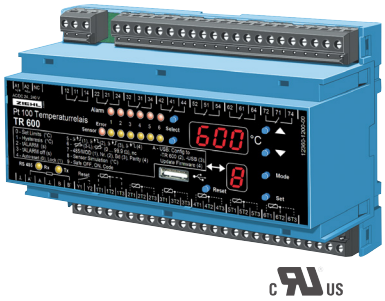
# Pt100-Temperature-Relay Type TR600

## Digital, 6 Sensors, 6 Limits, RS485



**TR600**
Interface RS485



**Part numbers:**

| | |
|---|---|
| TR600 RS485 (no analog output) | **T224361** |
| ER8 | **T224388** |

**Temperature Relay for 6 Sensors Pt100**
The Pt100-temperature relay TR600 monitors up to six sensors Pt100 (RTD) at the same time. 6 switching points and 6 relays permit almost any combination of switching action. It also can select the highest temperature of groups of sensors.
Programming is very variable and simple.

Due to the fact that 6 type Pt100 sensors can be connected, the unit is especially suitable for temperature monitoring wherever up to 6 different measuring points must be monitored simultaneously:

- machines, bearings, plants
- motors and generators with simultaneous monitoring of bearings and coolant.
- transformers with additional monitoring of the core temperature also

Accessory: Installation frame ER8 for panel mount

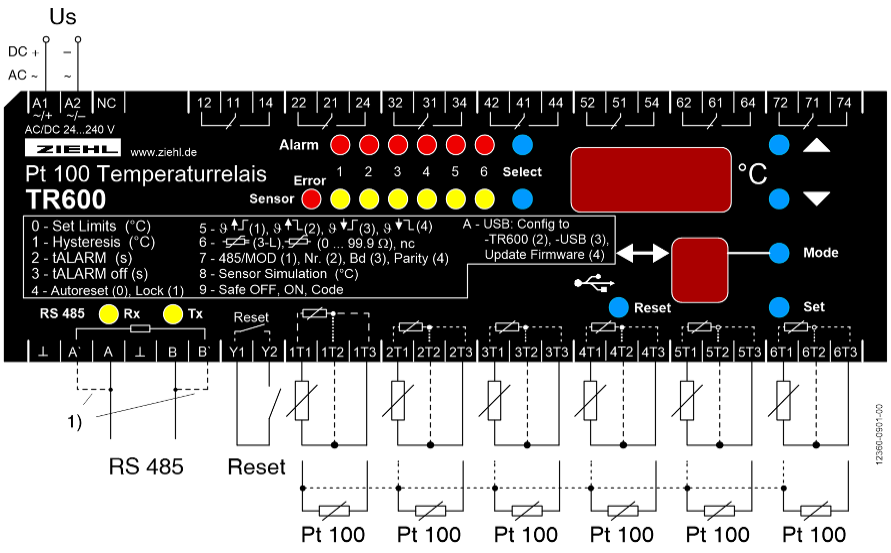
- measuring and monitoring range -199 ... +800 °C
- 6 sensor inputs with 2- or 3-wire connection
- 6 relay outputs K1 to K6 with change-over contacts
- switching points for single sensor or group of 2, 3 or 6 sensors
- sensor error relay K7 monitors sensor break or sensor short circuit as well as an interruption of the power-supply.
- interface RS485 protocols ZIEHL and modbus RTU
- universal power supply in 2 ranges AC/DC 24 - 240 V
- USB-Stick-Terminal for up- and download of sets of parameters and for firmware-updates

Displays

- built-in 3 digit temperature display and 1 digit program-mode display
- LED Alarm showing state of the alarm relays
- LED Sensor Error blinking at sensor short circuit or sensor interruption.
- Stored Values of MIN- and MAX- temperature can be displayed
- „Sensor select“ showing temperatures of the different sensors
- „Alarm select“ showing switching points .

Programmable for each relay extra:

- hysteresis
- electronic reclosing lock or autoreset
- switch-on delay and switch-off delay
- MIN or MAX- function of relay
- relay releases or picks up when exceeding the setpoint



# Technical Data TR600

## Rated supply voltage Us

| | |
|---|---|
| | AC/DC 24 – 240 V |
| tolerance DC-supply | DC 20,4...297 V |
| tolerance AC-supply | AC 20...264 V |
| power consumption | < 4 W, < 13 VA |
| frequency | 0 / 50 / 60 Hz |

## Relay outputs

| | |
|---|---|
| | 7 change-over contacts (co) |
| switching voltage | max. AC 415 V |
| switching current | max. 5 A |
| switching power | max. 1250 VA (ohmic load)<br>max. 120 W at DC 30 V |
| Nominal operational current $I_e$ | |
| AC 15 | $I_e$ = 3 A $U_e$ = 250 V |
| DC 13 | $I_e$ = 2 A $U_e$ = 24 V<br>$I_e$ = 0,1 A $U_e$ = 250 V |
| recommended fuse NO | 4 A time-lag or miniature circuit-breaker MCB B4 |
| recommended fuse NC | 3.15 A time-lag |
| expected life mechanical | 3 x $10^7$ operations |
| expected life electrical | 1 x $10^5$ operations with AC 250 V / 5 A, cos φ = 1 |

## Testing conditions

| | |
|---|---|
| | EN 60 010-1 |
| ambient temperature range | - 20 ... + 65 °C |
| galvanic separation | Us-Relay, Sensors, USB, Analog output<br>Reset input -> DC 3820 V<br>Relay - Sensors, USB, Analog output<br>Reset input -> DC 3820 V |
| No galvanic separation | Sensors, USB, Analog output, Reset input |

## Sensor connection

| | |
|---|---|
| | 6 x Pt 100 acc. to EN 60751 / IEC 60751, 2- / 3-wire |
| measuring accuracy | ±0,5 % of value ±1 Digit |
| sensor current | ≤ 0,7 mA |
| measuring delay time $t_M$ | <1,5 s |

## Temperature alarm

| | |
|---|---|
| switch points | -199 ... +800 °C |
| hysteresis | 1 ... 99 K |
| delay time tALARM | 0,1 ... 99,9 s |
| delay time tALARM off | 0 ... 999 s |

## Interface RS485

| | |
|---|---|
| | Modbus RTU/ZIEHL RS485 protocol |
| address/busnumber | 1-247 (Modbus)/0-99 (ZIEHL RS485 protocol) |
| baudrate | 4800/9600/19200/57600 |
| parity bit | no, odd, even |
| stoppbit | 1 (at modbus and pority no, stoppit = 2) |
| Response time ZIEHL RS485 protocol | 7-9 ms after reception of last sign |

## Housing

| | |
|---|---|
| Design / Installation Frame | V8 / Front mounting kit ER8, 8 TE |
| Simensions (h x w x d) | 90 x 140 x 58 [mm] mounting height 55 mm |
| Line connection solid wire | 1 x 1,5 $mm^2$(1,0 $mm^2$ with end sleeves for strands) |
| Protection housing / terminals | IP 30 / IP 20 |
| Attachment | on 35 mm DIN rail according to EN 60715 or M4 screw |
| Weight | app. 360 g |