rexroth
A Bosch Company

Application Manual
(Translation of the original)

ctrlX HMI, ctrlX IPC PR, VR, DR, DE Devices

Software Applications



R911384733 Edition 04

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1 About this documentation

1.1 Revision history

Edition	Release date	Note
Edition 01	2018-01	First edition
Edition 02	2019-03	Revised edition
Edition 03	2020-05	Additions for Windows 10
Edition 04	2026-02	Additions for Windows 11

1.2 Overview on target groups and product phases

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

Example: In the product phase "Mounting (assembly/installation)", the target group mechanic/electrician can execute the activity install using this documentation.

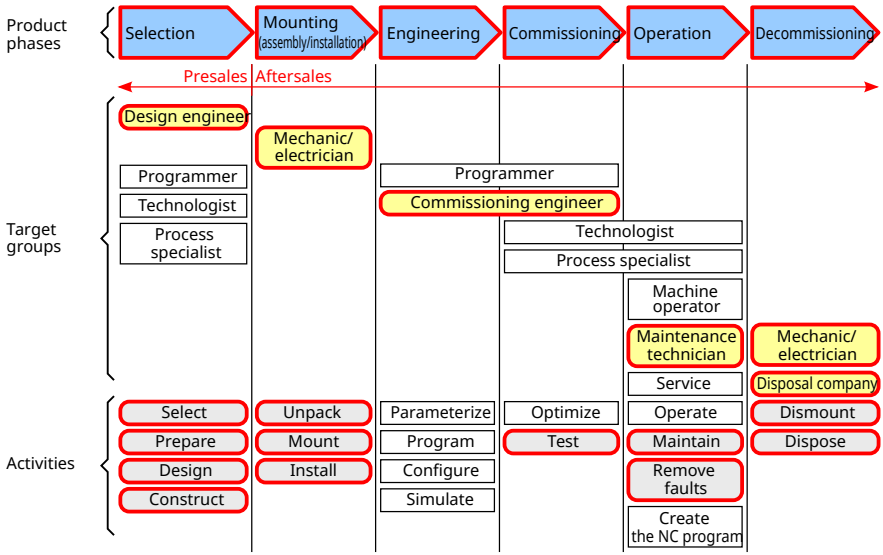


Fig. 1: Assigning the present documentation to the target groups, product phases and activities of the target group

This document instructs the technical staff of the machine manufacturer on how to safely perform the mechanic and electric installation and on how to commission the devices.

Required qualification: Individual who is able to assess the tasks assigned and to identify possible safety risks owing to qualification in the subject, knowledge and experience. The individual should also be familiar with the standards and regulations.

1.3 Purpose

This document instructs the technical staff of the machine manufacturer on how to perform the mechanical and electrical installation safely and on how to commission the device.

Required qualification: Individual who is able to assess the tasks assigned and to identify possible safety risks owing to qualification in the subject, knowledge and experience. The individual should also be familiar with the standards and regulations.

1.4 Scope

This documentation applies to the following PR and VR devices:

- PR21.1
- PR/VR31x.1
- PR/VR4x.1
- PR2x.2
- PR4x.2/PR5x.2

1.5 Customer feedback

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

2 Using safety instructions

2.1 Structure of the safety instructions

The safety instructions are structured as follows:

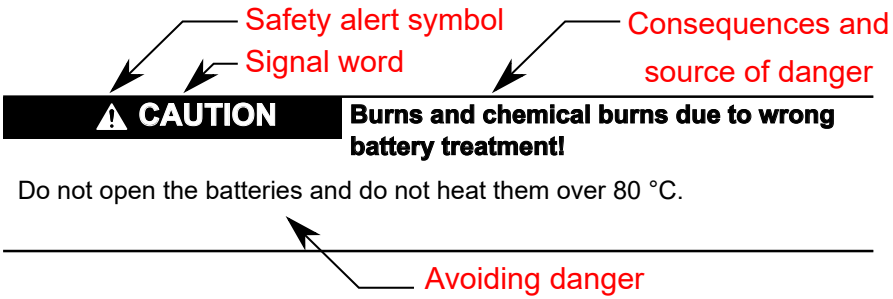


Fig. 2: Structure of the safety instructions

2.2 Explaining signal words and the 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).

The signal word draws attention to the safety instruction and indicates the risk potential.

The signal graphics (warning triangle with exclamation mark), added in front of the signal words Danger, Warning and Caution refer to hazards to inidividuals.

⚠ 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.

2.3 Symbols used

This is a tip.

2.4 Explaining the signal alert symbol on the device

If this symbol is on your device, you have to observe the documentation on the device. The respective documentation informs on the type of hazard as well as the steps required to avoid this hazard.

3 Windows IoT Enterprise

The PR and VR devices are provided with different versions of the "Windows IoT Enterprise" operating system.

3.1 General information

3.1.1 File storage of Rexroth data

The following Rexroth-specific data is stored in the folder "C:\Support\rexroth" in the Windows installation:

- Licensing terms of "Microsoft Windows IoT Enterprise & Mobile (All Editions)"
- Release notes and revision history of the Windows image.
- "rexroth" folder
  - Program to set the brightness of the display ("PR/VR Brightness Control" or "DR/DE Brightness Control")
  - Program to set the display orientation ("PR/VR Orientation Setting")

- Tool to activate and deactivate Windows Autologon ("Windows Autologon")
- Sample scripts for the Windows IoT "Unified Write Filter"

3.1.2 Languages

The "Windows IoT Enterprise" display language is set to English by default. Change the display language under *"Settings → Time and language → Region and language"*. The following language packages are installed.

- English (default setting)
- German
- Spanish
- French
- Italian
- Portuguese
- Swedish

More language packages are stored on the recovery USB stick provided upon delivery. Languages can be installed as follows:

1. Connect the recovery USB stick to the USB port of the PR/VR device.
2. Press the "Windows key" and the "R-key" to open the "Run" dialog.
3. Enter "lpksetup" and press "OK".

