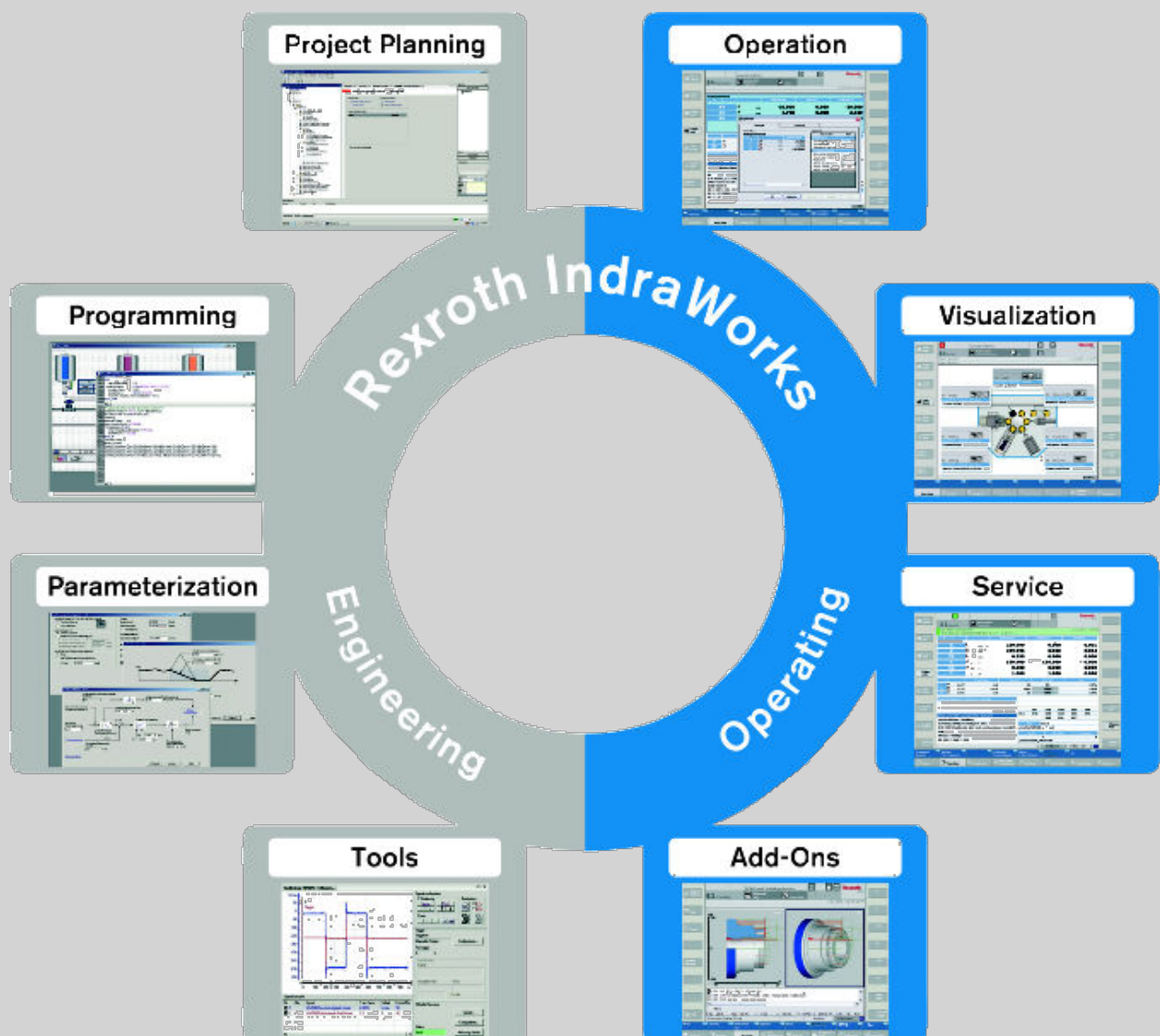


IndraWorks 14VRS

Remote Support

Application Description
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Edition 01



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14VRS
Remote Support

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Editorial Department Engineering Automation Systems Basic Components for Engineering and Visualization , MiLe (SyKe/MePe)

Table of Contents

	Page
1 About this documentation.....	3
1.1 Validity of the documentation.....	3
1.2 Required and supplementing documentation IndraWorks.....	3
1.2.1 Engineering.....	3
1.2.2 Engineering & visualization.....	5
1.2.3 Visualization.....	5
1.3 Information representation.....	5
1.3.1 Use of the safety instructions.....	5
1.3.2 Customer feedback.....	7
2 Important instructions on use.....	9
2.1 Intended use.....	9
2.1.1 Introduction.....	9
2.1.2 Areas of use and application.....	9
2.1.3 Unintended use.....	9
3 Safety instructions.....	11
3.1 Operational safety.....	11
3.2 IT security.....	12
4 General information.....	13
5 UltraVNC.....	15
6 Integrating UltraVNC.....	17
7 Installing UltraVNC.....	19
7.1 Installing the UltraVNC server.....	19
7.2 Installing the UltraVNC viewer.....	23
7.3 Installing the UltraVNC Mirror Driver.....	24
8 Service and support.....	27
Index.....	29

1 About this documentation

1.1 Validity of the documentation

Purpose This documentation supports the user while installing and using a remote support software compatible to the current operating systems from Win7 - Win10.

Target group This documentation supports the user during the following phases:

- Engineering
- Commissioning
- Operation

Overview on target groups and product phases

In the following illustration, the framed activities, product phases and target groups refer to this documentation.

Example: In the product phase "Commissioning", the target group "Programmer" can execute the activity "Optimize" using this documentation.

