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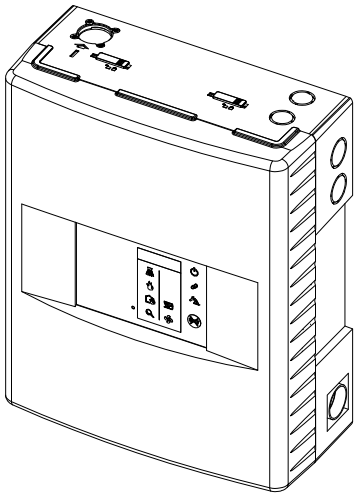

FDA222, FDA242

Aspirating smoke detector

Installation

Mounting

A6V13580856_en--_a
2023-07-04

Smart Infrastructure

Imprint

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Table of contents

1 About this document

Goal and purpose

This document contains all the information you will need to mount and install the following aspirating smoke detectors:

- FDA222
- FDA242

Following the instructions consistently will ensure that the product can be mounted and installed safely and without any problems.

Intended use

The aspirating smoke detector is intended to detect and control fires.

Document identification

The document ID is structured as follows:

ID code	Examples
ID_languageCOUNTRY_ modification index -- = multilingual or international	A6V10215123_deDE_a A6V10215123_en--_a A6V10315123_----_a

Date format

The date format in the document corresponds to the recommendation of international standard ISO 8601 (format YYYY-MM-DD).

1.1 Applicable documents

Document ID	Title
008331	List of compatibility (for 'Sinteso™' product line)
009052	FS20 Fire detection system - Commissioning, Maintenance, Troubleshooting
009078	FS20 Fire detection system - Configuration
A6V10210416	FS720 Fire detection system - Commissioning, Maintenance, Troubleshooting
A6V10210424	FS720 Fire detection system - Configuration
A6V10229261	List of compatibility (for 'Cerberus™ PRO' product line)
A6V10393194	Technical manual Power supply kit A 70 W FP120-Z1
A6V10877841	Installation ASD Filterbox FDAZ292
A6V11783979	Planning, Installation ASD Pipe system
A6V11784000	User Manual 'ASD Asyst Tool V3 FXS2056'
A6V13580769	Technical manual Aspirating smoke detector FDA222, FDA242
A6V13580771	Data sheet Aspirating Smoke detector FDA222, FDA242

1.2 Technical terms

Term	Explanation
ASD	Aspirating smoke detector
ASD+ Connect	Siemens software
FDnet/C-NET	Addressed detector line
GPI	General purpose input; connection for an external switch
NC	Normally closed; standard state of connection is closed
NO	Normally open; standard state of connection is open
PC	Personal computer
Portal	Online web portal Sinteso Portal: sintesoportal.siemens.com Cerberus Portal: cerberusportal.siemens.com
PSU	**P**ower **s**upply **u**nit
SRC1	Optical detection channel in the FDnet/C-NET (fire alarm)
SRC2	Optical detection channel in the FDnet/C-NET (extinguishing)

1.3 Revision history

The version of the reference document is valid for all languages into which the reference document is translated.

The first edition of the document into a language and/or for a country might have the version 'd', for example, instead of 'a', if the document has already reached this publication version.

Version	Edition date	Brief description
a	2023-07-04	**First edition**

2 Mounting

2.1 Installation position and space requirements

Requirements for the installation location

- Only to be mounted within a building where the ambient conditions are permissible
- No direct sunlight
- Minimal dust load
- Level, non-combustible surface
- Sufficient clearance on all sides of the aspirating smoke detector
- Additional space requirements for and access required to:
  - External power unit and batteries
  - Blowing-out unit (optional)
  - Water trap (optional)

Installation position

The aspirating smoke detector can be mounted in four installation positions:

- Standard: pipe connections at top
- Rotated by 180°: pipe connections at bottom
- Rotated counterclockwise by 90°: pipe connections on left
- Rotated clockwise by 90°: pipe connections on right

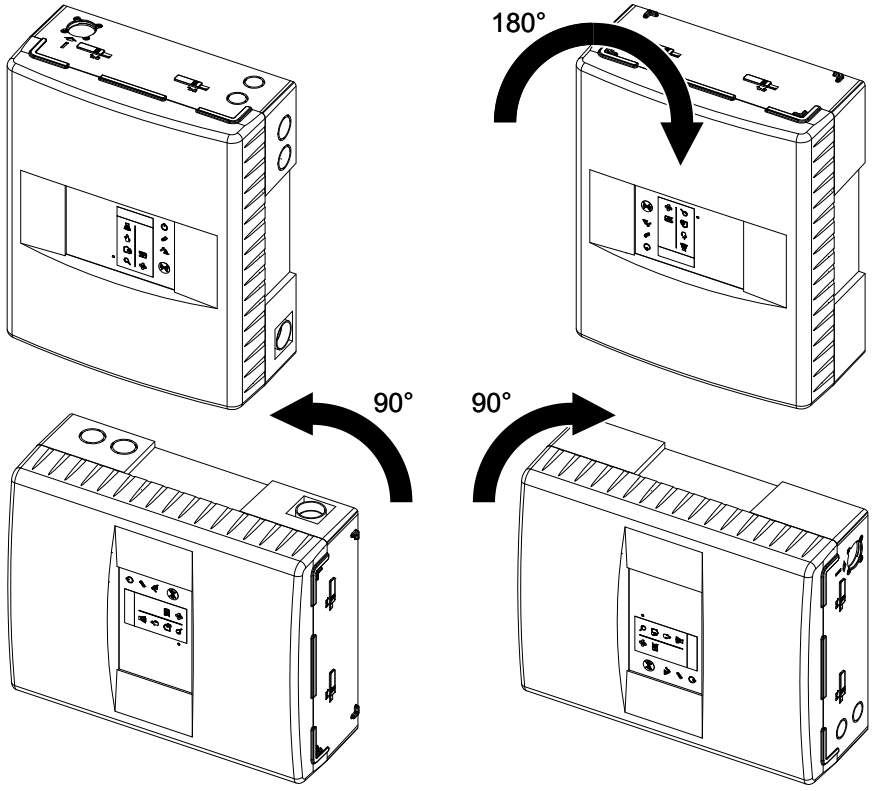


Fig. 1: Installation positions

Space requirements

At least 150 mm clearance required on all sides of the aspirating smoke detector, for easy mounting of the pipe system and electrical connections.

