

# VPN Client App

Virtual Point-to-Point Connection Software for ctrlX CORE

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DOK-XCORE\*-VPN\*\*\*\*\*-AP03-EN-P

DC-IA/EPI5 (MiSc/PiaSt)

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# 1 About this documentation

## Editions of this documentation

Edition	Release date	Note
01	2020-06	First edition VPN Client App version VPN-V-0102
02	2021-07	Revision VPN Client App version VPN-V-0110
03	2021-11	Revision VPN Client App version VPN-V-0112

## 2 Important directions on use

### 2.1 Intended use

#### 2.1.1 Introduction

Rexroth products are developed and manufactured to the state-of-the-art. The products are tested prior to delivery to ensure operational safety and reliability.

#### **▲ WARNING**

#### **Personal injury and damage to property due to incorrect use of products!**

The products may only be used as intended.

Failure to use the products as intended may cause situations resulting in property damage and personal injury.

#### **NOTICE**

#### **Damages resulting from unintended use**

Rexroth As the manufacturer does not assume any warranty, liability or compensatory claims for damages resulting from unintended use of the products. The user alone shall bear the risks of an unintended use of the products.

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

- Personnel that in any way, shape or form uses Rexroth products must first read and understand the relevant safety instructions and be familiar with their intended use
- Leave hardware products in their original state, i.e., do not make any structural modifications. 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

Products of the ctrlX series are suitable for Motion/Logic applications.

#### **NOTICE**

Products of the ctrlX series may only be used with the accessories, mounting parts, and other components specified in this documentation. Components that are not expressly mentioned must neither be attached nor connected. The same applies to cables and lines.

Only to be operated with the hardware component configurations and combinations expressly specified and with the software and firmware specified in the corresponding documentations and functional descriptions.

Products of the ctrlX series are suitable for single-axis as well as for multi-axis drive and control tasks. Device types with different equipment and interfaces are available for using the system in specific applications.

Typical areas of application:

- Building automation
- IoT and Security Gateway or Device
- Handling & Robotic

Controls of the ctrlX CORE series may only be operated under the mounting and installation conditions, in the position of normal use and under the ambient conditions (temperature, degree of protection, humidity, EMC, etc.) specified in the related documentations.

## 2.2 Unintended use

"Unintended use" refers to using the ctrlX products outside of the above-mentioned areas of application or under operating conditions and technical data other than described and specified in the documentation.

ctrlX products must not be used if they are exposed to following conditions:

- Operating conditions that do not meet the specified ambient conditions. Operation under water, under extreme temperature fluctuations or under extreme maximum temperatures is prohibited
- Applications that have not been expressly authorized by Rexroth




## 3 Safety instructions

The Safety instructions contained in the available application documentation feature specific signal words (DANGER, WARNING, CAUTION or NOTICE) and, where required, a safety alert symbol (in accordance with ANSI Z535.6-2006).

The signal word is meant to draw the reader's attention to the safety instruction and identifies the hazard severity.

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.

The Safety instructions in this documentation are designed as follows:

 <b>DANGER</b>	In case of non-compliance with this safety instruction, death or serious injury <b>will</b> occur.
 <b>WARNING</b>	In case of non-compliance with this safety instruction, death or serious injury <b>could</b> occur.
 <b>CAUTION</b>	In case of non-compliance with this safety instruction, minor or moderate injury could occur.
<b>NOTICE</b>	In case of non-compliance with this safety instruction, property damage could occur.





## 4 Introduction and overview

### 4.1 VPN Client App

#### Function:

The VPN client app allows an easy and secure remote access to the production plant or to individual machines to configure them irrespective of the existing IT infrastructure. With this app, IPSec and OpenVPN connections can be created and configured. IPSec refers to a number of protocols for the key management and for authentication purposes and encryption. OpenVPN is an open source software to create Virtual Private Networks (VPN) using encrypted TLS connections.



#### VPN service provider

Bosch provides services for VPN connections. Please contact our customer service, see ↗ Chapter 7 “Service and support ” on page 19.

#### Further information

- ↗ Chapter 5.1.1 “Window – VPN” on page 11
- ↗ Chapter 5.2.1 “Editor – VPN <Name> ” on page 13



## 5 ctrIX UI – Elements


### 5.1 Windows

#### 5.1.1 Window – VPN


The VPN client app allows an easy and secure remote access to the production plant or to individual machines to configure them irrespective of the existing IT infrastructure.











