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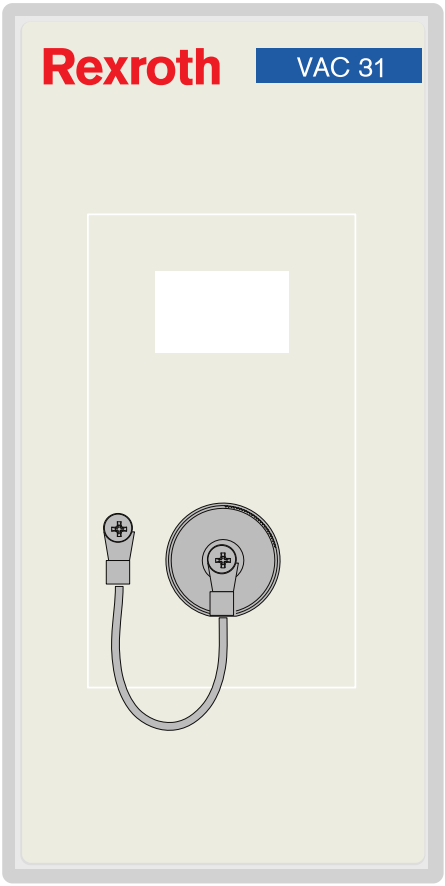
EN

IndraControl VAC 31.1
Connection Module

Assembly Instruction



About this Document

The assembly instructions describe how to install the IndraControl VAC 31.1 Connection Module.

For further information, please refer to the project planning manual “Rexroth Indra¬Control VCH 08.1”, parts number R911320190 or “Rexroth IndraControl VEH 30.2”, parts number R911331585.

Symbols

This document uses the following symbols to draw the reader’s attention to notices and dangers:

⚠ DANGER

Death and severe personal injury will occur in case of non-compliance with these safety instructions.

⚠ WARNING

Death and severe personal injury could occur in case of non-compliance with these safety instructions.

⚠ CAUTION

Minor or moderate injury may occur in case of non-compliance with these safety instructions.

NOTICE

Property damage may occur in case of non-compliance with these safety instructions.

Target Group

All installation work related to the automation system may only be carried out by qualified personnel (e.g. electricity specialists, electrical engineers). The personnel installing the device must be qualified to work with the automation system.

NOTICE **This device is a safety component or part of a safety circuit!**

Before installing and commissioning the device, please read and comply with the safety instructions in the corresponding project planning manual.

Safety Component according to Machinery Directive

This device is a safety component or part of the safety circuit! Please read and comply with the safety instructions specified in the respective manual before installing and setting the device up.

Comply with the regulations of the Machinery Directive 2006/42/EC. Synchronize the safety components to the EN ISO 13849-1, EN ISO 13850 standards. A risk analysis according to EN ISO 14121-1 determines the

safety category (see EN 60204-1). Check, whether further standards have to be complied with.

The assembly instruction applies to the following device variants:

Device type	Description	Parts number
VAC31.1C-NN	Connection Module IndraControl VAC 31.1	R911171822

Unpacking

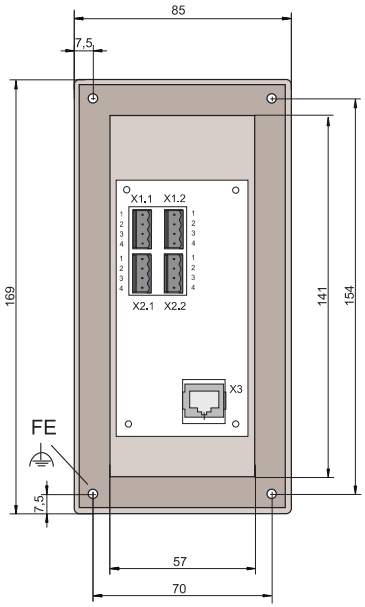
Unpack all items and check the contents for visible damages in transit. Also check, whether the delivery corresponds to the data on the delivery note. Please contact the Bosch Rexroth sales department immediately in case of discrepancies or damages in transit.

Assembly

NOTICE	Warranty of degree of protection!
To warrant the specified degree of protection, please ensure that the seal seats evenly on the mounting surface and that the set screws are uniformly tighened.	

Connecting

Supply voltage 24 V



⚠ WARNING Personal exposure to hazard due to electric shock!

- Only supply the device with power supplies featuring safety extra low voltage (e.g. SELV or PELV according to EN 61131-2).
- Only connect voltages and circuits up to 50 V nominal voltage to connectors, terminals or interfaces that are not connected to dangerous voltage (e.g. due to sufficient insulation and electric strength).

The voltage is supplied via the plug-in connector X1.1 or X1.2. This device is equipment of protection class I. To operate the device safely, a PELV corresponding to DIN EN 61131 has to be used as supply voltage.

A cable with fine wire cable cores with a minimum cross section of 0.75 mm² and a maximum cross section of 1.5 mm² has to be used for the supply voltage.

