

## Automation station EDDC, E-device



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### 1. General information



#### Reading and storing documents

##### Damage to the device due to operating errors!

If you do not have sufficient knowledge of the device, errors may occur during operation.

- Read this document carefully.
- The document is an integral part of the device and must be available at the place of use of the device at all times during its entire service life.
- If the device is sold, this document must also be handed over.

#### 1.1 Symbols and Graphics

Symbol/Graphic	Description
	Warning of general danger
	Tip, hint
	Reading and storing documents
	LED that can switch between red and green, depending on operating status
	LED that can switch between red, green and yellow, depending on operating status
	LED that can switch between red, green and off, depending on operating status
	LED lights up or flashes in one of the displayed colours
	LED flashes alternately red/green Other colour combinations are possible depending on the device
	LED is off
	push button

This is a general explanation, not every device has all LED variants or push buttons.

#### 1.2 Proper use

The automation station "EDDC23", in the following only called "device", is a freely programmable modular DDC unit for the regulation, control, monitoring and optimisation of systems for building automation.

### 1.3 Type plate

The following data can be found on the type plate:

Part number, designation, logo, bar code (code 128) and serial number; CE mark; associated information about the device.

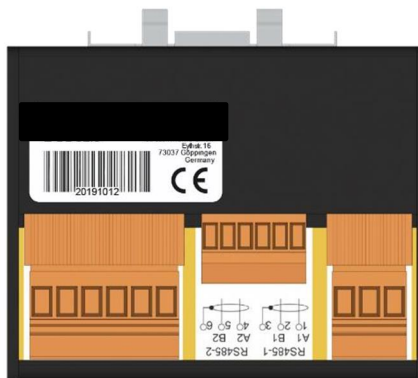
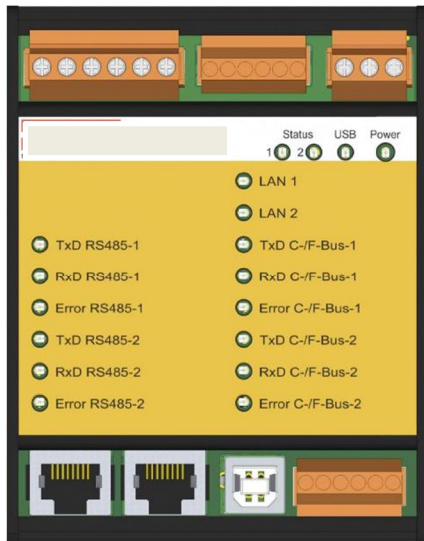


Image similar

### 1.4 Firmware update

A firmware update can be performed with a suitable R.F. program.

→ See separate document.

### 1.5 USB driver

An USB driver must be installed to program the device via USB interface and provide the required communication with the device.



#### Note!

From Windows 8.x the check for a driver signature must be switched off, as the USB driver can otherwise not be installed. The RNDIS driver from R.F. does not have a signature.

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### 1.6 SD card

During installation, a free area of at least 50 mm must be provided at the side for removing the SD card and the battery from the device.



#### Note!

#### **Impairment of the function if the SD card is incorrect!**

If conventional SD cards are used, a permanent and correct function of the device cannot be guaranteed.

→ Only use SD cards supplied by Régulation France.

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#### Note!

#### **Damage to the SD card!**

The removal, installation or replacement of the SIM card when the device is switched on can impair the proper functioning of the SIM card.

→ Only remove, install or replace the SIM card when the device is switched off or de-energized.

→ Ensure that the SD card is correctly aligned! See the graphic above the SD card slot.

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#### **Removing and inserting SD card**

→ To remove the SD card, press the SD card slightly into the device to open the lock (Push-in/Push-out mechanism). A click can be heard.

→ The SD card now protrudes a little.

→ Pull out the SD card.

→ To insert the SD card, enter the SD card into the card slot and press it slightly into the device to open the lock (push-in/push-out mechanism). A click can be heard.

### 1.7 Battery

- It is possible to change the battery during operation without losing data.
- The battery is used to buffer (preserve) the NVRAM content and the RTC (Real Time Clock).
- If the unit is without power supply, do not remove the battery of the unit for more than three hours, otherwise the NVRAM and RTC will lose their data.



#### Note!

#### **Removal of the battery holder is no longer possible!**

Never insert the battery holder without the battery, otherwise it can not be removed again.

→ Always insert the battery holder with the battery inserted.

