



Quick Start Guide REX 100 3G|LTE

Version

2^{en}
from FW 1.9.0

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1. Introduction

The REX 100 is an industrial router suitable for worldwide remote access to IP-enabled devices (PLCs, HMIs, IP cameras, etc.) It is mounted on the DIN rail.

This Quick Start Guide explains the basic settings in the myREX24 portal and shows how to transfer the configuration made there to the REX 100 unit.

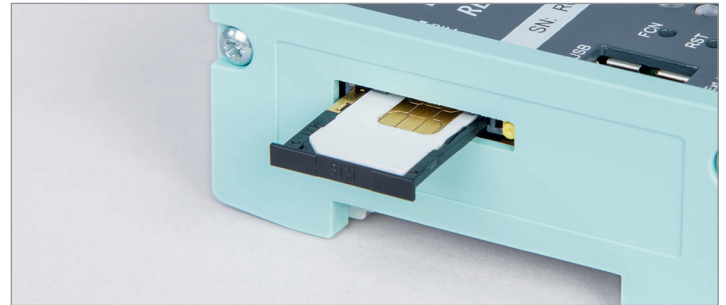
2. Preparing the REX 100 unit

Access to a GSM network requires a standard SIM card of a provider. This serves the purpose of identification for the network operator. The insert is found on the left housing side. In order to unlock and remove the insert, please press the recessed yellow button next to the card reader.

The LAN ports P1 to P4 are available for connection to the machinery network and for commissioning via PC. They are also active when the REX 100 router has no connection with the Internet.

Important advance information: Please use the most current version (as of v3.7.0) of the dial-up software "shDIALUP" for commissioning. You can acquire it as a download at www.helmholz.de.

The current firmware must be installed on all REX 100 routers for successful connection with the myREX24 V2 portal. Write down the serial number and MAC address of your REX 100 router before installing the router in your system. You will need the serial number in order to configure the REX 100!



2.1 Connection

The REX 100 must be supplied with 24 V DC at the wide range input 18 – 30 V DC via the provided connector plug.

The terminal (FG) is for the functional ground. Connect this correctly with the reference potential.

2.2 Digital inputs IN1 and IN2

The alarm inputs can be activated with potential-free switches, buttons or relay contacts. E-mail recipients who need to be notified are configured and activated via the alarm management in the myREX24-V2 portal. Depending upon the setting, it is possible to initiate the establishing of a connection to the myREX24-V2 portal via IN1. The use of these functions is optional.

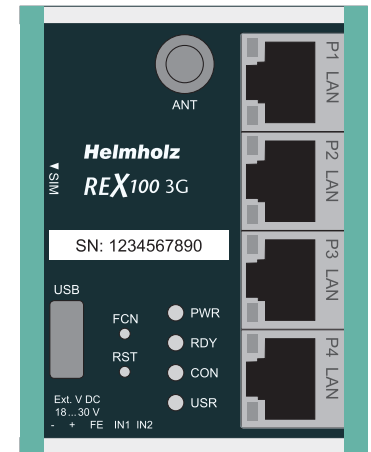
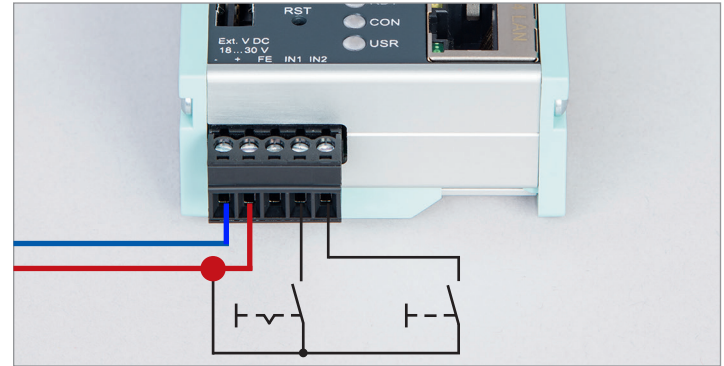
The PWR LED lights up when the supply voltage is switched on. The boot process starts following the internal system check (duration of approx. 25 sec.), which is indicated by the blinking RDY LED (for approx. 90 sec.). The REX 100 is ready for operation as soon as the RDY LED lights solid.

2.3 Antenna terminals

Please ensure prior to installation that the antenna is positioned in such a way that it receives an adequate GSM signal. Also be sure to follow the instructions from the technical data sheets of the antenna manufacturer and do not install these (due to the shielding effect) into metal housings (e.g. control cabinet).

2.3.1 REX 100 3G (UMTS)

The antenna required for radio reception is screwed onto the SMA socket "ANT".



2.3.2 REX 100 LTE (4G)

For radio reception, at least one suitable antenna must be screwed onto the SMA socket "MAIN" (ANT 2).

In order to improve the data throughput, a second antenna terminal is available on the REX 100 LTE router with the SMA socket "Rx" (ANT1) that can be used as an option. This functionality is called antenna diversity in the "WCDMA mode" and Downlink-MIMO in the "LTE mode".

The second receiver antenna should not be located in the immediate vicinity of the main antenna. In order to improve the diversity gain and reduce other reciprocal interactions (interference effects), the two antennas should be (taking the space available in the application into account) installed with the greatest possible distance between them.

For the same reason, the second antenna should be mounted cross-polarized (rotated by 90° in relation to the main antenna).

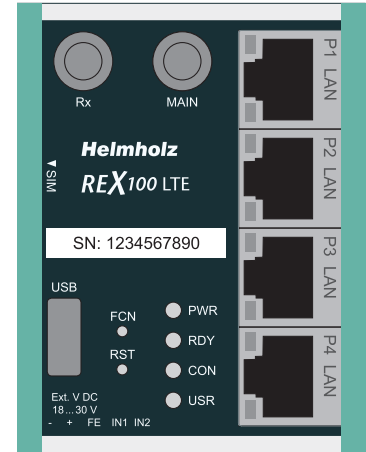
3. Access to the myREX24-V2 portal

REX 100 routers can be fully configured using the myREX24 portal. A secure connection with the portal is required to this purpose:

- For complete hardware project planning of a REX 100 router, the remote client software shDIALUP must be used in order to establish a VPN connection.
- Alternatively, you could also create the configuration with an HTTPS-secured direct call up from your browser. The call up is realized with the following URL: <https://v2.myREX24.net>.

