

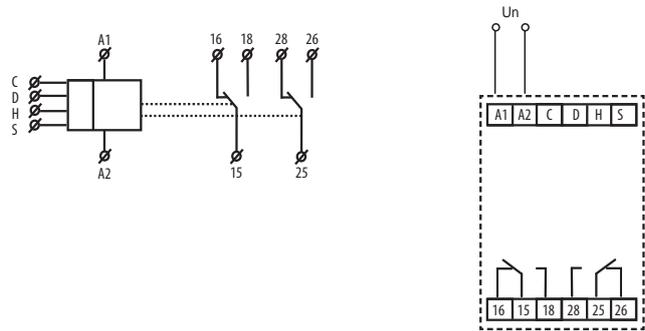


EAN code
 HRH-1 /230V 8594030337783
 HRH-1 /24V 8594030338209
 HRH-1 /110V 8595188117180

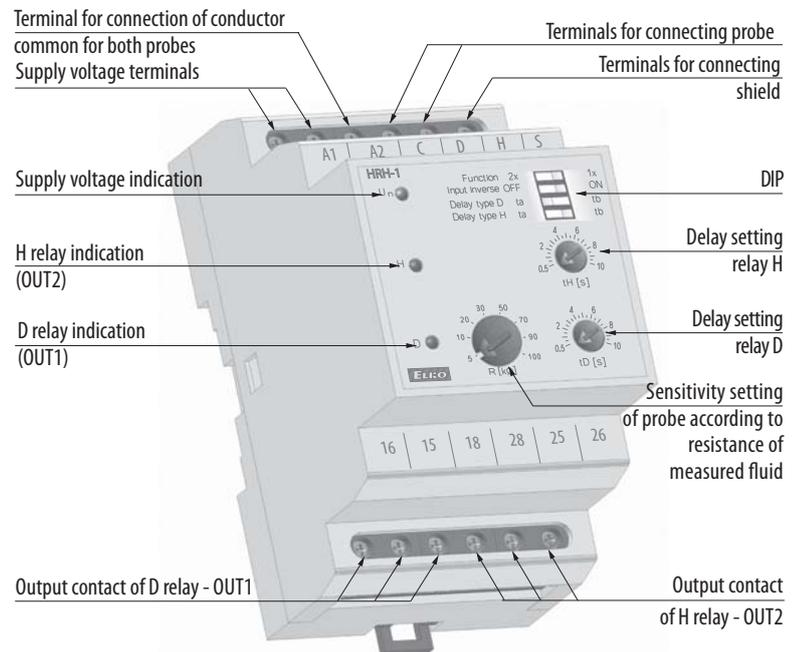
- used to check the level in wells, reservoirs, tanks, pools, tankers, containers, etc.
- within the framework of a single device, the following configurations can be selected (see functions graph):
 - two separate level switches
 - two probes in one tank
 - filling tank from well
- single-state monitors one level (full or empty tank), double-state monitors two levels (switches on upon one level and switches off upon the second)
- DIP switch on front panel is used to select function (see functions graph):
 - pumping in
 - pumping out
 - over-pumping
- option of setting time delay for reacting to the output upon a change in level, any type of delay by DIP switch
- sensitivity adjustable by potentiometer (probe resistance based on fluid)
- the measuring frequency 500 Hz prevents fluid polarization and oxidation increase of measured probes
- galvanically separated supply AC 230 V, AC/DC 24 V or AC 110 V
- output contact 2x switches 16 A / 250 V AC1
- in 3-MODULE design, fixing to DIN rail

