



# Radio Frequency Fire Detection System

DOW 1171, FK 110 LSN, SMF121



**BOSCH**

en Operation Guide



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# 1 Notes

## 1.1 Safety Instructions

**Notice!**

Installation must only be carried out by authorized specialist personnel.

To guarantee the resistance to interference of the devices, only installation material approved for installation by Bosch ST may be used.

All devices must be installed in dry areas.

**Caution!**

Electrostatic discharge (ESD)! Electronic components could become damaged. Ground yourself using a wrist strap or take other suitable measures when handling PC boards.

**Notice!**

When connecting, please observe the regulations and guidelines of the regional authorities and institutions (fire service, police, etc.)

## 1.2 Approvals and Certificates

An approval in line with Guideline 99/5/EC relating to short-range devices and telecommunications transmitting devices, Annex IV, exists. This approval applies for the following countries:

Austria (A), Belgium (B), Switzerland (CH), Germany (D), Denmark (DK), Spain (E), Great Britain (GB), Croatia (HR), Italy (I), Luxembourg (L), Norway (N), Netherlands (NL), Portugal (P), Sweden (S), Slovakia (SK), Slovenia (SLO).

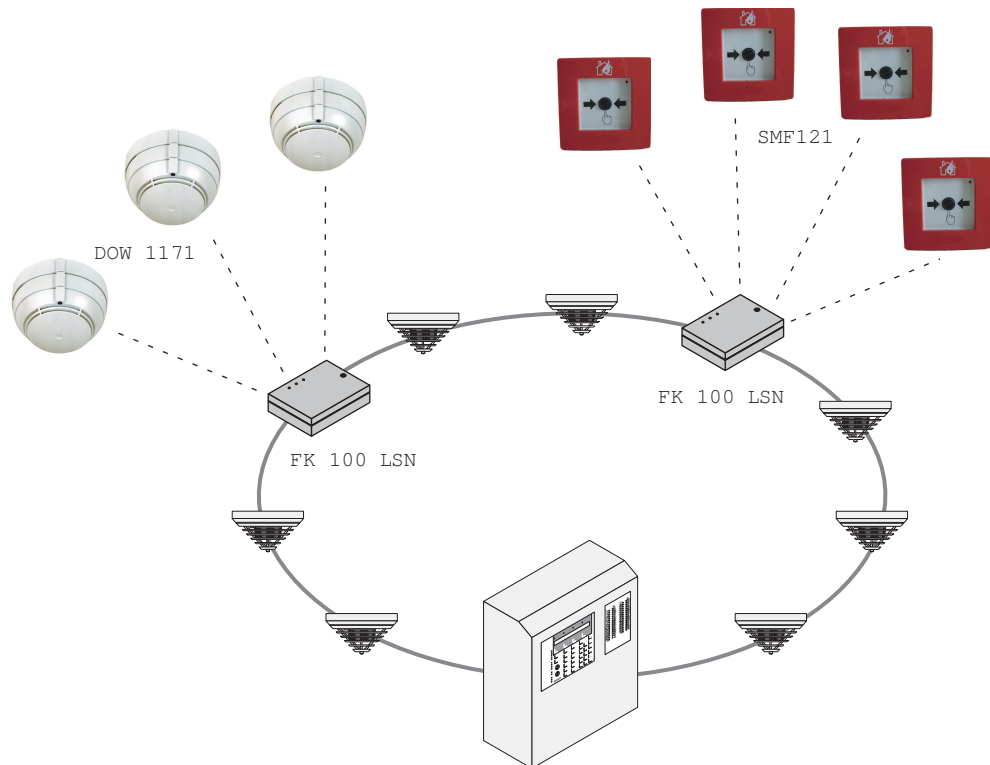
The individual components of the RF fire detection system conform to the regulations and guidelines for security systems EN 54, VDE 0833 and VdS.

## 2 Short Information

The RF fire detection system consists of 1 FK 100 RF Interface Module and up to 30 RF smoke detectors (DOW 1171 RF Smoke Detector and/or SMF121 RF Manual Call Point). As an LSN element, FK 100 RF Interface Module is switched in a loop or stub line and forms the interface between the RF smoke detectors and the fire panel.

Transfer of information between detector and interface module is bi-directional. If a base channel is occupied by an external system, the system immediately switches to a secondary channel to guarantee alarm transmission.

The RF fire detection system works in a frequency range of 868 to 870 MHz. Within this range, a few channels are exclusively defined for radio applications in security systems. This guarantees an extremely high level of operational stability.



**Figure 2.1: RF Fire Detection System Connection to Fire Panel**

### 3 System Overview

#### 3.1 FK 100 LSN RF Interface Module

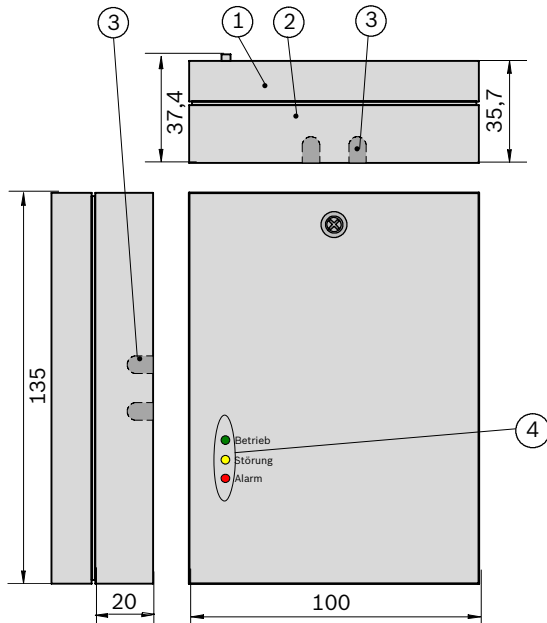


Figure 3.2: FK 100 LSN configuration closed

1	Housing cover
2	Lower part of housing
3	Cable bushing
4	LED operation, fault and alarm

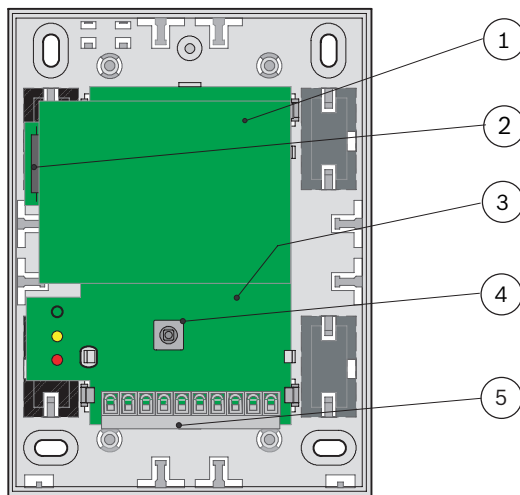


Figure 3.3: FK 100 LSN configuration open

1	Radio module
2	Reed contact
3	PC board
4	Tamper contact
5	Connection terminals

The LSN part in the interface module is powered via the LSN (LSN = Local Security Network). The radio module is powered via an auxiliary power supply. An integrated microcontroller drives interfaces and user elements and is responsible for data transfer between the RF fire detector and the fire panel. The interface module has a tamper contact, a reed contact for manual activation of the configuration mode and three LEDs for the operating status display.

