

7XV5662-6AD10 Resistance Temperature Detector (RTD-Box) TR1200



Fig. 13/47a
7XV5662-6AD10 RTD-box TR1200

Function overview

- 3-digit temperature display
- 12 inputs for temperature sensors, 1 to 12 sensors can be connected
- Pt 100 thermostats with 2- or 3-conductor technology
- 1 error relay (potential-free change-over contact)
- RS485 interface (ZIEHL standard protocol and MODBUS RTU protocol)
- LED signal the measuring channel, error state, relay function and RS485 activity
- Code lock prevents parameter manipulation
- TR600 compatible (to replace one TR600 with 6 sensors connected)
- Universal power-supply 24 to 240 V AC/DC
- Snap-on mounting onto 35 mm standard rail EN 60715

Description

The RTD-box TR1200 can capture up to 12 temperatures with 12 measuring inputs. 2- and 3-conductor Pt 100 sensors are supported. For the 2-conductor mode, the measured conductor resistance can be compensated for with a corresponding setting. The measurement of temperatures may be simulated for commissioning purposes.

The output of measured values to the protection device is compatible with TR600 and implemented with bus cable 7XV5103-7AAxx via a RS485 bus.

All settings are done via 3 push buttons on the front of the device. Entry can be blocked via a code.

The TR1200 has a wide-range power supply from 24 – 250 V DC and 115 / 230 V AC as well as an alarm relay. Sensor failure or sensor short-circuit are alarmed and transmitted via protocol to the SIPROTEC device.

Application

Communication via RS485 bus

The RTD-box TR1200 is connected via a RS485 interface to one SIPROTEC 4 bay device with thermo function (e. g. 7SJ6, 7UT6, 7UM6) or to the compact protection 7SK80 via a serial RS485-interface (Port B).

The special cable 7XV5103-7AAxx is used for the connection. In the event of remote measuring locations, the connections may also be done using multi-mode fiber-optic conductors and the converter 7XV5650 (see Fig. 13/47b).

