

TEMPERATURE SWITCH TSZ4H – RS485

106.06en

DESCRIPTION AND APPLICATION

Temperature switch TSZ4H-RS 485 with display is designed for using as two-state controllers (on/off type control). This switch compares 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 10 to 33 V DC or 9 to 24 V AC (by the type). Two temperature sensing elements can be connected to the switches. The display indicates 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, which switch each relay separately according to temperature interval (two sensing elements are used, each separately for each relay)

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. Measurements and setting all parameters can be done by means of the industrial bus RS485 with the protocols ModBus RTU (standardly). With a simple converter RS485/RS232 the switch can be connected to the PC-serial port and so various settings can be made. For this purpose the software placed on the web site www.sensit.cz/download can be used. 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 400 °C.

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

DECLARATION, CERTIFICATES, CALIBRATION

Manufacturer provides **EU Declaration of Conformity**.

Calibration – The final metrological inspection – comparison with standards or working instruments – is carried out for all the products. Continuity of the standards and working measuring instruments is ensured within the meaning of the Section 5 of Act no.505/1990 on metrology. The manufacturer offers a possibility to supply the sensors calibrated in SENSIT s.r.o.'s laboratory (according to requirements of the EN ISO/IEC 17025 standard) or in an Accredited laboratory.

SPECIFICATIONS

Switch type	TSZ4H-24 – RS 485	TSZ4H-230 – RS 485
Connection of temperature sensor	Models of temperature switch 1 to 2 1 sensor - 2wire or 4wire Models of temperature switch 3 to 5 1 sensor - 2wire or 4wire 2 sensor - 2wire	
Output	2 relays	
Type of sensing element	Pt 100/3850 and Pt 1000/3850 - standard Ni 1000/6180 - modification	
Measuring range	-50 to 400 °C (acc. to sensing element type and temperature sensor variant)	
Power supply	10 to 33 V DC, 9 to 24 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 400 °C, step 0.1 °C	
Display	4 digits – red LED, high of the digits 10 mm	



OTHER PARAMETERS

Brightness of the display setting	4 levels	
Updating of the display	< 0.2 s	
Type of terminal board	terminal board ARK210, wire cross section 0.35 to 1.5 mm ²	
Material of the case	LEXAN	
Case dimensions	86 x 67 x 65 mm	
Ingress protection	IP 20 in accordance with EN 60529, as amended	
Operating conditions	ambient temperature: -5 to 60 °C relative humidity: max 85 % (at the ambient temperature 25 °C) atmospheric pressure: 87 to 107 kPa	
Weight	0.15 kg (without sensing element)	0.25 kg without sensing element

*error of the sensing element is not incorporated

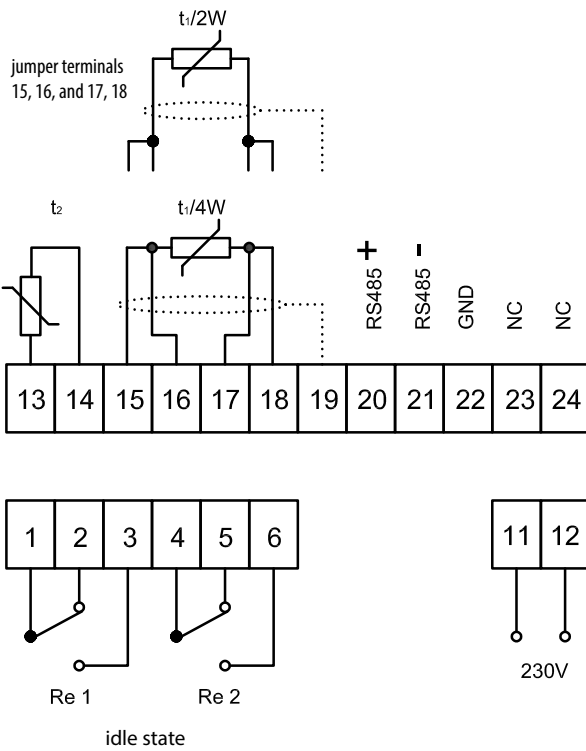
COMMUNICATON PROPERTIES

communication via RS 485, maximum segment length is 1200 m, asynchronous transfer

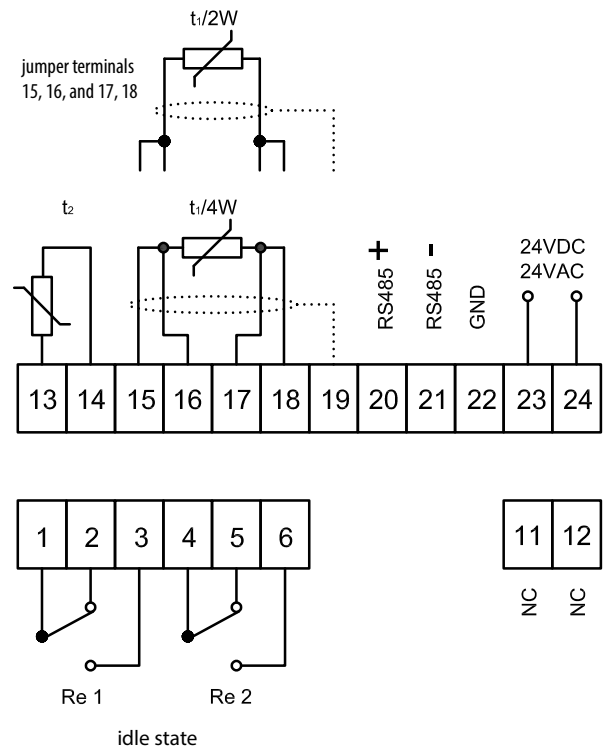
- transfer speeds 1200, 2400, 4800 Bd
- 32 modules / 1 serial port
- protocol ModBus 1 stop bit, without parity

WIRING DIAGRAM

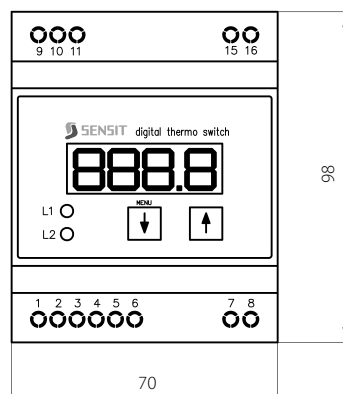
TSZ4H-230-RS485



TSZ4H-24-RS485



DIMENSIONAL DRAFT



SENSIT s.r.o., Skolní 2610, 756 61 Roznov pod Radhostem, Czech Republic
T +420 571 625 571 F +420 571 625 572 E obchod@sensit.cz



106.06en
09/2019