

Quick Guide TR1200IP

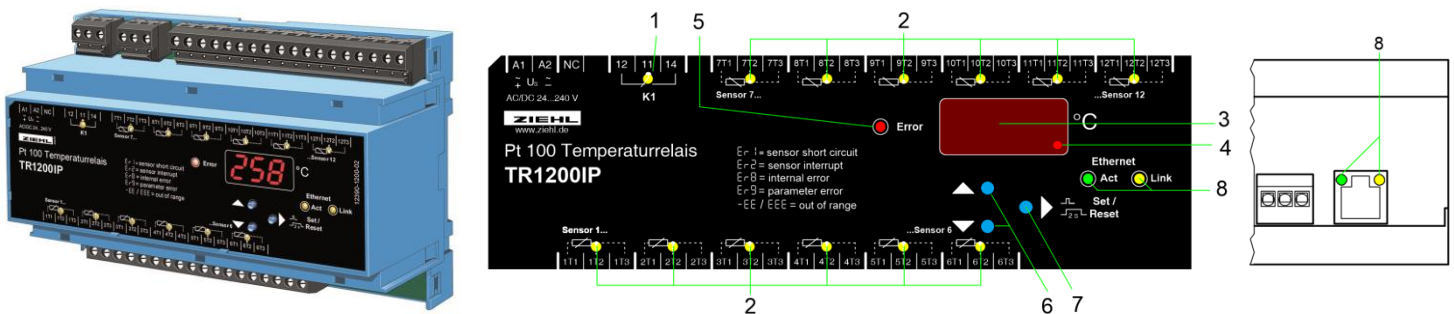
updated: 2017-01-03/Fz
 from Firmware: -09

- Pt100 temperature relay for up to 12 sensors with electric 10 MBit/s Ethernet interface
 IEC 61850 GOOSE protocol Configuration through Web server



Detailed operating manual see: <http://www.ziehl.com/en/AllProducts/detail/TR1200IP-40>

1 Display and controls



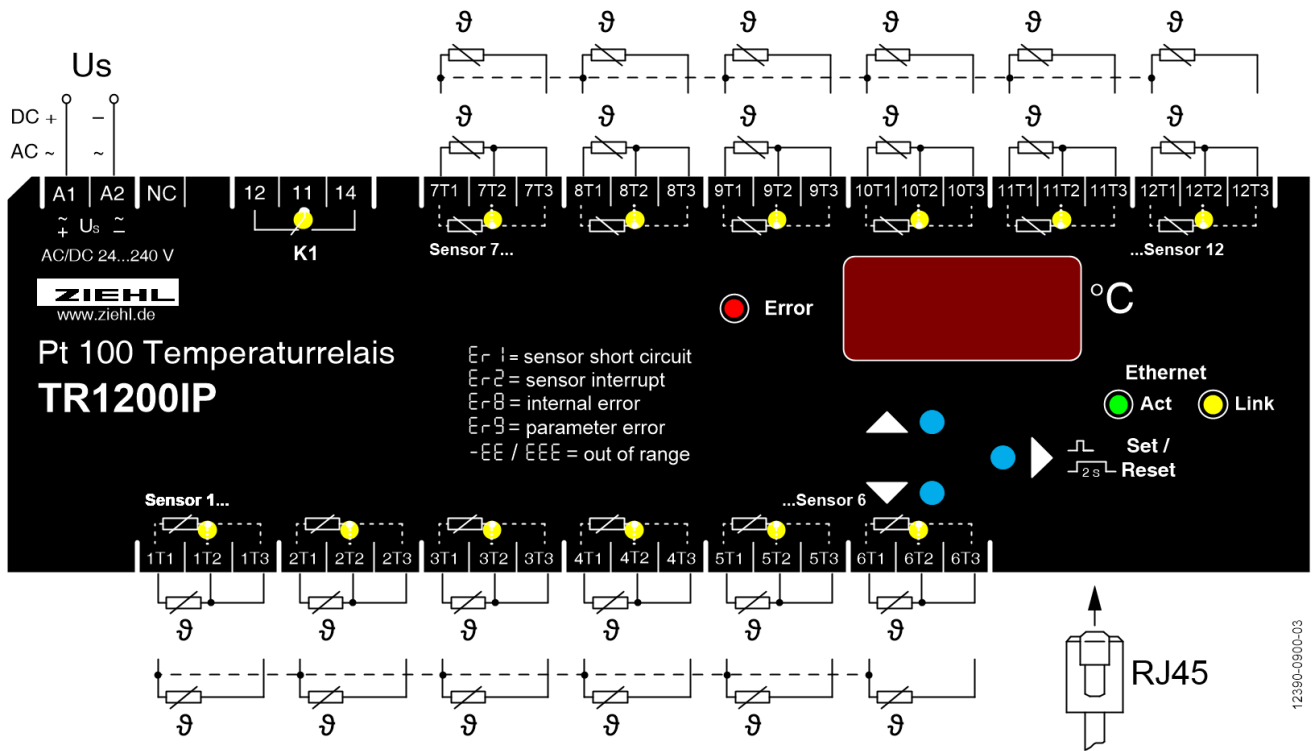
- 1 LED relay status (yellow)**
 OFF Relay is released
 ON Relay operating
- 2 LEDs sensors (yellow)**
 ON Sensor value of the related LED in the digital display
 FLASHES, **Er 1** or **Er 2** Sensor error in the corresponding sensor circuit
 MORE THAN ONE ON Temperature value of the warmest sensor is displayed in the digital display
- 3 3-digit digital display (red)**
 Displays the sensor value
 Displays the errors with error code e.g. **Er 9**
- 4 Last decimal point (red)**
 Off Display mode
 Illuminated Menu mode
 Flashes Configuration mode
- 5 LED Error (red)**
 OFF No error present
 ON, **Er 1**, **Er 2**, **Er 8** or **Er 9** Sensor error, device error or configuration error
- 6 Up / Down key (in display mode, normal state)**
 Press briefly Change into the menu mode
 Press for > 2s: Displays the MAX (Up) and MIN (Down) measurement, pressing the Set key for ≥ 2s in addition deletes the saved value
- 7 Set/Reset key (in display mode, normal state)**
 Press briefly Displays the next measurement
 Press for > 2s: Reset, return to display mode
 Press for > 10s: Displays the software version e.g. **000**
- 8 Ethernet interface LEDs (yellow)**
 Act FLASHES BRIEFLY Unit is receiving or transmitting via the Ethernet interface
 Link FLASHES BRIEFLY Valid connection via the Ethernet interface

