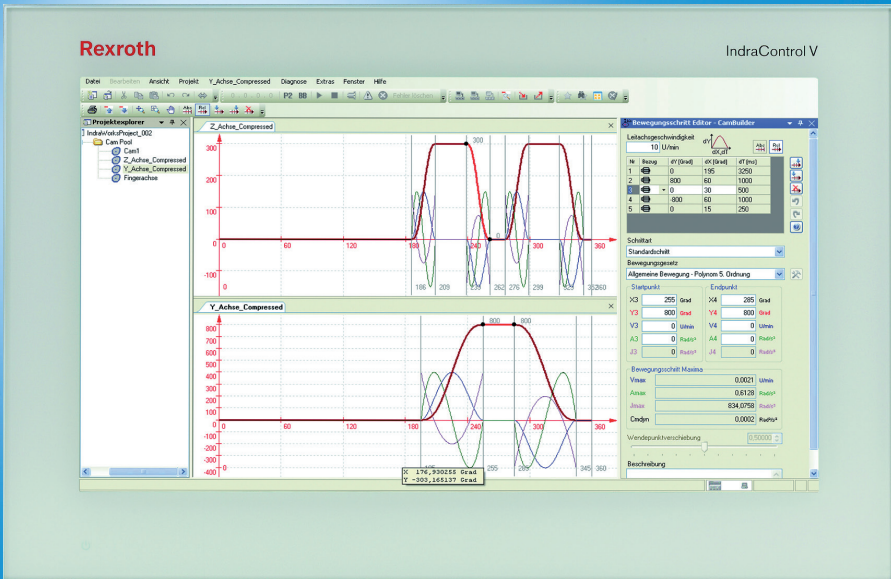


Rexroth IndraControl VEP 07.6/15.6 Multi Touch

Operating Display – Built-In Devices

Operating Instructions
R911341193

Edition 02



Change Record

Edition	Release Date	Notes
Edition 01	2014-10	First edition
Edition 02	2015-03	7" variant supplemented

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Editorial Department

Development Automation Systems Control Platform HB (KaWa/MePe)

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1 About this documentation

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 "mechanic/electrician" can execute the activity "install" using this documentation.

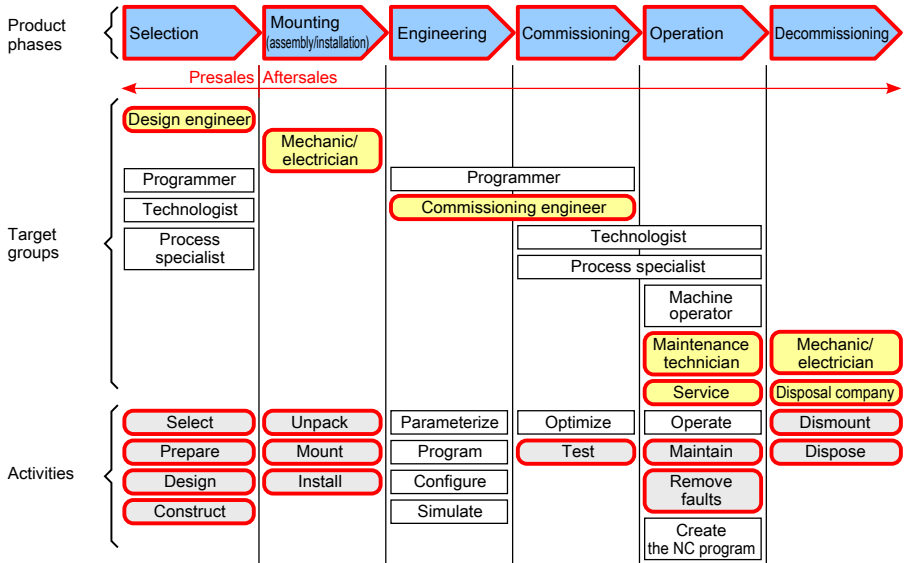


Fig. 1-1: Assigning the present documentation to the target groups, product phases and activities of the target group

Purpose

This document instructs the technical staff of the machine manufacturer on how to perform the mechanical and electrical installation safely 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 operating instruction applies to all multi-touch operator displays whose type code starts with "VEP15.6..." or "VEP 07.6".

The type code specifications are located on the type plate of the device. Also refer to [chapter 2.1 "Product identification"](#) on page 2.

