



**FDOOT271, FDCW241**

Sinteso™  
Cerberus® PRO

## **SWING Neural radio fire detector**



addressable (FDnet/C-NET)

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- **Multihop technology**
  - **Complete integration in FS20 and FS720 fire detection systems**
  - **Simultaneous operation of wired and wireless fire detectors**
  - **High transmission reliability using independent ways of communication**
    - At least 2 independent ways of communication
    - Big range via radio transmission up to 2 intermediate stations
  - **Up to 30 Radio gateways**
  - **Up to 16 Radio gateways with crossover of radio cells**
  - **Individual detector addressing for easy identification of location**
  - **Small current consumption, long battery service life**

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 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

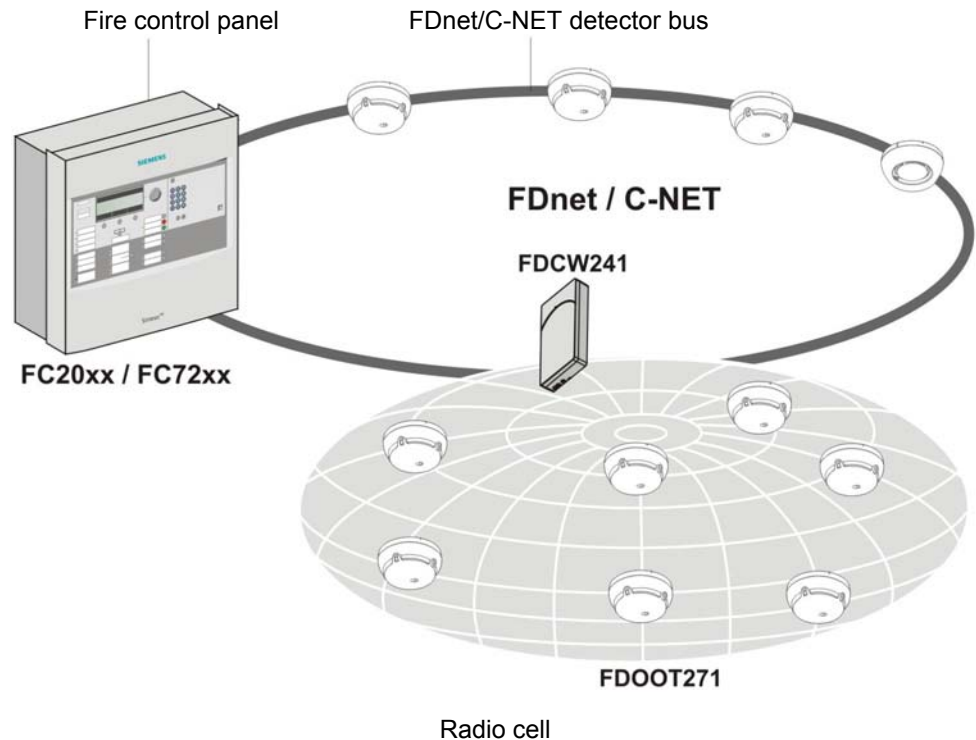
### **Target and purpose**

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 FDCW241, which is connected to the FDnet/C-NET, communicates with up to 30 radio detectors (neural fire detectors). Each detector has its own location address.
- The radio gateway transmits the signals received from the radio fire detectors 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/C-NET 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
- The building construction may influence the radio range (materials as steel, concrete, sand-lime brick, wood etc.). The new mesh technology provides the possibility of using up to 2 intermediate stations in order to overcome critical areas.
- Up to 16 radio gateways can be operated with crossover of radio cells. At each point a max of 16 different radio cells (with max. 30 detectors) can be installed inside ear-shot.
- The radio gateway must be well accessible for the field service personnel.

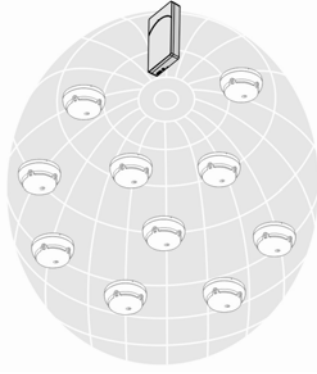
## Restriction

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

## Mesh network

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- A mesh network is a radio network linking two or more radio devices to an inter-meshed network. Radio devices connect to one another and configure themselves of their own accord. The network continuously modifies itself during operation
  - If a radio link to a neighboring radio device is blocked, the SWING mesh network automatically looks for another radio device. A high network density improves the network's capacity for self-healing.
  - Bi-directional data communication in the frequency range of 868 - 870 MHz and 433 - 435 MHz
  - The radio transmission works in the SRD band (Short Range Device), a reserved frequency band with defined user rules.
  - Radio: encoded information transmission
  - Radio: monitoring of connection/system integrity
- **Advantage**  
The SWING technology makes the radio system unique and extremely reliable.

## Neural radio fire detector FDOOT271

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- Uniform response to the various types of fires
- Dynamic analysis of the sensor signal 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.
- The batteries must only be inserted in the base during commissioning.
- The detector can be inserted and removed using a detector exchanger up to a height of 8 meters.

### 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.

- **ASA technology (Advanced Signal Analysis)**

– 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 neural fire detector FDOOT271 is supplied by one battery bloc (AA lithium batteries). In normal operating condition they have a service life of more than 3 years. Separate monitoring of each battery guarantees up to 6 months operation of the detector even if one battery malfunctions.

## Detector base FDB271

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- The detector must only be inserted in the base during commissioning (address allocation).