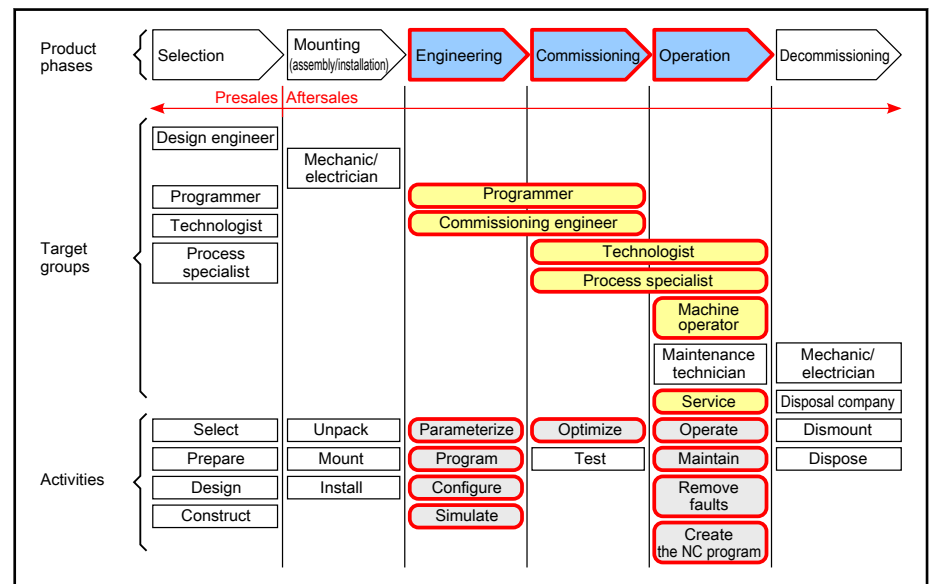


Fig. 1-1: Assigning the present documentation to the target groups, product phases and activities of the target group

1.2 Required and supplementing documentation IndraWorks

1.2.1 Engineering

Documentation titles with type codes and part numbers

IndraWorks 14VRS Software Installation DOK-IWORKS-SOFTINS*V14-CORS-EN-P, R911344286 This documentation describes the IndraWorks installation.
IndraWorks 14VRS Engineering DOK-IWORKS-ENGINEE*V14-APRS-EN-P, R911343566 This documentation describes the application of IndraWorks in which the Rexroth Engineering tools are integrated. It includes instructions on how to work with IndraWorks and how to operate the oscilloscope function.

About this documentation

IndraWorks 14VRS PLC Programming System IndraLogic 2G

DOK-IWORKS-IL2GPRO*V14-APRS-EN-P, R911343571

This documentation describes the PLC programming tool IndraLogic 2G and its use. It includes the basic use, first steps, visualization, menu items and editors.

IndraWorks 14VRS Basic Libraries IndraLogic 2G

DOK-IL*2G*-BASLIB**V14-LIRS-EN-P, R911343920

This documentation describes the system-comprehensive PLC libraries.

IndraWorks 14VRS WinStudio 7.4

DOK-IWORKS-WINSTUD*V14-APRS-EN-P, R911341585

This "User Manual and Technical Reference Book" facilitates working with the "Rexroth WinStudio"™ software for optimal results. This document provides technical information and step-by-step instructions to create web-enabled HMI/SCADA programs.

Rexroth IndraWorks 13VRS CamBuilder

DOK-IWORKS-CAMBUIL*V13-APRS-EN-P, R911336291

This documentation describes the basic principles and operation of the CamBuilder, the cam editing tool.

IndraWorks 14VRS Field Buses

DOK-IWORKS-FB*****V14-APRS-EN-P, R911341485

This documentation describes the field bus and local periphery connections supported by the IndraLogic XLC, IndraMotion MLC and IndraMotion MTX systems. The focus of this documentation is on the configuration, parameterization, commissioning and the diagnostics of the different periphery connections.

IndraWorks IndraMotion Service Tool

DOK-IWORKS-IMST*****-APRS-EN-P, R911341383

This documentation describes the IndraMotion Service Tool (IMST). IMST is a web-based diagnostic tool used to access a control system via an Ethernet high-speed connection. The IMST allows OEMs, end users and service engineers to access and remotely diagnose a system. The PC has to use at least Internet Explorer 8, Firefox 3.5 or a higher version.

The following control variants are supported:

- IndraMotion MLC L25/L45/L65/L75/XM12/XM2/VPx
- IndraLogic XLC L25/L45/L65/L75

Rexroth IndraDrive Service Tools IMST/IDST

DOK-IM*MLD-IMSTIDSTV13-RERS-EN-P, R911342652

This documentation describes the IndraMotion Service Tools (IMST and IDST). It is a web-based diagnostic tool used to access a drive system via a high-speed Ethernet connection. Using these service tools OEMs, end users and service engineers can access and remotely diagnose a system from anywhere.

IndraWorks SafeLogic 14VRS First Steps

DOK-IWORKS-SL*STEP*V14-CORS-EN-P, R911341520

This documentation provides information to facilitate an easy start in the safety control engineering SafeLogic. By using project examples, information about the installation, configuration, commissioning, troubleshooting and diagnostics is provided to the user.

Rexroth IndraWorks 12VRS FDT Container

DOK-IWORKS-FDT*CON*V12-APRS-EN-P, R911334398

This documentation describes the IndraWorks FDT Container functionality. It includes the activation of the functionality in the project and working with DTMs.

IndraWorks 14VRS Field Buses Libraries

DOK-IWORKS-FB*LIB**V14-LIRS-EN-P, R911343575

This documentation describes field bus libraries for the IndraLogic XLC, IndraMotion MLC and IndraMotion MTX systems.

Rexroth IndraWorks Remote Condition Monitoring RMB_TechRCM DOK-IWORKS-TEC*RCM*V14-LIRS-EN-E, R911343671 This documentation describes the individual functions of the "Remote Condition Monitoring" systems as well as the most important use cases for a quick status assessment of the connected machines/systems.
IndraWorks 14VRS SafeLogic - Project Configuration, Version 1.2.0.0. DOK-IWORKS-SL**PRJ*V14-APRS-EN-P, R911341694 This documentation describes the creation and programming of SafeLogic projects in IndraWorks Engineering.

