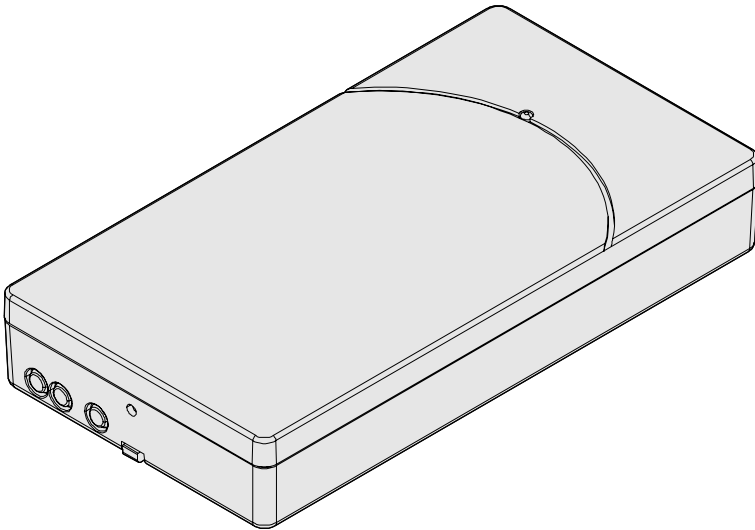


SIEMENS



FDCW241

Radio gateway

Mounting

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Table of contents

1	About this document	5
2	Mounting / Installation	6
2.1	Mounting	6
2.2	Mounting in housing FDCH221	7
2.3	Connecting the radio gateway	8
3	Details for ordering	11
3.1	Radio gateway FDCW221	11
3.2	Connection terminal DBZ1190-AB	11
3.3	Battery pack BAT3.6-10	11
3.4	Housing FDCH221	12
3.5	Housing base FDCH271	12
3.6	Housing cover FDCH272	12
3.7	MCL-USB (radio) adapter FDUZ227	13
4	Specifications	14
4.1	Technical data	14
4.2	Dimensions	18
4.3	Master gauge for recesses	19
4.4	Environmental compatibility and disposal	19

1 About this document

Goal and purpose

This document contains information required to mount the radio gateway FDCW241.

Prerequisites:

- The installation location of the radio gateway has been established.
- Mounting should be performed by a specialist in compliance with safety regulations.

You will find more information on the radio gateway FDCW241 in document A6V10227639.

Intended use

The radio gateway FDCW241 must only be used on a FDnet/C-NET detector line in a fire detection system FS20/FS720.



- Specialist electrical engineering knowledge is required for installation.
 - Only an expert is permitted to carry out installation work.
- Incorrect installation can take safety devices out of operation unbeknown to a layperson.

Applicable documents

Document ID	Title
A6V10227631	Planning Radio fire detection system SWING
A6V10227639	Technical manual Radio gateway FDCW241
A6V10271323	Data sheet SWING Neural radio fire detector FDCW241, FDOOT271, FDM273, FDM275, FDM275(F)

2 Mounting / Installation

2.1 Mounting

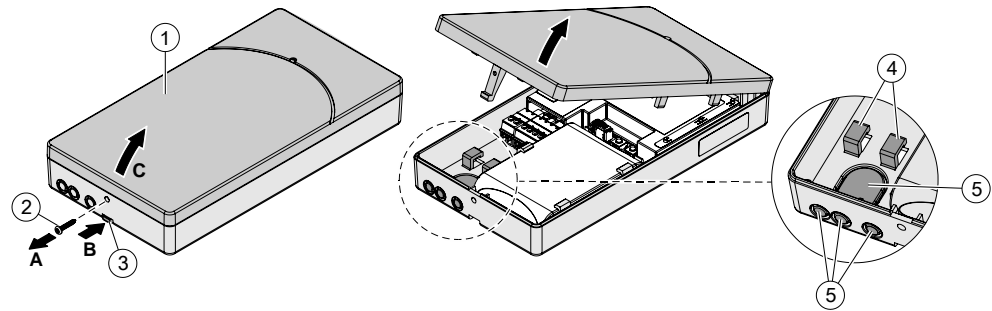


Figure 1: Installing the radio gateway

- 1 Housing cover
- 2 Screw
- 3 Lock
- 4 Strain relief fastenings
- 5 Cable entries

- ▷ You have the radio gateway, battery pack, fixing screws, and cable tie to hand.
- ▷ You have the device location plan to hand.
- ▷ The connection cable has a conductor cross-section of 0.2...1.5 mm².
- ▷ The lines to the installation location are installed.
- ▷ Two fixing screws (Ø max. 4.3 mm) are to hand.

