# SIEMENS

# FDA241, FDA221

## Aspirating Smoke Detector

Mounting

Installation

## Building Technologies

# Legal notice

Technical specifications and availability subject to change without notice.

© Siemens Switzerland Ltd, 2011

Issued by:

Siemens Switzerland Ltd.

Building Technologies Division

International Headquarters

Gubelstrasse 22

CH-6301 Zug

Tel. +41 41 724-2424

www.siemens.com/buildingtechnologies

Edition: 2015-05-29

Document ID: A6V10345654_h_en_--

# Table of contents

# 1 About this document

## Goal and purpose

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

- FDA241
- FDA221

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

You will find more information about the aspirating smoke detectors in document A6V10334410. See the chapter 'Applicable documents [➜ 5]'.

## Intended use

Aspirating smoke detectors FDA241 and FDA221 may only be used for fire detection and fire control purposes.

## 1.1 Applicable documents

| Document ID | Title |
|---|---|
| 007023 | Technical manual Input module, input/output module FDCI222, FDCIO222, FDCIO224 |
| 008331 | List of compatibility (for 'Sinteso™' product line) |
| 009052 | FS20 Fire detection system - Commissioning, Maintenance, Troubleshooting |
| A6V10210416 | FS720 Fire detection system - Commissioning, Maintenance, Troubleshooting |
| A6V10229261 | List of compatibility (for 'Cerberus™ PRO' product line) |
| A6V10331032 | Data sheet Aspirating Smoke Detectors FDA221, FDA241 |
| A6V10332759 | Installation, Operation Manual, Configuration 'ASD Configuration Tool FXS2051' |
| A6V10334410 | Technical manual Aspirating smoke detector FDA241, FDA221 |
| A6V10334435 | Planning, Installation ASD Pipe system |
| A6V10393194 | Technical manual Power supply kit A 70 W FP120-Z1 |

## 1.2 Technical terms

| Term | Explanation |
|---|---|
| ASD | Aspirating smoke detector |
| FDnet/C-NET | Addressed detector line |
| GPI | General Purpose Input, connection for an external switch |
| n.c. | normally closed, connection closed in normal condition |
| n.o. | normally open, connection open in normal condition |

## 1.3    Revision history

The reference document's version applies to all languages into which the reference document is translated.

**i** | The first edition of a language version or a country variant may, for example, be version 'd' instead of 'a' if the reference document is already this version.

The table below shows this document's revision history:

| Modification index | Edition date | Brief description |
|---|---|---|
| h | 2015-05-29 | 'Connection to the input/output module' chapter added; 'Applicable documents' and ' 'Dust' relay output for dust value (FDA241 only)' chapters amended |
| g | 2015-02-19 | Power supply FP120-Z1 added<br>Battery FA2003-A1 added<br>Editorial changes |
| f | 2013-11-14 | Data sheet updated in 'Applicable documents' chapter<br>Chapter 'External power unit and batteries' reinserted |
| e | 2013-01-02 | Change of function when opening housing cover. |
| d | 2012-11-02 | Editorial adjustments |
| c | 2012-03 | Document adapted to the following type designation: communication transponder FDCC221S; additional mounting note |
| b | 2011-12 | Revised version |
| a | 2011-10 | First edition |

**i** | The language versions and country variants produced by a local company have the same modification index as the corresponding reference document. They are not however included in the table below.

The table below shows the published language versions and country variants with the corresponding modification index:

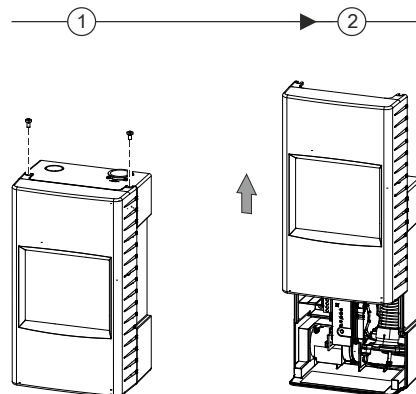| Modification index | en_-- | de_-- | fr_-- | it_-- | es_-- |
|---|---|---|---|---|---|
| h | X | X | X | X | X |
| g | X | X | X | X | X |
| f | - | X | - | - | - |
| e | X | X | X | X | X |
| d | X | X | - | - | - |
| c | - | X | - | - | - |
| b | - | X | - | - | - |
| a | X | X | - | - | - |

X = published

– = no publication with this modification index

# 2 Preparatory work

## 2.1 Opening and closing the housing cover when the power supply is switched off

When the housing cover is open, the mini USB connection and the internal indicators are accessible.

| ! | *NOTICE* |
|---|---|
| | **Electrostatic discharge** |
| | Damage to electronic components in the aspirating smoke detector |
| | • When working on the open aspirating smoke detector, use anti-static floor mats and anti-static work surfaces. |
| | • Ground yourself immediately before opening the housing, e.g. by touching a ground point or wearing an anti-static belt. |



*Opening the housing cover*

### Opening the housing cover

▷ The housing is free from dust.

1. Remove the two screws on the top of the aspirating smoke detector using a size 2 Phillips screwdriver (step 1).

2. Slide the housing cover in the direction of the arrow until it snaps into place (step 2).

⇨ The housing cover is open.

## Closing the housing cover

▷ The size 2 Phillips screwdriver and the two screws are available.

▷ The power supply is switched off.

1. Slide the housing cover in the opposite direction to the arrow (step 2) until it reaches the end position at the bottom.

2. **NOTICE! Connection cable clamped between the back box and the housing cover. Damage to the cable! Be aware of the connection cable when closing the housing cover.**

3. Screw the housing cover to the housing base with the two screws. Tighten the screws by hand (step 1).

⇨ The housing cover is closed.

## 2.2 Removing and installing the housing cover when the power supply is switched off

| ! | *NOTICE* |
|---|---|
| | **Electrostatic discharge** |
| | Damage to electronic components in the aspirating smoke detector |
| | • When working on the open aspirating smoke detector, use anti-static floor mats and anti-static work surfaces. |
| | • Ground yourself immediately before opening the housing, e.g. by touching a ground point or wearing an anti-static belt. |

When the housing cover is removed, you have access to:

● The fixing screws
● The cable entry
● All the mechanical components
● The electrical connections
● The rear of the front indicator



*Removing the housing cover*

## Removing the housing cover

▷ The housing is free from dust.