2 Factory settings and software version

When changing programs, all parameters are reset to the factory settings.

Menu item	Parameter	factory settings	User data
SEn.	S 1 (Sensor 1)	3-L	
	S 2 (Sensor 2)	3-L	
	S 3 (Sensor 3)	3-L	
	S 4 (Sensor 4)	3-L	
	S 5 (Sensor 5)	3-L	
	S 6 (Sensor 6)	3-L	
	S 7 (Sensor 7)	nc	
	S 8 (Sensor 8)	nc	
	S 9 (Sensor 9)	nc	
	S 10 (Sensor 10)	nc	
	S 11 (Sensor 11)	nc	
	S 12 (Sensor 12)	nc	
rEL.	rEL (Relay function)	r	
IP.	IP1 (1st block IP address)	192	
	IP2 (2nd block IP address)	168	
	IP3 (3rd block IP address)	1	
	IP4 (4th block IP address)	100	
Sub.	SU1 (1st block subnetwork)	255	
	SU2 (2nd block subnetwork)	255	
	SU3 (3rd block subnetwork)	0	
	SU4 (4th block subnetwork)	0	
GAt.	GA1 (1st block gateway)	192	
	GA2 (2nd block gateway)	168	
	GA3 (3rd block gateway)	1	
	GA4 (4th block gateway)	1	
UdP.	rtd (RTD Protocol)	on	
	Ud1 (1st block UDP port)	50	
	Ud2 (2nd block UDP port)	00	
CFG.	htt (http)	FUL	
	Mod (Modbus Protocol)	on	
Si.	S 1 ... S 12 (Sensor 1...12)	0	
CodE.	on / off	off	
	Pin (Pincode)	504	

3 Connection diagram



4 Important notice



DANGER!

Hazardous voltage!

Will cause death or serious injury. Turn off and lock out all power supplying this device before working on this device.

The flawless and safe operation of a device requires that it is shipped and stored appropriately, professionally installed and put into operation and operated according to its intended use.

Only people who are familiar with the installation, commissioning and operation and who have qualifications corresponding to their job are permitted to work on the device. They must comply with the contents of the operating instructions, the notices attached to the device and the relevant safety regulations for constructing and operating electrical plants.

