



FDCW221 / DOW1171 / SMF121 SMF6120 (repair/replacement)

Sinteso™

Radio fire detection system



Addressed (FDnet)

- **Full integration into FS20, SIGMASYS, and AlgoRex fire detection systems**
- **Simultaneous operation of wired and wireless detectors**
- **High signaling security**
 - Automatic definition of optimum basic and deviating radio channels
 - Automatic channel change (up to 4 alternative channels) in the event of radio faults
 - Bidirectional data traffic in SRD band
 - 2 integrated aerials (aerial diversity)
 - Communication faults are detected and displayed
- **EN 54-25-compliant**
- **Individual detector addressing for simple site identification**
- **Up to 16 radio gateways with radio cell overlapping**
- **Up to 30 radio detectors (smoke detectors and manual call points) can be activated per radio gateway**
- **2 external alarm indicators can be connected to the radio gateway**
- **Low current consumption (battery life typically 5 years).**

The wireless fire detection system is primarily used in applications where cables or pipelines can only be laid to a limited extent for reasons relating to structural engineering, aesthetics, or historical building preservation.

The wireless coupling means there is no elaborate or visible cable installation, making this solution particularly attractive to museums, churches, and so on.

The wireless fire detection system offers another advantage in that installation can be carried out without interrupting operation.

If changes are made to how the building is used, or if the building is extended, the smoke detectors and manual call points can be moved easily and inexpensively.

Typical application areas

Rooms of a high historical value, e.g.:

- Museums
- Churches
- Libraries

Rooms that only permit brief interruptions in operation while the fire detection installation is being installed, e.g.:

- Hotel rooms
- Executive offices
- Conference facilities

Extension of existing sites with minimum wiring work; e.g.:

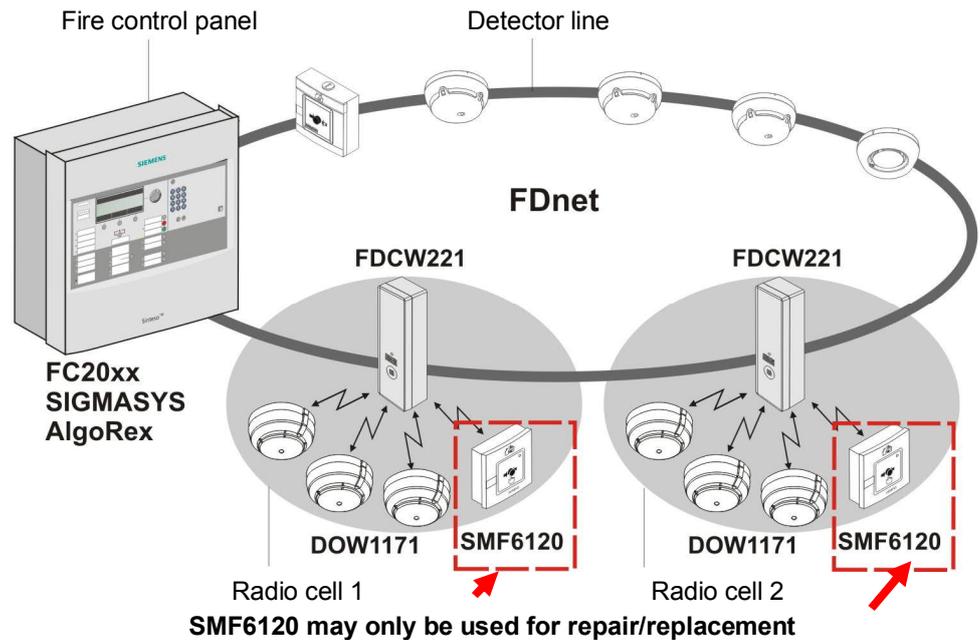
- Industrial premises undergoing a change in use
- Offices whose layout is being changed

Goal and purpose

In functional buildings, fire detection installations are optimized, planned, and set up in a way that suits the needs of the first group of users. As experience has shown, however, even this group's requirements can become outdated in just a short time due to growth in the company as well as changes in the building's use and structures – resulting in the need for structural adaptations.

