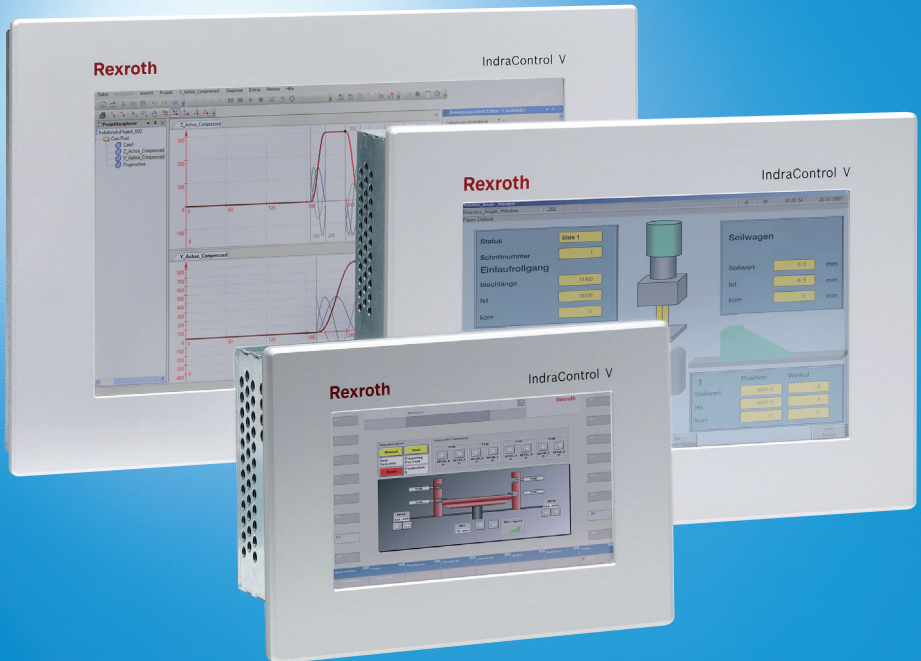


Rexroth IndraControl VR 21 Operating Panel

R9111339476
Edition 02

Operating Instructions



Record of Revision

Edition	Release Date	Notes
First edition	09.2013	--
Edition 02	04.2014	Revision

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Editorial Department

Development Automation Systems Control Hardware CV (KaWa/PiGe)

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1 About this Documentation

Overview – target groups and product phases

The activities, product phases and target groups that refer to the present documentation are marked in red color in the following figure.

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

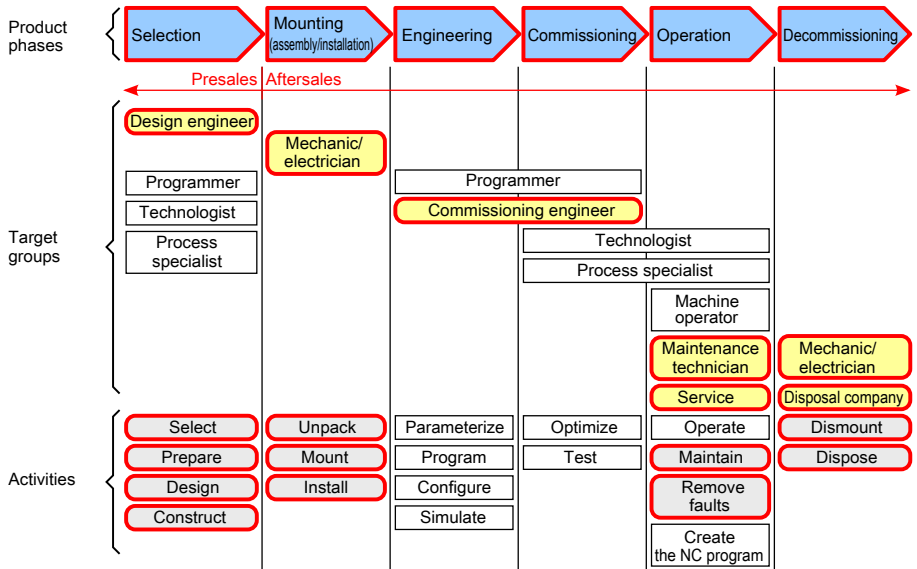


Fig. 1-1: Assigning the present documentation to the target groups, product phases and activities of the target group

Purpose

This document instructs the technical staff of the machine manufacturer on how to perform the mechanic and electrical installation in a safe way and on how to commission the device.

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

Scope

This document is valid for all variants whose type code starts with "VR21xx.01...".

