



**FDCW221, DOW1171, SMF6120,  
SMF121**

Sinteso™

## **Radio fire detection system**

CE

addressable (FDnet)

- **Complete integration in FS20 fire detection system**
- **Simultaneous operation of wired and wireless fire detectors**
- **High transmission reliability**
  - Automatic definition of the optimum basic and backup radio channels
  - Automatic change of channel (up to 4 alternative channels) in the event of radio interference
  - Bi-directional data traffic in SRD band
  - 2 integrated antennae (antenna diversity)
  - Communication failures are recognized in max. 100 s, alarms and radio interruptions will immediately be transmitted
- **Individual detector addressing for easy identification of location**
- **Up to 16 Radio gateways with crossover of radio cells**
- **Up to 30 Radio detectors (smoke detectors and manual call points) can be connected to each radio gateway**
- **2 external alarm indicators can be connected to each radio gateway**
- **Small current consumption, long battery service life (more than 5 years)**

Application of the wireless fire detection system is where only restricted use of cable or conduit is permitted because of structural or aesthetic reasons, or for reasons of architectural conservation.

By wireless coupling the complex or visible cable installation is void; this is particularly interesting for museums, churches etc.

The system offers the additional advantage that installation is possible without interruption of operation.

With change or extension of the building, smoke detectors and manual call points can be displaced easily, without high investment.

### **Typical fields of application**

Rooms of great historical value, e.g.:

- Museums
- Churches
- Libraries

Rooms which permit only the shortest interruption to operations for wiring, e.g.:

- Hotel rooms
- Management offices
- Congress halls

Extensions of existing systems with lowest possible effort for wiring and installation, e.g.:

- Industrial rooms with changed usage
- Office rooms with changed floor plan

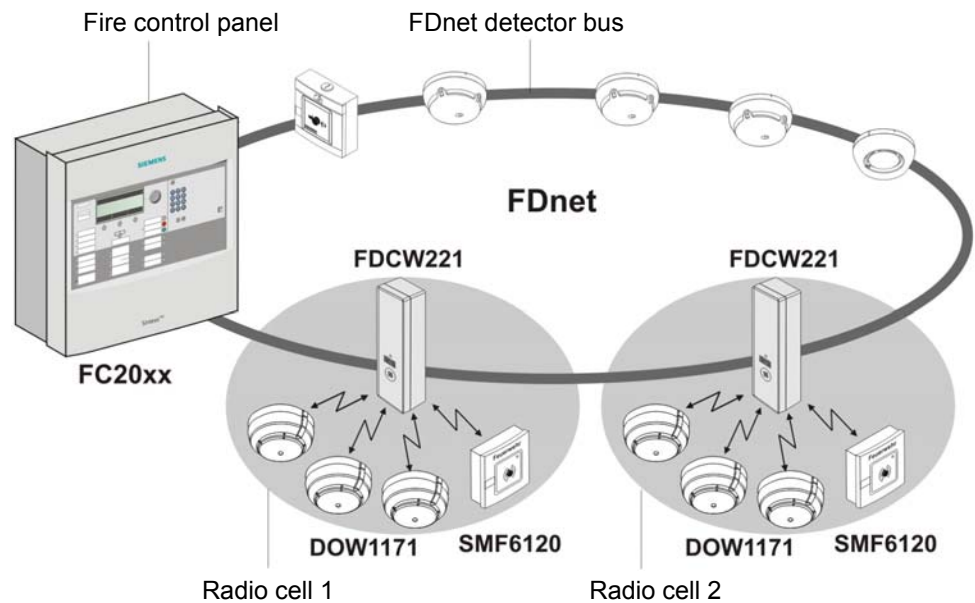
### **Target and purpose**

In functional buildings, fire detection systems are optimized, planned and installed according to the requirements of the initial user. Experience shows that even the initial user's requirements are outpaced in the shortest possible time. The company expands the utilization and structures change and constructional changes are the result.

## System overview

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- The radio gateway FDCW221, which is 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 transmits the signals received from the radio smoke detectors respectively radio manual call points via the detector bus to the fire detection control unit and passes on commands from the control unit to the radio detectors.
- Simultaneous operation of wired detectors on FDnet and wireless fire detectors at the radio gateway is warranted.
- The radio fire detection system operates in a frequency range with highest transmission and functional reliability, with clear regulations for all users.