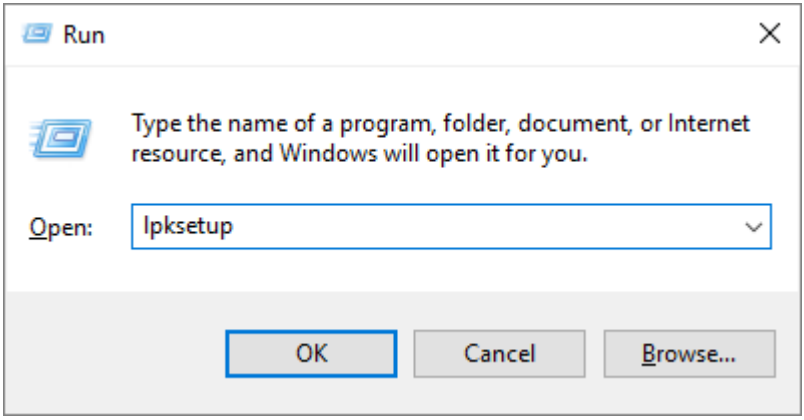


Fig. 3: Windows IoT Enterprise - Display language setup

4. Select the entry "Install display languages"

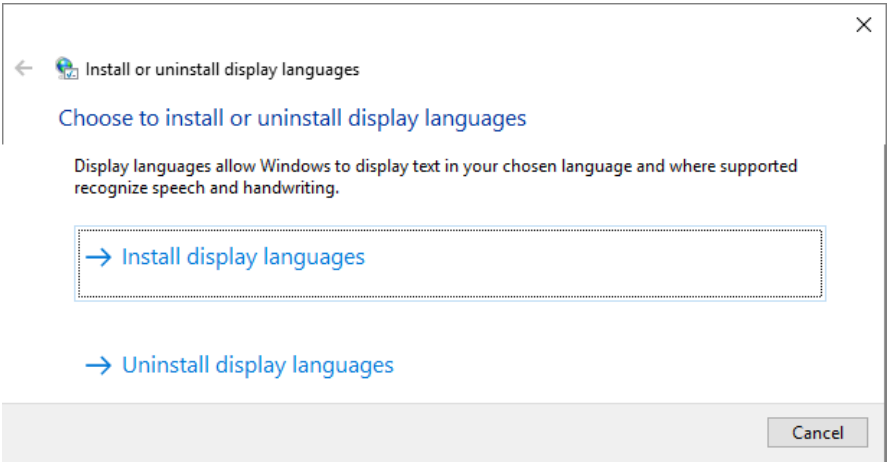


Fig. 4: Windows IoT Enterprise - Install display language

5. Select the file path of the recovery USB stick. Select the language in the folder "Win1xx Langpacks".

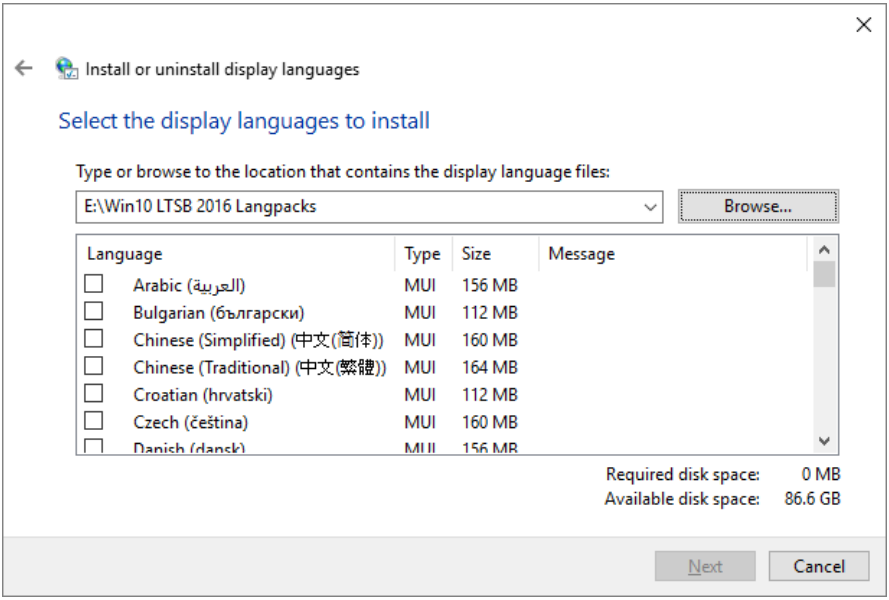


Fig. 5: Windows IoT Enterprise - Select display languages

6. Log off the system and log in again to apply the changed language setting.

3.1.3 Windows recovery

A USB recovery stick is included upon delivery of the PR/VR devices. The basic image can be restored using this USB recovery stick.

The basic image on the recovery USB stick does not replace the data backup required in case of device failure. We strongly recommend to use the data backup software "Acronis" that can be purchased separately.

Run the Windows recovery as described in the following:

1. Connect the recovery USB stick to the USB interface of the switched-off control cabinet PC.
2. Press the Reset button of the control cabinet PC for more than three seconds

   or

   directly press "F7" after switching on the device and select "UEFI: USB DISK 2.0 PMAP".

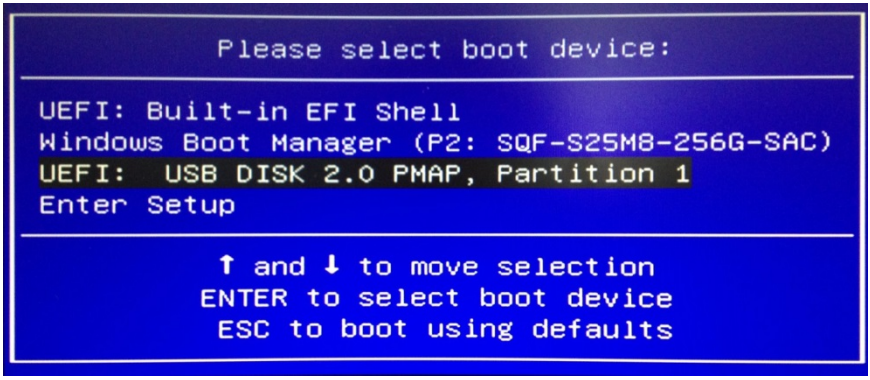


Fig. 6: Select boot partition for Windows recovery

3. Confirm the safety prompt with "Yes". The recovery starts.

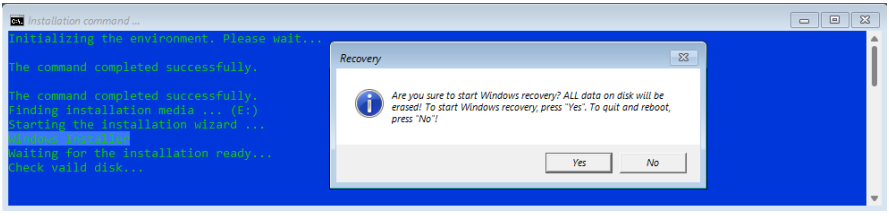


Fig. 7: Safety prompt for recovery

4. To end the recovery, select "Shutdown" or "Restart" to shut down or restart the control cabinet PC.

   ℹ After shutting down the control cabinet PC, remove the recovery USB stick!

   ℹ After restarting the control cabinet PC, the restored Windows operating system starts with an automatically elapsed setup process. Wait for this setup process until the computer completed booting.

3.1.4 Content of the recovery USB stick

There is the following data on the recovery USB stick in addition to the recovery system:

- Licensing terms of "Microsoft Windows 10 IoT Enterprise & Mobile (All Editions)"
- Release notes and revision history of the Windows image.
- More data folders:

Data folders	Content
\Win10 Langpacks	All available display language packages for Windows 10 IoT Enterprise.
\Rexroth\Plattform Drivers	All drivers in the Windows 10 image that are not part of the Windows setup.
\Rexroth\Software	Installation files of the additional Rexroth control cabinet PC software, e.g. "Dashboard".

3.2 Windows 10 IoT Enterprise LTSC 2019

3.2.1 Local users

The user "Rexroth" is created upon delivery. This user is automatically logged in upon device start.

Username	Password	Member of the user group	Autologon
Rexroth	Rexroth	Administrators	Active

NOTICE	Data misuse by insecure password
	The default user "Rexroth" and the password "Rexroth" provided upon delivery are intended for a facilitated commissioning. Immediately change the password of the standard user after commissioning.

3.2.2 Windows themes

The following Windows themes are available for different display formats and orientations:

Theme name	Display format
Rexroth	4:3 Landscape format (Landscape)
RexrothWS	16:9 Landscape format (Landscape)
RexrothWSP	9:16 portrait format (Portrait)

These Windows themes are displayed in the display properties as "Installed Themes". Go to the display properties to select the theme matching the connected display.

Start the "PR/VR Orientation Setting" tool to quickly and easily change the display orientation between 16:9 landscape and 9:16. This tool also applies the setting of the respective Windows theme.

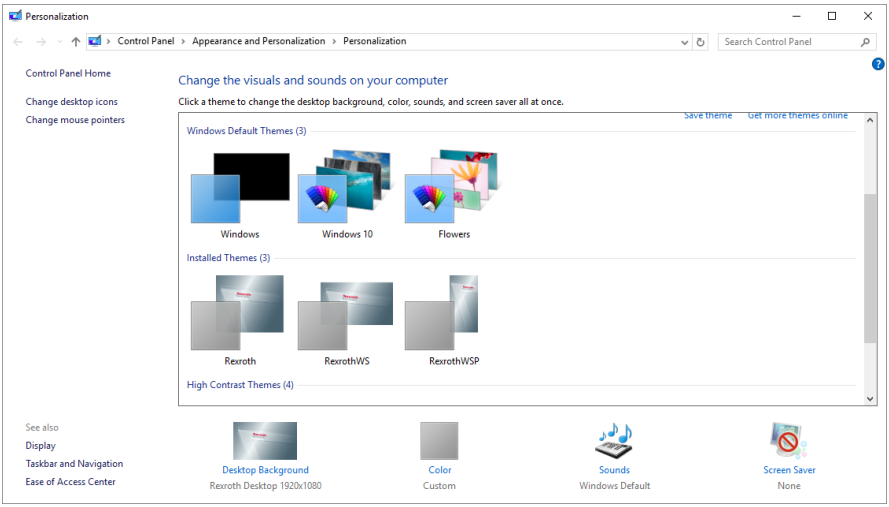


Fig. 8: Installed Windows themes and available Rexroth themes

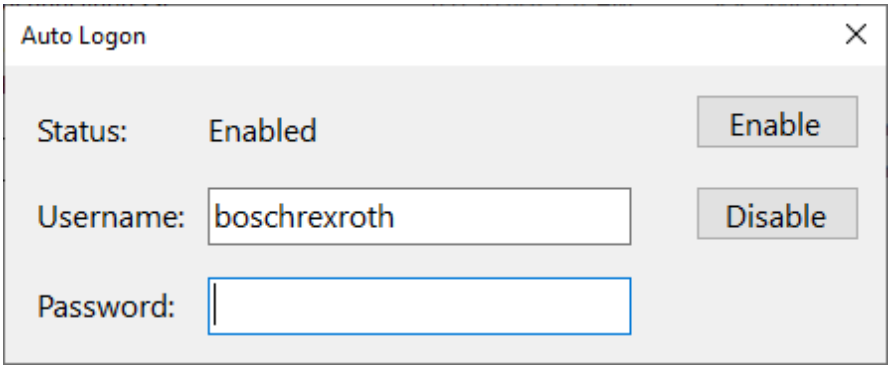
3.3 Windows 10 IoT Enterprise LTSC 2021

3.3.1 Local users

The user "boschexroth" is created upon delivery. During the first startup of the operating system, accept the Microsoft license terms and assign a new password. Follow the instructions of the operating system.

