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**Ceiling Mounted Visual Smoke Detector
RMS-D II and
RMS-V II (vandal proof model)
For +12 and +24 Volt with relay contact –outlets**

EN54-7: 2006

Installation Handbook

This handbook is enclosed in every smoke detector and explains the installation and operation of the ceiling mounted smoke detector RMS-D II (article number 08-101 (12 Volt) and article number 08-102 (24 Volt)) and RMS-V II (article number 08-201 (12 Volt) and article number 08-202 (24 Volt)).



RMS-D II



RMS-V II

The ceiling mounted smoke detectors, RMS-D II and RMS-V II, detect smoke very early on and are different from conventional localized smoke detectors in that this smoke detector does not require a detection chamber (light labyrinth). The casing of the detector with the electronic measuring equipment is built into the ceiling and there are only two measuring windows on the side that is visible from the room.

In the vandal proof model RMS-V II, the front plate is made of 3mm thick high grade steel, which protects the smoke detector against extreme conditions and vandalism. This makes it virtually indestructible.



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Operational Description

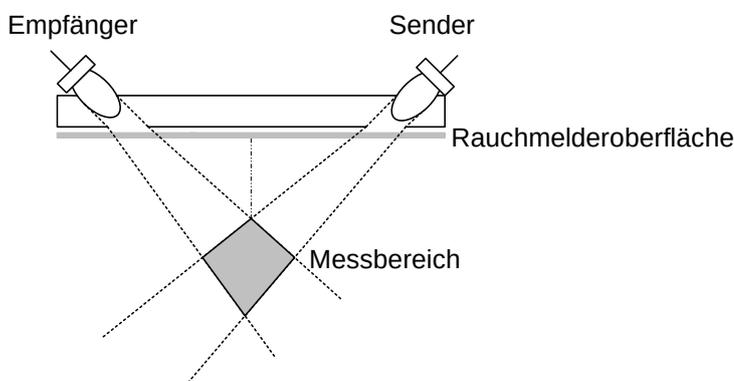
The smoke detector has 3 operating modes:

Measuring Operation

This is shown by a blinking green light on the operation display

Detecting Smoke

The smoke is measured by a sender and a receiver in the IR-light area. The sender sends a pulsed directed IR-light at a set angle to the scattered light area. This forms a defined measuring zone below the detector, which disperses light to the smoke particles in the case of a fire. The light goes to the receiver and the receiver sends a signal to the detector electronics. The electronics analyses the signal and an alarm goes off if the set limit is exceeded.



Recognizing Manipulation

Advanced measuring instruments allow for a distinction between smoke and other types of interference that occur within the measuring area. This way solid objects will be detected as manipulation and the smoke detector sends an alarm signal after a set amount of time. The signal must be reset, so that the smoke detector will work again.

Recognizing Impurities

Additional sensors are used to detect the amount of impurities on the surface of the smoke detector. When the amount of surface impurities reaches the point that it cannot detect smoke anymore, an alarm signal will be set off after a certain amount of time. The signal must be reset, so that the smoke detector will work again. An early exposure of the smoke detector will also be recognized.

Malfunction

The smoke detector shows different malfunctions as follows:

1. Impurities LED switches between red / green
2. Manipulation LED lights yellow permanently

The outlet for “manipulation” will be activated after a delay time of approximately 200s. This signal must be connected to the fire detector processor and evaluated.

A detector in Error Mode cannot recognize smoke!

For security reasons, the smoke detector can give off an alarm signal for certain malfunctions when the cause is not removed.

A malfunction can be caused by:

1. Attempted Manipulation.
2. Covering or Taping the Surface.
3. Impurities on the Surface.
4. Insects.
5. Objects within < 1000 mm distance.
6. Direct Blinding or Reflections of Sunlight or Other Bright Lights.
7. Strong Electromagnetic Radiation directly near the smoke detector.
8. Condensation on the Surface.

Alarm

In case of an alarm the display on the smoke detector will light up red and the outlet for “Alarm” will be activated.

1. The alarm will go off when the particle concentration reaches a set limit.
2. The alarm can also go off when the error signal is set off and not analyzed by the fire detector unit.

Electrical Supply

The operating voltage of the RMS-D II is +12 Volt (article number 08-101) or +24 Volt article number 08-102) and is provided by the connecting plug.