2.2 Dimensions

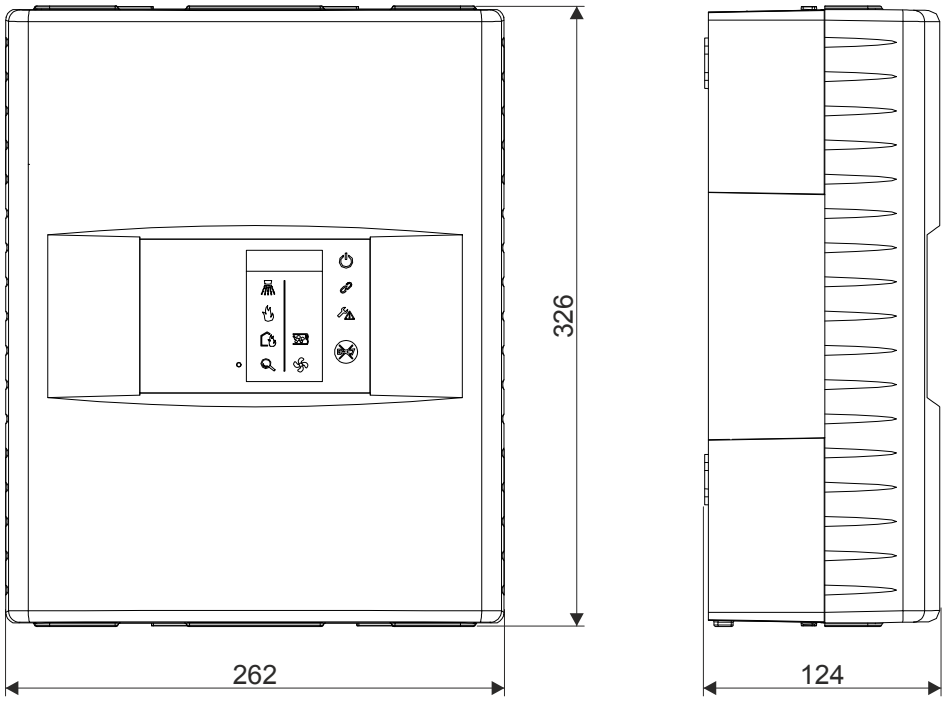


Fig. 2: Aspirating smoke detectors FDA222, FDA242

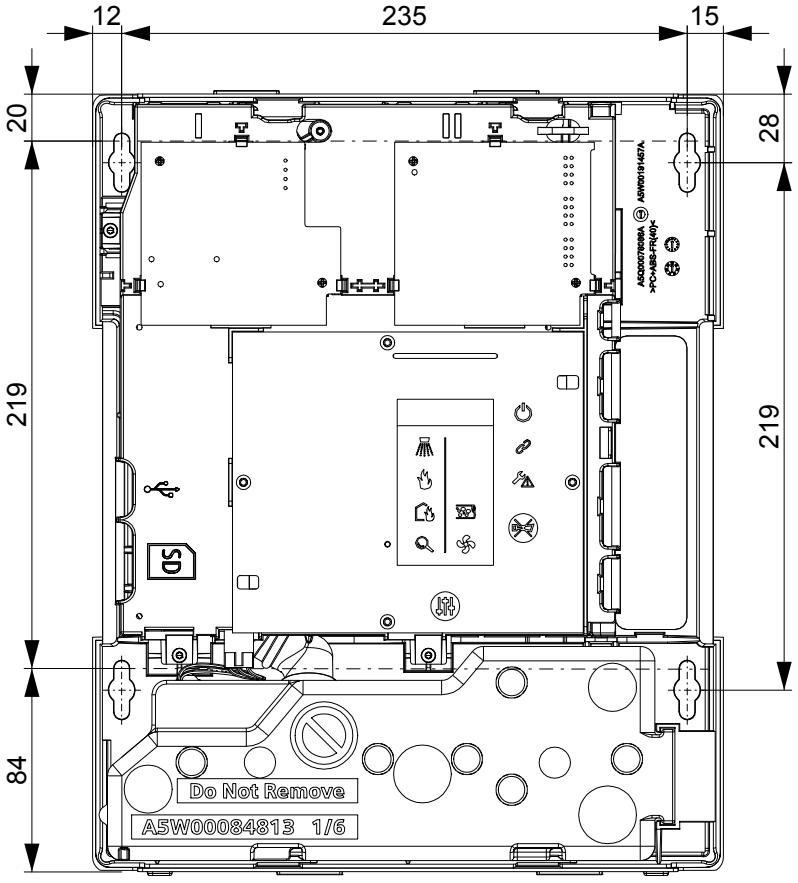


Fig. 3: Hole pattern FDA222, FDA242

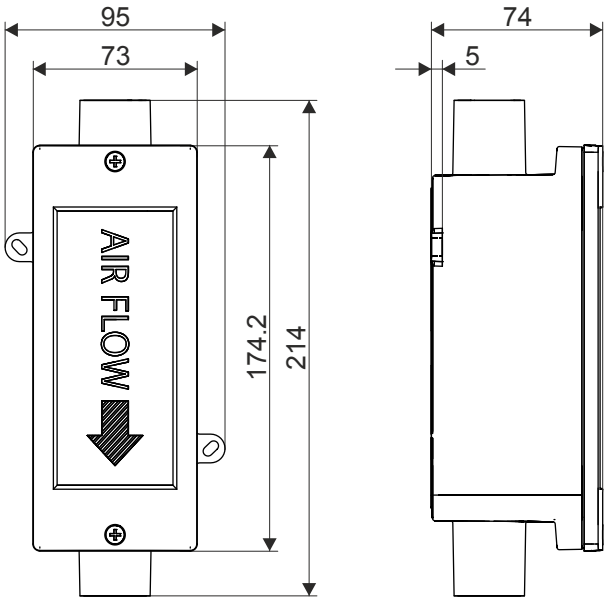
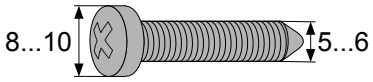


Fig. 4: ASD filter box FDAZ292

2.3 Mounting on a level surface

▷ Installation location: level surface

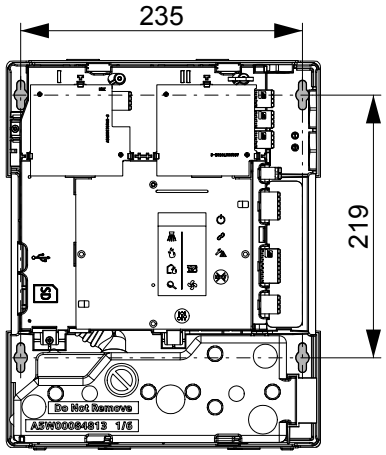
▷ Four screws are to hand.