3.3.2 Setting up Autologon

To set up an Autologon for the desired user, please execute the "Autologon.exe" file from the "C:\Support\rexroth\" directory.



3.3.3 Windows themes

The following Windows themes are available for different display formats and orientations:

Theme name	Display format
Rexroth	4:3 Landscape format (Landscape)
RexrothWS	16:9 Landscape format (Landscape)
RexrothWSP	9:16 portrait format (Portrait)

These Windows themes are displayed in the Windows settings as "Installed Themes". Go to the Windows settings to select the theme matching the connected display.

Start the "PR/VR Orientation Setting" tool to quickly and easily change the display orientation between 16:9 landscape and 9:16. This tool also applies the setting of the respective Windows theme.

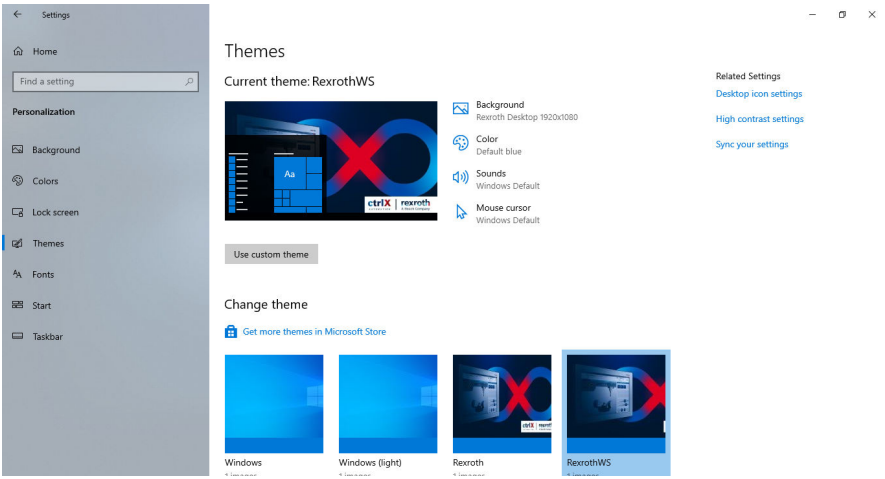


Fig. 9: Available themes

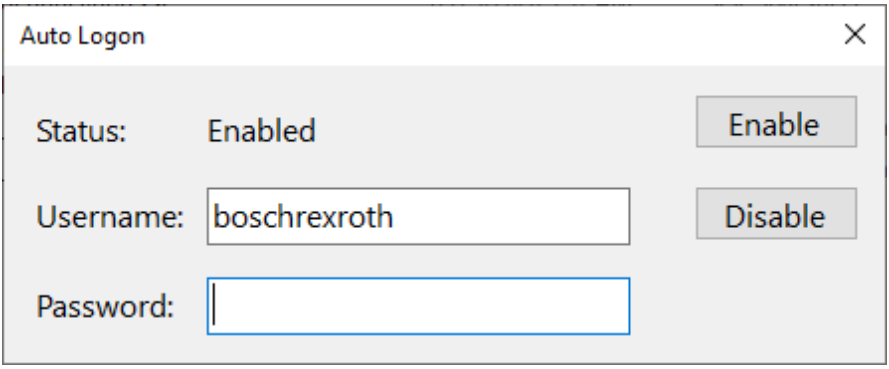
3.4 Windows 11 IoT Enterprise LTSC 2024

3.4.1 Local users

The user "boschexroth" is created upon delivery. During the first startup of the operating system, accept the Microsoft license terms and assign a new password. Follow the instructions of the operating system.

3.4.2 Setting up Autologon

To set up an Autologon for the desired user, please execute the file: C:\Support\rexroth\Autologon.exe.



3.4.3 Windows themes

The following Windows themes are available for different display formats and orientations:

Theme name	Display format
Rexroth	4:3 Landscape format (Landscape)
RexrothWS	16:9 Landscape format (Landscape)
RexrothWSP	9:16 portrait format (Portrait)

These Windows themes are displayed in the Windows settings as "Installed Themes". Go to the Windows settings to select the theme matching the connected display.

Start the "PR/VR Orientation Setting" tool to quickly and easily change the display orientation between 16:9 landscape and 9:16. This tool also applies the setting of the respective Windows theme.

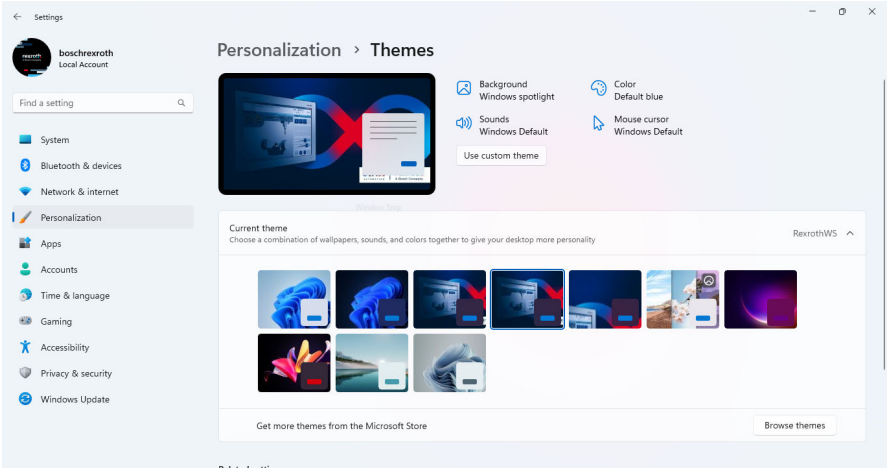


Fig. 10: Available themes

4 ctrlX IPC/HMI dashboard

The Windows images of the PR and VR devices contain the "ctrlX IPC/HMI-Dashboard". The ctrlX IPC/HMI dashboard can be used to display information on the devices and settings can be changed.

The dashboard software is also a part of the Windows service ("PRVR Dashboard Service") that runs the hardware monitoring cyclically.

To start the "ctrlX IPC/HMI Dashboard", go to *"Start → Rexroth → ctrlX IPC/HMI Dashboard"* ctrlX IPC/HMI Dashboard in the Windows start menu or click on the Desktop icon "ctrlX IPC/HMI Dashboard".

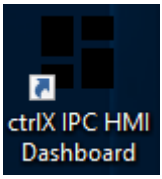


Fig. 11: Desktop icons "ctrlX IPC/HMI Dashboard"

4.1 Menu

After opening the ctrlX IPC/HMI dashboard, open the menu on the navigation in the dashboard in the upper left. The following figure shows the open menu to navigate in the dashboard.

