Applications for RTD-Box TR800 Web (Ethernet)

7XV5662-7AD10

In this document the measurement of temperatures, currents or voltages in a 7SK80x via the Universal Relay TR800 Web in an Ethernet-network (LAN) is described.

The Universal relay TR800 Web has 8 measuring / sensor inputs and can by using these measure up to 8 temperatures with Pt 100 elements.

Three conductor thermo elements are supported. For two conductor operation the measured conductor resistance can be compensated for with a corresponding setting.

Alternatively it is possible to measure up to 8 voltages in the range from 0-10 V DC or currents in the range from 0/4-20 mA DC. The output can be scaled and the denomination (C°, V, mA, %) can be adapted.

Note: SIPROTEC 4 Protection devices can only process 6 measured values per "RTD-Box",



i.e. with two RTD-Boxes a maximum of 12 measuring inputs are supported. All measured values are scaled and indicated in °C in the protection device.

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

All settings are conveniently done using a Web-Browser (e.g. Internet Explorer).

Note: This application guide is only intended as additional user information and it is a prerequisite that the user has knowledge of the general operation and usage of the device and its basic functions as described in the device manual.

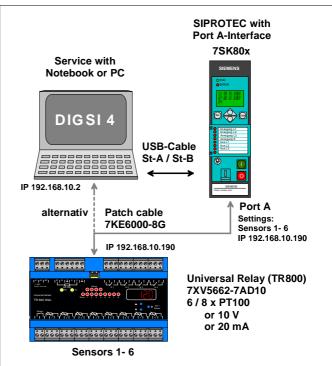
Application 1: Up to 6 Measured values with a TR800 Web via Ethernet

If one Universal relay TR800 Web is sufficient for the capturing of up to 6 measured values, then it may be 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 running on a Notebook via the USB-front interface.

The Universal Relay TR800 Web is set using a Web Browser running on the Notebook via the Ethernet interface.

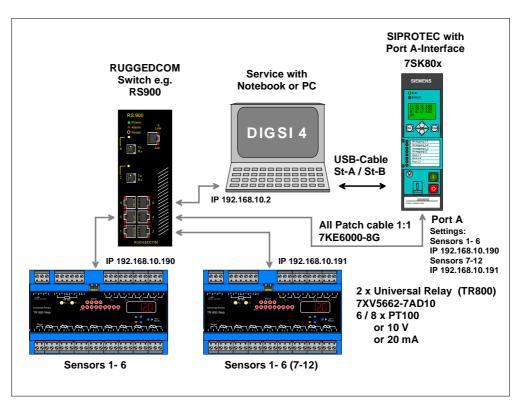
Tip: If during commissioning a common switch is temporarily applied using three patch cables, the protection device can be set from a PC using DIGSI 4 in parallel with the TR800 Web (refer to Application 2).





Application 2: Up to 12 Measured Values using two TR800 Web via Ethernet

If two TR800 Web are needed for the measurement of up to 12 measured values a switch that is suitable for the substation environment (e.g. RUGGEDCOM RS900) must be used. The switch, both TR800 Web, the protection device and the operating PC make up a sub-net that is connected via patch cables. DIGSI 4 and a Web browser can run in parallel on the PC. It is therefore possible to set one of the two TR800 Web and the protection device in parallel while in service.



Note: The network must be restricted to those devices that are directly communicating with the Universal Relay. This may be a dedicated network segment or a seperate V-LAN-Segment. The simultaneous operation of the Protection Devices (e.g. 7SK80x) with DIGSI 4 is permitted.

Setting of the Protection Device using DIGSI 4

The Notebook is connected with the front interface of the protection device, e.g. 7SK80x, using an available USB interface (1.1 / 2.0). A USB-cable with Plug-A to Plug-B is required for this purpose (e.g. from the accessories with DIGSI 4.82).

The protection device is inserted as new device in DIGSI 4 with corresponding MLFB and then initialized.

Subsequently the object properties of the device, the Ethernet interface and the measured values acquisition is set and saved.

The protection device must have an Ethernet-Interface "Port A", (not EN100 / Port B).

Note: When setting the parameters of the Ethernet interfaces of all the devices in the network segment, different "**IP addresses**" within the same address range (e.g. 192.168.10.0 - 254) must be applied. Example: See table

Subnet-Mask	255.	255.	255.	0
IP address (Switch)	192.	168.	10.	1
IP address (PC)	192.	168.	10.	2
IP address (TR800 - 1)	192.	168.	10.	190
IP address (TR800 - 2)	192.	168.	10.	191
IP address (7SK80)	192.	168.	10.	200
IP address (max.)	192.	168.	10.	254



+J... +K... +L... +M... +N... +P... +Q... +R...

5: DC 60V,110V,125V,220V,250V; AC 115V,2 -

B : Reg. World, IEC/ANSI, Eng. chg., Front Std.

E : 0/U Voltage; 0/U Frequency; sens. Earth 💌

-

-

•

-<u>N</u>: ..

•

-

🖄 File Edit Insert Device View Op	n C:\Siemens\Digsi4\D4p	rojwegion_tj		
		J 🛛 🖻 🖬 🕅 😢	- 0 ×	
Region London Gustation East Substation Vest Feder 1 Feder 2 Feder 3	25K803V4.6 Open Object Cut Copy Paste Delete Configure DIGSI Initialize device DIGSI -> Device Read out process Create variant. Export device Update paramete Update paramete Update process b Object Properties	 data ir set uus data	Order number (MLFB):	DIGSI Manager Communication parameters +K +L +M +N +P +Q 1: !ph=1A/5A, IE=1A/5A 5: DC 60V,110V,125V,220V,20V,AC 115 E: File F
Displays properties of the selected object fo	or editing.		16. Auto Reclose / Fault locator	0 : none

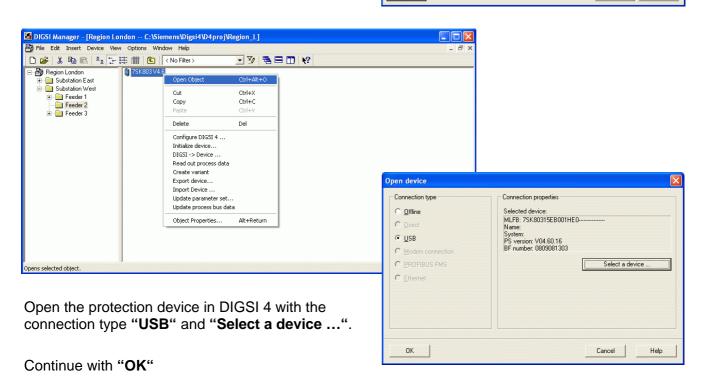
If the Ethernet interface "Port A" has already been installed at the factory as indicated by the "Order number (MLFB)", this can be checked under "Object properties ...", "MLFB".