Please always use your myREX24-V2 portal access data to log in. You can find further information in the manual for the myREX24-V2 portal.

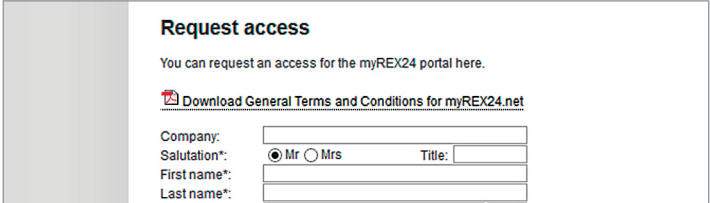
The various ways to transfer the configuration you have created to the REX 100 are described in this Quick Start Guide.



3.1 Registering


If you don't yet have a myREX24-V2 portal account, you can register under www.myREX24.net. Fill out the required fields there. After your data is checked by our service team (Mon.-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, the second the password.

The software required for establishing the connection with the myREX24-V2 portal (shDIALUP and shCHECK) can be found in the download area under www.helmholz.de. There you can also download further documents with additional example applications at any time.



Request access

You can request an access for the myREX24 portal here.

 [Download General Terms and Conditions for myREX24.net](#)

Company:

Salutation*: Mr Mrs Title:

First name*:

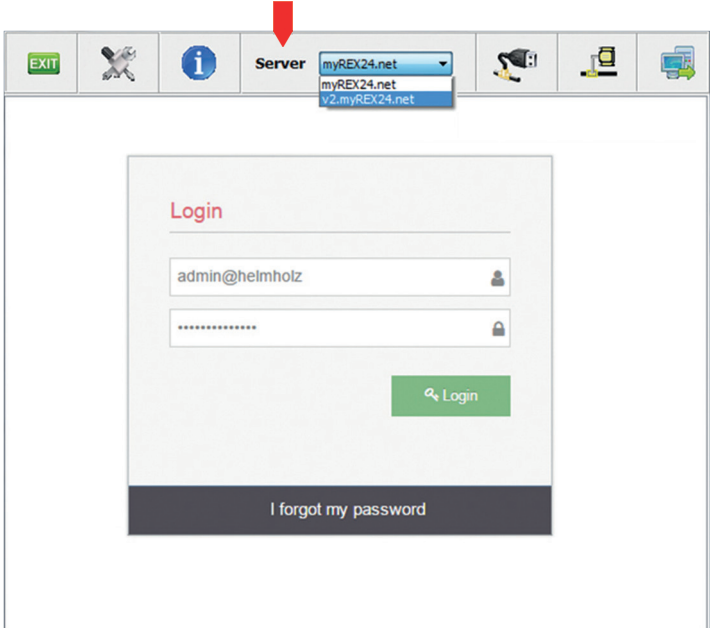
Last name*:



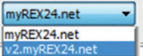



3.2 Log in to the myREX24 portal

Once you install and start the shDIALUP software, you can use your login data to log in to the myREX24 portal. Select "V2.myrex24.net" in the server selection field.

Notes:


- *Alternatively, the login page can also be reached under: <https://v2.myrex24.net>. Any up-to-date browser can be used for this purpose. Chrome and Firefox have been successfully tested.*
- *Your login name is composed of a user name preceding the @ character and the name of your company. Example: `admin@helmholz`*
- *Following the initial login, you will be prompted to register a new, individual password for your account.*
- *If necessary, you can also create and administer additional users after logging into the myREX24-V2 portal.*




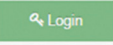
EXIT   **Server**    

myREX24.net
myREX24.net
v2.myREX24.net

Login







[I forgot my password](#)

4. Initial router configuration via the myREX24-V2 portal

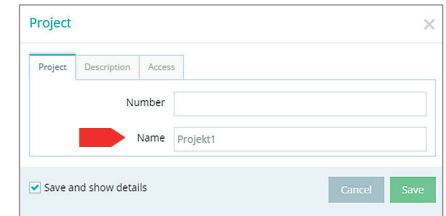
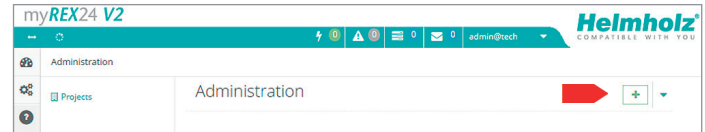
The following information goes over the basic configuration steps required in order to be able to establish a VPN portal connection. A description of the expanded functions can be found with the online help or in the manuals/white papers.

As soon as you have successfully logged into the portal for the first time, you will be prompted to individualize your access data once (user names/passwords). Only subsequent to this can a new project be created.

4.1 Create new project

Navigation: Administration > Projects

Click on the plus  in the project overview and assign a project name in the subsequent window (all other entries/information can be provided later).



4.2 Creating a new device

Navigation: Administration > Projects > Project (here "Projekt1"):

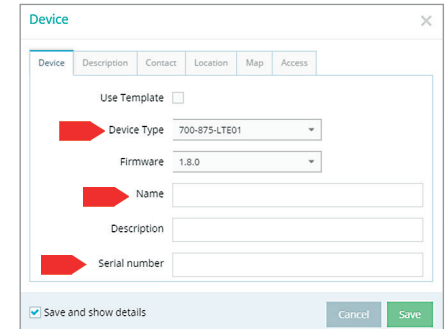
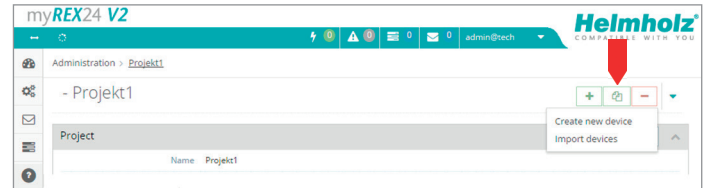
Click on the plus  in the selected project and then on "Create new device".