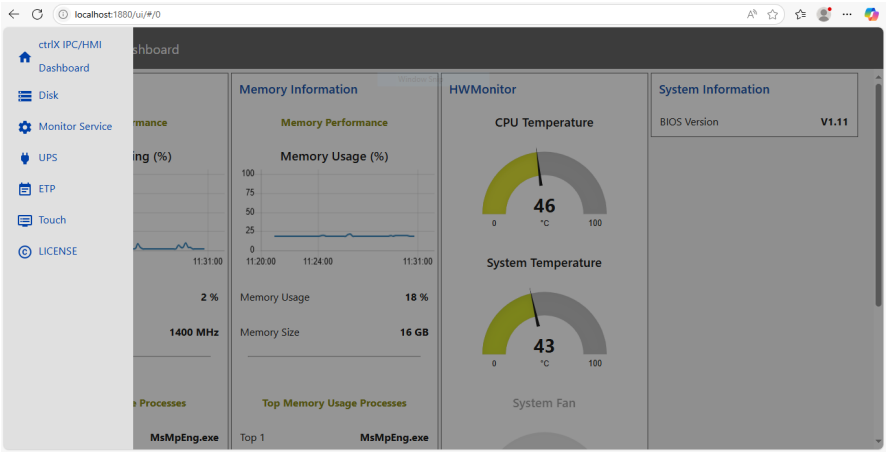


Fig. 12: Dashboard menu

Table 1: Menu structure of the dashboard

Dashboard menu items	Content
ctrlX IPC/HMI Dashboard	Display of the CPU information (CPU Information)
	Display of the memory information (Memory information)
	Display of the hardware monitor (HWMonitor)
	Display of the system information (System information)
Disk	Display of general information (General Information)
	Display of lifetime information (Lifetime Information)
	Display of additional data (Additional Information)

Dashboard menu items	Content
Monitor Service	Temperature monitoring (Temperature Monitor)
	Mass storage monitoring (Disk Monitor)
	UPS configuration (UPS Monitor)
	Electronic type plate - writing on user fields (ETP Monitor)
	Change password (System Password)
UPS	Display of the UPS status (Monitor Information)
	Display of the UPS status (Detail Information)
ETP	Display of the electronic type plate including user fields (Electronic Type Plate Information)
Touch	Display of touch information (Touch information)
	Disable touch to clean the screen (Touch Disable)
LICENSE	Display the "Free- and Open-Source-Software" used

4.2 Menu item "ctrlX IPC/HMI Dashboard"

In the "ctrlX IPC/HMI Dashboard" menu item, the current device state is clearly displayed.

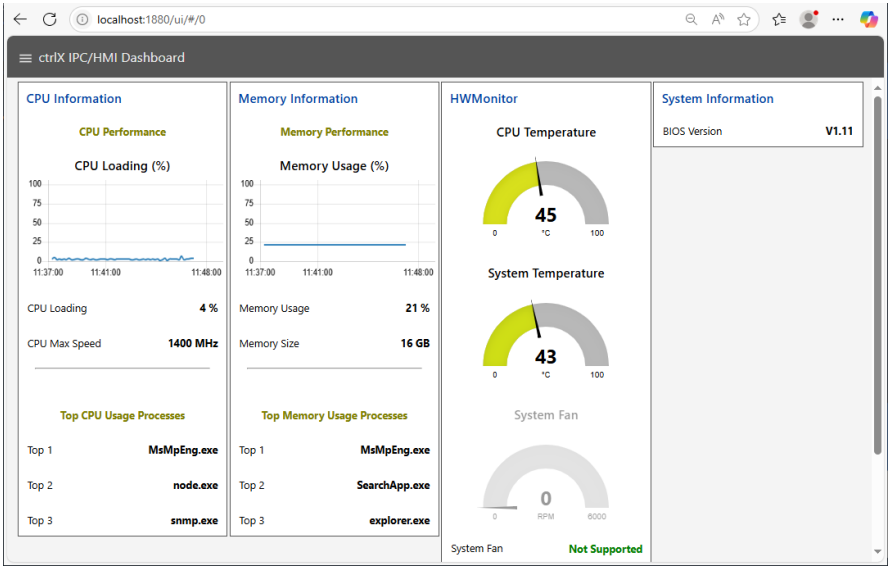


Fig. 13: Menu item "ctrlX IPC/HMI Dashboard"

Table 2: Processor information - CPU Information

Element	Description
CPU Loading (%)	Graphic display of the CPU load, average value of the last ten minutes
CPU Loading	Real-time display of the CPU load

Element	Description
CPU Max Speed	Real-time display of the maximum CPU speed
Top CPU Usage Processes	Display of the three Windows processes with the highest CPU load

Table 3: Memory information - Memory Information

Element	Description
Memory Usage (%)	Graphic display of the memory load, average value of the last ten minutes
Memory Usage	Real-time display of the memory load
Memory Size	Display of the available RAM
Top Memory Usage Processes	Display of the three Windows processes with the highest memory load

Table 4: Hardware monitoring - HWMonitor

Element	Description
CPU Temperature	Real-time display of the CPU temperature in °C
System Temperature	Real-time display of the system temperature in °C
VBAT	Real-time display of the CMOS battery voltage in V
Refresh Interval	Use the slider to set the interval between two messages. Adjustment range between 10 and 180 seconds. Default value: 10 seconds.

Table 5: System Information

Element	Description
BIOS Version	Display of the BIOS version
EC Version	Display of the embedded controller version of the IPC

4.3 Menu item "Disk"

The menu item "Disk" shows information on the installed mass memory.

Use the drop-down menu "Select Disk" to select the storage medium (SSD, M.2, CFast) on which information should be displayed if more than one storage medium is installed in the device. The first storage medium in the system is displayed as default medium.

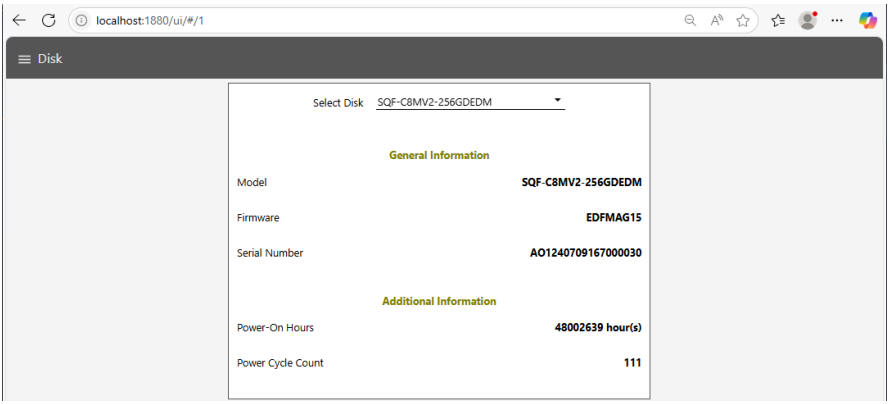


Fig. 14: Menu item "Disk"

Table 6: Basic data - General Information

Element	Description
Model	Display of the model name of the mass memory (SSD, M.2, CFast)
Firmware	Display of the firmware version of the mass memory (SSD, M.2, CFast)
Serial Number	Display of the serial number of the mass memory (SSD, M.2, CFast)

Table 7: Lifetime Information

Element	Description
Bad Block	Display of "Later Bad Blocks" of the mass memory (SSD, M.2, CFast)
Erase Count	Display of the "Erase Count" of the mass memory (SSD, M.2, CFast)
Life Remaining	Display of the "Health State" of the mass memory in % (SSD, M.2, CFast)

"Early bad block" are memory areas in the flash that were already marked as "bad block" during the initial manufacturing process. "Later bad block ", on the other hand, are memory areas that were only marked as "bad block" during normal device use (of the mass storage).

Table 8: Additional data - Additional Information

Element	Description
Power-On-Hours	Display of the operating hours of the mass memory (SSD, M.2, CFast)
Power Cycle Count	Display of the number of power-on and power-off processes of the mass memory (SSD, M.2, CFast)
Unexpected Power Loss Count	Display of the number of unexpected power failures (no standby command of the host at the controller) of the mass memory (SSD, M.2, CFast).
Temperature	Display of the current temperature of the mass memory (SSD, M.2, CFast)

Element	Description
Host Write	Number of the total amount of data written to the mass memory (SSD, M.2, CFast) by the host. The unit for SSD and M.2 is sector (512 bytes). The unit for CFast is MB.

4.4 Menu item "Monitor Service"

The menu item "Monitor Service" is password-protected. Upon delivery, the password is "Rexroth" and can be changed in the password-protected section of this menu item.

Due to safety reasons of the machine or the system, we strongly recommend to change the password during commissioning to ensure that there are unauthorized changes in the configuration or monitoring functions!

After entering the correct password, the following settings can be made:

- Configuring temperature monitoring
- Configuring mass memory monitoring
- Configuring UPS
- Write to both user fields in the electronic type plate
- Change the password of the dashboard for the section "Monitor Service".