The type code specifications are located on the type plate of the device, see also [chapter 2.1 "Product Identification" on page 2](#).

Further documents

Title	Part number and document type
Rexroth IndraControl VAP 01 Power Supply Unit	R911339613 Operating Instructions
Rexroth IndraControl V Devices Operating Systems	R911343901 Project Planning Manual

Tab. 1-1: Required and supplementing documentation

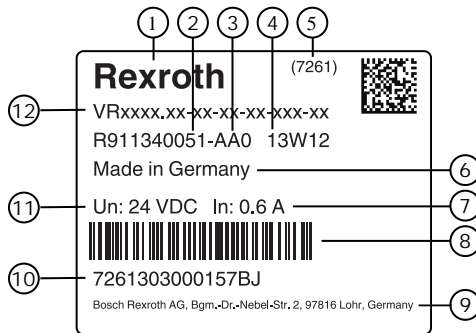
Customer feedback

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 Product Identification and Scope of Delivery

2.1 Product Identification

The type plate is located on the rear panel.



- | | | | |
|---|-----------------------------|----|-----------------------------------|
| 1 | Logotype | 7 | Nominal current |
| 2 | Part number | 8 | Serial number as barcode |
| 3 | State of revision | 9 | Company address |
| 4 | Date of manufacture (yyWww) | 10 | Serial number |
| 5 | Division or plant number | 11 | Nominal voltage |
| 6 | Designation of origin | 12 | Type code (type designation code) |

Fig. 2-1: Type plate IndraControl VR 21

2.2 Scope of Delivery

- Product insert "Safety and Warning Instructions"

- Six mounting brackets including tool
- 24 V female connector strip

3 Using the Safety Instructions

3.1 Safety Instructions – Structure

The safety instructions are structured as follows:

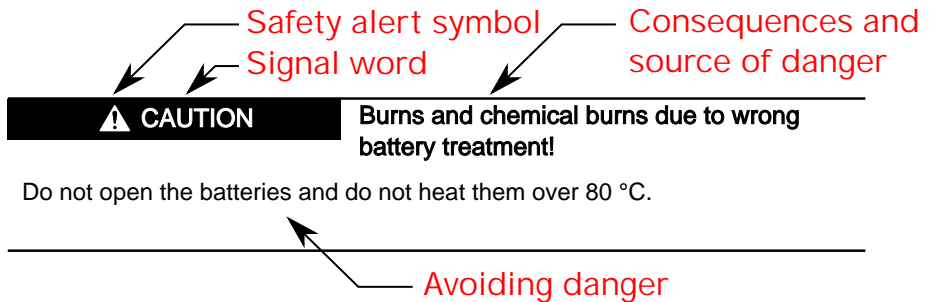


Fig. 3-1: Safety instructions – Structure

3.2 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).

The signal word is meant to draw the reader's attention to the safety instruction and signifies the degree of danger.

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 could occur.

NOTICE

In case of non-compliance with this safety instruction, property damage could occur.

3.3 Symbols Used

Notes are displayed as follows:



This is a note.

Tips are displayed as follows:



This is a tip.

4 Intended Use

The IndraControl VR 21 devices by Bosch Rexroth are machine operator panels that can, depending on the application, visualize control data and trigger functions at the machine.

NOTICE

Danger of destruction of the device if not expressly stated accessories, mounting parts and other components, cables, lines, software and firmware are used

The machine operator panels may be used only as intended and 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.

Operation must only be carried out with the hardware component configurations and combinations that are expressly specified and with the software and firmware indicated and specified in the respective documentation and functional descriptions.

Typical areas of application of the machine operator panels are:

- Handling systems and assembly systems

- Packaging and food processing machines
- Printing machines and paper converting machines
- Machine tools
- Wood processing machines

The machine operator panels may only be operated under the mounting and installation conditions, the position, and the ambient conditions (temperature, degree of protection, humidity, EMC etc.) specified in this documentation.

5 Spare Parts, Accessories and Wear Parts

5.1 External 24 V Power Supply Unit

Order code	Parts number	Description
VAP01.1H-W23-024-010-NN	R911171065	External 24 V power supply unit for the IndraControl V devices

Tab. 5-1: External 24 V power supply unit for the operating panel

5.2 Wear Parts

Wear parts are not subject to any warranty.

Backlight

The service life of the backlight is limited. After this time has been exceeded, the backlight will produce only 50 % of its original brightness. The service life of the following table refers to an ambient temperature of 25 °C.