Only the selection of the REX type, the assignment of a unique name and the entry of the serial numbers are necessary for the initial/minimal configuration in the menu "Device" under the tab "Device". The name can be freely selected, but only the following numbers and/or letters are allowed: 0 to 9, A to Z, a to z (without spaces).

Notes:

- The name must start with a letter. Umlauts, special characters, and spaces are not permitted. Double designations are also not possible in the "Name" field.
- The serial number always starts with the letter "R", followed by eight numbers (0-9).


After saving your information, you will be automatically forwarded to the device settings.



4.3 Configure REX 100 (connection data)

Only the "Interfaces" menu is relevant for the initial configuration.

Navigation: Administration > Projects > Project (selected project) > New Device (selected device)

Click on the editing symbol  in order to process the settings of the relevant sub-menu.

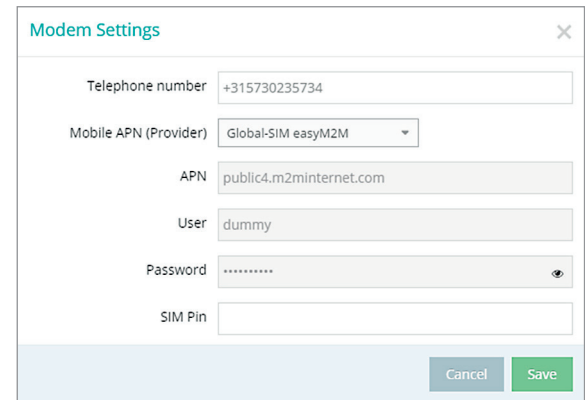
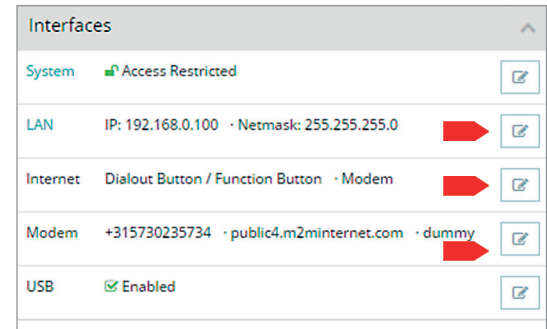
The following menus are significant for the initial configuration:

- LAN All REX 100 routers come with a LAN-side IP address of 192.168.0.100/24 as a default. Modify the IP address and the subnet mask in keeping with the specifications from the machinery network.

Note: It can happen that this IP address must be used as a standard gateway for additional TCP/IP components that are connected to the REX 100 for remote maintenance purposes (see page 20, chapter 8).

- Internet For the initial configuration it is advisable to choose the action "Always" for the selection field "Connect to server on". Only with this setting does the REX 100 automatically attempt to establish a connection with the portal as soon as it is supplied with power.
- Modem If you have the telephone number of the SIM card at the ready, you can enter this in the corresponding field. The REX 100 can then be controlled through the myREX24-V2 portal via SMS messages. The parameters for the APN access point (Access Point Name) of the card provider and the correct SIM PIN must be available to you and be stored here.

Save the settings. The initial configuration is herewith complete.



5. Router configuration transfer options

The created device configuration can be transferred to the actual REX 100 unit in a variety of ways.

1. Download to PC

The configuration file is saved on the PC and subsequently transferred to the REX 100 using a USB stick (page 10, chapter 5.1).

You can choose this procedure when the REX 100 router cannot be reached through either the local network (LAN) or through the Internet during commissioning. Prerequisite: the configuration PC has a connection with the myREX24-V2 portal.

2. Prepare for synchronization (First Start Assistant in the REX 100 necessary)

To this purpose you provide the configuration data for downloading in the portal. The configuration is automatically transferred to the REX 100 as soon as the REX 100 connects with the portal (page 11, chapter 5.2).

Prerequisite/conditions:

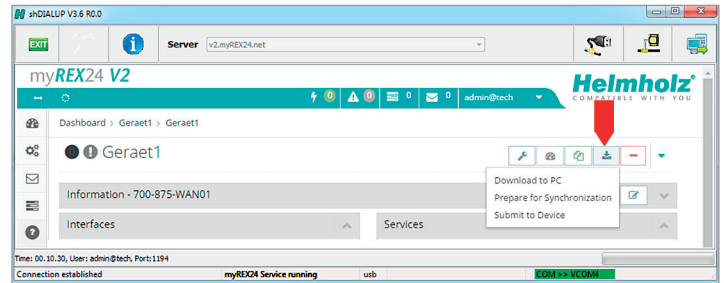
- The REX 100 can create a connection with the myREX24-V2 portal via the Internet.
- You have preconfigured the connection data via the web interface of the REX 100 (First Start Assistant).
- The REX 100 can be authenticated at the portal on the basis of its unique serial number.

3. Submit to device

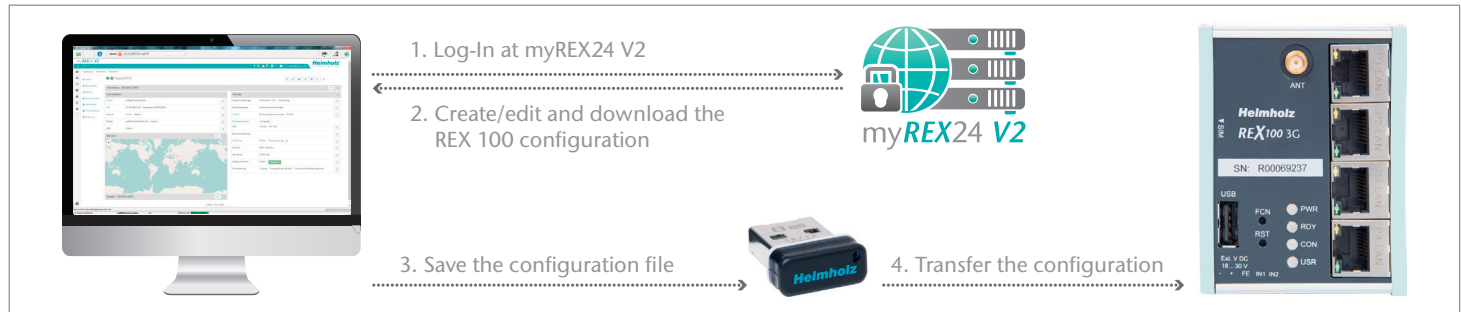
The configuration is transferred via a local LAN connection of the computer on which shDIALUP is running (page 15, chapter 5.3).