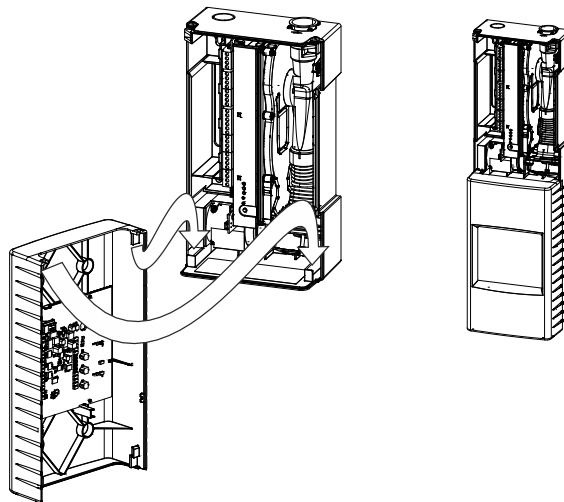▷ Do not disconnect the connection cable running between the housing cover and the back box.

1. Remove the two screws on the top of the aspirating smoke detector using a size 2 Phillips screwdriver (step 1).

2. Slide the housing cover in the direction of the arrow until it snaps into place (step 2).

   ⇨ The housing cover is open.

3. Take hold of the housing cover on the left and right (A) and pull the side walls apart (step 3).

4. Lift the housing cover off the back box (B). When doing this, be aware of the connection cable (step 3).
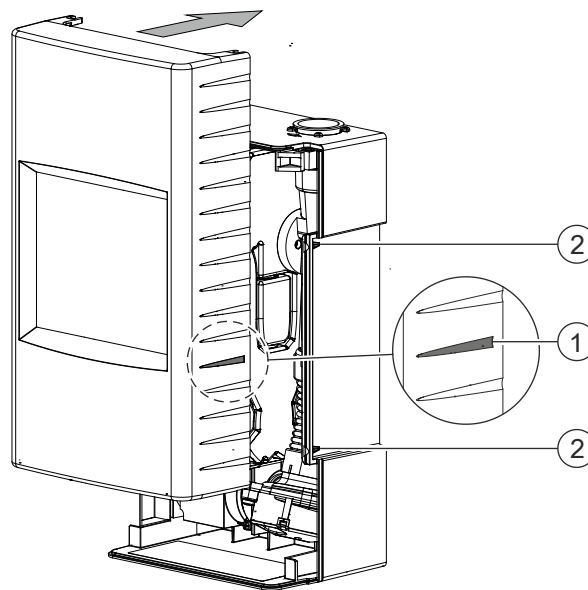
⇨ The housing cover is removed.

The removed housing cover can be hung on the back box.



*Hanging the removed housing cover on the back box*

## Installing the housing cover



*Markings on the housing cover and back box*

▷ The size 2 Phillips screwdriver and the two screws are available.

1. Connect the connection cable plug to the interface card!

2. Place the housing cover on the back box so that marking (1) is located between both of the (2) markings.

3. Push the housing cover onto the back box in the direction of the arrow until the housing cover snaps into place.

4. **NOTICE! Connection cable clamped between the back box and the housing cover. Damage to the cable! Be aware of the connection cable when closing the housing cover.**

5. Slide the housing cover in the opposite direction to the arrow (step 2) until it reaches the end position at the bottom.

6. Screw the housing cover to the housing base with the two screws. Tighten the screws by hand.

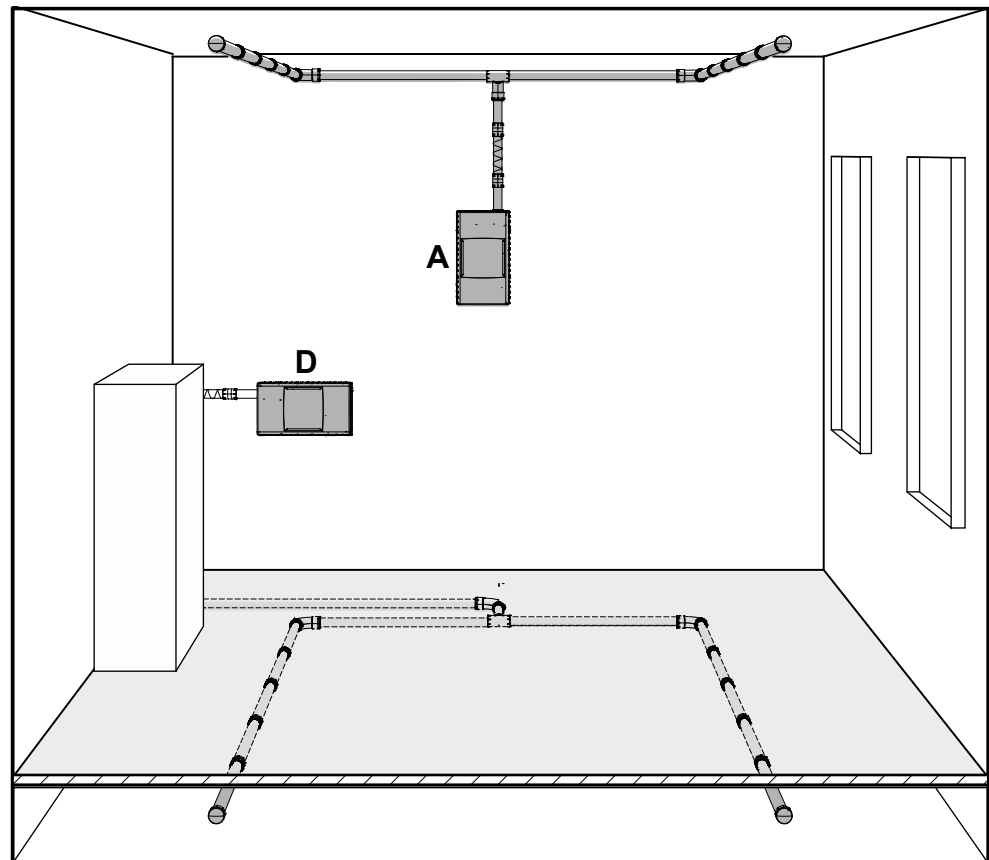⇨ The aspirating smoke detector's housing cover is installed.

## 2.3 Installation position and space requirements

### Installation site requirements

- Only to be installed within a building where the ambient conditions are permissible
- No direct sunlight
- Take into account the additional space required by and the need to access the following:
  - External power unit and batteries
  - Blowing-out unit (optional)
  - Water trap (optional)
- The aspirating smoke detector can be installed either horizontally or vertically on a level surface.
- The dust load should be low at the installation site, because the aspirating smoke detector housing is opened for maintenance purposes.
- Ensure that there is at least 150 mm of free space on each side of the installed aspirating smoke detector to ensure the pipe system and electrical connections can be installed with ease.

### Connecting to the pipe system

The aspirating smoke detector can be installed in different installation locations. The installation location to be used depends on the pipe system's connection to the aspirating smoke detector.



