..... Relay output contact NO
T1,T2..... Bimetallic thermal fuse, PTC
E0,E1..... Conductivity electrodes

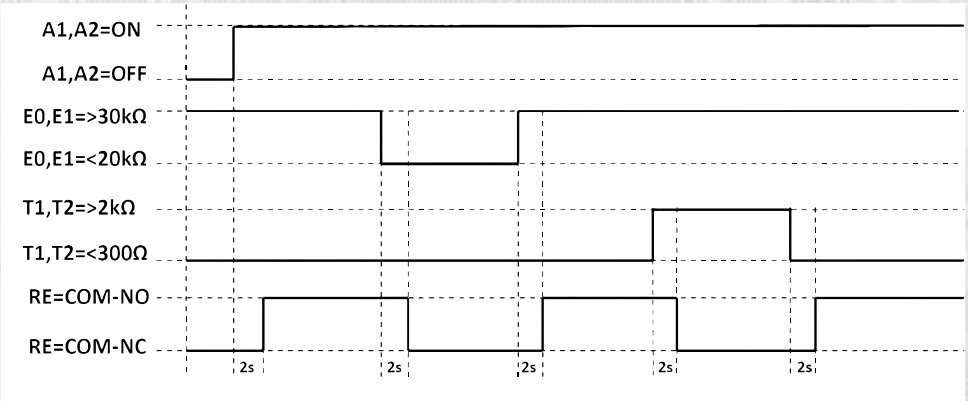
Terminals T1 and E0 are internally connected.

No input terminal (T1,T2,E0,E1) must be connected to any power supply terminal!

If a bimetallic thermal fuse or PTC thermistor is not used, terminals T1,T2 must be connected with zero resistance.

Display of operation statuses
LED green up..... Indication of connected supply voltage (Ready for operation)
LED red up..... Overtemperature indication (Temperature alarm)
LED yellow up..... Leakage indication (Leakage alarm)

State of the output relay contacts depending on the supply voltage and input states (Fig. 2):



Installation and connection

The electrical circuit to which the device is connected must be protected by a circuit breaker with a maximum tripping current of 16 A.
The switch is attached to the TS35 DIN rail using a bracket.
The device terminals are connected according to Fig. 1.
To ensure trouble-free operation, the power supply and electrode wires must be routed separately.
It is optimal to use a coaxial cable with a braid connected to terminals T1,E0 as electrode wires. The maximum length of the electrode wires should not exceed 20 m.