You can select this procedure if the REX 100 can be reached directly through the local network (LAN). The IP address settings of the network adapter are not relevant here.

Note: We recommend the "Submit to Device" variant for the initial configuration.



5.1 Transfer of the configuration using a USB stick

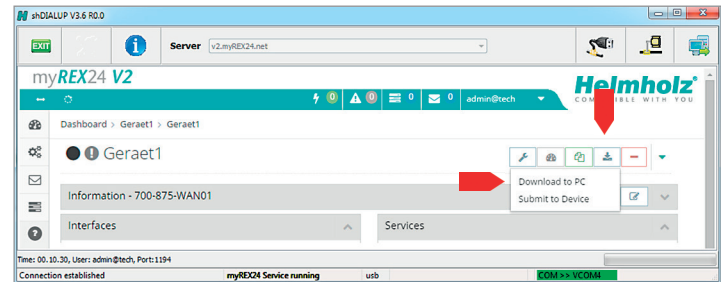


The USB-based configuration method can be used if the REX 100 cannot be reached either through the local network (LAN) or through the Internet. The prerequisite for this is a PC with a USB terminal, an Internet connection to the myREX24-V2 portal and an FAT-formatted USB stick.

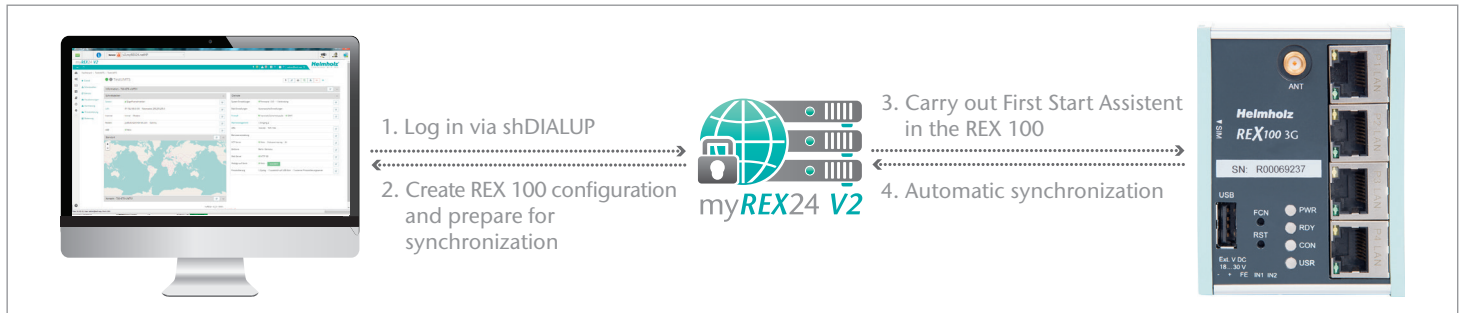
In the myREX24-V2 portal, select the "Download to PC" option in the device settings.

Download the configuration file provided by the myREX24 portal to your PC and save it on a FAT-formatted USB stick. The file is called myrex24.mbn for the initial commissioning of the REX 100. All of the following configuration files generated for this router are automatically generated by the system as myrex24.mbnx. Never rename this file.

Now carry out the steps described on page 22 in chapter 11 "Load configuration/ firmware update from the USB stick".



5.2 Preparation for synchronization with the "First Start Assistant"



5.2.1 File configuration in the myREX24-V2 portal to be picked up

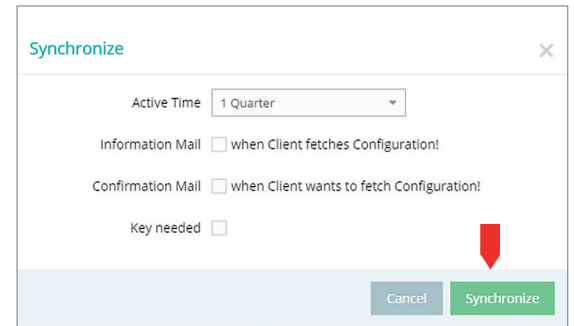
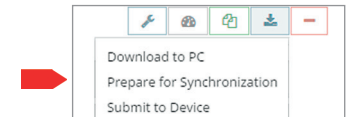
As soon as the REX 100 router has established an Internet connection with the portal, the REX 100 is automatically verified for your account on the basis of its unique serial number and the configuration is automatically transferred to the REX 100. This method is also ideal in the event that you need to carry out retroactive changes to the device settings.

Prerequisite/conditions:

- The device configuration was created in the myREX24-V2 portal. The serial number has been correctly entered.
- The REX 100 was preconfigured via the web interface with the connection data (First Start Assistant).
- The REX 100 has a GSM connection to the Internet.

Click on the symbol for the selection of the type of transfer and then on "Prepare for Synchronization".

No further settings are required for the basic configuration. Click on "Synchronize".



5.2.2 Calling up the "First Start Assistant" through the browser

You can also determine the Internet access of the REX 100 directly in the web interface of the router via the "First Start" website. This is relevant in the event that the REX 100 has not yet been configured through one of the other configuration paths (with the PC via LAN or via USB stick).

