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Quick Start Guide REX 200/250 WAN|WiFi

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from FW 6.0.5

www.helmholz.com

Content

1. Introduction 3
2. Preparing the REX 200/250 3
3. Access to the myREX24 V2 portal 6
4. Initial router configuration via the myREX24 V2 portal 8
5. Router configuration transfer options 11
6. Connection to the machine network 14
7. Tips and tricks 16
8. Remote maintenance of Ethernet CPUs 20
9. Setting up the MPI/PROFIBUS interface (REX 250 only) 21
10. Setting up the VCOM LAN for serial communication (REX 250 only) 22
11. Description of LEDs and buttons 23
12. Resetting to factory settings 24
13. Configuration / factory settings from the USB stick 24
14. Alternative configuration without myREX24 V2 portal 25
15. Technical data 26

1. Introduction

The REX 200/250 is an industrial router suitable for nearly worldwide remote access to IPv4-enabled devices (PLCs, HMIs, IP cameras etc.). This Quick Start Guide explains the basic settings in the myREX24 V2 portal and shows how to transfer the configuration made there to the REX 200/250.

Important advance information: *Please use the most current version (V3.7R1.0 or higher) of the "shDIALUP" dial-up software for commissioning. You can download it from www.helmholz.de.*

The current firmware must be installed on all REX 200/250 routers for successful connection with the myREX24 V2 portal.

2. Preparing the REX 200/250

2.1 Safety instructions

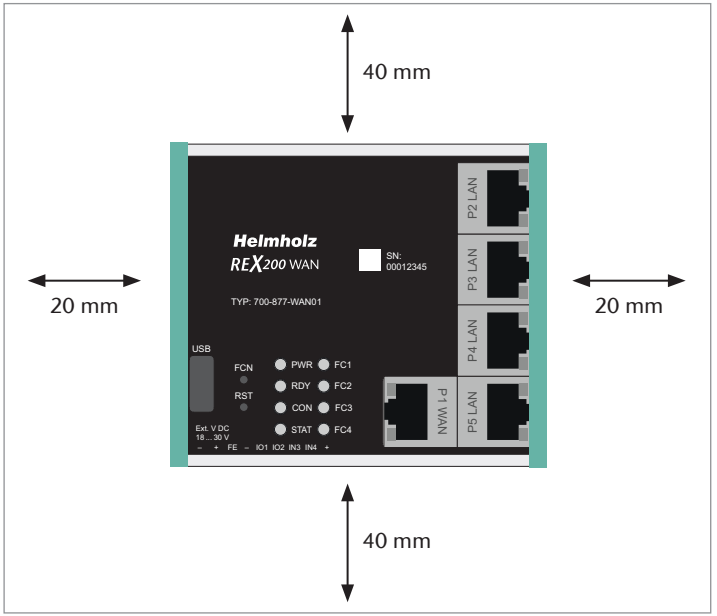
Mounting, installation and commissioning of the router may only be carried out by qualified personnel. The respective national safety and accident-prevention regulations must be complied with. The router was constructed using state-of-the-art technology and the recognized safety-related rules (see declaration of conformity). The router was designed solely for operation in the switch cabinet and at safety extra-low voltage (SELV) in accordance with IEC 60950/EN 60950/VDE 0805 and may only be connected to devices which fulfill the conditions of EN 60950. The router is only intended for use inside buildings, i.e. it is not intended for outdoor use.

Electrostatic discharge! Comply with the required precautionary measures when handling components at risk from static electricity (EN 61340-5-1 and IEC 61340-5-1).

2.2 Installation position/Minimum clearances

The router was designed to be mounted on DIN rails (as per DIN EN 50 022) and intended for installation in switch cabinets. Installation and mounting must take place in accordance with VDE 0100/IEC 364. The router may only be mounted in a vertical installation position.

Minimum distances from neighboring modules:



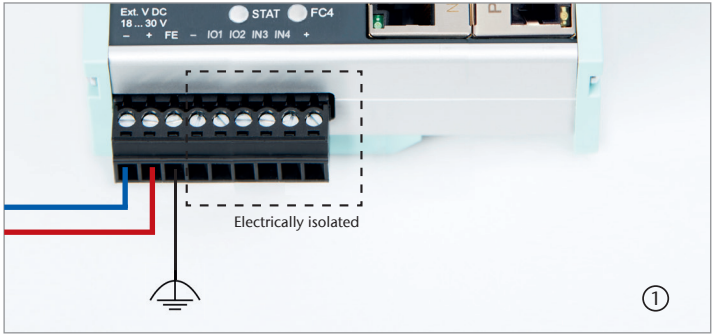
2.3 Terminals and interfaces

Rigid copper wires with a max. diameter of 1.5 mm² can be clamped onto the provided connector plug. Network cables corresponding to at least category 5/5e (CAT-5) should be connected to the RJ-45 sockets. The connection to the higher-level network/router for Internet access is established over the P1 WAN interface. LAN ports P2 to P5 are available for connection to the machine network and for commissioning via PC.

Internal switch functions are active even if the REX 200/250 router is not connected to the Internet.

The PWR LED lights up when the 24-volt supply voltage is applied. The boot process starts following the internal system check, which is indicated by the blinking RDY LED. The REX 200/250 is ready for operation as soon as the PWR LED and RDY LED light up continuously. (duration: approx. 90 sec.)

Connection FE is for the functional ground. Connect this properly to the reference potential.

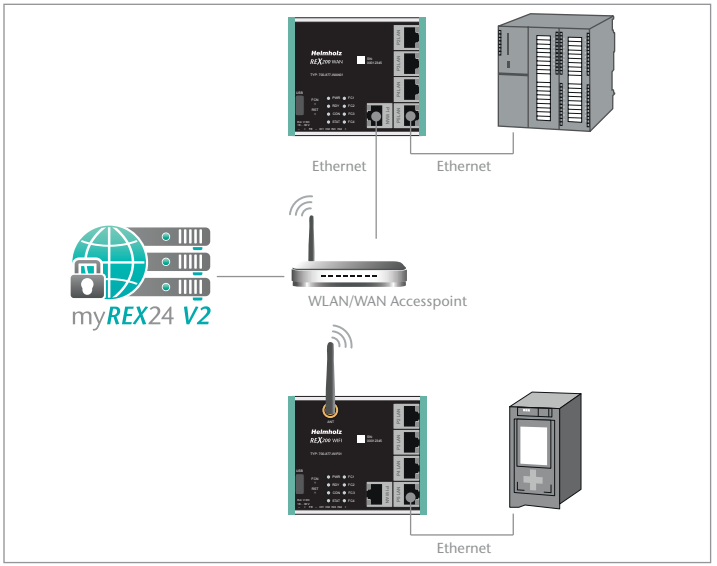


2.4 REX 200/250 WAN

Connect the P1 WAN interface of the REX 200/250 to the higher-level network/router being used to establish the Internet connection.

2.5 REX 200/250 WiFi

With this device version, a wireless connection to the Internet can be configured instead of the P1 WAN interface. For this purpose, connect one of the 2.4 GHz WLAN antennas available as Helmholz accessories to the RP-SMA socket and ensure that a continuous radio connection to a WLAN access point can be guaranteed.