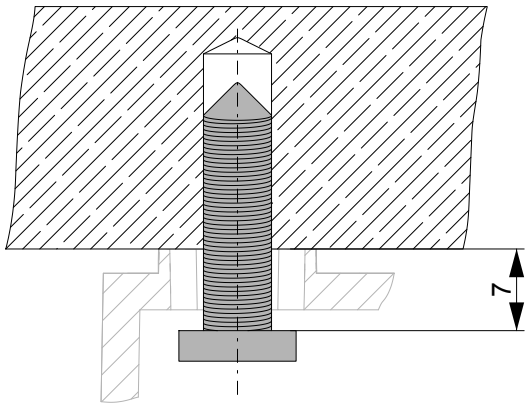
▷ Housing cover has been removed. See 'Removing the housing cover [➙ 13]'.

1. Drill four holes using the supplied drilling template. For the hole pattern, see 'Dimensions [➙ 8]'.

– Use suitable dowels if required.



2. Screw in the screws until there is a gap of 7 mm between the surface and the screw head.



3. Hook the back box onto the screws.

4. Carefully tighten the screws.

⇨ The back box is now fastened.

2.4 Connecting the pipe system

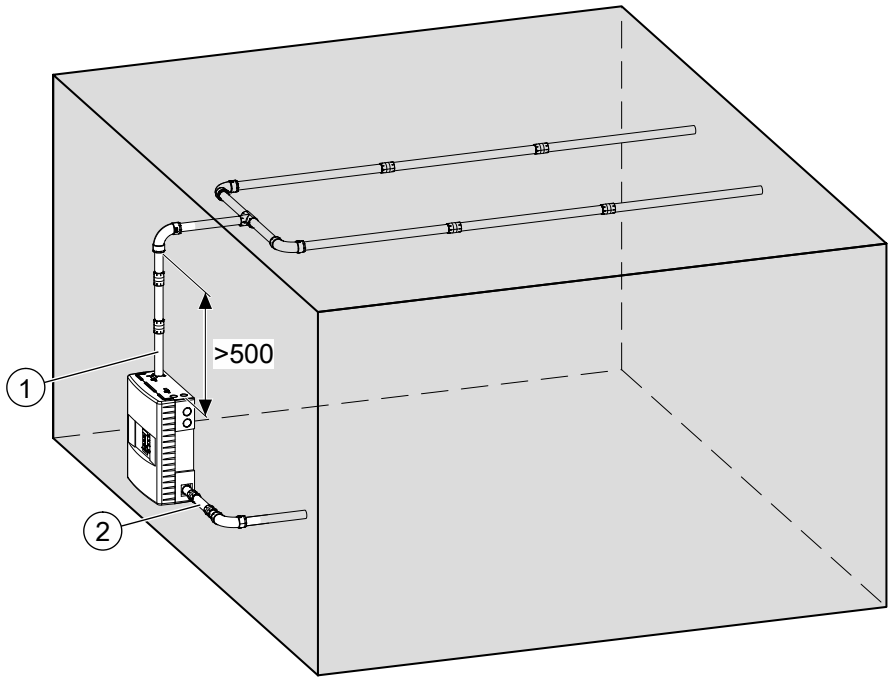


Fig. 5: Connecting the pipe system (example)

▷ The pipe system has been mounted.

▷ There is a straight pipe at least 500 mm in length leaving the aspirating smoke detector.

1. Press the pipe (1) into the air inlet (without adhesive).

2. Connect the pressed-in pipe to the pipe system.

Connecting a return pipe (optional)

If the air pressure difference between the monitored room and the aspirating smoke detector is >45 Pa, install a return pipe.

1. Press the return pipe (2) into the air outlet.

2. Feed the return pipe into the monitored room.

You will find more information in document A6V11783979. See 'Applicable documents'.

2.5 Mounting the ASD filter box

- Install the ASD filter box FDAZ292 into the pipework system with a clearance of at least 100 mm to the aspirating smoke detector.

You will find more information on mounting the ASD filter box in document A6V10877841. See 'Applicable documents'.