*Aspirating smoke detectors with different installation locations*

Four connection types are possible:

● Standard: From above (A)

● From below (B) when the aspirating smoke detector is installed rotated by 180°

● From left (D) or right (E) when the aspirating smoke detector is installed horizontally

---

ⓘ When the aspirating smoke detector is installed horizontally, no adapted alignment of the front panel is possible. See 'Adapting the front indicator to the installation position'.

---



*Installation position*

A  Aspiration from above

B  Aspiration from below

C  Space required by the aspirating smoke detector when the housing cover is open

D  Aspiration from left

E  Aspiration from right

## Cable entry

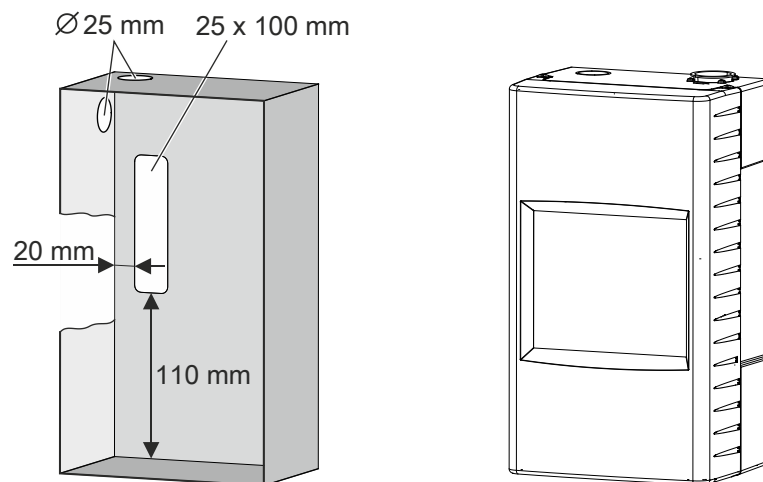| Position of hole | Size of hole |
|---|---|
| Breakthrough on rear | 25 x 100 mm |
| Breakthrough on left side of housing | Diameter 25 mm |
| Breakthrough on top of housing | Diameter 25 mm |

If the aspirating smoke detector is installed rotated by 180°, the circular breakthroughs are found on the bottom at the right-hand side.



*Cable entry with standard installation position*

To prepare the electrical connections, perform the following steps:

1. Break through the necessary cable entries (e.g., using a screwdriver).

2. Attach the plastic cable entries (usual size M20) to the housing.

3. Insert the cables through the relevant cable entries.

## 2.4   External power unit and batteries

### External power unit

The aspirating smoke detector must be supplied with electricity by an external power unit. The power unit must satisfy the following requirements:

● Version according to EN 54-4

● Output voltage: DC 24 V

● Output current: 250 mA

● The power unit must be connected to the aspirating smoke detector with as short a cable as possible.

● Suitable power unit:

| Company | Type | VdS | For battery type |
|---------|------|-----|------------------|
| Siemens | FP120-Z1 | G214130 | 2x FA2003-A1 (12 V, 7 Ah) <br> Or <br> 2x FA2004-A1 (12 V, 12 Ah) <br> Or <br> 2x FA2005-A1 (12 V, 17 Ah) |

You will find more information on the power supply kit FP120-Z1 in document A6V10393194. See the 'Applicable documents' chapter.
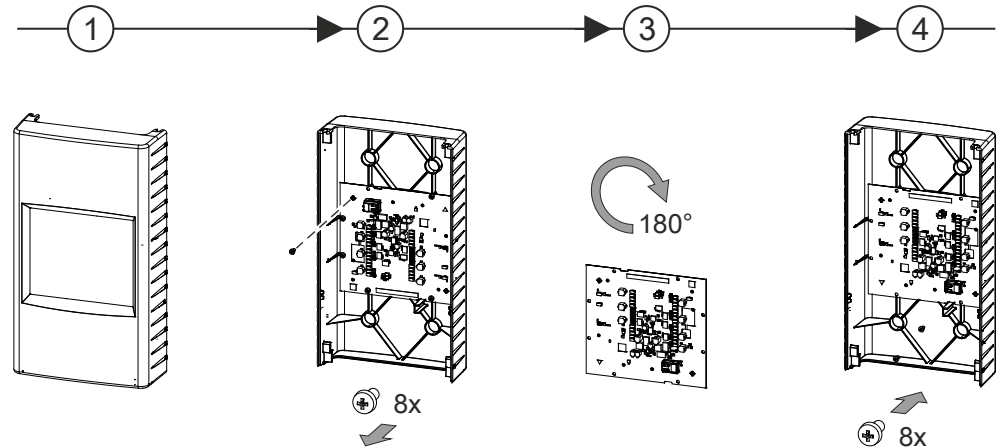
### Batteries

If the power supply via the external power unit fails, the power supply of the aspirating smoke detector must be guaranteed using batteries.

● If the aspirating smoke detector is in standalone operation: Observe local regulations for the minimum detector operation period for power supply failure. The capacity of the batteries must be selected according to the local regulations.

● If the aspirating smoke detector is being operated on a FDnet/C-NET detector line: The capacity of the batteries must match the runtime of the connected fire detection installation if the power supply fails. Observe local regulations for the fire detection installation.

● The batteries are charged using the external power unit. The charging current for the batteries depends on the battery capacity. You should therefore select your external power unit to match the batteries' capacity.

# 3 Mounting

## 3.1 Adapting the front indicator to the installation position

The aspirating smoke detector can be installed rotated by 180° if required. The front indicator must then also be installed rotated by 180°.



*Adapting the front indicator to the installation position*

▷ The housing cover has been removed (step 1).