System overview

- The radio gateway FDCW221 connected to the FDnet communicates with up to 30 radio detectors (smoke detectors and manual call points). Each detector has its own location address.
- The radio gateway forwards the signals received from the radio smoke detectors or radio manual call points to the fire control panel via the detector line, and passes commands from the control panel to the detectors.
- Simultaneous operation of wired fire detectors on the FDnet and wireless radio detectors on the radio gateway is ensured.
- The radio fire detection system operates in a frequency range with maximum transmission and functional security, and with clear rules for all users.



Use

- The range between the radio gateway and the radio detector must be noted (max. 40 m, 90 dB damping).
- The building structure can have a significant effect on the radio range (materials such as steel, concrete, lime sand brick, and wood).
- Up to 16 radio gateways can be operated with radio cell overlapping. If a project consists of more than 16 radio gateways with radio cell overlapping (max. utilization), it is important to remember that the next radio gateway is mounted outside the 'hearing range' (without radio cell overlapping). The 16 basic channels are thus made available again.
- The radio gateway must be easily accessible for the service staff.

Restriction

- Unsuitable for rooms with a high level of transmission field damping, such as those with a framework of metal bars used as a partition or with metallic storage racks.

Radio smoke detector DOW1171 and detector base DBW1171



- Consistent response to a wide range of different fires
- Dynamic analysis of the sensor signal in the detector itself
- Built-in diagnosis algorithms with automatic selftest
- High degree of immunity towards false alarms and environmental influences
- High-quality, opto-electronic sensor system
- Automatic compensation for soiling
- The radio smoke detector is battery-operated and can be attached at any point within a radio range.

Functions

● 4 danger levels

- Enable activation of differentiated measures and an early warning in the case of incorrect application.

● Selftest

- The detector performs a comprehensive selftest periodically or on command.

● Algorithms

- Special calculation procedures in the detector processor enable optimum signal processing defined for the detector. This ensures excellent interference immunity and operational reliability.

● Measurement compensation

- Ensures the detector demonstrates a virtually identical level of sensitivity throughout the operating period.
- The integrated alarm indicator shows the alarm on site.

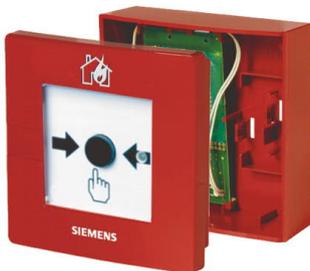
Supply

The radio smoke detector DOW1171 is supplied with power by two 9 V lithium batteries. In normal operation, these have a service life of more than 5 years. As each battery is monitored separately, detector operation is guaranteed for up to 30 days even if a battery fails.

Installation

- Mounting with detector base DBW1171. The detector must not be inserted into the base until commissioning (address assignment) takes place.
- It is possible to insert and remove the detector using the detector exchanger tool up to a height of 8 meters.

Manual call point SMF121, radio base SMF6120



- The radio module is integrated into the base.
- The radio base is battery-operated and can be attached at any point within a radio range.
- The radio base consists of a housing part including radio electronics and aerials. The two 3.6 V lithium batteries (order separately) are also used here.
- Manual call point with indirect alarm activation. To activate, drive in the washer and press the knob.

The SMF6120 (S24218-F72-A1) does not have an EC Certificate of Conformity to EN 54-25 and may no longer be used for new systems. It may, of course, continue to be used for repair/replacement of SMF6120 devices that have already been installed.

Installation

- Mounting with radio base SMF6120
- The batteries must not be inserted into the base until commissioning (address assignment) takes place.

Radio gateway FDCW221

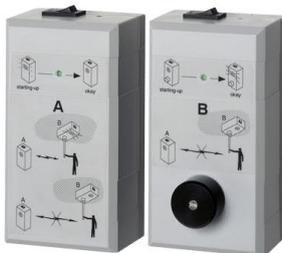


- With integrated line separator
- Bidirectional data transmission in the 868...870 MHz frequency range
- The radio module has a complete send and receive unit and a microcontroller control unit for all functions that are required for radio transmission.
- Radio transmission operates in the SRD band (Short Range Device), a reserved frequency band with defined usage rules. SRD is free from amateur users. It provides 80 channels with a channel width of 25 kHz.
- 4 alternative channels are assigned to each of the 16 basic channels.
- Communication with the control panel and the supply takes place via the FDnet detector line.
- The additional 9 V lithium battery (order separately) ensures radio operation can take place during commissioning or if the detector line is disconnected from the power supply. In normal operation the battery is switched off, which means it has a service life of significantly more than 5 years.
- Signal processing and management for up to 30 detectors (radio smoke detectors and/or radio manual call points)
- MC link connection for connecting the detector exchanger and tester: Enable information to be read for commissioning, maintenance, and error search

