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## HRH-4

### Level set



Made in Czech Republic

02-18/2017 Rev.: 1

### Characteristics

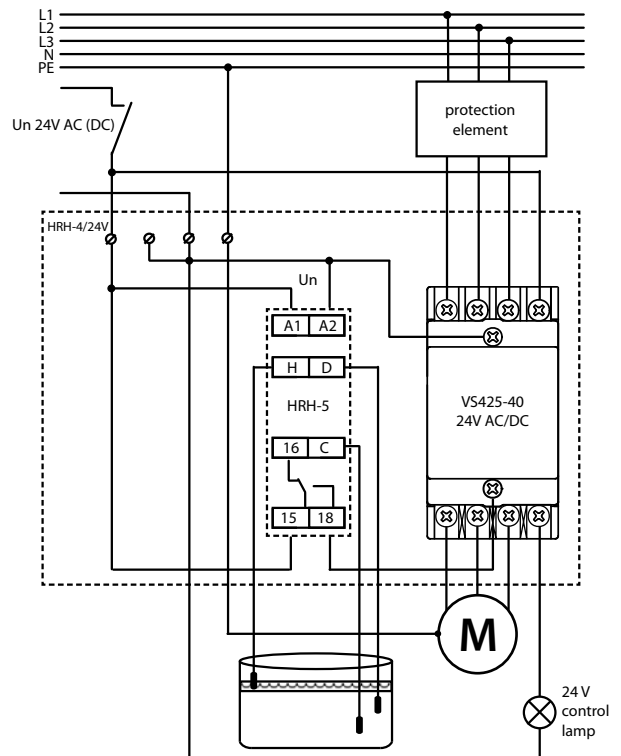
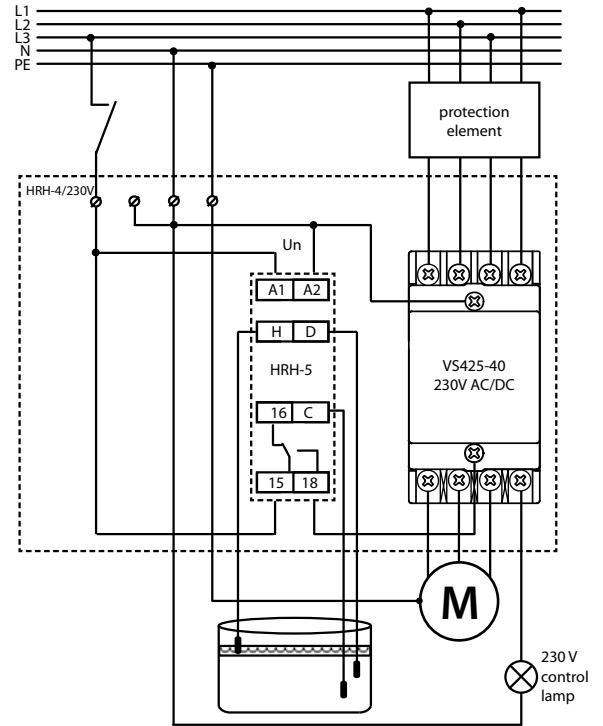
- in an easy way automatizes operation of pumps depending on level
- control of level in wells, tanks, reservoirs...
- delivered as a connected set - easy installation
- possibility to monitor level of any type of conductive liquid
- designated for an automatic operation in 1-phased and 3-phased pumps
- set of level switch HRH-5 and a contactor VS425
- function choice - pumping up or down
- unit doesn't have its own protection- it is necessary to add a suitable protection element
- protection degree of the set is IP55
- there is a possibility of 4 types of probes in a various design (they are not a part this set)
- unit is placed in a plastic box with dimensions 160 x 135 x 83 mm

### Measuring probes

Measuring probe can be arbitrary (whatever conductive contact, recommended is using of brass or stainless-steel material).

