

Rexroth IndraControl VCH 08.1

Hand-Held Terminal

Operating Instructions
R911339628

Edition 01



Change Record

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Editorial Department

Development automation systems control platform EH (MK/MePe)

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1 About this documentation

Overview on target groups and product phases

The activities, product phases and target groups that refer to the present documentation are highlighted 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.

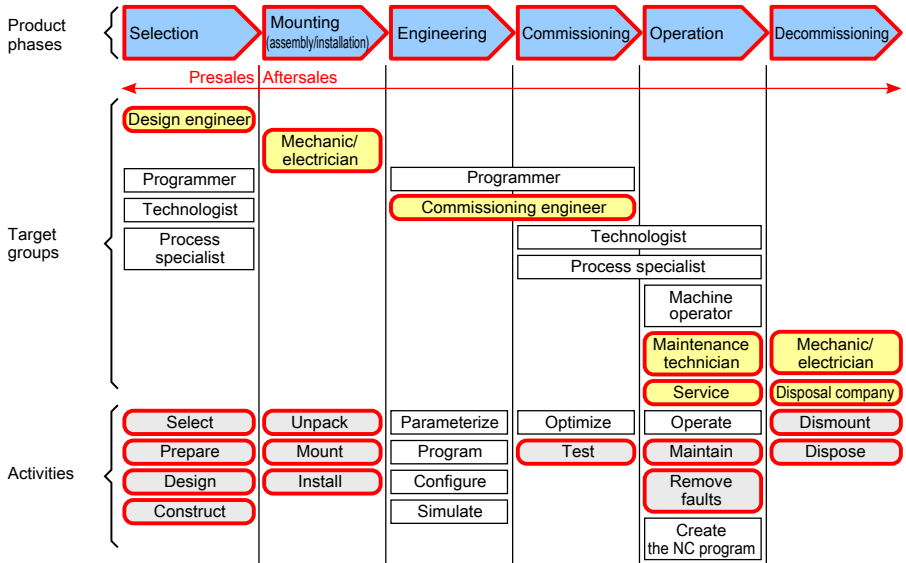


Fig. 1-1: Assigning the present documentation to the target groups, product phases and activities of the target group

Purpose

This document instructs the technical staff of the machine manufacturer on how to safely perform the mechanic and electrical installation and on how to commission the hand-held terminal.

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.

Availability

This document is part of the present product delivery. This document has to be available at any time. The product has to be passed on together with this document only.

Scope

This operating instruction applies to all variants whose type code starts with "VCH08.1...".

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
Rexroth IndraControl VCH 08.1 Hand-Held Terminal	R911320189 Project Planning Manual
Rexroth IndraControl VAC 30/31/05 Connection Module	R911338407 Operating Instructions

Tab. 1-1: Related documents

Also refer to the descriptions of the respective system or the component (e.g. MLC, IndraLogic, MTX, MLC, XLC or IndraLogic component).

For further documents, please enter the specified parts number under "Documentation and Downloads" in the "Rexroth Media Directory" at <http://www.boschrexroth.com>.

Customer feedback

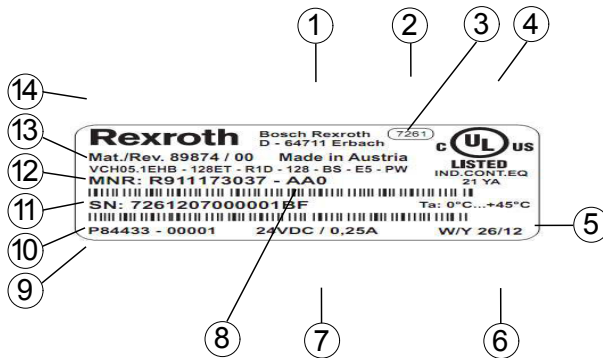
Customer requests, comments or suggestions for improvement are of great importance to us. Please email your feedback on the documentations to Feedback.Documentation@boschrexroth.de. Directly insert comments in the electronic PDF document and send the PDF file to Bosch Rexroth.

2 Product identification and scope of delivery

2.1 Product identification

The type plate is located at the rear side of the device.

Type plate



- | | | | |
|---|-------------------------------------|---|-----------------------------------|
| ① | Company address | ⑧ | Serial number as barcode |
| ② | Division or plant number | ⑨ | Serial number |
| ③ | Designation of origin | ⑩ | Part number as bar code |
| ④ | Underwriters Laboratories Inc. mark | ⑪ | State of revision |
| ⑤ | Operating temperature | ⑫ | Parts number |
| ⑥ | Manufacturing data (wwyy) | ⑬ | Type designation code (type code) |
| ⑦ | Nominal voltage and nominal current | ⑭ | Company name |

Fig. 2-1: Type plate, example

2.2 Scope of delivery

The scope of delivery depends on the customer configuration.

