# 7XV5662-8AD10
# Resistance Temperature Detector (RTD-Box) TR1200 IP (Ethernet)


**Fig. 13/49a**
7XV5662-8AD10 RTD-box TR1200 IP (Ethernet)

## Description

The RTD-box TR1200 IP has 12 sensor inputs which allow measurement of up to 12 temperatures by Pt100 sensors.

Three conductor sensors are supported. For two conductor operation compensation of the measured conductor resistance is possible via a corresponding setting.

All settings on the TR1200 IP can be done through 3 keys on the front of the device or in a Web browser (e.g. Internet Explorer).

If Ni100 or Ni120 sensors are applied, the measured values have to be adapted in the protection device. The 7SK80 supports this with its integrated RTD functionality.

The measured-value output to the protection device is done via Ethernet network with RJ45 connectors.

Note: The SIPROTEC 4 system interface with EN100 module does not support the temperature detection of the RTD-box TR1200 IP.

## Function overview

- 3-digit digital display for the temperature of up to max. 12 measuring points
- 12 sensor inputs; 1 to 12 sensors can be connected
- PT100 in 2- or 3-conductor technology, when connecting Ni100 or Ni120, conversion to the correct temperature in the evaluation unit is required, SIPROTEC devices (e.g. 7SK80) support this function. The EN100 module in the SIPROTEC 4 units does not support the TR1200 IP
- 1 alarm relay (1 changeover contact)
- Electric 10 MBit/s Ethernet interface (RTD IP protocol from ZIEHL, or MODBUS IP protocol)
- Read-out display, configuration, simulation and firmware update via Web browser
- Tested with Mozilla Firefox 3.5 and Microsoft Internet Explorer 8.0
- LEDs for measurement allocation, error, relay status and Ethernet interface
- Code protection against manipulation of the setpoint values
- Wide-range power supply 24 to 240 V AC/DC
- Distributor housing for panel mounting 8 TE, front-to-back size 55 mm
- Mounting on 35 mm DIN EN 60715 standard rail.




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## Application

### *Measurerment of up to 12 measured values with a TR1200 IP*

To get up to 12 measured values one RTD-box TR1200 IP is connected via a double screened CAT5 patch cable (1:1 or crossed-over) directly to the protection device (e.g. 7SK80x/Port A).

The protection device is set using DIGSI 4 progam running on a Notebook via the USB-front interface.

The RTD-box TR1200 IP is set either through the front keys or by using a Web browser running on the Notebook via the Ethernet interface. For this purpose the patch cable must be unplugged from the protection device and then re-plugged into the Notebook.

Tip: If during commissioning a common switch is temporarily inserted using three patch cables, the protection device can be set from a PC using DIGSI 4 in parallel with the TR1200 IP.