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#### **Removing and inserting battery**

- To remove the battery holder with the battery, insert a suitable tool (e.g. tip of a narrow slot screwdriver) into the lower opening of the battery holder.
- Pull or lever the battery holder with battery out of the device.
  
- To insert the battery holder with the battery, enter the holder with the battery into the battery compartment and press it completely into the device.
- Ensure that the battery holder is correctly aligned!
- Ensure correct polarity of the battery! See the graphic above the battery compartment.

### 2. EDDC

EDDCs are units manufactured in series and designed task neutral. Any links, storage functions, times, counters, etc. required for control engineering are provided and connected to a functioning control system via programming.

EDDC is the central processing unit. In it, all data required for the operation can be stored and processed. It starts all actions, receives the information of the integrated IO-modules and transfers these to other units depending on the system design.

By using an operating device (HMI, Touch-Display) it is possible to take a look at programmed actual values during the operation and to change nominal values, respectively. The data stored in the EDDC can be changed via an operating device and trend data can be displayed.

Depending on the version, the communication with the EDDC is possible via USB (type B), Ethernet (RJ45), RS485 channel 1 + and modem.

#### 2.1 Connection options

##### Web configurator via browser

From firmware version 03.06.03 it is possible to make some settings via the web interface of the device. No device-specific software is required on the computer for this purpose.

To use the web interface, a network connection to the device must exist and the IP address of the device must be entered in the address line of the browser.

**The following internet browsers are supported:**

- Mozilla Firefox from version 37
- Google Chrome from version 42
- Internet Explorer from version 10

Further browsers are possible.

##### USB

IP address: 192.0.0.1

##### Ethernet

IP address: 192.168.135.1

Subnet mask: 255.255.255.000

Standard gateway: 000.000.000.000

##### Device address (time of delivery)

RS485 channel 1, MS/TP, baud rate 76800

RS485 channel 2, MS/TP, baud rate 76800

Bus address: 1

Modbusport: 502

### 3. Technical specifications

Electrical connection		
Voltage supply	AC 24 V $\pm$ 10 %, 50 $\bar{\delta}$ 60 Hz DC 24 V $\pm$ 20 %	
max. power consumption	AC 44 VA DC 26 W	
Self-consumption	AC 6.9 VA DC 2.6 W	without load
Communication		
2x RS485	type of cable: min. 2x 0.8 mm <sup>2</sup> , wires twisted-pair and shielded	
	A-bus	baud rate: 9600
	B-bus	baud rate: 19200
	E-bus	baud rate: 76800
	MS/TP	baud rate: 9600, 19200, 38400, 57600, 76800, 115200 protocol: BACnet MS/TP and TCP/IP TCP/IP: ICMP, UDP, TCP, FTP, HTTP, SMTP; PPTP/GRE
	Modbus RTU	master or Slave baud rate: 9600, 19200, 38400, 57600, 76800, 115200 parity: none (Stopbit 2), even (Stopbit 1), odd (Stopbit 1)
2x C-/F-bus	type of cable: min. 2x 2x 0.8 mm <sup>2</sup> , wires twisted-pair and shielded. When designing the cable, consider the voltage drop for the corresponding cable length. C-bus: per line max. 400 mA, up to 22 units F-bus: per line max. 400 mA, up to 32 units	
2x Ethernet	2 x RJ45 connector	LAN 1: Ethernet LAN 2: Connection to touch panel (e.g. HMI-WEB7)
	transfer rates	10/100 MBit/s, Auto MDIX, Auto Sens
		TCP/IP over Ethernet ICMP, UDP, TCP, FTP, HTTP, SMTP, PPTP/GRE, BACnet IP, Modbus TCP
	Modbus TCP (master or slave)	
1x USB	Service interface (type B) for diagnosis, parameter setting and maintenance, web server functionality	TCP/IP over RNDIS
Output		
Digital	2x DO	<ul style="list-style-type: none"> <li>relay contact (changeover contact): each max. AC 24 V, 2 A / DC 30 V, 1 A</li> <li>freely programmable</li> <li>potential free</li> </ul>
Memory		
SD-RAM	32 MB	system-memory
NVRAM	2 MB	buffered by a battery (CR 1632) which is accessible from the outside
microSD flash card	4 GB	for trend data, application, CAD drawing, languages, firmware $\bar{\delta}$
Others		
Real Time Clock (RTC)	automatic summer / winter time	buffered by a battery (CR 1632) which is accessible from the outside
Batterie	CR 1632	
Operating conditions		
Temperature	0 $\bar{\delta}$ +50 °C	
Humidity	10 $\bar{\delta}$ 95 % r.h.	non-condensing
Vibration	5.9 m/s <sup>2</sup> (0.6 G)	max. 10 $\bar{\delta}$ 150 Hz