### 3.2 DOW 1171 RF Smoke Detector

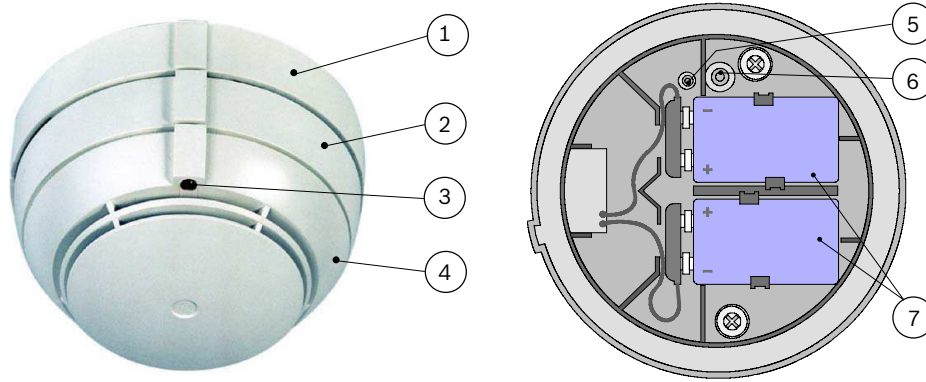


Figure 3.4: DOW 1171 configuration closed and open

1	Detector Bases
2	Bayonet ring
3	Red LED
4	Detector housing
5	New button for logging in and resetting
6	Contact as removal lock
7	9 V lithium battery pack

The RF smoke detector utilizes the scattered-light method, in the same way as conventional optical smoke detectors. In conjunction with the modern detection algorithm, it achieves a uniform response behavior, while providing high levels of interference immunity. The detector base contains the radio module and the inserts and connections for the batteries.

### 3.3 SMF121 RF Manual Call Point and SMF6120 Base



**Notice!**

Please note that the red LED on the RF manual call point does not light up or flash after the alarm has been triggered. This is known and is not necessary according to EN 54-11.

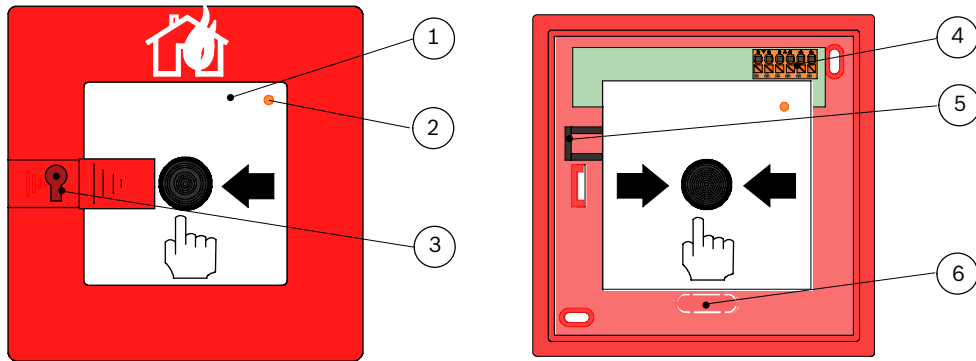


Figure 3.5: SMF121 configuration closed and open

1	Glass pane
2	Red LED
3	Lock to unlock the detector door
4	Terminal block
5	Reset lever
6	Cable insertion

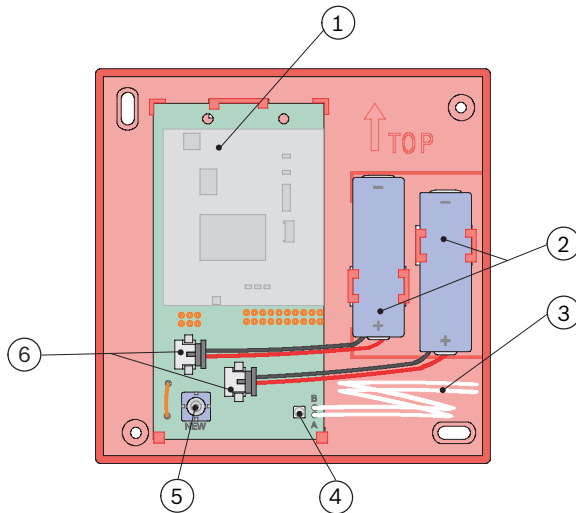


Figure 3.6: SMF6120 Base configuration

1	Radio module
2	3.6 V lithium battery
3	Cable to connect to SMF121
4	Green LED, display when logging in
5	New button for logging in
6	Battery connection

The RF manual call point consists of the SMF121 Manual Call Point and the SMF6120 Detector Base. The detector base contains the radio module and the inserts and connections for the batteries.

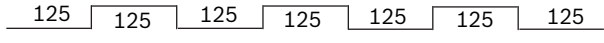



In event of a fire, the glass pane must be broken first, and then the push button is pressed hard. A micro switch within the detector triggers the alarm. The push button remains pressed down. The push button or alarm can only be reset by opening the detector door or manually operating the reset lever.

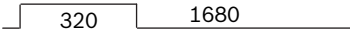

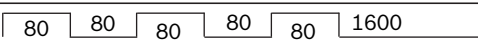

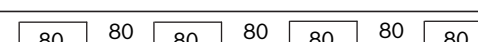
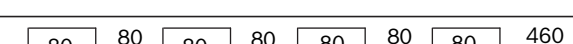
### 3.4 LED Functions

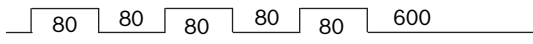

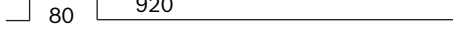
#### 3.4.1 LEDs on FK 100 LSN Interface Module

Display	Red	Yellow	Green	Meaning
Rapid flashing		x	x	Frequency search
			x	RF detector login
		x		Commissioning without WinPara/FSP-5000-RPS
	x			Fault
Slow flashing			x	System configuration for RF fire detection system
		x		Standby
	x			Alarm
Steady light		x		Sabotage alert (Interface module opened or detector twisted out of base)
			x	Normal mode

Display	Timing diagram [ms]
Rapid flashing 4 Hz	
Slow flashing 0.5 Hz	

#### 3.4.2 DOW 1171 RF Smoke Detector LED

Flash cycle	Timing diagram [ms]	Meaning
Once every 2 s		System search
Once every 2 s		New logon
Three times every 2 s		Renewed logon
Once every 1 s		Alarm
Six times every 1 s		Fault, defect
Four times every 1 s		Field strength high

Flash cycle	Timing diagram [ms]	Meaning
Three times every 1 s		Field strength moderate
Twice every 1 s		Field strength low
Once every 1 s		Field strength very low

## 4 Installation/Configuration Notes

When planning the RF fire detection system it must be ensured that the individual RF detectors have an optimum radio connection to the RF interface module. In a building, the range for the RF fire detection system generally depends on the reflection and absorption behavior of the materials used and the applicable ceiling and wall construction. There is no need for a visual line between the individual radio components.