Tab. 1-1: IndraWorks documentation overview - Engineering

1.2.2 Engineering & visualization

Documentation titles with type codes and part numbers

IndraWorks 14VRS Energy Efficiency Management DOK-IWORKS-4EE****V14-APRS-EN-P, R911339229 This document describes the use of the Energy Efficiency Management function within the MLC, XLC and MTX systems. Using example applications, this documentation provides information about the project planning, configuration and visualization of the system.

Tab. 1-2: IndraWorks documentation overview - Engineering & visualization

1.2.3 Visualization

Documentation titles with type codes and part numbers

IndraWorks 14VRS HMI DOK-IWORKS-HMI****V14-APRS-EN-P, R911343569 This documentation describes the HMI operating interface IndraWorks Operation, its operation and functions as well as the configuration in IndraWorks Engineering.
--

Tab. 1-3: IndraWorks documentation overview - Visualization

1.3 Information representation

1.3.1 Use of the safety instructions

Structure of the safety instructions

The safety instructions are structured as follows:

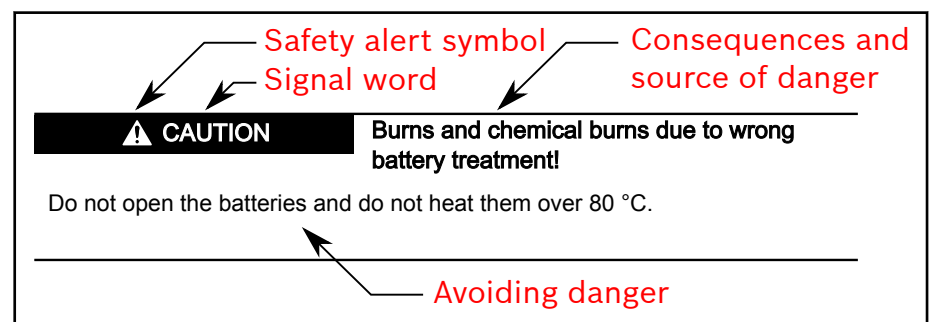


Fig. 1-2: Structure of the safety instructions

Explaining signal words and safety alert symbol

The safety instructions in this documentation contain specific signal words (danger, warning, caution, notice) and, if necessary, a safety alert symbol (according to ANSI Z535.6-2006).

About this documentation

The signal word is used to draw attention to the safety instruction and also provides information on the severity of the hazard.

The safety alert symbol (a triangle with an exclamation point), which precedes the signal words danger, warning and caution is used to alert the reader to personal injury hazards.

** DANGER**

In case of non-compliance with this safety instruction, death or serious injury **will** occur.

** WARNING**

In case of non-compliance with this safety instruction, death or serious injury **can** occur.

** CAUTION**

In case of non-compliance with this safety instruction, minor or moderate injury can occur.

NOTICE

In case of non-compliance with this safety instruction, material damage can occur.

Symbols used

Hints are represented as follows:



This is an information.

Tips are represented as follows:



This is a tip.

Signal graphic explanation on the device



Prior to the installation and commissioning of the device, refer to the device documentation.

1.3.2 Customer feedback

Customer requests, comments or suggestions for improvement are of great importance to us. Please email your feedback on the documentations to Feedback.Documentation@boschrexroth.de. Directly insert comments in the electronic PDF document and send the PDF file to Bosch Rexroth.

2 Important instructions on use

2.1 Intended use

2.1.1 Introduction

Bosch Rexroth products represent state-of-the-art developments and manufacturing. The products are tested prior to delivery to ensure operating safety and reliability.

The products may only be used as intended. If they are not used as intended, situations occur that result in damage to property or personal injury due to an incorrect use of products.



Bosch Rexroth shall not assume any warranty, liability or payment of damages in case of damage resulting from a non-intended use of the products; the use shall solely bear all risks from unintended use of the products.

Before using Rexroth products, ensure that all the prerequisites for an intended use of the products are met:

- Anybody dealing with our products is obliged to read and consent to the relevant safety instructions and the intended use.
- The original condition of hardware products may not be altered; in other words, no structural modifications are permitted. It is not permitted to decompile software products or alter source codes.
- Do not install damaged or defective products or commission them.
- It has to be ensured that the products have been installed as described in the relevant documentation.

2.1.2 Areas of use and application

IndraWorks Engineering is used for configuration, parameterization, programming and diagnostics.

IndraWorks Engineering is used for selected Bosch Rexroth drive and control systems.

Additionally, the specifications given in the "Areas of use and application" for the control and drive systems used with the IndraWorks Engineering do also apply.



IndraWorks Engineering is designed for a screen setting of 96 DPI. The use of other settings is considered as unintended and can cause an incomplete or incorrect display of screen elements.

2.1.3 Unintended use

Using IndraWorks Engineering in other applications than those specified or described in the documentation and technical data is considered as "unintended".

Furthermore, IndraWorks Engineering must not be used in any applications not expressly approved by Bosch Rexroth.

3 Safety instructions

The following safety instructions have to be considered to ensure the operational safety and the IT security!

3.1 Operational safety

WARNING

Potential risks while controlling a machine remotely

- *Undefined or unexpected response*
 - An unexpected or undefined response can result when simultaneously operating mouse and keyboard at the UltraVNC client and UltraVNC server system
- *Dangerous situation is identified too late or with delay*
 - A machine malfunction or a safety hazard is either not identified or identified too late by the remotely working UltraVNC client operator
 - Due to connection failures, it is possible that the screen content of the UltraVNC server is shown with delay on the UltraVNC client
 - Due to connection failures, operational actions of the UltraVNC client operator are transferred with delay or not at all to the UltraVNC server
- *Revoking mouse and keyboard control by remotely-controlled UltraVNC client operator*
 - The operator of the UltraVNC viewer (client) can revoke the control of mouse and keyboard from the operator at the UltraVNC server system at any time!
 - The handling options of on-site inspectors are limited if the remotely working UltraVNC client operator has the exclusive control about the user interface of the server system
 - The UltraVNC server operator cannot actively take the control over mouse and keyboard of the server system. The control has to be allowed by an operating action of the UltraVNC client operator

Take the respective actions to ensure that there will be no danger!