The operating voltage of the RMS-V II is +12 Volt (article number 08-201) or +24 Volt (article number 08-202) and is provided by the connecting plug.

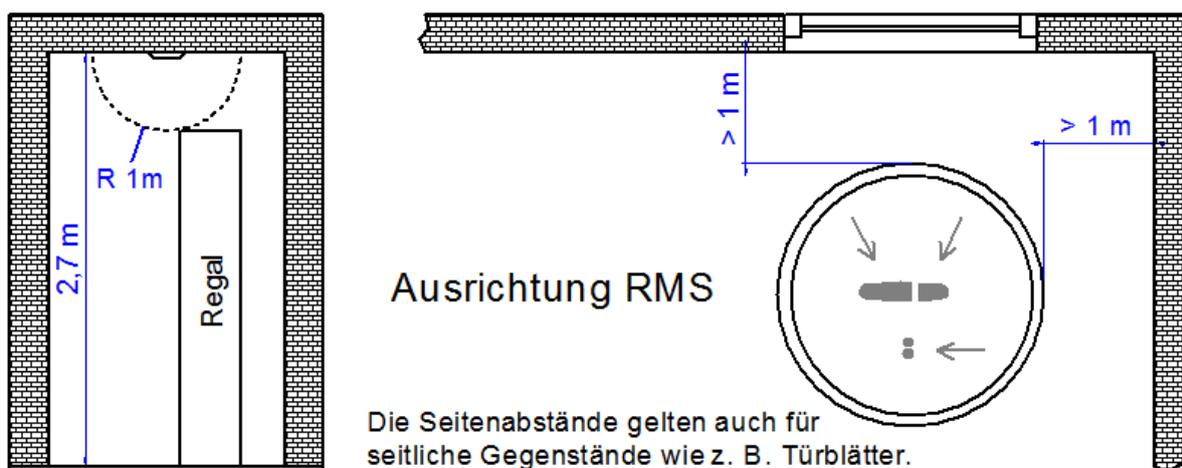
Installation

Mounting Instructions

	<p>Attention: The following instructions are to be followed carefully in order to guarantee a safe and smooth operation. Not following these instructions can lead to false alarms or additional error signals.</p>
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- The basic installation can be found in the VDS guidelines 2095 and other recognized technical rules and norms and guidelines of specific countries are also to be regarded.
- Avoid mounting the smoke detector near sources of steam, dust, exhaust and other smoke particles from the aerosol.
- The smoke detector must be mounted at least 1 m from the wall and in the correct alignment with the window (see Fig. 1).
- A semi-circular area with a radius of 100 cm below the smoke detector must be free of permanent objects and open doors and windows may not enter this area.

Fig.1: Aligning the Mounting



- Note: People, large animals, insects, plants and other objects that enter this area can cause an error signal to go off.

- The smoke detector may not be mounted near highly reflective surfaces.
- The smoke detector may on be installed within arm´s reach. We recommend a mounting height of 2,70 m.
- Low frequency electrical sources of interference, such as electronical transformers (switch-mode power supplies) for halogen lamps and neon lamps must be at least 1 m from the smoke detector and its connecting lines.
- Lamps must be at least 1m away from the smoke detector and the detector may not be mounted within the cone of light.
- The smoke detector may not be mounted in direct sunlight.
- The smoke detector is not for outside use.
- Please observe the handling instructions on page 13!

Installation Plan

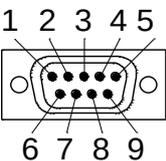
SUB D Connection Plug Arrangement for RMS-D II and RMS-V II with + 12V or +24V			
			
Pin	Relay-Status for Error/Alarm (idle)	Relay-Status in measuring mode	Assignment Configuration
1			GND / Ground
2			Error Contact
3			Error Central Contact
4			Error Break Contact
5			n.c.
6			Alarm Contact
7			Alarm Central Contact
8			Alarm Break Contact
9			+ 12V / + 24V