Depending on whether the configuration or the materials of the wall and ceiling constructions are known, there are various options to plan the RF fire detection system:

- Planning with manual calculation of the attenuation (see chapter *Planning the RF Fire Detection System, page 11*)
- Planning with DZW 1171 Radio Test Unit (see chapter *Planning a RF Fire Detection System with DZW 1171 Radio Test Unit, page 13*)
- Planning using PC or laptop with Radio Spy 1 Field Strength Measuring Unit and Software

### 4.1 General Limits

- Recommendation: Maximum of 10 x FK 100 LSN Interface Modules per LSN ring.
- Maximum of 30 RF fire detectors or 10 RF manual call points per interface module. Interface modules, RF fire detectors and RF manual call points count in each case as one LSN element (e.g. 1 interface module + 15 RF fire detectors = 16 LSN elements).
- A maximum of 127 LSN elements are permitted for each LSN ring.
- Attenuation of a transmission path < 90 dB

### 4.2 Planning the RF Fire Detection System

To be able to create an optimum radio connection, the attenuation of a transmission must be < 90 dB. The attenuation values of the construction elements located on the transmission path in question (walls, ceilings etc.) must also be added to determine the actual attenuation at the mounting location in the case of attenuation owing to the distance.

The attenuation for the individual transmission paths, depending on distance and including the construction elements installed, can be calculated from the following tables.

Where the distance is doubled, the attenuation increases by approx. 17 dB.

Distance	5 m	10 m	15 m	20 m	25 m	30 m	40 m
Attenuation	40 dB	57 dB	67 dB	74 dB	79 dB	83 dB	90 dB

**Table 4.1: Attenuation Values Depending on Distance**

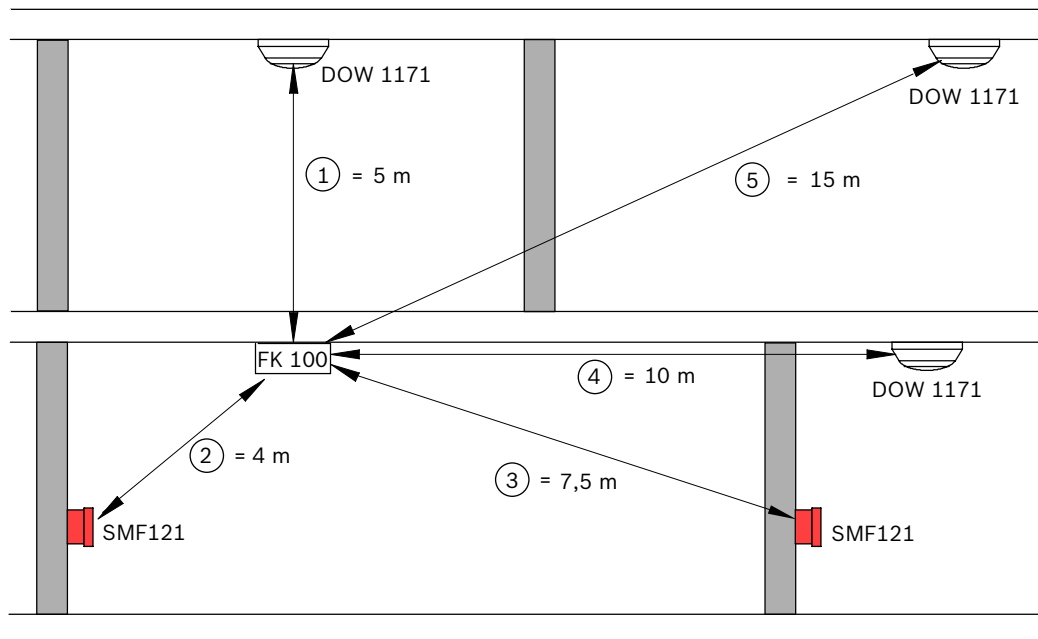
Construction	Attenuation
Partition	1 dB
dry brick walls or concrete walls/ceilings	6 dB
Lime sand brick	6 dB
Sand lime brick planning elements	10 dB
Wood framed or wood paneled walls	10 dB
Damp brick wall	10 dB
Coated gypsum plasterboard (double wall)	15 dB
Steel-reinforced concrete	30 dB

Construction	Attenuation
Thick, damp brick wall	40 dB

**Table 4.2: Additional attenuation due to construction elements on the transmission path**

### Calculation example

In the figure beneath, the FK 100 LSN Interface Module is installed under a reinforced concrete ceiling (white), the dividing walls are made from concrete (gray). The RF detectors are placed at different positions with and without a visual line to the RF interface module.



**Figure 4.7: Calculation example for planning of RF fire detection system**

The individual transmission paths (FS) can be calculated as follows:

- FS 1: Attenuation corresponding to distance + attenuation through reinforced concrete ceiling  
=> 40 dB + 30 dB = 70 dB
- FS 2: Attenuation corresponding to distance  
=> 35 dB
- FS 3: Attenuation corresponding to distance + attenuation through concrete wall  
=> 53 dB + 6 dB = 59 dB
- FS 4: Attenuation corresponding to distance + attenuation through concrete wall  
=> 57 dB + 6 dB = 63 dB
- FS 5: Attenuation corresponding to distance + attenuation through reinforced concrete ceiling + concrete wall  
=> 67 dB + 30 dB + 6 dB = 103 dB

The transmission paths 1 to 4 can be operated. In the case of transmission path 5, the detectors are no longer reached, as the attenuation exceeds 90 dB.

### 4.3 Planning a RF Fire Detection System with DZW 1171 Radio Test Unit

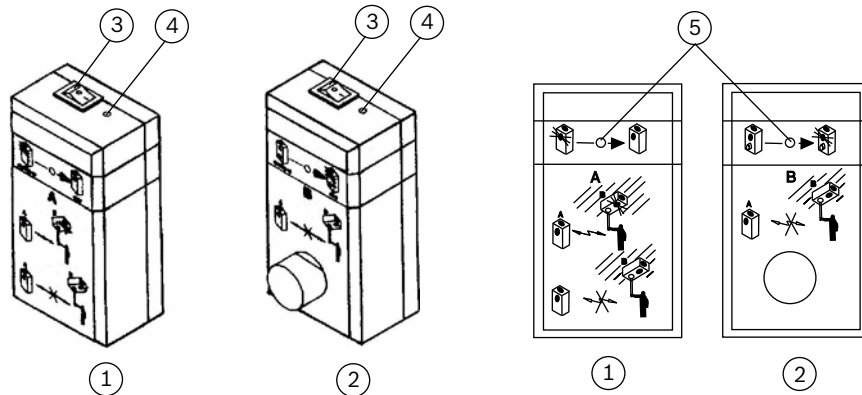


Figure 4.8: DZW 1171 Radio Test Unit

1	Module A
2	Module B
3	Switch for switching on and off
4	LED battery charge level display
5	LED radio connection display

1. Switch modules A and B on.  
The LEDs (4) next to the switches light up if there is sufficient battery voltage. The specified radio connection between the modules is initiated automatically and the LED on module A flashes while the radio connection is being established. As soon as the radio connection is set up, LED (5) on module A goes out and LED (5) on module B stays continuously lit.
2. Position module A as close as possible to the RF interface module.
3. Connect module B to the service pole and move to the designated RF detector installation location.  
As long as the LED (5) on module B stays continuously lit, the transfer of the radio signal is guaranteed (attenuation < 90 dB). If the LED (5) on module B starts to flash, the maximum radio range has been reached (attenuation 85 to 89 dB); however, the radio signal is still strong enough for fault-free operation. If the LED (5) on module B goes out, the RF interface module or RF detector installation location is outside the radio range.

## 5 Installing the RF Fire Detection System

### 5.1 Installing the FK 100 LSN RF Interface Module



**Notice!**

To create a fault-free radio connection, observe the following points:



The RF interface module must not be installed in a metal cabinet.