Display size	Service life
107.95 mm (4.3")	40,000 hours
177.8 mm (7")	40,000 hours
228.6 mm (9")	70,000 hours

Tab. 5-2: Half-life period of the TFT displays

Touch screen

After 3 million touches, no damage or malfunction have occurred under the following conditions:

Touch element: R8, HS40 silicone rubber

Touch pressure: 150 g

Touch frequency: 3 Hz

6 Ambient Conditions

	In operation	Transport	Storage
Max. ambient temperature	+0 °C to +50 °C	-25 °C to +70 °C	
Humidity	Min. relative humidity: 20 % Max. relative humidity: 85 % Condensation not allowed	Min. relative humidity: 20 % Max. relative humidity: 75 % Condensation not allowed	Min. relative humidity: 20 % Max. relative humidity: 85 % Condensation not allowed
Air pressure	Up to 3000 m above sea level acc. to EN 61131-2		
Mechanical strength	Max. vibration: Frequency range: 10 Hz to 150 Hz Excursion: 0.075 mm at 10 Hz to 57 Hz Acceleration: 1 g at 57 Hz to 150 Hz acc. to EN 600068-2-6	Max. shock: 15 g 11 ms acc. to EN 60068-2-27, no disturbance of the function	
Contamination level	2		
Overvoltage category	3	-	

Tab. 6-1: Ambient conditions

7 Technical Data

7.1 VR 21 Singletouch

	VR2104 Singletouch	VR2107 Singletouch	VR2109 Singletouch
Display	107.95 mm TFT (4.3") 480 × 272 pixels 65536 colors Brightness 450 cd/m ² Display 53,8 × 95 (H × B)	177.8 mm TFT (7") 800 × 480 pixels 262144 colors Brightness 350 cd/m ² Display 91.4 × 152.4 (H × B)	228.6 mm TFT (9") 800 × 480 pixels 16.77 million colors Brightness 360 cd/m ² Display 117 × 195 (H × B)
Touch technology	Analog resistive, 4-wire technology		
Touch activation pressure	15 g (standard) with R8 HS60 silicone rubber		
Housing	Sheet steel, zinc-coated		

	VR2104 Singletouch	VR2107 Singletouch	VR2109 Singletouch
Front panel material	Aluminium, brushed, naturally anodized		
Enclosure rating	Front panel IP 65 according to DIN EN 60 529, rear side IP 20		
Central processing unit	ARM Cortex™-A8, 800 MHz with real-time clock		
Flash memory	256 MByte		
LPDDR memory	512 MByte		
Voltage supply	DC 24 V (use a 24 V power supply unit according to DIN EN 60742, classification VDE 0551, for example the power supply unit VAP01.1H-W23-024-010-NN, part number R911171065)		
Current consumption	0.2 A (typically at 24 V) 0.3 A (maximum)	0.3 A (typically at 24 V) 0.4 A (maximum)	0.6 A (typically at 24 V) 0.7 A (maximum)
Connection value	4.8 W	7.2 W	14.4 W
Fuse	Semiconductor fuse, resettable		
Reverse voltage protection	Integrated		
USB	Per USB port max. 500 mA, total current at all USB ports is max. 1 A.		
Weight	Approx. 0.6 kg	Approx. 0.8 kg	Approx. 1.3 kg

Tab. 7-1: Technical data of the VR 21 Singletouch

7.2 VR 21 Multitouch

	VR2107 Multitouch	VR2109 Multitouch
Display	177.8 mm TFT (7") 800 × 480 pixels 262144 colors Brightness 350 cd/m ² Display 91.4 × 152.4 (H × B)	228.6 mm TFT (9") 800 × 480 pixels 16.77 million colors Brightness 360 cd/m ² Display 117 × 195 (H × B)
Touch technology	Projected capacitive, can be operated with finger	
Touch activation pressure	15 g (standard) with R8 HS60 silicone rubber	
Housing	Sheet steel, zinc-coated	
Front panel material	Aluminium, brushed, naturally anodized	
Surface of the front panel	Glass	
Enclosure rating	Front panel IP 65 according to DIN EN 60 529 Rear panel IP 20	
Central processing unit	ARM Cortex™-A8, 800 MHz with real-time clock	
Flash memory	256 MByte	
LPDDR memory	512 MByte	

	VR2107 Multitouch	VR2109 Multitouch
Voltage supply	DC 24 V (use a 24 V power supply unit according to DIN EN 60742, classification VDE 0551, for example the power supply unit VAP01.1H-W23-024-010-NN, part number R911171065)	
Current consumption	0.4 A (typically at 24 V) 0.5 A (maximum)	0.7 A (typically at 24 V) 0.8 A (maximum)
Connection value	9.6 W	16.8 W
Fuse	Semiconductor fuse, resettable	
Reverse voltage protection	Integrated	
USB	Per USB port max. 500 mA, total current at all USB ports is max. 1 A.	
Weight	Approx. 0.8 kg	Approx. 1.3 kg

Tab. 7-2: Technical data of the VR 21 Multitouch

8 Standards

8.1 General Information

The products have been developed according to the current German edition of the standards at the time of product development.