The devices are built and certified in accordance with DIN/EN/IEC and leave the factory in a safe and technically flawless condition. To maintain this state you must comply with the safety regulations indicated with "Caution" in the operating instructions.

If the information in the operating instructions is insufficient at any time, please contact us directly or contact the representation responsible for you.

Instead of the industrial norms and stipulations stated in the operating instructions and applicable in Europe, you must comply with the valid and applicable regulations in the country of utilisation if the device is used outside of the area of application.



Caution! If the operating current execution is programmed for all relays, a failure of the control voltage or the device will not be detected. When using as a monitoring device, the operator must ensure that this error is detected through periodic performance tests. We recommend programming and correspondingly evaluating at least one relay in closed-circuit current execution.

Caution! Sensor connections

It is only permitted to connect to or disconnect from sensor connections terminals or to plug them in or unplug them with the power supply switched off.

The pin connections of Sensors 1...6 (below) are not compatible with Sensors 7...12 (above). If a 3-conductor sensor connected below is to be connected above, both external connections must be swapped. The sensors are connected to terminals 1T1 – 1T2 – 1T3, 2T1 - ... - 12T3. The plug-in contacts have special contact material and must only be used for connecting the sensors.

Ethernet connection:

Use the Ethernet connection solely with a shielded patch cable, category 5.

The maximum cable length is 20m.

When using longer cable lengths, the earth potential can shift, causing transmission interference.

Corrective measures by using media converters can be taken which can optically transmit the electrical signal across further distances and, e.g., create the connection to an optical switch.

Comply with the maximum permissible temperature when installing in a switch cabinet. Ensure sufficient clearance to other devices or heat sources. If cooling is inhibited, e.g., through close proximity to devices with increased surface temperature or interference with the cooling-air current, the permissible ambient temperature is decreased.



Caution!

Before applying mains voltage to the device, make sure that the control voltage U_S complies with the mains voltage connected to the device!



A circuit-breaker or switch must be situated within easy reach of the unit and fused. Installation excess current protection should be ≤ 10 A.