In the delivery condition, the REX 100 has the LAN IP address setting 192.168.0.100 with the subnet mask 255.255.255.0. In order to reach the REX 100 through your local LAN connection, the network setting of your PC may need to be adjusted. To this purpose, open the properties of your LAN connection and adjust the IPV4 address and the subnet of the computer (e.g. IP: 192.168.0.99/SNM: 255.255.255.0). The website can then be reached for subsequent configuration with the URL: <http://192.168.0.100>.

Authenticate yourself with the user: **helmholz** and the password: **router**. The First Start Assistant then opens.

Note: *Make sure that there are no address space conflicts with any other network interfaces (do not assign the same IP address more than once) in order to be able to communicate with the REX 100 unit properly.*

Only the access data of the mobile communications provider (APN) and the SIM card identification numbers (SIM-PIN) are required for the modem settings.

Select the following setting from the list of portal servers: "V2 Europe". The code for the session key is optional and is defined during synchronization. No entry is required for initial commissioning.

Confirm with "Next".

The settings in the assistant are now complete. Click on "Apply". The REX 100 saves the entries and you are then forwarded to the "Device Status" page (see chapter 5.2.4, page 17). The individual connection steps are displayed there for informational purposes. As soon as the REX 100 has successfully connected with the portal through the Internet, it picks up the configuration stored for it and activates it automatically.

Modem

Unittype: 700-875-LTE01 (1.5.0) Serialnumber: R00070425

Enter your settings for a modem->internet connection

Network (Provider): Global-SIM easy42M

User: dummy

Mobile APN (Provider): public4.mc2internet.com

Password: *****

Password Confirmation: *****

SIM Pin: SIM Pin

< Previous Next > Cancel

Cloudserver

Unittype: 700-875-LTE01 (1.5.0) Serialnumber: R00070425

Cloudserver settings

Cloudserverlist: User Defined

Cloudserver address/name: vpn2.myres24.net

Session-Key: Session-Key

< Previous Next > Cancel


Finish


Unittype: 700-875-LTE01 (1.5.0) Serialnumber: R00070425

Click on Apply to Save and Enable the Settings on the Device.

< Previous Apply Cancel

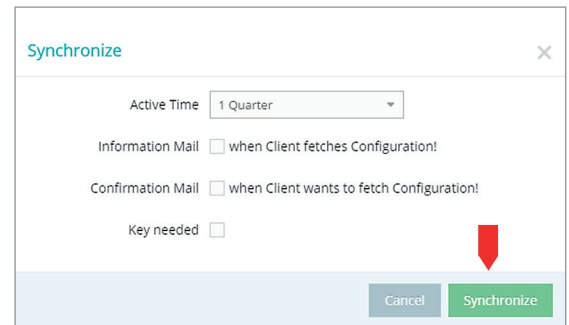
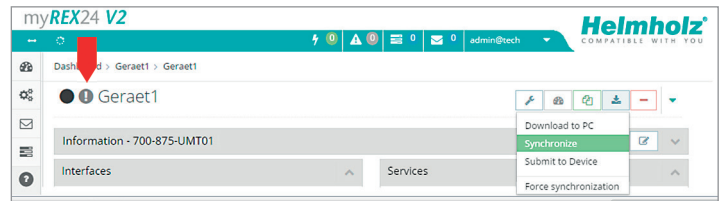
5.2.3 Synchronization of the portal configuration

As soon as the REX 100 has logged into your account in the portal, you can transfer retroactive changes to the REX 100 at any time with "Synchronize". Where there is an existing portal connection, the REX 100 checks cyclically whether there is a new configuration available for its serial number and then loads it automatically. When, for example, you have edited the LAN IP address, the  "Device configuration is not up to date" symbol appears next to the Online LED.

Click here to initiate the synchronization. Alternatively, the corresponding menu can also be opened via the symbol .


The synchronization function must always be confirmed through the following dialog. In this menu you can define additional security aspects as required.

When you generate a unique key for the download here, this must be entered in the "First Setup Assistant" at the REX 100 website for purposes of verification (page 11, chapter 5.2.1).



5.2.4 Device status and diagnostics page

The status page on the REX 100 router's web interface will show the router's connection status and active configuration data. To this purpose, enter the LAN IP address of the REX 100 into the address bar of a browser. The REX 100 must be accessible to this purpose, meaning that the TCP/IP address of a PC must be in the same IP subnet. Authenticate yourself with the standard user: **helmholz** and the password: **router**.

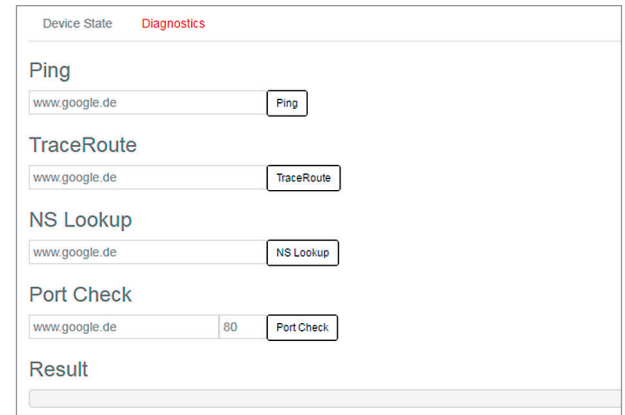
To get more information on each step of the router connection, click on the  Info icon in the status fields.