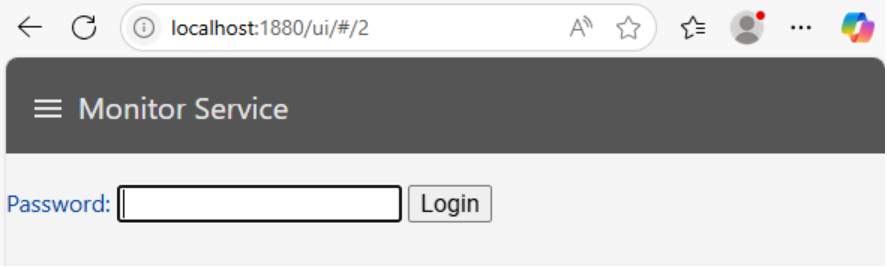


Fig. 15: Menu item "Monitor Service" – Password input

After entering the correct password, the section "Monitor Service" can be accessed.

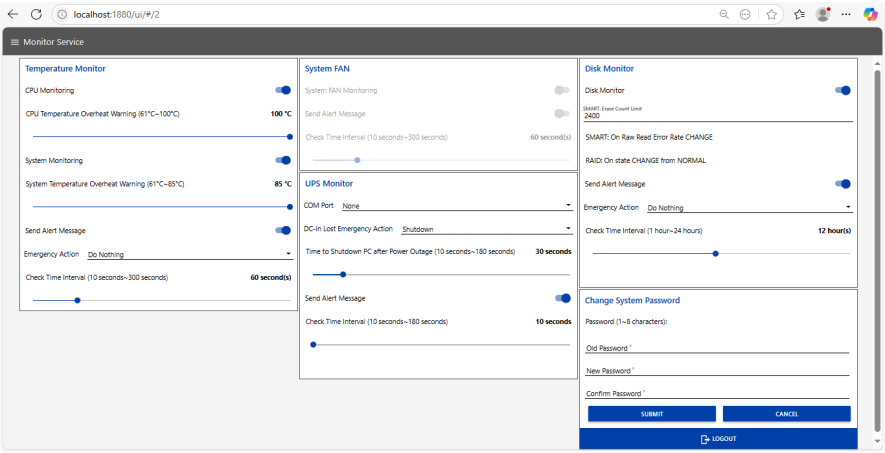


Fig. 16: Menu item "Monitor Service"

Table 9: Temperature monitoring - Temperature Monitor

Element	Description
CPU Monitoring	Switch to enable or disable the temperature monitoring of the CPU. Default setting: Enabled
CPU Temperature Overheat Warning	Slider to set the limit temperature of the processor above which a temperature warning should be issued. Adjustment range between 61 °C and 100 °C Default setting: 100 °C.
System Monitoring	Switch to enable or disable the temperature monitoring of the system. Default setting: Enabled
System Temperature Overheat Warning	Slider to set the limit temperature of the system above which a temperature warning should be issued. Adjustment range between −61 °C to 85 °C Default setting: 85 °C.
Send Alert Message	Switch to enable or disable warnings when the overtemperature of the CPU or the system is reached Default setting: Enabled
Emergency Action	Setting options whether an emergency action is to be executed when the overtemperature of the processor or system is reached, "Shutdown" or nothing results "Do nothing". Default setting: "Do Nothing"
Check Time Intervall	Slider to set the monitoring interval. The monitoring interval can be set between 10 and 300 seconds. Default setting: 60 seconds

Table 10: Mass storage monitoring – Disk Monitor

Element	Description
Disk Monitoring	Switch to enable or disable the mass memory monitoring. Default setting: Enabled
SMART: Erase Count Limit	Input of the "SMART Erase Count Limit" above which a warning is to be generated. Default setting: 2400
SMART: On Raw Read Error Rate CHANGE	If this value is not 0, a warning is generated.
RAID: On state CHANGE from NORMAL	A warning is displayed if the RAID state is not "NORMAL" in the RAID operation.
Send Alert Message	Switch to enable or disable warnings of the mass memory monitoring Default setting: Enabled
Emergency Action	Setting options whether an emergency action is to be executed in case of events of the mass memory monitoring, "Shutdown" or not executed "Do nothing". Default setting: Do Nothing
Check Time Interval	Slider to set the monitoring interval. Monitoring interval can be set between 1 and 24 seconds. Default setting: 12 hours

Table 11: UPS configuration - UPS Monitor

Element	Description
COM Port	Selection of the interface used to connect the UPS to the control cabinet PC. XCOM1 or XCOM2
DC-In Lost Emergency Action	Setting the action to be run upon power failure. Shutdown "Shutdown" or no action "Do Nothing". Default setting: "Shutdown"
Time to Shutdown PC After Power Outage	Slider to set the delay time between the failure of the UPS supply voltage and the triggering of the "DC-In Lost Emergency Action". Adjustment range between 10 and 180 seconds. Default setting: 30 seconds
Send Alert Message	Switch to enable or disable warnings of the UPS. Default setting: Enabled
Check Time Interval	Slider to set the monitoring interval of the UPS supply voltage. Adjustment range between 10 and 180 seconds. Default setting: 10 seconds

Table 12: Electronic type plate - user section – ETP Monitor

Element	Description
Select Element	There are two fields with 128 characters each available in the electronic type plate of the PR and VR devices to store information on the hardware, e.g. machine information. Selection of the user field ("User Info. 1" or "User Info. 2") to write in.
Input	Input field for data for the user field selected under "Select Element".
UPDATE	Select the "UPDATE" button to save data from the "Input" field.

Table 13: Password settings - System Password

Element	Description
Original Password	To change the password, enter the current password into this field. Default password upon delivery: Rexroth
New Password	Enter the new password. 8 characters max.
Confirm Password	Confirm the new password. Only if "New Password" and "Confirm Password" are identical, the new password can be saved.
SUBMIT	"Save" the new password
CANCEL	Cancel the password change and delete the input fields "New Password" and "Confirm Password".
LOGOUT	Logging out from the password-protected section "Monitor Service".

4.5 Menu item "UPS"

The state of the connected UPS is displayed in the menu item "UPS". If no UPS is connected, "Not Connected" is displayed.

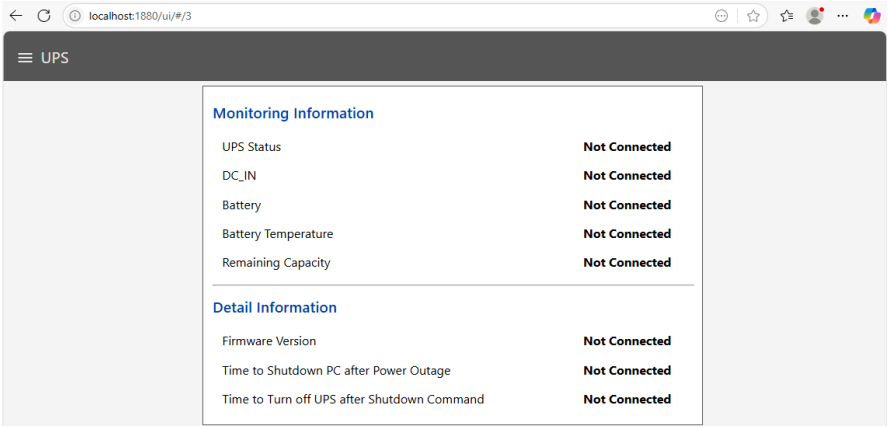


Fig. 17: Menu item "UPS" – UPS not connected

If a UPS is connected, status and device information on the connected UPS are displayed.