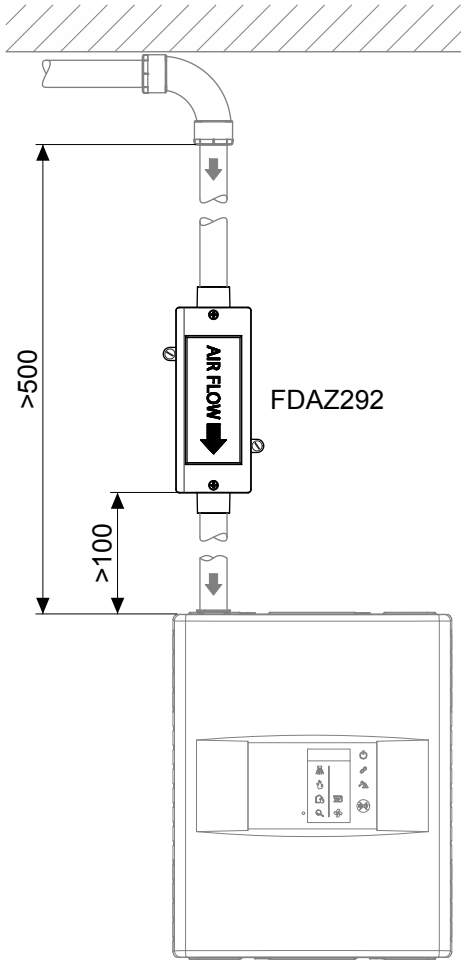


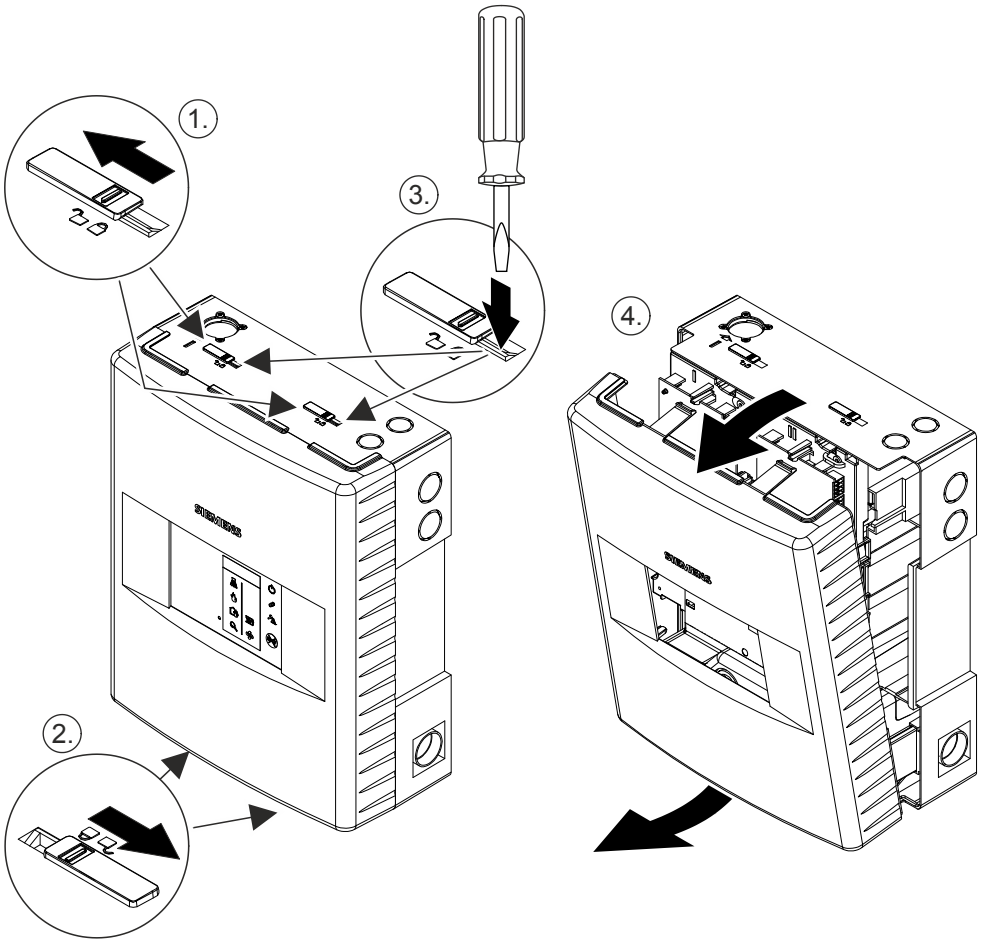
Fig. 6: Mounting the ASD filter box

2.6 Removing the housing cover

NOTICE	
!	**Electrostatic discharge** Damage to electronic components ● Ground yourself before opening the housing: Wear a grounding strap or touch a ground point.

Open the housing to access the service area:

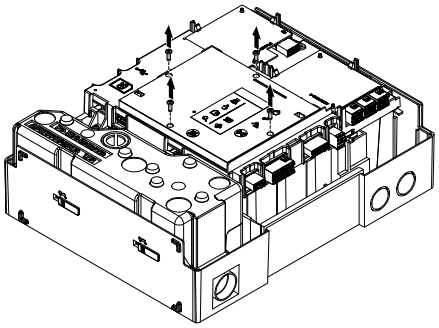
1. Move two sliders at the top into the position.
2. Move two sliders at the bottom into the position.
3. Push in the two lugs at the top with a suitable tool.
4. Tilt the cover forward at the top and remove.

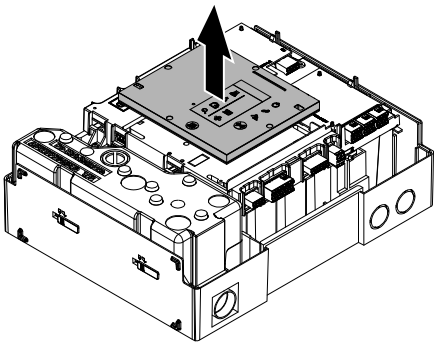


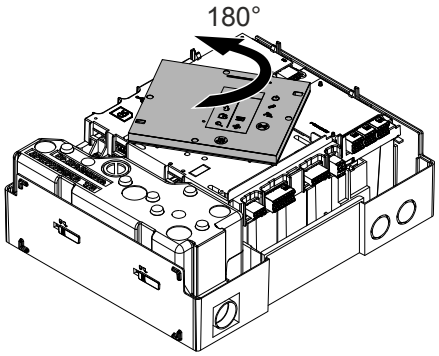
2.7 Rotating the front indicator

▷ Housing cover has been removed. See 'Removing the housing cover [➙ 13]'.

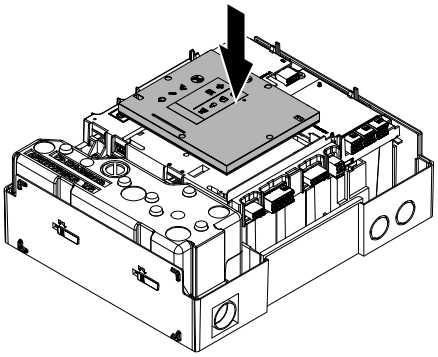
1. Disconnect the power supply DC 24 V: pull the connector out.
2. Remove the four screws.
3. Lift the front indicator straight up.
4. Rotate the front indicator by 180°.