Related documents

Title	Parts number and document type
Rexroth IndraControl	R911339613
VAP 01	Operating Instructions
Power Supply Unit	
Rexroth IndraControl	R911336867
VAU 01.1	Operating Instructions
UPS with Communication Interface	
Rexroth IndraControl	R911343901
V-Devices	Project Planning Manual
Operating Systems	

Tab. 1-1: Related documentation

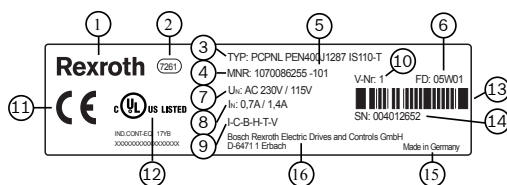
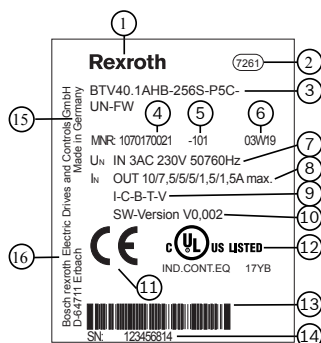
Customer Feedback

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 side or at the side of the device.



- 1 Logotype
- 2 Division or plant number
- 3 Type designation code (type code)
- 4 Parts number
- 5 State of revision
- 6 Date of manufacture (yyWww)
- 7 Nominal voltage

- 8 Nominal current
- 9 Test marking
- 10 Version number
- 11 CE mark
- 12 Underwriters Laboratories Inc. mark
- 13 Serial number as barcode
- 14 Serial number

15 Designation of origin

16 Company address

Fig. 2-1: Exemplary type plates

2.2 Scope of delivery

- Operator display
- Safety instructions
- Mounting kit
- 24 V female connector strip

3 Using safety instructions

3.1 Safety instructions – Structure

The safety instructions are structured as follows:

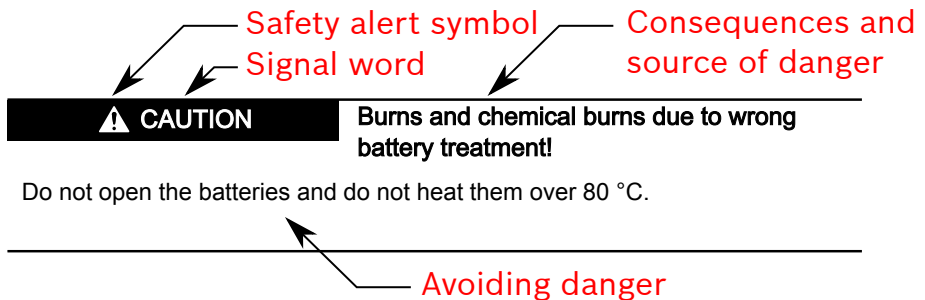


Fig. 3-1: Safety instructions – structure

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

⚠ WARNING

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

⚠ CAUTION

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

NOTICE

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

3.3 Symbols Used

Pointers are displayed as follows:



This is a note.

Tips are displayed as follows:



This is a tip.

4 Intended use

The Bosch Rexroth operator displays are passive operator and visualization terminals. They form a PC-based operator terminal when used with a Bosch Rexroth control cabinet PC.

NOTICE

Risk of damaging the device if not expressly stated accessories, mounting parts and other components, cables, and lines are used.

The operator displays may only be used 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.

Only to be operated with the component configurations and combinations expressly defined and with the software and firmware specified in the corresponding functional description.

Typical areas of application of the operator display:

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

The operator displays 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.

NOTICE

Danger of destruction of the touch screen if operated with inappropriate objects.

Operate the touch screen only with your finger or with a touch pen.

5 Spare parts, accessories and wear parts

5.1 External 24 V power supply unit

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

Tab. 5-1: External 24 V power supply unit for the operator display

5.2 Uninterruptible power supply (UPS)

Ordering code	Parts number	Description
VAU01.1U-024-024-240-NN	R911171024	Uninterruptible power supply DC 24 V, 240 watts with USB interface

Tab. 5-2: Uninterruptible power supply (UPS)

Ordering code	Parts number	Description
RKB0050/001,0	R911172944	USB connecting cable with increased noise immunity; length 1 m
RKB0050/003,0	R911172945	USB connecting cable with increased noise immunity; length 3 m

Tab. 5-3: USB connection cable with high noise immunity for UPS

5.3 Wear parts

Wear parts are not subject to any warranty.