8.2 Used Standards

Standard	Meaning
DIN EN 61000-4-2, DIN EN 61000-4-3 DIN EN 61000-4-4, DIN EN 61000-4-5 DIN EN 61000-4-6, DIN EN 61000-6-2	Noise immunity
DIN EN 61000-6-3	Interference emission
DIN EN 61131-2	Equipment requirements
DIN EN 61131-2	Storage and transport
DIN EN 61131-2	Power supply
2004/108/EC	Electromagnetic compatibility
DIN EN 60529	Degrees of protection
DIN EN 60068-2-27	Impact load, shock
DIN EN 60068-2-6	Sinusoidal vibrations

Tab. 8-1: Used Standards

8.3 CE Marking

8.3.1 Declaration of Conformity



The electronic products that are described in the present instructions, comply with the requirements and the target of the following EU directive and with the following harmonized European standards:

EMC Directive 2004/108/EC

The electronic products described in the present instructions are intended for use in industrial environments and comply with the following requirements:

Standard	Title	Edition
DIN EN 61131-2	Programmable logic controllers	2008+B1:2010
DIN EN 61000-6-2	Electromagnetic Compatibility (EMC) Part: 6-2: Generic standards – Immunity for industrial environments	2006+B1:2011
DIN EN 61000-6-3	Electromagnetic Compatibility (EMC) Part: 6-3: Generic standards - Emission standard for residential environments	2007+A1:2011

Tab. 8-2: Standards for electromagnetic compatibility (EMC)



Non-compliance with CE conformity due to modifications to the device.

The CE marking is only valid for the device in its delivery status. After having modified the device, the CE conformity is to be verified.

8.4 UL/CSA Certified



The devices are certified according to

- **UL508** (Industrial Control Equipment) and
- **C22.2 No. 142-M1987** (CSA)

UL file no. E210730

However, there can be combinations or extension stages with limited or missing certification. Thus, verify the registration according to the UL marking on the device.

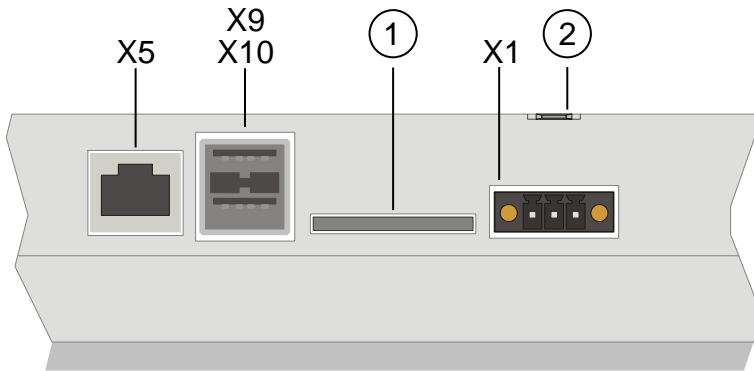


Loss of UL/CSA conformity due to modifications to the device.

The UL and CSA marking is only valid for the device in its delivery status. After modifying the device, the UL and CSA conformity is to be verified.

9 Interfaces



9.1 Interface View



- ① SD memory card
- ② Functional earth ground

Fig. 9-1: IndraControl VR 21 interfaces

9.2 Interface Overview

Designation at the housing	Connection type	Connector type, integrated	Mating connector or cable (from outside)
X1	DC-24-V voltage supply	3-pin, Phoenix MINI COMBICON	3-pin, FK-MCP 1,5/3-ST-3,5
X9, X10 USB host	2 USB interfaces	USB female connector, 4-pin, type A	USB connector, 4-pin, type A
X5	Ethernet 10/100 Base-T	RJ45 female connector	RJ45 connector
 Functional earth ground	Functional earth ground	Tab connector	Receptacle
 SD memory card	SD and SDHC memory card slot	-	-

Tab. 9-1: Interfaces

NOTICE**Malfunions due to insufficient shielding!**

Use only shielded cables and metallic or conductive connector/coupling covers with large-area shield support.

9.3 DC 24 V Voltage Supply

Cables with a cross section of 0.75 to 2.5 mm² can be connected to the connection terminal.