Safety instructions

3.2 IT security

** WARNING****Potential danger of the IT security in case of misconfiguration**

- A TCP/IP connection has to be possible between a client and a server system using a defined port. If the configuration is incorrect or incomplete, this network connection can show security gaps allowing potential attackers to access your IT infrastructure. Observe the installation instructions and completely perform installation and configuration.
- Check, whether the achievable IT security meets your standards or whether it is required to increase your IT security by taking further actions, such as VPN (Virtual Private Network) or an industrial firewall.
- Enable the UltraVNC server only if a remote support session is required and close the UltraVNC server after your remote support session has been completed to exclude an unauthorized access to your IT system via the UltraVNC server.
- Operate the UltraVNC service only in the starting mode "Manual" to ensure that the service has to be started explicitly to exclude an unauthorized access to your IT system via the UltraVNC server (refer to [chapter 7 "Installing UltraVNC" on page 19](#)).
- Operate the UltraVNC service exclusively in the mode that explicitly requires confirmation to allow the control by the UltraVNC client on the UltraVNC server to exclude unauthorized use (refer to [chapter 7 "Installing UltraVNC" on page 19](#)).

Take the respective actions to ensure that there will be no danger!

Also note further information on IT security given in the IndraControl Security guideline!

4 General information

Remote support means that IT systems or machines are remotely accessed for maintenance and repair.

Virtual Network Computing, VNC, is a software that displays the screen content of a remote system (server) to a local system (client) and sends keyboard and mouse movements to the remote system. Working on the remote system is thus like working in front of it. VNC implements the Remote Frame Buffer Protocol and can thus be used platform-independently in contrast to other remote support softwares. VNC uses the client-server model. The server program provides screen outputs and input options via mouse and keyboard representing and using the client program. As of 1998, VNC is published as open source. The original VNC is subject to GNU General Public License.

Prerequisites:

A TCP/IP connection has to be possible between the client system and the server system using a defined port.

5 UltraVNC

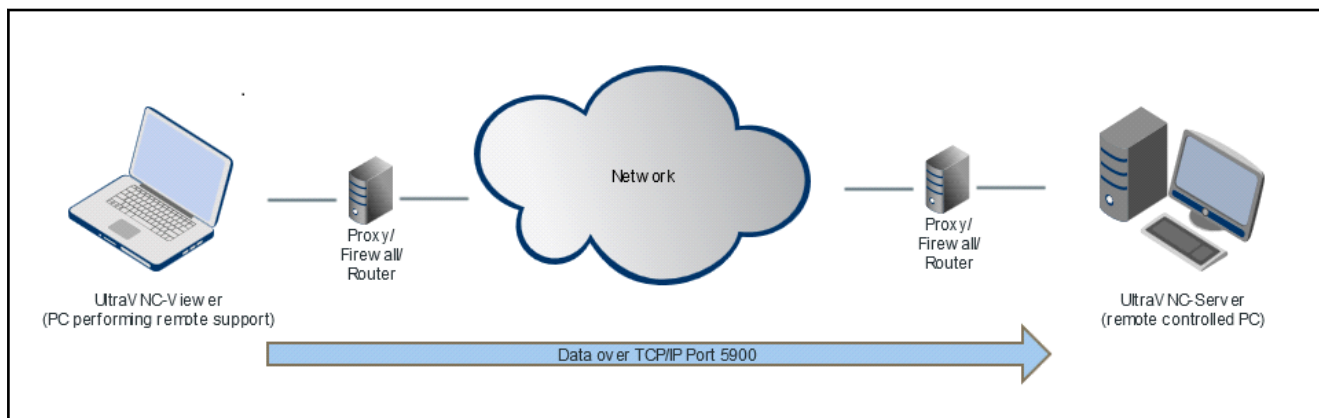


Fig. 5-1: Symbolic representation of the UltraVNC remote support

UltraVNC is an open source software based on VNC with numerous extensions implemented.

Using UltraVNC is subject to GNU GENERAL PUBLIC LICENSE (GPL). The corresponding license agreement is shown in the following ("[GNU GENERAL PUBLIC LICENSE \(GPL\)](#)" on page 15).

Prerequisites:

A TCP/IP connection has to be possible between an UltraVNC client and an UltraVNC server system using a defined port (default configuration: port 5900).

Additional product characteristics:

- Broad compatibility to RealVNC, TightVNC and multiple other VNC derivatives
- Plugin to encrypt data transmission
- File transfer functionality
- Chat functionality (to communicate in environments with higher noise level)

Software components:

- UltraVNC server: The server is operated on the remotely controlled/monitored system
- UltraVNC viewer: The viewer/client is operated on the system used to support remotely
- Mirror driver (optional): The mirror driver is installed on the server system to minimize the CPU load caused by the remote support software if required

Bosch Rexroth does not provide any UltraVNC software for the installation. Enter <http://www.uvnc.com> to go to the UltraVNC homepage to download an UltraVNC version for Windows PCs.



The URL references to an external homepage in the internet which cannot be controlled by Bosch Rexroth.

Only the author of this site is responsible for its content.

UltraVNC

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version. This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details (<http://www.gnu.org/licenses>).

6 Integrating UltraVNC

IndraWorks allows to integrate the remote support software UltraVNC into the IndraWorks user interface and to control their use on HMI devices via the IndraWorks user management.

IndraWorks starts the UltraVNC server only if the remote support is enabled via the user interface.

IndraWorks ends the UltraVNC server if the remote support is disabled via the user interface.