| Technical parameters | HRH-1 |
|-------------------------------------|---|
| Function: | 4 |
| Supply terminals: | A1 - A2 |
| Voltage range: | AC 230V, AC/DC 24V (galvanically separated) |
| Burden: | or AC 110V(AC 50-60Hz) |
| Operating range: | max. 4.5 VA |
| Supply voltage tolerance: | -15 %; +10 % |
| Measuring circuit | |
| Hysteresis (input - opening): | in an adjustable range 5 kΩ- 100 kΩ |
| Voltage on electrode: | max. AC 5 V |
| Current in probes: | AC <1 mA |
| Time reaction: | max. 400 ms |
| Max. cable capacity: | 4 nF |
| Time delay tD: | adjustable 0.5 -10 sec |
| Time delay tH: | adjustable 0.5 -10 sec |
| Accuracy | |
| Setting accuracy (mech.): | ± 5 % |
| Output | |
| Number of contacts: | 16 A / AC1 |
| Current rating: | 4000 VA / AC1, 384 W / DC |
| Breaking capacity: | 30 A / < 3 s |
| Inrush current: | 250 V AC1 / 24 V DC |
| Switching voltage: | 500 mW |
| Min. breaking capacity DC: | 3x10 ⁷ |
| Mechanical life: | 0.7x10 ⁵ |
| Electrical life (AC1): | |
| Other information | |
| Operating temperature: | -20 °C to +55 °C (-4 °F to 131 °F) |
| Storage temperature: | -30 °C to +70 °C (-22 °F to 158 °F) |
| Storage temperature: | 4 kV (supply - output) |
| Electrical strength: | any |
| Operating position: | DIN rail EN 60715 |
| Mounting: | IP 40 from front panel / IP 20 terminals |
| Protection degree: | III. |
| Oversvoltage category: | 2 |
| Pollution degree: | solid wire max. 1x 2.5 or 2x1.5/ with cavern max. 1x1.5 |
| Max. cable size (mm ²): | 90 x 52 x 65 mm (3.5" x 2" x 2.6") |
| Dimensions: | 240 g(8 oz.) |
| Weight: | EN 60255-6, EN 61010-1 |
| Standards: | pg. 94 |

Symbol Connection



Description



Measuring probes

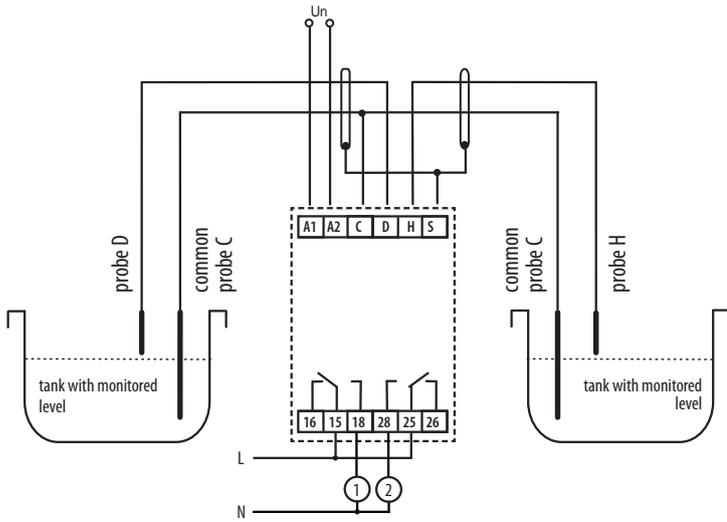
It can be any measuring probe (any conductive contact, use is recommended of brass or stainless steel).
 The probe wire does not need to be shielded, but it is recommended. When using a shielded wire, the shielding is connected to terminal S.

Description and importance of DIP switches

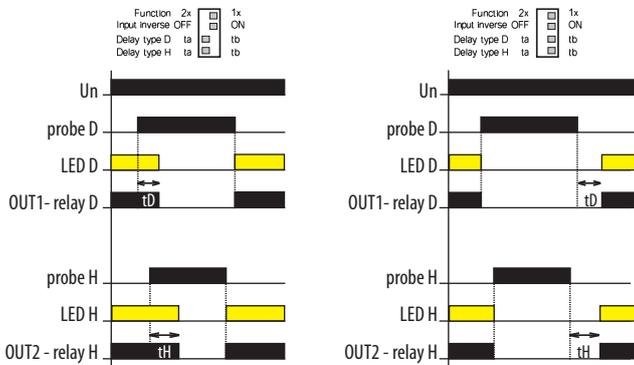
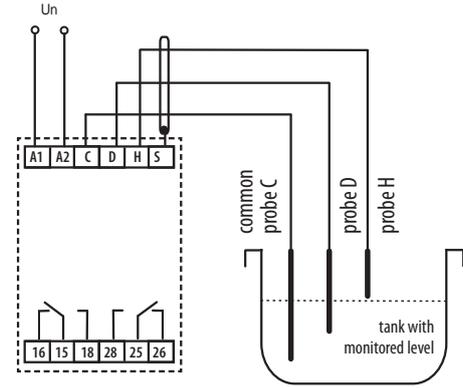
| | | | | |
|-------------------------------|-------------------|--------------------------|----|-------------------------------|
| 2 probes in one tank | Function 2x | <input type="checkbox"/> | 1x | 2 separate tanks |
| change of function of relay D | Input inverse OFF | <input type="checkbox"/> | ON | change of function of relay D |
| relay D - delayed open | Delay type D ta | <input type="checkbox"/> | tb | relay D - delayed close |
| relay H - delayed open | Delay type H ta | <input type="checkbox"/> | tb | relay H - delayed close |