When connecting the device to the supply voltage, execute the following steps:

1. Strip approx. 30 mm of the outer cable jacket of the connection and approx. 5 mm of the cable cores.
2. Provide the cores with connector sleeves and connect them to the plug-in connector.
3. Plug the socket strip on connector X1.1 or X1.2.

A separate line has to be provided to the protective earth at one of the threaded bolts. The line should have a minimum cross section of 1.5 mm² and should be as short as possible.

Pin assignment		Connection parameters	
Pin	Signal name	Parameters	Value
X1.1 Pin1	24 VDC Connection Module	Rated voltage U_N	24 VDC ; (+19 V to +30 V)
X1.1 Pin2	0 V	Residual ripple U_N	See device documentation
X1.1 Pin3	24 VDC Terminal	Noise and surge immunity	U_{max}= 35 V (für t < 100 ms)
X1.2 Pin1	24 VDC Connection Module	Current consumption for U_N	Max. 0.7 A (depending on the operator terminal)
X1.2 Pin2	0 V	External protection	Fusible cut-out, 2 A slow
X1.2 Pin3	24 VDC Terminal	Reverse voltage protection	Via isolating diode; in case of polarity reversal, the in-
X1.1 Pin4	Terminal connected IN		

Pin assignment		Connection parameters	
Pin	Signal name	Parameters	Value
			put fuse is triggered.
X1.2 Pin4	Terminal connected OUT		
X2.1 Pin1	E-STOP button 1 IN	The connection module IndraControl VAC 31.1 is supplied with voltage via X1.1 pin1 or X1.2 pin1. The connected handheld terminal is supplied with voltage via X1.1 pin3 or X1.2 pin3. To make the handheld terminal switchable or disengageable when it is plugged-in, the wire jumper between X1.2 pin1 and X1.2 pin3 has to be removed and the switching voltage for the handheld terminal has to be applied to X1.1 pin3 or X1.2 pin3.	
X2.1 Pin2	E-STOP button 1 OUT		
X2.1 Pin3	E-STOP button 2 IN		
X2.1 Pin4	E-STOP button 2 OUT		
X2.2 Pin1	Enabling device 1 IN		
X2.2 Pin2	Enabling device 1 OUT	For safety reasons, monitor the voltage supply for the connection module (X1.1 pin 1, X1.2 pin 1).	
X2.2 Pin3	Enabling device 2 IN		
X2.2 Pin4	Enabling device 2 OUT		

NOTICE **Fire hazard in case of component failure!**

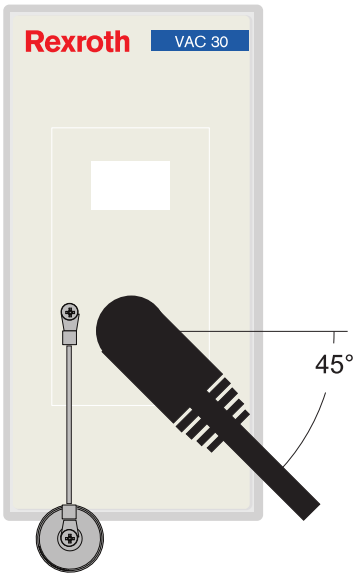
- The external voltage supply must have a rated voltage of 24 V and must not exceed an output voltage of 30 V.
- The 24 V line to the connection terminals must be protected by a slow 2 A fuse.
- All Emergency Stop circuits must also be protected by a slow 2 A fuse.

⚠ DANGER **Danger without safe isolation!**

- The 24 VDC input voltage must comply with the requirements of the "Safe isolation"!
- Plug and unplug the connector only if disconnected from voltage!

Connecting the Hand Held Terminal

The hand-held terminal is connected to the automation system via the connection module IndraControl VAC 31.1. Before commissioning the hand-held terminal, the user has to ensure that the installation and particularly the safety devices are in good order and condition.



Before commissioning the hand-held terminal, please ensure that the STOP button is NOT pressed. Connecting the hand-held terminal during a pressed STOP button will shut the installation down.

To connect the hand-held terminal, place the angled connector with little force, at an angle of approximately 45°, on the flange of the IndraControl VAC 30.2. connection module. The correct position is reached when the connector snaps in correctly. Now turn the knurled nut on the flange by applying little pressure.

To connect the hand-held terminal, unscrew the short-circuit-connector and place the panel connector with little force on the flange of the connection module IndraControl VAC 31.1. The correct position is reached when the connector snaps in correctly. Now turn the knurled nut on the flange by applying little pressure.

To ensure the optimal connection of the contacts and to achieve the specified degree of protection, the knurled nut has to be screwed on until the fixed stop is reached.

To disconnect the hand-held terminal, unscrew the panel connector and place the short-circuit-connector on the flange of the connection module IndraControl VAC 31.1 with little force. The correct position is reached when the connector snaps in correctly. Now turn the knurled nut on the flange by applying little pressure.

The short-circuit connector closes the E-Stop circuits in case no hand-held terminal is plugged on. An open flange will shut down the installation.