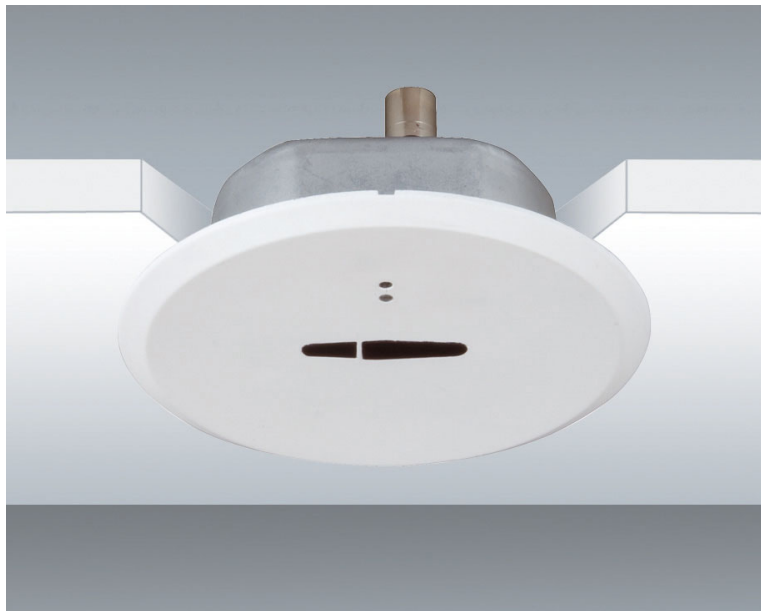




Smoke Detection System

RMS-D



Industrial property rights owned by Schako

- Patent DE 199 51 403 A1
- Registered utility model 2002 3533.8
- Patent EP 122 4641

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Smoke Detection System RMS-D

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Smoke Detection System RMS-D

Description

Application

Schako smoke detectors **are used in places where, at the earliest possible stage of a fire, upon occurrence of cold smoke of < 72°, triggering and switching operations are to be controlled automatically. They can be fitted flush to ceilings.**

The smoke detector limits the source of fire during an alarm. The alarm message is transmitted via a change in resistance. The smoke detectors are supplied with power by a 230 AC power supply unit and a secondary 24 V DC within the protection area.

As the measurements are taken outside the RMS housing, thus **not requiring a detection chamber**, the function does **not depend on a minimum or maximum air velocity**.

Function (special scattered light method)

Two sensors in the smoke detector send out a light beam and measure if the air on the front of the safety glass is contaminated with smoke or other particles.

Before triggering an alarm, various measurement cycles must be carried out, during which the contamination in the air must be measured. If the contamination is not permanently present, then the internal measurement cycle counter is reset. The response sensitivity of the smoke detector is set ex works. The alarm output is a resistance. The smoke detector can be reset to the ready-to-operate mode by remote control. A power failure at the smoke detector can be displayed at the central unit. Tampering with the smoke detector, for example by taping the sensors, is detected and reported to the switchboard via a resistance (error output). Deposits on the safety glass are detected and evaluated. When a certain degree of soiling is exceeded, it is reported as a fault message to the switchboard. In this way, the smoke detector system monitors itself. The degree of soiling can be polled and all relevant detector data can be read out by means of a diagnostic and data read-out unit (at an extra charge).

Advantages

- as no detection chamber is required for measurements, no medium flows through the smoke detector and no deposits can form.
- flush fit to ceiling.
- automatic tampering detection.
- easy to clean.
- Self-function test of the transmitter and receiver sensors. A defect is displayed.
- when a power, processor or system failure occurs, a fault message is displayed simultaneously with an alarm message.
- with system monitoring (watchdog).
- Bus connection possible via an exchangeable board.

Industrial property rights owned by Schako

- Patent: DE 199 51 403 A1
- Registered utility model: 20023533.8
- Patent: EP 122 4641

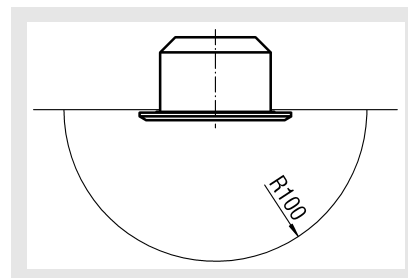
Installation arrangement and mounting

The smoke detector type RMS must be fitted free of vibration if possible. When charged with steam, dust, soot (exhaust gases) or dew, an alarm or fault message is triggered.