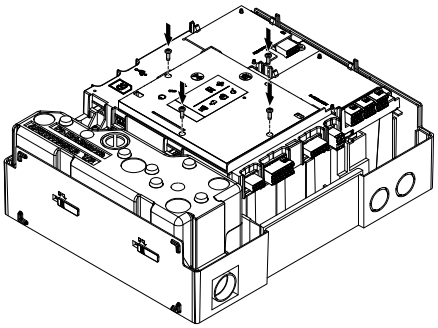


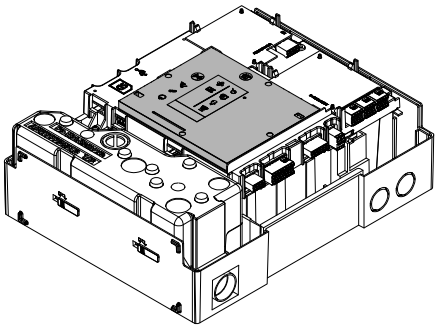




5. Position the front indicator.
   – Align the 14-pin connector with the socket.





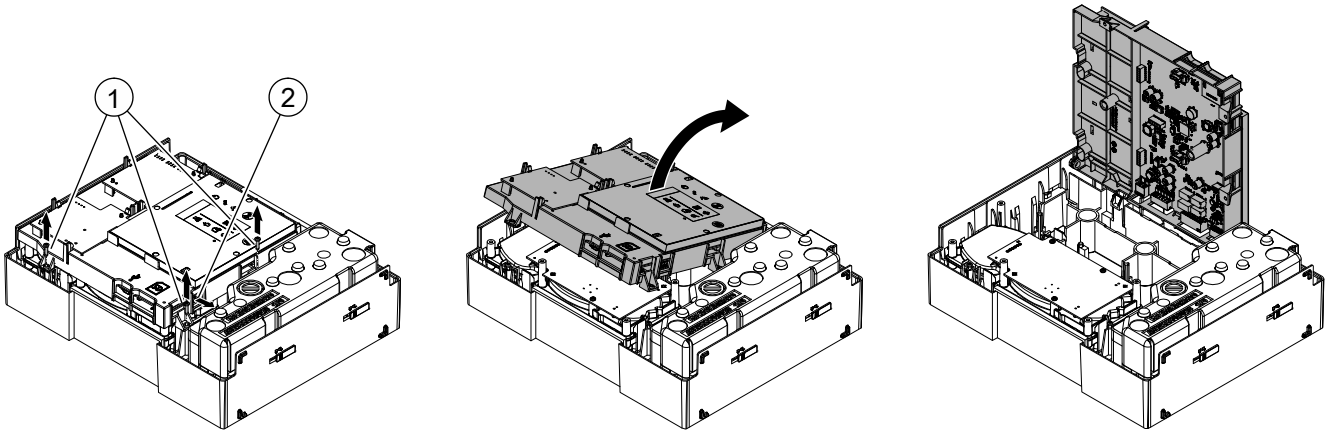


6. Install the front indicator.
   – Carefully insert the 14-pin connector.
7. Tighten the four screws.
   ⇨ The front indicator is now installed rotated by 180°.
8. Plug in the DC 24 V connector.

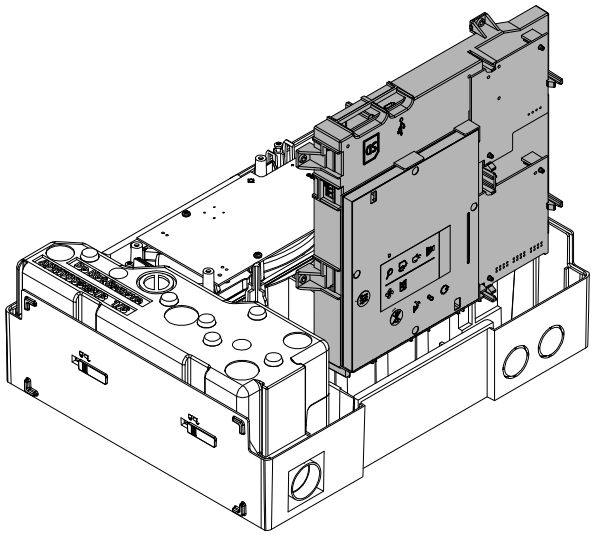
2.8 Folding the carrier up

▷ Housing cover has been removed. See 'Removing the housing cover [→ 13]'.

1. Remove the three screws (1).
2. Pull the aspirator connector (2) out.
3. Rotate the carrier in the direction of the arrow.



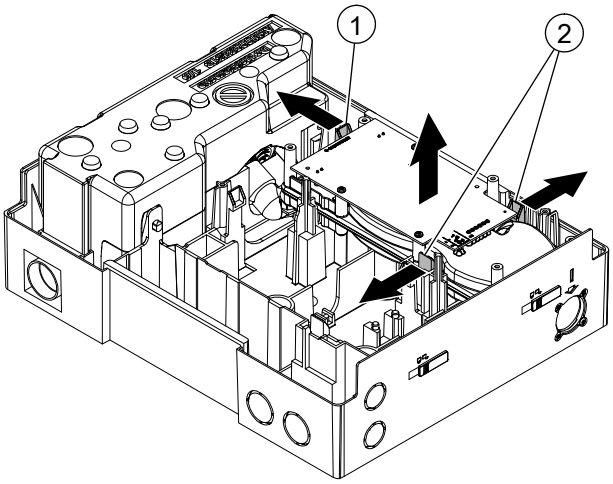
⇨ The carrier has been rotated by 90°.