- Hand-held terminal
- Connecting cable

3 Using safety instructions

3.1 Safety instructions – Structure

The safety instructions are structured as follows:

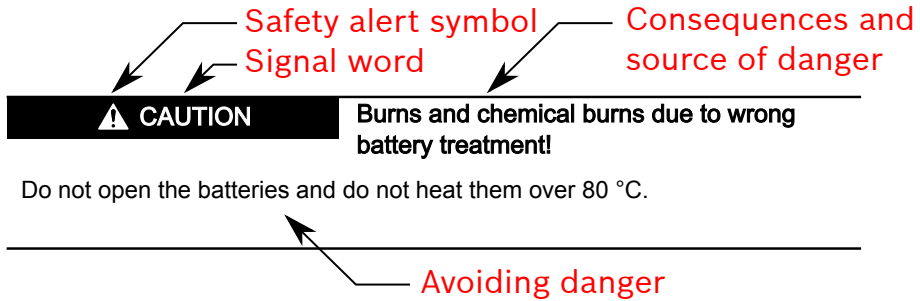


Fig. 3-1: Safety instructions – structure

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 hand-held terminals are PC-based machine operator terminals. Depending on the configuration, they can also perform control functions.

NOTICE

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

The hand-held terminals 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 hand-held terminals:

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

The hand-held terminals 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

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).

5 Spare parts, accessories and wear parts

5.1 Connecting cables

Ordering code	Parts number	Description
VAS05.1-002-008-CP	R911171694	Connecting cable for the hand-held terminal VCH 08.1, 17-pin, Stop button
VAS05.1-002-0M5-NN	R911171027	Connecting cable for the hand-held terminal VCH 08.1, 17-pin, Stop button, 0.5 m
VAS05.1-002-008-CQ	R911171957	Connecting cable for the hand-held terminal VCH 08.1, 17-pin, E-STOP button
VAS05.1-002-0M5-CQ	R911171958	Connecting cable for the hand-held terminal VCH 08.1, 17-pin, E-STOP button, 0.5 m
RKS0011/16,0	R911171696	Extension cable, 16 m, for the connecting cable VAS05.1-002-0M5-NN, Stop button
RKS0012/016,0	R911171950	Extension cable, 16 m, for the connecting cable VAS05.1-002-0M5-CQ, E-STOP button

Tab. 5-1: Connecting cable

5.2 Connecting modules

Ordering code	Parts number	Description
VAC05.1-N-NN	R911172980	Connection unit without automatic Stop button bridging for the VxH with Stop button
VAC30.2N-NN	R911171054	Connection unit with automatic Stop button bridging for the VxH with Stop button
VAC31.1C-NN	R911171822	Connection unit with short-circuit plug for the VxH with E-STOP button

Tab. 5-2: Wall holder

5.3 Wall holder

Ordering code	Parts number	Description
VAS01.1-002-NNN-NN	R9111170839	Wall holder with cable holder (for stationary operation or to deposit the hand-held terminal)
RKB0011/OXX,0	R911316888	Patch cable, category 6, can be freely pre-assembled, max. 65 m

Tab. 5-3: Wall holder

6 Ambient conditions

	In operation	Transport	Storage
Maximum ambient temperature	+0 °C to +50 °C	-20 °C to +70 °C	
Maximum temperature gradient	Temporal temperature changes up to 3 K per minute.		
Humidity	5% to 95 %		
Air pressure	Up to 2000 m above sea level acc. to EN 61131-2	Up to 3000 m above sea level acc. to EN 61131-2	
Mechanical strength	Maximum vibration: 10 Hz ≤ f < 57 Hz with 0.15 mm 9 Hz ≤ f < 150 Hz with 2 g	Max. shock: 25 g / 11 ms acc. to IEC 60068-2-27	Max. shock: 25 g / 11 ms acc. to IEC 60068-2-27

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

NOTICE

Loss of production can occur due to a failure of the hand-held terminal caused by operation outside the specified temperature range.

The hand-held terminal may only be operated in the specified temperature range.

7 Technical data

7.1 Hand-held terminals

Processor	Intel PXA 270/416 MHz
RAM	SDRAM, 64 MB max.
Flash memory	64 MB
Interfaces	1 × Ethernet connection (RJ 45, 10/100 Base-T), USB client in the cable chute (Debug and Active-Sync Device)
Housing material	ABS, resistant to grease, oil, lubricants, alcohol, etc.
Degree of protection	IP 65
Voltage supply	DC 24 V
Input voltage range	DC 24 V (DC +19,2 V to DC +30 V acc. to EN 61131-2)
Max. switch-on current (with current limiting)	5.6 A
Specified external protection	2 A safety fuse, slow
Max. power consumption for maximum configuration	4.8 W (200 mA at DC 24 V)
Protection class (acc. to EN 61131-2 or EN 50178)	III
Weight	Approx. 1200 g (without cable)

Tab. 7-1: Technical data

7.2 Keyboard, housing and display

Display	3.8" (76.8 × 57.6 mm) STN, backlit LC display, 320 × 240 pixels 262, 5 gray scales
Keyboard type	<ul style="list-style-type: none"> ● Foil keyboard with tactile feedback ● Keys designed for thumb operation ● Left/right-hand operation
Number of keys	40 foil keys with mechanical pressure point
Display elements	12 state LEDs
Surface – front panel	Color RAL 7035 light gray
Degree of protection	Front panel IP 65 acc. to EN 60529, IEC 60529
Fire resistance	UL94-V0