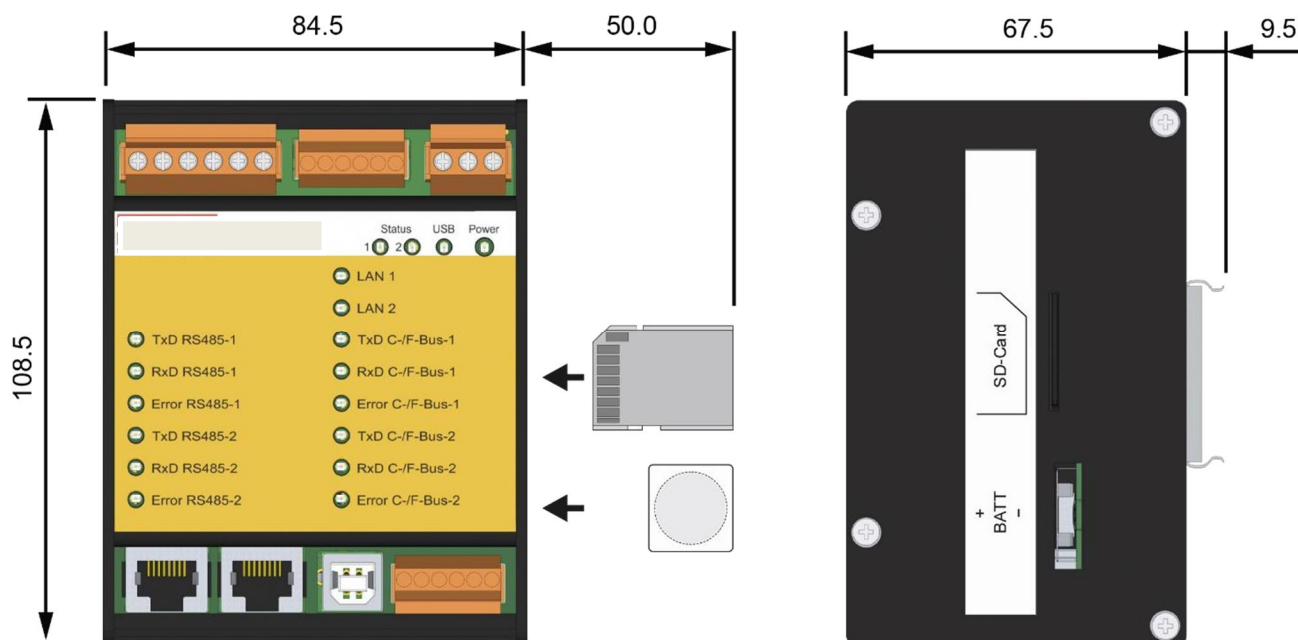


# EDDC23

## Workbook (WB)

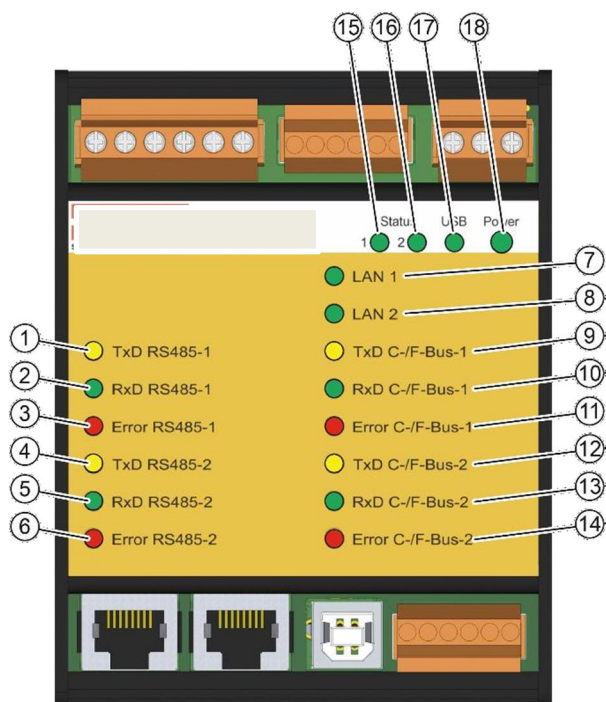
Air pressure	70 ÷ 106 kPa	up to 3000 m above mean sea level
<b>Storage conditions</b>		
Temperature	-20 ÷ +70 °C	
Humidity	10 ÷ 95 % r.h.	non-condensing
Vibration (transport)	5.9 m/s² (0.6 G)	max. 10 ÷ 150 Hz
Vibration (storage)	9.8 m/s² (1 G)	max. 10 ÷ 150 Hz
Air pressure	70 ÷ 106 kPa	up to 3000 m above mean sea level
<b>Housing</b>		
Dimensions (without top-hat rail)	84.5 × 108.5 × 67.5	length × width × height (installation depth) in mm
Dimensions (with top-hat rail)	84.5 × 108.5 × 77.0	length × width × height (installation depth) in mm
Weight	400 g	
Type of mounting	industrial design for DIN rail mounting	
Material/colour	robust metal housing die-cast aluminium	deep black RAL 9005
Protection class	III	safety extra-low voltage
Protection	IP 20	
<b>CE conformity</b>		
	see EU declaration of conformity	