1. Determine the installation location:

- The housing must be positioned in accordance with the planning specifications (make sure there is a wide radio range and that the housing can be accessed easily).
- Make sure there is enough space for you to open the housing cover easily.
- The housing may be installed in any appropriate position.

2. Open the housing:

- Remove the screw (2) (A).
- Using a screwdriver to press the lock (3) into the housing (B) and unlock the housing cover (1).
- Lift the housing cover (1) and remove it.

3. Remove the adhesive label bearing the serial number from the back box and use it to mark the installation location on the device location plan.

4. In the back box, break out the plastic for the cable entry (5):

- Openings in the supporting surface for recess-mounted cables
- Openings in the narrow side for surface-mounted cables

5. Insert the cables into the back box.

6. Mount the back box, without the battery pack, on a flat surface using two screws (\varnothing max. 4.3 mm) at the mounting points (see 'Master gauge for recesses [→ 19]' chapter). One screw at the mounting point is sufficient for fixing in housing FDCH221.
 7. Fasten the cable using a cable tie as strain relief (4).
 8. Label the battery pack with the date.
 9. Insert the battery pack and check the position of the battery cable. Do not connect the battery pack until you are ready to commission the radio cell.
- ⇒ The radio gateway is installed.

2.2 Mounting in housing FDCH221

The radio gateway can be installed in a separate housing FDCH221. The housing protects the radio gateway from dirt and dust.

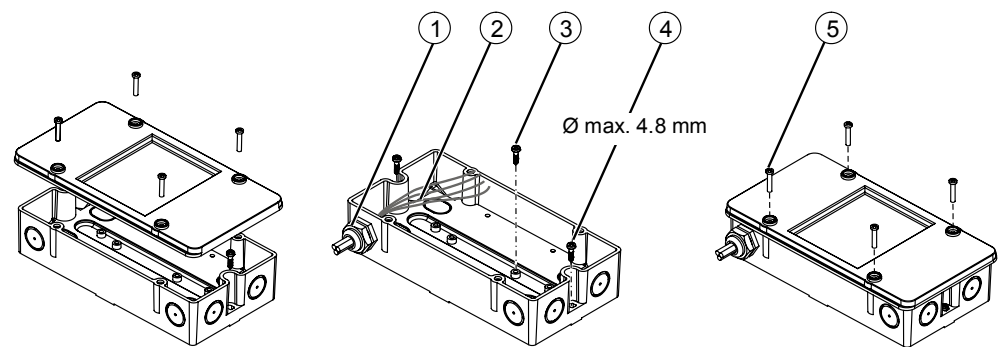


Figure 2: Installing housing FDCH221

- | | |
|---------------------------|-----------------------------------|
| 1 Cable entry | 4 Screws for securing the housing |
| 2 Cables | 5 Screws for housing cover |
| 3 Screw for radio gateway | |

Proceed as follows to install the radio gateway in housing FDCH221:

1. Break out the required cable entries (1) on the housing.
 2. Install the housing with screws (4) on a level surface.
 3. Insert the cables (2). If necessary, fix the cables using M20 x 1.5 cable glands or use a different cable entry.
 4. Remove the housing cover from the radio gateway and dispose of it in an environmentally-friendly manner.
 5. Install the radio gateway in the housing using the fixing screw (3) provided.
 6. Connect the radio gateway.
 7. Close the housing using the screws (5) provided.
- ⇒ The radio gateway is now installed in housing FDCH221. The radio gateway indicators can be viewed through the window of the housing.

2.3 Connecting the radio gateway



- Specialist electrical engineering knowledge is required for installation.
- Only an expert is permitted to carry out installation work.

Incorrect installation can take safety devices out of operation unbeknown to a layperson.

Once all the radio devices of a radio cell have been logged on to the radio gateway (B) in battery mode (A), the radio gateway can be connected to the FDnet/C-NET detector line (C).