The screenshot shows the REX 100 web interface. The top navigation bar includes 'Device State' and 'Diagnostics'. The 'Device State' page shows a 5-step process: 1. REX100 (with an info icon), 2. Down arrow, 3. Globe icon, 4. Down arrow, 5. Cloud icon. The 'Diagnostics' page shows a pop-up window with the following information:

- Modem : OK
- Network registration : registered, roaming
- SIM : OK
- IMEI : 351579053525281
- Logging
- Input 1 : not configured
- Input 2 : not configured
- Configuration : Logging
- Firmware version : 1.9.0
- Locale Date Time : Wed Dec 21 12:27:46 CET 2016
- Diagnostics
 - Extended Logging
 - Network
 - Firewall

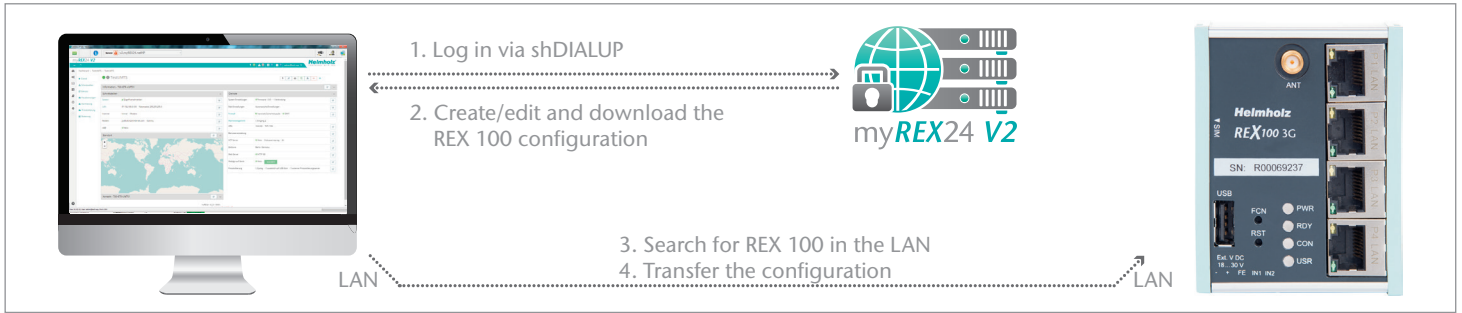
In the event of irregularities or interruptions when establishing the connection, the diagnostics page supports you with troubleshooting. In the event of an error, the technical support of Helmholz requires the respective result from the individual and autonomous test functions.



The screenshot shows the 'Diagnostics' page with the following test functions:

- Ping**: Input field 'www.google.de', button 'Ping'
- TraceRoute**: Input field 'www.google.de', button 'TraceRoute'
- NS Lookup**: Input field 'www.google.de', button 'NS Lookup'
- Port Check**: Input field 'www.google.de', dropdown '80', button 'Port Check'
- Result**: Empty text area for displaying test results.

5.3 Transfer configuration via a local LAN connection



In order to transfer the configuration from a PC through a local LAN connection, the configuration PC must allow for two simultaneous network connections:

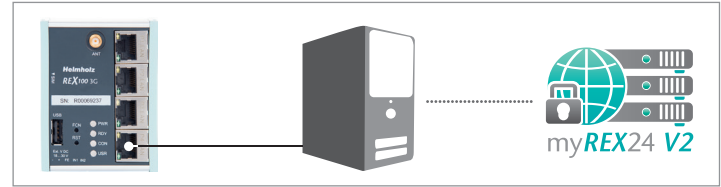
1. The PC must be active in the Internet with the shDIALUP software
2. The PC and the REX 100 to be configured must be connected in the same network via LAN

In practical terms this is possible as follows:

- PC with two network adapters/Ethernet connections
- Notebook with WLAN and Ethernet connection
- PC or notebook with additional switch at the workspace

Procedure:

- Connect the free LAN port of your PC (LAN adapter) to the REX 100 unit's LAN port with a standard CAT-5 patch cable.
- Select the option "Submit to Device" in the REX 100 device settings in the my-REX24-V2 portal (shDIALUP) (page 9, chapter 5).

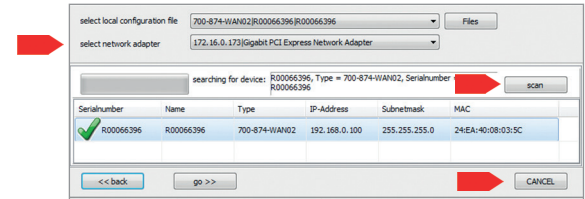


The menu for the transfer function opens (the Windows firewall appears at the first start; allow access to the corresponding network). Select the appropriate network adapter in the "select network adapter" selection menu.

The search starts with a broadcast with "scan". When the REX 100 with the appropriate serial number is found, the transfer can be started with "go>>".


After the configuration has been successfully transferred, the REX 100 automatically carries out a restart and uses the new settings.

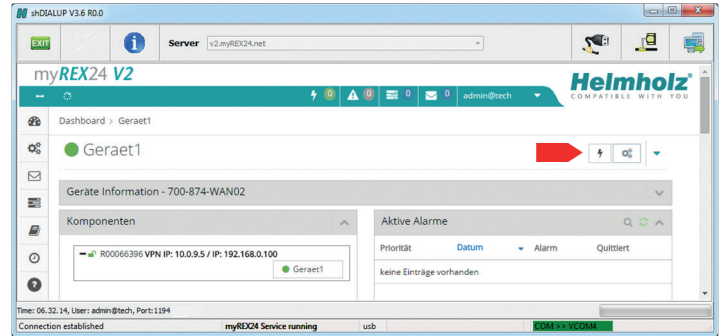
In order to leave the menu, click "CANCEL".



6. Establishing a VPN connection to your REX 100

Note: The following steps presume that the REX router has already been configured and that you have successfully logged into your account with shDIALUP.

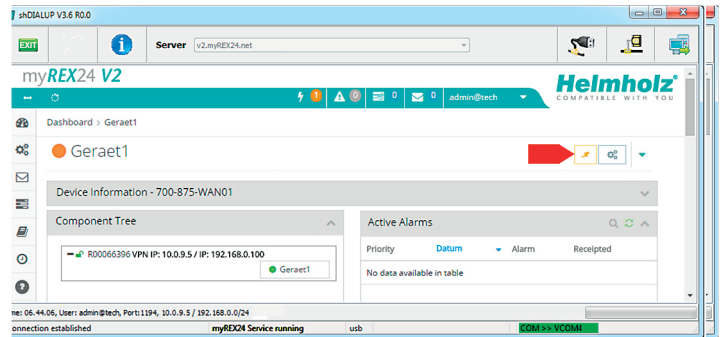
Logged in REX 100 routers are shown identified with a green circle in the dashboard view. The VPN connection is established by clicking on the connection button .