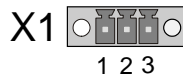



Fig. 9-2: Power supply connector X1

Pin	Designation	Function
1		Low-noise earth, functional earth (FE)
2	0 V	Supply voltage 0 V (GND)
3	24 VDC	24 VDC supply voltage

Use a 24 V industrial power supply unit acc. to DIN EN 60742, classification VDE 0551, for example "VAP01.1H-W23-024-010-NN" (parts number R911171065) for the voltage supply.

9.4 USB Interfaces X9, X10

Two USB host interfaces are available at the operating device.

Operation of the USB ports at the operating device

When using input devices not intended for industrial use (e.g. keyboard, mouse), the operational safety is limited. Input devices intended for home or office use are also part of the devices not intended for industrial use.



Connect only USB devices that meet the USB2.0 specification.



For the specification of a suitable cable, refer to "Universal Serial Bus Specification Rev. 2.0".

The max. cable length is 2.5 m.



Not all USB devices are recognized.

The operating system does not support all USB devices. Devices that require a special USB driver, which is not integrated in the system, cannot be operated at the USB interfaces.

9.5 Ethernet Interface X5

A 10/100Base-T Ethernet interface is provided at the operating device.



Use a twisted-pair cable of category 5 or 6 (CAT 5 or 6). The max. cable length is 100 m.

Ethernet interface – Status and diagnostic displays

LED ACT/LNK (green)

- On: Connection to network is available
- Off: No connection
- Flashing: Communication is running

LED SPD 10/100 (yellow)

- On: 100 MBit/s mode
- Off: 10 MBit/s mode or connection disconnected

9.6 Slot for SD Memory Card

An SD card can be inserted at the bottom of the operating device.



When using hardware not intended for industrial use (e.g. keyboard, mouse, memory card) in an industrial environment, the operational safety is limited. Hardware intended for home or office use is also part of the devices not intended for industrial use.

Inserting the memory card

Insert the memory card with the front facing the top. Insert the card until the memory card engages.

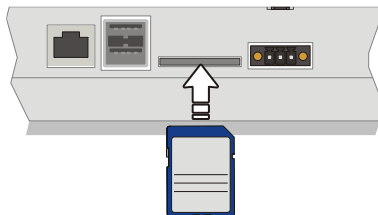


Fig. 9-3: Inserting the memory card

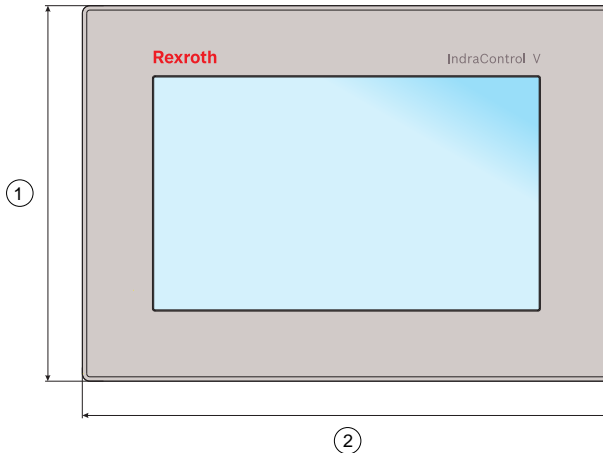
Removing the memory card

Insert the memory card in the operating device until it engages. Remove the unlocked memory card.

10 Assembly, Disassembly and Electrical Installation

10.1 Housing Dimensions

10.1.1 Front View



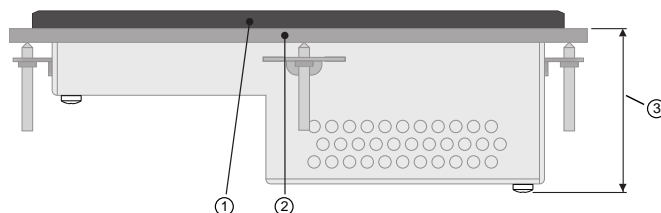
①, ② See the following table

Fig. 10-1: IndraControl VR 21 front view

Device	Height	Width
VR2104	100 mm	140 mm
VR2107	150 mm	211 mm
VR2109	178 mm	263 mm

Tab. 10-1: Front dimensions

10.1.2 Overview of Housing Dimensions - Side View



- ① Front panel
 ② Mounting surface 1 to 6 mm
 ③ See the following table for mounting depth

Fig. 10-2: Side view (sample illustration)

Type code	Display	Mounting depth
VR2104.01-00-01-N2-NNN-AA	4,3"	42 mm
VR2107.01-00-01-N2-NNN-AA	7"	46.3 mm
VR2107.01-00-01-N2-NNN-CA		
VR2109.01-00-01-N2-NNN-AA	9"	52.3 mm
VR2109.01-00-01-N2-NNN-CA		

Tab. 10-2: Mounting depth

10.2 Installation Notes



A clearance of at least 30 mm has to be complied with during the assembly to ensure sufficient free air conditions.



