



ZAMEL Sp. z o.o.

ul. Zielona 27, 43-200 Psczyna, Poland
tel. +48 (32) 210 46 65, fax +48 (32) 210 80 04
www.zamel.com, e-mail: marketing@zamel.pl



DESCRIPTION

The PZM-20 device is used to detect the presence of conductive liquids. Detection levels of liquid and of mounted sensors are the same. The device can be used to activate different circuits (mostly pumps) depending on the liquid level. PZM-20 cooperates with SZH-03 sensors produced by ZAMEL Sp. z o.o. The sensitivity of a sensor detection can be adjusted in the range of $1 \pm 190 \text{ k}\Omega$ by means of a potentiometer placed on the front panel. The device output is equipped with three relays of a maximum contact load 16 A. The use of changeover contacts NO/NC increases the device (PZM-20) application range. The red LEDs (PK1, PK2, PK3) indicate that a particular output is switched on. The green LED indicates the presence of 230 V AC supply voltage. The PZM-20 relay is designed to be mounted on a rail (TH35) in distribution boards. It is made in a 3modular casing.

FEATURES

- Circuit control depending on the liquid level
- three detection channels
- detection sensitivity adjustment in the range of $1 \pm 190 \text{ k}\Omega \pm 15\%$
- cooperation with SZH-03 flooding sensor
- parallel or serial sensor connection
- optical signalling of switching on the device (1 x green LED)
- optical signalling of output status (3 x red LED)
- 3 x relay outputs (dry contacts) NO/NC of a maximum load 16 A
- mounting in distribution boards (TH35 rail).

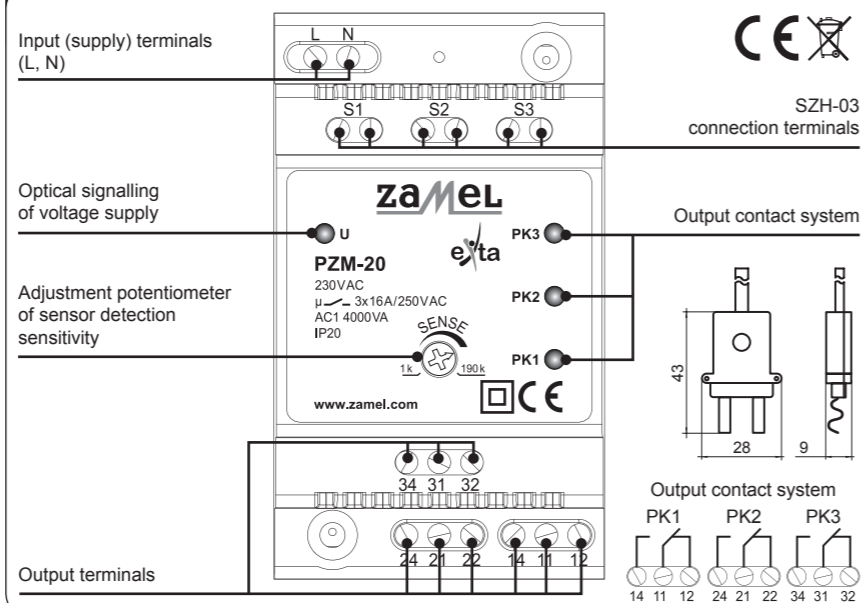
The device is designed for single-phase installation and must be installed in accordance with standards valid in a particular country. The device should be connected according to the details included in this manual instruction. Installation, connection and control should be carried out by a qualified electrician staff, who act in accordance with the service manual and the device functions. In case of casing dismantling, the guarantee is lost and an electric shock may occur. Before installation make sure the connection cables are not under voltage. The cruciform head screwdriver 3,5 mm should be used to install the device. Improper transport, storage, and use of the device influence its wrong functioning. It is not advisable to install the device in the following cases: if any device part is missing or the device is damaged or deformed. In case of improper functioning of the device contact the producer.

TECHNICAL DATA

PZM-20 relay	
Input (supply) terminals:	L, N
Nominal supply voltage:	230 V AC
Nominal supply voltage tolerance:	-15 + 10 % (195 + 255 V AC)
Nominal frequency:	50 Hz
Nominal power consumption:	stand-by: 0,9 W, active outputs: 2,6 W
Optical signalling of voltage supply:	1 x green LED
Optical signalling of relay status:	3 x red LED
Liquid detection delay:	~2 seconds
Liquid detection method:	SZH-03 external sensor (maximum 3 pcs.)
Sensor terminals:	S1, S2, S3
Detection sensitivity adjustment:	yes – in the range of $1 \pm 190 \text{ k}\Omega \pm 15\%$
Maximum sensor cable length:	100 m
Output elements:	3 x relay
Output relay parameters:	NO/NC – 16 A 250 VAC AC1 – 4000VA
Maximum output load:	2000 W for resistive loads (AC1)
Number of terminal clamps:	17
Cross-section of connection cables:	0,2 to 2,5 mm ²
Operating temperature range:	-20 + +50 °C
Operating position:	free
Casing mounting:	TH35 rail
Protection degree:	IP20
Protection class:	II
Overvoltage category:	II
Pollution degree:	2
Dimensions:	90 x 53 x 66 mm (three-modular)
Weight:	0,167 kg
Reference standard:	PN-EN 60730-1, PN-EN 60730-2-15, PN-EN 61000-4-2,3,4,5,6,11