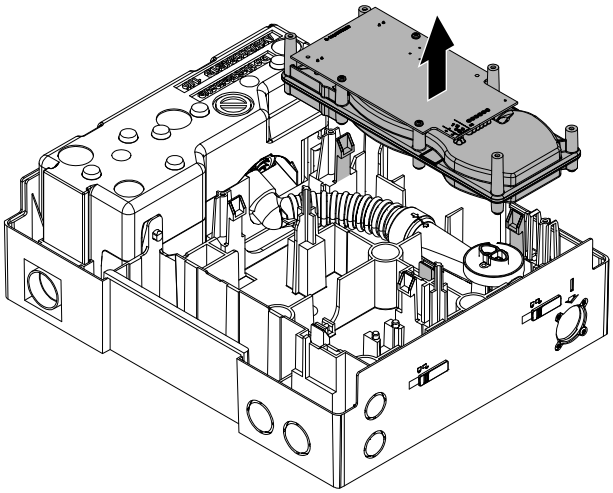


2.9 Replacing the detection chambers

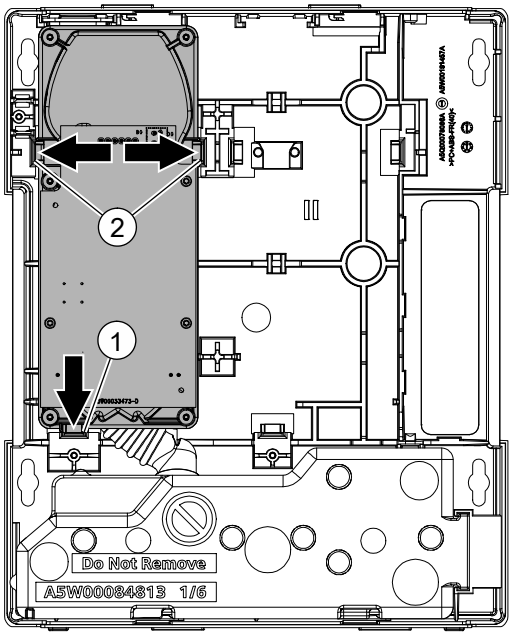
▷ The carrier has been folded up. See 'Folding the carrier up [➙ 15]'.
The carrier is not depicted in the figures below to give a clearer view of the parts concerned.

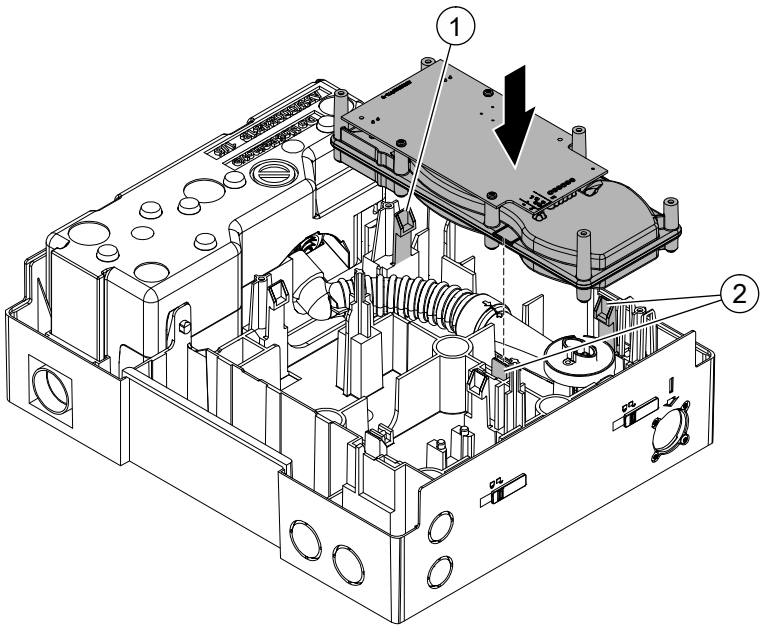
1. Press the snap fastener (1) in the direction of the arrow and lift the detection chambers a little.
2. Press the snap fasteners (2) in the direction of the arrow and remove the detection chambers, again in the direction of the arrow.





3. Position the new detection chambers and install in the direction of the arrow.
   – The snap fasteners (1, 2) must latch into place.

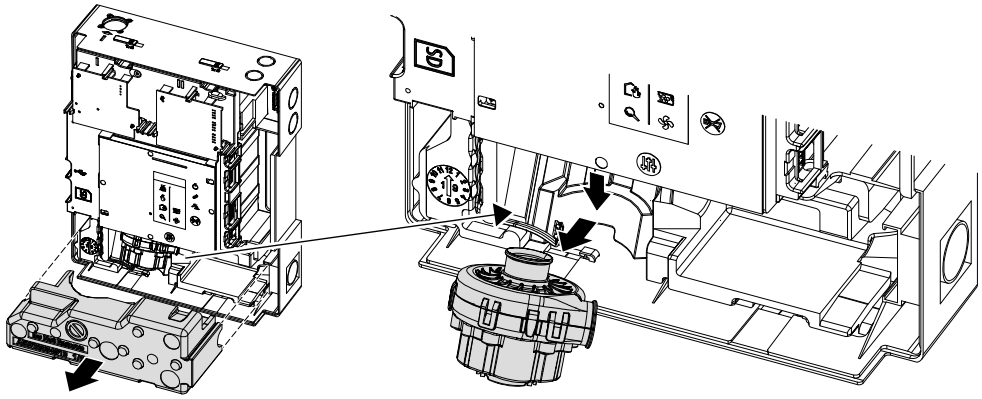




⇨ The detection chambers are now installed.

2.10 Replacing the aspirator

▷ Housing cover has been removed. See 'Removing the housing cover [→ 13]'.



1. Pull the aspirator holder out.
2. Unplug the cable from the aspirator and the carrier.
3. Remove the aspirator from the pipe.
4. Position the new aspirator and insert it into the pipe.
5. Plug the cable into the aspirator and the carrier.
6. Insert the aspirator holder.
7. Mount the housing cover.

2.11 Installing an extension card

The extension cards 'relay card FDAZ295' and '4…20mA card FDAZ296' can be installed in slot (1) or (2). Two extension cards of the same type can be installed.

Recommendation: Install 'relay card FDAZ295' (3) in slot (2) to make cabling easier.

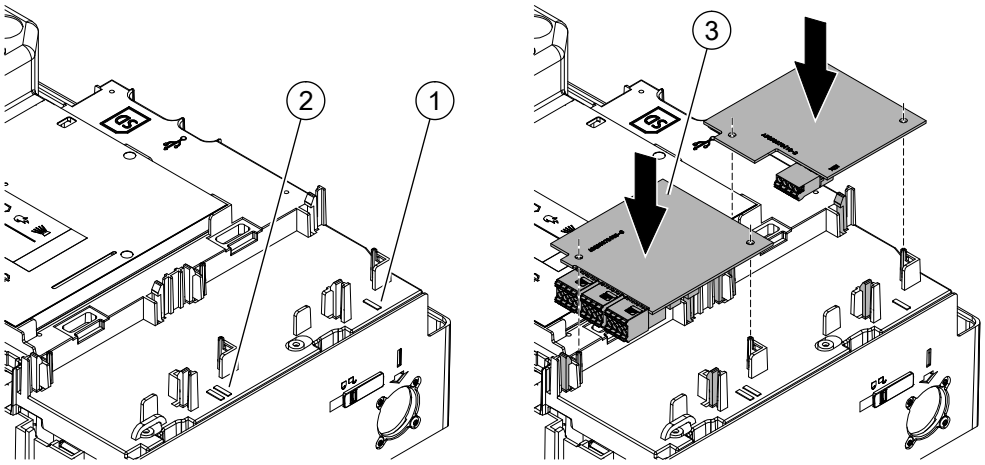
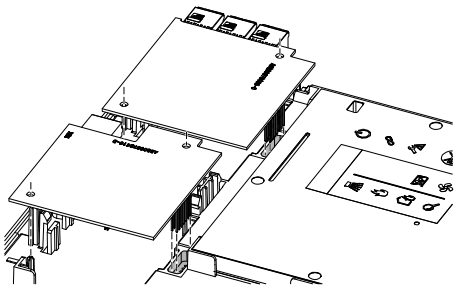