The number of active connections is shown in the menu bar.

The active connection status with the REX 100 is represented with an orange LED. In order to end the connection of a remote access, please click the in the meantime yellow and animated connection button and then confirm the disconnection of the remote connection.

Once a connection to the REX 100 has been established, all the IP packets that are valid for the applicable LAN network on the system side will be forwarded. Further parameters for the VPN-IP/IP subnet are also shown in the lower status bar for informational purposes.



7. Tips and tricks

7.1 Establishing of connection isn't working

If the connection to the portal does not work on the first try, please install our "shCHECK" testing tool on a PC. This freely available program checks whether the ports needed to successfully establish a connection to the myREX24 portal have been approved. This means that the network at the system (from which a REX 100 router with WAN interface creates the connection with the Internet) can be checked, as can the network with the PCs meant to connect with the portal via the dial-in software shDIALUP.

Background:

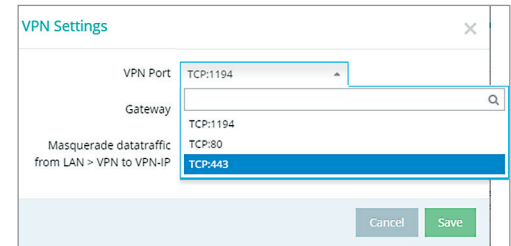
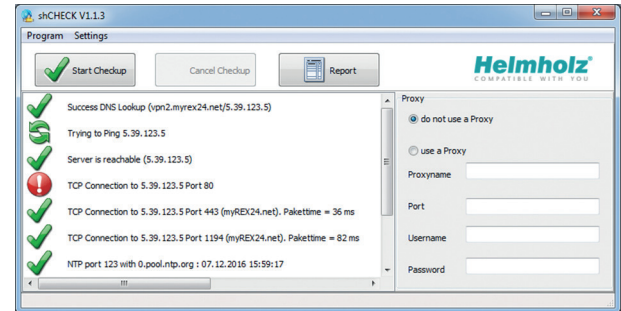
- shDIALUP and the REX 100 establish an outbound TCP connection with the address v2.myrex24.net (5.39.123.21).
- In order to be able to establish a secure connection to the myREX24 server with shDIALUP or REX 100, at least one of the following TCP ports (80, 443, or 1194) required for the VPN tunnel must be open. Port 80 is locked in the example shown to the right. However, the connection with the myREX24-V2 server can be established via ports 443 or 1194.

Please clarify which setting is required in advance with the responsible IT department on site. You can adjust the port correspondingly in the VPN settings of the REX 100.

7.2 Device configuration: Services – HTTPS

Alternatively, you can also view the status of your machines with a direct call-up of the myREX24-V2 server from your browser: <https://v2.myREX24.net> The connection is HTTPS-secure. Please use your shDIALUP access data to log in. Most myREX24-V2 portal functions are then available.

You can only carry out a remote maintenance connection, the USB/COM-over-IP functions and the "Submit to Device" with the shDIALUP client software.



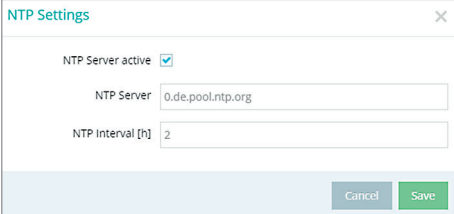
7.3 GSM connection is interrupted

If the provider for GSM remote maintenance interrupts the connection of your REX 100 router, this may have occurred for the following reasons, among others:

- Wrong user name/ password,
- ports blocked by the provider or
- credit of prepaid SIM cards used up.

7.4 Device configuration: Services – NTP server

For purposes of time synchronization of the REX 100, this carries out a comparison at regular intervals. Where necessary, you can individually set the preset NTP server and the interval.



NTP Settings

NTP Server active

NTP Server

NTP Interval [h]

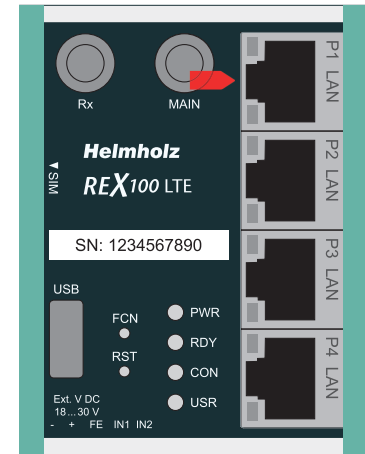
Cancel Save

8. Remote maintenance of Ethernet CPUs

The integrated 4-port switch is suitable for 100 Mbps and full duplex operation and supports auto-crossover and auto-negotiation. No special PROFINET functions are supported.

Notes:

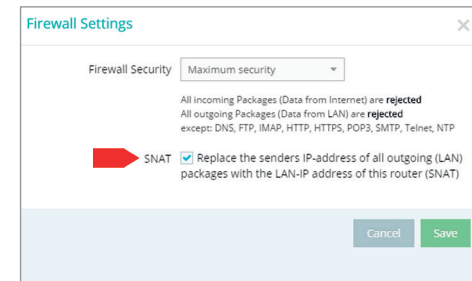
- Please note that the "P1" LAN interface is started delayed for technical reasons in the event of a device reset/switching on.
- When connecting additional Ethernet participants (PLC/panel) on the REX 100, it must be ensured that the IP addresses of the devices lie within the address range of the LAN interface of the REX 100.



Device settings: Services – Firewall Settings – SNAT

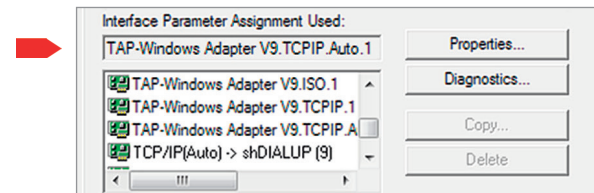
With a REX 100, the SNAT function is activated as a default. With this setting, participants for which no gateway*/router has been entered are reached via the VPN tunnel. For the CPUs and panels of some manufacturers, it can be the case that you need to explicitly enter the gateway* and deactivate the SNAT function in order that a remote connection with the end device is possible.