SZH-03 sensor (separately purchased)	
Voltage of sensor not immersed in water:	< 3 V AC
Voltage of sensor immersed in water:	< 0,5 V AC
Sensor current:	< 0,05 mA
Contact material:	bronze tape 0,35 mm
Connection cable:	2 x 0,5 mm ² , 3m long
Dimensions:	28 x 43 x 9 mm

APPEARANCE



MOUNTING

1. Disconnect power supply by the phase fuse, the circuit-breaker or the switch-disconnector combined to the proper circuit.
2. Check if there is no voltage on the connection cables by means of a special measuring equipment.
3. Install PZM-20 on a TH35 rail in the distribution board.
4. Install (SZH-03) flood sensors in a tank at heights corresponding to levels at which the correct output should be activated (S1→PK1, S2→PK2, S3→PK3).
5. Connect cables with terminals according to the installing diagram.
6. Adjust the sensitivity potentiometer to the maximum (190 kΩ).
7. Switch on the power supply from the mains (230 V AC).
8. If the PK1 relay does not switch off after the sensor has been connected to the S1 output and immersed in water, then it is required to adjust its sensitivity by a potentiometer (value change from 190 kΩ to 1 kΩ should switch on the relay).

CAUTION:

- The cables of the sensor can be lengthened to the maximum of 100 m by means of a cable with the minimum 0,5 mm² section.
- Sensors connected to the same output (S1, S2, S3) can be connected in a parallel or serial way, if required. In a parallel connection a particular relay is activated in case any of the installed sensors has been flooded. In serial connection a relay is activated only in case all sensors have been flooded (see Sensor connection).
- The correct PZM-20 operation does not require the installation of all three SZH-03 sensors.

TABLE 1

Exemplary permitted liquids	Exemplary not permitted liquids
<ul style="list-style-type: none"> • drinking water • well water • rainwater • liquids with low alcohol content • wine, milk, coffee • liquid manure, liquid fertilizers 	<ul style="list-style-type: none"> • demineralized water • petrol • oil • liquids with high alcohol content • paraffin • varnishes

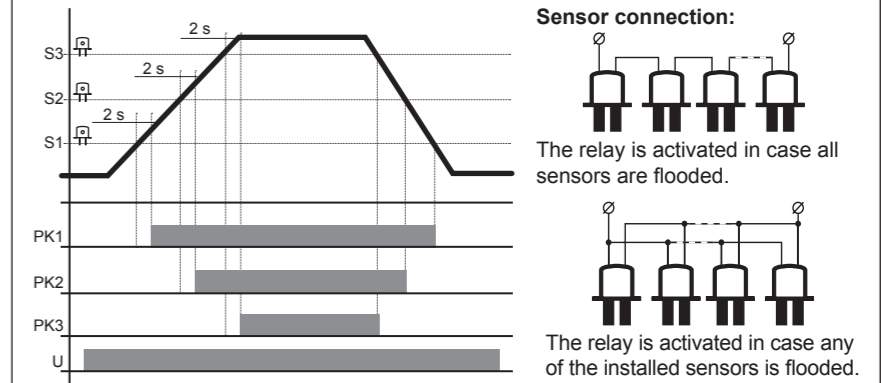
WARRANTY CARD

There is a 24 month guarantee on the product.

Salesman stamp and signature, date of sale.

FUNCTIONING

After power supply has been applied, the system operates properly (green LED switches on) and controls the status of external SZH-03 sensors. In case a sensor's electrodes are flooded with conductive liquids (see TABLE 1) and the detection sensitivity is correctly adjusted by a potentiometer on the front panel, then the system waits 2 seconds and switches on the relay corresponding to this sensor (closed contacts 11-14 for S1, 21-24 for S2, 31-34 for S3). Additionally, output activation is optically signalled by a red LED placed on the front panel. In case the liquid level drops below the installed sensor level, the corresponding relay (closed contacts 11-12 for S1, 21-22 for S2, 31-32 for S3) and the red LED are switched off.



WIRING DIAGRAM