1. Loosen the 8 screws on the inside of the housing cover (step 2).

2. Rotate the front indicator by 180° (step 3).

3. Fasten the front indicator to the housing cover using the 8 screws (step 4).

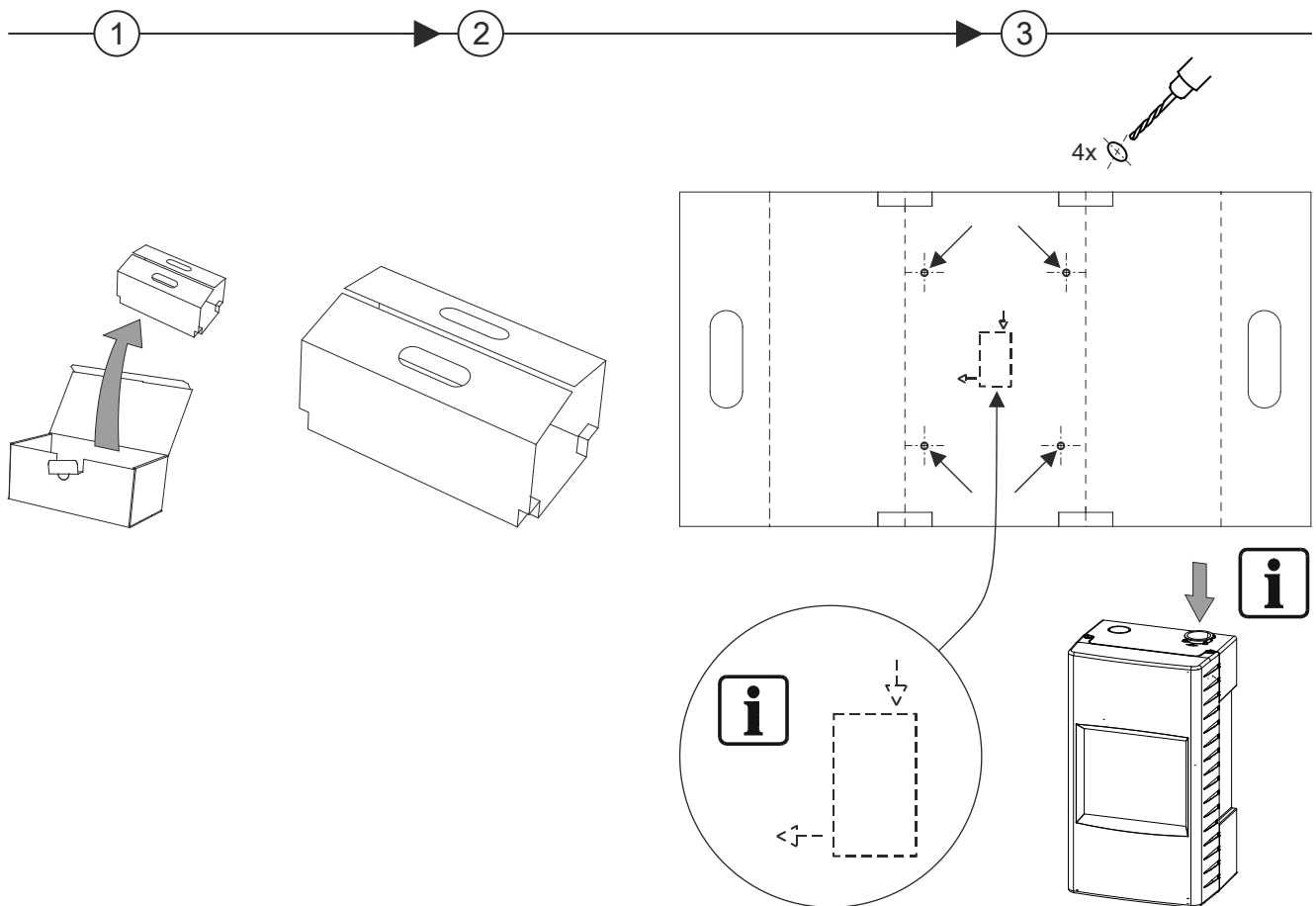⇨ The front indicator is adapted to the installation position.

## 3.2 Fastening on a level substructure

A drilling template is punched in the inner packaging of the aspirating smoke detector packaging.

The punched symbol in the center of the packaging indicates the airflow direction (air inlet and air outlet).

| i | The mounting holes in the back box are not symmetrical, so use the drilling template. |
|---|---|



*Using the drilling template*

▷ 4 screws with a shaft diameter of 5…6 mm and a head diameter of 8…10 mm are available.

▷ A suitable tool for drilling and screwing is available.

▷ The housing cover is removed and the cable loosened.

▷ The product must be installed on a level, non-combustible base.

1. Use the unfolded packaging as the drilling template.

   – Note the arrow symbol for the direction of the pipe connections (step 3).

2. Drill the mounting holes.

3. If necessary: Use suitable dowels.

4. Screw the four screws into the mounting holes.

  – Do not screw in the screws as far as the stop. A gap of approx. 10 mm must remain between the screw head and the wall.

5. Hang the back box on the screws.

6. Carefully tighten the four screws.

  ⇨ The back box is fastened.

7. Reconnect the cable and close the housing cover.

⇨ The aspirating smoke detector is installed.

## 3.3 Connecting the pipe system to the aspirating smoke detector

| ! | NOTICE |
|---|--------|
| | **Connection between pipe system and aspirating smoke detector**<br>Damage to the pipe system and/or the aspirating smoke detector<br>• Do not glue the pipe system to the aspirating smoke detector! If the pipe system has to be separated from the aspirating smoke detector for maintenance work or repairs, components may be damaged. |

▷ The pipe system is installed.

▷ The last 500 mm of the pipe system on the aspirating smoke detector must be straight, such that flow turbulences can be eliminated before entering the aspirating smoke detector.

1. Press a short pipe securely into the air inlet on the aspirating smoke detector.

2. Connect the pipe system and the pressed-in pipe piece to the aspirating smoke detector.

⇨ The pipe system is connected to the aspirating smoke detector.

You will find more information in document A6V10334435.

### See also

▤ Applicable documents [➜ 5]

## 3.3.1 Return line

If there is an air pressure difference of >45 Pa between the monitored area and the aspirating fire detector, a return line is required.

| ! | NOTICE |
|---|---|
| | **Connection between aspirating smoke detector and return line** Damage to the return line and/or the aspirating smoke detector <br> • Do not glue the return line to the aspirating smoke detector! If the return line has to be separated from the aspirating smoke detector for maintenance work or repairs, the return line or the aspirating smoke detector may be damaged. Press the return line securely into the air outlet on the aspirating smoke detector. |