A minimum distance of 2 m must be maintained between individual RF interface modules installed in the same area.



**Notice!**

In the case of a wall-mounted configuration, fit the RF interface module in a vertical position to ensure that the writing on the cover can still be read.

- 4 x  Ø 6 mm
- 4 x  Ø 4.5 x 25 mm

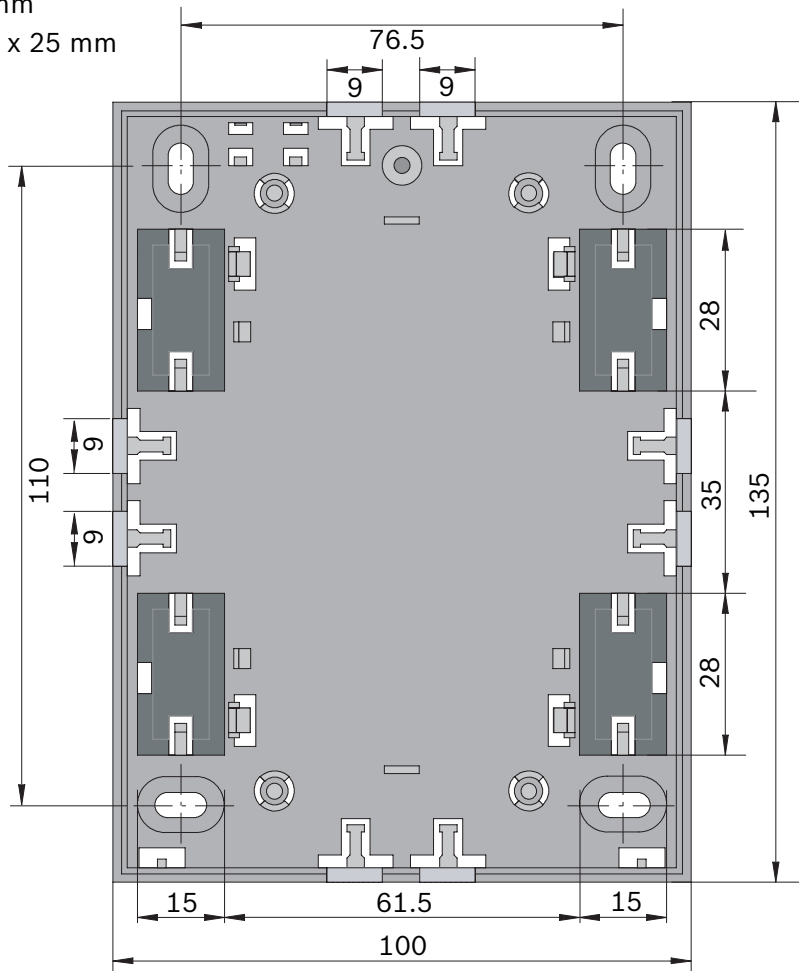
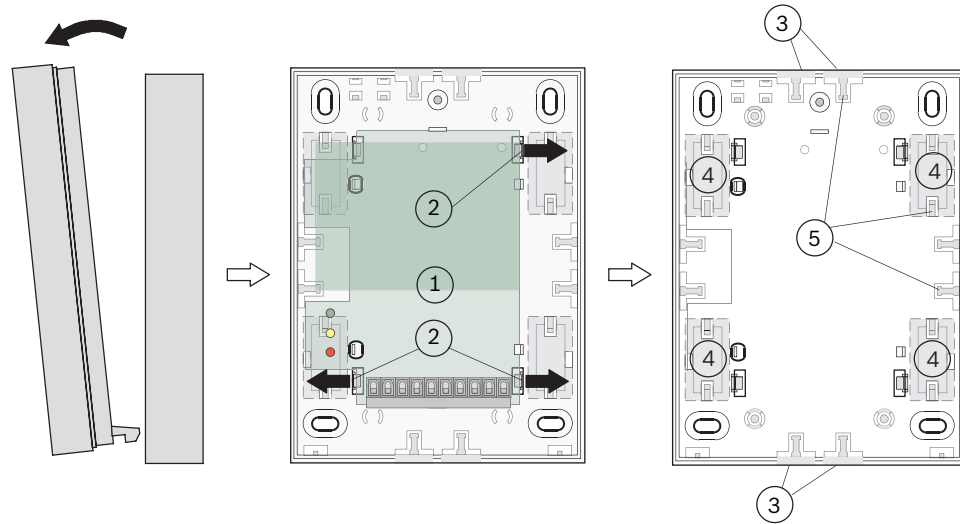


Figure 5.9: FK 100 LSN RF Interface Module Dimensions



**Figure 5.10: FK 100 LSN RF Interface Module Installation**

1	PC board
2	Snap-fit hook
3	Surface-mounted cable feed
4	Flush-mounted cable feed
5	Bar for strain relief of connection cables

The RF interface module is surface-mounted. The cables can be surface-mounted or flush-mounted. For this reason, pre-punched openings are provided on the lower part of the housing (on the sides and the base). The pre-punched openings can be punched out more easily, if the PC board is first removed.

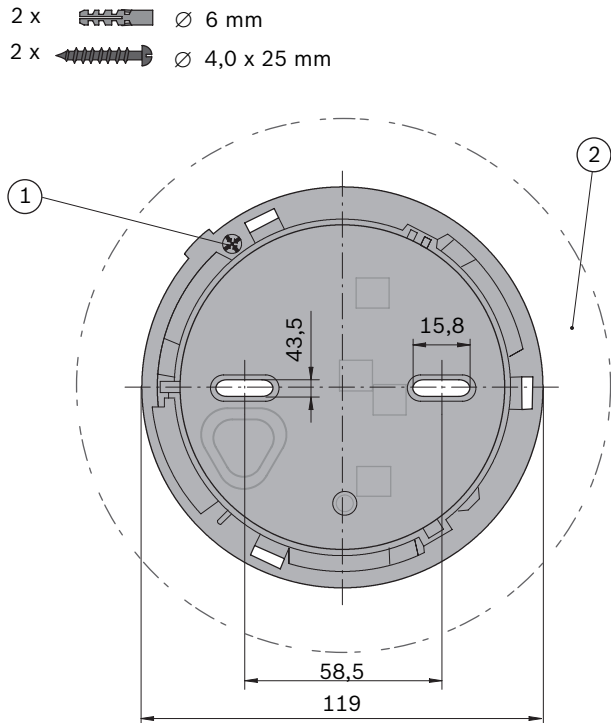
1. Remove the housing cover from the lower part of the housing.
2. Push off the two snap-fit hooks (2) on the left or right of the PC board carefully and remove the PC board (1).
3. Punch out the required openings for the surface-mounted (3) or flush-mounted (4) cable feed and screw the lower part of the housing to a dry, even surface.
4. Insert the PC board (1) again and wire up the connections (for terminal assignment see chapter *Connection of FK 100 LSN RF Interface Module to the Fire Panel*, page 18).
5. Use hose clips to secure the connection cable to the bars (5) to relieve strain.