Fig. 7: Installing an extension card

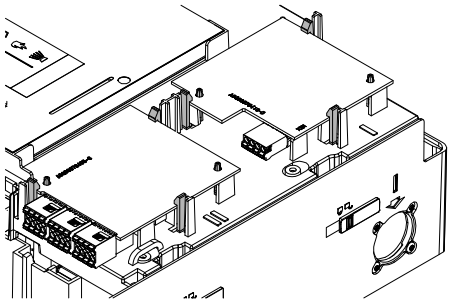
▷ Housing cover has been removed. See 'Removing the housing cover [→ 13]'.

1. Disconnect the power supply DC 24 V: pull the connector out.
2. Position the extension card.

– Align the 14-pin connector with the socket.



3. Carefully insert the 14-pin connector.
4. Push the extension card on as far as it will go.
   ⇨ The snap fasteners latch into place. The extension card is now installed.



5. Plug in the DC 24 V connector.

3 Installation

⚠ CAUTION	
	**Electrical voltage** Electric shock ● Disconnect all lines from the power supply before starting any installation work.

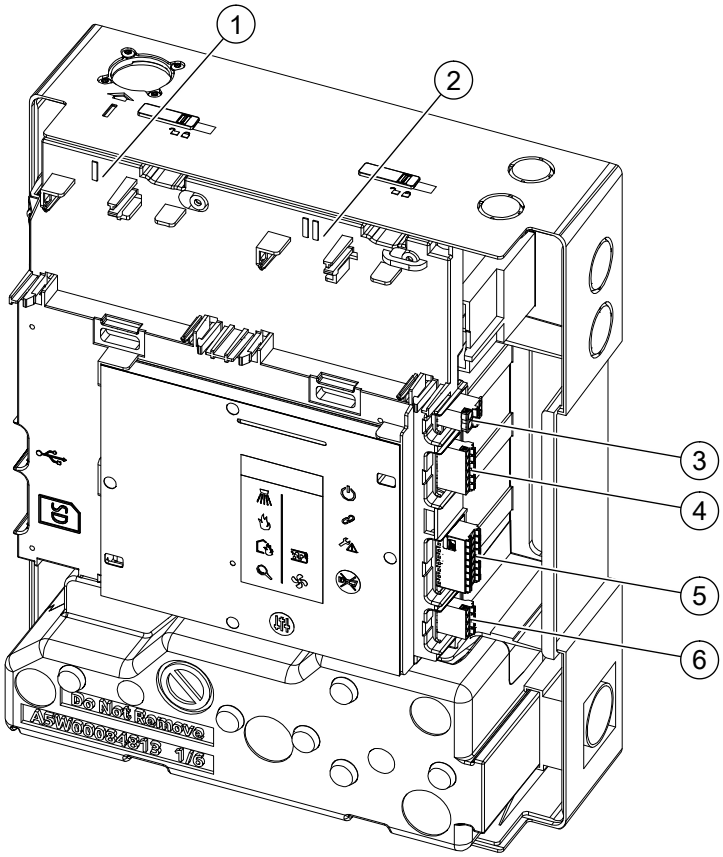


Fig. 8: Overview of connections

1	Slot I, extension card	4	GPI inputs
2	Slot II, extension card	5	Relay outputs
3	Power supply DC 24 V	6	FDnet/C-NET detector line

▷ Housing cover has been removed. See 'Removing the housing cover [→ 13]'.

1. Guide the cables through the cable entries into the housing.

– Break out the required cable entry either on the side or the top. Use cable glands if required: On side M25 × 1.5, on top M20 × 1.5.
– The cable entry on the back is open.

2. Insert the cables into the push-in connectors in accordance with the connection diagram.

3.1 Power supply DC 24 V

◈ Connect the cable to the connector.
  – Cable cross section: 0.2…2.5 mm² flexible (AWG 12…30)
  – Cable cross section: 0.2…1.5 mm² rigid

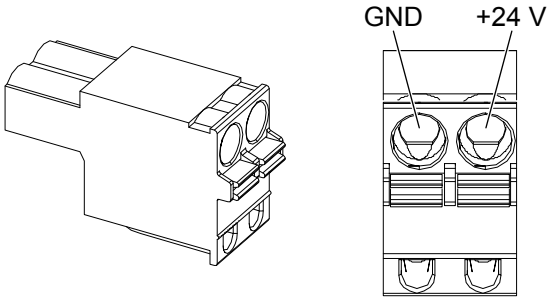


Fig. 9: Connecting the power supply DC 24 V

3.2 GPI inputs

Configurable inputs for external switches.

◈ Connect the cable to the connector.
  – Cable cross section: 0.2…1.5 mm² flexible/rigid

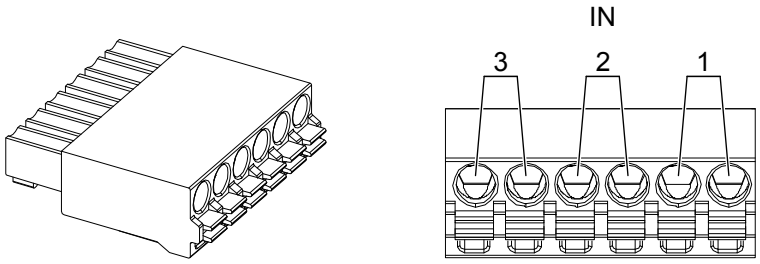
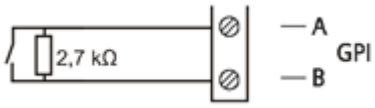


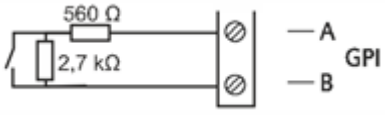
Fig. 10: Connecting GPI inputs

Monitoring for open line



Configure in accordance with 'GPI inputs'.