Backlight

The service life of the backlight is limited. After this period, the backlight will produce only 50 % of its original brightness. The service life of the VEP 15.6 is approx. 50,000 hours and of the VEP 07.6 approx. 30,000 hours if the ambient temperature is 25 °C.

6 Ambient conditions

	In operation	Transport	Storage
Max. ambient temperature	+0 °C to +50 °C	-20 °C to +60 °C	-20 °C to +60 °C
Max. temperature gradient	Temporal temperature changes up to 3 K per minute	Temporal temperature changes up to 3 K per minute	Temporal temperature changes up to 3 K per minute

	In operation	Transport	Storage
Humidity	Min. relative humidity: 5 %	Min. relative humidity: 5 %	Min. relative humidity: 5 %
	Max. relative humidity: 85 %	Max. relative humidity: 75 %	Max. relative humidity: 85 %
	Min. absolute humidity: 1 g/m ³	Min. absolute humidity: 1 g/m ³	Min. absolute humidity: 1 g/m ³
	Max. absolute humidity: 25 g/m ³	Max. absolute humidity: 25 g/m ³	Max. absolute humidity: 25 g/m ³
	Condensation not al- lowed	Condensation not al- lowed	Condensation not al- lowed
	Corresponds to climatic class 3K3 acc. to EN 60721-3-3	Corresponds to climatic class 2K2 acc. to EN 60721-3-2	Corresponds to climatic class 1K2 acc. to EN 60721-3-1
Air pressure	Up to 3,000 m above sea level acc. to EN 61131-2	Up to 3,000 m above sea level acc. to EN 61131-2	Up to 3,000 m above sea level acc. to EN 61131-2
Mechanical strength	Max. vibration:	Max. shock:	Max. shock:
	Frequency range: 10 ... 150 Hz	15 g 11 ms acc. to EN 60068-2-27,	15 g 11 ms acc. to EN 60068-2-27,
	Excursion: 0.75 mm at 10 ... 57 Hz	No malfunction	No malfunction
	Acceleration: 1 g at 57 ... 150 Hz Acc. to EN 600068-2-6		
Contamination level	2	2	2
Overvoltage category	2	-	-

Tab. 6-1: Ambient conditions

The ambient air must not contain acids, alkaline solutions, corrosive agents, salts, metal vapors and other electrically conductive contaminants in high concentrations.

The ambient air must be free of dust. Housing and installation compartments must at least comply with the degree of protection IP 54 acc. to DIN VDE 0470-1.



Not resistant to gas endangering the function (sulphur dioxide (SO₂), hydrogen sulphide (H₂S))

7 Technical data

7.1 General technical data

	VEP15.6GA	VEP07.6CK
Display	396 mm TFT (15")	17 mm TFT (7")
	1366 × 768 pixels	800 x 480 pixels
	16.7 million colors	262k colors
Operation	Multi touch	
Surface of the front panel	Thermally tempered glass	
Degree of protection	Front panel IP 65 acc. to DIN EN 60 529	
	Front type 1 acc. to NEMA (UL)	
	Rear side IP 20	
Voltage supply	DC 24 V (use a 24 V power supply unit acc. to DIN EN 60742, classification VDE 0551, for example the VAP01.1H-W23-024-010-NN, parts number R911171065)	
Current consumption	1.5 A for 24 V DC	1.1 A for 24 V DC
Power loss	36 W	26 W
USB	Per USB port max. 500 mA, total current at all USB ports max. 1 A.	
Weight	5.35 kg	4.2 kg

Tab. 7-1: Technical data of the VEP 15.6 and VEP 07.6

7.2 Optical characteristic values

7.2.1 TFT

The maximum permissible number and type of pixel errors of TFT displays depends on the manufacturer and is defined by the respective "incoming inspection" of the manufacturer. This "incoming inspection" is provided by the Bosch Rexroth service if required.

The maximum brightness and color characteristics of TFT displays depends on the manufacturer and is defined by the respective specification of the manufacturer.