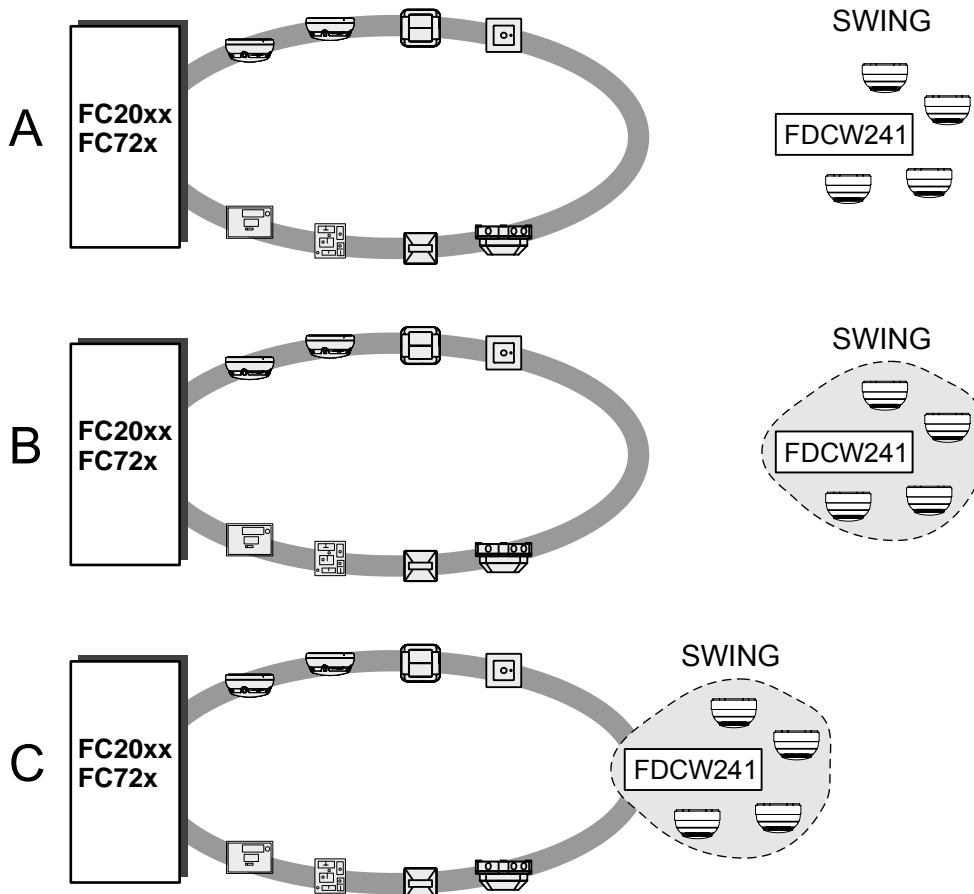


Figure 3: Connecting the radio cell to the detector line

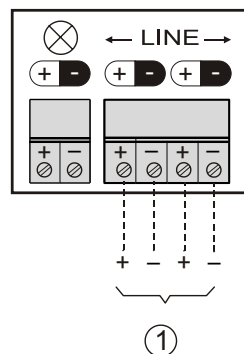


Figure 4: Connections on radio gateway FDCW241

1 detector line terminal strip

The radio gateway 'FDCW241' automatically assigns the additional, virtual address 'FDCL221v' as a line separator. When you assign the connections, you determine the order in which the devices are read in at the control panel.

The following topologies are possible:

Radio cell as LOOP

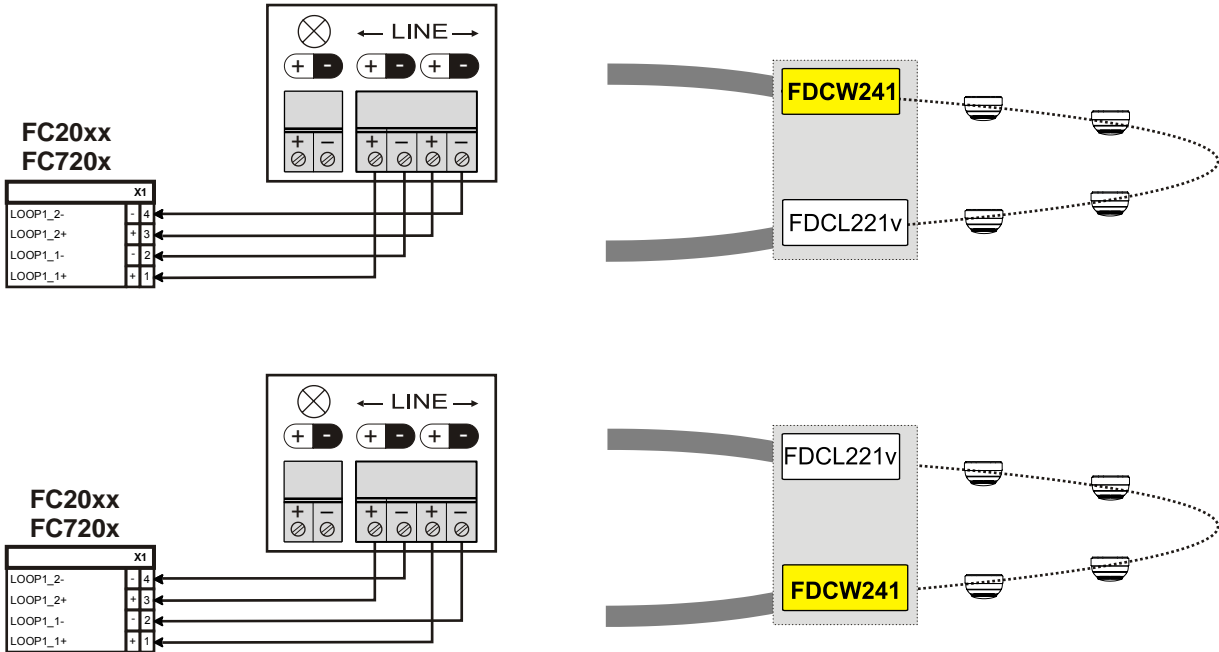


Figure 5: Loop connection

Radio cell as stub

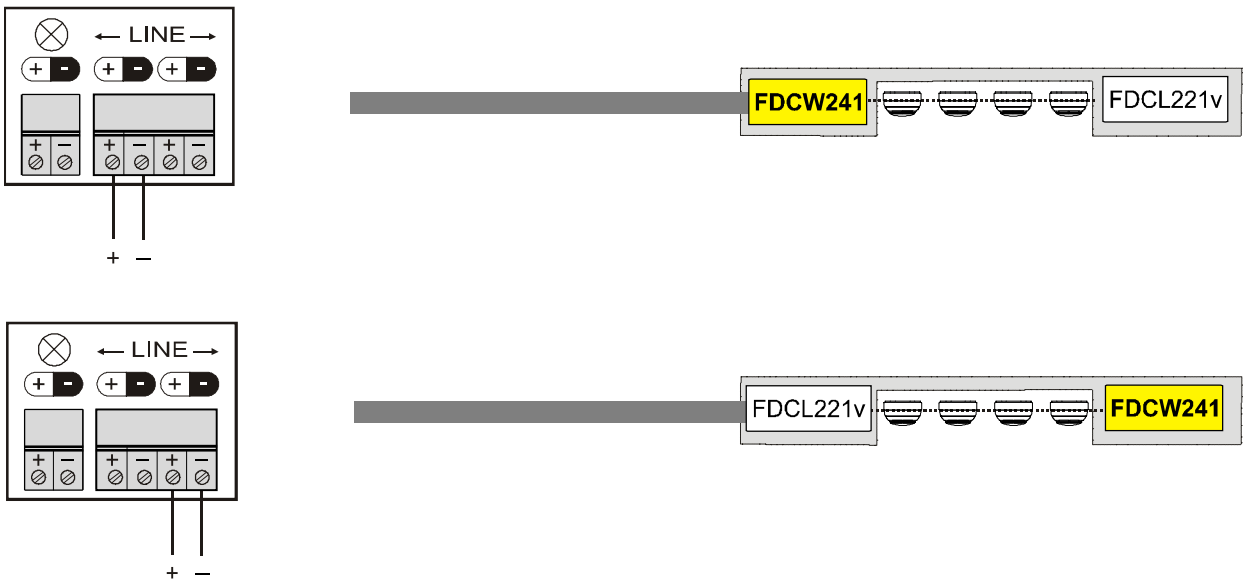


Figure 6: Stub connection only

Radio cell as sub-stub on loop

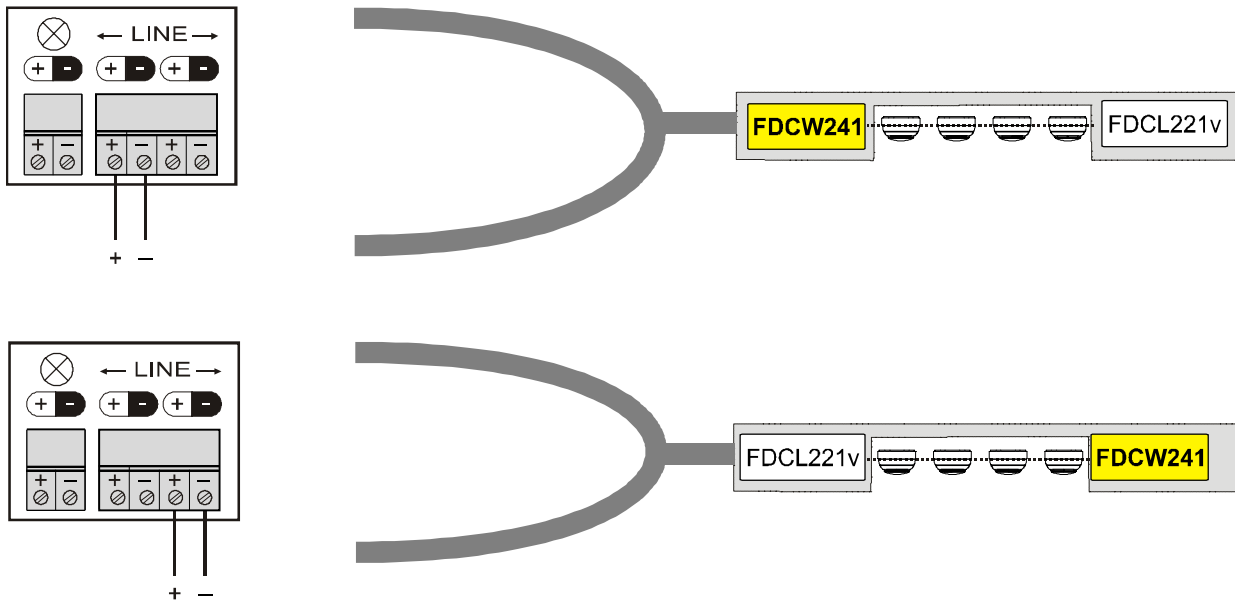


Figure 7: Sub-stub on loop connection

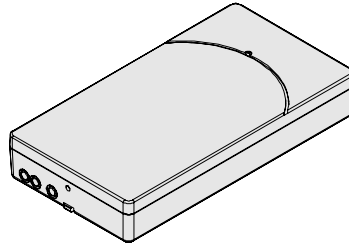
Wiring connections

!	<p>NOTICE</p> <p>Failure of the electrical connection</p> <p>Damage to the screw terminals or contact problems may lead to faults in the electrical connection. If the conductor cross-sections you want to connect to the radio gateway are larger than 1.5 mm², the screw terminals may become damaged or contact problems may arise.</p> <ul style="list-style-type: none"> • Use the connection terminal DBZ1190-AB for cables with a conductor cross-section of 1.5...2.5 mm². • Obtain a corresponding terminal from the customer for even larger cross-sections. The terminal can be positioned inside the housing.
----------	--

- ▷ The radio cell is in battery mode.
 - ▷ The detector line cable has a wire diameter of 0.2...1.5 mm².
 - ▷ The detector line terminal strip is not inserted.
 - ▷ The 2-pin terminal strip must not be connected.
1. Wire the detector line terminal strip in accordance with the required topology. Do not insert the detector line terminal strip until the radio cell has been commissioned and is about to be connected to the detector line.
 2. Switch the detector line off.
 3. Connect the socket strip to the radio gateway.
 4. Switch the detector line on.
 5. Snap the housing cover on and screw it down tight.
- ⇒ The radio cell is now set up and ready for commissioning via the control panel.