- Manufacturer's recommended probes:
  - SHR-1-N - stainless steel sensor
  - SHR-1-M - brass sensor
  - SHR-2 - stainless steel mounted in PVC cover
  - SHR-3 - stainless probe intended to be used in harsh industrial environments
  - FP-1 - flood probe
- Factory recommended conductor (certified to be used in drinking water):
  - Three-wire cable D03VV-F 3x0.75/3.2
  - Cable D05V-K 0.75/3.2

### Connection



HRH-4

Function:	2
Voltage range:	AC/DC 230 V or AC/DC 24 V (AC 50 - 60 Hz)
Power input:	max. 7 VA / 1.5 W
Max. dissipated power (Un + terminals):	4 W
Supply voltage tolerance:	-15 %; +10 %

Measuring circuit

Sensitivity (input resistance):	adjustable in range 5 kΩ - 100 kΩ
Voltage on electrodes:	max. AC 3.5 V
Current on probes:	AC < 0.1 mA
Time response:	max. 400 ms
Max. capacity of probe cable:	800 nF (sensitivity 5 kΩ), 100 nF (sensitivity 100 kΩ)
Time delay (t):	adjustable, 0.5 - 10 sec
Time delay (t1):	1.5 sec

Accuracy

Setting accuracy (mech.):	± 5 %
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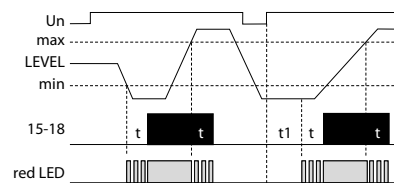
Output

Number of contacts:	4x switching
Rated thermal current:	25 A
Loading in AC3:	4 kW / 400 V
Mechanical life:	3x10 <sup>6</sup>

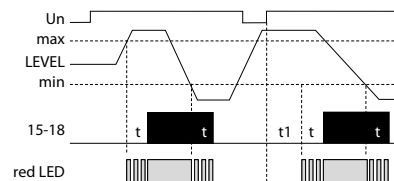
Other information

Operating temperature:	-20 °C to 55 °C (-4 °F to 131 °F)
Storage temperature:	-30 °C to 70 °C (-22 °F to 158 °F)
Electrical strength (supply-output):	3.75 kV, galvanically insulated
Operating position:	any
Protection degree:	IP55
Pollution degree:	2
Dimensions:	160 x 135 x 83 mm (6.3" x 5.3" x 3.3")
Weight:	743 g (26.2 oz.)
Standards:	EN 60255-6, EN 61010-1

Function PUMP UP



Function PUMP DOWN



- 1) PUMP UP - in case the level falls under a lower limit (sensor D), a relay switches and a pump pumps a liquid up until it reaches an upper limit (probe H), then a relay opens and a pump stops pumping. When a level reaches a lower limit again, all process is repeated. After the device is energized, relay automatically closes and a pump pumps liquid to upper limit.
- 2) PUMP DOWN - in case a level reaches over an upper limit, a relay closes and a pump pumps liquid down. In case a level reaches a lower limit, a relay opens and a pump stops pumping. When energized, a relay is in an open state and a pump operates only after an upper limit is exceeded.
- 3) In case you combine inputs H and D and connect them to one probe, the device will keep only one level (upper and lower limit will become one). In function PUMP UP relay closes in case the level falls under a probe level. A pump pumps liquid up and in case the level reaches a probe level, a relay opens and a pump stops. The level is kept in a small range around the probe. In function PUMP DOWN relays closes in case a level reaches a probe level. A pump pumps down until the level reaches a probe, then relay pens and pump stops.

Warning

The device is constructed to be connected into 1-phase main and must be installed in accordance with regulations and norms applicable in a particular country. Installation, connection and setting can be done only by a person with an adequate electro-technical qualification which has read and understood this instruction manual and product functions. The device contains protections against over-voltage peaks and disturbing elements in the supply main. To ensure correct function of these protection elements it is necessary to front-end other protective elements of higher degree (A, B, C) and screening of disturbances of switched devices (contactors, motors, inductive load etc.) as it is stated in a standard. Before you start with installation, make sure that the device is not energized and that the main switch is OFF. Do not install the device to the sources of excessive electromagnetic disturbances. By correct installation, ensure good air circulation so the maximal allowed operational temperature is not exceeded in case of permanent operation and higher ambient temperature. While installing the device use screwdriver width approx. 2 mm. Keep in mind that this device is fully electronic while installing. Correct function of the device is also depended on transportation, storing and handling. In case you notice any signs of damage, deformation, malfunction or missing piece, do not install this device and claim it at the seller. After operational life treat the product as electronic waste.