Save with "OK"

If the interface was retrofitted, the "Object properties ...", - "Communication modules" must be opened and then be changed accordingly.

Cancel Help OK Properties - SIPROTEC device General MLFB Communication modules DIGSI Manager Communication parameters NO 11. Port B (bottom of device, rear) ▼ L: Ethe 12. Port A (bottom of device, ahead) ▼ <u>M</u>:... Declare here exchanged or retro-fitted communications modules. The originally ordered order number (MLFB) will of course be kept Г -OK Cancel Help

Save with "OK"





✓ DIGSI - Region London / Substation West / Feeder 2 / 75K803 V4 File Edit Insert Device View Options Window Help ● Region London / Substation West / Feeder 2 / 75K803 V4.6/75K ● Online ● Settings ● Control ● Annunciation ● Mesurement ● Oscillographic Records ● Settings ● Control ● Settings ● Control ● Mesurement ● Oscillographic Records ● Passwords ● Test	?	Interface Settings Serial port on PC VD Addresses Ethermet IP address: Subnet mask: Standard gateway:	t Service in the device] 192 . 168 . 10 . 200 255 . 255 . 255 . 0 0 . 0 . 0 . 0	×
An available IP address (e.g. 192 allocated to the interface "Port A Settings", "Ethernet Service in	168.10.200) is " under " Interface			

OK <u>D</u>IGSI -> Device

Save in the protection device with "DIGSI -> Device"

After entering the password, continue with "OK"

DIGSI 4 under "Configure DIGSI 4", "Ethernet"

Password for parameter set:	Enter Password		
	Password for parameter se	t: ******	

Cancel

Cancel

Help

Help

📓 DIGSI Manager - [Region Lon	don C:\Siemens\D) igsi4\D4proj\R	egion_L]				
File Edit Insert Device View	Options Window He	lp			_ 8 ×		
🗋 🖻 🎽 👗 🖬 💼 🛼 📴	Customize	Ctrl+Alt+E	🖸 🏹 🖷 🗖 🕅	?			
⊟-∰ Region London ⊕- Substation East	Configure DOSDIGSI Configure DIGSI 4						
⊡ 🔁 Substation West ⊕ 🔁 Feeder 1	Charts	•					
···· 🔁 Feeder 2 ⊕·· 🚍 Feeder 3	Shared Declarations	•					
					Configure DIGSI 4		
					Ethernet PROFIBUS FMS	COM ports	
					<u>I</u> P address:	192.168.10.2	•
					<u>S</u> ubnet mask:	255.255.255.0	
Opens the dialog for configuring DIGSI 4	ł.						
If the protection via the Etherne " IP-address " of	t interface	e (see a	pplication 2), the			

NOTE: For DIGSI 4.82 on, the IP addresses of all the available Ethernet interfaces of the PC/notebooks are available for selection in the pull-down menu.

Take Care: If no <u>"IP address" has yet been selected</u>, or if the "<u>IP address" has been changed</u> (e.g. automatic allocation by HDCP), the space will be empty.

An IP address must be selected here,

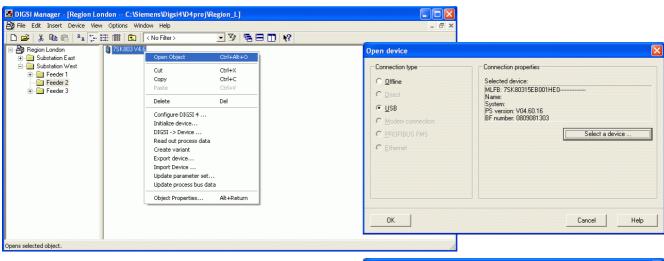
otherwise the operation of the protection device via Ethernet is not possible.

OK

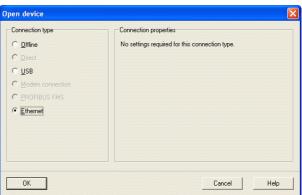


The protection device is either connected via a CAT5 patch cable (cross over) directly or with a CAT5 patch cable (1:1) via a switch to the notebook.

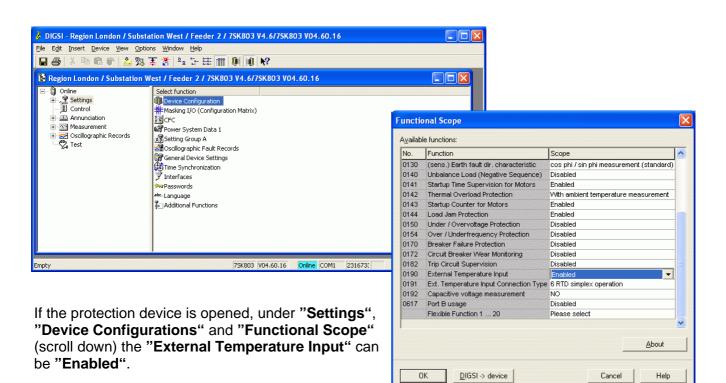
Further settings of the protection device can now be applied with DIGSI 4 either via the USB front interface or the bottom Ethernet interface "Port A".



In the window **"Open device**" the device may be selected directly with **"Connection type" – "USB"**, or via **"Ethernet**" the connection can be directly established.



Continue with "OK"





The "Ext. Temperature Input Connection Type" is

set to "6 RTD simplex operation" in the factory default settings at time of delivery and must be changed accordingly for both applications.

Application 1:

If only the 6 measured values of one RTD-Box TR800 Web must be interrogated by the protection device, the selection

"Ext. Temperature Input Connection Type", "6 RTD Ethernet" must be applied.

Application 2:

If both sets of 6 measured values each from two RTD-Boxes TR800 Web must be interrogated by the protection device, the selection "Ext. Temperature Input Connection Type",

"12 RTD Ethernet" must be applied.