If the IndraWorks user management is enabled on the HMI device, only IndraWorks operators can enable or disable the remote support if they are provided with the respective remote support authorization. The user does not have to have administrative rights for the operating system, thus also allowing selected users (such as machine operators) to enable or disable the remote support.

Authorization model

Engineering environment / Windows Desktop	IndraWorks HMI user management is always disabled	A user with administration rights for the operating system can be enabled or disabled by the remote support
IndraWorks user interface	IndraWorks HMI user management is disabled	A user with administration rights for the operating system can be enabled or disabled by the remote support
IndraWorks user interface	IndraWorks HMI user management is enabled	A user does not require administration rights for the operating system, but he requires special remote support authorization in the HMI user management to enable or disable the remote support.

The following operating actions described, can be executed if you are authorized. For the functions in the IndraWorks Engineering environment, go either to the main menu item "Extras/Remote support" or to the IndraWorks user interface. To open the dialog, press the OP-key <Maintenance> and the F-key <Remote support>.

Enabling The action "Enable" starts the UltraVNC server on the system to allow the UltraVNC client to open a remote support session.

Note the safety instructions when operating the remote support, refer to [chapter 3 "Safety instructions" on page 11!](#)



The UltraVNC server is closed if:

- the remote support is disabled via the user interface
- the UltraVNC server systems is restarted

Disabling The action "Disable" closes an existing remote support session and stops the UltraVNC server. The connection cannot be established anymore from the client-side.

Note the safety instructions when operating the remote support, refer to [chapter 3 "Safety instructions" on page 11!](#)

Info A status display for the remote support software can be called. This dialog provides information on:

- the installation status of the IndraWorks-supported remote support software
- the operating status of the respective Windows remote support service (started/stopped)

Integrating UltraVNC

- the name of the UltraVNC server computer
- the IP address of the UltraVNC server computer
- the port used by the UltraVNC client to establish a connection to the UltraVNC server

The dialog also provides a link to open an installation instructions with the recommended settings for the UltraVNC, refer to [chapter 7 "Installing UltraVNC" on page 19](#). Press "Ctrl-A" to select the complete document and "Ctrl-C" to copy it to the clipboard. Press "Ctrl-V" to insert the document including images and attached files into the editor that supports the Rich Text Format (RTF) (e.g. Wordpad). If required, save or print the installation instructions and execute the attached files or save them using the editor.

7 Installing UltraVNC

This chapter includes an instruction on how to install the UltraVNC server and the UltraVNC client/viewer with the recommended settings to operate the UltraVNC. Note that the configuration settings of the UltraVNC server and the UltraVNC viewer have to match. The installation instructions was based on the UltraVNC version 1.2.1.2.

For the installation instructions including its attached files, you can also click on the link on the "Info" dialog of the IndraWorks user interface, refer to [chapter 6 "Integrating UltraVNC" on page 17](#).

Prerequisites A TCP/IP connection has to be possible between an UltraVNC client and an UltraVNC server system using a defined port (default configuration: port 5900).

Download

- Bosch Rexroth does not provide any UltraVNC software for the installation. For the setup, go to the site of the UltraVNC manufacturer (<http://www.uvnc.com/downloads/ultravnc.html>)
- Open the link "download ultravnc 1.2.1.2" (or newer)
- The "INSTALLERS" section provides different installation program variants (setups and Microsoft Installers (msi)). Select the Microsoft Installer variant (e.g. "ultravnc 1212 msi x86" or "ultravnc 1212 msi x64"). Select the matching installation program for your operating system (x86 for 32-bit operating systems or x64 for 64-bit operating systems). Press the **Download** button to start the download and follow the instructions.



The URL references to an external homepage in the internet which cannot be controlled by Bosch Rexroth.

Only the author of this site is responsible for its content.

7.1 Installing the UltraVNC server

Administration rights are required for the operating system to install the UltraVNC server.

Installing UltraVNC server

- Start installation program:
- Select "Server" component
- Select "Install service" and "Allow software Ctrl-Alt-Del"
- Accept license conditions
- Select installation directory
- Start installation
- Confirm "User account control" dialog
- Close installation program

After the installation, the upcoming steps depend on the authorizations of the user currently logged-in under Windows:

Installing UltraVNC

The user currently logged into Windows has no administration rights for the operating system	A message is displayed that no password has yet been set for the UltraVNC server ("No password has been set..."). The message is displayed again and again until a password is specified. Perform the step "Configure UltraVNC server" and subsequently confirm the messages.
The user currently logged into Windows has administration rights for the operating system	The dialog "UltraVNC Server Property Page" is displayed. Set a password for "VNC password" and "View-only password" in the section "Authentication" and close the dialog with "OK". Confirm the "User account control" dialog.

Configuring UltraVNC server

Administration rights are required for the operating system to configure the UltraVNC server.

To start the UltraVNC configuration interface, click on the icon "UltraVNC settings" that was created on the Desktop or execute the following steps by opening the "UltraVNC settings" in the Windows start menu:

- Specify a "VNC password" and a "View-only password" in the "Security" tab
- Select the checkbox "Use" in the "Encryption" section of the "Security" tab and select "SecureVNCPlugin.dsm" or "SecureVNCPlugin64"