7.2.2 Input system (multi-touch front)

The maximum permissible number and type of defects on the front or the glass, such as trapped dust, scratches, etc. is defined in the FT¹⁾. The VEP multi-touch devices meet the quality guideline.

¹⁾ *Quality standard (version December 2013) of the Fachgemeinschaft Eingabesysteme (German association for input systems).*

8 Standards

8.1 General information

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

8.2 Standards used

Standard	Significance
EN 60 204-1	Safety of machinery - Electrical equipment of machines
EN 61 000-6-4	Generic standards - Emission standard (industrial environments)
EN 61 000-6-2	Generic standards – Noise immunity (industrial environments)
EN 61 558-2-6	Transformer for 24 V power supply unit, protective separation
EN 60 664-1	Overvoltage category II
EN 61 131-2	24 V output requirements
EN 61 131-2	24 V current supply requirements
EN 60 529	Degrees of protection (including housings and installation compartments)
EN 60 068-2-6	Vibration test
EN 60 068-2-27	Shock test
EN 60 721-3-1 and EN 60 721-3-3	Climatic class

Tab. 8-1: Standards used

8.3 CE marking

8.3.1 Declaration of conformity



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

Standard	Title	Edition
DIN EN 61000-6-4 (VDE 0839-6-4)	Electromagnetic Compatibility (EMC) Part: 6-4: Generic standards – Emission standard for industrial environments (IEC 61000-6-4:2006)	September 2007
DIN EN 61000-6-2 (VDE 0839-6-2)	Electromagnetic Compatibility (EMC) Part: 6-2: Generic standards – Noise immunity for industrial environments (IEC 61000-6-2:2005)	March 2006

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



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

The CE marking is only valid for the device in its delivery state. After modifying the device, verify CE conformity.

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 a limited or missing certification. Thus, verify the registration according to the UL marking on the device.



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

UL and CSA marking applies only to the device in its delivery state. After modifying the device, UL conformity and CSA conformity are to be verified.

9 Interfaces

9.1 View

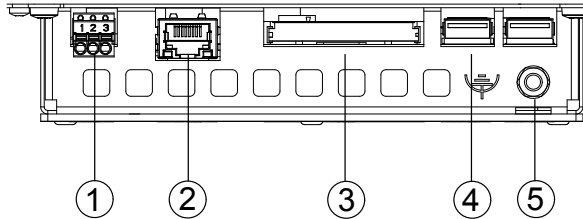



Fig. 9-1: Interfaces at the operator display

9.2 Overview

	Name at housing	Connection type	Connector type, integrated	Mating connector or cable (from outside)
①	XD1	24 V DC voltage supply	3-pin, MC1,5/3- G-3,5 THT	3-pin, FK-MCP 1,5/3-ST-3,5
②	XF20	Ethernet interface	RJ45 socket	RJ45 plug
③	XG10	Compact Flash slot	Compact Flash socket	Compact Flash card
④	XF31/32	2 USB interfaces	USB socket, 4-pin, type A	USB plug, 4-pin, type A
⑤		Functional earth (FE)	M5	Ring cable lug

Tab. 9-1: Interfaces

NOTICE

Malfunctions due to insufficient shielding!

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

9.3 24 V DC voltage supply

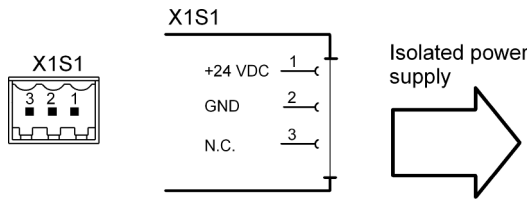


Fig. 9-2: Interface for 24 V voltage supply





Pin	Function
1	+24 V supply voltage
2	0 V supply voltage
3	n.c.