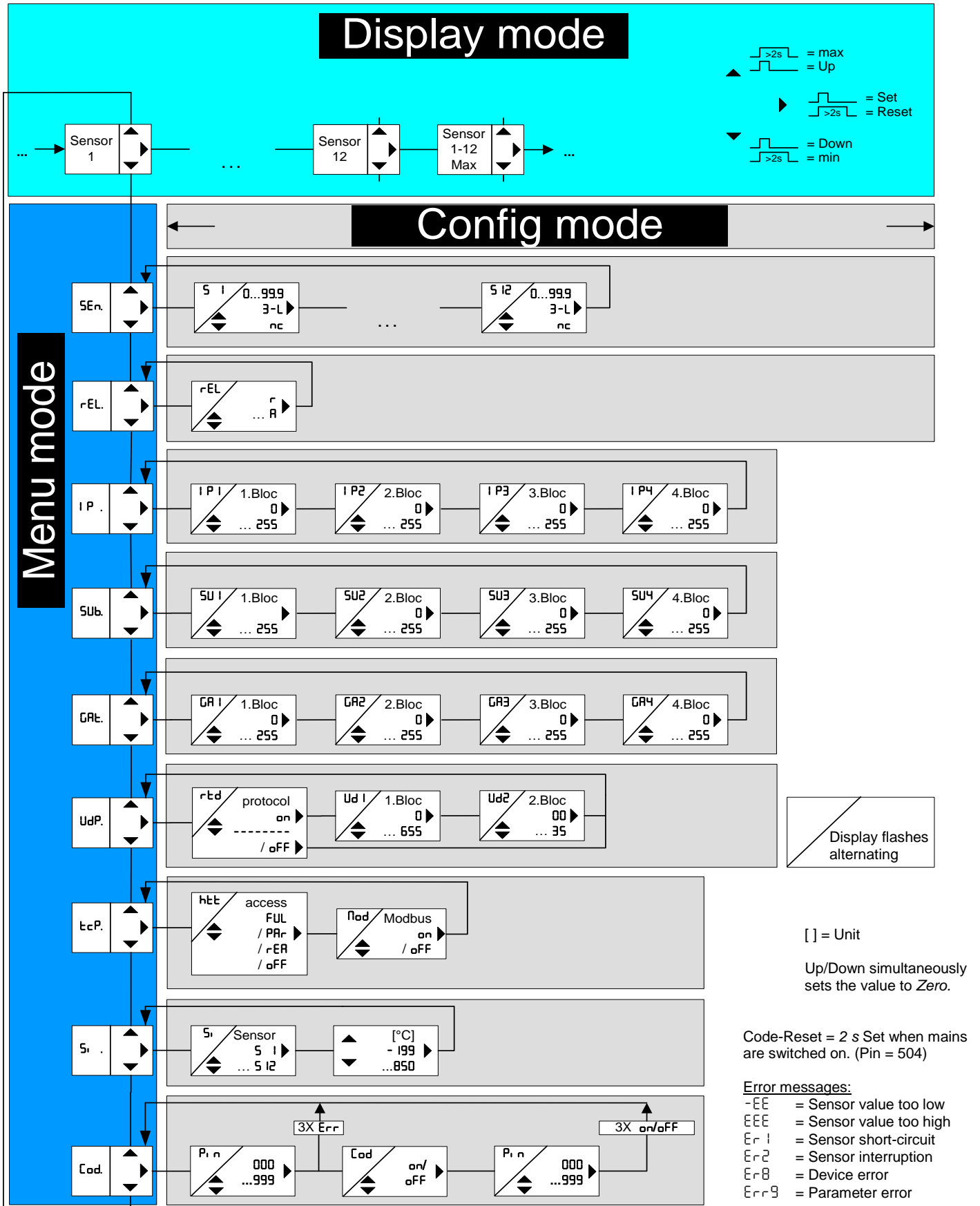
5 Mounting

The device can be mounted:

- Distribution board or switch cabinet on 35 mm rails according to EN 60715

6 Commissioning

6.1 Control chart



6.2 Possible indications in display

Display mode

Er 1 ... Er 9	Error messages (see 11. Troubleshooting and measures)
---------------	---

Menu mode / Configuration mode

SEn	Menu item sensor configuration
S 1 ... S 12	Sensors 1...12
3-L	3-conductor connection
nc	No sensor connected
rEL	Relay function
IP.	Menu item for configuring the IP address
IP 1 ... IP 4	Blocks 1 to 4 to set the IP address
SUb.	Menu item for configuring the subnetwork mask
SU 1 ... SU 4	Blocks 1 to 4 to set the subnetwork mask
GA.	Menu item for configuring the gateway
GA 1 ... GA 4	Blocks 1 to 4 to set the gateway
UDP.	Menu item to configure the RTD protocol and the setting of the UDP port
rtd	ZIEHL RTD protocol
Ud 1 ... Ud 2	Blocks 1 to 2 to set the UDP port (if possible > 1024)
tCP.	Menu item for configuring the http port and the modbus protocol
htt	Configure the http port
FUL	Full access, http port and firmware update On
PAR	Measurements and device data along with configuration in the browser (no firmware update, no network settings modification)
rER	Read access, only measurements and device data in the browser
oFF	No user interface and no firmware update
Mod	Modbus TCP protocol
Si	Simulation
cod	Code lock
Pin	Pin code (factory setting 504)
UPd	Firmware update is running

7 Troubleshooting and measures

Error	Cause	Remedy
-EE appears in the display	Sensor short-circuit	Measurement range of -199°C (sensor resistance <18.39 Ohm) undercut
EEE appears in the display	Sensor interruption	Measurement range of 850°C (sensor resistance >390.26 Ohm) exceeded
Er1 appears in the display	Sensor short-circuit	The LED in the defective sensor circuit flashes, check sensor circuit for short-circuit
Er2 appears in the display	Sensor interruption	The LED in the defective sensor circuit flashes, check sensor circuit for interruption
Er8 appears in the display	Internal device error	The unit needs to be returned
Er9 appears in the display	Parameter error	Do a factory reset
False values or sensor error for Sensors 7...12	Sensors 7...12 are not connection compatible to Sensors 1...6	Connect Sensors 7...12 correctly
The device cannot be configured	Code lock	<p>The code lock provides protection against unauthorized manipulation on the device. If the code lock is active, the parameters cannot be changed. The pin can be set by the user.</p> <p><u>Pin code unknown? -> Perform a code reset:</u></p> <p>While switching on the supply voltage, press the "Set" key for 2 s</p> <ul style="list-style-type: none"> > The display alternates 888 – [od] – oFF – 888 > Release the Set key <p>Code lock is switched off, Pin code = 504</p>