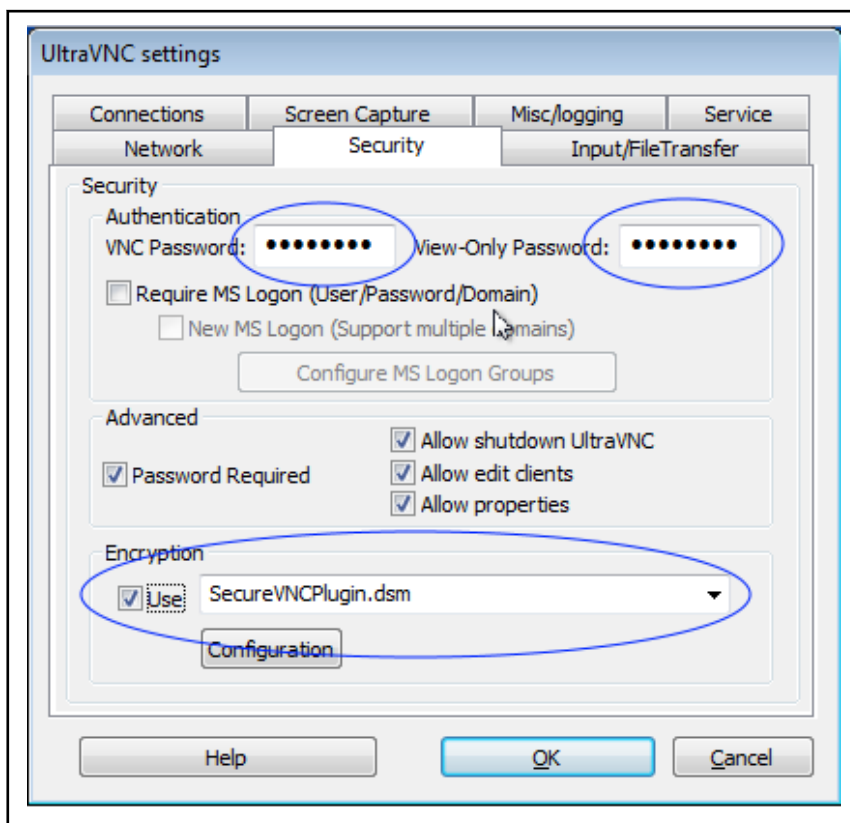


Fig. 7-1: UltraVNC security settings

- Disable the setting "Enable blank monitor on viewer request" in the "Input/FileTransfer" tab

Installing UltraVNC

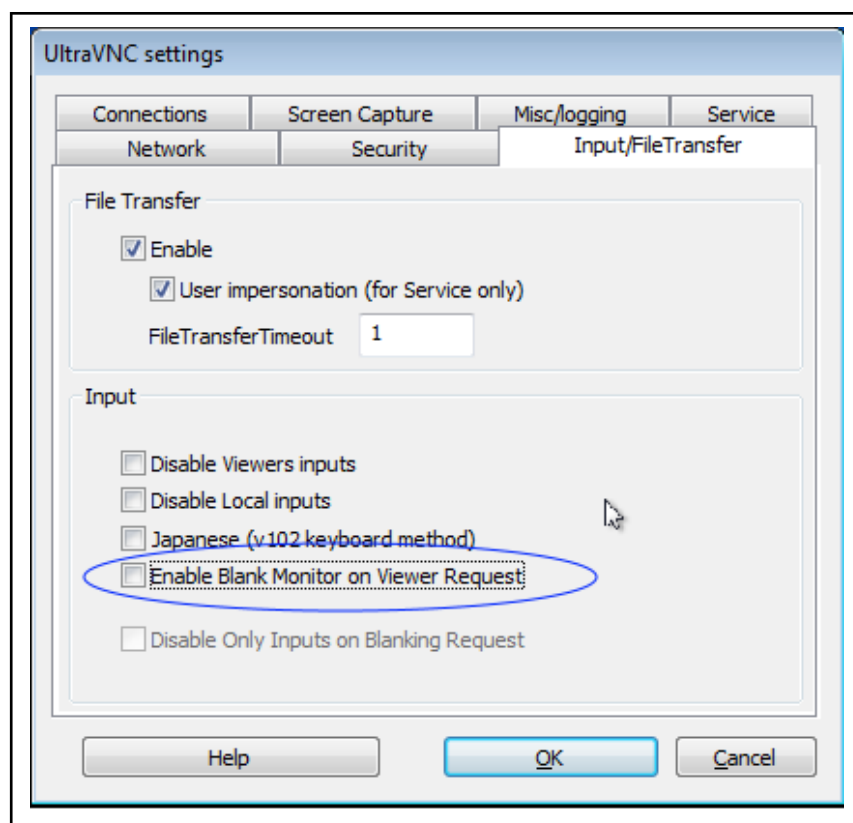


Fig. 7-2: UltraVNC file transfer settings

- Enable the setting "Display query window" in the "Connections" tab
- Set the setting "Timeout" in the "Connections" tab to 150 seconds