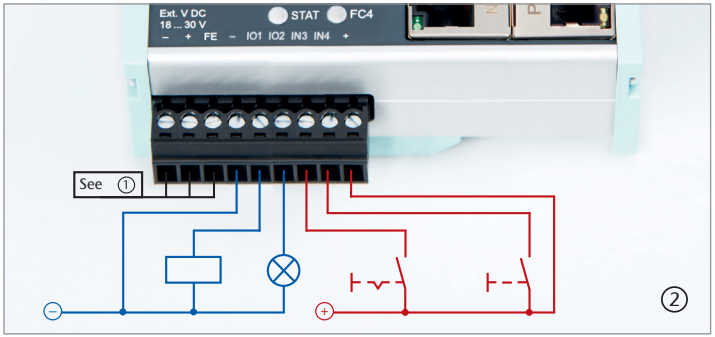


2.6 2x IO1 & IO2 digital inputs/outputs and 2x IN3 & IN4 inputs

Due to the electrical isolation of the bi-directional input/output wiring, an additional supply voltage of 24 volts DC must be applied. The alarm inputs can be activated with potential-free switches, buttons or relay contacts. Depending on the configuration in the myREX24 V2 portal, one to four (or, in the case of multiplex wiring, up to 99) different email/text message recipients can be alerted with individual message texts. One input each can also be configured for establishing the connection to the myREX24 V2 portal or for a REX system restart.

The configurable output wiring makes available signals for the status of an active Internet, VPN or user connection or a device fault of the REX 200/250.

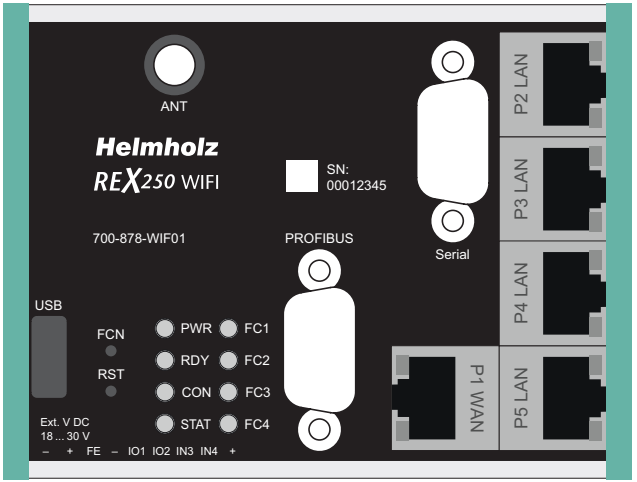
***Note:** When using outputs O1 and O2, the corresponding input signals I1 and I2 assume the respective output status and can themselves no longer be used externally for other alarm input signals.*



application example

2.7 Interfaces on the front

Name	Description
P1 WAN	WAN connection of the router (customer network, DSL router etc.)
P2 to P5 LAN	Connection of the local network (e.g. machine network)
USB	Connection for USB flash drive
ANT	RP-SMA socket for antenna connection (REX 200/250 WiFi only)
PROFIBUS	MPI/PROFIBUS up to 12 Mbps (REX 250 only)
Serial	Serial RS232 VCOM port (REX 250 only)



3. Access to the myREX24 V2 portal

The REX 200/250 can be fully configured in the shDIALUP dial-up software through the myREX24 V2 portal. This software, as well as other documents with supplementary example applications,
can be downloaded from the download area of www.helmholz.de at any time and installed under a Windows operating system.

You can also administer your projects and the configuration of your REX routers through an HTTPS-secured direct call from your browser. Use the following URL for this purpose: **https://v2.myREX24.net**.

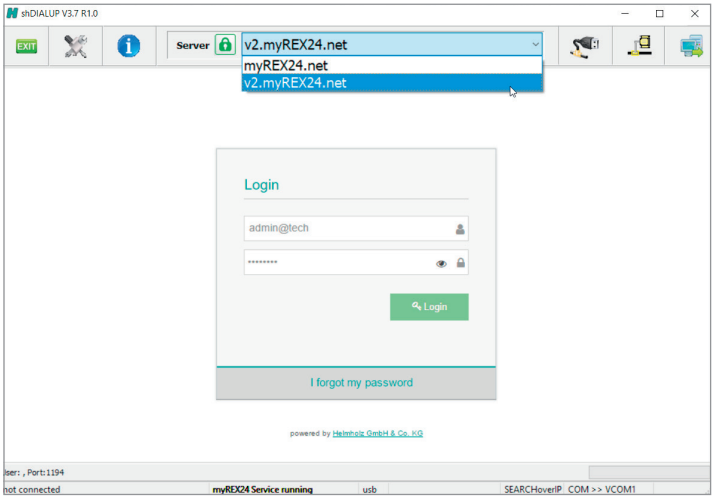
Use the myREX24 V2 portal access data available to you for logging in. The various ways to transfer a configuration you have created to the REX 200/250 are described below. Establishing a secure VPN to a REX router can then only occur using the shDIALUP remote client software. You can find further information in the manual for the myREX24 V2 portal.

For information on alternative configuration methods, refer to Chapter 14.

3.1 Logging into the myREX24 V2 portal server

Install the shDIALUP software with administrative rights under a Windows operating system. After opening the program, select the “V2.myREX24.net” server in the top menu bar and then log in to the myREX24 V2 portal with
your access data.

You should only register at www.myREX24.net if you don't yet have a myREX24 V2 portal account or have not received user access from a myREX24 account administrator. Fill out the required fields there. After your data is checked by our service team (Mon. to Fri., 8 a.m. to 5 p.m. CET), you will receive two separate e-mails with the access data. One e-mail contains the user name, and the second the password.



Notes:

- *Alternatively, the login page can also be accessed at https://v2.myrex24.net. Any current browser can be used for this.*
- *Your login name can be comprised of your user name and company name separated by the @ symbol, for example. Example: admin@helmholz*
- *Following the initial login, you will be prompted to register a new, individual password for your account.*
- *As the account administrator, you can create and administer additional users after logging into the myREX24 V2 portal if necessary.*

3.2 Navigation in the portal

Once a user has logged in for the first time, he or she is guided through a tutorial. Navigation, basic settings and switching from the simple view to the extended view are shown.

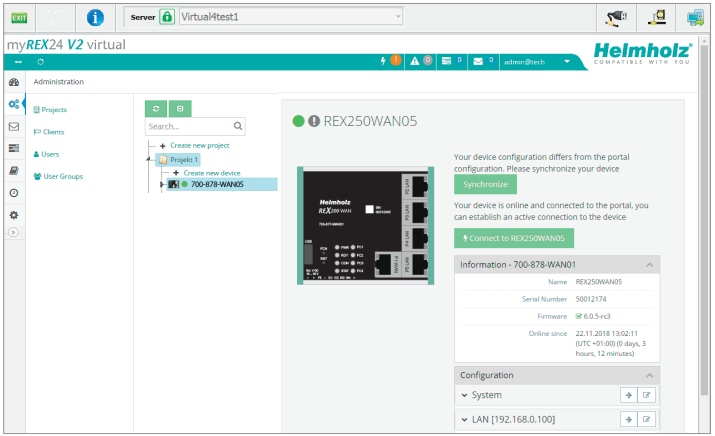
3.3 Simple and extended views

You can choose between the two views in the menu interface of the myREX24 V2 portal.

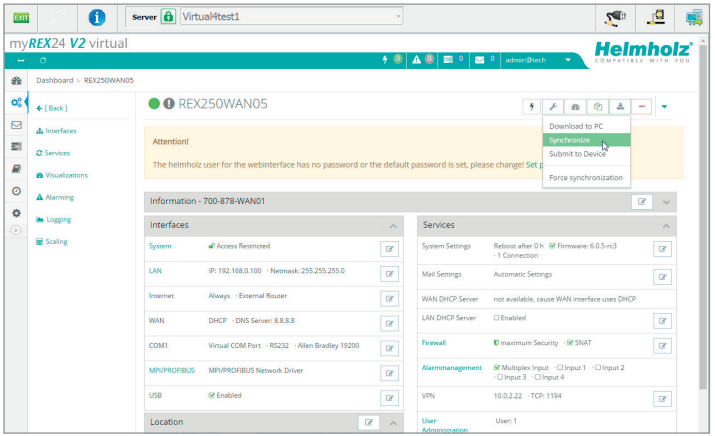
The “simple view” is active the first time you log in. You can switch to the “extended view” at any time without changes being lost or losing their validity.