Monitoring for short-circuit and open line



Configure in accordance with 'GPI inputs'.

3.3 Relay outputs

Configurable outputs for issuing signals or controlling external devices such as the blowing-out unit.

1. Connect the cable to the connector.
   – Cable cross section: 0.2…1.5 mm² flexible/rigid
2. Connect a monitoring resistor (1) for each relay output as required.

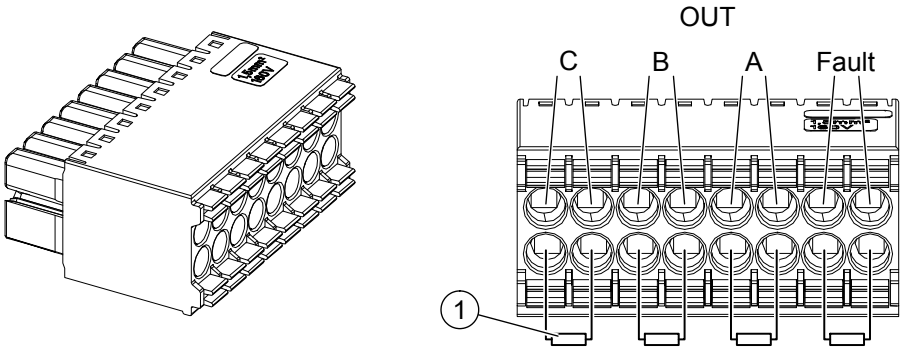


Fig. 11: Connecting relay outputs

3.4 FDnet/C-NET detector line

◈ Connect the cable to the connector.
   – Cable cross section: 0.2…1.5 mm² flexible/rigid

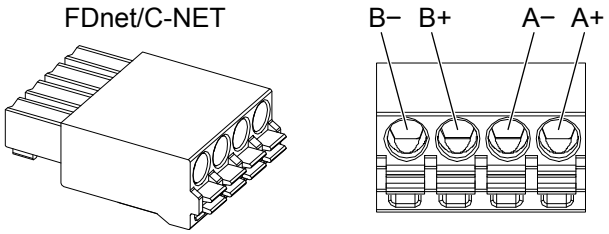


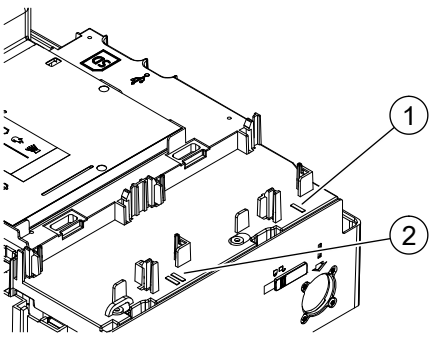
Fig. 12: Connecting the FDnet/C-NET detector line

3.5 Relay outputs (optional)

The relay outputs are located on the extension card FDAZ295. See 'Relay card FDAZ295'.

The extension card FDAZ295 supports six relay outputs A to F.

1. Insert the extension card into one of the two slots (1, 2).
   – Recommendation: Install 'relay card FDAZ295' in slot (2) to make cabling easier.



2. Connect the cable to the connector.
   – Cable cross section: 0.2…1.5 mm² flexible/rigid
3. Connect a monitoring resistor (1) for each relay output as required.

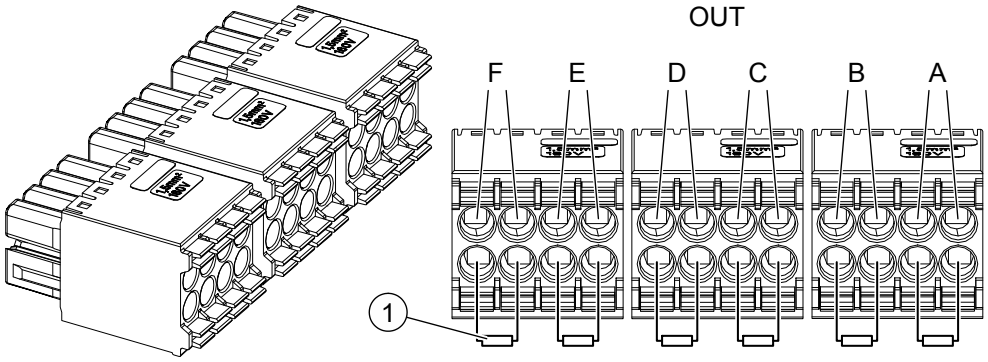


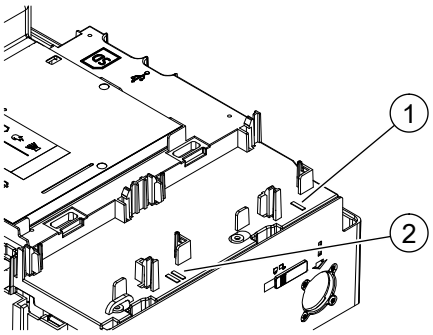
Fig. 13: Connecting relay outputs

3.6 4...20 mA outputs (optional)

The 4…20 mA outputs are located on the extension card FDAZ296. See '4...20mA card FDAZ296'.

The extension card FDAZ296 supports two electrically isolated, polarity-invariant 4…20 mA outputs A and B.

1. Insert the extension card into one of the two slots (1, 2).



2. Connect the cable to the connector.
   – Cable cross section: 0.2…1.5 mm² flexible/rigid

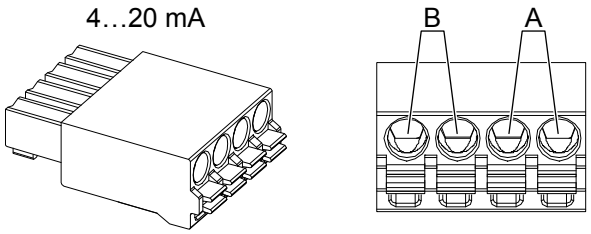


Fig. 14: Connecting 4...20 mA outputs

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