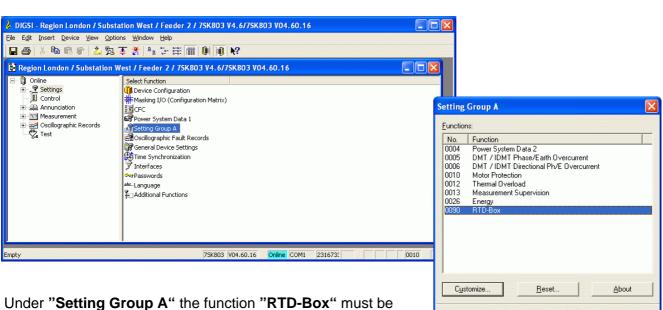
No.	Function	Scope	Ē
0130			4
and the second	(sens.) Earth fault dir. characteristic	cos phi / sin phi measurement (standard)	
0140	Unbalance Load (Negative Sequence)	Disabled	
0141	Startup Time Supervision for Motors	Enabled	
0142	Thermal Overload Protection	With ambient temperature measurement	
0143	Startup Counter for Motors	Enabled	
0144	Load Jam Protection	Enabled	
0150	Under / Overvoltage Protection	Disabled	
0154	Over / Underfrequency Protection	Disabled	
0170	Breaker Failure Protection	Disabled	
0172	Circuit Breaker Wear Monitoring	Disabled	
0182	Trip Circuit Supervision	Disabled	
0190	External Temperature Input	Enabled	
0191	Ext. Temperature Input Connection Type	6 RTD simplex operation	
0192	Capacitive voltage measurement	6 RTD simplex operation	1
0617	Port B usage	6 RTD half duplex operation	
	Flexible Function 1 20	12 RTD half duplex operation	
		6 RTD Ethernet	1
		12 RTD Ethernet	
		About	
		·····	

Functional Scope

No.	Function	Scope	^
0130	(sens.) Earth fault dir. characteristic	cos phi / sin phi measurement (standard)	
0140	Unbalance Load (Negative Sequence)	Disabled	
0141	Startup Time Supervision for Motors	Enabled	
0142	Thermal Overload Protection	With ambient temperature measurement	
0143	Startup Counter for Motors	Enabled	
0144	Load Jam Protection	Enabled	
0150	Under / Overvoltage Protection	Disabled	
0154	Over / Underfrequency Protection	Disabled	
0170	Breaker Failure Protection	Disabled	
0172	Circuit Breaker Wear Monitoring	Disabled	
0182	Trip Circuit Supervision	Disabled	
0190	External Temperature Input	Enabled	
0191	Ext. Temperature Input Connection Type	6 RTD simplex operation	
0192	Capacitive voltage measurement	6 RTD simplex operation	1
0617	Port B usage	6 RTD half duplex operation	
	Flexible Function 1 20	12 RTD half duplex operation	
		6 RTD Ethernet	~
		12 RTD Ethernet	
		About	

Close

Save with "OK"



opened and "Customize ..." must be selected.



Help

X

In the following section the protection device is set with the UDP-Serviceport and IP-Addresses of the RTD-Box(es). The protection device will later retrieve the measured values at these addresses

Application 1:

If only one RTD-Box is connected (6 RTD Ethernet), the parameters are applied under "RTD 1-6 Com".

The "UDP service port in the RTD box" may be, but does not have to be changed.

The "IP address(x) of RTD box ..." must always be in the address range (192.168.10.xxx) and is entered from the top down. Example: 192.168.10.190

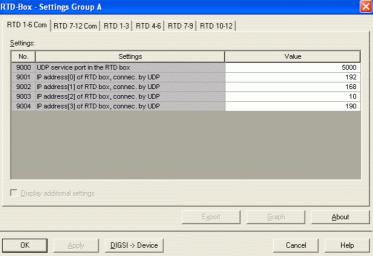
No.	Settings	Value
9000	UDP service port in the RTD box	5000
9001	IP address[0] of RTD box, connec. by UDP	192
9002	IP address[1] of RTD box, connec. by UDP	168
9003 9004	IP address[2] of RTD box, connec. by UDP IP address[3] of RTD box, connec. by UDP	10

Application 2:

If two RTD boxes are connected (12 RTD Ethernet), the first parameters are entered under "RTD 1-6 Com".

The "UDP service port in the RTD box" may be, but does not have to be changed.

The first "IP address(x) of RTD box ..." is entered from the top down. Example: 192.168.10.190



D 1-6	Com RTD 7-12 Com RTD 1-3 RTD 4-6 RTD	7-9 RTD 10-12	
ettings			
No.	Settings	Value	
9005	UDP service port in the RTD box		500
9006	IP address[0] of RTD box, connec. by UDP		19
9007	IP address[1] of RTD box, connec. by UDP		16
9008 9009	IP address[2] of RTD box, connec. by UDP IP address[3] of RTD box, connec. by UDP		10 19
<u>Disp</u>	lay additional settings	Export Graph Ab	

The second parameters are entered under "RTD 7-12 Com".

The "UDP service port in the RTD box" may be, but does not have to be changed.

The second, different "IP address(x) of RTD box ..." is entered from the top down. Example: 192.168.10.191



In the next step all the required measuring inputs are configured. Depending on the application, 6 measuring inputs are available in 2 or 4 setting pages.

In the following example only the first measuring input is configured. he same procedure applies to the

he same procedure applies to the others.

In the start menu only the pick-up values of the temperature stages are displayed.

A check in the check-box **"Display additional settings"** displays additional settings.

In the window "RTD 1-3" the
settings for the
first three measuring inputs can now
be applied.

TD-Box	- Settings Group A			×
RTD 1-6	Com RTD 1-3 RTD 4-6			
<u>S</u> ettings:				
No.	Settings		Value	
9013	RTD 1: Temperature Stage 1 Pickup			100 °C
9015	RTD 1: Temperature Stage 2 Pickup			120 °C
9023	RTD 2: Temperature Stage 1 Pickup			100 °C
9025	RTD 2: Temperature Stage 2 Pickup			120 °C
9033	RTD 3: Temperature Stage 1 Pickup			100 °C
9035	RTD 3: Temperature Stage 2 Pickup			120 °C
<u>□</u> isp	lay additional settings	Export	Grande	About
014		Export	Graph	
OK	Apply <u>D</u> IGSI -> Device		Cancel	Help