The simple view is mainly used throughout the rest of this Quick Start Guide. The extended view is also presented in some places for purposes of illustration.

Simple view:

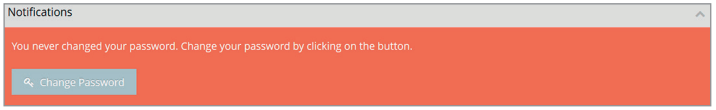


Extended view:



4. Initial router configuration via the myREX24 V2 portal

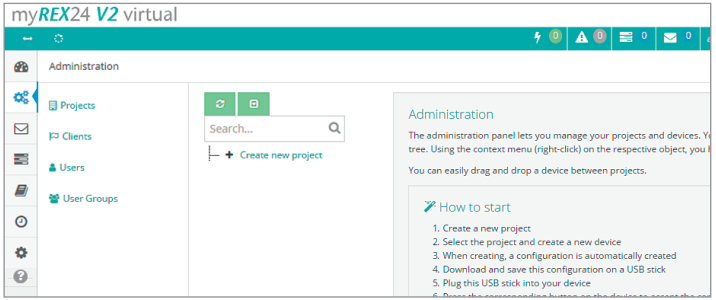
The following information describes the basic configuration steps required in order to set up a REX router for a VPN connection. A description of the extended functions can be found in the online help or in the manuals/white papers. You can go to the online help in the myREX24 V2 portal using the question mark symbol in the lower left-hand area of the screen. When you log in for the first time, the myREX24 portal guides you through a brief tutorial. Please change the password for your myREX24 account following the tutorial.



4.1 Creating a new project

A project is the highest level for carrying out the following tasks:

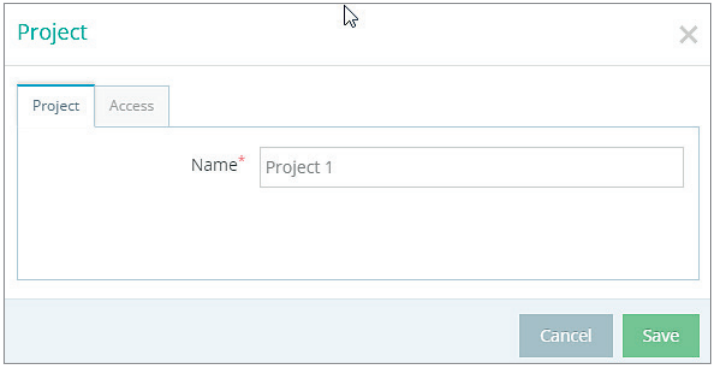
- Device administration
- Remote maintenance
- Monitoring and alarms
- Data logging
- Visualizations



Initially, at least one new project must be created in which a router is assigned. Navigate to the Administration section using the following symbol (the tutorial also brings you to this point).

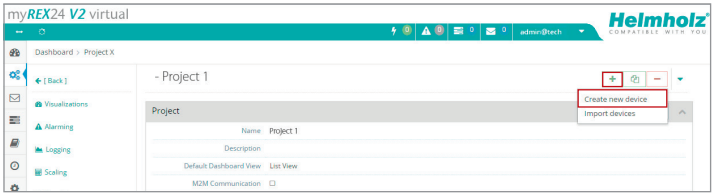
A unique project name is now issued in this menu.

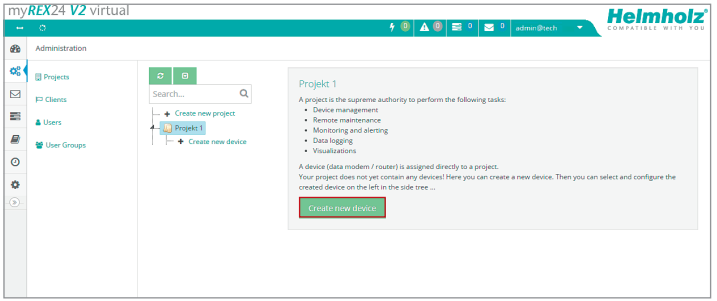
Additional account users, if created, can be assigned to this project on the “Access” tab.



4.2 Creating a new device

A router can be added to the tree structure using the plus symbol ⊕ or with a right-click of the mouse. If a project does not yet have a router, the same function is made available in the main view by way of the green button “Create new device”. Clicking the respective button starts the configuration assistant, which guides the user through the settings.





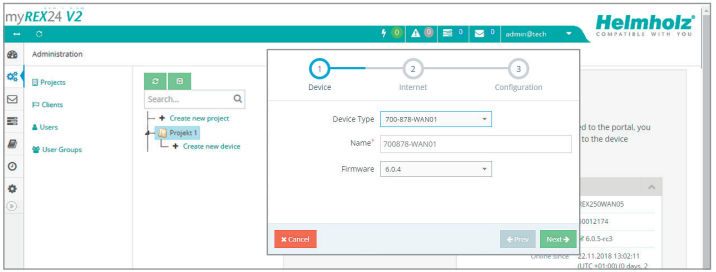
4.3 Configuring the REX 200/250 (connection data)

Three simple steps are sufficient for minimal configuration of the router.

- Selection of the device type
- Network settings
- Transfer of the configuration to the REX router

4.3.1 Step 1 “Device” – Selection of the type and name

In the first step, the correct device type (matching the device order number) must be selected. A unique, freely selectable name should be assigned to this router. Only numbers and letters may be used (0 to 9, A to Z, a to z and no spaces or special characters).



4.3.2 Step 2 “Internet” – Network settings

In Step 2, the network configuration for the LAN and mobile WAN side of the device is made.

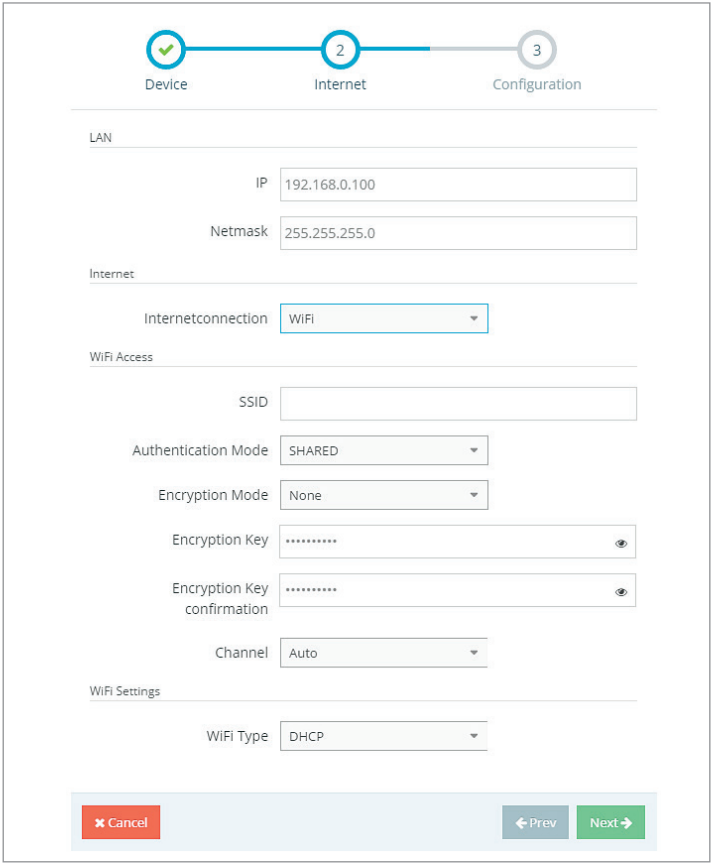
- **LAN** Every REX 200/250 comes with a LAN-side IP address of 192.168.0.100/24 by default. If necessary, modify the IP address and subnet mask according to the specifications from the machine network to be maintained remotely.
- **WAN** The required information for the DHCP or static IP settings is provided by the respective network administrator. DHCP is preset at the factory.
- **WLAN** (700-877-WIF01 and 700-878-WIF01 only) Enter the WLAN-specific access data for an access point. The corresponding information is provided to you by the respective network administrator.