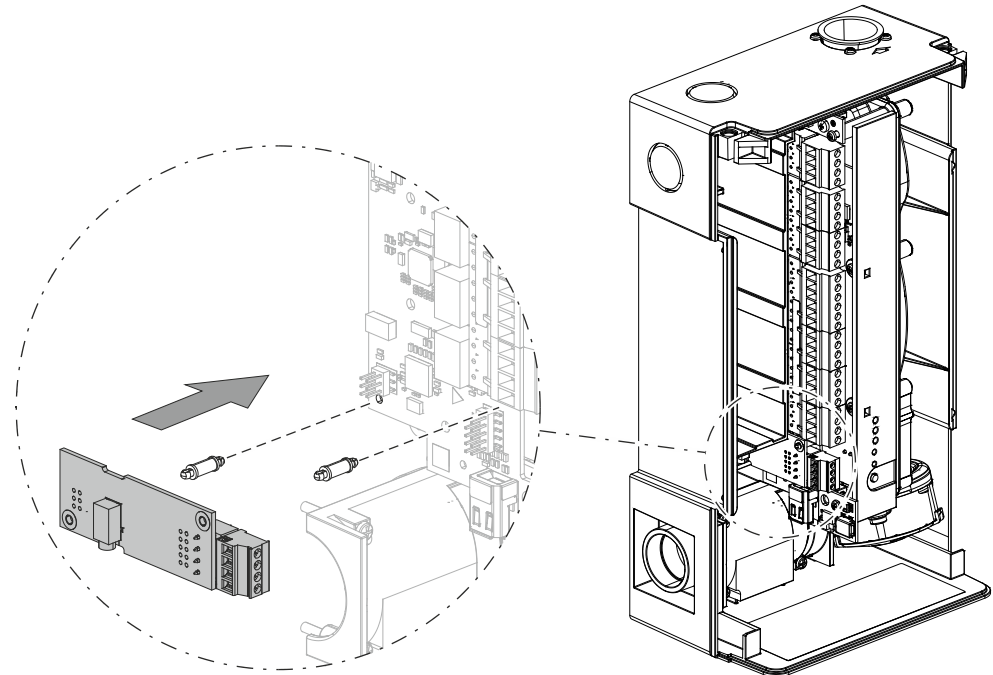You will find more information in document A6V10334435.
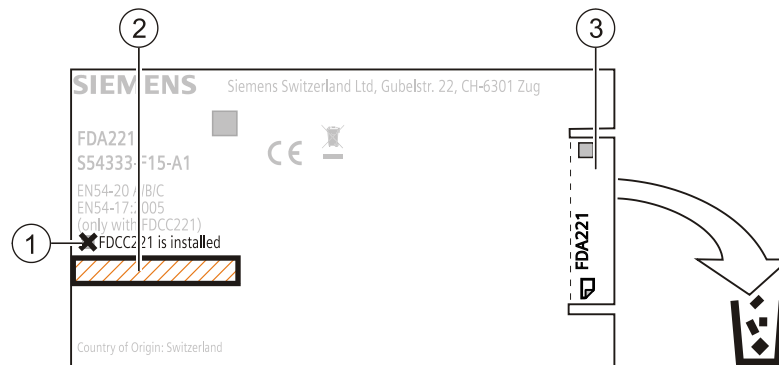
**See also**

▤ Applicable documents [➜ 5]

## 3.4 Installing communication transponder FDCC221S

Communication transponder FDCC221S may only be installed if the aspirating smoke detector is connected to FDnet/C-NET. Installation is not permitted in the case of standalone operation.

Communication transponder FDCC221S has its own ID. The ID of communication transponder FDCC221S is made visible to the detector line and it replaces the ID of the aspirating smoke detector.



*Installing communication transponder FDCC221S in an aspirating smoke detector*



*Changes on the type plate when the FDCC221S is installed*

1   Mark indicating that the FDCC221S is installed

2   ID adhesive label from FDCC221S for aspirating smoke detector

3   Tear-off adhesive label for installation plan

## Mounting

▷ The housing cover is open.

▷ The aspirating smoke detector's external power supply is switched off and disconnected from the aspirating smoke detector.

▷ A communication transponder FDCC221S (accessory) is available.

1. Insert communication transponder FDCC221S into the aspirating smoke detector's interface card with the two spacer bolts as shown in the diagram.

2. On the type plate of the aspirating smoke detector, place a mark in the 'FDCC221S is installed' field (1).

3. Use the two ID adhesive labels from the FDCC221S as described below:

   – Take the first ID adhesive label and stick it over the type plate of the aspirating smoke detector (2).

   – Use the second ID adhesive label for the installation plan.

   – Remove the tear-off adhesive label from the aspirating smoke detector and dispose of it (3).

4. After switching off the detector line, connect it to communication transponder FDCC221S. You will find the terminal assignment in the 'Connecting to the detector line with the FDCC221S' chapter.

5. Re-connect the switched off external power supply for the aspirating smoke detector.

6. Close the housing cover.

⇨ Communication transponder FDCC221S is installed and connected to the detector line.

---

| **i** | Only start the detector line when the external power supply for the aspirating smoke detector has been established. |

# 4 Installation

|  | ⚠ CAUTION |
|---|---|
| ⚡ | **Electrical voltage on lines**<br>Risk of injury due to electric shock<br>● During mounting and installation work, electrical voltage must not be applied to the lines. |

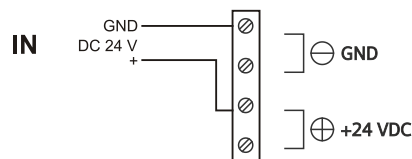| | |
|---|---|
| ℹ | Note the positive and negative poles.<br>Only connect one wire per terminal. This is the only way to ensure the connection is failure-free for the entire service life of the device. |

## 4.1 Connecting the external power unit

Two connection terminals are available for the aspirating smoke detector's power supply. This allows more aspirating smoke detectors to be connected to a power unit.
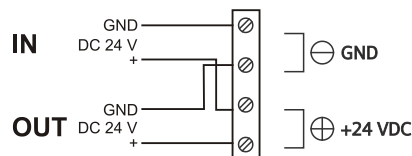
Prerequisite: The power unit used satisfies the requirements according to the 'External power unit and batteries' [➜ 15] chapter.

### Connection diagram for 'one aspirating smoke detector on one power unit'



*Connection without forwarding to other aspirating smoke detectors*

### Connection diagram for 'multiple aspirating smoke detectors on one power unit'



*Connection with forwarding to other aspirating smoke detectors*

    IN  Connection of external power unit

    OUT  Connection for the power supply of other aspirating smoke detectors

### Properties

● Protected against polarity reversal
● Connection of more aspirating smoke detectors

## Procedure

▷ A suitable external power unit is available.

▷ The aspirating smoke detector's housing cover is removed.

1. Before connecting the external power unit to the terminal block, check the voltage provided by the power unit. Permissible value: DC 24 V ±4 V

2. Connect the power unit to the aspirating smoke detector(s) according to the connection diagram shown.

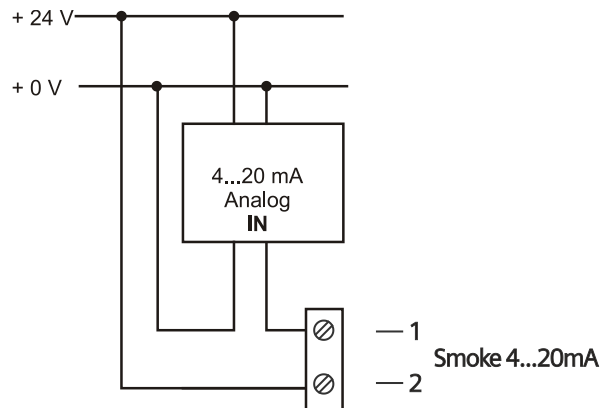⇨ The external power unit is connected to the aspirating smoke detector(s).