No.	Settings	Value
	RTD 1: Type	not connecte
	RTD 1: Location	Othe
9013	RTD 1: Temperature Stage 1 Pickup	100 °C
9015	RTD 1: Temperature Stage 2 Pickup	120 °C
	RTD 2: Type	not connecte
	RTD 2: Location	Othe
9023	RTD 2: Temperature Stage 1 Pickup	100 °C
9025	RTD 2: Temperature Stage 2 Pickup	120 °C not connecte
	RTD 3: Type RTD 3: Location	Othe
9033	RTD 3: Temperature Stage 1 Pickup	100 °C
9035	RTD 3: Temperature Stage 2 Pickup	120 °C
Disp	lay additional settings	

No.	Settings	Value
9011A	RTD 1: Type	not connected
9012A	RTD 1: Location	not connected
9013	RTD 1: Temperature Stage 1 Pickup	Pt 100 Ohm
9015	RTD 1: Temperature Stage 2 Pickup	Ni 120 Ohm
9021 A	RTD 2: Type	Ni 100 Ohm
9022A	RTD 2: Location	Oth
9023	RTD 2: Temperature Stage 1 Pickup	100 *
9025	RTD 2: Temperature Stage 2 Pickup	120 *
9031 A	RTD 3: Type	not connecte
9032A	RTD 3: Location	Oth
9033	RTD 3: Temperature Stage 1 Pickup	100 "
9035	RTD 3: Temperature Stage 2 Pickup	120 *
✓ <u>D</u> ispl	lay additional settings	

16.02.2009

SIEMENS siemens-russia.com

First, the **"Type"** of the thermo element e.g. Pt 100 Ohm is selected for **"RTD 1".**

In this menu a "Location" can be selected for the measured value "RTD 1"

No.	Settings		Value	
9011A	RTD 1: Type		F	100 Ohr
9012A	RTD 1: Location	Ot	her	-
9013	RTD 1: Temperature Stage 1 Pickup	Oil		
9015	RTD 1: Temperature Stage 2 Pickup	and the second se	nbient	
9021 A	RTD 2: Type	VVI	nding	
9022A	RTD 2: Location		aring	
9023	RTD 2: Temperature Stage 1 Pickup	Ot	her	
9025	RTD 2: Temperature Stage 2 Pickup			120 °C
9031 A	RTD 3: Type		not	connecte
9032A	RTD 3: Location			Othe
9033	RTD 3: Temperature Stage 1 Pickup			100 °C
9035	RTD 3: Temperature Stage 2 Pickup			120 °C
	RTD 3: Temperature Stage 2 Pickup		1 Graph	120 About

Energy Sector Energy Automation

RTD-Box - Settings Group A

RTD 1-6 Com RTD 1-3 RTD 4-6 Settings: No. Value Settings 9011A RTD 1: Type Pt 100 Ohm 9012A RTD 1: Location Ambient 9013 RTD 1: Temperature Stage 1 Pickup 30 °C 9015 RTD 1: Temperature Stage 2 Pickup 40 °C 9021A RTD 2: Type not connected Other 9022A RTD 2: Location 9023 RTD 2: Temperature Stage 1 Pickup 100 °C 9025 RTD 2: Temperature Stage 2 Pickup 120 °C 9031A RTD 3: Type not connected 9032A RTD 3: Location Other 9033 RTD 3: Temperature Stage 1 Pickup 100 °C 9035 RTD 3: Temperature Stage 2 Pickup 120 °C Display additional settings About OK Apply DIGSI -> Device Cancel Help

Under "**Temperature Stage x Pickup**" two pick-up thresholds for alarms may be entered for the measured value "**RTD 1**".

When all measuring inputs have been configured, the settings are transferred with the button "DIGSI -> Device" to the device.

The process is concluded by entry of the "**Password**" and "**OK**".

Note: Save settings to "file".

The second second			ue
9011A I	RTD 1: Type		Pt 100 Oh
012A I	RTD 1: Location		Ambier
	RTD 1: Temperature Stage 1 Pickup		30 °C
9015 F	RTD 1: Temper Enter Password		40 °0
9021.A I	RTD 2: Type		not connecte
1022A I	RTD 2: Locatio Password for parameter set:	*****	Othe
9023 F	RTD 2: Temper		100 °C
9025 F	RTD 2: Temper		120 °C
	RTD 3: Type		not connecte
	RTD 3: Locatio	Cancel Help	Othe
	RTD 3: Temper		100 °C
9035 F	RTD 3: Temperature Stage 2 Pickup		120 °C

The measured values will later be

displayed in **DIGSI 4** under **"Measurement" – "Others" – "RTD-Box Measuring Values",** or in the **Display of 7SK80** under **"Measurement" – "RTD-Box"**.

Setting the RTD-Box TR800 Web using the Web-Browser

The RTD-Box is set using a PC/notebook via the Ethernet interface with a Web Browser e.g. Internet Explorer. Before the Web Browser is started, several settings on the PC and RTD-Box must however be applied.

Preparing the RTD-Box:

In its delivery state the RTD-Box has the **IP address 10.10.10.10**. The **"Username**" and **"Password**" are empty, the menu is opened by mouse click on **"OK**".

If the IP-Address is unknown it can be read out on the display by means of the navigation keys. If the bottom key is pressed twice (Output IP) and then the right key is pressed once, the IP-Address is displayed in blocks.

By changing over the red toggle switch (to the left) and pressing the reset key (next to the Ethernet plug) the IP-Address is fixed to **10.10.10.10** following the boot sequence.

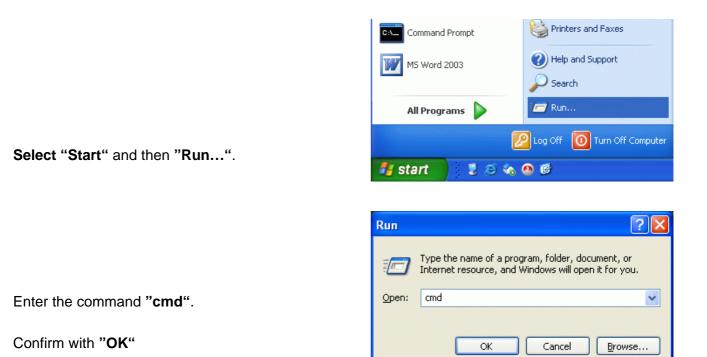
Note: Only one RTD-Box with the Address 10.10.10.10 may be connected in the network at any given time.