Note: *If you use DHCP, make sure that the DHCP server does not assign the WAN interface to an IP address that is already in use on the LAN side. IP addresses from two different subnets must be assigned to each router’s LAN and WAN interfaces.*

4.3.3 Step 3 “Configuration” – Coupling/pairing the router with the portal

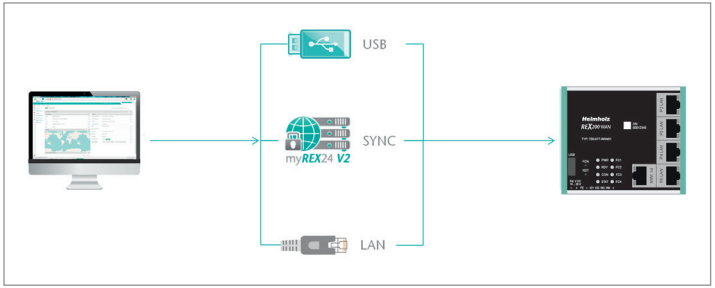
The basic parameters of the minimum configuration of the REX 200/250 are now stored in the portal account and must now be transferred to the device (see Chapter 5).

Note: *We recommend the “Download configuration to PC” variant for the initial configuration.*



5. Router configuration transfer options

Newly created or subsequently modified device configurations can be transferred to the REX 200/250 in a variety of ways.



- **1. Download configuration to PC (via USB flash drive)**

  The configuration file is saved on the PC and can subsequently be transferred to the REX 200/250 using a USB flash drive (further procedure described in Section 5.1).

- **2. Synchronize (recommended for subsequent modifications)**

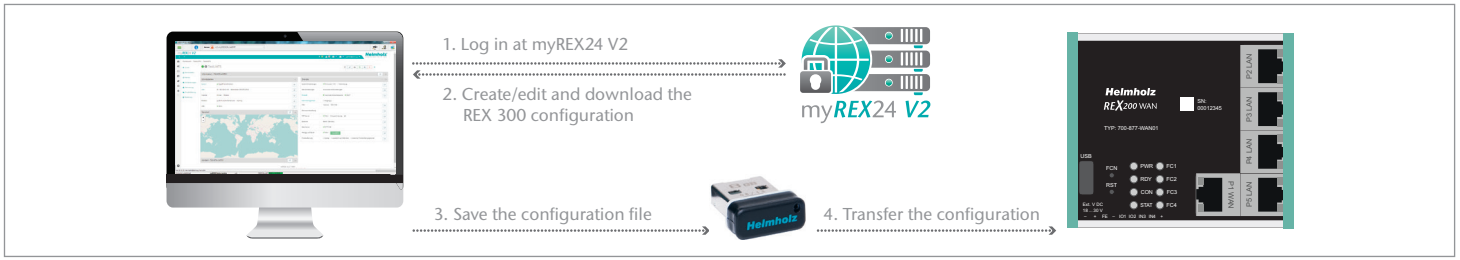
  If the router has already been configured and a connection with the portal is established, each subsequent change to the configuration can be carried out via the existing VPN remote connection (further procedure described in Section 5.2).

- **3. Transfer configuration to device (using LAN connection, only possible via shDIALUP)**

  For this configuration option, the REX 200/250 must be accessible directly on the LAN from the PC. The PC must also be logged in on the Internet via the shDIALUP dial-up client using your myREX24 account at the same time.

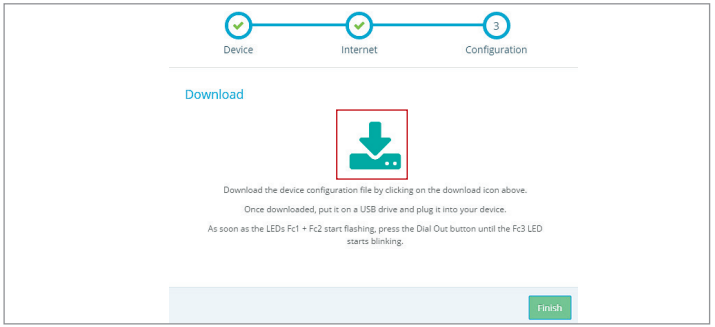
Transfer via USB flash drive (Point 1) and the way subsequent changes can be transferred using the “Synchronization” (Point 2) function are explained in this Quick Start Guide.

5.1 Transferring the configuration using a USB flash drive

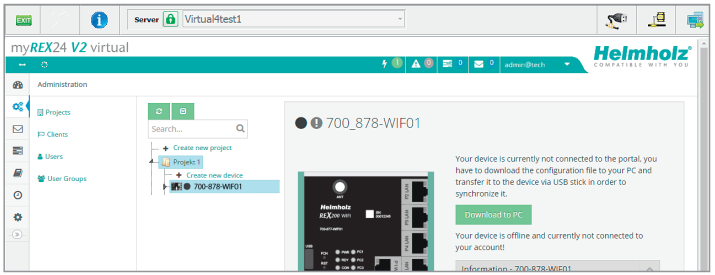


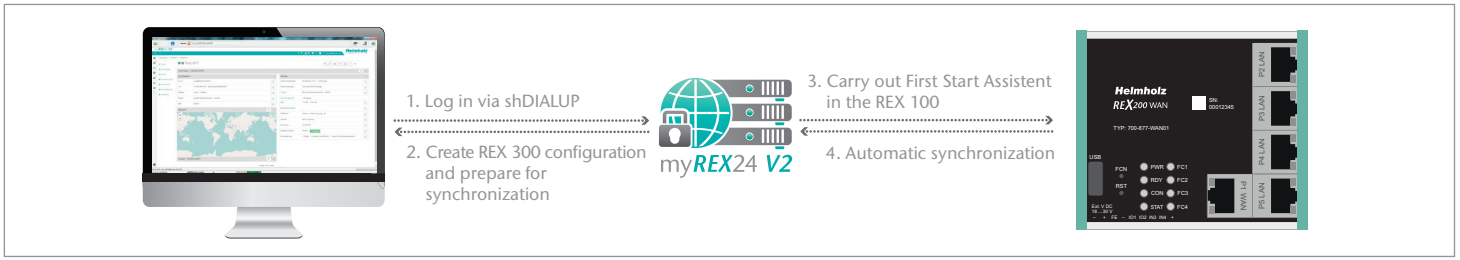
Ensure that the power supply is connected to the REX 200/250. Download the configuration file provided through the myREX24 portal to the FAT-formatted USB flash drive connected to your PC using the download symbol.

Note: *The myrex24.mbn(x) configuration file must be stored in the root directory of your USB flash drive and may not be renamed.*



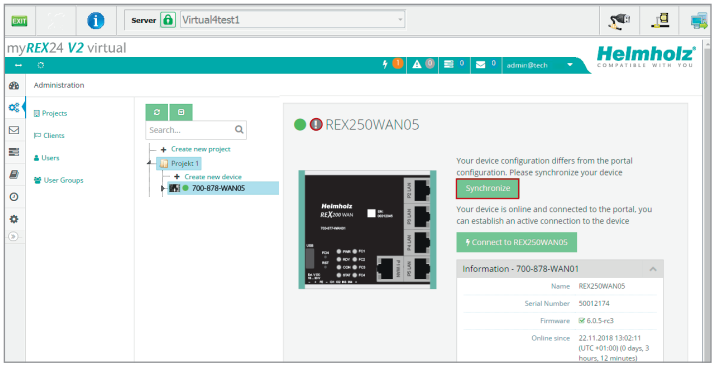
Now carry out the steps described on Page 24 in Section 13.1 “Reading in the myREX24 portal configuration”.