### See also

▤ External power unit and batteries [➜ 15]

## 4.2 'Smoke 4…20 mA' analog output

Configurable 4…20 mA analog output.

The setting is made in the 'Current loop' menu with the 'FXS2051 ASD Configuration Tool' software for one of the following values:

- Smoke value (device default)
- Dust value (FDA241 only)
- Airflow (FDA241 only)
- Fine dust value (FDA241 only)



*Example illustrating analog input (IN)*

Connection for DC 9…25 V power supply

| Smoke value (device default) | 4…20 mA analog output |
|---|---|
| No smoke | 4 mA |
| Inspect | 8 mA |
| Prealarm | 12 mA |
| Fire 1 | 16 mA |
| Fire 2 | 20 mA |

| Airflow | 4…20 mA analog output |
|---|---|
| 0 l/min | 4 mA |
| 20 l/min | 8 mA |
| 40 l/min | 12 mA |
| 60 l/min | 16 mA |
| 80 l/min | 20 mA |

| Dust value | 4…20 mA analog output |
|---|---|
| No dust | 4 mA |
| Low dust value | 8 mA |
| Medium dust value | 12 mA |
| High dust value | 16 mA |
| Very high dust value | 20 mA |

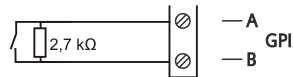| Fine dust value | 4…20 mA analog output |
|---|---|
| 0 µg/m³ | 4 mA |
| 30 µg/m³ | 8 mA |
| 60 µg/m³ | 12 mA |
| 90 µg/m³ | 16 mA |
| 150 µg/m³ | 20 mA |

## Properties

- With electrically isolated, passive two-wire 4…20 mA analog output.
- The connection is independent of polarity.
- The increment corresponds to the increment of the smoke indicator (bar graph indicator).
- The error indicator can be suppressed with the 'FXS2051 ASD Configuration Tool' software.
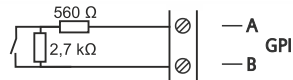- 'Current loop' output.

## 4.3  Configurable 'GPI' input

Configurable input for an external switch. The setting is made in the 'Relay and GPI' menu with the 'FXS2051 ASD Configuration Tool' software.

### Monitoring for open line



### Monitoring for short circuit and open line



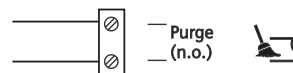### Properties

- Can be configured to trigger the following actions:
  - Switching to Manned/Unmanned (not possible when fire control panel FC20xx/FC72x is connected)
  - Resetting
  - Activating blowing-out unit
  - Deactivates all relays and alarm outputs
- Monitoring for open line (1 resistor)
- Monitoring for short circuit and open line (2 resistors)
- Input for error monitoring on the external power unit

## 4.4  'Purge' relay output for blowing out (with FDA241 only)

Relay output for controlling an external blowing-out unit.



Connection: n.o.

### Properties

- Suitable for controlling an external blowing-out unit.
- Configuration of:
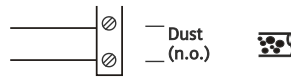  - Purge interval
  - Purge duration

When the aspirating smoke detector is in operation, the setting is made on the FDnet/C-NET using the fire control panel configuration software.

- For fire control panels FC20xx: 'SintesoWorks'
- For fire control panels FC72x: 'Cerberus-Engineering-Tool'

When the aspirating smoke detector is in standalone operation, the setting is made in the 'Purge' menu with the 'FXS2051 ASD Configuration Tool' software.

## 4.5 'Dust' relay output for dust value (with FDA241 only)

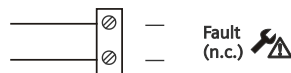Relay output for external monitoring of the dust value.

Connection: n.o.

### Properties

● Suitable for external monitoring of the dust value.
● Is activated with increased dust concentration.

## 4.6 'Fault' relay output for error messages

Relay output for error messages.

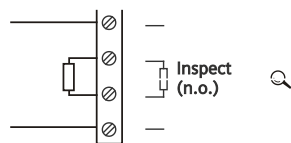| State | Relay |
|---|---|
| Normal (no error) | Closed |
| Error or disconnected from the power supply | Open |

Connection: n.c. (default setting)

### Properties

● The relay deactivates if an error occurs.

## 4.7 'Inspect' relay output for early warning (with FDA241 only)
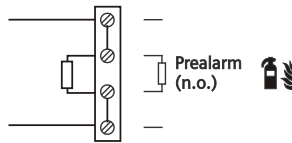
Relay output for early warning.

Connection: n.o. (default setting) and resistance according to specification of the connected device.

### Properties

● Activation occurs according to the chosen setting.
● The connection can be changed to 'n.c.' with the 'FXS2051 ASD Configuration Tool' software. The chosen setting applies automatically to 'Inspect', 'Prealarm', 'Fire 1', 'Fire 2'.

## 4.8     'PreAlarm' relay output for pre-alarm

Relay output for 'pre-alarm' alarm level.



Connection: n.o. (default setting)

### Properties

- Activation occurs according to the chosen setting.
- The connection can be changed to 'n.c.' with the 'FXS2051 ASD Configuration Tool' software. The chosen setting applies automatically to 'Inspect', 'Prealarm', 'Fire 1', 'Fire 2'.

## 4.9     'Fire 1' relay output for fire alarm 1

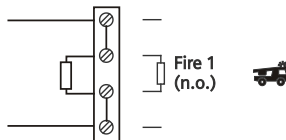Relay output for alerting the fire brigade.



Connection: n.o. (default setting)

### Properties

- Activation occurs according to the chosen setting.
- The connection can be changed to 'n.c.' with the 'FXS2051 ASD Configuration Tool' software. The chosen setting applies automatically to 'Inspect', 'Prealarm', 'Fire 1', 'Fire 2'.

## 4.10    'Fire 2' relay output for fire alarm 2

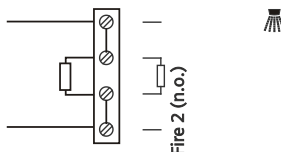Relay output for alarm level 2 to activate external extinguishing equipment.



Connection: n.o.

### Properties

- Activation occurs according to the chosen setting.
- The connection can be changed to 'n.c.' with the 'FXS2051 ASD Configuration Tool' software. The chosen setting applies automatically to 'Inspect', 'Prealarm', 'Fire 1', 'Fire 2'.

## 4.11 Connecting to the detector line with the FDCC221S

The aspirating smoke detector is directly connected to the FDnet/C-NET detector line using communication transponder FDCC221S (accessory).

### Terminal assignment

| View in the aspirating smoke detector | Terminal name | Assignment |
|---|---|---|
| LINE IN +<br>LINE IN -<br>LINE OUT +<br>LINE OUT -<br>A+ A- B+ B- FDnet | A+ | LINE IN + |
| | A- | LINE IN - |
| | B+ | LINE OUT + |
| | B- | LINE OUT - |

▷ The external power unit is connected to the aspirating smoke detector.