Standard operating elements	Two 3-stage enabling buttons, two-circuit, externally wired Stop button/E-STOP button, two-circuit, externally wired
Operating elements	Electronic handwheel, internally wired Override potentiometer, internally wired

Tab. 7-2: Technical data of the keyboard, the housing and the display

7.3 Stop and E-STOP button

Nominal voltage	DC 24 V
Minimum current	10 mA (per contact)
Maximum current	1000 mA (per contact)
Usage category	DC-13 (acc. to IEC 60947-5-1)
EAO BR 84	B _{10d} : 100 000
IDEC XA series	B _{10d} : 100 000

Tab. 7-3: Technical data of Stop and E-STOP button

7.4 Enabling button (enabling device)

Output type	Solid-state output
Nominal voltage	DC 24 V (voltage tolerance DC 19.2 V to DC 30 V acc. to EN 61131-2)
Nominal current ¹⁾	Max. 500 mA
Max. switch-off current	<ul style="list-style-type: none"> ● Circuit 1: 1.5 A ● Circuit 2: 0.8 A
Max. inductive load	<ul style="list-style-type: none"> ● Circuit 1: 145 mJ / 1.16 H at DC 24 V, 500 mA (DC13 acc. to EN 60947-5-1) ● 145 mJ / 1.16 H at DC 24 V, 500 mA (DC13 acc. to EN 60947-5-1)
Reverse voltage protection	Yes
Short circuit and overload protection	<ul style="list-style-type: none"> ● Circuit 1: Yes ● Circuit 2: Yes

1) Protect lines against short-circuits and cross-circuits caused by installation!

Switching cycles	<ul style="list-style-type: none"> ● Switch position 2: 10^5 ● Switch position 3: 5×10^4
Actuating force	<ul style="list-style-type: none"> ● From switch 1 to 2: 5 N typically ● From switch 2 to 3: 20 N typically

Tab. 7-4: Technical data, enabling button

	Enable	Panic
Category	3	3
Performance Level	d	d
Proof Test Interval	20 years	20 years
	MTTF _d symmetrized acc. to D.2 at EN ISO 13849-1: 78 years ²⁾	MTTF _d symmetrized acc. to D.2 at EN ISO 13849-1: 88 years ³⁾
	PFH _d : 1.57×10^{-7}	PFH _d : 1.35×10^{-7}

Tab. 7-5: Enabling button, specifications acc. to EN ISO 13849-1:2008

7.5 Connection modules

For technical data on the connection modules, refer to the respective operating instructions. Refer to ["Related documents"](#) on page 2.

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

Enabling device and E-STOP button

This operating instructions complies with the machinery directive 2006/42/ EC. Also refer to the chapter 4.13 of the project planning manual of the VCH 08.1. The terms used in this operating instructions derive from the new machinery directive (MD) 2006/42/EC. The following table compares the old standard to the new standard.

- ²⁾ The monitoring device was not considered when calculating the MTTF_d values. Also refer to the project planning manual of the VCH 08.1 "Panic" and "Connection examples with PILZ PNOZ s6.1 monitoring device".
- ³⁾ The monitoring device was not considered when calculating the MTTF_d values. Also refer to the project planning manual of the VCH 08.1 "Panic" and "Connection examples with PILZ PNOZ s6.1 monitoring device".

98/37/EC (outdated standard)	2006/42/EC (new standard)
E-STOP	E-STOP

Tab. 8-1: E-STOP button: Standards

EN 60204-1:1997 (outdated standard)	EN 60204-1:2006 (new standard)
Enabling device	Enabling control device (is called "enabling button" or "enabling device" in this document)

Tab. 8-2: Enabling button

Standard	Significance
EC directives	
98/37/EC and 2006/42/EC (valid from 29th December 2009)	Machinery directive with amendment 98/79/EC and MD 2006/42/EC
2004/108/EC	EMC directive
Checking conformity using machinery directive	
EN ISO 13850:2006	Safety of machinery - E-STOP - Principles for design
EN ISO 13849-1:2008	Safety of machinery – safety-related parts of control systems – part 1: General principles for design
EN 60204-1:2006 (chapter 9 and 10)	Safety of machinery – Electrical equipment of machines - Part 1: General requirements
Checking conformity using EMC directive	
EN 61131-2:2007 (chapter 8 and 9)	Programmable logic controls – part 2: Equipment requirements and tests
Thus, it is also complied with the following standards:	
EN 61000-6-2:2006	EMC generic standards – noise immunity for industrial environments
EN 61000-6-4:2007	EMC generic standards - emission standard for industrial environments
General procedures and safety principles	
EN ISO 12100:2010	Safety of machinery – General principles for design – Risk assessment and risk reduction
Stability and impermeability of the enclosure	
EN 60529:1991	Degrees of protection provided by enclosures
Electrical safety and fire protection	
EN 50178:1997	Electronic equipment for use in power installations
UL examination for industrial control equipment	
UL 508, 17 th edition (=CSA C22.2 No. 14)	Industrial Control Equipment (NRAQ, NRAQ7)

Standard	Significance
UL examination for robotic applications	
UL 508, 17 th edition (=CSA C22.2 No. 14)	Industrial Control Equipment (NRAQ, NRAQ7)
UL 1740, 2007	(1998) Industrial Robots and Robotic Equipment E216950 (TETZ2, TETZ8)

Tab. 8-3: Standards

EC directives

Related information

For more information on directives, on the machinery directive, EMC und EMC measures, EC conformity declaration and type-examination certificate, refer to the project planning manual of the hand-held terminal VCH 08.1. Also refer to "[Related documents](#)" on page 2.