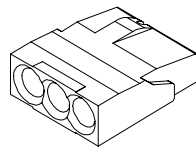
3 Details for ordering

3.1 Radio gateway FDCW221



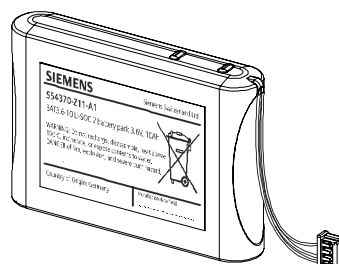
- For the SWING radio fire detection system
- For fire detection installations 'Sinteso'/'Cerberus PRO'
- Power supplied by battery pack BAT3.6-10 and detector line
- Compatible with:
 - FDOOT271
 - FDM273
 - FDM275
 - FDM275(F)
- Can be configured using MCL-USB adapter (radio) FDUZ227 with SWING tool FXS2061
- Order number: S54370-F11-A1

3.2 Connection terminal DBZ1190-AB



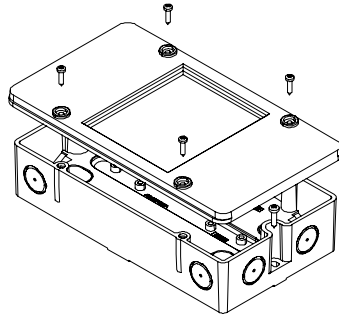
- Auxiliary terminal for connecting cables
- For T-branches of additional cabling, e.g., for cable shielding, detector heating units, sounder base, external alarm indicators, etc.
- For conductor cross-sections of 0.5...2.5 mm²
- 3 poles
- Order number: BPZ:4942340001

3.3 Battery pack BAT3.6-10



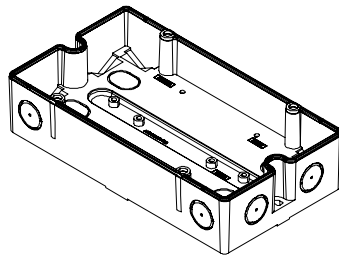
- For supplying radio devices and the radio gateway with power
- Lithium batteries
 - BAT3.6-10 LI-SOCI2 battery pack 3.6 V, 10 Ah
- Batteries with battery cable
- Connector system with protection against polarity reversal
- Inscription field for commissioning date
- Compatible with:
 - Radio gateway FDCW241
 - Radio manual call point FDM273
 - Radio manual call point FDM275
 - Radio manual call point FDM275(F)
 - Radio fire detector FDOOT271
- Order number: S54370-Z11-A1

3.4 Housing FDCH221



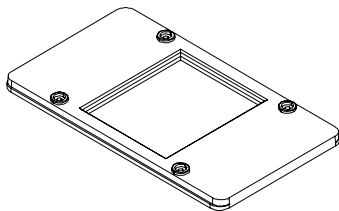
- To protect against dust and wetness
- Compatible with:
 - Multi line separator module FDCL221-M
 - Input module FDCI22x(-CN)
 - Input/output module FDCIO22x(-CN)
 - Output module FCA1209-Z1
 - Radio gateway FDCW241
 - Zone module, external powered FDCI223, FDCI723
 - Sounder module FCA2005-A1
- Order number: S54312-F3-A1

3.5 Housing base FDCH271



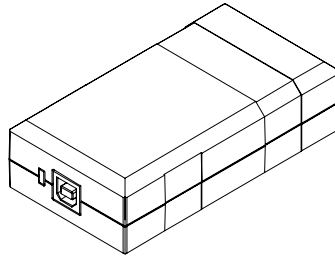
- Housing base for radio gateway
- Order number: S54370-N45-A1

3.6 Housing cover FDCH272



- Housing cover for radio gateway
- Order number: S54370-N46-A1

3.7 MCL-USB (radio) adapter FDUZ227



- For connecting FDnet/C-NET devices to a personal computer
- Signals can be transmitted to SWING radio devices via radio
- Interface converter for USB on MC link
- Compatible with:
 - Floor repeater terminal FT2010
 - Floor repeater display FT2011
 - Radio gateway FDCW221 and FDCW241
 - Detector exchanger and tester FDUD292
 - Intelligent detector tester FDUD293
 - Line tester FDUL221
 - Radio manual call point FDM27x
 - Radio fire detector FDOOT271
- You will find more information in document A6V10347735
- Order number: S54323-F106-A1

4 Specifications

Unless otherwise mentioned, the following data applies:

Temperature	= 25 °C
Air pressure	= 1000 hPa (750 Torr)

You will find information on approvals on the data sheet for the device.