Installation

- For installation purposes, remove the housing cover, break out the openings required for inserting the cables, and secure on a flat surface using 2 screws (max. Ø 4.3 mm).
- In the case of shielded cables or larger cables (diameter $\geq 1.5 \text{ mm}^2$), use additional connection terminals DBZ1190-AB (order separately).
- Insert 9 V lithium battery (order separately); do not connect battery cable until commissioning starts.

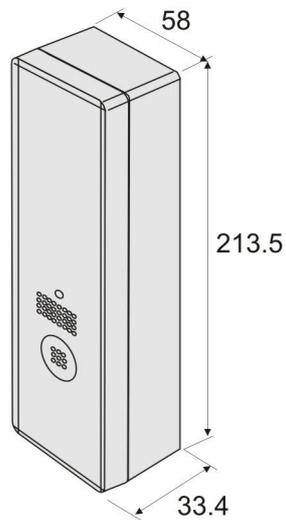
Radio test set DZW1171



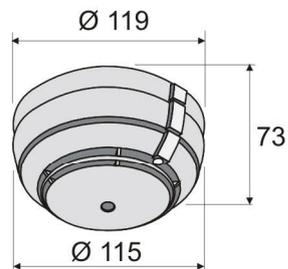
- The mobile radio test set DZW1171 provides a simple way of determining the exact spreading properties of radio waves in the building.
- We recommend performing these field strength tests to ensure the planning process is reliable; i.e., to determine the locations of radio gateways and radio detectors.
- Measure the radio smoke detectors at their final locations if possible; use the telescope rods FDUM291 or FDUM292 to do this. The same applies to radio manual call points. The radio test set has no effect on an existing radio cell; it can be measured or checked in parallel.
- The radio test set is battery-operated (order two 9 V lithium batteries separately).

Dimensional drawings

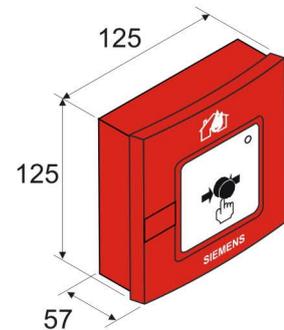
Radio gateway
FDCW221



DOW1171 radio smoke detector
with base DBW1171



Manual call point SMF121 with
radio base SMF6120



Disposal



The device is considered an electronic device for disposal in accordance with the European Guidelines and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

Technical data

Communication protocol (detector line)	FDnet
Number of radio gateways with radio cell overlapping	Max. 16
Number of radio detectors per radio gateway	Max. 30
Connection factor	2 + number of radio detectors

	DOW1171	SMF6120	SMF121	FDCW221
Sending/receiving aerials	2 (aerial diversity)	2 (aerial diversity)		2 (aerial diversity)
Radio frequencies	868...870 MHz (SRD band)	868...870 MHz (SRD band)		868...870 MHz (SRD band)
Channel grid	25 kHz	25 kHz		25 kHz
Transmitting power	<5 mW ERP	<5 mW ERP		<5 mW ERP
Range				
– In building	Max. 40 m	Max. 40 m		Max. 40 m
– Outdoors	Max. 200 m	Max. 200 m		Max. 200 m
Electromagnetic compatibility				
– ETS 300 220 / 683	3 V/m	3 V/m		3 V/m
– EN 50130-4	10 V/m	10 V/m		10 V/m
– VdS (range with increased danger, GSM)	30 V/m	30 V/m		30 V/m
Supply	2x 9 V lithium batteries,	2x 3.6 V lithium batteries		From detector line, plus 1x 9 V lithium battery, monitored
Lithium battery life	Min. 5 years	Min. 5 years		Min. 5 years
Ext. alarm indicator can be connected	–	–		2
MC link connection	–	–		Connector
Operating temperature	-10...+55 °C	-10...+55 °C		-10...+55 °C
Air humidity (non-condensing)	≤95 % rel.	≤95 % rel.		≤95 % rel.
Protection category (IEC 60529)	IP44	IP43		IP40
Color	~RAL 9010 pure white	~RAL 3000 flame red		~RAL 9002 gray white
Approvals:				
– VdS	G211065	-	G299032	G211066