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:

- EC directive on machinery 2006/42/EC
- EC directive on electromagnetic compatibility 2004/108/EC

Conformity with the regulations of the directive 2006/42/EC is ensured by complying with the following harmonized European standards for the E-STOP or Stop button and the enabling button:

- EN ISO 13850:2008
- EN 60204-1:2006

Conformity with the directive 2004/108/EC is ensured by complying with the applicable parts of the following harmonized European standards:

- EN 61131-2:2007



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.

Ask your representative for the declaration of conformity.

8.4 UL/CSA certified



The devices are certified according to

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

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 to the device.

The UL- and CSA- marking is only valid for the device in its delivery status. After having modified the device the UL and CSA compliance is to be verified.



To guarantee an UL/CSA-compliant operation, the following conditions have to be fulfilled:

- Use only insulated copper wires suitable for at least 60/75 °C.
-

8.5 Type-examination certificate

A type examination was performed by the certification body NSBIV AG SIBE Switzerland, Iseliquai 8, 6005 Lucerne, Switzerland.

The type-examination certificate no. is 1069/1.

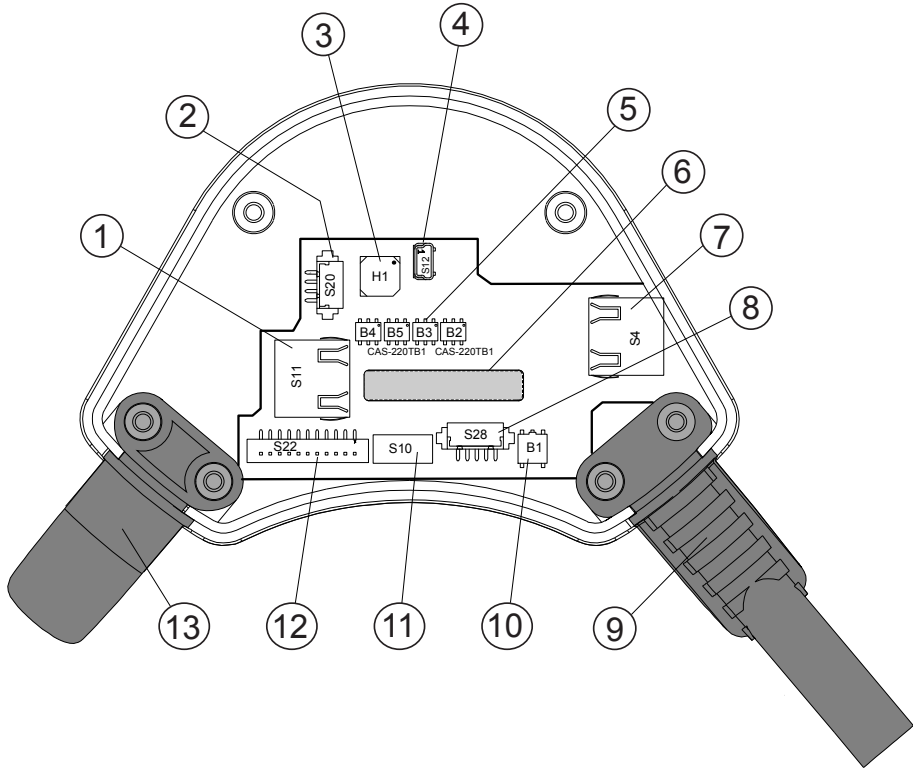
Safety specifications

EN ISO 13849-1:2008 Category 3 PL d

The safety function enabling button for the special operation mode control and the stop button meet the requirements of category 3 and PL according to EN ISO 13849-1 and the requirements of EN 60204-1 provided that the safety instructions in this document are observed.

9 Interfaces

9.1 General information



- ① S11: RS-422-A, RS-232-C plug (data exchange)
- ② S20: Plug for external wiring (button or handwheel)
- ③ H1: Buzzer
- ④ S12: USB client (plug)
- ⑤ B2, B3, B4, B5: DIP switch (selection of the RS-422-A or RS-232-C interface at S11; set to RS-422-A upon delivery)
- ⑥ Label for serial number
- ⑦ S4: Ethernet plug (data exchange)
- ⑧ S28: Buffer accumulator plug (battery buffering optional)
- ⑨ Strain relieve and bending protection (connecting cable optionally right or left). Caution: Insert a sealing plug at the opposite site!
- ⑩ B1: Reset button: Windows CE restart. Caution: Unsaved data is lost!
- ⑪ S10: Serial port socket S10 for debug interface (RS-232-C). For software download and troubleshooting.
- ⑫ S22: Main plug (male connector strip) (control lines and supply)
- ⑬ Sealing plug ensuring the tightness of the device

Fig. 9-1: Interfaces

10 Mounting, demounting and electric Installation

10.1 General information



Also refer to the notes in the project planning manual of the hand-held terminal VCH 08.1, see "[Related documents](#)" on page 2.