Assembly in ceilings

1. Establish smoke detector position and mark the middle.
2. Cut out a hole of 74 mm in diameter.
3. Fit and clamp a hollow wall connection socket.
4. Insert smoke detector and lock it into place in the hollow wall connection socket.
5. Carry out electrical wiring according to the diagram.

When fitting the RMS smoke detector, care must be taken that in a 100 mm radius around the detector, nothing can reflect the emitted sensor signals.



R100 when measuring window is parallel to the reflection surface.

Connection

1. Connect the mains power supply. When the output voltage is active, the green operating indicator lamp will flash.
2. Check the output voltage.

Note

Before the first startup of the smoke detector, the ceiling must be cleaned to remove any assembly dirt so as to avoid any accidental alarm message.

The power supply units are equipped with a controller with power limiter and thermal protection. When a short-circuit occurs, the controller switches off the output voltage. An interruption in the mains supply voltage or of the "+" output line will reset the detector.

Smoke Detection System RMS-D

Construction

Smoke detector base

- high-quality plastic painted in RAL 9010 (white) or in a different RAL colour (at an extra charge).

Connecting socket of the diagnostic device

- 6-pin connection

Connection

- Zone monitor board (standard, terminal board, 10-pin)
- Relay board 24 V (SUB-D plug 9-pin)
- Relay board 12 V (SUB-D plug 9-pin)

Housing

- high-quality plastic painted in RAL 9010 (white) or in a different RAL colour (at an extra charge).

Hollow wall connection socket

- Plastic

Individual display

- Room-side LED

Accessories

Diagnostic and data read-out unit

- for polling the degree of soiling and reading out all relevant detector data

Power supply unit

- NG 519: for a max. of 8 RMS-D 230 V AC / 24 V DC
- NAG 03 : for a max. of 15 RMS-D 230 V AC / 24 V DC

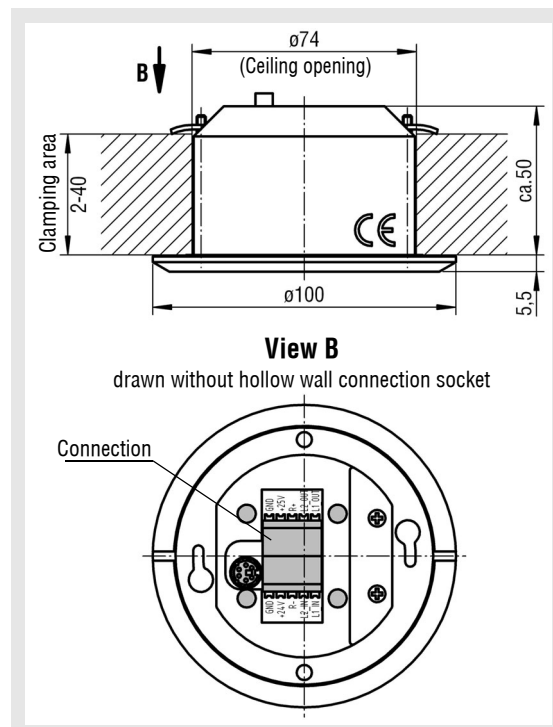
Test bell (-PG-S)

- for simple maintenance and inspection of the smoke detectors

Models and dimensions

Dimensions

RMS-D

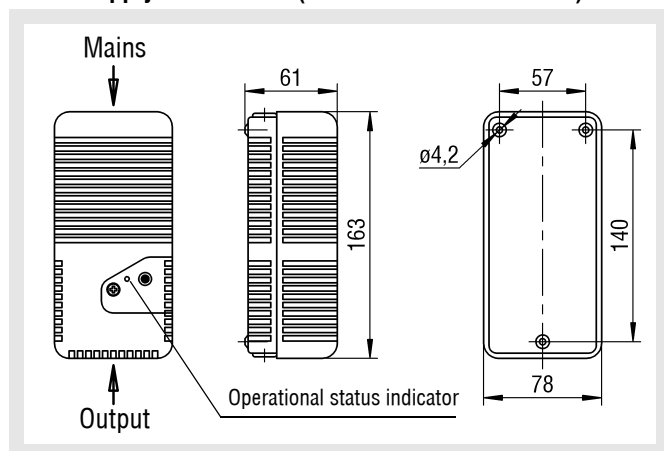



Smoke Detection System RMS-D

Dimensions of accessories

Power supply unit NG 519 (for a max. of 8 RMS-D)

Power supply unit NAG 03 (for a max. of 15 RMS-D)



 **Parts marked with this symbol must only be replaced with original parts!**

The power supply units must be installed at a visible location accessible even in case of fire.