**Call:**

ctrIX CORE side navigation “*Settings → VPN*”

If no VPN connection was created on the control, only the  Upload VPN configuration file and + Add VPN connection interfaces are displayed in the window. After uploading or adding a connection, the command bar and the table including the entry of the connection are displayed on the page.

#### Elements of the “VPN” window

GUI element	Description
Command bar “VPN”	“[x] item(s)” Number of listed connections  Upload the configuration file to ctrIX CORE To create an OpenVPN/IPSec connection, upload a configuration file to the device. The provider of the VPN server service usually provides the configuration file. The service provider creates the configuration. The configuration is based on information provided by the user of the VPN service. Select the configuration file in the Explorer window. The IPSec connection configuration consists of the configuration file (.conf) and the container file (.p12) with certificate and key. <b>The IPSec configuration file (.conf) has to be created in Swantcl format.</b> According to the configuration type, VPN type, IPSec or OpenVPN are set automatically during the upload. This setting can be changed manually if it is not written into the configuration file. <b>If the set VPN type does not correspond to the actual type upon upload, the connection cannot be created.</b>

GUI element	Description
	<p> Creating a non-configured connection. The dialog “Add connection” opens. While creating a connection, assign a unique name and the VPN type:</p> <ul style="list-style-type: none"> <li>• IPsec</li> <li>• OpenVPN</li> </ul> <p>Add or discard the connection with  or .</p> <p>To configure or rename the connection, open the configurator. To open the configurator, click on  “Edit” in the Actions column of the connection list.</p> <p><b>The IPsec configuration file (.conf) has to be created in Swantl format</b></p>
Table “Connection”	<p>“Connection”: Connection name</p> <hr/> <p>“Type” VPN type</p> <hr/> <p>“Connect autimatically” Automatically establish the connection upon control start. It can be enabled/disabled via  or .</p> <hr/> <p>“Actions” Includes buttons to edit or delete a connection. This is only possible in stopped state.</p> <p> Editing a connection. The VPN connection editor opens, see <a href="#">↔ Chapter 5.2.1 “Editor – VPN &lt;Name&gt; ”</a> on page 13.</p> <p> Deleting a connection.</p> <p> Load the VPN configuration file from the device to the local PC. In the opening dialog, select whether to save the file in the “Download” folder or to open it in the (text) editor.</p> <p> Starting the connection. The connection is set up as required for the respective configuration. The OpenVPN configuration file usually includes the certificates and keys as well. If this is not the case, a corresponding message is reported when the connection is started.</p>

GUI element	Description
	<p>If the certificates and keys belonging to the IPSec configuration were not uploaded to the control using the “Certificates &amp; Keys”, refer to the ctrlX CORE Runtime Application Manual →, chapter Managing certificates and keys→, a message is output when the connection is started: "The connection cannot be started due to missing access data (certificates, keys, etc.)."</p> <p><input type="checkbox"/></p> <p>Closing the connection</p>
	<p>“Status”</p> <p>Current connection status.</p> <p>When establishing the connection “Establish connection” is displayed. After the connection has been set up, but there has not yet been any response from the remote host, the status remains on “pending”. After the connection has been set up, the connection status changes to “connected”</p>


**Further information**

- → Chapter 4.1 “VPN Client App” on page 9
- → Chapter 5.2.1 “Editor – VPN <Name> ” on page 13






## 5.2 Editors

### 5.2.1 Editor – VPN <Name>

**Editing a connection**

The connection properties can be edited via the  interface in the window “VPN” in stopped state. If the connection is active, the connection properties are opened as read-only.

**Elements of the editor “VPN <Name>”**

GUI element	Description
Table “VPN <Name>”	<p>“Name *”: Editing the connection name</p> <p>“Connection configuration *” Editing the connection.</p> <p>In case of implemented changes, a prompt is displayed upon closing the editor by clicking on , asking the user whether or not the changes are to be saved. Click on  or  and the editor either saves or does not save the changes before closing. Click on  and the editor remains open. The changes are not saved. Click on  to save the changes and the editor is closed.</p> <p><b>The IPSec configuration file (.conf) has to be created in Swantcl format.</b></p> <p>The OpenVPN configuration file usually includes the certificates and keys as well. If this is not the case, a corresponding message is reported when the connection is started.</p>

GUI element	Description
	If the certificates and keys belonging to the IPSec configuration were not uploaded to the control using the “Certificates & Keys”, refer to the ctriX CORE Runtime Application Manual →, chapter Managing certificates and keys↗, a message is output when the connection is started: "The connection cannot be started due to missing access data (certificates, keys, etc.)."

