HRH-5 | Level switch for monitoring 1 or 2 levels

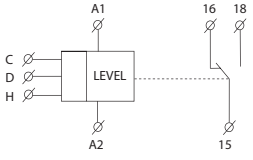
- Relay is designed for monitoring levels in wells, sumps, reservoirs or storage tanks.
- In one device you can choose the following configurations:
  - one-level switch of conductive liquids (formed by connecting H and D)
  - two-level switch of conductive liquids
- One-state connection monitors one level, two-state connection monitors two levels (CLOSES at one level and OPENS at another level)
- Adjustable time delay (0.5 – 10s)
- Adjustable probe sensitivity (5 – 100 kΩ)
- Measuring frequency 10 Hz prevents polarization of liquid and raising oxidation of measuring probes
- Galvanically isolated supply voltage AC/DC 24 – 240 V.

EAN code
HRH-5: 8595188136396

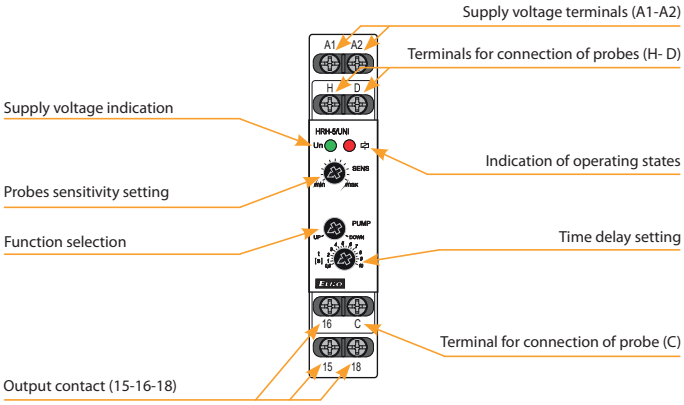
Technical parameters	HRH-5
Functions:	2
Supply terminals:	A1-A2
Supply voltage:	AC/DC 24 – 240 V (AC 50-60 Hz)
Consumption (max.):	3 VA/1 W
Toleration of voltage range:	–15 %; +10 %
Measuring circuit	
Sensitivity (input resistance):	5 – 100 kΩ
Voltage on electrodes (max.):	AC 3.5 V
Probe current:	AC < 0.1 mA
Response time (max.):	400 ms
Probe cable capacitance*	800 nF (sensitivity 5 kΩ)
(max.):	100 nF (sensitivity 100 kΩ)
Time delay (t):	0.5 – 10 s
Switch-on delay (t1):	1.5 s
Accuracy	
Setting accuracy (mech.):	± 5 %
Output	
Contact type:	1× changeover/SPDT (AgNi)
Current rating:	8 A/AC1; PD. B300
Breaking capacity:	2000 VA/AC1, 240 W/DC1
Switching voltage:	AC 250 V/DC 24 V
Power dissipation (max.):	0.6 W
Mechanical life (AC1):	60.000.000 ops.
Electrical life:	150.000 ops.
Other information	
Operating temperature:	–20 .. +55 °C (–4 .. +131 °F)
Storage temperature:	–30 .. +70 °C (–22 .. +158 °F)
Dielectric strength:	
supply - probes	AC 4 kV
supply - output	AC 4 kV
probes - output	AC 4 kV
Operating position:	any
Mounting:	DIN rail EN 60715
Protection degree:	IP40 font panel/IP20 terminals
Overvoltage category:	II.
Pollution degree:	2
Cross-wire section; solid/	1× 4 mm² (12), 2× 2.5 mm² (14 AWG)/
stranded with ferrule (max.):	1× 4 mm² (12), 2× 1.5 mm² (16 AWG)
Dimensions:	90 × 17.6 × 64 mm (3.5″ × 0.7″ × 2.5″)
Weight:	69 g (2.4 oz)
Standards:	EN 60255-1, EN 60255-26, EN 60255-27
Recommended probes:	see next page

* max. line length is limited by the capacity between the individual cable cores.