Power supply unit NG 519 (for a max. of 8 RMS-D)

The power supply unit NG 519 is distinguished by the following features:

- Power supply unit with series impedance
- short-circuit proof
- Output voltage of 24 V DC
- Output current max. 350 mA
- Potential-free change-over contacts

The short-circuit proof power supply unit NG 519 is used to supply power to smoke detectors. It contains a power pack and gives a stable output voltage. For further functions, such as alarm transmission, a potential-free changeover contact is available.

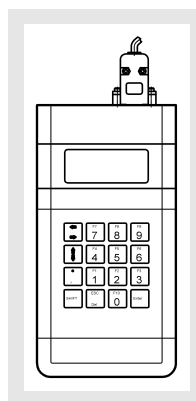
Power supply unit NAG 03 (for a max. of 15 RMS-D)

The power supply unit NAG 03 is distinguished by the following features:

- Power supply unit with series impedance
- short-circuit proof
- Output voltage of 24 V DC
- Output current max. 900 mA
- Potential-free change-over contacts
- Thermal protection

The short-circuit proof power supply or trigger unit NAG 03 is used to supply power to smoke detectors. It contains a power pack and gives a stable output voltage. For further functions, such as alarm transmission, a potential-free changeover contact is available.

Diagnostic and data read-out unit



for polling the degree of soiling and reading out all relevant detector data: for example

- Degree of soiling 1 and 2
- Serial number
- Trigger threshold value
- Temperature in the smoke detector
- Functionality control of alarm contact
- Functionality control of fault contact
- including 1 m of connecting cable
- The power is supplied by the RMS

Test bell (-PG-S)



Smoke Detection System RMS-D

Technical Data

Connections:

1. Zone monitor board
2. Relay board 24 V (+15 %, -20 %, current 18-25 mA)
3. Relay board 12 V (+30 %, -10 %, current 28-35 mA)

Individual display - LED display

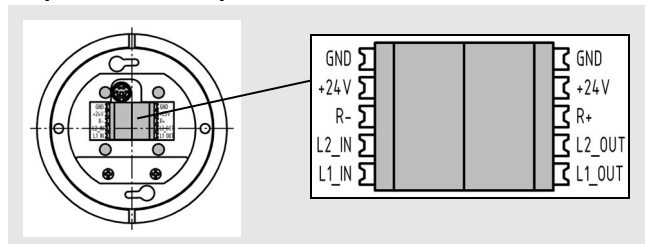
- flashing green = Function
- permanently red = Alarm
- permanently orange = Fault / soiled

When soiled, the smoke detector can still detect smoke.

1. Zone monitor board

Operating voltage	24 V DC (+15%, -5%)
Residual ripple	< 20%
Current consumption	5-7 mA
Resistances:	
- Operation	6.8 kΩ ±10%
- Fault	> 100 kΩ
- Alarm	< 500 Ω
Operating temperature and ambient temperature	0 °C to +60 °C
Protection type according to DIN 40050	IP 42
Weight	0.2 kg
Storage temperature	max. 75°C
relative humidity	10 - 90%

10-pin terminal strip

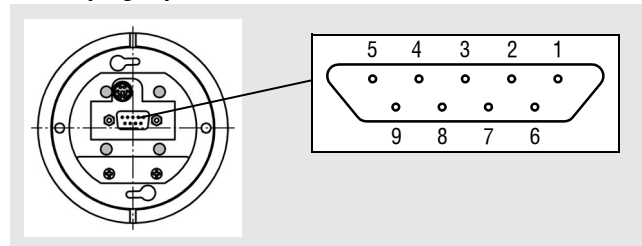














Terminal	Description
GND	Minus supply voltage
+24V	Voltage supply +24V
L2_IN	Line input (when using the monitor LED minus line)
L1_IN	Line input (when using the monitor LED plus line)
R -	Monitor-LED Minus
R+	Monitor-LED Plus
L2_OUT	Line output for additional smoke detectors
L1_OUT	Line output for additional smoke detectors

2. Relay board 24 V (+15 %, -20 %, current 18-25 mA)

Operating voltage	24 V DC (+15 %, -20 %)
Residual ripple	< 20%
Current consumption	18-25 mA
Switching contacts	- 1 alarm output (potential-free change-over contact) - 1 fault output (potential-free change-over contact)
max. switching voltage	100 V DC / 125 V AC
max. switching current	2.0 A
max. switching power	30 W / 62,5 V A
Operating temperature and ambient temperature	0 °C to +60 °C
Protection type according to DIN 40050	IP 42
Weight	0.2 kg
Storage temperature	max. 75°C
relative humidity	10 - 90%