8 Technical data

Rated supply voltage Us:

Tolerance

Power consumption

AC/DC 24 – 240 V

DC 20, 4 - 297 V AC 20 - 264 V 50/60 Hz

< 3 W

< 10 VA

Housing

Dimensions (W x H x D)

Front-to-back size / Width 55 mm / 8 TE

Wiring connection single strand

Finely stranded with wire end ferrule

Starting torque

of the terminal screw

Protection class housing / terminals

Mounting position

Mounting

Type V8, distribution board

140 x 90 x 58 mm

each 1 x 1.5 mm²

each 1 x 1.0 mm²

0.5 Nm (3.6 lb.in)

IP 30 / IP20

Arbitrary

Snap-on fastening standard rail

35 mm acc EN 60715 or

Fasten with screws (with 2 additional bars)

Approx. 350 g

Weight:

We reserve the right to make technical changes.

9 Appendix SIPROTEC configuration

9.1 Configuration SIPROTEC Compact-Devices (only 7SJ80 and 7SK80)

Connection of sensors and configuration of RTD box TR 1200 IP for evaluation of Siemens SIPROTEC Compact-devices 7SJ80 and 7SK80 at Port A.

Settings for the Ethernet connection between SIPROTEC Compact-device and RTD box TR1200 IP:

-Setting in SIPROTEC Compact-device is „**Ziehl RTD UDP Protocol**“

-Setting in RTD TR1200 IP is „**Modbus UDP Protocol**“ with „**On**“ (Presetting = „On“) activated.

CAUTION! The EN100 module in the SIPROTEC 4 devices does not support this function.

The connection type „**6 RTD Ethernet**“ or „**12 RTD Ethernet**“ from the RTDs set within „Function scope“ of the Compact-device.

Following settings have to be done in RTD box TR1200 IP:

For „6 RTD Ethernet“ Connect Sensors 1...6

⇒ Configure Sensors 1...6 in menu item **SEn** depending on the connection (configure sensors that are not connected as "nc")

⇒ Configure Sensors 7...12 in menu item **SEn** as "nc"

⇒ Set IP address in menu item **IP** and UDP port in menu item **UDP**

The TR 1200 IP transmits the data of Sensors 1...6 on enquiry (see protocol description) with the IP address under the set UDP port.

For „12 RTD Ethernet“ Connect Sensors 1...12

⇒ Configure Sensors 1...12 in menu item **SEn** depending on the connection

⇒ Set IP address in menu item **IP** and UDP port in menu item **UDP**

The TR 1200 IP transmits the data of Sensors 1...6 on enquiry (see protocol description) with the IP address under the set UDP port. On enquiry with the same IP address under the set UDP port +1, the TR 1200 IP transmits the data of Sensors 7...12.

Find detailed application description in Internet, at following Link :

www.siprotec.com > Accessories > Temperature Detection > 7XV5662-8AD10 > Downloads

9.2 Configuration SIPROTEC 5-Devices

Settings for the Ethernet connection between SIPROTEC 5 and RTD box TR1200 IP:

-Setting in SIPROTEC 5-device is „**SUP-Protocol**“ (Slave Unit Protocol)

-Setting in RTD TR1200 IP is „**Modbus TCP Protocol**“ with „**On**“ (Presetting = „On“) activated.

The „**Modbus**“ TCP-Protocol can be activated with the function buttons under the menu **tcp** – **Mod** or using the Web-Browser in the tab „**TCP/UDP Config**“ with „**On**“ activated.

The setting „RTD“ (RTD-Protocol) and „UDP Port“ have no influence here.

The Modbus TCP Port is fix set to 502 and cannot be changed.

The setting of the SIPROTEC 5-device can be found in manual (e.g. 7UT82) in chapter 5.9 „function group type analog converter“.

In Internet under: www.siprotec.com > SIPROTEC 5 > 7UT82 > Downloads

Attention! The RTD box TR1200 IP supports only **10 MBit/s Ethernet** connections, so no direct connection to **100 MBit-communication modul** is possible. In such a case you have to use e.g. an autom. 10/100 MBit/s- Autosensing-Switch between TR1200 IP and SIPROTEC 5.

10 IEC 61850 GOOSE protocol

GOOSE descriptions see: <http://www.ziehl.com/en/AllProducts/detail/TR1200IP-40>