1. Switch the power supply on.

2. Check whether the aspirating smoke detector is being supplied with power. The ● ⏻ LED lights up.

3. Start the detector line.

⇨ The aspirating smoke detector is not detected as FDA241 or FDA221 by the fire control panel.

---

ℹ️

If the aspirating smoke detector has not been detected correctly, refer to the fire control panel documentation for the remainder of the process.

The following document applies to fire control panels **FC20xx**: 009052, chapter 'Modifying and extending the detector line'.

The following document applies to fire control panels **FC72x**: A6V10210416, chapter 'Modifying and extending the detector line'.

1. After completing step 1 as described in the document, switch off the power supply for the aspirating smoke detector.

2. Wait one minute; then switch the aspirating smoke detector power supply back on.

⇨ The aspiration unit starts up.

3. Now proceed as described in the documentation for the fire control panel.

---

If the aspirating smoke detector has already been registered on the detector line, refer to the fire control panel documentation for the remainder of the process.

The following document applies to fire control panels **FC20xx**: 009052, chapter 'Removing or replacing non-stationary FDnet devices'.

The following document applies to fire control panels **FC72x**: A6V10210416, chapter 'Removing or replacing non-stationary C-NET devices'.

# 4.12 Connection to input/output module

Aspirating smoke detectors FDA241 and FDA221 can be connected to a fire control panel via an input/output module.

For fire control panels FC20xx and FC72x, the aspirating smoke detector should be connected via the communication transponder FDCC221S, see chapter 'Connecting to the detector line with the FDCC221S'.

| **!** | *NOTICE* |
|---|---|
| | **Incorrect configuration of the fire control panel** |
| | Signals from the input/output module are not evaluated correctly |
| | • After connecting the input/output module, check the configuration of your fire control panel. |
| | • Adapt the configuration if necessary. |

**i**    Only use potential-free contacts to connect the input/output module to the interface card of the aspirating smoke detector.

**i**    The 'Smoke 4…20 mA' analog output must not be used to connect the input/output module.
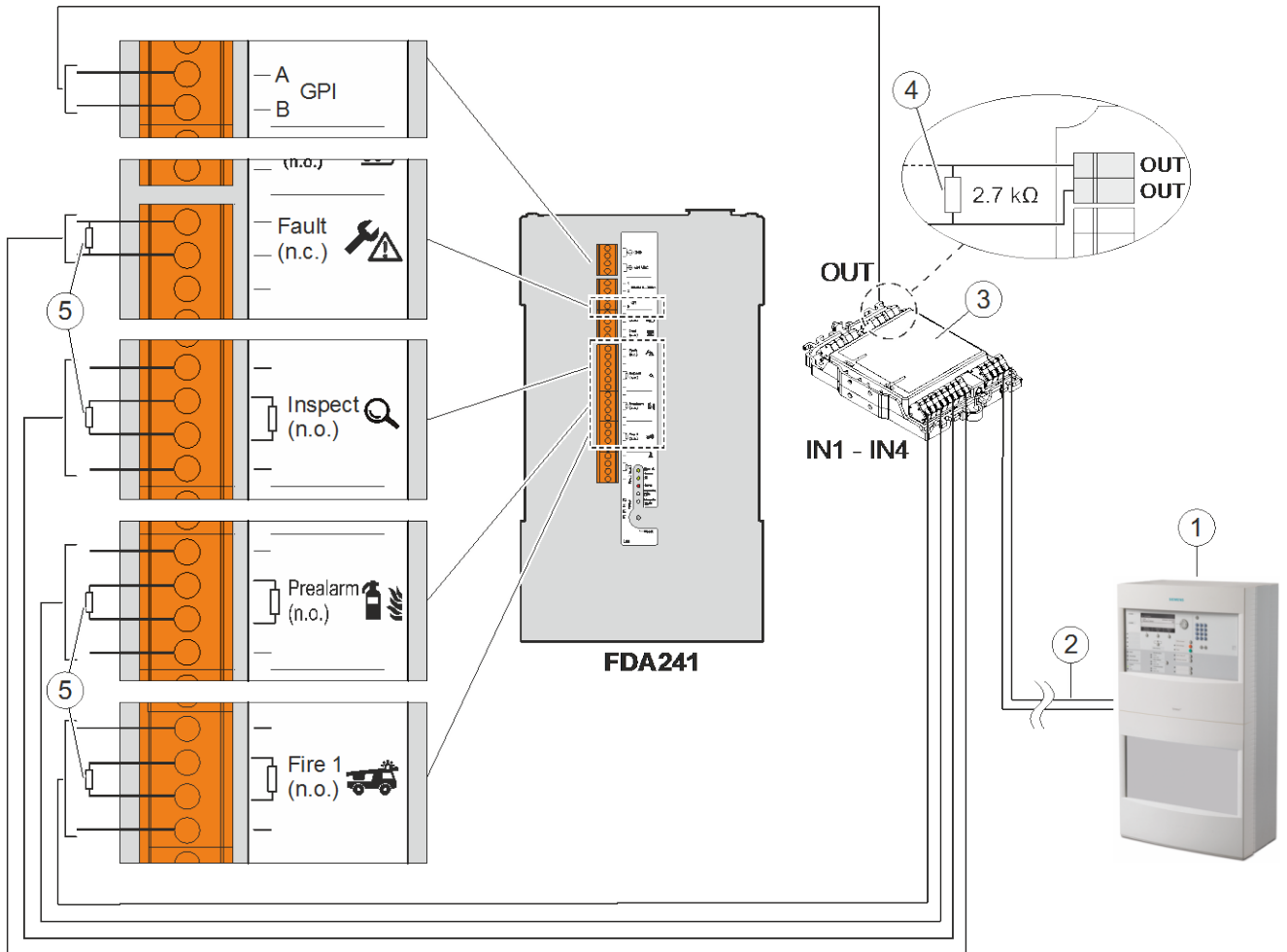
**i**    An output on the input/output module must be connected to the configurable 'GPI' input of the aspirating smoke detector so that it is possible to reset an alarm or the status of the aspirating smoke detector from the fire control panel.
Please be aware that the configuration of the aspirating smoke detector must be adapted using the 'FXS2051 ASD Configuration Tool' software in this case. See also document A6V10332759, chapter "Other settings' menu", section 'Reset input configuration options'.

Different connection variants are possible. Two variants are shown as examples below.

The selection of a suitable input/output module is dependent on the number of inputs and outputs required.