### 3.1 Dimensions



All dimensions in mm

### 3.2 Indicating and operating elements



#### Start process of the device (bootloader)

After switching on the power supply, the device runs through the start process and signals this via the LED Status 1 (pos. 15):

Green light → fast flashing → flashing: start process is completed

#### Undervoltage protection

If the device detects an undervoltage (< AC 14 V / < DC 18 V) at the power supply, the device stops processing the firmware and the application until the voltage is sufficient again.













LED Status 1 (pos. 15) + LED Status 2 (pos. 16): both LEDs flash alternately.

When the supply voltage returns, the device restarts.

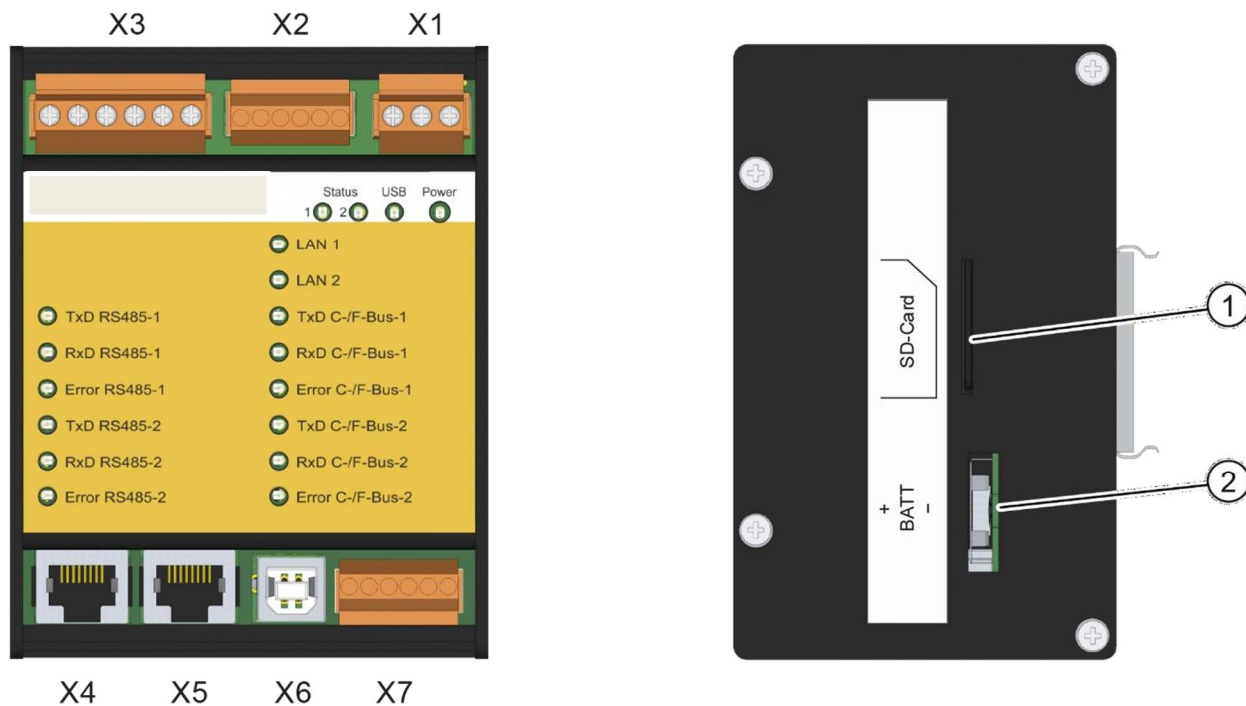
LED		
Designation	Display	Description
TxD RS485-1 pos. 1	yellow	flashing: data is sent via RS485 channel 1
RxD RS485-1 pos. 2	green	flashing: data is received via RS485 channel 1
Error RS485-1 pos. 3	red	flashing: device detects error on RS485 channel 1 (checksum error, collision, protocol error)
TxD RS485-2 pos. 4	yellow	flashing: data is sent via RS485 channel 2
RxD RS485-2 pos. 5	green	flashing: data is received via RS485 channel 2
Error RS485-2 pos. 6	red	flashing: device detects error on RS485 channel 2 (checksum, collision, protocol error)