**Further information**

- ↗ Chapter 4.1 “VPN Client App” on page 9
- ↗ Chapter 5.1.1 “Window – VPN” on page 11

## 6 Related documentation

### 6.1 Overview

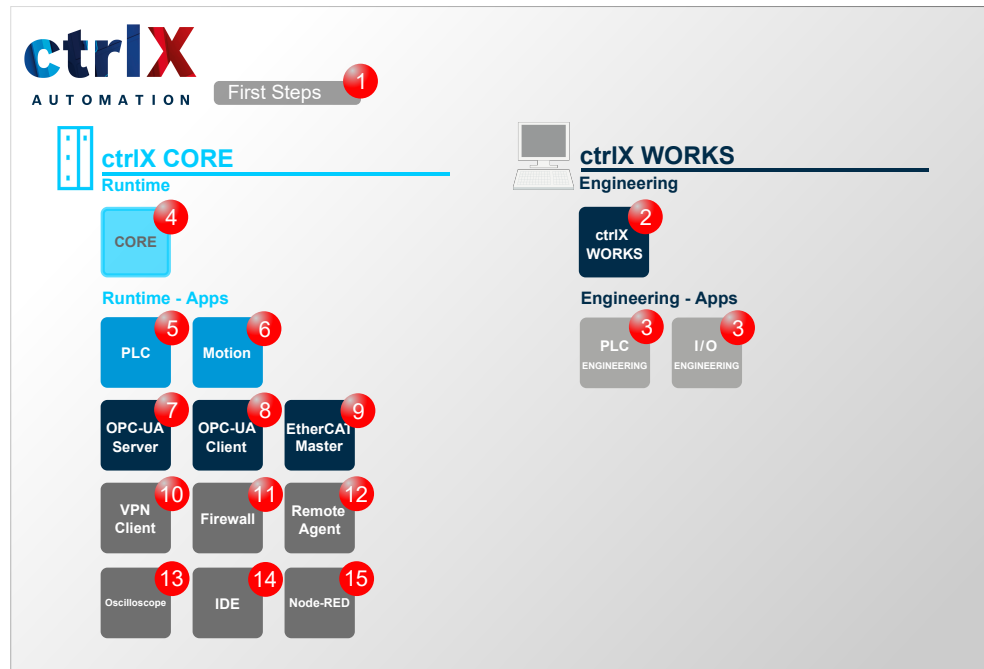


Fig. 1: Overview on further documentations

### 6.2 ctrlX AUTOMATION

No.	Documentation
1	<p><b>ctrlX WORKS First Steps</b></p> <p>Quick Start Guide</p> <p>↪ Web documentation link</p> <p>Ordering information:</p> <ul style="list-style-type: none"> <li>• DOK-XWORKS-F*STEP*****-QURS-EN-P</li> <li>• R911403760</li> </ul>

### 6.3 ctrlX WORKS

No.	Documentation
2	<p><b>ctrlX WORKS Basic System</b> Application Manual ↪ Web documentation link Ordering information:</p> <ul style="list-style-type: none"> <li>• DOK-XWORKS-*****-APRS-EN-P</li> <li>• R911403761</li> </ul>
3	<p><b>ctrlX PLC Engineering - PLC Programming System</b> Application Manual ↪ Web documentation link Ordering information:</p> <ul style="list-style-type: none"> <li>• DOK-XPLC**-ENGINEERING-APRS-EN-P</li> <li>• R911403764</li> </ul>
3	<p><b>ctrlX PLC Engineering - PLC Libraries</b> Reference ↪ Web documentation link Ordering information:</p> <ul style="list-style-type: none"> <li>• DOK-XPLC**-LIBRARY****-RERS-EN-P</li> <li>• R911403766</li> </ul>