## 5.2 Installing DOW 1171 RF Smoke Detector



**Notice!**

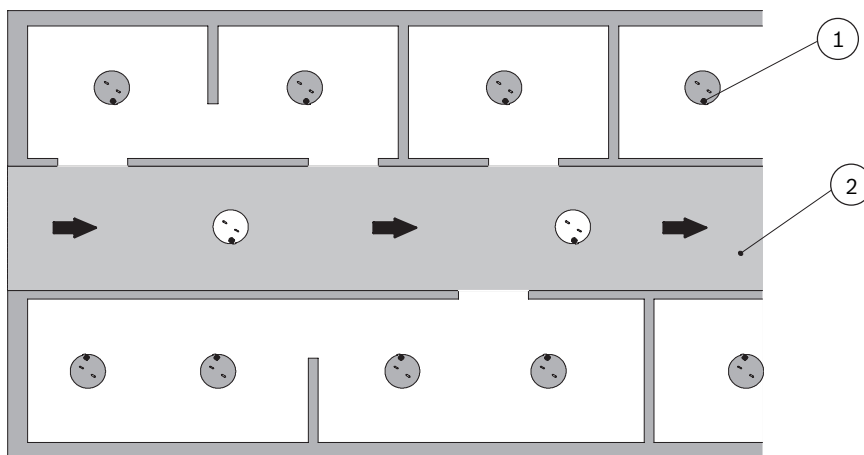
Do not connect the batteries in the RF smoke detector base until the RF interface module is permanently connected to the power supply. If this is not the case, the detector constantly tries to establish a connection to the RF interface module, which substantially reduces the service life of the batteries.



**Figure 5.11: DOW 1171 RF Smoke Detector Base Dimensions**

1	LED display marking position
2	Required space for service and maintenance

The RF smoke detector must be easily accessible for service and maintenance work. In addition, it must be possible to check it and remove it vertically from below (e.g. to change the battery). For this reason, there must be a free area of 2 cm around the detector base. When installing the base, ensure without fail that the LED display is always visible from the reconnaissance route. For precise aligning when installing, the position of the display LED (1) is marked on the base.



**Figure 5.12: Aligning the DOW 1171 RF Smoke Detector along the Reconnaissance Route**

1	LED display
2	Reconnaissance route

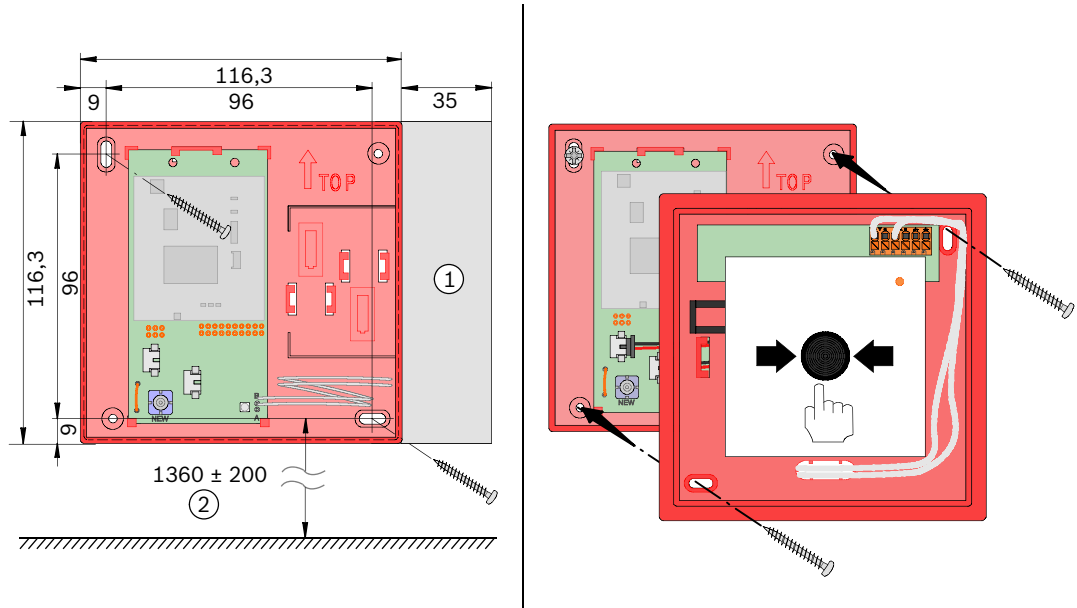


### 5.3 Installing the SMF121 RF Manual Call Point



**Notice!**

Do not connect the batteries in the RF manual call point until the RF interface module is permanently connected to the power supply. If this is not the case, the detector constantly tries to establish a connection to the RF interface module, which substantially reduces the service life of the batteries.



**Figure 5.13: SMF6120 Detector Base Dimensions**

1	Space to open the door
2	Mounting height

The RF manual call point is suitable for surface-mounting on a wall. Select the installation location so that approx. 35 mm is left free to the right (1) to open the door, and so that the detector is easily accessible for service and maintenance work.

The mounting height (2) from the ground to the center of the push button, in line with VdS regulation, amounts to 1400 mm (± 200 mm).

1. First install the SMF6120 Detector Base.
2. Then wire up the SMF6120 Base to the SMF121 RF Manual Call Point in line with chapter *Connection of SMF121 RF Manual Call Point to SMF6120 Base*, page 19.
3. Then install the SMF121 RF Manual Call Point on the base.

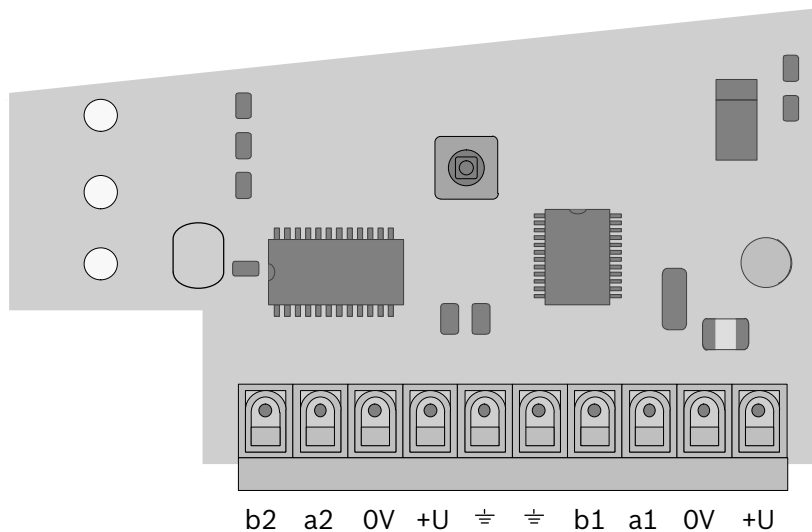
## 6 Wiring

### 6.1 Connection of FK 100 LSN RF Interface Module to the Fire Panel




#### Notice!

The RF interface module requires a separate power supply of 24 V via the connections 0 V / +U.