Preparing the PC/Notebook:

The notebook automatically derived via DHCP an IP-Address (company LAN), or it is set with a fixed IP-Address (e.g. in a network segment of the protection devices). For operation of the RTD-Box with the Notebook both IP-Addresses must be in the same network segment, or the IP-Address of the RTD-Box must be routed to the PC.

Routing is the simplest solution as the basic settings of the PC/Notebook do not have to be changed. Routing is done in the Console and is only active until the next new start-up of the PC/Notebook.

Initially the Command-Console (DOS-window) is opened.





The window with the active prompt (e.g. C:\Dokuments and Settings\Alle>) is opened. The commands are always entered following the ">".

Initially the present IP-Address of the PC/Notebook is read out, then routed and finally the connection is tested.

C:\WINDOWS\system32\cmd.exe - 🗆 🗙 Microsoft Windows XP [Version 5.1.2600] (C) Copyright 1985-2001 Microsoft Corp. Read out IP-Address with: C:\Documents and Settings\Alle>ipconfig "ipconfig" Windows IP Configuration In this case the IP-address is: Ethernet adapter Local Area Connection: Connection-specific DNS Suffix 192.168.10.165 iddress. . . net Mask . . ault Gateway 255.255.255.0 192.168.10,254 Defa :\Documents and Settings\Alle>route add 10.10.10.10 192.168.10.165 Route with: C:\Documents and Settings\Alle>ping 10.10.10.10 "route add Pinging 10.10.10.10 with 32 bytes of data: 10.10.10.10 10.10: bytes 10.10.10: bytes 10.10.10: bytes 10.10.10: bytes 10.10.10: bytes 192.168.10.165" 10. 10 g statistics for 10.10.10.10: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), 'oximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 0ms, Average = 0ms Test with: "ping 10.10.10.10" \Documents and Settings\Alle>_ The RTD-Box answers!

Open TR800 Web Interface:

Now start a Web-Browser (e.g. Internet-Explorer), enter the IP-Address 10.10.10.10 and start by pressing "Return".

Ziehl TR800 Web Interface - Microsoft Internet Explorer

		en Ansicht Eavorite				A.
Initially the Username and	G Zurück 🝷	🕥 - 💌 🛃	🏠 🔎 Suchen 🤺 Favo	riten 🚱 🔗 - 🍑 🔜 🛄 🏭	8	
	Adresse 🕘 http	c//10.10.10.10/				🔽 🂽 Wechseln zu 🛛 Links
Password must be entered and confirmed with "OK ".			TR800		TR 800 Web	ZIEHL
and commed with OK .	Messwerte	Sensoren Zeitsteu	erung 🛛 Protokollierung 🗍 Netz			
	Se		Messwert Einheit Mir	nWert MaxWert Alarm 1 2 3 4		^
	1. S	ensor 1		0000		
	2. S	ensor 2		0000	Sensorsimulation	
If there is no login assigned	3. S	ensor 3		0000		
when initially starting, simply		ensor 4		0000		
press "OK".		ensor 5		Login	Reset verriegelter Alarm	
		ensor 6		Benutzername: Passwort:	Reset Min/Max-Werte	3
		ensor 7 ensor 8		Ok Ok		
If the window is opened, the						
If the window is opened, the	Okein Alarm	Verzögerung Alar	m ein 📕 Alarm 🕘 Verzöger			
language can be selected by	100					
clicking on the						
corresponding flag at the top	80 -					
left hand side.	60					
ien nanu side.	60 -					
	40 -					
	20 -					
	<					×
	53		and the second	· · · · · · · · · · · · · · · · · · ·	second	



Set Network parameters:

Initially the "**Network**"-parameters are set. These parameters must correspond to those of the notebook and protection device (see note on page 2). The protection device requests the data from the RTD-Box(es) using this data (see page 7).

In the section

"Network TCP/IP": "manual configuration" must be entered.

Application 1:

For the <u>first</u> RTD-Box enter the "**ip address**" (e.g. 192.168.10.<u>190</u>) here.

Application 2:

For the <u>second</u> RTD-Box enter the "**ip address**" (e.g. 192.168.10.<u>191</u>) here.

Enter the **"subnet mask"** (e.g. 255.255.255.0 for both RTD-Boxes.

In the section "UDP Configuration" the "UDP Port" may be left unchanged at "5000".

2 Ziehl TR800 Web Interface - Microsoft Internet Explorer File Edit View Favorites Iools Help	
Con Back - Co - 🖹 🗟 🏠 🖉 Search 📌 Favorites 🚱 🔗 - 🍃 🖂 💭 🎎	-
یون الملت://10.10.10.10/	
Data Sensors Scheduler Logging Network System Users cancel	Help
Attraction Control of ya https port 443 https port @ manual configuration ip address 192 DNS server 0 0 0 gateway 0 MAC address 101010 MAC address 0012:E4:00:005E	
UDP Porti (5000	
R5485 Interface	
baud rate 9600 💌 parity even 🗙 stop bits 1 👻 protocol Ziehl Standard 👻 RS-485 Address 0 💌	
Mail Account POP3 Server Password SMTP authentification required	

Optional settings:

Optional settings are "https-port" and "http-port", as well as a "DNS server" and a "gateway". For the simplest application described here, changes are not necessary.

Below, the current settings such as the "current IP address", "current subnet mask" and the "MAC address" are shaded grey.

If communication takes place via a proxy server, the corresponding settings can be applied under "proxy configuration".

Right at the bottom of the window, the "**eMail configuration**" provides the required information regarding the "**E-Mail Account**". This enables the sending of eMails in the case of faults or when thresholds are reached.

The setting for the "RS485 Interface" are not relevant for Ethernet communication.

Save the "Changed parameters, please save or cancel!" with the "Save" button.



Saving of the settings also resulted in the saving of the new IP address in the RTD-Box. To obtain access to the RTD-Box via Ethernet with the new ip-address the following must be done.