## 6.4 ctrlX CORE

No.	Documentation
4	<p><b>ctrlX CORE - Runtime</b> Application Manual ↪ Web documentation link Ordering information:</p> <ul style="list-style-type: none"> <li>• DOK-XCORE*-BASE*****-APRS-EN-P</li> <li>• R911403768</li> </ul>
	<p><b>ctrlX CORE - Diagnostics</b> Reference ↪ Web documentation link Ordering information:</p> <ul style="list-style-type: none"> <li>• DOK-XCORE*-DIAG*****-RERS-EN-P</li> <li>• R911403770</li> </ul>

## 6.5 ctrlX CORE Apps

No.	Documentation
5	<p><b>PLC App - PLC Runtime Environment for ctrlX CORE</b> Application Manual ↪ Web documentation link Ordering information:</p> <ul style="list-style-type: none"> <li>• DOK-XCORE*-PLC*****-APRS-EN-P</li> <li>• R911403787</li> </ul>



No.	Documentation
6	<p><b>Motion App - Motion Runtime Environment for ctrlX CORE</b></p> <p>Application Manual  ↳ Web documentation link  Ordering information:</p> <ul style="list-style-type: none"> <li>● DOK-XCORE*-MOTION****-APRS-EN-P</li> <li>● R911403791</li> </ul>
7	<p><b>OPC UA Server App - OPC UA Server for ctrlX CORE</b></p> <p>Application Manual  ↳ Web documentation link  Ordering information:</p> <ul style="list-style-type: none"> <li>● DOK-XCORE*-OPCUA*SERV*-APRS-EN-P</li> <li>● R911403778</li> </ul>
8	<p><b>OPC UA Client App - OPC UA Client for ctrlX CORE</b></p> <p>Application Manual  ↳ Web documentation link  Ordering information:</p> <ul style="list-style-type: none"> <li>● DOK-XCORE*-OPCUA*CLIEN-APRS-EN-P</li> <li>● R911403781</li> </ul>
9	<p><b>EtherCAT Master App - EtherCAT master for ctrlX CORE</b></p> <p>Application Manual  ↳ Web documentation link  Ordering information:</p> <ul style="list-style-type: none"> <li>● DOK-XCORE*-ETHERCAT***-APRS-EN-P</li> <li>● R911403773</li> </ul>
10	<p><b>VPN Client App - Remote Support Software for ctrlX CORE</b></p> <p>Application Manual  ↳ Web documentation link  Ordering information:</p> <ul style="list-style-type: none"> <li>● DOK-XCORE*-VPN*****-APRS-EN-P</li> <li>● R911403775</li> </ul>
11	<p><b>Firewall App - Security Functions for ctrlX CORE</b></p> <p>Application Manual  ↳ Web documentation link  Ordering information:</p> <ul style="list-style-type: none"> <li>● DOK-XCORE*-FIREWALL***-APRS-EN-P</li> <li>● R911403783</li> </ul>
12	<p><b>Remote Agent App - ctrlX Device Portal connection for ctrlX Devices</b></p> <p>Application Manual  ↳ Web documentation link  Ordering information:</p> <ul style="list-style-type: none"> <li>● DOK-XCORE*-REMOTE*AG**-APRS-EN-P</li> <li>● R911403785</li> </ul>

No.	Documentation
<b>13</b>	<b>Oscilloscope App - Oscilloscope function for ctrlX CORE</b> Application Manual ➔ Web documentation link Ordering information: <ul style="list-style-type: none"><li>● DOK-XCORE*-OSCI*****-APRS-EN-P</li><li>● R911409806</li></ul>
<b>14</b>	<b>IDE App - Integrated Development Environment</b> Application Manual ➔ Web documentation link Ordering information: <ul style="list-style-type: none"><li>● DOK-XCORE*-IDE*****-APRS-EN-P</li><li>● R911410625</li></ul>
<b>15</b>	<b>Node-RED App - Graphical Programming for ctrlX CORE</b> Application Manual ➔ Web documentation link Ordering information: <ul style="list-style-type: none"><li>● DOK-XCORE*-NODE*RED***-APRS-EN-P</li><li>● R911403789</li></ul>

## 7 Service and support

Our worldwide service network provides an optimized and efficient support. Our experts provide you with advice and assistance. 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**  
Email:      ↪ [service.svc@boschrexroth.de](mailto: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)



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