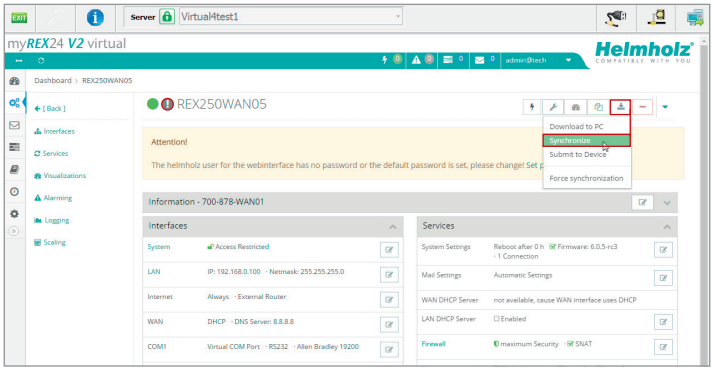


As soon as the REX 200/250 has logged into your account in the portal, you can transfer subsequent changes at any time with “Synchronize”. Where there is an existing myREX24 V2 portal connection, the REX 200/250 cyclically checks whether there is a new configuration available for its serial number and then loads it automatically. As soon as you have modified and saved one or more parameters, the following symbol appears next to the Online LED: ❗ “Device configuration is not up to date”. Click this ❗ symbol (or the “Synchronize” button), to start the process.

Synchronization in the simple view:



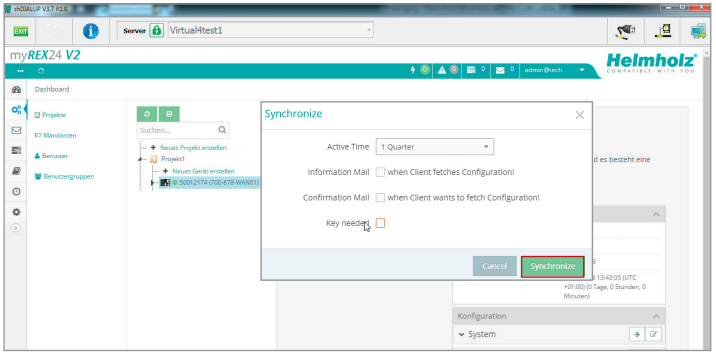
Synchronization in the extended view:



The synchronization function is confirmed through the following dialog.

In this menu, you can select optional user-defined settings, such as the sending of information/confirmation mails.

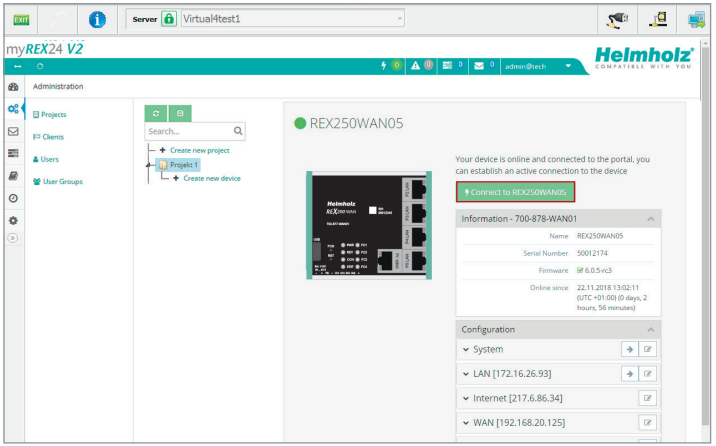
The REX router now accepts the new settings and restarts automatically. As soon as the boot process has concluded, the REX router logs into the portal again.



6. Connection to the machine network

***Note**: The following steps presume that the REX 200/250 has already been configured and that you have successfully logged into your account with shDIALUP.*
A secure VPN connection to the end device cannot be implemented via the browser view (https://v2.myREX24.net).

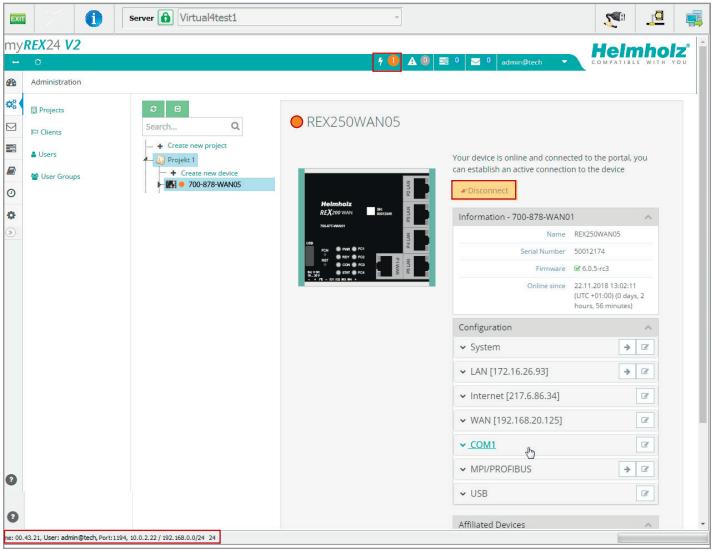
Logged-in REX 200/250 routers are identified with a green circle in the dashboard. The secure VPN connection between the PC and REX router is not established until the connection button is clicked.



The active connection status to the REX 200/250 is represented by an animated orange connection button. The number of active connections made using this account is shown with details in the menu bar.

Once the VPN connection to the REX 200/250 has been established, all the IPv4 packets valid for the applicable LAN network on the system side will be forwarded. The parameters (port, VPN IP, LAN IP etc.) used for this connection are also shown with details in the status bar at the bottom.

To end a remote access connection, click the orange animated connection button and then confirm disconnection of the remote connection.



Effective immediately, you can view the setup of your REX router and the functional overview of the myREX24 V2 portal very easily online.

https://youtu.be/8a1Xnu9lJ4g
Video Tutorial (3:22 min.)

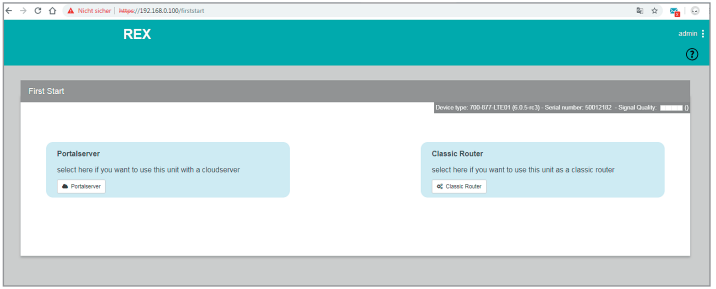
7. Tips and tricks

7.1 A connection cannot be established

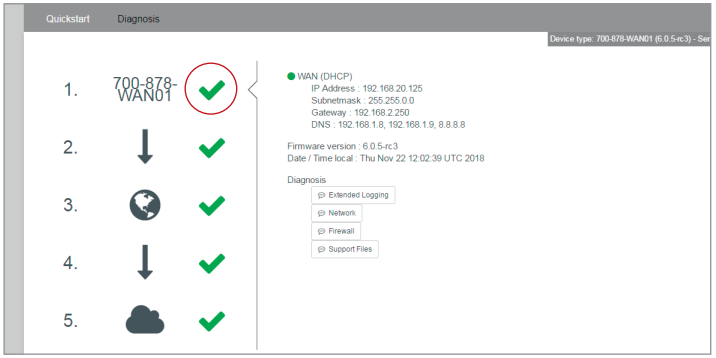
7.1.1 Checking the device status

The status page on the REX 200/250 web interface shows the connection status and active configuration data of the router. For this purpose, enter the LAN IP address of the REX 200/250 into the address bar of a browser. The REX 200/250 must be accessible on the LAN for this purpose, i.e. the TCP/IP address of a PC must be set for the same IP subnet. The authentication information is printed on the back of the device.