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

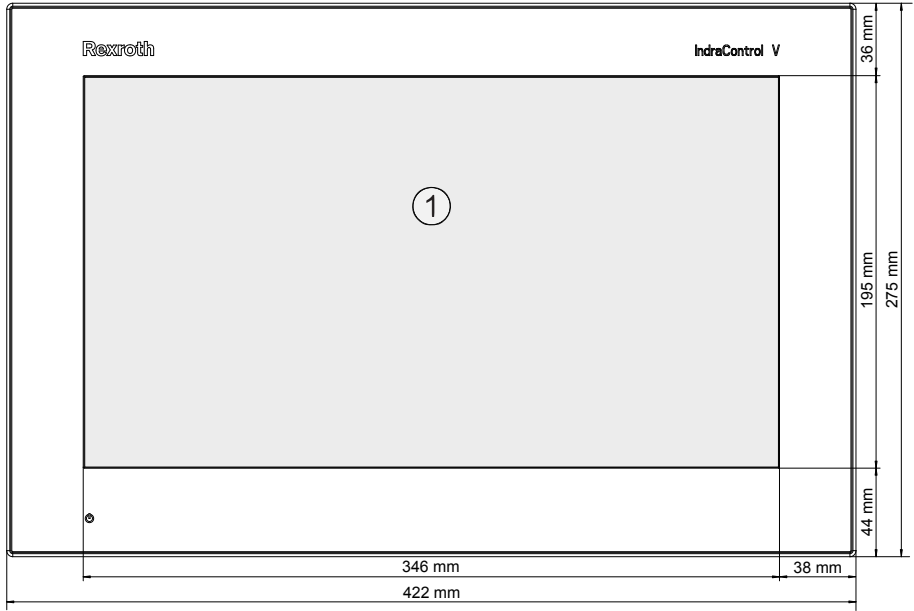
There are two USB interfaces on the connector panel (XUSB1/2) at the devices and, depending on the variant, one interface on the front panel.

Operating USB ports at operator display

-  Interference-free USB2.0 connection only up to a cable length of 5 meters.
-  Connect only USB devices that meet the USB2.0 specification.
-  The cables of the connected USB devices have to comply with the USB2.0 specifications.
-  If the total current of all USB ports exceeds 1 A, the power supply unit switches off the operator display.

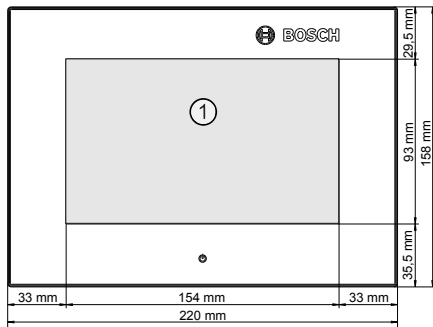
10 Mounting, demounting and electric installation

10.1 Housing dimensions



① Visual range of the display

Fig. 10-1: Housing dimensions of the operator display VEP 15.6



① Visual range of the display

Fig. 10-2: Housing dimensions of the operator display VEP 07.6

10.2 Installation notes

- Provide a space of 50 mm on all sides of the device for sufficient cooling and cable routing
- The LED display on the operator panel must not be covered.
- Wire all cables in loops. Use strain reliefs for all cables
- Only install the operator display vertically, with a max. deviation of $\pm 45^\circ$, measured from the vertical

10.3 Assembly

Mount the operator display as follows:



Loss of degree of protection IP 65!

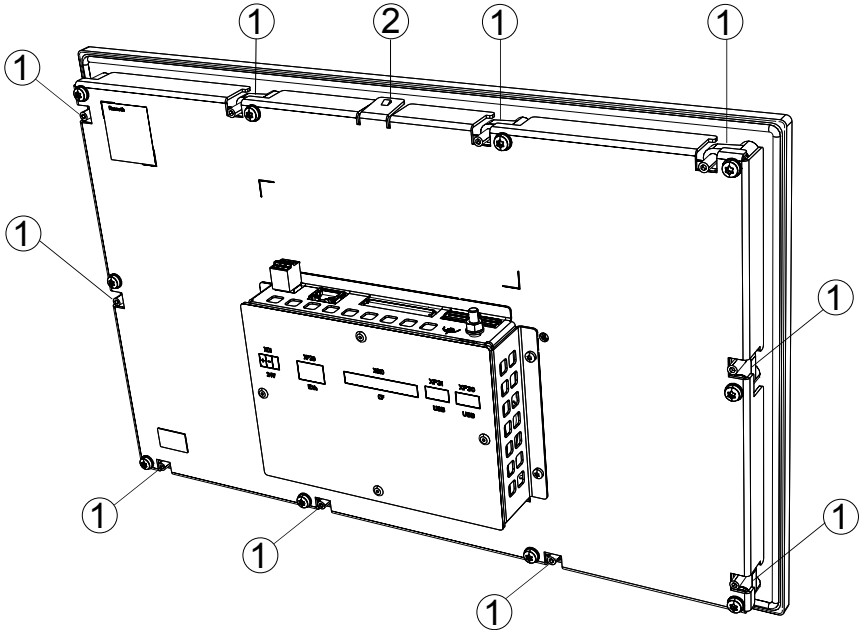
The housing, in which the operator display is installed, has to fulfill the following conditions:

- Free from impurities
- Sufficient mechanical strength and flatness

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

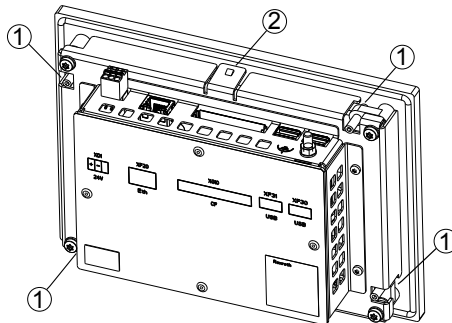
Further required measures are to be taken depending on the mounting location, e. g. the stabilization of the mounting frame.

1. Creating a mounting cut-out, see [chapter 10.4 "Mounting dimensions" on page 17](#).
2. Insert the operator display from the front into the cut-out until the latching lug at the top of the device latches in the cut-out.



- ① Clamp fastenings
- ② Latching lug

Fig. 10-3: Position of clamp fastenings for the VEP 15.6



- ① Clamp fastenings
- ② Latching lug

Fig. 10-4: Position of clamp fastenings for the VEP 07.6

3. Fold out the clamp fastenings.

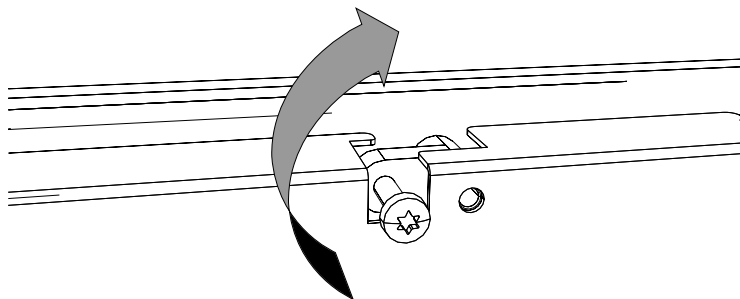


Fig. 10-5: Clamp fastening

4. Tighten the clamping screws.

NOTICE

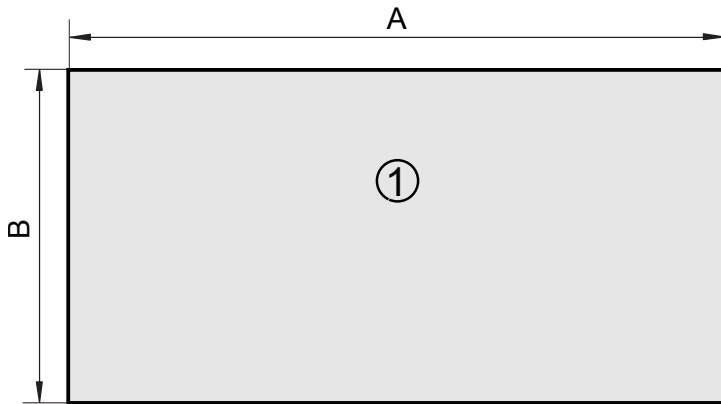
Mechanic damage due to incorrect mounting torque.

Tighten the screws and nuts with the corresponding torque according to the following table.

Threads	Mounting torque
M2,5	0.4 Nm
M3	0.7 Nm
M4	1.4 Nm
M5	1.0 Nm

Tab. 10-1: Mounting torques

10.4 Mounting dimensions



① Mounting cut-out

Fig. 10-6: Fitting dimensions

Operator display	Dimension A	Dimension B
VEP 15.6	403	255
VEP 07.6	203	140

Tab. 10-2: Dimensions of the mounting cut-out (in mm)

10.5 Demounting

1. Disconnect the operator display.
2. Remove all connected cables.
3. Loosen the screws of the clamp fastenings.
4. Fold the clamp fastenings.
5. Press the latching lug of the installation aid.