## Function

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- To attend the range between radio gateway and radio detector (max. 40 m, max. damping 90 dB)
- The building construction may influence the radio range (materials as steel, concrete, sand-lime brick, wood etc.).
- Up to 16 radio gateways can be operated with crossover of radio cells. If a project consists of more than 16 radio gateways with crossover of radio cells (max. utilizations), precautions have to be taken that the next further radio gateway is installed outside 'earshot' (without crossover of radio cells), therefore again 16 basis channels are available.
- The radio gateway must be well accessible for the field service personnel.

## Restriction

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- Unsuitable for rooms with large radio field absorption, e.g. with metallic lattice partition or with metallic storage rack

## Radio smoke detector DOW1171 and detector base DBW1171

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- Uniform response to the various types of fires
- Dynamic analysis of the sensor signal smoke in the detector itself
- Built-in diagnostic algorithms with automatic self-test
- High immunity to false alarms and ambient influences
- High-quality optoelectronic sensor system
- Automatic compensation of soiling
- The smoke detector is battery-operated and can be mounted at any position within radio range.

### Functions

#### ● 4 danger levels

- Allows the actuation of different counter-measures as well as an early warning in the event of an incorrect application.

#### ● Self test

- Periodically or upon command the detector carries out a comprehensive self-test.

#### ● Algorithms

- Special computing procedures in the detector processor allow optimum signal evaluation as assigned to the detector. This ensures high immunity to interference and operational reliability.

#### ● Measurement value compensation

- This gives the detector practically constant sensitivity throughout its entire service life.
- A built-in alarm indicator signals an alarm on the spot.

### Supply

The DOW1171 radio smoke detector is supplied by two 9V lithium batteries. In normal operating condition they have a service life of more than 5 years. Separate monitoring of each battery guarantees up to 30 days' operation of the detector even if one battery malfunctions.

### Installation

- Mounting with detector base DBW1171. The detector must only be inserted in the base during commissioning (address allocation).
- The detector can be inserted and removed using a detector exchanger up to a height of 8 meters.

## Manual call point SMF121, Radio base SMF6120

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- The radio module is integrated in the base.
- The radio base is battery-operated and can be mounted at each place within a radio range.
- The radio base consists of a housing part inclusive radio electronic and antennas. The two 3.6 V lithium batteries are put into the base (must be ordered separately).
- Manual call point with indirect alarm actuation by breaking the glass and pressing the push button.

### Installation

- Mounting with radio base SMF6120. The batteries must only be inserted in the base during commissioning (address allocation).

## Radio gateway FDCW221

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- With integrated line separator.
- Bi-directional data communication in the frequency range of 868 - 870 MHz.
- The radio module contains a complete sending and receiving unit, as well as a micro controller with all necessary functions for the radio transmission.
- The radio transmission works in the SRD band (Short Range Device), a reserved frequency band with defined user rules. The SRD is free from amateur radio. 80 channels with a channel width of 25 kHz are available.
- 4 alternative channels are assigned to each of the 16 basis channels.
- The detector bus (FDnet) is used for communication with the control unit and the power supply.
- The additional 9V battery (must be ordered separately) safeguards operation during commissioning or when the detector bus is dead. In normal operating condition the battery is switched off which leads to a service life of well over 5 years.
- Signal conditioning and monitoring of up to 30 detectors (radio smoke detectors and/or radio manual call points).
- MC link for connection of the detector exchanger and tester makes reading of information possible, for commissioning, maintenance and for the troubleshooting.

### Installation

- For mounting, remove the cover, break off the corresponding openings for the introduction of the cables and fasten housing with 2 screws (max. Ø4.3 mm) on a plane surface.
- If shielded cables or larger cables are used (cross-section  $\geq 1.5 \text{ mm}^2$ ), additional connection terminals DBZ1190-AB are to be used (must be ordered separately).
- Insert the 9 V battery (must be ordered separately), connect the battery cable only with commissioning.

## Radio test set DZW1171

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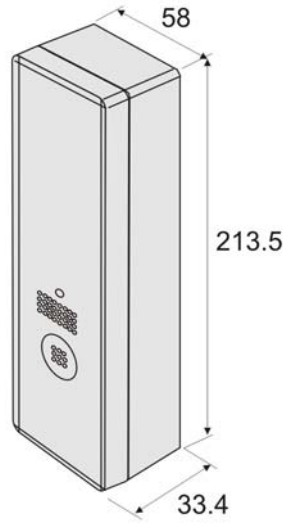


- The mobile radio test set DZW1171 enables to easily determine the exact propagation of the radio waves through the building.
- To ensure a safe project planning, i.e. the determination of radio gateway and radio smoke detector locations, we would recommend to carry out field strength measurements.
- Field strength measurements to be done at the final position of the radio smoke detector, if ever possible. Use telescope rod FDUM291 or FDUM292. The same applies for the manual call points. The radio test device does not affect a radio cell already existing; it can be used in parallel for measurement or checking.
- The radio test set is battery-operated (2x 9 V lithium batteries must be ordered separately).