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## Workbook (WB)

LAN 1 <i>pos. 7</i>	 green	lighting: connection LAN 1
LAN 2 <i>pos. 8</i>	 green	lighting: connection LAN 2
TxD C-/F-Bus-1 <i>pos. 9</i>	 yellow	flashing: data is sent via C-/F-Bus channel 1
RxD C-/F-Bus-1 <i>pos. 10</i>	 green	flashing: data is received via C-/F-Bus channel 1
Error C-/F-Bus-1 <i>pos. 11</i>	 red	flashing: the device detects errors on the C-/F-bus line 1 (checksum, collision, protocol error or double use of an address)
TxD C-/F-Bus-2 <i>pos. 12</i>	 yellow	flashing: data is sent via C-/F-bus channel 2
RxD F-Bus-2 <i>pos. 13</i>	 green	flashing: data is received via C-/F-bus channel 2
Error C-/F-Bus-2 <i>pos. 14</i>	 red	flashing: the device detects errors on the C-/F-bus line 2 (checksum, collision, protocol error or double use of an address)
Status 1 <i>pos. 15</i>	 green	lighting: no program release flashing: the program processing runs in a flashing rhythm. The flashing becomes slower as the program run time (size) increases.
Status 2 <i>pos. 16</i>	 green	Displays in operation flashing: processing of the time switches off: Normal operation
USB <i>pos. 17</i>	 green	lighting: connection USB present
Power <i>pos. 18</i>	 green	lighting: power supply available

### 3.3 Connection assignment



Designation		Description
<b>Clamp X1</b>		
1	L1	power supply AC/DC 24 V
2	L2	ground connection voltage supply
3		ground potential housing
<b>Clamp X2</b>		
1	A1	RS485-1
2	B1	
3	-	Support clamp (shield clamp)
4	A2	RS485-2
5	B2	
6	-	Support clamp (shield clamp)
<b>Clamp X3</b>		
1	A1	C-/F-bus-1
2	B1	
3	⏏	ground potential housing
4	A2	C-/F-bus-2
5	B2	
6		ground potential housing
<b>Clamp X4</b>		
.	LAN 2 Panel	Ethernet (RJ45), connection to touch panel (e.g. HMI-WEB7)
<b>Clamp X5</b>		
.	LAN 1	Ethernet (RJ45)
<b>Clamp X6</b>		
.	USB Service	Type B, for service

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## Workbook (WB)

Clamp X7		
1	DO1	Changeover contact (common contact)
2		Relay contact normally open (NO), potential-free
3		Relay contact normally closed (NC), potential-free
4	DO2	Changeover contact (common contact)
5		Relay contact normally open (NO), potential-free
6		Relay contact normally closed (NC), potential-free
SD card		
pos. 1	Slot for microSD flash card 4 GB	
Battery		
pos. 2	Slot for battery CR 1632	

### Permissible cable cross-sections (clamp X1, X3)

- 0.2 mm<sup>2</sup> ÷ 4.0 mm<sup>2</sup> (solid, flexible, with wire end ferrule)
- 0.2 mm<sup>2</sup> ÷ 2.5 mm<sup>2</sup> (with ferrule with collar)

### Tightening torque

- 0.4 ÷ 0.5 Nm

### Permissible cable cross-sections (clamp X2, X7)

- 0.2 mm<sup>2</sup> ÷ 1.5 mm<sup>2</sup> (solid, flexible, with wire end ferrule, with wire end ferrule with collar)