The First Start Assistant then opens. You must select “Portal server” for the myREX24 portal configuration described here. Using the extended view for the “Classical router” is preferable for the configuration of your own VPN connections using the device web interface.



Note: *The web interface at the routers can be deactivated for security reasons. If the interface is not accessible, please check the corresponding setting in the myREX24 portal. Make sure that there are no address space conflicts with any other network interfaces (do not assign the same IP address more than once) on your PC so that you can communicate properly with the REX 200/250.*



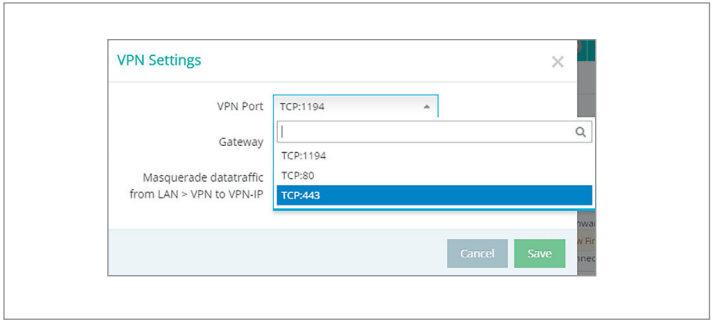
To get more information on each step of the router connection, click the Info icon in the various status fields.

7.1.2 VPN port

The REX 200/250 establishes an outbound TCP connection with the address VPN-V2.myrex24.net (5.39.123.21).

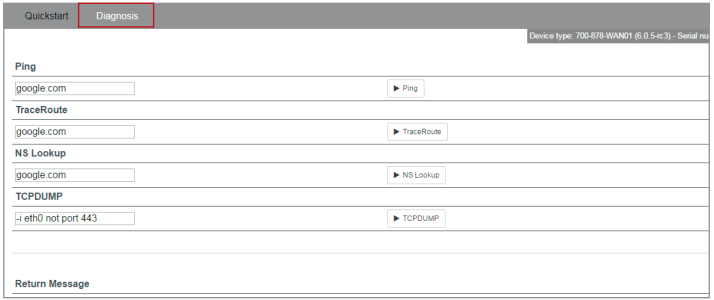
To be able to establish a secure connection to the myREX24 V2 server with shDIALUP or the REX 200/250, at least one of the following TCP ports (80, 1194 or 443) must be enabled for the VPN tunnel in the customer firewall. This communication takes place via port 1194 by default, which is also preset.

Please clarify all details of the settings in advance with the responsible IT department on site. If necessary, the port in the REX 200/250 can be changed in the VPN settings.



7.1.3 Diagnostics page

In the event of irregularities or interruptions when establishing the connection, the diagnostics page can provide troubleshooting assistance. In the event of an error, Helmholz technical support requires the respective result from the individual and autonomous test functions.

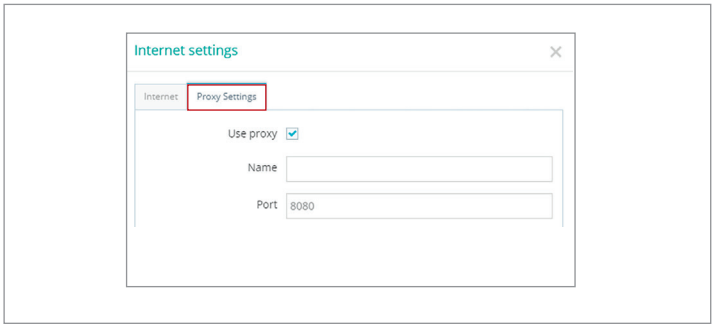


7.1.4 Is a MAC address filter activated in the firewall?

It may be necessary to approve the MAC address of the REX 200/250 in the higher-level DSL modem or firewall. Should it not be possible to establish a connection, please ask the respective network administrator whether such a MAC address filter has been activated.

7.1.5 Is the connection established over a proxy?

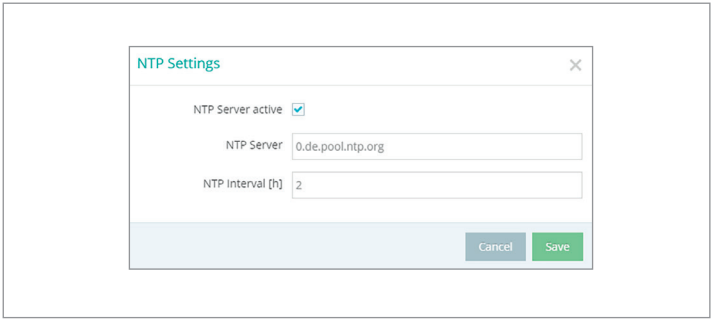
If a connection is not established on the customer network, the required proxy settings may not have been stored or may be faulty. These settings may be adjusted on the configuration page of the REX 200/250 in the Internet settings.



7.2 Device configuration: Services – NTP server

For the internal system time of the REX 200/250, this carries out a comparison using a time server on the Internet at regular intervals. Where necessary, you can individually set the preset NTP server entry and the interval.

Note: *Various functions in the myREX24 portal require a current time setting in the REX 200/250.*



7.3 Device configuration: Services – Mail settings

If you would like to use the REX 200/250 function for the automatic sending of e-mails, port 25 (SMTP) may not be blocked in the firewall of the customer network. You can also use alternative e-mail servers to send e-mails.

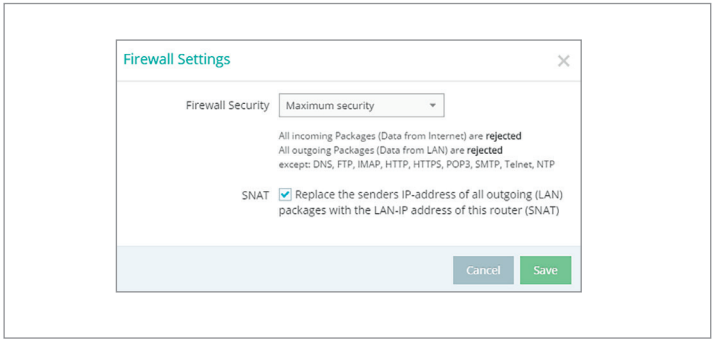
8. Remote maintenance of Ethernet CPUs

Notes:

- *The LAN ports are suitable for 100 Mbps and full duplex operation and support auto-crossover and auto-negotiation. No special PROFINET functions are supported.*
- *When connecting additional Ethernet participants (PLC/panel) to the REX 200/250, it must be ensured that the IP addresses of the devices lie within the address range of the LAN interface of the REX 200/250.*

Device settings: Services – Firewall – SNAT

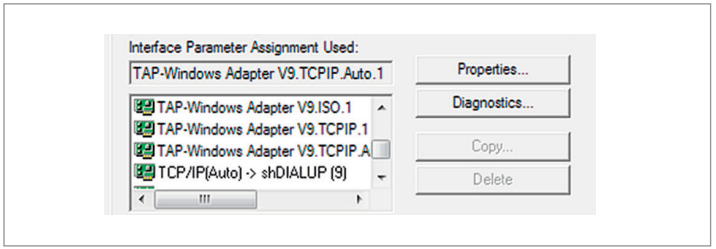
With a REX 200/250, the SNAT function is activated by default. With this setting, participants for which no gateway*/router has been entered are accessed via the VPN tunnel. For the CPUs and panels of some manufacturers, it can be the case that you need to explicitly enter the gateway* and deactivate the SNAT function in order that a remote connection with the end device is possible.



*Gateway: This refers to the configured LAN IP address of the REX 200/250.