## Radio gateway FDCW241

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- With integrated line separator.
- 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 detector bus (FDnet/C-NET) is used for communication with the control unit and the power supply.
- 3.6 V lithium battery (must be ordered separately) leads to a service life of well over 6 years.
- Signal conditioning and monitoring of up to 30 radio detectors
- MCL USB Adapter for connection of the SWING-Tool. Makes reading of information possible, for commissioning, maintenance and for the troubleshooting.

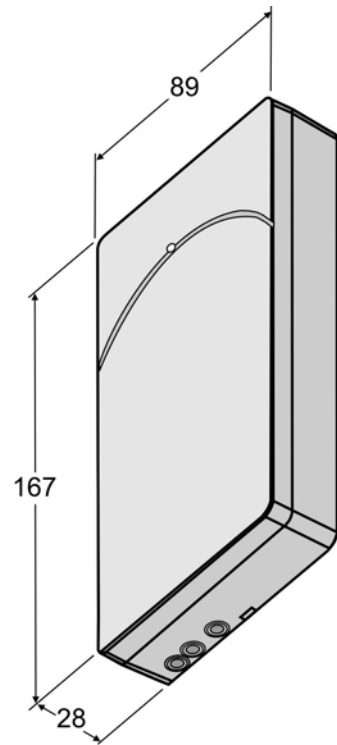
### Installation

- 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 3.6 V lithium battery (must be ordered separately), connect the battery cable only with commissioning.

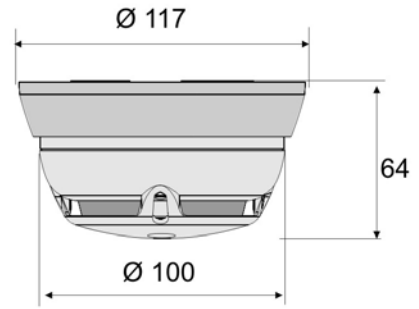
## Dimensions

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Radio gateway FDCW241



Radio neural fire detector FDOOT271 with base FDB271



## Technical data

Communication protocol (detector line)	FDnet / C-NET	
Number of radio gateways with crossover radio cells	16	
Number of radio detectors per radio gateway	max. 30 + GW + separator in GW	
Connection factor	2 + number of radio detectors	
	<b>FDOOT271</b>	<b>FDCW241</b>
Transmitter/receiver antenna	Dual band antenna	Dual band antenna
Radio frequency		
– 23 channels	868 ... 870 MHz (SRD band)	868 ... 870 MHz (SRD band)
– 20 channels	und 433 ... 435 MHz	und 433 ... 435 MHz
Channel width	50 kHz	50 kHz
Transmitting power	< 10 mW ERP	< 10 mW ERP
Transmission distance		
– in the building	max. 180 m	max. 180 m
– in the open air	max. 1000 m	max. 1000 m
Electromagnetic compatibility		
– 100 kHz... 2.5 GHz	30 V/m	30 V/m
Permissible air speed	Max. 5 m/s	-
Terminals		0.2... 1.5 mm <sup>2</sup>
Supply	Battery pack with AA 3.6 V lithium batteries, (must be ordered separately)	Detector line and battery pack with AA 3.6 V lithium batteries, (must be ordered separately)
Lithium battery service life	min. 3 years	min. 6 years
MC link connection	–	Jack socket
Operating temperature	-10 ... + 55 °C	-10 ... + 55 °C
Storage temperature	-30 ... + 75 °C	-30 ... + 75 °C
Humidity (no condensation)	≤95 % rel.	≤95 % rel.
Protection category (EN60529/IEC529)	IP44	IP40 IP65 with FDCH221 housing
Color	white, ~RAL 9010	white, ~RAL 9010
Standard	EN 54-5, EN 54-7, EN 54-25 EN300220-2	EN 54-17, EN 54-18, EN 54-25 EN300220-2
Approvals		
– VdS	G212104	G212103

### FDOOT271

<b>CE</b> 0786
Siemens Schweiz AG, CH-6301 Zug Date: see manufacturing date on the product 0786-CPD-21169
EN 54-5, EN 54-7 EN 54-25:2008/AC:2010 Radio fire detector; Safety in case of fire FDOOT271 Technical data see Doc. A6V10227635

### FDCW241

<b>CE</b> 0786
Siemens Schweiz AG, CH-6301 Zug Date: see manufacturing date on the product 0786-CPD-21168
EN 54-17:2005/AC:2007, EN 54-18:2005/AC:2007, EN 54-25:2008/AC:2010 Radio gateway; Safety in case of fire FDCW241 Technical data see Doc. A6V10227639

## Details for ordering

	Type	Part no.	Designation	Weight
Radio detector	FDOOT271	S54313-F1-A1	Radio neural fire detector	0.105 kg
	FDB271	S54319-F12-A1	Detector base	0.040 kg
	BAT3.6-10	S54370-Z11-A1	Li-SOCI2 battery 3.6 V, 10 Ah	0.092 kg
Base accessories	FDBZ293	A5Q00005035	Detector locking device	0.001 kg
	FDBZ291	A5Q00002621	Detector designation plate	0.027 kg
	FDZ291	A5Q00004814	Detector dust cap	0.005 kg
Radio Gateway	FDCW241	S54370-F11-A1	Radio gateway	0.154 kg
	DBZ1190-AB	BPZ:4942340001	Connection terminal 2.5 mm <sup>2</sup> , 3-pole	0.002 kg
	BAT3.6-10	S54370-Z11-A1	Li-SOCI2 battery 3.6 V, 10 Ah	0.092 kg
Accessory	FDCH221	S54312-F3-A1	Housing with cover, seal and screws	0.333 kg
	FDUZ227	S54323-F106-A1	MCL-USB Adapter	0.250 kg