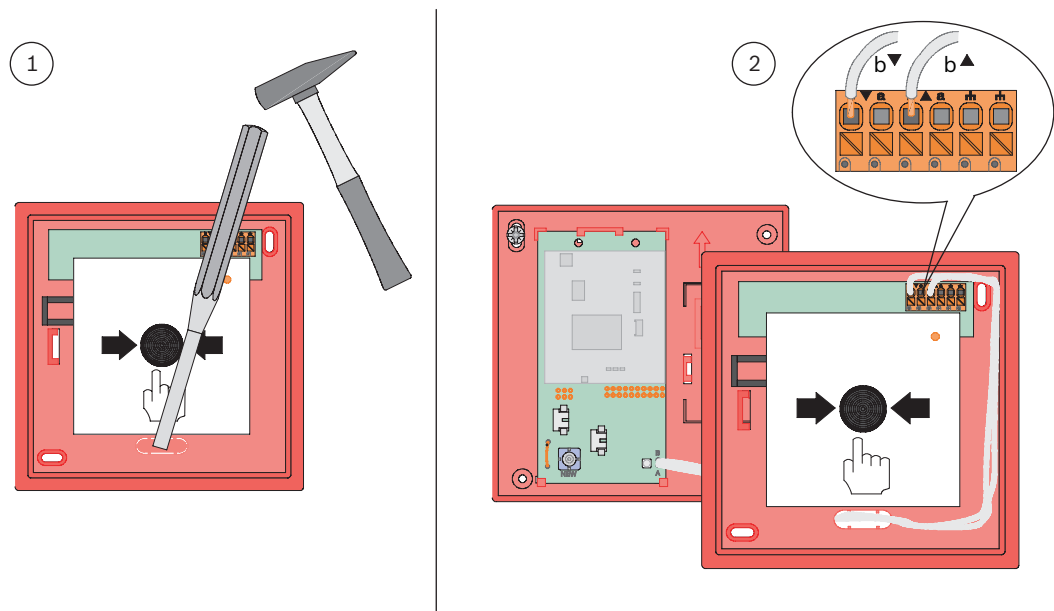


**Figure 6.14: Interface Module Terminal Assignment**

b2, a2	LSN outgoing
0V, +U	20 to 30 V DC
	Ground
b1, a1	LSN in

1. Remove the terminal blocks and wire up the connections.
2. Do not insert the terminal blocks until the RF interface module has been commissioned; as this simplifies the commissioning procedure (see chapter *Commissioning the FK 100 LSN RF Interface Module via WinPara / FSP-5000-RPS*, page 21).

## 6.2 Connection of SMF121 RF Manual Call Point to SMF6120 Base



**Figure 6.15: Connection of SMF121 RF Manual Call Point to SMF6120 Base**

1. Break out the pre-punched cable feed on the SMF121 RF Manual Call Point.
2. Wire up the connection cable to the terminal block of the RF manual call point.

## 7 Commissioning a RF Fire Detection System



### Notice!

If at all possible, do not switch off the power supply to the RF interface module after commissioning the RF fire detection system, as during a power failure all RF detectors in the relevant RF fire detection system search for their RF interface module and are therefore permanently in send mode. This considerably reduces the life of the batteries.

If the power supply to the RF interface module has to be interrupted for a lengthy period (> 1 hour), please disconnect the batteries in the RF detectors.

Only those RF interface modules, RF smoke detectors and RF manual call points can be commissioned, which are either new or in the delivery state.

- FK 100 LSN RF Interface Module:
  - When commissioning **with** WinPara / FSP-5000-RPS, a RF interface module that has already been configured will be automatically reset into the delivery state.
  - When commissioning **without** WinPara / FSP-5000-RPS, a RF interface module that has already been configured must be manually reset into the delivery state (see chapter *Resetting the RF Interface Module to the Delivery State*, page 26).
- DOW 1171 and SMF121 RF Detectors:

When commissioning, RF detectors that have already been configured must always be manually reset into the delivery state. This is described in the respective chapter for logging in.

For the complete commissioning of the RF fire detection system, the RF interface module must be set up first (see chapter *Commissioning the FK 100 LSN RF Interface Module via WinPara / FSP-5000-RPS*, page 21) and then the individual RF detectors must be logged into the RF interface module (see chapter *Commissioning DOW 1171 and SMF121 RF Detectors*, page 21).

### Autodetection

Autodetection refers to the automatic identification of all connected peripherals according their topologies by the panel.



### Notice!

With loop wiring, make sure that you have logged in at least 1 RF detector to the RF interface module. This allows the panel to identify and display the loop correctly.

### Assignment of the base channels

16 base channels are available for the connection from the interface module to the fire panel. When commissioning, each RF fire detection system automatically searches out a B-channel in a specific sequence. Once all 16 base channels have been called up in sequence, the assignment starts again at the first base channel, leading to a double assignment.



### Notice!

Ensure without fail that the individual RF fire detection systems are installed so that there are no errors in the allocation/logging in of the individual RF detectors to the RF interface module due to double assignment.

For optimum planning, use the Radio Spy 1 Field Strength Measuring Unit including Software.

The base channels can be displayed in WinPara:

In the input field in the *Read out dynamic data* menu, under item *Periphery control*, enter "Type 10" as text. You will see the base channel in the display under *Data*. FSP-5000-RPS does not support this function.

However, you can also read off the B-channel direct from the FPA-5000 Fire Panel. Go to *Diagnostics -> Element Details*, and select the appropriate LSN module to display the relevant RF interface module using *All info for one element -> by description* or *-> by number*. The HF channel describes the number of the B-channel.

## 7.1 Commissioning the FK 100 LSN RF Interface Module via WinPara / FSP-5000-RPS

1. Insert the wired terminal blocks for LSN and power supply in the RF interface module (wiring see chapter *Connection of FK 100 LSN RF Interface Module to the Fire Panel*, page 18).  
The red LED on the RF interface module lights up for approx. 10 seconds. Then the yellow LED flashes slowly.  
If this is not the case, the RF interface module must be manually reset to the delivery state (see chapter *Resetting the RF Interface Module to the Delivery State*, page 26).
2. Configure all the RF interface modules and planned RF detectors in WinPara / FSP-5000-RPS and load the configuration into the fire panel using PC/laptop.
3. In WinPara / FSP-5000-RPS, activate menu item *Reset FK 100* or *Initialize FK 100*.  
The red LED on the RF interface module lights up for approx. 10 seconds. As soon as it goes out, the green and yellow LEDs start to flash rapidly and the automatic search for a base channel (frequency) starts. After a successful search (approx. 1 to 5 minutes), the yellow LED goes out and the green LED flashes until all the RF detectors configured in WinPara / FSP-5000-RPS are logged in.

## 7.2 Commissioning DOW 1171 and SMF121 RF Detectors



### Notice!

It must be possible to clearly locate triggered detectors. For this reason, log in all the RF detectors one after the other and in the sequence in which they are entered in WinPara / FSP-5000-RPS.

Ensure that all the DOW 1171 and SMF121 RF Detectors are installed in the appropriate base and at the actual installation location when logging in to the RF interface module.

### 7.2.1 Logging in DOW 1171 RF Smoke Detectors to the RF Interface Module

1. Connect the batteries in the detector base.  
The red LED on the detector starts to flash slowly.  
If the red LED flashes rapidly after inserting the batteries, the detector must be reset to the delivery state. To do this, press the *new* button in the detector base for at least 3 seconds.
  2. Insert the detector into the base within 10 minutes. As soon as the detector has been inserted, it starts logging in.
  3. Now log in all the detectors one after the other. In so doing, take note of the sequence entered in the WinPara- / FSP-5000-RPS configuration.
- Once the detector has been logged into the RF interface module, the red LED on the detector goes out and then starts to flash again for approx. 2 minutes. The flash rate shows the field strength (quality of the radio connection).

Flash rate per second	Field strength	Meaning
4 times	High	Secure transfer => Detector is positioned correctly
3 times	Average	
Twice	Low	Insecure transfer => Detector must be repositioned
Once	Very low	



**Notice!**

Logging in is only successful if the field strength is high or average, or a secure transfer is guaranteed.