	2 Ziehl TR800 Web Interface - Microsoft Internet Explorer		
Change position of the red	<u>File Edit Vi</u> ew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp		
toggle switch (to the left)	🕲 Back - 🕑 - 🖹 🗟 🏠 🔎 Search 👷 Favorites 🤣 🔗 - 🍃 💭 🛄 🤱 🥸		
	Address 🙆 http://192.168.10.190/		💌 🄁 Go 🛛 Links
	TR800	TR 800 Web	ZIEHL [^]
Press the re-set key next to	Data Sensors Scheduler Logging Network System Users		
the toggle switch.	cancel. save		Help
	Network TCP/IP		
	https port 443 http port 80		
After the boot sequence the	DHCP	255 0	
IP-address is fixed to		200	
	DNS server 0 0 0 0 gateway 0 0	0 0	
192.169.10.190.	current IP address 192.168.10.190 current subnet mask 255.255.255.0 MAC address 00.12.E4.00.00.5E		1 1 1 1 1
	proxy configuration		
Close the Browser and re-	http proxy proxy port 80 usemame for proxy proxy password		
start it with the new IP-	UDP Configuration		
Address (192.168.10.190).	UDP Port: [5000		
	ODP Port: 5000		
	R5485 Interface		
	baud rate 9600 👻 parity even 💙 stop bits 1 👻 protocol Ziehl Standard 👻 RS-485 Address D	*	
	eMail configuration		
	E-Mail Account POP3 Server POP3 Server		
Now all the further settings	SMTP authentification required		
-	K		>
(also via a network) can be	E Done		Internet
applied.			

Sensor / measuring input settings:

The 8 "Sensors", or measuring inputs may be set individually as follows.

1.	Sensor	setting
----	--------	---------

The "**Sensor-Name**" may be individually set (is not transferred to the protection device).

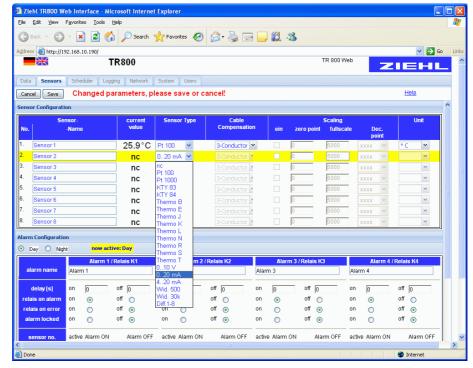
Select the **"Sensor Type"**, e.g. **"Pt 100**".

<u>E</u> dit ⊻ier	v F <u>a</u> vori	tes <u>T</u> ools	Help													
Back - () · (1 🔁 (1	Searc	h 🤺 Far	vorites 🧑) 🔗 - 👌	è 🖃 🗖	1	-88						
ss 🙆 http	//192.168	.10.190/	E.												🗸 🔁 Go	,
			TR8	00							TR 800 W	eb	7			
Senso	we Sch	eduler L	ogging	Networ	k Systen	Users										
					, please		oonooll							Help		
cel Sav		langeu	paran	leters	, piease	save or	cancel							TIOID		1
or Configu														1		
	Sensor- -Nam	e		urrent value	Senso	Туре	Cat Comper		ein	zero poi	Scaling nt fullscale		lec. oint	U	nit	
Sensor 1				nc	Pt 100	~	3-Conduc	tor N		0	5000	XXXX	~		~	
Sensor 2				nc	nc Pt 100			tor 🔊		0	5000	XXXXX	~		~	
Sensor 3				nc	Pt 1000			tor 🔹		0	5000	XXXX	~		~	
Sensor 4				nc	KTY 83 KTY 84			tor 🔹		0	5000	XXXX	~		~	
Sensor 5				nc	Thermo B			tor 🔹		0	5000	XXXX	~		~	
Sensor 6				nc	Thermo E Thermo J			tor 🔹		0	5000	XXXX	~		~	
Sensor 7				nc	Thermo K			tor 🔹		0	5000	XXXX	~		~	
Sensor 8				nc	Thermo L Thermo N			tor 🔹		0	5000	XXXXX	~		~	
m Configur	ation				Thermo R											
Day O	Niaht	now a	ictive: D	ay	Thermo S Thermo T											
		Alarm	1 / Rela	is K1	010 V	Marm	2 / Relais K2		Ala	arm 3 / Rela	is K3		larm 47	Relais K4		
larm name	Alar				020 mA 420 mA				m 3			Alarm 4				
			_		Wid. 500 Wid. 30k											
delay [s]	on	0	off	JU.	Diff.8-7		off 0	on	0	off		on O		off 0		
ais on alar		۲		0	on	۲	off 🔿	on	۲	off	<u> </u>	on 🧿		off 🔿		
lais on err		0	off	\sim	on	0	off 💿	on	0	off	<u> </u>	on C	·	off 💿		
arm locke	d on	0	υΠ	۲	on	0	off 💿	on	0	off	۲	on C)	off 💿		
sensor no.	activ	e Alarm Ol	N	Alarm C	FF activ	e Alarm Ol	N Alan	m OFF acti	/e Alarr	n ON	Alarm OFF	active Ala	arm ON	Alar	rm OFF	



"3-Conductor" or "Cable Compensation" for the 2conductor operation can be applied in OHM.

Ziehl TR800 We	eb Inte	erface - Mi	crosoft Inte	rnet E	xplore	ľ										in the second			E	
ile <u>E</u> dit <u>V</u> iew F	avorite	es <u>T</u> ools	Help																	
3 Back - 🕥	- 🗙) 🖻 🎸) 🔎 Sear	rch 🥠	Favor	rites 🧭		• 🎍 📃	3 📒	1	**									
dress 🕘 http://19	2.168.																	~	🔁 G	io
		T	R800										TR 800 We	eb		z			- 11	
Data Sensors	Sche	duler Logo	ing Netwo	ork S	iystem	Users														1880
Cancel Save	Ch	anged pa	arameters	s, plea	ase s	ave or c	ance	el!									E	lelp		
ensor Configuratio	n																			^
	isor- Name		curren value		Sense	or Type	(Cable Compensatio	on	ein	zero	point	Scaling fullscal	e	De			Uni	l	
Sensor 1			26.8	°C F	Pt 100	~	Ē	-Conductor	~		0		5000	X	ooc	~	° (~	
Sensor 2			nc	n	с	*		ionductor 🗠			0		5000	X	C(X)	~			~	
Sensor 3			nc	n	с	*	0.0				0		5000	X	C(X)	V			~	
Sensor 4			nc	n	с	*	0.1				0		5000	10	COC	~			~	
Sensor 5			nc	n	с	~	0.3				0		5000	0	OOC	~			~	=
Sensor 6			nc	n	с	~	0.4	Ω			0		5000	10	ooc	~			*	
Sensor 7			nc	n	с	~	0.5				0		5000	ю	cox.	~			~	
Sensor 8			nc	n	с	~	0.6				0		5000	X	CXX.	Y			~	
arm Configuration	n						0.8													
Day 🔘 Night		now acti	ve: Day				0.9													
		Alarm 1/	Relais K1			Alarm 2 /	1.0	2		Alar	rm 3 / Re	lais K	3		Ala	rm 4 /	Relai	s K4		a I
alarm name	Alarn				Alarm	2	1.1		Alan	m 3				Alarm						
				_			1.3	IΩ 🗸			_				_			_		
delay (s)	on	0	off 🛛			0	off	,	on	0	0	ff 0		on	0		off off	,		
elais on alarm elais on error	on on	•	off 🔿		on on	•	off off	0 0	on on	•	0	-	·	on on	•		off off	0 0		
alarm locked	on	0	off 💿		on	0	off	-	on	0		n G		on	0		off			
sensor no.	active	Alarm ON	Alarm	OFF	active	Alarm ON		Alarm OFF	activ	e Alarm	I ON	Ala	arm OFF	active	Aları	n ON		Alarm	OFF	
Done														1				Interne	t	