*Gateway: This refers to the LAN IP address of the REX 100.



In order to reach a PLC or a panel via the VPN tunnel, the open VPN adapter must be selected in the corresponding software modules as the interface. The virtual network connection responsible for this is the TAP Windows¹ Adapter V9.

The setting to be selected in the PG/PC interface module from the SIMATIC STEP 7² software is emphasized in the detail to the right.



9. Description of LEDs and buttons

9.1 LED display

PWR	Indicator light for the power supply
RDY	Readiness indicator (this LED must show a solid light after a max. of 110 s)
CON	Off: There is no active Internet or VPN connection Solid light: Internet connection active or possible, but VPN connection inactive Rapid flashing (3 Hz): The router is attempting to establish a VPN connection Flashing (1.5 Hz): VPN connection is active
USR	Solid light: When loading default settings, firmware files, or device configurations Flashing (1.5 Hz): A portal configuration was recognized on the USB stick (see FCN button, chapter 9.2.) Rapid flashing (3 Hz): A firmware file was recognized on the USB stick (see FCN button, chapter 9.2.)

9.2 Button functions

FCN	<ol style="list-style-type: none">1. Function button used to manually establish a connection with the portal server (see screenshot on page 8, chapter 4.3) → Interfaces → Internet → "Connect to server on").2. If the USR LED starts flashing, this means that you have ten seconds to press this button in order to load data from an inserted USB stick.
RST	Reset button for restarting the router

10. Restoring the REX 100 router to its default settings

In order to reset the REX 100 to the factory settings, the following steps are necessary:

- Apply a supply voltage (or press "RST") until the PWR LED lights up.
- Wait until the RDY LED flashes.
- Press the FCN button for approx. 10–15 seconds until the USR LED flashes orange.
- After you release the FCN key, the REX 100 reboots and once again has the factory settings.

Important: The IP address of the REX 100 LAN interface is reset to 192.168.0.100/24.

11. Load configuration/firmware update from USB stick

Note: Ensure that either only the firmware file or only the configuration file is found in the root directory of the USB stick. If you wish to update both the firmware and the configuration, carry out the following steps consecutively for each file.

To provide the REX 100 with a configuration or perform a firmware update from a USB stick, please carry out the following steps:

- The start process of the device must be completed (PWR & RDY LEDs light up continuously).
- Don't change the file name and save this in the root directory of a standard FAT-formatted USB stick.
- Insert the USB stick into the USB interface of the REX 100.
- Once the USR LED starts flashing, you will have ten seconds to press the FCN button.
- During the operation, the voltage supply should not be interrupted.
- Once the USR LED lights up continuously, you can release the FCN button, at which point the data will be loaded from the USB stick.
- The process is complete once the PWR and RDY LEDs light up again permanently.

Note: Once the configuration file has been successfully transferred, the file will automatically be renamed "Xmyrex24.mbn", making it impossible to accidentally reuse it a second time.

12. Technical data

	REX 100 3G (700-875-UMT01)	REX 100 LTE (700-875-LTE01)
Dimensions (D x W x H)	35 x 59 x 76 mm	35 x 59 x 76 mm
Weight	Approx. 130 g	Approx. 130 g
GSM modem	Quad-band GPRS/EDGE data interface	Multiband GSM/GPRS/WCDMA/LTE data interface
Antenna terminal	SMA socket (exterior thread)	SMA socket (exterior thread)
SIM card type	Standard SIM, 1.8 V/3 V	Standard SIM, 1.8 V/3 V
GSM frequency bands (MHz)	GSM/GPRS/EDGE: 850, 900, 1800, 1900	GSM 900, DCS1800
UMTS frequency bands (MHz)	UMTS/HSPA: 800/850, 900, AWS 1700, 1900, 2100 class 1	B5(850), B8 (900), B1 (2100)
LTE frequency bands (MHz)	–	B20 (800), B3 (1800), B7 (2600)
Transmit power	Class 1, E2, 3, 4	Class 1, E2, 3, 4
Data transfer rates	HSPA+ (upload: 5.76 Mbps download: 21.0 Mbps)	HSPA+ (upload: 5.76 Mbps download: 42.0 Mbps) LTE (upload: 50 Mbps download: 100 Mbps)
Number of inputs type	2/24 V (DC), as per DIN EN 61131-2 Type 2	2/24 V (DC), as per DIN EN 61131-2 Type 2
Router functions	Firewall, NAT/PAT, SMS wake-up	Firewall, NAT/PAT, SMS wake-up
VPN	OpenVPN	OpenVPN
Interfaces	Four 10/100 Mbps LAN ports, USB 2.0 Type A port	Four 10/100 Mbps LAN ports, USB 2.0 Type A port
Voltage	DC 24 V (18 ... 30 VDC)	DC 24 V (18 ... 30 VDC)
Current draw	Max. 250 mA with DC 24 V	Max. 250 mA with DC 24 V
Ambient temperature in operation	-40 °C ... +75 °C	-40 °C ... +75 °C
Transport and storage temperature	-40 °C ... +85 °C	-40 °C ... +85 °C
Humidity	0 to 95 %, non-condensing	0 to 95 %, non-condensing
Location of use	Dry location	Dry location
Protection rating	IP 20	IP 20
Certifications	CE	CE
UL	UL 61010-1/ UL 61010-2-201	UL 61010-1/ UL 61010-2-201
- Voltage supply	DC 24 V (18 ... 30 VDC, SELV and limited energy circuit)	DC 24 V (18 ... 30 VDC, SELV and limited energy circuit)
- Pollution degree	2	2
- Altitude	Up to 2000 m	Up to 2000 m
- Temperature cable rating	87 °C	87 °C

Note

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.

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1) Windows is a registered trademark of the Microsoft Corporation.

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

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