

## TEMPERATURE SWITCHES TSZ2H



### DESCRIPTION AND APPLICATION

These temperature switches with display are designed for using as two-state controllers (ON/OFF type control). They compare the temperature set-point with the actual temperature value and enable switching the galvanically separated (electrically insulated) contacts of a connected relay when the set temperature is reached. Supply voltage of the switches is 7 to 36 V DC or 230 V AC (by the type). Two temperature sensing elements on the base of Pt (Pt 1000/3850) or on the base of Ni (Ni 1000/6180) can be connected to the switches. The display indicates the present value of the measuring temperature during measure process. Setting of individual parameters is executed by two control buttons.

The switch can be used in 5 different modes:

- Mode no. 1: the switch operates as a single controller which switches the first relay by the set temperature interval and the second relay is switched at the exceeding set emergency temperature (only one sensing element is used)
- Mode no. 2: the switch operates as a single controller which switches each relay by the set temperature interval (only one sensing element is used)
- Mode no. 3: the switch operates as a double controller, it means that each relay is controlled by the temperature of one sensing element
- Mode no. 4: the switch operates as a differential controller which switches on the base of temperature difference of two sensing elements (analogous to mode no. 1)
- Mode no. 5: the switch operates as a differential controller which switches on the base of temperature difference of two sensing elements (analogous to mode no. 2)

The time delay of switching-off for the relay 1 within the limits 0–300 s can be set in each mode.

The switches are intended for assembly to the DIN slat. The temperature range of the switch applications depends on used temperature sensing element type (for example for the sensor in the TG8 case the range is -50 to 200 °C). Maximum operating temperature range of the switch is -50 to 250 °C.

The switches are intended for operating in a chemically non-aggressive environment.



### DECLARATION, CERTIFICATES, CALIBRATION

**EC Declaration of Conformity** – in accordance with Act No. 22/1997 Coll. as amended for temperature switches.

**Calibration** – we perform standard calibration of resistance temperature sensors in accordance with EN ISO/IEC 17025 in the temperature range -70 to 600 °C.

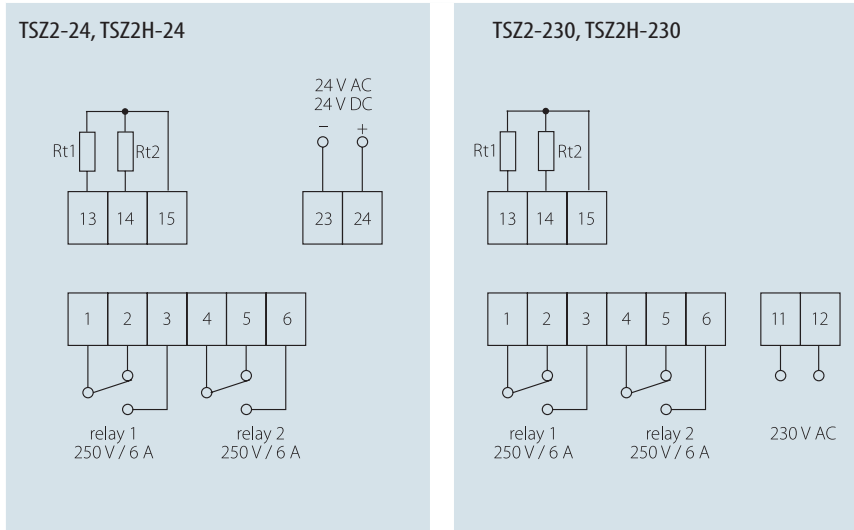
### SPECIFICATIONS

Switch type	TSZ2H-24	TSZ2H-230
Output	2 relays	
Type of sensing element	Pt 1000/3850 or Ni 1000/6180	
Maximum temperature operating range	-50 to 250 °C	
Power supply	7 – 36 V DC, V AC	230 V AC
Maximum switched voltage	250 V AC / 6 A	
Maximum error of the switch*	± (0.2 % from the value + 2 dig)	
Resolution	0.1 °C	
Setting range	-50 to 250 °C, step 0.1 °C	
Display	4 digits – red LED, high of the digits 10 mm	
Brightness of the display setting	4 levels	
Updating of the display	< 0.2 s	
Type of terminal board	terminal board ARK 210, wire cross section 0.35 to 1.5 mm <sup>2</sup>	
Material of the case	ABS, self-extinguishing, meeting the UL94-V0 standard	
Case dimensions	86 x 67 x 65 mm	
Ingress protection	IP 20 according to EN 60 529	
Working conditions	ambient temperature: -5 to 60 °C	
	relative humidity: max 85 % (at the ambient temperature 25 °C)	
	atmospheric pressure: 87 to 107 kPa	
Mass	0.15 kg (without sens. el.)	0.25 kg (without sens. el.)

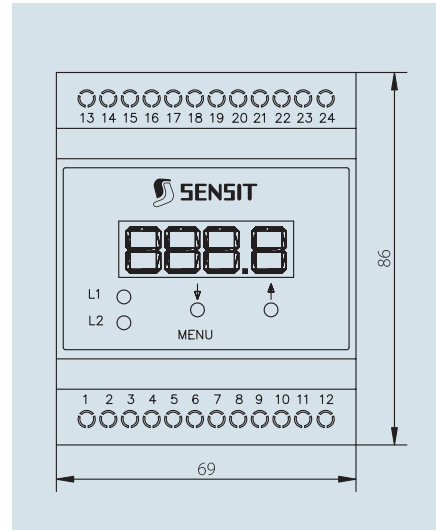
\*error of the sensing element is not incorporated

## TEMPERATURE SWITCHES TSZ2H

### WIRING DIAGRAM



### DIMENSIONAL DRAFT



### SWITCH INSTALLATION AND SERVICING

An integral part of the switch is a clamp enabling to fix it on DIN slat. After fixing the unit the relevant supply lead-in cables (terminals 23, 24 – 24 V AC/DC, terminals 11, 12 – 230 V AC), the temperature sensors (terminals 13, 15 – sensing element 1; terminals 14, 15 – sensing element 2) and the cable for the relay output signal (1, 2, 3 – relay 1; 4, 5, 6 – relay 2) are connected to the terminals according to the wiring diagram. The recommended wire cross-section is 0.35 to 1.5 mm<sup>2</sup>.

In case the lead-in cable is laid in the vicinity of high voltage conductors or those supplying equipment creating disturbing electromagnetic field (e.g. inductive load equipment), a shielded cable should be used. The shielding of the lead-in cable of the temperature sensor is connected to the terminal no. 3.