SUB-D plug 9-pin



Assignment	Colour	Relay dead	Relay operating	Meaning
1	brown	-	-	GND
2	red			Relay contact work contact fault
3	orange			Relay contact center contact fault
4	yellow			Relay contact rest contact fault
5	green	-	-	Test switch to GND
6	blue			Relay contact rest contact alarm
7	purple			Relay contact center contact alarm
8	grey			Relay contact work contact alarm
9	black	-	-	+24 V

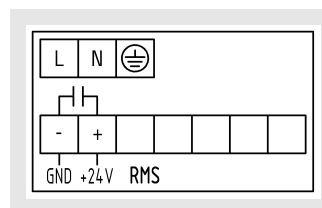
The relays drop off when an alarm / a fault or a power cut occurs.

Smoke Detection System RMS-D

3. Relay board 12 V (+30 %, -10 %, current 28-35 mA)

Operating voltage	12 V DC (+30 %, -10 %)
Residual ripple	< 20%
Current consumption	28-35 mA
Switching contacts	- 1 alarm output (potential-free change-over contact) - 1 fault output (potential-free change-over contact)
max. switching voltage	100 V DC / 125 V AC
max. switching current	2.0 A
max. switching power	30 W / 62.5 V A
Operating temperature and ambient temperature	0 °C to +60 °C
Protection type according to DIN 40050	IP 42
Weight	0.2 kg
Storage temperature	max. 75°C
relative humidity	10 - 90%

Connection power supply unit NG 519 / NAG 03 Terminals

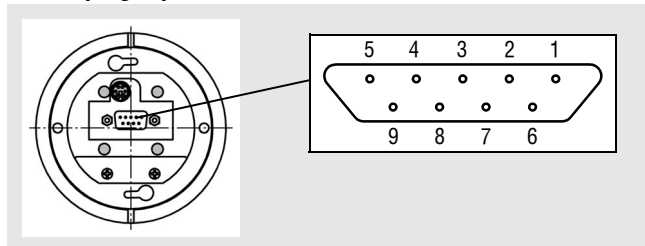














Attention!

When connecting the smoke detector type RMS-D, the following sequence must be adhered to:

1. Connect all smoke detectors to the relevant mains rectifier type NG 519 or NAG 03
2. Connect the voltage supply to the mains rectifier

SUB-D plug 9-pin



Assignment	Colour	Relay dead	Relay operating	Meaning
1	brown	-	-	GND
2	red			Relay contact work contact fault
3	orange			Relay contact center contact fault
4	yellow			Relay contact rest contact fault
5	green	-	-	Test switch to GND
6	blue			Relay contact rest contact alarm
7	purple			Relay contact centre contact fault
8	grey			Relay contact work contact alarm
9	black	-	-	+24 V

The relays drop off when an alarm / a fault or a power cut occurs.

Smoke Detection System RMS-D

Maintenance / Inspection

The smoke detector RMS-D must be subjected to regular maintenance according to statutory regulations.

Note

Installation and wiring must be carried out by skilled electricians. The recognised regulations of technology, safety and accident prevention regulations as well as the VDE guidelines, regulations of the local electric power companies and the wiring instructions and connection diagrams of the component manufacturer must be adhered to when installing, wiring and commissioning. When wiring the junction boxes, care must be taken to connect the shielding to earth. The smoke detector must be used according to the brochure description.

Maintenance instructions

The SCHAKO smoke detector type RMS permanently monitors itself and gives an error warning to the central unit if there is a mechanical or electrical defect or if it is too contaminated. When a power failure of the smoke detector occurs, a fault message is also sent to the central unit.

Maintenance includes the following actions:

1. The type of use and the installation situation must be checked for the first time during commissioning and then after changes have been made.
2. The electrical connections must be checked for correct connection and perfect condition.
3. Checking whether the diode on the fitted smoke detector flashes green, thus signalling ready operating state.
4. Electrical functionality control:
The power supply of the smoke detector must be interrupted. The diode on the smoke detector or on the reset button is no longer lit. As soon as the power supply has been restored, the smoke detector must return to the ready operating state, and the diode on the smoke detector must flash green. At the central unit, the ready operating state must also be displayed.
5. Fault control:
On the smoke detector RMS, the transmitter and receiver sensors must be covered. The diode on the smoke detector lights up permanently in orange. The smoke detector reports a fault message to the central unit. After that, the cover must be removed again. The smoke detector must again return to the ready operating state, and the fault message is reset at the central unit.