To access a PLC or panel via the VPN tunnel, the OpenVPN adapter must be selected in the corresponding engineering tool as the interface. The virtual network connection responsible for this is the TAP Windows2 Adapter V9.

The setting to be selected in the PG/PC interface module from the SIMATIC STEP 7[1] software is emphasized in the detail to the right.



9. Setting up the MPI/PROFIBUS interface (REX 250 only)

The following steps are necessary to maintain an S7 MPI/PROFIBUS PLC remotely with the REX 250:

9.1 Installing drivers

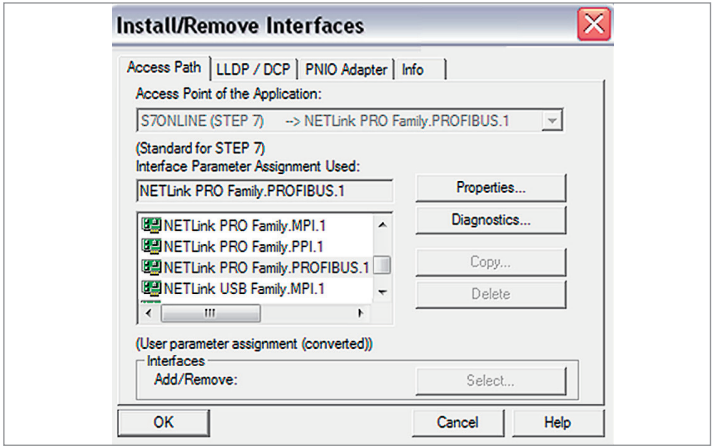
Please install the NETLink®-S7-NET driver on your remote maintenance PC. The driver can be found on the enclosed CD, and the current version can be downloaded from www.helmholz.de.

9.2 Creating a station

Following successful installation, the access paths of the “NETLink® PRO Family” are available in the PG/PC interface.

Note: *For the TIA Portal¹ as well, the general assignments must first be carried out in the PG/PC interface (accessible via the Windows Control Panel).*

Select a configuration (MPI, PPI or PROFIBUS) and open the “Properties...” page.

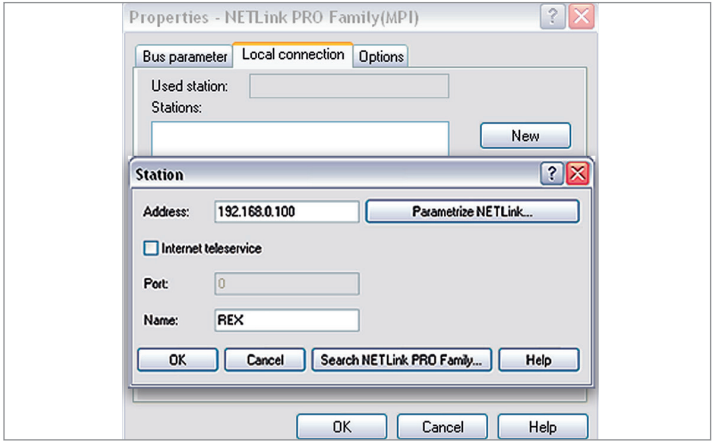


9.3 Assigning an IP address and name

Click the “New” button under the “Local Connection” tab to add the REX 250. Enter the LAN IP address and the name of the router into the corresponding input fields. The internal communications adapter can be accessed with these settings both locally via LAN and via VPN. Then confirm with “OK”.

Note: *Please note that the port required by the REX 250 unit to communicate using the driver will be enabled by default. The “Internet teleservice” function may not be activated!*

Following acceptance of the settings, it is possible to access devices on the MPI/PROFIBUS interface of the REX 250. Selection takes place via “Set PG/PC interface” in the programming software.



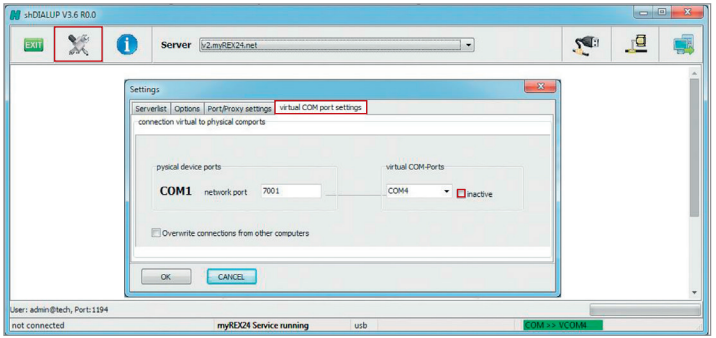
10. Setting up the VCOM LAN for serial communication (REX 250 only)

To be able to use a remote connection to access serial participants, start shDIALUP and activate the corresponding settings for the virtual COM port on your PC. To do this, click the corresponding tool button before logging in.

Deactivate the “Inactive” check box on the “Virtual COM Port Settings” tab.

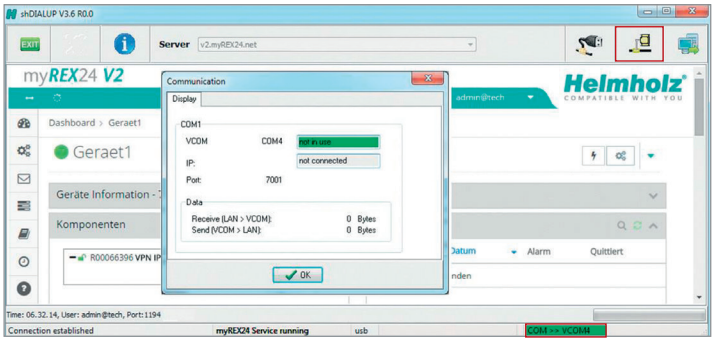
The system will automatically suggest a network port and the COM port to be used, neither of which need to be changed. Close the window by clicking “OK”.

You can then use your access data to log in to the portal server (see Page 6 in Section 3.1) and establish a connection to an REX 250 which has already been configured (see Page 14 in Chapter 6).



You can receive further information by activating the VCOM LAN status button.

In this example, the COM4 connection is now also available in the system in addition to the standard remote maintenance connection. The possibility for serial communication is still indicated in the task bar by a green symbol (an active connection with a yellow symbol).



11. Description of LEDs and buttons

11.1 Function and status LEDs in normal operation

LED	LED color	LED status	Description
PWR	Green	LED on	The power supply is connected to the terminal and switched on.
		LED off	The power supply to the router is interrupted/The router is not connected to the power supply.
RDY	Orange	LED off	Waiting for boot loader or signature successfully checked
		LED on	Checking signature, loading kernel
	Green	LED off	Waiting for kernel
		LED on	Boot process complete; the device can be used.
Con	Orange	LED off	No VPN connection started
		LED on	Internet connection is established and VPN connection is started
		LED flashing	Flash frequency of 1.5 Hz: VPN connection is established
	Green	LED off	No Internet connection
		LED on	Internet connection is established
		LED flashing	Flash frequency of 3 Hz: Internet connection is being established
Stat	Red	LED off	No error
		LED flashing	Error in memory
		LED on	Error found
	Green	LED off	–
		LED on	In conjunction with the myREX24 V2 portal
Fc1		LED off	See Chapters 12 and 13
Fc2		LED off	See Chapters 12 and 13
Fc3		LED off	See Chapters 12 and 13
Fc4		LED off	See chapter 12
WAN & LAN	Orange	LED on	Network connection present
	Green	LED flashing	Network data traffic active

11.2 Buttons

Name	Description
FCN	The FUNCTION button is used, among other things, to establish an Internet or VPN connection (press and hold the button until the Con LED begins flashing). Other functions are described in chapters 11 and 12.
RST	The router is restarted after pressing the RESET button.