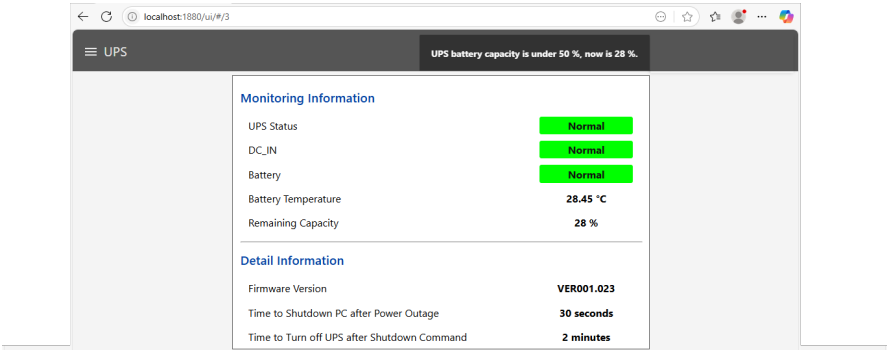


Fig. 18: Menu item "UPS" – UPS connected

Table 14: UPS state display - Monitoring Information

Element	Description
UPS Status	Display of the UPS status: • Normal (green) – UPS state without error • Critical (red) – UPS error or not connected
DC-IN	Display of the UPS input voltage: • Normal (green) – UPS input voltage present • Critical (red) – UPS input voltage failed
Battery	Display of the battery status: • Normal (green) – UPS battery status OK • Critical (red) – UPS battery error or not connected
Battery Temperature	Display of the UPS battery temperature
Remaining Capacity	Display of the battery capacity in percent

Table 15: UPS state display – Detail Information

Element	Description
Firmware Version	Display of the UPS firmware version
Time to Shutdown PC After Power Outtage	Display of the time set until the PC receives the shutdown signal after a power failure.
Time to Turn off UPS After Shutdown Command	Display of the UPS switch-off time after the PC send the signal for shutdown.

4.6 Menu item "ETP"

The electronic type plate of the control cabinet PC is displayed in the menu item "ETP".

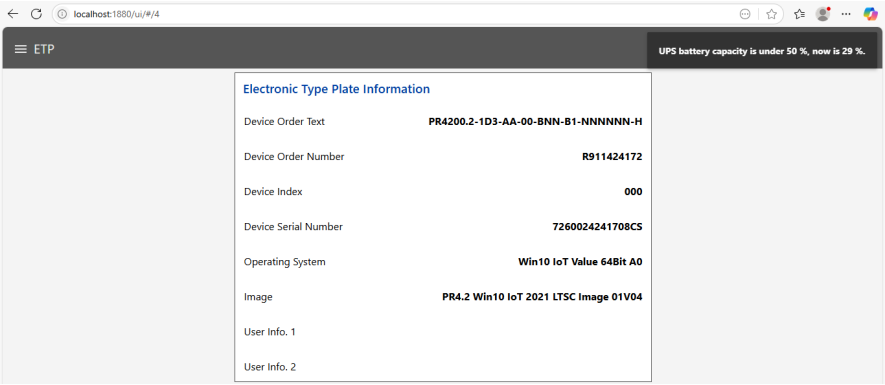


Fig. 19: Menu item "ETP"

Table 16: Electronic type plate – ETP

Element	Description
Device Order Text	Display of the type code of the device
Device Order Number	Display of the part number of the device
Device Index	Display of the change index of the device
Device Serial Number	Display of the serial number of the device
Operating System	Display of the operating system – Ordering information from type code
Image	Display of the image name and version
User Info. 1	Display of the content of the user field 1. The content can be changed in the "Monitor Servie".
User Info. 2	Display of the content of the user field 2. The content can be changed in the "Monitor Servie".

4.7 Menu item "Touch"

Information on the touch controller is displayed in the menu item "Touch". For cleaning, the touch can be disabled for 30 seconds.

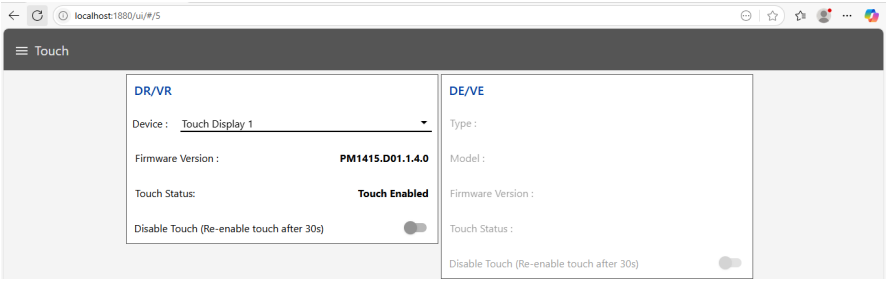


Fig. 20: Menu item "Touch"

Table 17: Touch

Element	Description
Device	Display of a touch device. Up to three external displays of the DR and DE series can be connected to and operated at a device of the PR series.
Firmware Version	Display of the firmware version of the touch device.
Status	Display of the status of the touch device. "Enabled" or "Disabled".
Touch Disable	Option to disable the touch for cleaning purposes. If the touch is disabled, it enables again automatically after 30 seconds.

Up to three external displays of the DR and DE series can be connected to the devices of the PR3 and PR4 series. Proceed as follows to assign a name to multiple displays:

1. Switch on the PR device.
2. Connect the first display and switch on the voltage supply. The name "Touch Display 1" is assigned to the first display.
3. Connect the second display and switch on the voltage supply. The name "Touch Display 2" is assigned to the second display.
4. Connect the third display and switch on the voltage supply. The name "Touch Display 3" is assigned to the third display.

4.8 Menu item "LICENSE"

The menu item "LICENSE" shows the licenses of the free and open source software of the device used. The respective component to display its license text is selected via the selection field "LICENSE".

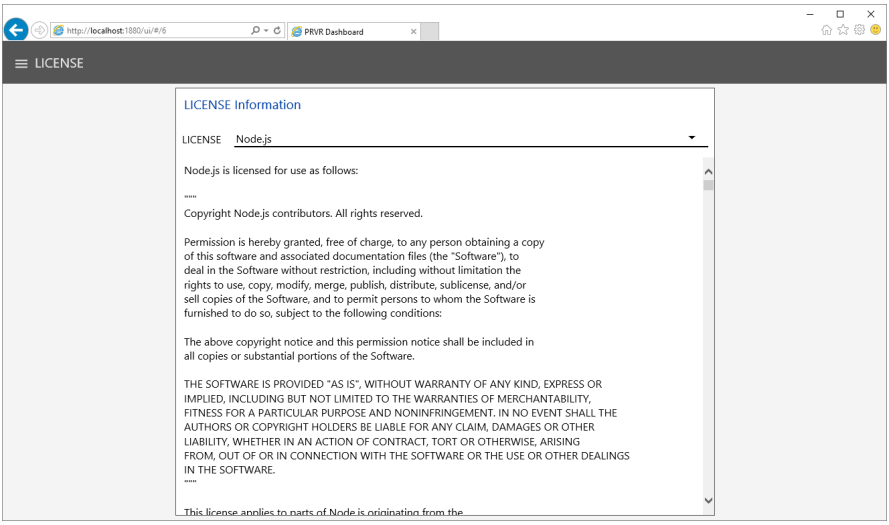


Fig. 21: Menu item "LICENSE"

5 PR and VR tools

5.1 Display orientation of the PR and VR panel PC

Upon delivery, the display orientation of the PR and VR panel PC is set to landscape format. Start the "PR/VR Orientation Setting" tool to change the display orientation to portrait format. For the tool, go to the Start menu under *"Start menu → Rexroth"*. The following settings can be changed using this tool:

1. Display orientation

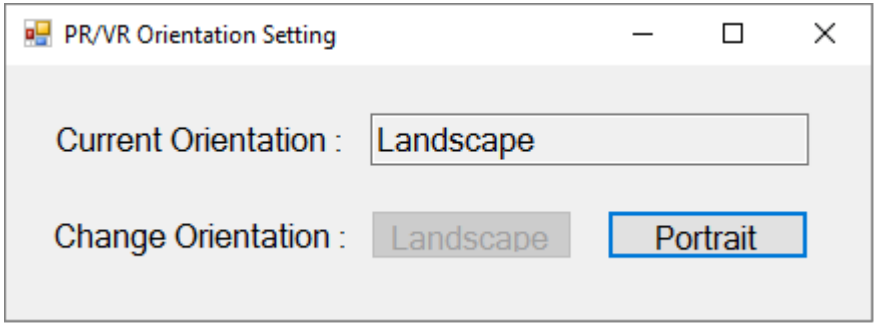


Fig. 22: PR/VR Orientation Setting

2. Windows theme

3. Themes of the Windows login screen

5.2 Display brightness on the VR Panel PC

Upon delivery, the display brightness is set to "9". To easily set the brightness of the screen, use the tool "PR/VR Brightness Control" in the start menu under *"Start → Rexroth"*.