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

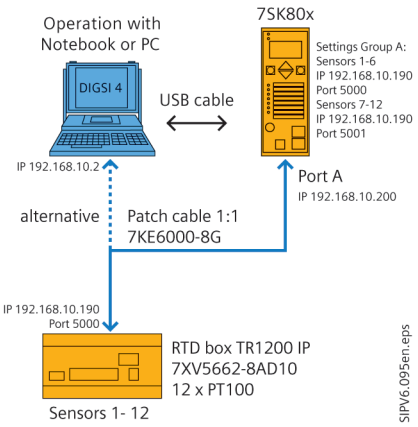


**Fig. 13/49b**
Connection of a device via Ethernet

## Technical data

| | | | |
|---|---|---|---|
| ***Rated voltage*** | | | |
| Control voltage $V_S$: | | 24 to 240 V AC/DC, 0/45 to 65 Hz < 5 VA | |
| | | 20.4 to 297 V DC, 20.4 to 264 V AC | |
| ***Relay output*** | | | |
| Number | | 1 changeover contact (CO) | |
| Switching voltage | | Max. 415 V AC | |
| Switching current | | Max. 5 A | |
| Breaking capacity | | Max. 2000 VA (resistive load)<br>Max. 120 W at 24 V DC | |
| Reduction factor at cos $\varphi = 0.7$ | | 0.5 | |
| $U_L$ electrical ratings: | | 250 V AC, 3 A general use<br>240 V AC 1/4 hp. 2.9 FLA<br>120 V AC 1/10 hp. 3.0 FLA<br>C 300<br>D300 1 A 240 V AC | |
| Rated operating current $I_E$ | | | |
| | AC 15 | $I_E = 1$ A | $V_E = 400$ V |
| | | $I_E = 2$ A | $V_E = 250$ V |
| | DC 13 | $I_E = 2$ A | $V_E = 24$ V |
| | | $I_E = 0.2$ A | $V_E = 125$ V |
| | | $I_E = 0.1$ A | $V_E = 250$ V |
| Recommended series fuse | | T 3.15 A (gL) | |
| Contact service life, mech. | | 1 x $10^7$ operating cycles | |
| Contact service life, electr. | | 1 x $10^5$ operating cycles at 250 V AC / 5 A<br>2 x $10^5$ operating cycles at 250 V AC / 3 A<br>6 x $10^5$ operating cycles at 250 V AC / 1 A | |
| ***Temperature measurement*** | | | |
| Measurement time sensor | | 0.25 to 3 s (dependent on the number of sensors) | |
| Measurement time sensor | | 0.25 to 30 s (for measurement cycle of one sensor) | |
| Measurement range | | –199 °C to 850 °C | |
| Resolution | | 1 °C | |



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## Technical data

### Sensor connection

12 x PT100 acc. to EN 60751, connection of Ni100 and Ni120 sensors possible. Conversion of the measured values must be performed in the evaluation unit.

| | Measured range °C | | Short circuit Ohm | Interruption Ohm | Sensor resistance + line resistance Ohm |
|---|---|---|---|---|---|
| Sensor | min. | max. | < | > | max. |
| Pt100 | – 199 | 860 | 15 | 400 | 500 |

| | |
|---|---|
| Tolerance | ± 0.5 % of measurement ± 1 K |
| Sensor current | ≤ 0.8 mA |
| Temperature drift | < 0.04 °C/K |

### Ethernet interface

| | |
|---|---|
| Transmission speed | 10 MBit/s |
| IP adress | Standard: 192.182.1.100, adjustable |
| Subnetwork mask | Standard: 255.255.255.0, adjustable |
| UDP port | Standard: 5000 (5001), adjustable |
| Max. cable length | 20 m when using CAT 5 patch cable |
| Max. response time RTD/MODBUS | < 700 $\mu$s |

### Test conditions

| | |
|---|---|
| Acc. to | EN 61010 |
| Rated impulse withstand voltage | 4000 V |
| Surge category | III |
| Pollution level | 2 |
| Rated insulation voltage $V_i$ | 300 V |
| Operating time | 100 % |
| Permissible ambient temperature during operation | – 20 °C to + 65 °C<br>EN 60068-2-2 dry heat |
| EMC – noise immunity | EN 61000-6-2 |
| EMC – noise emission | EN 61000-6-4 |
| Galvanic insulation<br>Control voltage – measurement input | 3820 V DC |
| Ethernet – control voltage – measurement input | 500 V DC |

### Housing

| | |
|---|---|
| Housing type | V8, distribution panel mounting |
| Dimensions (W x H x D) | 140 x 90 x 58 mm |
| Front-to-back size/Width 55 mm/8 TE | |
| Wiring connection single strand | Each 1 x 1.5 mm$^2$ |
| Finely stranded with wire end ferrule | Each 1 x 1.0 mm$^2$ |
| Starting torque of the terminal screw | 0.5 Nm (3.6 lb.in) |
| Protection class housing/terminals | IP30 / IP20 |
| Mounting position | Arbitrary |
| Mounting | Snap-on mounting onto standard rail 35 mm acc. to EN 60715 or screw mounting (with 2 additional bars) |
| Weight | Approx. 350 g |





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## Selection and ordering data

| Description | Order No. |
|---|---|
| *Resistance temperature detector (RTD-box) TR1200 IP (Ethernet)* | *7XV5662 - 8AD10* |
| Distributed input-box for 12 RTD-connections Pt100 | |
| Rail mounting plastic | |
| Protection class IP21 | |
| 1 Ethernet interface for communication with SIPROTEC devices for measurement and fault reports. | |
| Wide-range power supply 24 to 240 V AC/DC | |





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