Installing UltraVNC

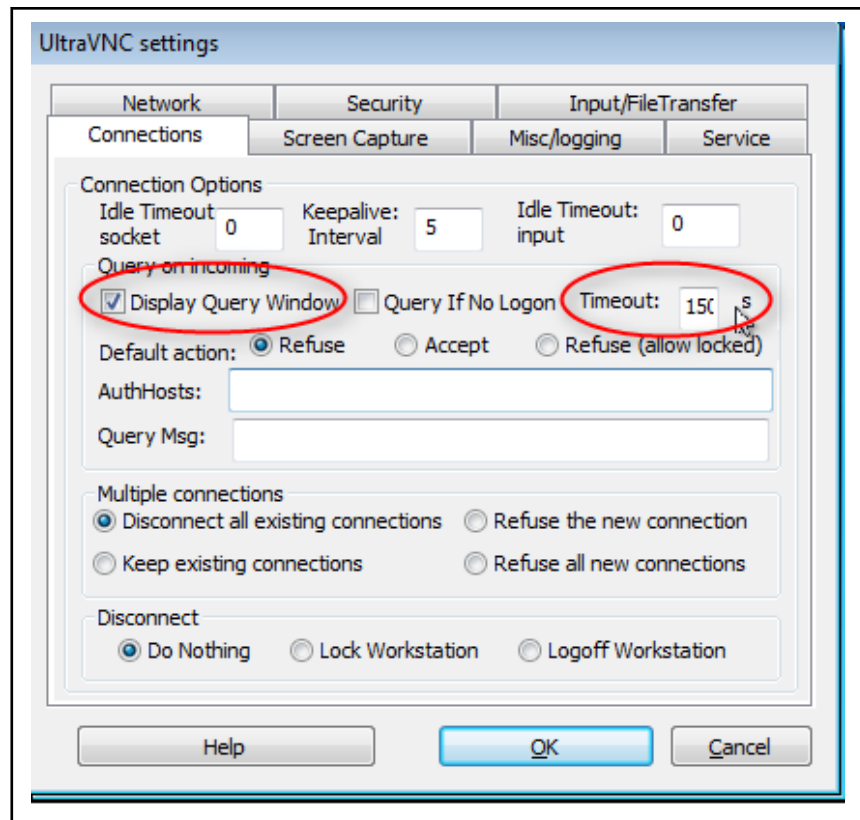


Fig. 7-3: UltraVNC connection settings

Close the configuration dialog and confirm the dialog with the note on the missing password. The icon of the UltraVNC server is displayed in the taskbar

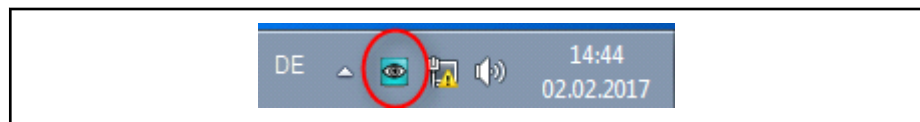


Fig. 7-4: UltraVNC taskbar icon

Configuring UltraVNC service and firewall

To ensure that the UltraVNC service is automatically started upon each PC restart, the start type of the service has to be set to "Manual". The ports required by UltraVNC have to be enabled in the firewall. Therefore, a batch file is added to the installation instructions that can be obtained via the "Info" dialog of the IndraWorks Engineering or IndraWorks user interface (refer to "Info" on page 17). Copy the file "ConfigUvncServer.bat" to your PC and execute it with administration rights for the operating system.

Please note the safety instructions, refer to [chapter 3 "Safety instructions" on page 11](#).

If IndraWorks is not installed on the server PC, the batch file can also be created manually:

Content of the batch file "ConfigUvncServer.bat":

Program:

```
@rem Enable running on networkshare
cls
@pushd %~dp0

@rem Check Adminrights
@echo Checking admin rights...
```


Installing UltraVNC

```
@NET FILE 1>NUL 2>NUL
@if '%errorlevel%' == '0' ( goto Adminrights ) else ( goto NoAdminrights )

:Adminrights
@echo Stopping uvnc_service...
net stop uvnc_service

@echo Setting starttype to manual...
sc config uvnc_service start= demand

@ rem Description of netsh:
@ rem https://technet.microsoft.com/de-de/library/dd734783%28v=ws.10%29.aspx

@echo Configuring firewall...

@set HttpPort=5800

@ start of command netsh...
netsh advfirewall firewall add rule name="vnc5800" dir=in action=allow
    protocol=tcp localport=%HttpPort% enable=yes profile=private
@ end of command netsh...

@ start of command netsh...
netsh advfirewall firewall add rule name="vnc5800" dir=in action=allow
    protocol=tcp localport=%HttpPort% enable=yes profile=public
@ end of command netsh...

@set RfbPort=5900

@ start of command netsh...
netsh advfirewall firewall add rule name="vnc5900" dir=in action=allow
    protocol=tcp localport=%RfbPort% enable=yes profile=private
@ end of command netsh...

@ start of command netsh...
netsh advfirewall firewall add rule name="vnc5900" dir=in action=allow
    protocol=tcp localport=%RfbPort% enable=yes profile=public
@ end of command netsh...

@pause

exit

:NOAdminrights
@echo The script must be started with adminrights.
@pause
```

Stopping/starting UltraVNC server

Restart the service before each remote support. Close the service after the remote support. This is possible by opening "net start uvnc_service" or "net stop uvnc_service" in the command line (administrator rights required for the operating system) or after restarting IndraWorks via the menu item **Tools ► Remote support ► Enable/disable**.

Please note the safety instructions, refer to [chapter 3 "Safety instructions" on page 11](#).

7.2 Installing the UltraVNC viewer

Administration rights are required for the operating system to install the UltraVNC viewer.

Installing UltraVNC viewer

- Execute installation program
- Select "Viewer" component
- Deselect "Install service" and "Allow software Ctrl-Alt-Del"
- Accept license conditions
- Select installation directory
- Start installation
- Confirm "User account" dialog
- Complete installation

Configuring UltraVNC viewer

Make the following settings when establishing the connection:

Installing UltraVNC

- Start the "UltraVNC viewer" (via the icon on the Desktop or via the Windows start menu)
- Enter the IP address or the PC name of the server machine into the field "VNC server"
- Select "AUTO" in the "Quick options" setting (default setting)
- Select the setting "SecureVNCPlugin.dsm" or "SecureVNCPlugin64.dsm" in the "Use DSMPlugin" section and select the checkbox.
- Enable "Save connection settings as default"