All specifications in millimeters

10.2 Housing dimensions

10.2.1 Housing dimensions of the VCH 08.1

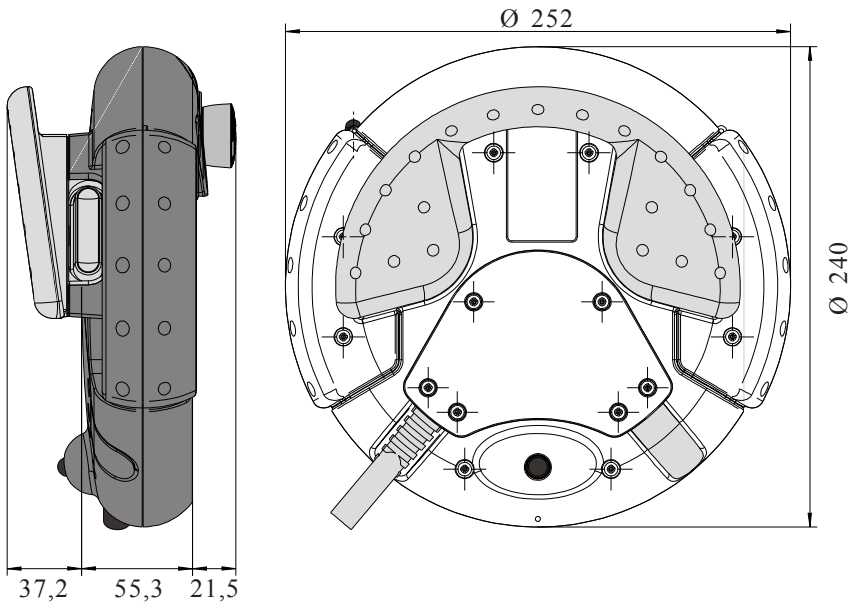


Fig. 10-1: Dimensions of the hand-held terminal VCH 08.1

10.2.2 Housing dimensions of the wall holder VAS 01.1

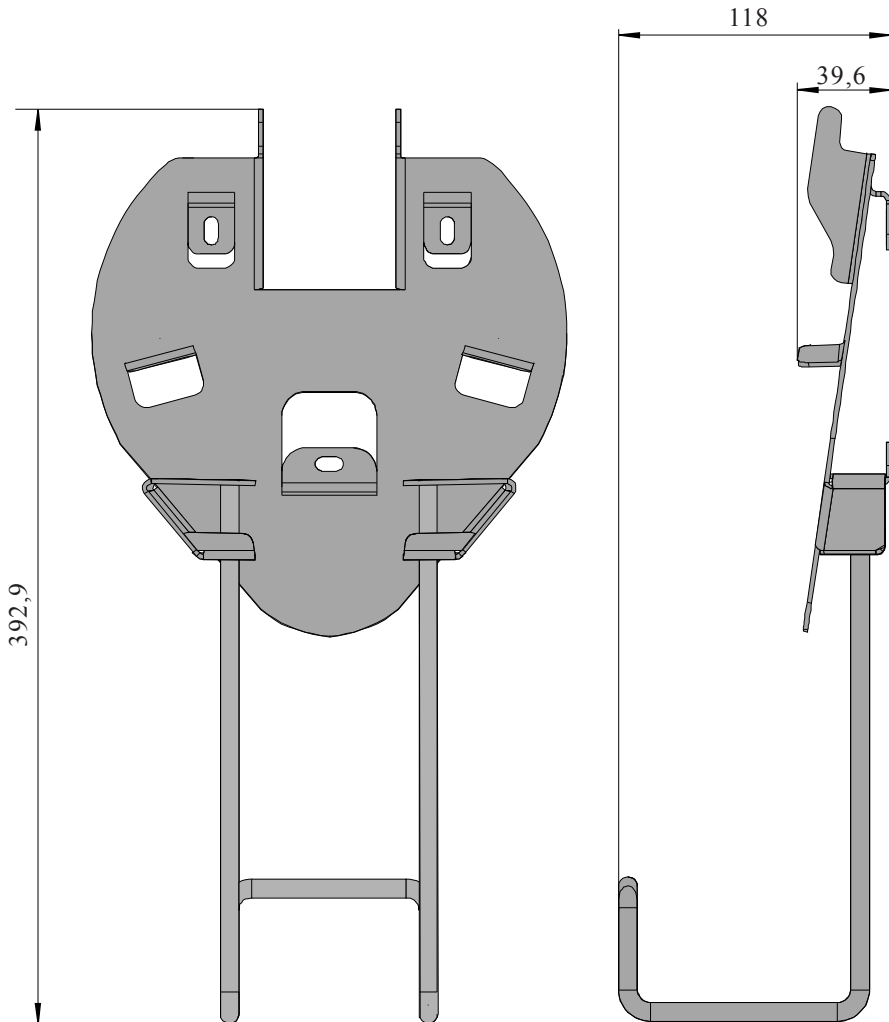


Fig. 10-2: Rear view and side view VAS 01.1

10.3 Cable laying

10.3.1 Opening connection chute

1. Place the hand-held terminal on an even and clean surface with the display facing downwards (e.g. ESD mat).

2. Use a Philips screwdriver (size 2) to open and close the cable chute.



Changes in the connection chute:

- When removing the main plug (S22), use your fingers and remove it at its leads. Do not use any sharp devices when removing the plug.
- When removing the RJ-45 plug (S11 or S4), ensure that the locking lever is pressed (refer to ① and ② in the following figure).