For detailed information please visit www.siemens.com/siprotec

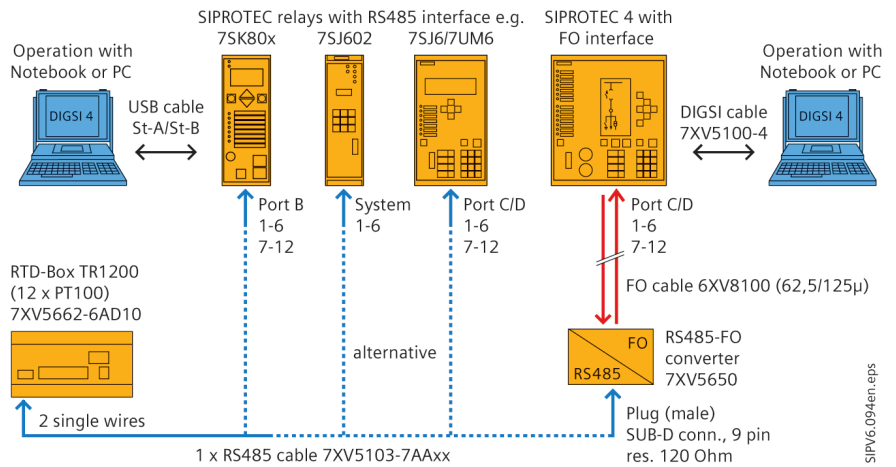


Fig. 13/47b
Connection of devices via a serial RS485 bus or FO cable

Technical data

Rated auxiliary voltage	
Auxiliary voltage V_S	24 – 240 V AC/DC, 0/45 – 65 Hz < 5 VA
Tolerance	20.4 – 297 V DC, 20 – 264 V AC
Relay output	
Number	1 changeover contact (CO)
Switching voltage	Max. 415 V AC
Switching current	Max. 5 A
Switching power	Max. 2000 VA (ohmic load) Max. 120 W at 24 V DC
De-rating factor with $\cos \varphi = 0.7$	0.5
U_L electrical ratings:	250 V AC, 3 A general use D300 1 A 240 V AC
Rated operating current I_E	AC 15 $I_E = 2 \text{ A}$ $V_E = 250 \text{ V}$ DC 13 $I_E = 2 \text{ A}$ $V_E = 24 \text{ V}$ $I_E = 0.2 \text{ A}$ $V_E = 125 \text{ V}$ $I_E = 0.1 \text{ A}$ $V_E = 250 \text{ V}$
Recommended fuse	T 3.5 A (gL)
Contact service life, mech.	1×10^7 switching operations
Contact service life, electr.	1×10^5 switching operations at 250 V AC / 5 A
Sensor connection	
Number	12 x Pt 100 according to EN 60751
Measuring cycle/measuring time	0.25 to 3 s (depending on the number of sensors)
Measuring cycle/circuit resistance	0.25 to 30 s (per measuring cycle of sensor)
Measuring range	-199 to 850 °C
Resolution	1 °C
Accuracy	$\pm 0.5 \%$ of measured value $\pm 1 \text{ K}$
Sensor current	$\leq 0.8 \text{ mA}$
Temperature drift	$< 0.04 \text{ °C} / \text{K}$
Short circuit	$< 15 \text{ Ohm}$
Interruption	> 400
Sensor resistance + circuit resistance	Max. 500 Ohm
RS485 interface	
Device address	0 to 96
Baud rate	4800, 9600, 19200 bit/s
Parity	N, O, E (no, odd, even)
Max. cable length	1000 m at 19200 bit/s
Serial protocol	Serial RTD – Protocol Zieh! / SIPROTEC See manual for detailed protocol description

Technical data

Test conditions

Acc. to	EN 61010
Rated impulse voltage insulation	4000 V
Overvoltage category	III
Pollution rate	2
Rated insulation level V_i	300 V
Duty cycle	100 %
Perm. ambient temperature	- 20 °C to + 65 °C EN 60068-2-2 dry heat
Electrical isolation	Power supply – measuring inputs 3820 V DC
No electrical isolation	RS 485 interface – measuring inputs
EMC-tests	EN 61326-1
EMC test for noise emission	EN 61000-4-3
Fast transient disturbances/Burst	EN 61000-4-4 ± 4 kV Pulse 5/50 ns, $f = 5$ kHz, $t = 15$ ms, $T = 300$ ms
High-energy surge voltages (SURGE)	IEC 61000-4-5 ± 1 impulse: 1.2 / 50 μ s (8/20 μ s)
Electrostatic discharge	IEC 61000-4-2 ± 4 contact discharge, ± 8 kV air discharge

Housing

Housing type	V8, distribution panel mounting
Size (W x H x D)	140 x 90 x 58 mm
Depth/Width	55 mm/8 TE
Circuit termination single strand	Per 1 x 1.5 mm ²
Braided conductor with crimp lug	Per 1 x 1.0 mm ²
Tightening torque of terminal screw	0.5 Nm (3.6 lb.in)
Protection class of housing/terminals	IP30 / IP20
Mounting vertical/horizontal	Optional
Affixing	Snap-on mounting onto standard rail mounting 35 mm acc. to EN 60715 or screw mounting (with 2 additional brackets)
Weight	Approx. 370 g

Selection and ordering data

Description	Order No.
<i>Resistance temperature detector (RTD-box) TR1200</i>	<i>7XV5662 - 6AD10</i>

Distributed input-box for 12 RTD-connections Pt100

Rail mounting plastic

Protection class IP21

1 serial interface RS485 for communication with SIPROTEC devices for measurements and fault reports.

Wide-range power supply 24 to 240 V AC/DC

Note: The device can be operated in a 7XV5662-2AD10 or 7XV5662-5AD10 compatible mode.