Details for ordering

Type	Art. no.	Designation	Weight	
DOW1171/ DBW1171	S24218-F62-A7	Complete radio smoke detector, including base DBW1171 and two 9 V lithium manganese dioxide batteries	0.330 kg	
DOW1171	S24218-F62-A8	Radio smoke detector	0.170 kg	
DBW1171	S24218-F316-A1	Base for radio smoke detector	0.090 kg	
–	A5Q00004142	Lithium manganese dioxide battery 9 V, 1.2 Ah (1 block)	0.040 kg	
Base accessories				
DBZ1190	BPZ:4585260001	Detector locking device	0.001 kg	
DBZ1193A	BPZ:4864330001	Designation plate	0.077 kg	
DBZ1192	BPZ:4588140001	Base attachment, surface-mounted, humid	0.341 kg	
DBZ1194	BPZ:4677110001	Protective cage	0.138 kg	
Manual call point				
SMF121	V24217-C1218-W200	International manual call point (Siemens)	0.202 kg	
SMF121	V24217-C1218-W100	Neutral manual call point	0.202 kg	
–	S24217-G34-A1	Key	0.004 kg	
SMF6120	S24218-F72-A1	Radio base	0.184 kg	
–	V24069-Z112-A1	3.6 V lithium battery	0.020 kg	
Spare part	–	S24217-G41-A1	Glass insert	0.012 kg
Gateway				
FDCW221	S54323-F104-A1	Radio gateway	0.190 kg	
DBZ1190-AB	BPZ:4942340001	0.5...2.5 mm ² (3-pin) connection terminal	0.001 kg	
–	A5Q00004142	Lithium manganese dioxide battery 9 V, 1.2 Ah (1 block)	0.040 kg	
Radio test set				
DZW1171	BPZ:5762200001	Radio test set	0.550 kg	
–	A5Q00004142	Lithium manganese dioxide battery 9 V, 1.2 Ah (1 block)	0.040 kg	

11		0786	DOW1171 compl.	Siemens Schweiz AG; Theilerstrasse 1a CH-6300 Zug Technical data: see doc. 009865
DOW1171 compl. - Point type smoke detector using radio link for use in fire detection and fire alarm systems installed in buildings.				
305/2011/EU (CPR): EN 54-7 / EN 54-25 ; 2014/53/EU (RED): EN 300 220-2 / EN 300 220-3-2 / EN 301 489-3 / EN 60950-1 / EN 62479 ; 2011/65/EU (RoHS): EN 50581				
The declared performance and conformity can be seen in the Declaration of Performance (DoP) and the EU Declaration of Conformity (DoC), which is obtainable via the Customer Support Center: Tel. +49 89 9221-8000 or https://siemens.com/bt/download				
DoP No.: 0786-CPR-21077; DoC No.: CED-DOW1171				

11		0786	DOW1171 w/o batt.	Siemens Schweiz AG; Theilerstrasse 1a CH-6300 Zug Technical data: see doc. 009865
DOW1171 w/o batt. - Point type smoke detector using radio link for use in fire detection and fire alarm systems installed in buildings.				
305/2011/EU (CPR): EN 54-7 / EN 54-25 ; 2014/53/EU (RED): EN 300 220-2 / EN 300 220-3-2 / EN 301 489-3 / EN 60950-1 ; 2011/65/EU (RoHS): EN 50581				
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DoP No.: 0786-CPR-21077; DoC No.: CED-DOW1171				

11		0786	FDCW221	Siemens Schweiz AG; Theilerstrasse 1a CH-6300 Zug Technical data: see doc. 009865
FDCW221 - Input/output device incl. short-circuit isolator for use in fire detection and fire alarm systems installed in buildings.				
305/2011/EU (CPR): EN 54-18 / EN 54-17 / EN 54-25 ; 2014/53/EU (RED): EN 300 220-2 / EN 300 220-3-2 ; EN 301 489-3 ; EN 60950-1 / EN 62479 ; 2014/30/EU (EMC): EN 50130-4 / EN 61000-6-3 ; 2011/65/EU (RoHS): 50581				
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DoP No.: 0786-CPR-21078; DoC No.: CED-FDCW221				

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