2. Sensor settings

The "**Sensor-Name**" can be indidvidually set

Select the "Sensor Type" e.g. "0..20 mA".



If the measured value has to be scaled, check the box under " Scaling" "on ".	2 Ziehl TR800 Web Interface - Microsoft Internet Explore Ele Edt Yew Favorites Iools belo Back - O Image: Comparison of the provided and the provi	orites 🔗 🔗 - 🌏 🕞 🔔 🎇 🔧 TR 800 VA	Veb
Example 1: Scaling "zero point": 0 "fullscale": 200 "Dec. point" : xxx.x "Unit": mA (see screenshot on right)	Sensor. value current value Sensor 1. Sensor 1 25.2 ° C Pt 100 2. Sensor 2 0.0 ° C 0.20 m 3. Sensor 3 nc nc 4. Sensor 4 nc nc 5. Sensor 5 nc nc 7. Sensor 6 nc nc 7. Sensor 7 nc nc 8. Sensor 8 nc nc		ale Dec. point Unit XXXX × C × XXXX × × C XXXX × × C XXXX × × C XXXX × × C XXXX × × × XXXX × × × XXXX × × × XXXX × × k2 XXXX × %
Nominal Current 5.1 mA is in "current value": 5,1 mA Device 7SK80: 51 °C	Alarm Configuration O Dey Night note active: Day alarm name Alarm 1 Alarm delay [s] on 0 off relais on atarm on off on relais on error on off on alarm locked on off on sensor no. active Alarm ON Alarm OFF active	0 off 0 on 0 off 0 0 off 0 off 0 off 0	Alarm 4 / Relais K4 Alarm 4 on p off p on o off o on o off o on off o active Alarm ON Alarm OFF
Further examples:	< ● Done		> Internet

Туре	Zero point	Fullscale	Dec.Point	Unit	nom. value	curr. value	7SK80
020 mA	0	20	xxxx	mA	5.1 mA	5 mA	5 °C
010 V	0	100	xxx.x	V	9.5 V	9.5 V	95 °C

The measured values are always displayed in the protection device without a decimal point scaled in °C! This has to be considered when setting the temperature thresholds.

Processing of the measured values in protection functions

Alarms and measured values of the thermal functions can be transferred to a substation control system or may be exchanged between devices via "IEC 61850 GOOSE". Please observe the following notes for measurement of analog values.

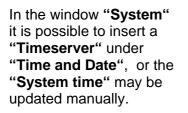
If the device is utilized for reading in 20 mA current interfaces, of 0-10 V voltages (max. 6 per device) the following must be observed.

The analog values 1-6 in the SIPROTEC – device are available for processing in the integrated Thermofunction. These values are transferred with the protocol (RTD protocol) that is also used for transferring the temperatures if Pt 100 sensors are connected to the device. A measured analog value of e.g. 7.4 mA is (scaled accordingly) transferred as the value 74 and displayed in the SIPROTEC – device as a measured temperature of 74° degrees (see example 1 above).

If an analog value has to be monitored with a threshold of 7.4 mA by the Thermofunction in the SIPROTEC – device, then a value of 74° C must be set for this threshold and the measuring point must be configured as Pt100. If a second threshold of 12,4 mA has to be set, then the 2^{nd} temperature threshold in the SIPROTEC – device for this sensor input must be set to 124° C. The SIPROTEC device would indicate a temperature value of 124° C when this threshold is exceeded.

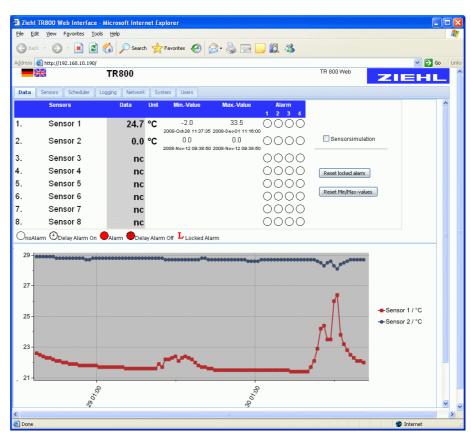
In the window "**Data**" the measured values of the 8 "**Sensors**" are displayed with scaling.

By checking **"Sensorsimulation"** it is possible to simulate sensors. This simplifies the commissioning with a protection device without connected sensors.



Under "Save / load Device Configuration" it is possible to save and load customer specific or factory default settings.

Under "Firmware Version / Update" the present Firmware-Version is displayed, or a "Firmware-Update" may be carried out.