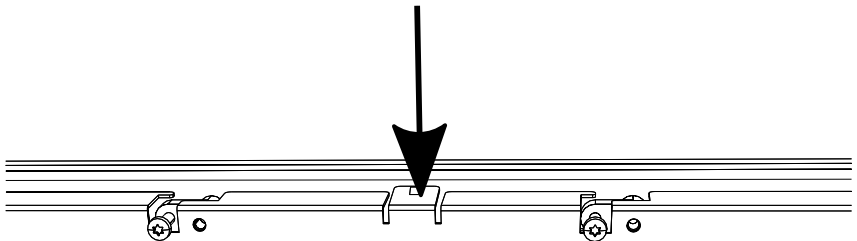


Fig. 10-7: Latching lug

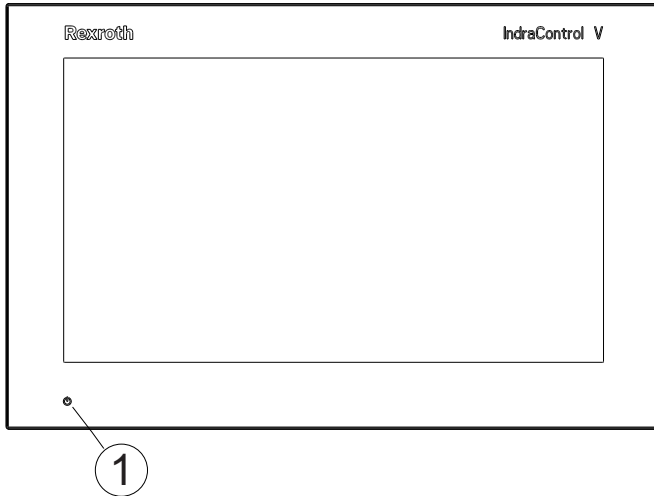
6. Remove the operator display from the mounting frame.

11 Commissioning

The product can be used directly. No configuration is required.

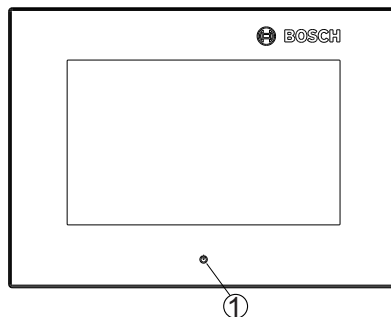
12 Device description

12.1 General information



① Status displays

Fig. 12-1: Front view of the operator display VEP 15.6




① Status displays

Fig. 12-2: Front view of the operator display VEP 07.6

12.2 Operating and error displays

An LED for the operating display is located in the lower part of the front panel.

Symbol, LED	Display	Significance	Action
	LED green	Normal operation	–
	LED off	No supply voltage of 24 V DC	Check supply voltage

Power

Tab. 12-1: LED for operating and error display on the front panel

13 Error causes and troubleshooting

For information on the error display on the front panel, refer to [chapter 12.2 "Operating and error displays" on page 19](#).

Error	Troubleshooting
No screen visible	<ul style="list-style-type: none"> ● Connect the supply voltage and check the XD1 connection ● Plug in the Compact Flash card correctly ● Use fitting Compact Flash card
The USB flash drive does not work, although other USB devices work	<ul style="list-style-type: none"> ● Use USB stick formatted with FAT16 or FAT32

Tab. 13-1: Error causes and troubleshooting

14 Maintenance

14.1 General information

NOTICE

Loss of IP degree of protection due to incorrect maintenance.

Ensure the IP degree of protection during maintenance!

14.2 Display

The backlight is subject to wear, see [chapter 5.3 "Wear parts" on page 6](#).

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

14.3 Cleaning notes

NOTICE

Dissolving front glass sealing with solvent!

- Do not use solvents
- Do not use high pressure cleaning device

14.4 Regular maintenance tasks

- Check all plug and terminal connections of the components for proper tightness and possible damage at least once a year
- Check that no cables are broken or pinched
- Replace damaged parts immediately

15 Ordering information

15.1 Accessories and spare parts

For ordering information on accessories and spare parts, refer to [chapter 5 "Spare parts, accessories and wear parts"](#) on page 5.

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

Send the products free of charge 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 material consists of cardboard, plastics, wood or styrofoam. Packaging material can be recycled anywhere.

For ecological reasons, please do not return 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 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)

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