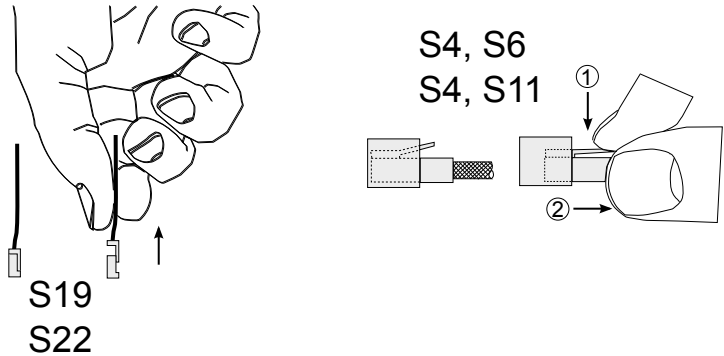


Fig. 10-3: Plug in connection chute

10.3.2 Cable chute

NOTICE

Possible malfunctions due to incorrectly engaged plugs.

Ensure that the S22 and S4 or S11 connectors correctly engaged when plugging them in.

NOTICE

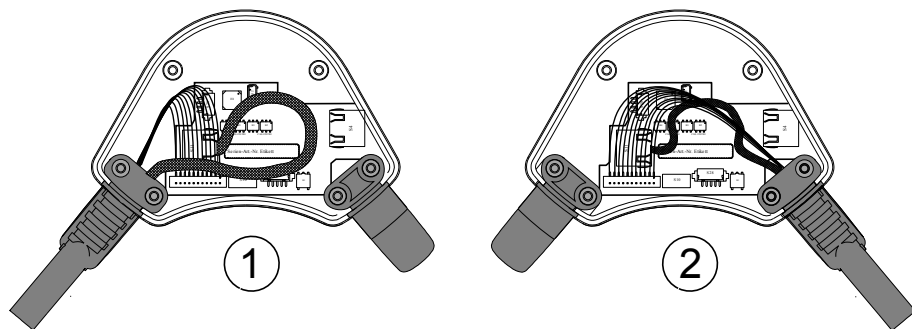
Possible malfunctions due to incorrectly closed connection chute.

Note the following when closing the connection chute:

- The sealing has to be tight and clean. It has to be at the correct position in the connection chute cover.
- No cables may be clamped.
- The connection chute cover has to be screwed using all 6 screws (torque: 0.4 to 0.5 Nm). Otherwise, the degree of protection cannot be ensured.

10.3.3 Cable routing using RS-232-C interface, black RJ-45 plug

The following figure shows the cable routing using the RS-232-C interface.

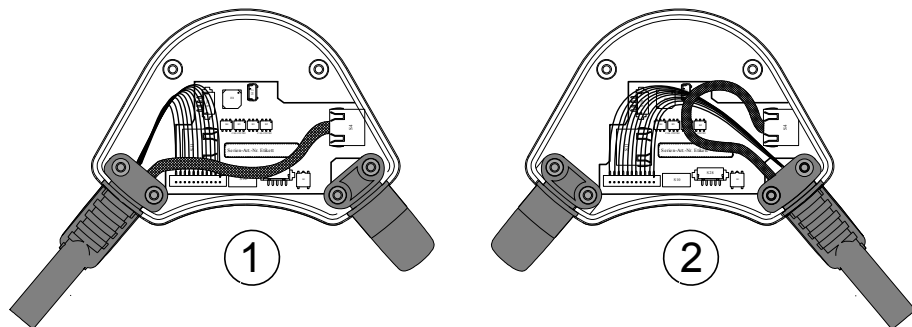


- ① Right
- ② Left

Fig. 10-4: Cable routing on the left and right when using the RS-232-C interface

10.3.4 Cable routing using Ethernet interface

The following figure shows the cable routing using the Ethernet interface.



- ① Right
- ② Left

Fig. 10-5: Cable routing on the left and right when using the Ethernet interface

10.4 Connecting to the connection module VAC



For information on the connection modules, refer to the documentation [tab. 1-1 "Related documents" on page 2.](#)

11 Commissioning

11.1 General information

To commission the control, further parameterization or programming is necessary.

11.2 Commissioning steps

1. Before commissioning the hand-held terminal, the operator has to ensure that the plant, especially the safety devices, are in proper condition.

NOTICE

System stop by connecting a hand-held terminal with the stop or E-STOP button pressed.

Before commissioning the hand-held terminal, ensure that the stop or E-STOP button is not pressed.