4.1 Technical data

You will find information on approvals, CE marking, and the relevant EU directives for this device (these devices) in the following document(s); see 'Applicable documents' chapter:

- Document A6V10271323

Detector line

Operating voltage	DC 12...33 V
Operating current	Typ. 1 mA (0.6...25 mA)
Maximum current connection factor	16
Quiescent current connection factor	6
Address connection factor	2 + n*1 (n = number of radio devices)
Separator connector factor	1
Protocol	FDnet/C-NET
Compatibility	See 'List of compatibility'
Design	<ul style="list-style-type: none"> • Inherently short-circuit-proof • Protected against polarity reversal • Protected against overvoltage

Line separator

Line voltage:	
• Nominal	DC 32 V (= V_{nom})
• Minimum	DC 12 V (= V_{min})
• Maximum	DC 33 V (= V_{max})
Voltage at which the line separator opens:	
• Minimum	DC 7.5 V (= $V_{SO min}$)
• Maximum	DC 10.5 V (= $V_{SO max}$)
Permanent current when switches are closed	Max. 1.5 A (= $I_{C max}$)
Switching current (e.g., in the event of a short-circuit)	Max. 2 A (= $I_{S max}$)
Leakage current when switches are open	Max. 1 mA (= $I_{L max}$)
Serial impedance when switches are closed	Max. 0.4 Ω (= $Z_{C max}$)

Radio	Number of radio devices per radio gateway as loop	Max. 30
	Number of radio devices per radio gateway as stub	Max. 30
	Sending/receiving aerials	Dual band aerial
	Radio transmission:	
	• Frequency range	433.05...434.79 MHz in band 44b and 45b ¹ 868...870 MHz in band 48, 49, 50, 54b, and 56b ¹
	• Channel grid	50 kHz
	• Number of channels	27 in 868-MHz band 20 in 433-MHz band
	• Transmitting power	≤10 mW ERP in band 44b, 45b, and 49 ¹ Type 10 (max. ≤25) mW ERP in band 48, 50, 54b, and 56b ¹
	• Range:	See document A6V10227631
	¹	2013/752/EU: according Official Journal of the European Union, COMMISSION IMPLEMENTING DECISION of 11 December 2013 amending Decision 2006/771/EC on harmonisation of the radio spectrum for use by short-range devices and repealing Decision 2005/928/EC (notified under document C(2013) 8776) (Text with EEA relevance)

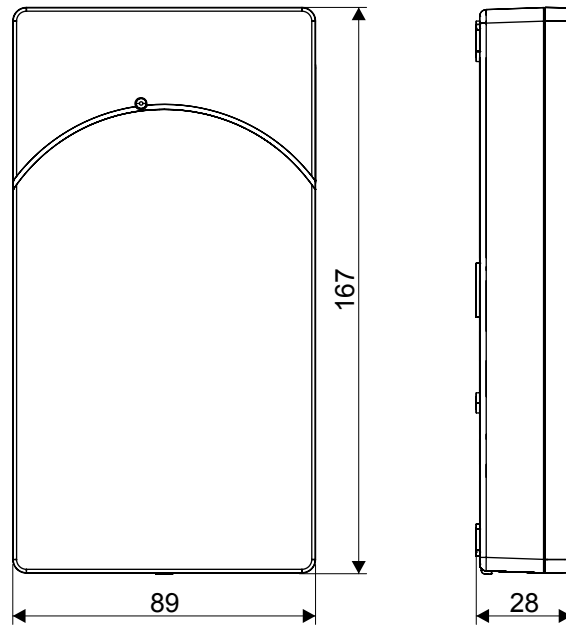
Top band		Bottom band	
Channel	Frequency [MHz]	Channel	Frequency [MHz]
12	868.325	144	433.425
14	868.375	146	433.475
16	868.425	148	433.525
18	868.475	150	433.575
20	868.525	152	433.625
22	868.575	154	433.675
26	868.675	156	433.725
30	868.775	158	433.775
32	868.825	160	433.825
34	868.875	162	433.875
36	868.925	164	433.925
38	868.975	166	433.975
40	869.025	168	434.025
42	869.075	170	434.075
44	869.125	172	434.125
46	869.175	174	434.175
56	869.425	176	434.225
58	869.475	178	434.275
60	869.525	180	434.325
62	869.575	182	434.375
64	869.625		
68	869.725		
70	869.775		
72	869.825		
74	869.875		
76	869.925		
78	869.975		