During the horizontal mounting of the operating device, note that heat can accumulate below the operating device due to additional heat sources. Provide sufficient heat dissipation! Comply with the permissible temperature range specified in the technical data for the operation of the operating device!



To guarantee the specified degree of protection, ensure that the seal is positioned flat on the mounting surface and that the threaded pins of the mounting brackets are uniformly tightened. Comply with the maximum torque of 1 Nm.



Loss of degree of protection IP 65!

The housing in which the operator display is installed, has to fulfil the following conditions:

- Free from impurities
- Sufficient mechanical strength and flatness

These criteria influence the required degree of protection IP to a great extent.

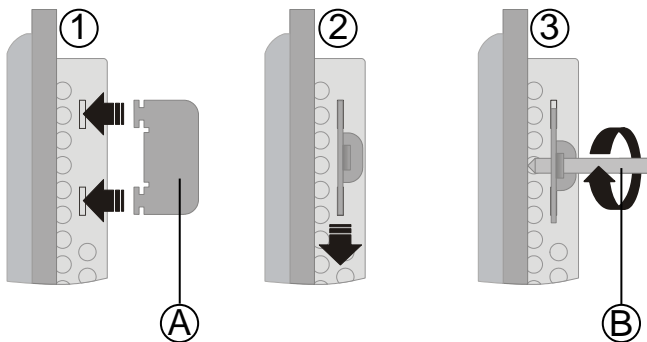
Further required measures are to be taken depending on the mounting location, e. g. the stabilization of the mounting frame.

10.3 Mounting Cut-Out

The device facilitates quick and easy mounting of the rear of the device. A wall thickness of 1 mm to 6 mm is permissible and ensure a correct assembly.

Assemble the operating device as follows:

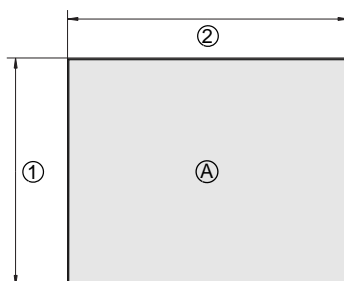
1. Creating a mounting cut-out, see [chapter 10.4 "Mounting Dimensions" on page 16](#).
2. Insert the device in the mounting cut-out.
3. Position the mounting brackets in the provided cut-outs (①) and pull the mounting brackets down until they engage (②).
4. Fix the device using threaded pins (③).



- Ⓐ Mounting bracket
Ⓑ Threaded pin

Fig. 10-3: Installing the mounting brackets

10.4 Mounting Dimensions



A Mounting cut-out

Fig. 10-4: Mounting cut-out

Device		
VR2104	92 mm	132 mm
VR2107	142 mm	203 mm
VR2109	170 mm	255 mm

Tab. 10-3: Housing dimensions: IndraControl VR 21 front

10.5 Disassembly

1. Disconnect the operating device.
2. Remove all connected cables
3. Loosen the threaded pins of the mounting brackets.
4. Remove the operating device from the mounting frame.

10.6 Electrical Wiring

10.6.1 Connecting the Supply Voltage

The supply voltage is supplied via the X1 male connector strip. A compatible female connector strip is part of the delivered product. The permissible supply voltage for the operating device is specified in the technical data.



The device is equipped with a reverse voltage protection. The device is not operated in case of an incorrect polarity.



This device is an item of degree of protection III. To ensure safe operation, use a safety extra-low voltage (SELV) according to DIN EN 61131 for the supply voltage.



Use a cable with finely stranded cores with a minimum cross section of 0.75 mm^2 and a maximum cross section of 2.5 mm^2 for the supply voltage. Comply with the following torques at the connectors:

- Screw terminal of the terminals: 0.22 Nm (minimum) up to 0.25 Nm (maximum)
- Bolt flange: 0.3 Nm (maximum)

⚠ WARNING

Danger of electric shock due to electrical voltage.

- Only connect power supply units as power supply with safe isolation according to DIN EN 50178 with PELV voltage according to DIN EN 61131-2. Establish permanent protective earth conductor connections.