Ziehl TR800 Web Interface -	microsoft internet cxpiorer					
<u>File Edit View Favorites Tools</u>	s <u>H</u> elp					_
🕒 Back - 🌍 - 💌 🖻	🏠 🔎 Search 🤺 Favorites 🥳	🖉 - 🕹 🖃 🔜 🛍	-83			
Address 🍓 http://192.168.10.190/					💌 🛃 Go	Lin
	TR800		TR 8	00 Web	IEHL	
Data Sensors Scheduler Lo	aging Network System Users					
	and monthly address				Help	
cancel save					<u>ricip</u>	
Devicename						
Device labeling TR800						
Time and Date						
		<u>,</u>				
🗌 Use Timeserver 🔤 🚽	Add Timeserver Remove Timeserver					
last update: none qu	uery interval 86400 s					
last update: none qu	uery interval 86400 s					
	uery interval 86400 s					
use MEZ/MESZ O differe	ince hours (h)					
⊙ use MEZ/MESZ ○ differe	ince hours (h)	n:ss 00 • : 00 • : 00 •	Update TR800) sytem time		
● use MEZ/MESZ ○ differe	ince hours (h)	1:55 00 ¥ : 00 ¥ : 00 ¥	Update TR800	D sytem time		
use MEZ/MESZ differe tooe-1911:56:01 dd.mm.yyy iave / Load Device Configuration	w 01 v . 01 v . 2008 v hhrmn	nss 00 v : 00 v : 00 v	Update TR800			
use MEZ/MESZ differe define define define define define define define define define	ince hours (h)	nss 00 v : 00 v : 00 v	Update TR800	D sytem time		
use MEZ/MESZ differe use MEZ/MESZ differe dd.mm.yyy ave / Load Device Configuration date User 2008-12-19 11:51:30	v 01 v . 01 v . 2006 v hh.mn	n.ss 00 v : 00 v : 00 v	Update TR800			
• use MEZ/MESZ o differe 0008-Dec-19 11:56:01 dd.mm.yyy over / Load Device Configuration dd.mm.yyy date User 2008-12-19 11:51:30 2008-12-19 11:41:23	y 01 v. 01 v. 2008 v hhumn Comment sonsor menu	nss 00 v : 00 v : 00 v	Update TR80C			
use MEZ/MESZ differe defene use MEZ/MESZ differe dete use Additional differe use Additional difference use Additional difference	y 01 y 01 y 2008 y hhrmn Comment sonsor menu network menu	nss 00 v ; 00 v ; 00 v	Update TR800			
• use MEZ/MESZ differe 2008-Dec-19 11:56:01 dd.mm.yyy sove / Load Device Configuration date User 2008-12-19 11:51:30 2008-12-19 11:51:30 2008-12-00 11:41:23 2008-12-01 12:49:31:36:18 2008-12-03 13:36:18	y 01 v. 01 v. 2008 v hh.mn Comment sonsor menu network menu Sensorikmenü	nss 00 v : 00 v : 00 v	Lipdate TR800			
• use MEZ/MESZ differe 2008-Dec-19 11:56:01 dd.mm.yyy Save / Load Device Configuration date User 2008-12-19 11:51:30 2008-12-19 11:41:23 2008-12-01 12:41:23:22 2008-12-03 13:36:18	y 01 v. 01 v. 2008 v hh:mm Comment sonsor menu network menu Sensorikmenü Netzwerkmenü	nss 00 v : 00 v : 00 v	Lipdate TR800			
• use MEZMESZ o differe 2008-Dec-1911:56:01 dd.mm.yyy Save / Load Device Configuration date Q008-12-1911:51:30 2008-12-1911:41:23 2008-12-1911:41:23 2008-12-031:38:12 2008-12-031:38:12 2008-12-031:38:52 2008-12-031:38:55	y 01 v, 01 v, 2008 v hhumn comment comment sonsor menu network menu Sensorikmenü Sensorikmenü Sensorikmenü	nss 00 v : 00 v : 00 v	Lipdate TR800			
• use MEZ/MESZ o differe 2008-Dec-1911:56:01 dd mm.yyy Save / Load Device Configuration ddate Q008-12-1911:51:30 2008-12-1911:41:23 2008-12-1911:41:23 2008-12-031:36:18 2008-12-031:36:26 2008-12-031:33:52 2008-12-031:33:55	vy 01 v. 01 v. 2008 v hhrmn comment comment sonsor menu network menu Sensorikmenü Sensorikmenü Sensorikmenü	nss 00 v : 00 v : 00 v	Update TRBOC	. readivate		
• use MEZMESZ o differe 2008-Dec-1911:56:01 dd.mm.yyy Save / Load Device Configuration date Q008-12-1911:51:30 2008-12-1911:41:23 2008-12-1911:41:23 2008-12-031:38:12 2008-12-031:38:12 2008-12-031:38:52 2008-12-031:38:55	vy 01 v. 01 v. 2008 v hhrmn comment comment sonsor menu network menu Sensorikmenü Sensorikmenü Sensorikmenü	nss 00 v : 00 v : 00 v	Lipdate TR800		uration	
• use MEZ/MESZ differe 2008-Dec-19 11:56:01 dd.mm.yry save / Load Device Configuration ddae 2008-12-19 11:51:30 2008-12-19 11:51:30 2008-12-03 14:26:32 2008-12-03 14:26:32 2008-12-03 13:36:18 2008-12-03 13:36:52 2008-12-03 13:26:54	y 01 v. 01 v. 2008 v hh:mm y 01 v. 01 v. 2008 v hh:mm Comment sonsor menu network menu Sensorikmenü Netzwerkmenü Sensorikmenü Netzwerkmenü	nss 00 v : 00 v : 00 v	Lipdate TR800	. readivate	uration	
• use MEZ/MESZ o differe 2008-Dec-1911:56:01 dd.mm.yyy Save / Load Device Configuration date Q008-12-1911:51:30 2008-12-1911:41:23 2008-12-1911:41:23 2008-12-031:4:28:32 2008-12-031:3:35:52 2008-12-031:3:35:52 2008-12-031:3:35:52	v 01 v . 01 v . 2008 v hhumn comment sonsor menu network menu Sensorikmenü Netzwerkmenü Sensorikmenü Sensorikmenü Netzwerkmenü Netzwerkmenü	n:ss 00 v : 00 v : 00 v	Lipdate TR800	. readivate	uration	
use MEZ/MESZ differe use MEZ/MESZ differe use MEZ/MESZ Udentry date User 2008-12-19 11:51:30 2008-12-03 14:26:32 2008-12-03 14:26:32 2008-12-03 13:36:18 2008-12-03 13:36:52 2008-12-03 13:26:54 2008-12-03 13:26:54 2008-12-03 13:26:54 2008-12-03 13:26:54 2008-12-03 13:26:54 2008-12-03 13:26:54 Comment of the second of the secon	v 01 v . 01 v . 2008 v hhumn comment sonsor menu network menu Sensorikmenü Netzwerkmenü Sensorikmenü Sensorikmenü Netzwerkmenü Netzwerkmenü			. readivate	uration	

If the RTD-Box(es) and the

protection device are correctly connected to the network, the measured value of the RTD-Box(es) are interrogated by the protection device and are available there.

Please refer to the device manuals for detailed descriptions of the settings in the devices.

Wish you much success