-
2. Connect the 17-pin connector to the VAC connection module.
 3. Set up the hand-held terminal and the connecting module. Refer to the "Software" chapter in the project planning manual of the VCH 08.1, parts number:

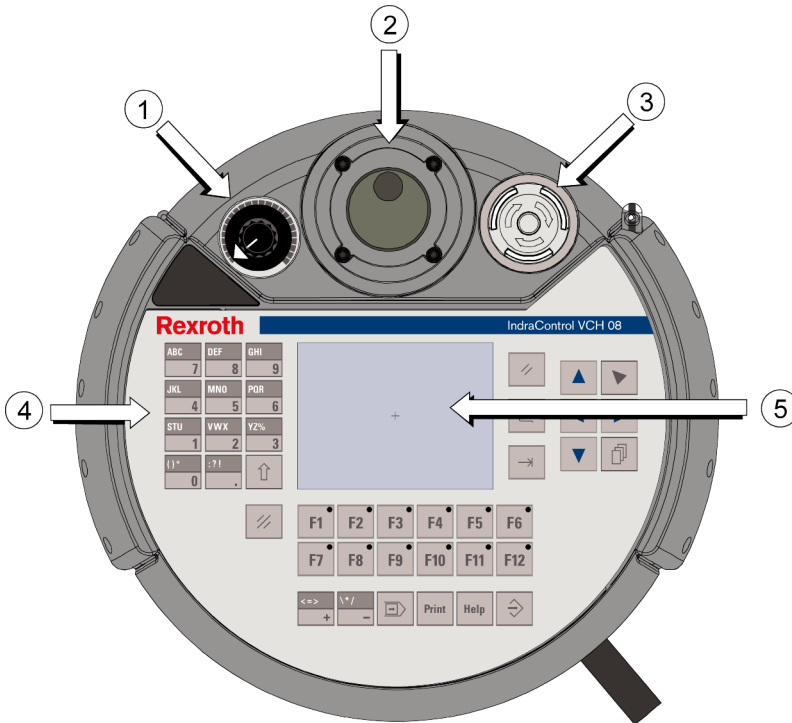


For more details on the commissioning, refer to the documentation of the device or system manufacturer.

12 Device description

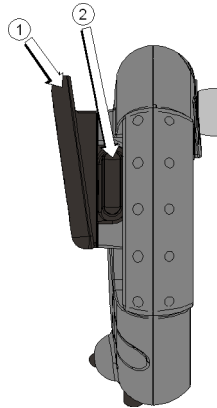
12.1 General information

12.1.1 View on hand-held terminals and connection module



- ① Mounting slot for override potentiometer
- ② Mounting slot for electronic handwheel
- ③ E-STOP, 2-circuit or Stop button
- ④ Foil keyboard
- ⑤ Display

Fig. 12-1: Front view of the hand-held terminal VCH 08.1



- ① Functional multi-grip
- ② Two three-stage enabling devices (one on the left, one on the right), each two-circuit

Fig. 12-2: Side view of the hand-held terminal VCH 08.1

For a figure of the connection module, refer to the operating instructions of the connection module VAC30/32/05 as well as to the project planning manual of the hand-held terminal VCH 08.1, see [tab. 1-1 "Related documents" on page 2](#).

12.1.2 Connecting to control; selecting connection modules

The hand-held terminal is connected to the control via a connection module in front panel mounting. At the front side, a 17-pin socket allows the comfortable connection of a hand-held terminal. All terminals for a fix wiring to the control are located on the rear side of the connection module in the control cabinet.

Select connecting modules: Depending on the safety technology used on the hand-held terminal, two different connection modules (see the following table) are available.



Connect the hand-held terminal of Bosch Rexroth only to a connection module of Bosch Rexroth and vice versa.

Connection module VAC 30.2	Connection module VAC 31.1	Connection module VAC 05.1
Suitable for hand-held terminals with Stop button:	Suitable for hand-held terminals with red-yellow E-STOP button:	Suitable for hand-held terminals with Stop button:
<ul style="list-style-type: none"> ● VCH08.1EAB-064ET-A1D-064-DS-E4-PW ● VCH08.1EAB-064ET-A1D-064-CS-E4-PW ● VCH08.1EAB-064ET-A1D-064-CS-E2-PW 	<ul style="list-style-type: none"> ● VCH08.1EAB-064ET-A1D-064-FS-B2-PW 	<ul style="list-style-type: none"> ● VCH05.1EHB-128ET-R1D-128-BS-E5-PW

Tab. 12-1: Connection modules VAC 30.2, VAC 31.1, VAC 05.1



VAC 30.2: The connection modules VAC 30.2 and VAC 05.1 for hand-held terminals with Stop button are equipped with a fine thread screw plug at the front side. For the VAC 30.2 connection module, the integrated "automatic Stop button bridging" allows integration of the hand-held terminal into the safety circuit of the running machine without stopping the machine accidentally.



VAC 31.1: Hand-held terminals with red-yellow E-STOP buttons may be only integrated into safety circuits if the system is in safe state or a certified bridging mechanism is available. The connection module VAC 31.1 is equipped for such devices with a bayonet joint with additional short-circuit connector. Connect a hand-held terminal only if the system is in safe state. Plugging in or removing a hand-held terminal at system runtime stops the system immediately.

12.2 Operating system, display and operating components

Operation system

For licensing reasons, the hand-held terminals are only delivered with an already installed operating system. For more information on the operating system, refer to the project planning manual of the VCH 08.1, chapter "Software".