As soon as all the RF detectors have been logged in, the RF interface module automatically starts the system configuration and the green LED on the RF interface module flashes slowly. After a successful system configuration, the green LED stays continuously lit. If the interface module housing is open, the yellow LED is also lit. The system is then automatically re-initialized by the fire panel and switches over to standard mode.

**7.2.2**

**Logging in the SMF121 RF Manual Call Points to the RF Interface Module**



**Notice!**

In some cases, it may be that a RF manual control point, which was already in operation, forgets that it was logged in. In this case, follow the instructions as for a new detector.

1. Trigger the manual call point by pressing the push button.
2. Connect the batteries in the detector base.  
The green LED on the right of the PC board flashes briefly once per second.  
If the green LED flashes three times every 2 seconds, the detector must be reset to the delivery state. To do this, press the *new* button at the bottom left of the PC board in the detector base until the green LED has changed from flashing 3 times every 2 seconds to flashing once per second.
3. Press the reset lever to the left to reset the push button.  
The green LED to the right of the PC board changes from briefly flashing once to flashing slowly once every 2 seconds, and the detector starts logging in.
4. Now log in all the detectors one after the other. In so doing, take note of the sequence entered in the WinPara / FSP-5000-RPS configuration.

Once the detector has been logged into the interface module, the green LED on the detector's PC board goes out and then starts flashing again for approx. 2 minutes. The flash rate shows the field strength (quality of the radio connection).

Flash rate per second	Field strength	Meaning
4 times	High	Secure transfer => Detector is positioned correctly
3 times	Average	
Twice	Low	Insecure transfer => Detector must be repositioned
Once	Very low	

**Notice!**

Logging in is only successful if the field strength is high or average, or a secure transfer is guaranteed.

As soon as all the RF detectors have been logged in, the RF interface module automatically starts the system configuration and the green LED on the RF interface module flashes slowly. After a successful system configuration, the green LED stays continuously lit. If the interface module housing is open, the yellow LED is also lit.

The system is then automatically re-initialized by the fire panel and switches over to standard mode.

## 7.3

### Manually Operating the FK 100 LSN RF Interface Module

**Notice!**

If you operate the RF interface module without the fire panel and WinPara / FSP-5000-RPS, a permanent power supply to the RF interface module must be guaranteed.

1. Insert the wired terminal block for the power supply into the RF interface module (wiring see chapter *Connection of FK 100 LSN RF Interface Module to the Fire Panel, page 18*). The red LED on the RF interface module lights up for approx. 10 seconds. Then the yellow LED flashes slowly.
2. Activate the reed contact in the RF interface module, by moving a magnet along the left side of the interface module housing (see the order information in chapter *Order information, page 27*).  
The red LED on the RF interface module lights up for approx. 10 seconds. As soon as it goes out, the green and yellow LEDs start to flash rapidly and the automatic search for a base channel (frequency) starts. After a successful search (approx. 1 to 5 minutes), the yellow LED goes out.
3. Now log in all the RF detectors one after the other to the RF interface module as described in chapter *Commissioning DOW 1171 and SMF121 RF Detectors, page 21*.
4. After all the RF detectors have been logged in, and the flashing to display the field strength has gone out on the last detector, activate the reed contact in the RF interface module again, by moving a magnet along the left side of the interface module housing. The RF interface module automatically starts the system configuration, while the green LED on the RF interface module flashes slowly. After a successful system configuration, the green LED stays continuously lit.

## 8 Exchanging and Adding Radio Components



### Notice!

As soon as one or more RF detectors are removed, the complete RF fire detection system must be set up again, as described in chapter *Commissioning a RF Fire Detection System*, page 20.

### 8.1 Exchanging the FK 100 LSN RF Interface Module and DOW 1171 and SMF121 RF Detectors



### Notice!

You can only exchange a RF interface module or RF detector using WinPara or FSP-5000-RPS.

#### Exchanging the FK 100 LSN RF Interface Module

1. After exchanging the RF interface module, load the current WinPara / FSP-5000-RPS in the fire panel. The new RF interface module thus recognizes the number of RF detectors.
2. Then set up the complete RF fire detection system again, as described in chapter *Commissioning a RF Fire Detection System*, page 20.

#### Exchanging DOW 1171 and SMF121 RF Detectors

1. Highlight the RF detector to be exchanged in WinPara / FSP-5000-RPS.
2. In WinPara / FSP-5000-RPS, activate menu item *Exchange detector DOW 1171 / SMF* or *Exchange DOW 1171 / SMF*.
3. Wait until the red LED on the DOW 1171 RF Smoke Detector or the green LED on the PC board in the SMF6120 Detector Base as well as the green LED on the FK 100 LSN RF Interface Module are flashing rapidly.
4. Now take the DOW 1171 RF Smoke Detector out of the base or disconnect the SMF121 Manual Call Point including the SMF6120 Detector Base.
5. To log in the new RF detectors, follow the instructions in chapter *Logging in DOW 1171 RF Smoke Detectors to the RF Interface Module*, page 21 or chapter *Logging in the SMF121 RF Manual Call Points to the RF Interface Module*, page 22.

### 8.2 Adding DOW 1171 and SMF121 RF Detectors using WinPara / FSP-5000-RPS

1. In WinPara / FSP-5000-RPS under *FK 100 -> LSN*, call up menu item *Add under* or *Add DOW 1171 / SMF*.
2. Enter the number of new RF detectors.
3. Save the configuration and load it into the fire panel.
4. In WinPara / FSP-5000-RPS under *FK 100*, activate menu item *DOW 1171 / SMF121 to be added* or *Send add for DOW 1171 / SMF121*. Confirm in WinPara with *Yes*.  
The green LED on the RF interface module flashes rapidly and shows that the RF detectors can now be added.
5. To log in the RF detectors, follow the instructions in chapter *Logging in DOW 1171 RF Smoke Detectors to the RF Interface Module*, page 21 or chapter *Logging in the SMF121 RF Manual Call Points to the RF Interface Module*, page 22.

### 8.3 Manually Adding DOW 1171 and SMF121 RF Detectors

1. Make sure that the power supply to the RF interface module has been disconnected. If required, pull out the terminal block for the power supply.



2. Activate the reed contact in the RF interface module, by moving a magnet (see the order information in chapter *Order information, page 27*) along the left side of the interface module housing, and then secure the magnet to the RF interface module (e.g. with duct tape) so that the reed contact remains activated.
3. Now re-insert the terminal block for the power supply.  
The red LED on the RF interface module lights up for approx. 10 seconds. As soon as it goes out, the yellow LED starts to flash rapidly.
4. Deactivate the reed contact by removing the magnet.
5. Reactivate the reed contact in the RF interface module within 10 seconds by moving the magnet along the left side of the interface module housing as often as is required, until just the green LED is flashing rapidly.  
After approx. 1 second, the red LED lights up briefly and shows that the RF detectors can now be added.
6. To log in the RF detectors, follow the instructions in chapter *Logging in DOW 1171 RF Smoke Detectors to the RF Interface Module, page 21* or chapter *Logging in the SMF121 RF Manual Call Points to the RF Interface Module, page 22*.