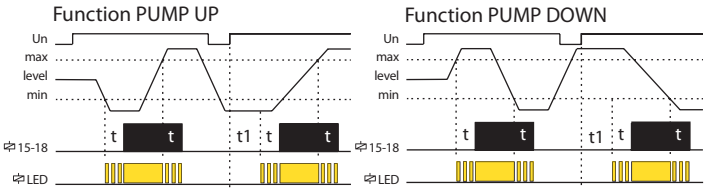
Symbol



Device description

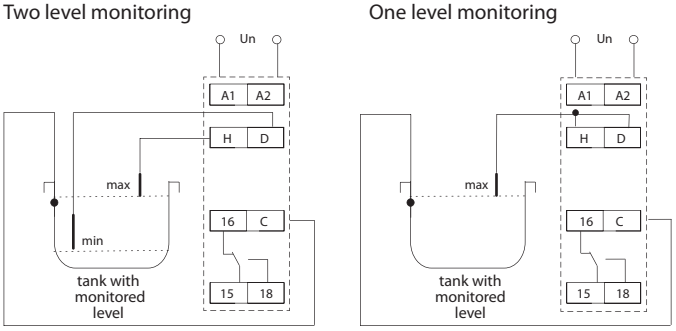


Function



The relay is designed for monitoring the level of conductive liquids, with a selectable function: FILLING or DRAINING (PUMP UP or PUMP DOWN). To prevent polarization and electrolysis of the liquid and unwanted oxidation of the measuring probes, an alternating current is used for measurement. Three measuring probes are used: H - upper level, D - lower level, and C - common probe. If a tank made of conductive material is used, the tank itself can serve as the C probe. If monitoring of only one level is required, the H and D inputs must be interconnected and connected to a single probe; in this case, the sensitivity is reduced by half (2.5 – 50 kΩ). The C probe can also be connected to the protective earth conductor (PE) of the supply system. To prevent unwanted switching caused by external influences (such as probe contamination by deposits, humidity, etc.), the device sensitivity can be adjusted according to the conductivity of the monitored liquid (corresponding to the "resistance" of the liquid) within a range of 5 – 100 kΩ. To limit the effect of undesired output contact switching due to turbulence of the liquid level in the tank, an output response delay of 0.5 – 10 s can be set.

Connection



SHR-1-N

EAN code
SHR-1-N: 8595188111379

SHR-1-N: stainless steel sensor

- Sensor to control flooding.
- The 4 mm diameter electrode is located in a plastic cover, which is equipped with a 12 mm thread with a nut.
- Panel or to holder mounting.
- Suitable for use in drinking water.
- Conductor is connected to terminal board, shrink bushing for feeder place insulation is a part of device.
- Max. wire profile: 2.5 mm^2 (10 AWG).
- Installation: after connecting a wire to the sensor, run the shrink bushing over the wire onto the sensor.
- Heat the sensor and by shrinking the connection of sensor and wire will be hermetical.
- Weight: 9.7 g (0.3 oz)
- Operating temperature: -25 .. +60 °C (-13 .. +140 °F)
- Total sensor lenght: 65.5 mm (2.58")

SHR-2

EAN code
SHR-2:8595188111263

Level probe **SHR-2**

- Detection sensor is electrode, which in connection with switchable device is used for level detection for example in wells, tanks.
- To be ued in electric conductive fluids and mechanically polluted fluids with temperature: +1 .. +80°C (+33.8 .. +176°F).
- Suitable for use in drinking water.
- Stainless steel one-pole electrode reside in PVC cover, intended for tank wall mounting or mounting by socket.
- To ensure corret function of the sensor, it is necessary to have the electrode without dirt which could disable the connection of the electrode and fluid and thus lead to malfunction.
- Max. wire profile: 2.5 mm^2 (10 AWG).
- Recomended wire D05V-K0.75/3.2.
- Installation:
  - conductor wire is connected by feazing of two brass screws to stainless steel electrode,
  - conductor is caulked by bushing Pg7 with protection degree IP68.
- Weight: 48.6 g (1.7 oz)
- Dimensions: max. diameter 21 mm (0.8"), lenght 96 mm (3.8")

SHR-2 in open state

SHR-3

EAN code
SHR-3: 8595188111270

Level probe **SHR-3**

- Stainless probe to be used into demanding industrial environments, designated for screwing into tank wall or cover.
- The probe is installed in horisontal, vertical or in sidelong position on tank side or in tank cover. Installation is done by soldering or by fixing nut. It is necessary to use 24 mm (1") screw. It is necessary to use an adequate torque with regards to a seal and operational overpressure in a tank.
- Sensor has connecting wire - lenght 3 m, which is connected to sensor to scan electrode and sensor bushing
- Connecting wire is double-wire PVC 2× 0.75 mm^2 (18 AWG)
- onnection of wires: brown - scan electrode, blue - sensor bushing.
- Connection M18x1.5 screw.
- Protection degree IP67.
- Sensor weight without cable: 100 g (3.3 oz).
- Operating surroundings: place without the danger of detonation, temperature on screw: max. +95 °C (+203 °F).
- Pressure immunity: on +25 °C (+77 °F) 4 MPa, on +95 °C (+203 °F) 1.5 MPa.
- Weight: 239 g (8.4 oz).
- Material: bushing and sean electrode: stainless steel W.Nr. 1.4301, insulation insert of electrode: PTFE.
- Internal material: self - extinguishing epoxide resin.
- Operating temperature: -25 .. +60 °C (-13 .. +140 °F).
- Total sensor lenght: 65.5 mm (2.58 ").
- Dimensions can be found in the relay catalog, technical information.