Examples of use:

FUNCTION - Two independent level switches

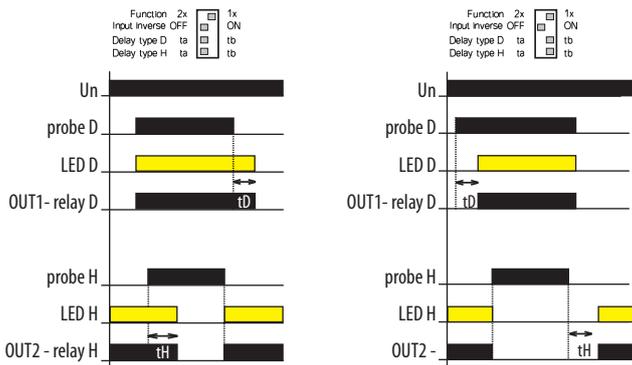


FUNCTION - Two probes in one tank



Filling function (both tanks)

- relay D starts pump 1
- relay H starts pump 2

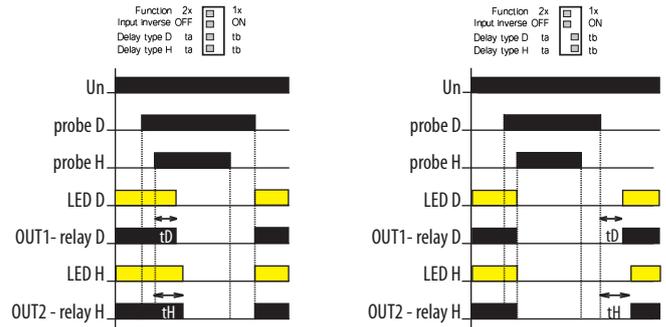


Discharge function (only for a tank where there is probe D)

- relay D starts pump 1
- relay H starts pump 2

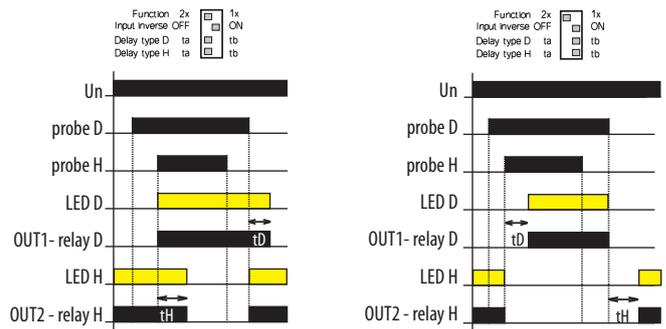
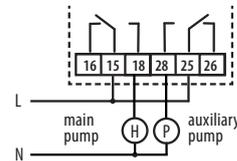
Note:

A metal tube, tank etc. could be used beneficially as a common probe. Due to the galvanic separation of probes from the supply voltage and measuring voltage up to 5V, it is possible for connecting probes to use ordinary communications cables. Delay upon closing or opening can be set independently for each relay.



Filling function (both tanks)

- relay D starts the main pump
- relay H starts the auxiliary pump
- FUNCTION: if the level drops below level D, relay D closes (main pump) and the tank is filled. If the level exceeds level H, the relay D with delay tD switches off. If the level does not reach level H by time tH, after the delay tH relay H also closes (auxiliary pump) and switches off immediately after reaching level H.



Discharge function (main and auxiliary pump)

- connection of relay contacts
- relay D starts main pump
- relay H starts auxiliary pump (circuit-opening contact 25-26 in series with working contact 15-18)
- FUNCTION: if the level H level is exceeded, relay D closes (main pump) and the tank discharges. If the level drops below level D, relay D switches off with delay tD. If the level does not reach level D until time tH, after completion of delay tH, the relay H opens and the circuit-opening contact 25-26 starts the auxiliary pump. After attaining level D relay H immediately closes and thus disconnects the auxiliary pump.