## Variant 1 (for aspirating smoke detector FDA241 only)

| | |
|---|---|
| Input/output module used: | FDCIO222 |
| Monitoring: | For open line |



*Example representation of monitoring for open line when using an input/output module FDCIO222*

| | | | |
|---|---|---|---|
| 1 | Fire control panel | 4 | Monitoring resistor for GPI input (see chapter 'Configurable 'GPI' input') |
| 2 | Detector line | 5 | Monitoring resistors |
| 3 | Input/output module FDCIO222 | | |

For the monitoring resistors (5), observe the device-specific specifications for the input/output module used. You will find this information in the example shown with the input/output module FDCIO222 in document 007023.

| Interface | Function |
|-----------|----------|
| 'GPI' | Possible to reset an alarm or the status of the aspirating smoke detector using the fire control panel |
| 'Fault' | A general fault is indicated on the fire control panel |
| 'Inspect 1' | An early warning is indicated on the fire control panel |
| 'Prealarm' | A pre-alarm is indicated on the fire control panel |
| 'Fire 1' | An alarm is indicated on the fire control panel |

No external extinguishing equipment can be controlled with this connection variant.

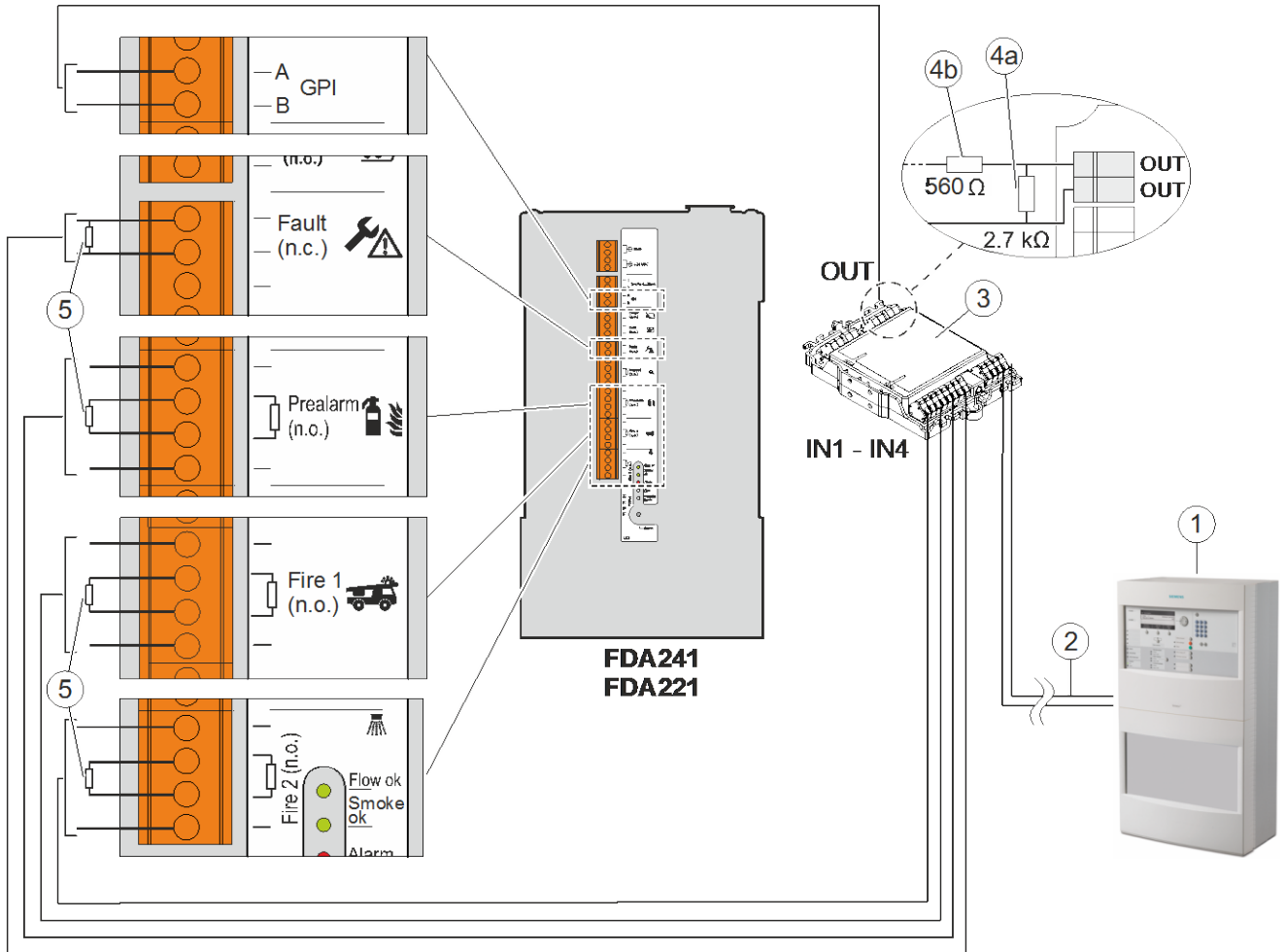## Variant 2 (for aspirating smoke detectors FDA241 or FDA221)

Input/output module used:          FDCIO222

Monitoring:          For open line and short-circuit



*Example representation of monitoring for open line and short-circuit when using an input/output module FDCIO222*

| 1 | Fire control panel | 4a, 4b | Monitoring resistors for GPI input (see chapter 'Configurable 'GPI' input') |
|---|---|---|---|
| 2 | Detector line | 5 | Monitoring resistors |
| 3 | Input/output module FDCIO222 | | |

For the monitoring resistors (5), observe the device-specific specifications for the input/output module used. You will find this information in the example shown with the input/output module FDCIO222 in document 007023.

| Interface | Function |
|-----------|----------|
| 'GPI' | Possible to reset an alarm or the status of the aspirating smoke detector using the fire control panel |
| 'Fault' | A general fault is indicated on the fire control panel |
| 'Prealarm' | A pre-alarm is indicated on the fire control panel |
| 'Fire 1' | An alarm is indicated on the fire control panel |
| 'Fire 2' | Controls external extinguishing equipment |

# Index

## B

### Batteries
Capacitance, 15
Operation on detector line, 15
Standalone operation, 15

### Battery
Suitable power unit, 15

## C

### Charging current, 15

## D

### Drilling template, 17

## E

### External power unit
Connection, 22
Requirements, 15
Several aspirating smoke detectors, 22

## F

### Front indicator
Adapting the installation position, 16

## H

### Housing cover
Closing when the power supply is switched off, 8
Installing, 11
Opening when the power supply is switched off, 7
Removing when the power supply is switched off, 10

## I

### Installation
Installation position, 12
Required space, 12
Requirements, 12

### Intended use, 5

## P

### Packaging
Drilling template, 17

## R

### Return line
Prerequisites, 19
Pressure difference, 19