1. Start the tool "PR/VR Brightness Control".
2. Move the slider to adjust the brightness.

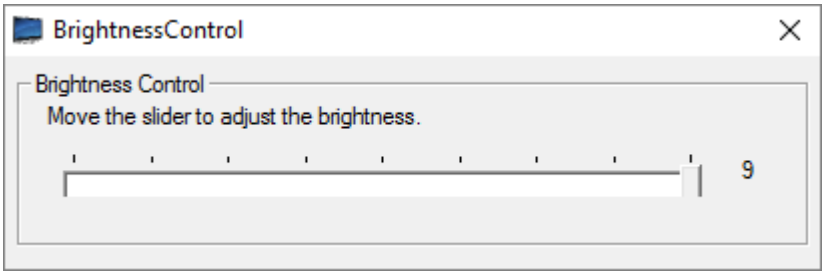


Fig. 23: PR/VR Brightness Control

The tool "PR/VR Brightness Control" is used to adjust the display brightness for panel PCs of the VR series. To adjust the display brightness at the DR and DE displays, use the tool "DR/DE Brightness Control".

5.3 Display brightness of DR and DE displays

Upon delivery, the display brightness of the external DR and DE displays is set to "9". To easily set the brightness of the screen, use the tool "DR/DE Brightness Control" in the start menu under *"Start → Rexroth"*.

1. Start the tool "DR/DE Brightness Control".
2. The brightness setting at the external display of the DR and DE series is addressed via a COM interface (Silicon Labs CP210x USB to UART Bridge (COM)). Select the respective COM interface of the external display. If multiple displays are connected, identify the respective display via the "Blink" button.

   Select the "Blink" button and the backlight of the external display connected to the selected COM interface flashes.

3. Use the slider to adjust the brightness level between 1 and 9.

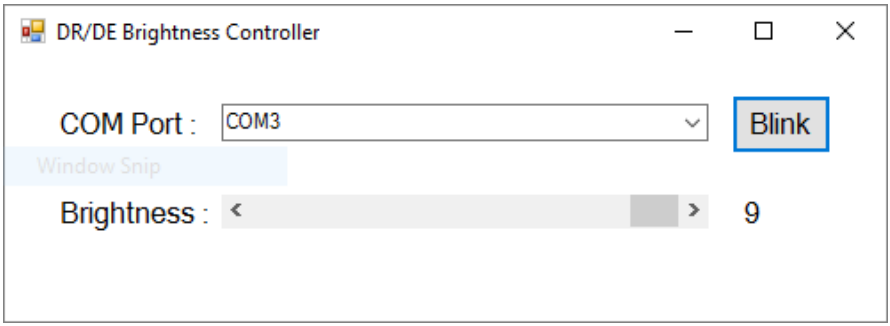


Fig. 24: DR/DE Brightness Control

Use the tool "DR/DE Brightness Control" to adjust the display brightness at the external displays of the DR and DE series. To adjust the display brightness at the panel PC, use the tool "PR/VR Brightness Control".

Up to three external displays of the DR and DE series can be connected to the devices of the PR3 and PR4 series. Proceed as follows to assign one COM interface to multiple displays:

1. Switch on the PR device.
2. Connect the first display and switch on the voltage supply. The interface "COM3" is assigned to the first display.
3. Connect the second display and switch on the voltage supply. The interface "COM4" is assigned to the second display.
4. Connect the third display and switch on the voltage supply. The interface "COM5" is assigned to the third display.

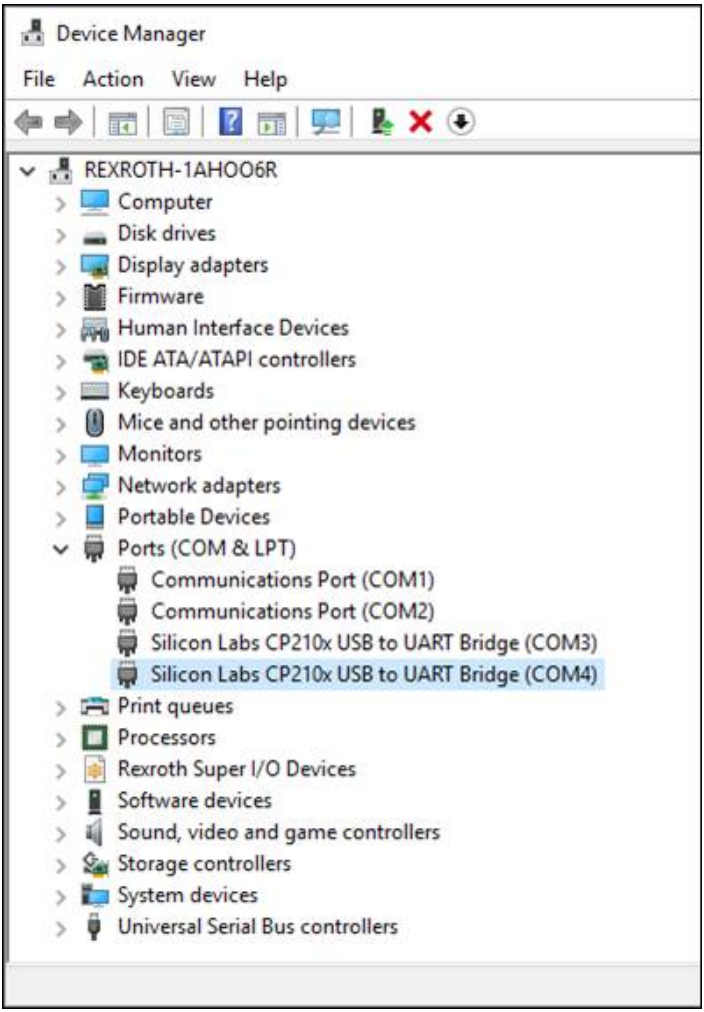


Fig. 25: Device manager if two DR and DE displays are connected

5.4 Backup software Acronis

In the operating system image of the devices (for PR4/VR4 with an image release ≥ 01V02), the backup software "Acronis True Image OEM" is included. To open the software, click on the Desktop icon "Acronis True Image OEM" or go to the "Acronis" start menu.

5.4.1 Acronis language

The default display language is English.

Selecting another language: *"Settings → Interface language"*

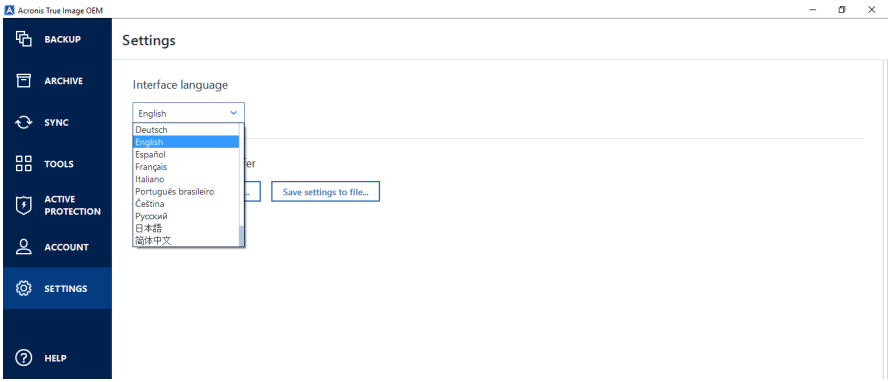


Fig. 26: Acronis language settings

5.4.2 Acronis help

The present description does not explicitly deal with the individual Acronis True Image OEM functions. For a detailed description, go to the Acronis online help. To open the online help, go to:

"Start Acronis → Select "Help" → Select "Open Help""