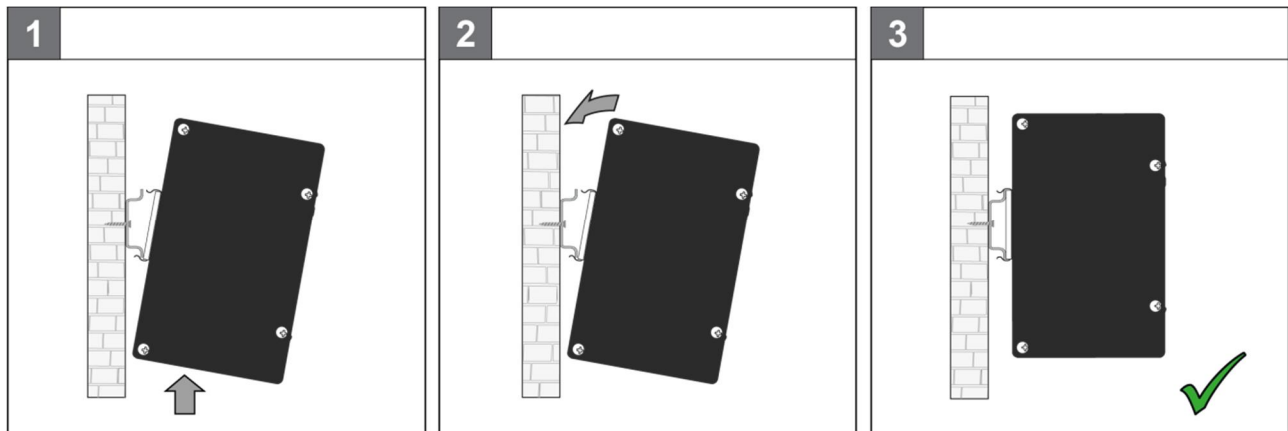
### Tightening torque

- 0.2 ÷ 0.25 Nm

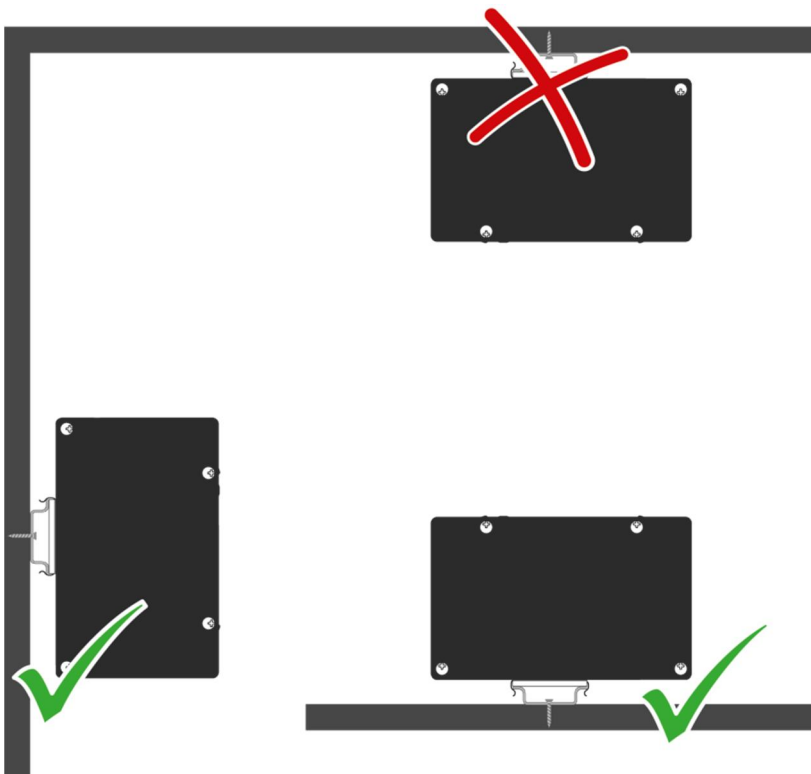
### 4. Mounting



Work on the device may only be carried out when it is disconnected from the power supply.



#### 4.1 Mounting position



### 5. Dismantling

The workflow is identical to the chapter "Mounting", but in the reverse order.

### 6. Contacting the support

Should you have questions or experience problems in handling the hardware or software, please contact our Support. For this purpose, keep the following information available:

- software used: designation, version
- hardware used: designation, article number, serial number (see rating plate), firmware version
- project data: voltage supply, bus topology, etc.
- operating system: designation, version

Telephone: 04.72.81.47.70.

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