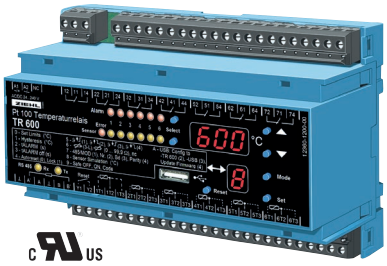
Pt100-Temperature-Relay Type TR600

Digital, 6 Sensors, 6 Limits, 2 analog outputs

TR600



Art.-number: T224360

Temperature Relay for 6 Sensors Pt100

The Pt100-temperature relay TR600 monitors up to six sensors Pt100 (RTD) at the same time. Six switching points and six relays permit almost any combination of switching action. It also can select the highest temperature of groups of sensors. The temperatures of two sensors or groups of sensors can be issued to 2 analog outputs i.e. for remote displays or further evaluation. 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

Function

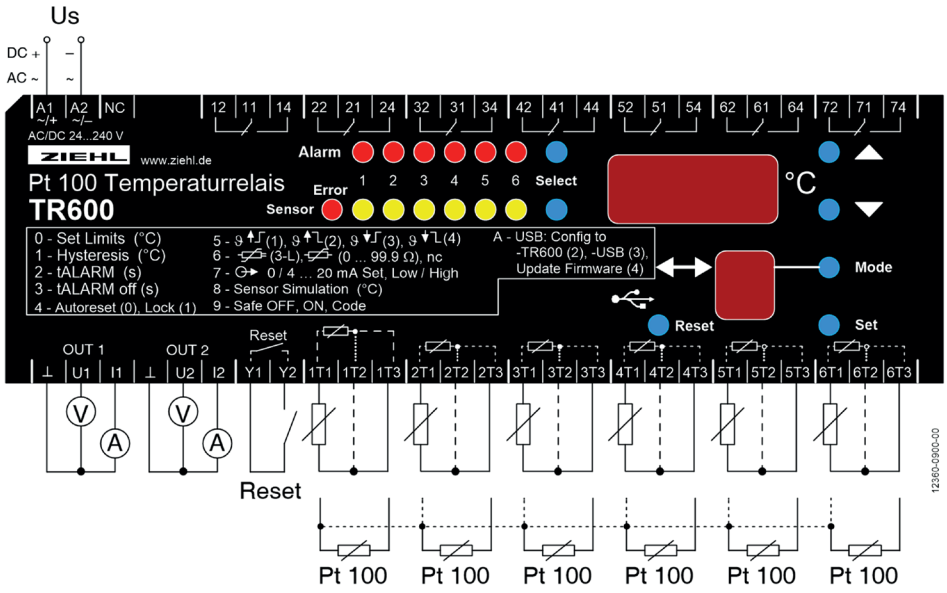
- measuring and monitoring range -199 ... +800 °C
- 6 sensor inputs with 2- or 3-wire connection
- 6 relay outputs K1 to K6 with change-over contacts
- switching points for single sensor or group of 2, 3 or 6 sensors
- sensor error relay K7 monitors sensor break or
- sensor short circuit as well as an interruption of the power-supply.
- 2 analog outputs, 0/4...20 mA and 0/2...10 V, with individual scaling.
- 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) 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 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 Reset input -> DC 3820 V Relay - Sensors, USB, Analog output 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

Analog output OUT 1/2

voltage outputs	DC 0/2 V – 10 V , max. DC 10 mA
current outputs	DC 0/4 mA – 20 mA
output resistance current	max. 500 Ω
no-load voltage	max. DC 16 V
accuracy	1% of span ±1 K

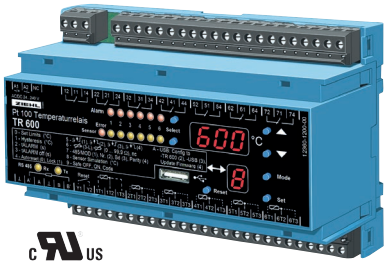
Housing

design	V8
dimensions (h x w x d)	90 x 140 x 58 [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

Pt100-Temperature-Relay Type TR600

Digital, 6 Sensors, 6 Limits, RS485

TR600 RS485



Art.-number: T224361

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- machines, bearings, plants
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Function

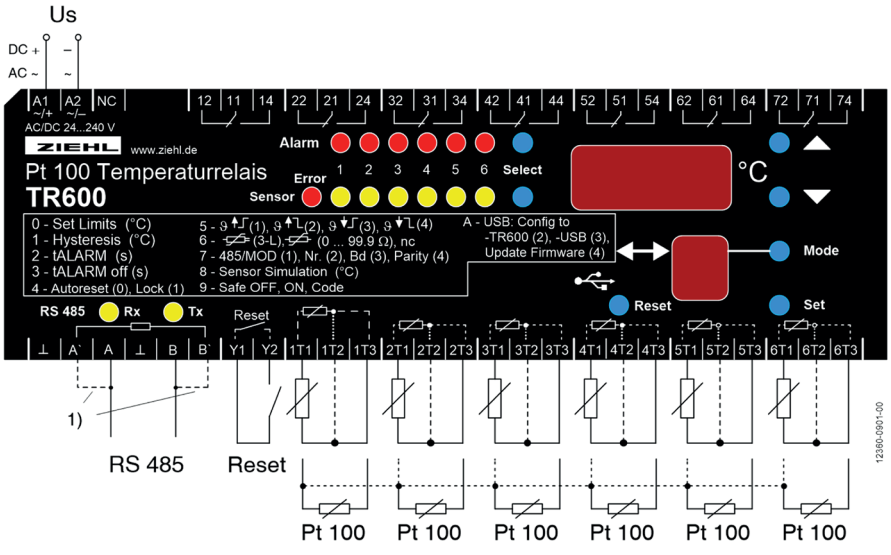
- measuring and monitoring range -199 ... +800 °C
- 6 sensor inputs with 2- or 3-wire connection
- 6 relay outputs K1 to K6 with change-over contacts
- switching points for single sensor or group of 2, 3 or 6 sensors
- sensor error relay K7 monitors sensor break or sensor short circuit as well as an 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

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Temperature alarm

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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	V8
dimensions (h x w x d)	90 x 140 x 58 [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