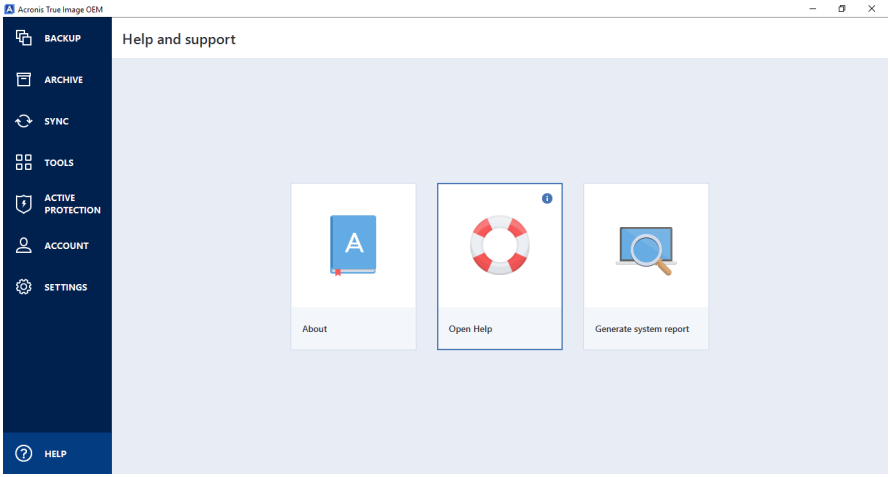


Fig. 27: Acronis interface – Help

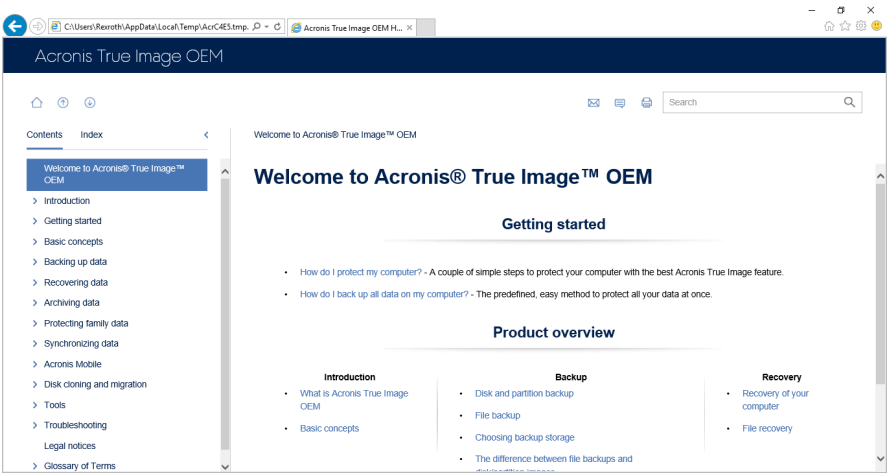


Fig. 28: Acronis – Help opened in the browser

The help text is displayed in the currently set language of the user interface.

6 Linux Ubuntu Core

The **PR2x** devices include the operating system "Linux Ubuntu Core" upon delivery.

6.1 Identifying the image version

The Ubuntu Core Image is identified using the file `/writable/system-image/etc/media-info`. Enter the command `cat /writable/system-image/etc/media-info` into the console to get the file content!

6.2 Local users

The user "boschrexroth" is created upon delivery.

Username	Password
boschrexroth	boschrexroth

As of Ubuntu Core 22, the password has to be changed upon the first login.

NOTICE	**Data abuse due to insecure password!**
	The default user "boschrexroth" and the password "boschrexroth" provided upon delivery are intended for a facilitated commissioning. Immediately change the password of the standard user after commissioning. Open the console with the command `passwd`. Enter the current password and then the new password twice.

Due to security reasons, an SSH remote access and a console login is not allowed for the "root" user!

If users require the "root" permission, they can be enabled temporarily using the "sudo" command!

6.3 Network configuration

6.3.1 Ubuntu Core 16

The networks are configured as follows upon delivery:

XF5	XF6
DHCP	IP: 192.168.0.1

Use the Netplan file `/etc/netplan/00-snapd-config.yaml` to configure the network.

For the network configuration listed in the table, the file content of the Netplan file is as follows, exemplarily shown for the DCHP and fixed IP addressing:

```
network:
  ethernets:
    enp1s0:
      dhcp4: true
    enp2s0:
      addresses:
        - 192.168.0.1/24
      nameservers:
        addresses:
          - 1.1.1.1
  version: 2
```

Fig. 29: PR21 standard Netplan file in Ubuntu Core 16

Use the editor "vi" to change the network configuration files. Open `sudo vi /etc/netplan/00-snapd-config.yaml` to edit the file.

6.3.2 Ubuntu Core 20

The networks are configured as follows upon delivery:

XF5	XF6
DHCP	IP: 192.168.0.1

Use the Netplan file `/etc/netplan/50-cloud-init.yaml` to configure the network.

For the network configuration listed in the table, the file content of the Netplan file is as follows, exemplarily shown for the DCHP and fixed IP addressing:

```
network:
  version: 2
  ethernets:
    eth0:
      addresses: []
      dhcp4: true
    eth1:
      addresses: [192.168.0.1/24]
      nameservers:
        addresses: [1.1.1.1]
```

Fig. 30: PR21 standard Netplan file in Ubuntu Core 20

6.3.3 Ubuntu Core 22

The networks are configured as follows upon delivery:

XF5	XF6
DHCP	IP: 192.168.0.1

Use the Netplan file `/etc/netplan/50-cloud-init.yaml` to configure the network.

For the network configuration listed in the table, the file content of the Netplan file is as follows, exemplarily shown for the DCHP and fixed IP addressing:

```
network:
  ethernets:
    eno1:
      addresses:
        - 192.168.0.1/24
      dhcp4: false
      nameservers:
        addresses:
          - 1.1.1.1
    eno2:
        dhcp4: true
    enp3s0:
        dhcp4: true
    version: 2
```

Fig. 31: PR21 standard Netplan file in Ubuntu Core 22

6.4 Linux recovery

A USB recovery stick is included upon delivery. The basic image can be restored using this USB recovery stick.

The basic image on the recovery USB stick does not replace the data backup required in case of device failure.

Run the Linux recovery as described in the following:

No network connection allowed during recovery. Remove possible plugged-in network connections!

1. Connect the recovery USB stick to the USB interface of the switched-off control cabinet PC.
2. Directly press "F7" after switching on the device and select "UEFI: USB DISK 2.0 PMAP".

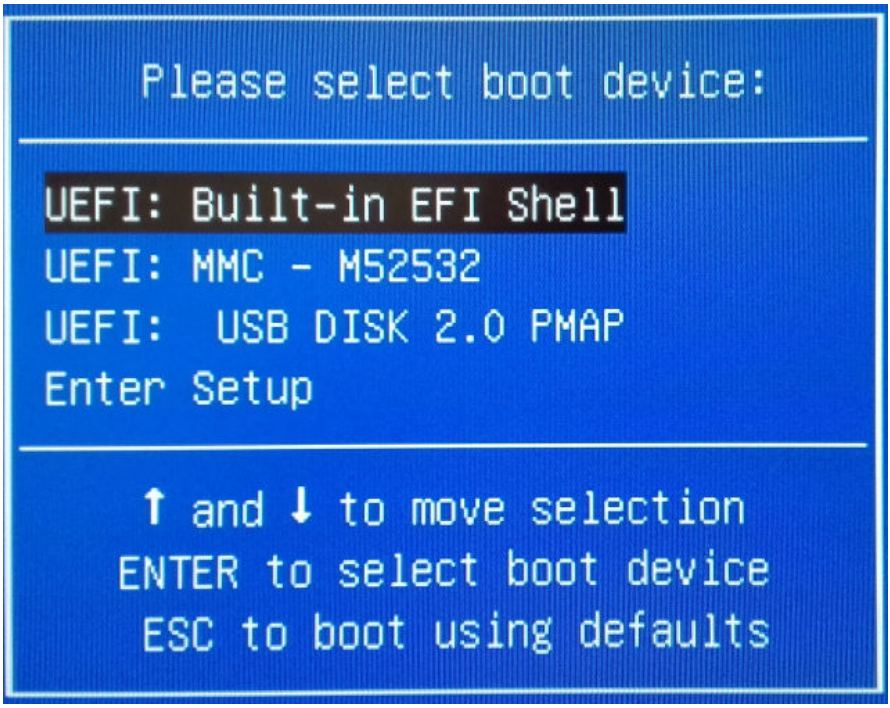


Fig. 32: "UEFI: USB DISK 2.0 PMAP"

3. Select "Recovery CD" in the displayed GRUB boot loader. Start the recovery system.
4. In the next screen "Ubuntu Core Installer", press "Yes" to start the recovery. After a successful recovery, the control cabinet PC shuts down automatically. Press Power to restart the control cabinet PC and for the initial start of the restored operating system. The operating system initializes the hardware upon the first start.

   After the successful recovery, the network connections can be restored.

7 Service and support

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Fax:	**+49 9352 18 4941**
Email:	➦ service.svc@boschrexroth.de
Internet:	➦ http://www.boschrexroth.com

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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)

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rexroth
A Bosch Company

Bosch Rexroth AG
Bgm.-Dr.-Nebel-Str. 2
97816 Lohr a.Main
Germany
Tel. +49 9352 18 0
Fax +49 9352 18 8400
www.boschrexroth.com/electrics



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