

SHV1 FLOOD DETECTORS (LEVEL SENSORS)

L01.02en

DESCRIPTION AND APPLICATION

Level sensors (flood sensors) consist of metal sensing electrodes and a plastic head containing evaluation electronics. The connection of 24 VDC or 24 VAC supply voltage as well as the resting state of the relay or transistor output are indicated by a green LED. The failure state (forming of a conductive connection between the electrodes) is indicated by a red LED inside the box and a change of the state of the output transistor or relay contact. The selection of the relay output is done through the placement of a jumper on the PCB. All metal parts are made of stainless steel DIN 1.430, the basic length of the sensing electrodes is 50 mm. The supply cables are connected to the terminal board through bushings, which are part of the plastic head. The basic material of the head is POLYAMIDE.

Level sensors (flood sensors) operates on the principle of different conductivity of air and water. Water becomes conductive to a certain extent due to dissolved mineral and organic substances. Under normal conditions (rain water), it has a conductivity of 5 mS/m and higher. This value reflects also on the setting of the sensitivity of the sensor with a margin (less than 1 mS/m). Once the electrodes are connected by a conductive medium, current starts to flow through the circuit (of the order of μA), which is then detected by evaluation electronics. This leads to state indication by a red LED, activation of the output transistor (open collector) or closing/opening of relay contacts.

Level sensors (flood sensors) indicate fault conditions associated with water leakage in industrial plants as well as in rooms, offices or production halls within the range of 0 to 80 °C. The level sensors (flood sensors) meet the ingress protection of IP 65 according to EN 60529, as amended and satisfy the conditions for operation in a normal, non-aggressive environment. The method of use must be chosen with regard to the temperature resistance of the sensor head and chemical resistance of the sensor housing and head.

Possible applications:

- pump shutdown upon reaching a required level
- flooding of buildings by groundwater, floods, sewage
- flooding of sumps, pump activation upon reaching a certain level
- indication of water leakage from a washing machine, boiler, pump unit, etc.
- flooding of a room in the event of various equipment failures – broken toilet water supply line, overflowed bathtub, sink
- monitoring of condensate in a ventilation duct

DECLARATION, CERTIFICATES, CALIBRATION

Manufacturer provides **EU Declaration of Conformity**.

SPECIFICATIONS

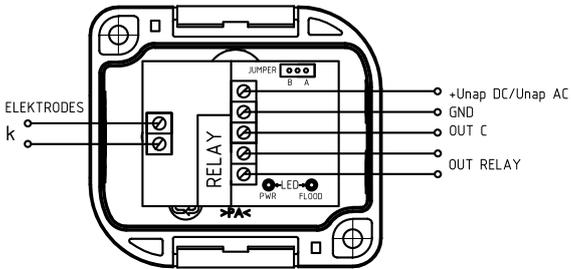
Level sensor type	SHV1 OUT R	SHV1 OUT C
Supply voltage	15 to 30 V DC/V AC for rele output; recommended 24 V DC/V AC	12 to 30 V DC/V AC for open collector output; recommended 24 V DC/V AC
Temperature range	around the head: 0 to 80°C sensing elektrode: max. 100 °C	
Output signal	relay output	output terminal of the open collector type
Max. consumption without load	approx. 15 mA	
Max. consumption with load	approx. 35 mA	
Max. switching current	6 A	
Switching voltage	up to 24 V DC/V AC	
Indication	red LED – alarm state green LED – in operation, inactive alarm state	
Switching sensitivity	alarm function active at fluid conductivity above 1 mS/m-1	
Insulation resistance	between electrodes \geq 500 V DC (between electrodes not connected to the PCB)	



OTHER PARAMETERS

Ingress protection of the head	IP65 acc. to EN 60529, as amended
Head material	POLYAMIDE
Electrode material	stainless steel DIN 1.4301
Dimensions	head 90 x 63 x 34 mm including electrodes 141 x 63 x 34 mm
Weight	125 g

WIRING DIAGRAM



- POSITION A: during flooding the outputs are active
- POSITION B: during flooding the outputs are not active

DIMENSIONAL DRAFT