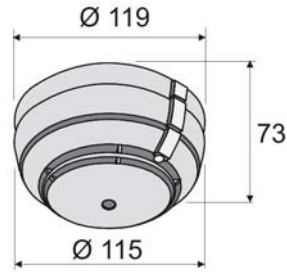
## Dimensions

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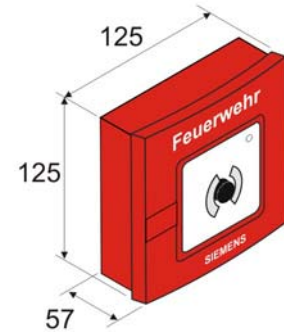
Radio gateway  
FDCW221



Radio smoke detector  
DOW1171 with base DBW1171



Manual call point SMF121 with  
radio base SMF6120



## Technical data

	Communication protocol (detector line)		
			FDnet
Number of radio gateways with crossover radio cells			max. 16
Number of radio detectors per radio gateway			max. 30
Connection factor			2 + number of radio detectors

	DOW1171	SMF6120	FDCW221
Transmitter/receiver antenna	2 (antenna diversity)	2 (antenna diversity)	2 (antenna diversity)
Radio frequency	868 ... 870 MHz (SRD band)	868 ... 870 MHz (SRD band)	868 ... 870 MHz (SRD band)
Channel width	25 kHz	25 kHz	25 kHz
Transmitting power	< 5 mW ERP	< 5 mW ERP	< 5 mW ERP
Transmission distance			
– in the building	max. 40 m	max. 40 m	max. 40 m
– in the open air	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 (zone with increased danger, GSM)	30 V/m	30 V/m	30 V/m
Supply	2x 9 V lithium batteries, separately monitored	2x 3.6 V lithium batteries, separately monitored	from detector bus, additional 1x 9 V lithium battery, monitored
Lithium battery service life	min. 5 years	min. 5 years	min. 5 years
Ext. alarm indicator connectable	–	–	2
MC link connection	–	–	connector
Operating temperature	–10... + 55 °C	–10... + 55 °C	–10... + 55 °C
Humidity (no condensation)	≤95 % rel.	≤95 % rel.	≤95 % rel.
Protection category (EN60529/IEC529)	IP44	IP43	IP40
Color	pure white, RAL 9010	rot, RAL 3000	grey white RAL 9002
Standard	EN54-7	EN54-11	EN54-17, EN54-18
Approvals			
– VdS	G200112	G299032	G207043

## Details for ordering

Type	Part no.	Designation	Weight
DOW1171/ DBW1171	S24218-F62-A5	Radio smoke detector DOW1171 complete with base DBW1171 + 9V lithium battery (2 blocks)	0.330 kg
DOW1171	S24218-F62-A6	Radio smoke detector	0.170 kg
DBW1171	S24218-F316-A1	Base	0.090 kg
–	A5Q00004142	9 V lithium battery (1 block)	0.040 kg
Base accessories			
DBZ1190	4585260001	Detector locking device	0.001 kg
DBZ1193A	4864330001	Detector designation plate (10 pcs.)	0.077 kg
DBZ1192	4588140001	Base attachment, surface mounting, wet appli- cation	0.341 kg
DBZ1194	4677110001	Protective cage	0.170 kg
Manual call points			
SMF121	V24217-C1214-C201	Manual call point with label 'Feuerwehr'	0.202 kg
SMF121	V24217-C1214-V202	Manual call point with label 'Fire alarm'	0.202 kg
SMF6120	S24218-F72-A1	Radio base	0.184 kg
–	V24069-Z112-A1	3.6 V lithium battery	0.020 kg
Gateway			
FDCW221	A5Q00020241	Radio gateway	0.190 kg
DBZ1190-AB	4942340001	Connection terminal 2.5 mm <sup>2</sup> , 3-pole	0.002 kg
–	A5Q00004142	9 V lithium battery (1 block)	0.040 kg
Radio test set			
DZW1171	5762200001 –	Radio test set	0.550 kg
–	A5Q00004142 –	9 V lithium battery (1 block)	0.040 kg