Connect the supply voltage as described in the following:

1. Strip the oversheath of the cable to a length of 30 mm and the cores to a length of 5 mm.

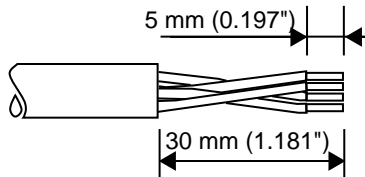


Fig. 10-5: Bared cable - Supply voltage

2. Provide the cores with wire end sleeves and connect the cores to the female connector strip.
3. Plug the female connector strip on the X1 connector strip at the operating device.
4. Protect the female connector strip against disengaging using screw-locking.

10.6.2 Connecting the Functional Earth (FE)

A receptacle is using for the functional earth.

1. Strip the line to a length of 5 mm.
2. Use a receptacle for the bared line.
3. Position the receptacle on the tab connector.

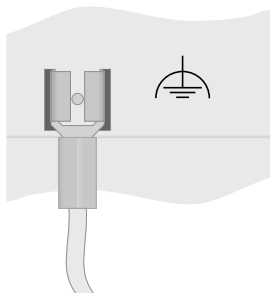


Fig. 10-6: Functional earth connection

11 Commissioning

The product is ready for operation immediately

The IndraControl VR 21 is configured using the cockpit tool. The cockpit tool is described in the project planning manual "Rexroth IndraControl V Devices Operating Systems" (see [tab. 1-1 "Required and supplementing documentation" on page 2](#)).

12 Device Description

12.1 General Information

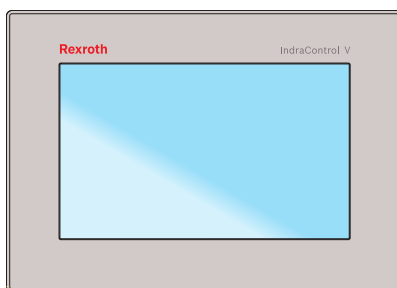


Fig. 12-1: IndraControl VR21xx.01 Single and Multitouch

12.2 Control and Display Elements

12.2.1 Display

⚠ WARNING

Poisoning or chemical burns due to damaged display

If the display is damaged, avoid direct skin contact, choking, breathing in of leaking liquid or gas!

NOTICE

Burn-in effects on the display due to missing image changes

Static image parts displayed on the display for a longer period (> 1 hour) can result in so-called "image sticking". Image sticking refers to a previously displayed image still being displayed as shadow following an image change. Higher environment temperatures during the operation can accelerate the burn-in effect. To avoid irreversible damage, regularly actuate the display with a back screen via the visualization application. The recommended actuation interval is 15 minutes.

The operating device is equipped with different displays, depending on the model (see [chapter 12.3 "Variants" on page 19](#)).

12.2.2 Touchscreen

NOTICE

Risk of destroying the touch screen or the front panel by using inappropriate items.

Operate the touch screen only with your finger or with a special touch pen (parts number 1070923266).

12.2.3 Real-Time Clock

The real-time clock is buffered by a capacitor. The capacitor reaches maximum capacity after 48 hours of trickle charge. After the maximum load, the real-time clock can be buffered for approximately 10 days.

12.3 Variants

The IndraControl VR 21 devices are available in different variants. The devices differ in display size and touch technology (single and multitouch).

Type code	Display	Resolution	Touch technology
VR2104.01-00-01-N2-NNN-AA Part no. R911340500	4,3"	480 × 272 pixels	Resistive, single touch
VR2107.01-00-01-N2-NNN-AA Part no. R911340503	7"	800 × 480 pixels	Resistive, single touch
VR2107.01-00-01-N2-NNN-CA Part no. R911340505	7"	800 × 480 pixels	Capacitive, multitouch
VR2109.01-00-01-N2-NNN-AA Part no. R911340051	9"	800 × 480 pixels	Resistive, single touch
VR2109.01-00-01-N2-NNN-CA Part no. R911340506	9"	800 × 480 pixels	Capacitive, multitouch

Tab. 12-1: IndraControl VR 21 variants

13 Error Causes and Elimination

Error	Correction
No image visible	<ul style="list-style-type: none"> ● Connect the voltage supply, check X10 connection
The USB flash drive does not function, although other USB devices function	<ul style="list-style-type: none"> ● Check if the USB flash drive is supported by the "Windows Embedded Compact 7" operating system ● Check USB flash drive partitioning. The operating system only supports FAT16/32
Touchscreen functionality is not available	<ul style="list-style-type: none"> ● Recalibrate touchscreen

Tab. 13-1: Error causes and error elimination

14 Maintenance

14.1 General Information

NOTICE

Loss of IP degree of protection due to incorrect maintenance

The IP degree of protection must be ensured during maintenance!