## 9 Maintenance and service

### 9.1 Resetting the RF Interface Module to the Delivery State

1. Pull out the terminal block for the power supply in the RF interface module.
2. Activate the reed contact in the RF interface module, by moving a magnet (see the order information in chapter *Order information, page 27*) along the left side of the interface module housing, and then secure the magnet to the RF interface module (e.g. with duct tape) so that the reed contact remains activated.
3. Now re-insert the terminal block for the power supply.  
The red LED on the RF interface module lights up for approx. 10 seconds. As soon as it goes out, the yellow LED starts to flash rapidly.
4. Deactivate the reed contact by removing the magnet.
5. Reactivate the reed contact in the RF interface module within 10 seconds by moving the magnet along the left side of the interface module housing as often as is required, until the green and the yellow LEDs are flashing rapidly.  
After approx. 10 seconds, the red LED lights up briefly, while the green and yellow LEDs continue to flash rapidly. This shows that the RF interface module is searching for a free base channel (frequency).
6. Pull out the terminal block for the power supply in the RF interface module.  
The RF interface module is now reset and is in the delivery state.

### 9.2 Replacing the Batteries in the RF Detectors



#### Notice!

Under optimum application conditions, lithium batteries have an operational life of approx. 5 years.

However, Bosch ST recommends that you replace the batteries after approx. 4 years, as part of a scheduled inspection.

Batteries are changed during normal operation. It is not necessary to make any settings on the fire panel. However, when removing the batteries or the detector, various system-specific fault messages are generated, which must be reset manually once the batteries have been replaced.

It makes no difference whether you first completely remove the weak/empty pair of batteries in a detector and insert the new pair, or whether you replace the weak/empty batteries individually, so that the power supply in the detector is never disconnected.

Only ever take one detector out of the base, in order to avoid confusion when re-inserting.

#### 9.2.1 Replacing the Batteries on the DOW 1171 RF Smoke Detector

1. Turn the bayonet ring to the left and take the RF smoke detector out of the base.
2. Replace the batteries.  
After inserting the new batteries, the red LED flashes 3 times within 2 seconds.
3. Insert the detector into the base within 10 minutes of replacing the batteries.  
The red LED flashes at a frequency of 1 to 4 Hz depending on the field strength and thus shows that RF smoke detector is logged back in to the RF interface module.  
After successfully logging in, the LED goes out.

#### 9.2.2 Replacing the Batteries on the SMF121 RF Manual Call Point

1. Open the RF manual call point with a suitable key and remove both screws (bottom left and top right).
2. Carefully take the detector out of the base and leave it hanging.

3. Replace the batteries.  
After inserting the new batteries, the green LED on the PC board in the base flashes briefly.
4. Insert the detector back in the base, replace the screws and close everything.

### 9.3

#### Order information

Designation	DU	Order number
FK 100 LSN RF Interface Module for surface mounting	1 Pc	4.998.111.422
RF Smoke Detector	1 Pc	F.01U.321.153
Base for RF Smoke Detector	1 Pc	F.01U.321.154
SMF121 RF Manual Call Point	1 Pc	F.01U.032.390
SMF6120 Detector Base for SMF121 RF Manual Call Point including 2 battery mounts (without batteries)	1 Pc	F.01U.032.389
HFM-BAT 3.6 V lithium battery for SMF6120 Detector Base (Two batteries are required for each detector)	1 Pc	F.01U.064.699
9 V lithium battery pack for RF Smoke Detector (Two batteries are required for each detector)	10 Pc	F.01U.321.155
Safety seals for the FK 100 LSN RF Interface Module (adhesive wafer for the interface module locking screw)	10 Pc	3.002.389.678
DBZ 1193A Detector Identification	10 Pc	4.998.115.785
DZW 1171 Radio Test Unit	Pc	4.998.120.143
Radio Spy 1 field strength measuring unit and software	Pc	4.998.117.745
SOLO330 Smoke Detector Tester	Pc	4.998.112.071
SOLO100 Telescopic Access Pole, 1 to 3.4 m, can be extended with up to 3 SOLO101 fixed extension poles	Pc	4.998.112.069
SOLO101 fixed extension pole, 1 m	Pc	4.998.112.070
Detector exchanger for the DOW 1171 RF smoke detector (Suitable for service pole from Siemens)	Pc	4.998.120.144
Testing Aerosol for Optical Smoke Detectors	12 Pc	F.01U.301.104
DU = Delivery unit, Pc = Piece SOLO is a protected brand name of No Climb Products Ltd.		

### 9.4

#### Repair and Disposal



##### Notice!

Within the European Union, batteries must not be disposed of in household or commercial waste, but exclusively at collecting points set up for this purpose. More information about disposal can be found on the website <http://www.boschsecurity.com/standards>.

In the event of a defect, the entire unit is exchanged.  
Dispose of unusable devices in line with the statutory regulations.

## 10

**Technical data****FK 100 LSN RF Interface Module**

LSN input voltage	10 to 33 V DC
AUX input voltage	20 to 30 V DC
Current consumption	
– LSN	7 mA
– AUX	< 20 mA
Frequency range	868 to 870 MHz (SRD band)
Channel spacing	25 kHz
Maximum number of RF interface modules	10 per LSN loop
Max. number of RF smoke detectors	30 DOW 1171 per FK 100 LSN
Maximum number of RF manual call points	10 SMF121 per FK 100 LSN
Protection category	IP 30
Permissible ambient temperature	-10 °C to +55 °C
Housing material	Plastic, ABS Terluran
Housing color	light-gray, RAL 9002
Dimensions (H x W x D)	135 x 100 x 35.7 mm
Weight	Approx. 200 g

**DOW 1171 RF Smoke Detector**

Power supply	2 x 9 V lithium batteries
Battery service life	approx. 5 years
Average current consumption	0.07 mA
Frequency range	868 to 870 MHz (SRD band)
Channel spacing	25 kHz
Maximum transmitting power	5 mW
Maximum range in buildings (Depending on environment)	40 m
Detection principle	Scattered-light measurement
Protection category (as per EN 60 529)	IP 44
Permissible ambient temperature	-10 °C to +55 °C
Maximum relative humidity	95% at T < 34 °C
Housing material	Plastic, PC/ABS
Housing color	white, similar to RAL 9010
Dimensions (D x H)	119 x 73 mm
Weight	approx. 335 g

**SMF121 RF Manual Call Point with SMF6120 RF Base**

Power supply	2 x 3.6 V lithium batteries
Battery service life	Approx. 5 years
Average current consumption	0.06 mA
Frequency range	868 to 870 MHz (SRD band)
Channel spacing	25 kHz
Maximum transmitting power	5 mW
Maximum range in buildings (Depending on environment)	40 m
Protection category	IP 43
Permissible ambient temperature	-10 °C to +55 °C
Maximum relative humidity	95%
Housing material	Plastic, ABS
Housing color	red, RAL 3000
Dimensions (H x W x D) – SMF121 – SMF6120 – SMF121 installed on SMF6120	125 x 125 x 36.5 mm 116.3 x 116.3 x 42 mm 125 x 125 x 56.5 mm
Weight – SMF121 – SMF6120 – SMF121 installed on SMF6120	Approx. 150 g Approx. 350 g Approx. 500 g



**Bosch Sicherheitssysteme GmbH**

Robert-Bosch-Ring 5

85630 Grasbrunn

Germany

**[www.boschsecurity.com](http://www.boschsecurity.com)**

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