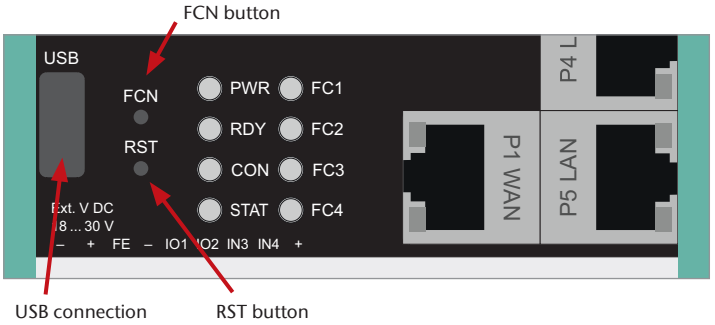
12. Resetting to factory settings

To reset the REX 200/250 to factory settings, the following steps are necessary:

- Start REX -> Apply power or press RST button (Reset)
- Wait until the RDY LED flashes green (about 30 seconds)
- Insert the supplied tool (SIM card ejector) into the opening below FCN. Press and hold the FCN button until the FC4 LED lights orange (about 10 seconds)
- Press FCN again -> FC3 LED turns orange
- Press FCN again -> FC2 LED turns orange
- Press the FCN one last time, whereupon all FC LEDs go out
- FC3 LED flashes orange -> factory settings are being loaded

When the PWR and RDY LEDs turn green again (after about 70 seconds), the REX 200/250 is ready for use again and can be configured.

Important: *Already changed login and IP address data of the LAN interface are reset. No USB stick/storage medium may be connected to the REX 200/250.*



13. Configuration / factory settings from the USB stick

13.1 Loading of the myREX24 portal configuration

- The REX 200/250 must be ready for use. Apply supply voltage -> After approx. 70 seconds, the PWR and RDY LEDs light up green
- Insert the USB stick with the configuration file into the USB port of the REX 200/250
- As soon as the configuration file is detected, the FC1 and FC2 LEDs flash orange (after approx. 3 seconds)
- Insert the supplied tool (SIM card ejector) into the opening below FCN. Press the FCN button and hold it until the FC3 LED flashes orange (about 2 seconds)
- Release the FCN button
- The configuration is transferred from the USB stick to the router
- As soon as the FC3 LED goes out, the transfer is complete
- Depending on the configuration, the router tries to establish a portal connection, in this case the CON LED flashes.

Important: *The configuration file to be transferred must be stored in the top directory (root) of a FAT / FAT32 formatted USB stick. The configuration file "myREX24.mbn (x)" may not be renamed. An interruption of the supply voltage during the data transfer from the USB stick can put the router in an undefined state.*

Note: *Once the configuration file has been successfully transferred, the file on the USB stick will be renamed "XmyREX24.mbn(x)" by the REX 200/250, making it impossible to accidentally reuse it a second time.*

13.2 Loading of a firmware file (Update)

- The REX 200/250 must be ready for operation. Apply supply voltage -> After approx. 70 seconds the PWR and RDY LEDs light up
- Insert the USB stick with the firmware file into the USB port of the REX 200/250
- As soon as the firmware file is detected, the FC1 and FC3 LEDs flash orange (after approx. 5 seconds)
- Insert the supplied tool (SIM card ejector) into the opening below FCN. Press the FCN key and hold it until the FC2 LED flashes orange (about 2 seconds)
- Release the FCN button
- The firmware is transferred from the USB stick to the router (Duration approx. 15 seconds)
- As soon as the FC2 LED goes out, the transfer is complete
- A reboot of the REX 200/250 is performed automatically and the process is complete when the PWR and RDY LEDs are lit solid.

__Important:__ An interruption of the supply voltage during the data transfer Transferring from the USB stick can put the router in an undefined state! The firmware to be transferred must be stored in the top directory (root) of a FAT / FAT32 formatted USB stick. The firmware file "image.swux" must not be renamed.

__Note:__ If both the firmware and a myREX24 portal configuration are found on the USB stick, the firmware is always first recognized by the REX 200/250 (Fc1 + Fc3 flashes). If you don't press the FCN button within 10 seconds, the REX 200/250 changes to the configuration file (Fc1 + Fc2 flash). If you here too don't react within 10 seconds, the router once again reverts to the normal mode.

14. Alternative configuration without myREX24 V2 portal

If you want to use the REX 200/250 without our mediation server "myREX24 V2", you can also use another OpenVPN software or e.g. set up the IPsec encryption embedded in your hardware. If you have selected the selection for the classic router in the "First Start" screen, you can reach the corresponding step by step configurator of the web interface via the menu item "Wizards" in the upper right corner.

For the aforementioned parameterization options are appropriate Documents with application examples under www.helmholz.com free of charge available for download.

15. Technical data

Performance data	
Voltage V (DC)	24 V DC, 18 to 28 V DC
Current draw	Max. 100 mA @ DC 24 V
IP protection rating	IP 20
Location of use	Dry location
Temperature (operating)	-40 to +75 °C
Temperature (storage)	-40 to +85 °C
Humidity	0 to 95%, non-condensing
Real-time clock	Should a power failure occur, the date and time are retained for up to 7 days (depending on the ambient temperature).
Dimensions (max.)	REX 250: 75 mm x 100 mm x 35 mm (H x W x D)/REX 200: 75 mm x 89 mm x 35 mm (H x W x D)
Weight (max.)	REX 200: 220 g / REX 250: 250 g
Power dissipation (max.)	3 watts
Installation	DIN rail mounting as per DIN EN50022
I/Os and standard interfaces	
Digital inputs	4x, DIN EN 61131-2 type 3
Digital inputs/outputs	2x, max. 0.5 A per output
LAN interfaces	4x, 10/100 Mbps full- and half-duplex operation, automatic patch cable/cross-over cable detection (autodetection)
USB interface	USB host 2.0 type A
SD card slot	In preparation
VPN	
VPN protocol	IPsec/PPTP/OpenVPN, 64 tunnels
Encryption method	Blowfish, AES, DES/3DES
Encryption algorithms	MD5, SHA1
Authentication	Pre-shared key, X.509
Network/Security	
Firewall	1:1 NAT, IP filter, port forwarding, stateful inspection
IP router	NAT IP, TCP/IP routing, IP forwarding
Services	DHCP server, DHCP client, DNS server, NTP client, PPP server, DynDNS
Time comparison	NTP server

Optional REX 250 interfaces	
Interface 1 (serial)	RS-232/422/485 (switchable via software)
Interface 2 (PROFIBUS)	RS-232/485 (switchable via software) PC adapter or MPI/PROFIBUS driver up to 12 Mbps
Communication	
WAN interface	10/100 Mbps full- and half-duplex operation, automatic patch cable/cross-over cable detection (autodetection)
WLAN (device-dependent)	IEEE802.11b/g & 802.11n (1T1R mode), up to 150 Mbps
WLAN specification	EU (2.412 GHz to 2.472 GHz, 1 to 13 channels)
	USA (2.412 GHz to 2.462 GHz, 1 to 11 channels)
	WPA/WP2, 64-/128-/152-bit WEP, WPS
	802.11b: 1, 2, 5.5, 11 Mbps
	802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	802.11n: (20 MHz) MCS0-7, up to 72 Mbps
	802.11n: (40 MHz) MCS0-7, up to 150 Mbps
Antenna connection	1x RP-SMA socket
FCC	Contains FCC ID: YWTWFXM05

The contents of this Quick Start Guide have been checked by us so as to ensure that they match the hardware and software described. However, we assume no liability for any existing differences, as these cannot be fully ruled out.

The information in this Quick Start Guide is, however, updated on a regular basis. When using your purchased products, please make sure to use the latest version of this Quick Start Guide, which can be viewed and downloaded on the Internet at www.helmholz.de. Our customers are important to us. We are pleased to receive suggestions for improvement and new impulses.

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2) Simatic and STEP 7 are registered trademarks of Siemens AG.

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