14.2 Display

The backlight is subject to wear (see [chapter 5.2 "Wear Parts" on page 5](#)).

A fading backlight causes a progressive deterioration display readability, so that a replacement is necessary. For further information please contact the Bosch Rexroth Service.

14.3 Cleaning Notes

NOTICE

The surface of the foil as well as the display seal are dissolved by solvents!

- Do not use any solvents (e. g. diluents)!
- No high pressure cleaning devices are to be used!
- To remove dirt from the front panel, only use a moist cloth

14.4 Fuse



The semiconductor fuse is not intended for replacement!

Use a semiconductor fuse to protect the device. After the fuse has triggered, disconnect the device from the supply voltage so that the semiconductor fuse can regenerate. The regeneration takes approximately 20 seconds at an ambient temperature of 20 °C. The higher the ambient temperature, the longer the regeneration phase.

14.5 Regular Maintenance Tasks

- At least once a year, all plug and terminal connections of the components are to be checked regarding proper tightness and possible damage
- Make sure that cables are not broken or crimped
- Replace damaged parts immediately.

15 Ordering Information

15.1 Accessories and Spare Parts

For ordering information about accessories and spare parts, please refer to [chapter 5 "Spare Parts, Accessories and Wear Parts" on page 5](#).

15.2 Type Code VR21xx.01

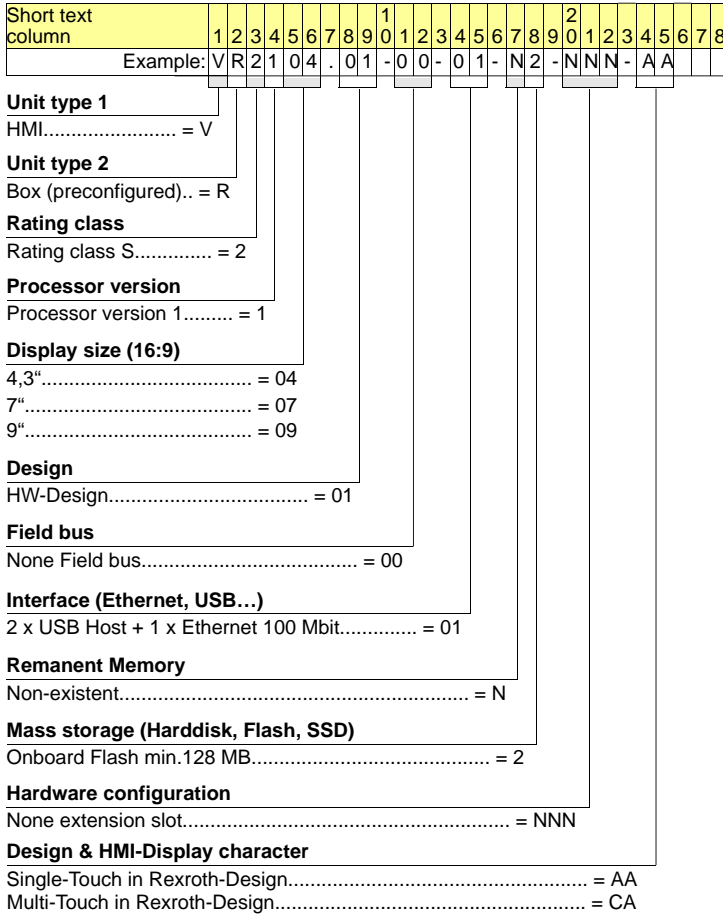


Fig. 15-1: Type code

16 Disposal

16.1 Take-Back

Our products can be returned to our premises free of charge for disposal. However, the products must be free of impurities like oil, grease or other impurities.

Furthermore, the products returned for disposal must not contain any undue foreign material or foreign components.

Send the products "free domicile" to the following address:

Bosch Rexroth AG
Electric Drives and Controls
Bürgermeister-Dr.-Nebel-Straße 2
D-97816 Lohr am Main, Germany

16.2 Packaging

The packaging materials consist of cardboard, plastic material, wood or expanded polystyrene (EPS). The packaging materials can be recycled without any problem.

For ecological reasons, please refrain from returning the empty packages to Bosch Rexroth.

17 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 Helpdesk & Hotline** 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 resulting in the malfunction
- Type plate name of the affected products, in particular type codes and serial numbers
- Your contact data (phone and fax number as well as your email address)

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