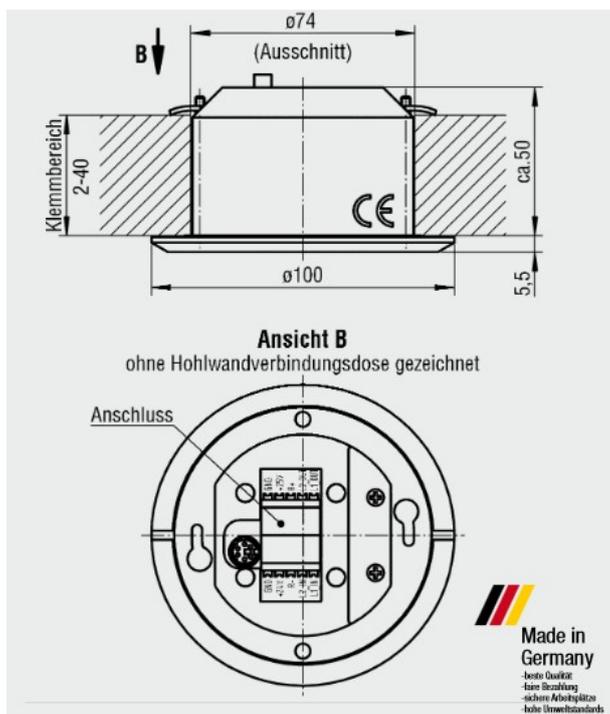
Fig. 2

The relays deactivate in the case of an alarm / an error or a voltage interruption (idle).

Mounting the RMS-D II

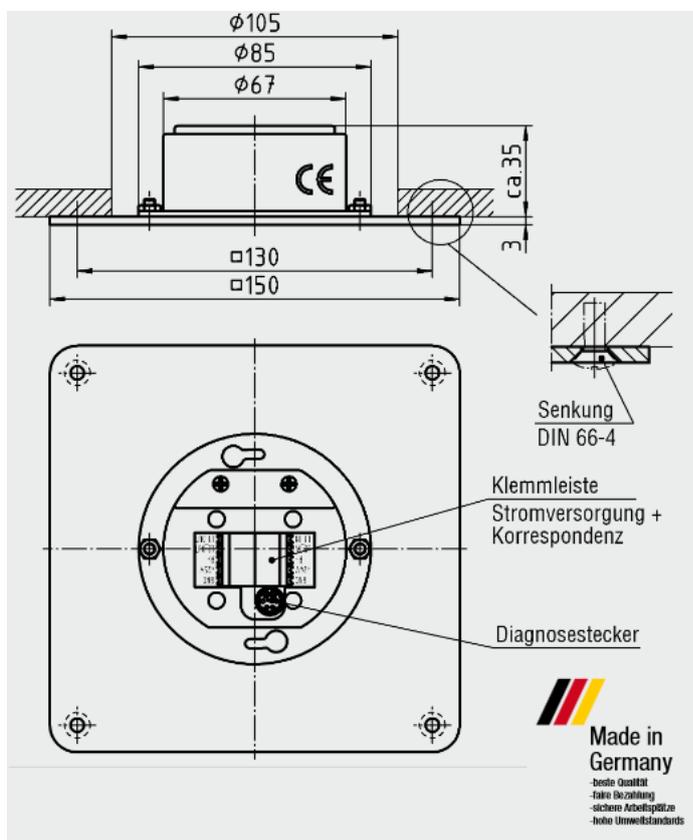
The in-wall socket holds the smoke detector casing in the ceiling and is mounted with two clamping screws in the ceiling. Spring steel elements are used to hold the RMS-D II in the in-wall socket and allow for an easy mounting and removal.

- The smoke detector must be mounted on a stable structure. Dust and other impurities must be removed from the ceiling before the smoke detector can be replaced.
- Drill a round hole with a 75mm diameter and at least 100mm deep in the ceiling. Please note that the in-wall socket can only be fastened in a hole with a 75mm diameter.
- Pull the wire through the in-wall socket and fasten the socket to the ceiling using both of the clamping screws. The clamping range is between approximately 5mm and 40 mm.
- Connect the wire with the smoke detector in accordance with the installation plan in Fig. 2. and insert the smoke detector into the in-wall socket.
- Remove the protective foil from the smoke detector before turning on the voltage supply.



Mounting RMS-V II

- The smoke detector must be mounted on a stable structure. Dust and other impurities must be removed from the ceiling before the smoke detector can be replaced.
- Drill a round hole with a 75mm diameter and at least 100mm deep in the ceiling. Please note that the in-wall socket can only be fastened in a hole with a 75mm diameter.
- Connect the wire with the smoke detector in accordance with the installation plan in Fig. 2.
- In order to avoid perturbations, the RMS-V II should be grounded.
- Screw the stainless steel plate on the ceiling with the safety screws, which prevent unauthorized opening of the smoke detector.
- Remove the protective foil from the front of the smoke detector before turning on the voltage supply.