Battery pack BAT3.6-10	Lithium battery pack	BAT3.6-10 LI-SOCI2 battery pack 3.6 V, 10 Ah
	Service life	Over 6 years in normal operation If the normal detector line power supply fails, approx. 1 week
	Battery voltage monitored	Yes
	Weight	0.093 kg
Connections	Detector line:	
	<ul style="list-style-type: none"> Design 	Screw terminals on plug
	<ul style="list-style-type: none"> Cable cross section 	0.2...1.5 mm ²
	MC link:	
	<ul style="list-style-type: none"> Design 	3.5 mm jack socket

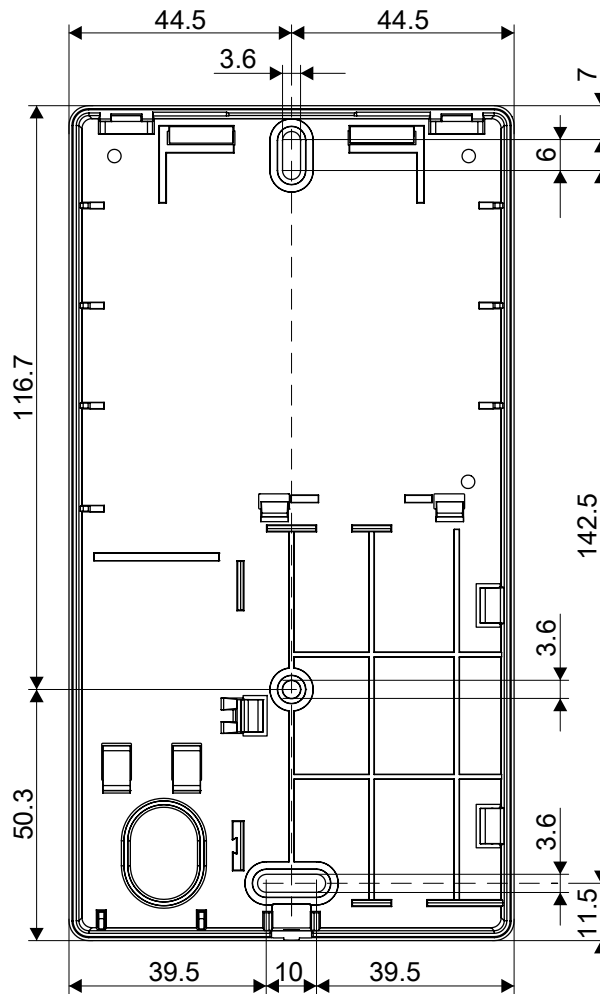
Ambient conditions	Operating temperature	-10...+55 °C
	Storage temperature	-30...+75 °C
	Air humidity (non-condensing)	≤95 % rel.
	Protection category (IEC 60529):	• IP40
	In housing FDCH221:	• IP65
	Electromagnetic compatibility:	
	100 kHz...2.5 GHz	30 V/m
Mechanical data	Weight without battery pack	0.154 kg
	Housing material	Acrylonitrile-butadiene-styrene (ABS)
	Color	~RAL 9010, pure white
Standards	European standards	<ul style="list-style-type: none"> • EN 54-17 • EN 54-18 • EN 54-25 • EN 300220-2

4.2 Dimensions

Radio gateway FDCW241



4.3 Master gauge for recesses



4.4 Environmental compatibility and disposal



This equipment is manufactured using materials and procedures which comply with current environmental protection standards as best as possible. More specifically, the following measures have been undertaken:

- Use of reusable materials
- Use of halogen-free plastics
- Electronic parts and synthetic materials can be separated

Larger plastic parts are labeled according to ISO 11469 and ISO 1043. The plastics can be separated and recycled on this basis.



Electronic parts and batteries must not be disposed of with domestic waste.

- Take electronic parts and batteries to local collection points or recycling centers.
- Contact local authorities for more information.
- Observe national requirements for disposing of electronic parts and batteries.

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