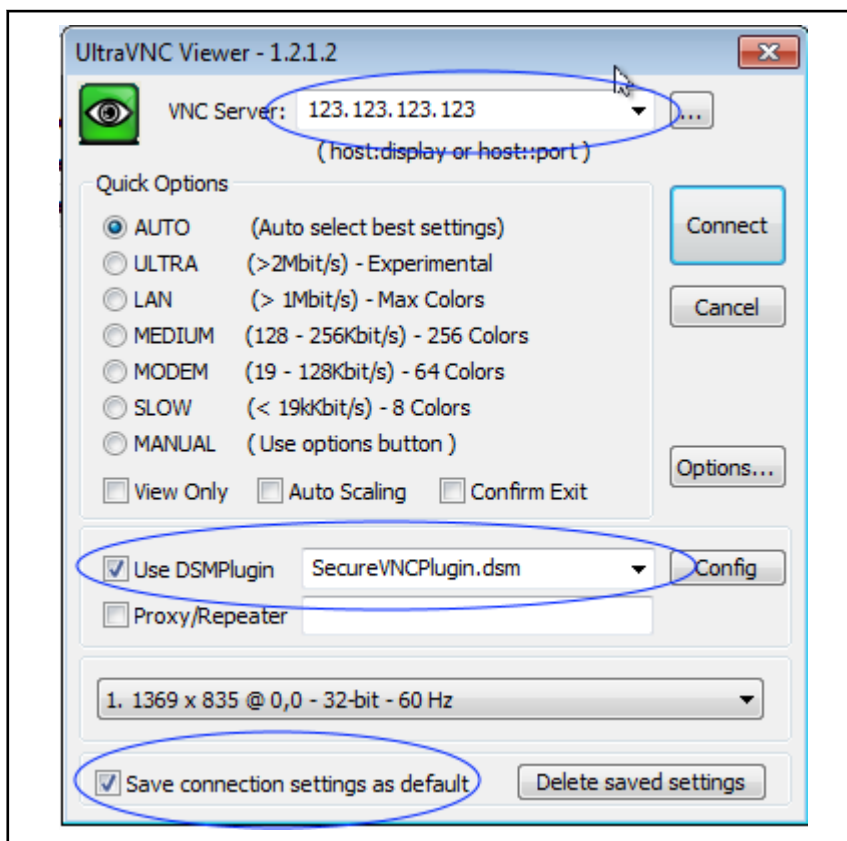


Fig. 7-5: UltraVNC Viewer settings

- Press "Connect" (the UltraVNC service on the server has to be already on!)
- Enter VNC password (from the server configuration) and press "Logon"
- Connection is established



If the configuration dialog opened via **Options...** is closed with **OK**, the setting in the "Quick options" section is changed from "AUTO" to "MANUAL", even if no changes were made.

7.3 Installing the UltraVNC Mirror Driver

For devices whose CPU is loaded too much by the UltraVNC server, a mirror driver is provided for specific operating system versions. The mirror driver establishes a direct connection between the screen buffer of the PC and the UltraVNC server. This reduces the CPU load and increases the processing velocity.

Installing UltraVNC

Notes	• The mirror driver has to be installed only if the CPU is extremely loaded by the UltraVNC server • Mirror driver is not available for Win10
Download	• Go to the download site of the manufacturer (http://www.uvnc.com/downloads/ultravnc.html) • Open the link "download ultravnc 1.2.1.2" (or newer) • Go to the "Mirror driver" section. Press the Download button and follow the instructions.
	 The URL references to an external homepage in the internet which cannot be controlled by Bosch Rexroth. Only the author of this site is responsible for its content.
Installing mirror driver	Administration rights are required for the operating system to install the UltraVNC mirror driver. • Unzip the .zip archive • Select the folder with the respective operating system. For 64-bit operating systems, select the folder with the extension "64" and for 32-bit operating systems, select the folder without extension. For Windows 7 operating systems, select either the folder "Vista" or "Vista64" • Start the Windows command line (CMD.exe) with administration rights and navigate to the directory containing the file "setupdrv.exe". Enter the command "setupdrv.exe install" • Confirm the Windows Security message with "Install" • Restart your system • Open the "Configuration" dialog of the UltraVNC server, see chapter 7.1 "Installing the UltraVNC server" on page 19 and select the checkbox "Use mirror driver" on the "Screen capture" tab
Testing mirror driver	To test the mirror driver, the UltraVNC server has to be started as service and a connection has to be established between the UltraVNC viewer and the UltraVNC server. Open the menu item "Properties" via the icon of the UltraVNC server and click on the button Check the mirror driver. Always use the described procedure to check the mirror driver.

8 Service and support

Our worldwide service network provides an optimized and efficient support. Our experts offer you advice and assistance should you have any queries. You can contact us **24/7**.

Service Germany

Our technology-oriented Competence Center in Lohr, Germany, is responsible for all your service-related queries for electric drive and controls.

Contact the **Service Hotline** and **Service Helpdesk** under:

Phone: **+49 9352 40 5060**
Fax: **+49 9352 18 4941**
E-mail: service.svc@boschrexroth.de
Internet: <http://www.boschrexroth.com/>

Additional information on service, repair (e.g. delivery addresses) and training can be found on our internet sites.

Service worldwide

Outside Germany, please contact your local service office first. For hotline numbers, refer to the sales office addresses on the internet.

Preparing information

To be able to help you more quickly and efficiently, please have the following information ready:

- Detailed description of malfunction and circumstances
- Type plate specifications of the affected products, in particular type codes and serial numbers
- Your contact data (phone and fax number as well as your e-mail address)

Index

A

About this documentation.....	3
Information representation.....	5
Validity of the documentation.....	3
ANSI Z535.6-2006.....	5

C

Complaints.....	7
Criticism.....	7
Customer Feedback.....	7

F

Feedback.....	7
---------------	---

H

Hazard warning.....	5
Helpdesk.....	27
Hotline.....	27

I

Important instructions on use.....	9
Intended use.....	9
Installation	
Install UltraVNC server.....	19
Installation Mirror driver.....	24
Installation UltraVNC viewer.....	23
Intended use	
Areas of use and application.....	9
Introduction.....	9

R

Remote support	
General information.....	13
Install UltraVNC.....	19
Integrate UltraVNC.....	17
Safety instructions.....	11
UltraVNC.....	15

S

Safety alert symbol.....	5
Safety instructions.....	5
IT security.....	12
Operational safety.....	11
Service hotline.....	27
Signal words.....	5
Suggestions.....	7
Support.....	27
Symbols used.....	7

T

Target groups.....	3
--------------------	---

U

Unintended use	
----------------	--

Consequences, non-liability.....	9
Introduction.....	9

W

Warnings.....	5
---------------	---

Notes

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