Display and operating components

For the display and operating components, also refer to the project planning manual of the hand-held terminal.

13 Error causes and troubleshooting

Error	Measures for troubleshooting
Enabling button not available	Enabling button defective. Replace device
STOP function not available	STOP button defective. Replace device
Communication with network not available	<ul style="list-style-type: none"> ● Check entries in Rexroth settings ● Screw on connection plug completely. If the contacts are bent, replace the connecting cable ● Check cable and replace it if required ● Network topology
Safety circuits cannot be closed	<ul style="list-style-type: none"> ● Completely screw in the plug ● If the contacts are bent or a cable broken, replace the connecting cable ● If a safety component is defective, replace the device

Tab. 13-1: Error causes and troubleshooting

14 Maintenance

14.1 General information

The hand-held terminals are maintenance-free. However, some components are subject to wear and have to be replaced.

NOTICE

Maintenance work in the device is only permissible by skilled staff!

If hardware or software components have to be exchanged, please contact the Bosch Rexroth Service or ensure that only skilled staff changes the respective components.

NOTICE

Dissolution of the foil surface as well as the seal by solvents or by high pressure cleaning devices!

- Do not use any solvents (e. g. diluents)!
 - Do not use compressed air, steam jet and high pressure cleaning devices!
-

14.2 Regular maintenance tasks

Include the following measures in the maintenance schedule:

- Clean the screen at least once a week using an antistatic fabric or a cleansing agent containing alcohol.
- Check all plug and terminal connections of the components for proper tightness and possible damage at least once a year.
- Check that cables are not broken or crushed. Replace damaged parts immediately.

14.3 Display

If a fading backlight causes a progressive deterioration display readability, replace it. For further information, please contact the Bosch Rexroth Service, see [chapter 17 "Service and support" on page 26](#).

14.4 Servicing

The hand-held terminal is designed for the industrial environment. No special maintenance is required.

Keep the device away from humidity, oils and emulsions.

After extended use, clean the hand-held terminal with a smooth, dry and lint-free cloth to ensure full grip for example.

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 6.

15.2 Type code VCH 08.1

Abbrev. Column	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4
Example:	V	C	H	0	8	.	1	E	A	B	-	0	6	4	E	T	-	A	1	D	-	0	6	4	-	C	S	-	E	1	-	P	W	
Product	VCH. = VCH																																	
Line	08 = 08																																	
Design	1 = 1																																	
Front plate and display	3.8", with 40 keys = EA																																	
Additional option	USB interface = B																																	
Memory capacity (RAM)	64 MB = 064																																	
Interface	Standard Ethernet = ET																																	
System configuration	PXA270, min. 400 MHz = A1																																	
Nominal connecting voltage	Supply voltage 24 VDC = D																																	
Compact flash size	64 MB = 064																																	
Function design ⓘ	Override, STOP-button and enabling device, three-stage, dual-circuit = CS																																	
	Override, handwheel, STOP-button and enabling device, three-stage, dual-circuit = DS																																	
	Override, emergency-stop button and enabling device, three-stage, dual-circuit = FS																																	
	Override, handwheel, emergency-stop button and enabling device, three-stage, dual-circuit = GS																																	
Other design ⓘ	Ethernet control cable, 8 m, bayonet lock = B1																																	
	Ethernet control cable, 0.5 m, bayonet lock = B2																																	
	Ethernet control cable, 8 m = E1																																	
	Ethernet control cable, 0.5 m = E2																																	
	Ethernet control cable, 8 m, straight connector with deform-secure contacts = E4																																	
	PS6000 operation, Ethernet control cable, 8 m = P1																																	
Firmware	With preloaded firmware = PW																																	

ⓘ Function designs "FS" and "GS" are only available in conjunction with the other designs "B1" and "B2".

Fig. 15-1: Type code of VCH 08.1

15.3 Type code VCH 08.1 (special device)

Short text-column →	1	2	3	4	5	6	7	8	9	1	0	1	2	3	4	5	6	7	8	9	2	0	1	2	3	4	5	6	7	8	9	3	0
Example:	V	C	H	0	8	.	1	E	K	B	-	0	6	4	E	T	-	A	1	D	-	0	6	4	-	E	S	-	E	3			

Front panel and display

Customized design
FMB: 3.8", with 40 keys. = EK

Functional design

Handwheel, STOP button (red). = ES

Other design

Ethernet control cable, 10 m. = E3

Fig. 15-2: Type code of VCH 08.1 (special device)

16 Disposal

16.1 General information

Dispose the products according to the respective national standard.

16.2 Return

For disposal, our products can be returned free of charge. However, the products must be free of remains like oil and grease or other impurities.

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

16.3 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.

16.4 Batteries and Accumulators

Batteries and accumulators can be labelled with this symbol.



The symbol indicating "separate collection" for all batteries and accumulators is the crossed-out wheeled bin.

The end user within the EU is legally obligated to return used batteries. Outside the validity of the EU Directive 2006/66/EC keep the stipulated directives.

Used batteries can contain hazardous substances, which can harm the environment or the people's health when they are improperly stored or disposed of.

After use, the batteries or accumulators contained in Rexroth products have to be disposed of according to the country-specific collection system.

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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Notes

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