6. Functionality control using test aerosols:

When the smoke detector is fitted to the ceiling, a test aerosol must be applied directly to the smoke detector by means of the test belt PG-S. When the alarm threshold values is exceeded, an alarm message will be triggered. The diode on the smoke detector must light up in red. After the components of the aerosol in the surrounding air of the smoke detector have been broken down to such an extent that the value drops again below the alarm threshold value, the diode on the smoke detector type RMS will light up again in green and the smoke detector will be again ready to function.

7. Soiled front glass

If the front glass is soiled to such an extent that the smoke detector sends a fault message to the central unit, and the diode on the smoke detector lights up in orange, the front glass must be cleaned with a moist cloth. As soon as the dirt has been removed, the smoke detector returns automatically to the ready-to-operate state, and the diode on the smoke detector flashes in green again. It is recommended wiping the front glass with a moist cloth when carrying out the regular maintenance work. Do not use any aggressive materials for cleaning the front glass as the glass might turn dull, causing a constant fault message to be sent (contaminated front glass)

Make sure that, after wiping the front glass, it is sprayed with an antistatic spray.

8. Elimination of defects

If defects have been detected during maintenance, they must be eliminated immediately. Defective components may only be replaced with original parts delivered by Schako. Repair of the smoke detector must be carried out only by the appliance manufacturer.

Inspection instructions

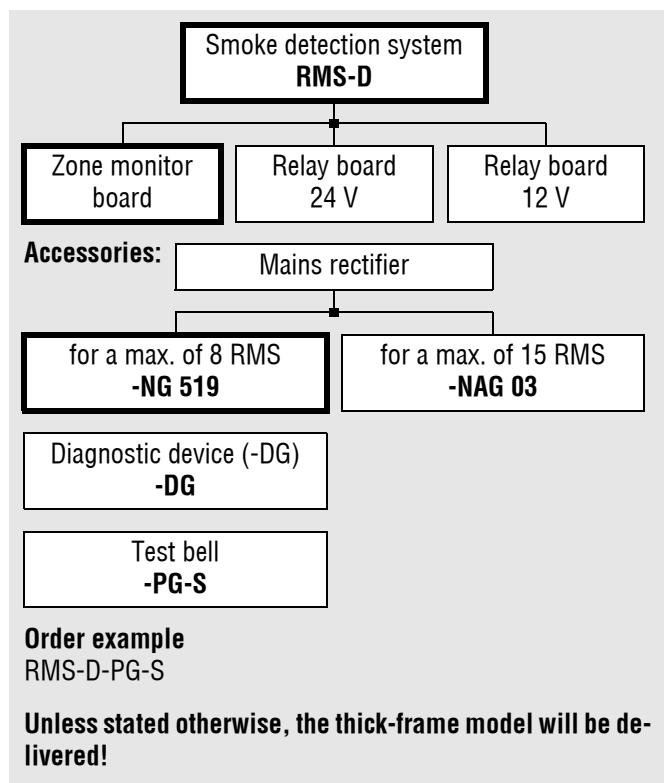
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Inspection includes the following actions:

Checking whether the diode on the fitted smoke detector flashes green, thus signalling ready operating state.

Smoke Detection System RMS-D

Order details



Specification text

Smoke detection system **type RMS-D** with regular maintenance, for ceiling fitting with hollow wall connection socket

Consisting of a housing and a smoke detector base made of high-quality plastic painted in RAL 9010 (white) or in a different RAL colour (at an extra charge). Connection to a zone monitor board (standard, with terminal strip 10-pin) or to a relay board 24 V or 12 V (via SUB-D plug 9-pin).

Two sensors self-monitoring permanently for correct functioning measure the air contamination due to smoke with a special scattered light procedure outside the housing, without using a detection chamber. They measure the degree of contamination on two points on the surface of the safety glass.

Alarm and fault messages each take place via a change in resistance.

with clamp fastening.

Connection 24 V DC.

Certified by VdS Cologne EN 54-7

Product: SCHAKO **type RMS-D**

Accessories:

- Power supply unit for supplying power to the smoke detectors. Short-circuit proof.
- NG 519: for a max. of 8 RMS
230 V AC / 24 V DC
- NAG 03: for a max. of 15 RMS
230 V AC / 24 V DC
- Test bell (-PG-S)
- Diagnostic device (-DG) for polling the degree of soiling and reading out all relevant detector data.