Initial Operation

When all of the mounting instructions have been carried out, a short visual test should be performed. The smoke detector performs a short check of the function controls and self-monitoring when turned on (activated). Wenn alle Montagevorkehrungen richtig erfüllt sind, sollte nochmals ein kurzer optischer Test durchgeführt werden. Then the detectors switches to measuring operation and the operation display blinks green.

Aerosol Test

- A conventional test gas socket cannot be used here because of the self-monitoring and manipulation recognition features of the smoke detector.
- Only 3HS test gas sockets can be used with article number 8109.
- Solo test gas sockets A3 are also suitable. The test socket with the article number 8109 is required.

Function Test with Test Aerosol

1. Shake the test gas can.
2. Attach the 3HS test socket to the test gas tester. Make sure that the floor in the test socket is laid out with non-reflecting material.
3. Connect the socket holder to the test gas tester.
4. Adjust the test rod to the necessary length.
5. Cover the smoke detector centrally with the 3HS test socket so that the LED's and the measuring window in the designated slots are visible. Spray the test aerosol into the test socket. (one or two short sprays).



6. Wait at least 20 minutes and then spray again if necessary.

Notice

1. In order to obtain optimal results, shake the test gas can and make sure the surrounding temperature does not exceed 15° C before testing.
2. If the display lights up yellow (Error) before turning red (alarm), this is not a malfunction. It shows that the smoke detector has registered an error or manipulation.
3. If the smoke detector is in alarm mode (red display), the connecting voltage must be disrupted briefly in order to turn off the alarm and return the device to normal operations (display blinking green).

Maintenance

Maintenance Guidelines

The smoke detector is built in Germany out of high quality components. For security reasons, the smoke detector should be replaced after 10 years.

The smoke detector is basically maintenance free. It performs permanent self-monitoring processes which turns on the yellow display light and the outlet "error" for each malfunction.

The smoke detector should still be maintained in accordance with laws and regulations. Maintenance should be performed as needed and at least once a year.

Maintenance Operations:

1. Ensure that the installation accords with the installation guidelines (Fig. 1).
2. Ensure that the connecting cable is not damaged and that the plug is attached correctly and securely to the smoke detector.
3. Check the green blinking display. This shows the correct measuring operation.
4. Cause an error signal by covering the front of the smoke detector (the dark measuring window) until the yellow displays lights permanently. Remove the cover and wait until the green display blinks again.
5. Clean the measuring window lightly with a soft cloth. Do not use spray. Do not use any harsh cleaners or alcohol. Otherwise the resulting temperature changes could damage the measuring window, even from the inside. Avoid scratches and mechanical damage.
6. Place the test socket over the smoke detector and spray the test aerosol inside in order to simulate a smoke gas. Make sure that this does not cause any manipulation or error. When the red display appears, the smoke detector recognized the smoke. See "Function test with test aerosol".
7. Turn off the voltage supply briefly and then back on (Reset). The green light on the display will blink again.
8. If the maintenance does not occur as described, redo the maintenance operation in the same order again. You may not repair the smoke detector yourself. Repairs may only be carried out by the manufacturer. Defect smoke detectors may only be replaced by original smoke detectors.

Technical Data

12 Volt		24 Volt	
Voltage supply	+ 12V DC, +/- 10%	Voltage supply	+ 24V DC, +/- 10%
Periodic and random deviation	< 20%	Periodic and random deviation	< 20%
Power Input	~ 44 mA	Power input	~ 22 mA
Switch contact:	Floating output	Switch contact:	Floating output
- for Error	Changeover contact	- for Error	Changeover contact
- for Alarm	Changeover contact	- for Alarm	Changeover contact
- Contact voltage	100V DC / 125V DC	- Contact voltage	100V DC / 125V DC
- Switching current	1,0 A	- Switching current	1,0 A
- Switching power	30W / 62,5 VA	- Switching power	30W / 62,5 VA
Function display		Function display	
- Operation	Green blinking	- Operation	Green blinking
- Error	Yellow illuminating	- Error	Yellow illuminating
	red/yellow alternating		red/yellow alternating
- Alarm	Red illuminating	- Alarm	Red illumination
Surrounding temperature	0° C to max. 50°C	Surrounding Temperature	0° C to max. 50°C
Storage temperature	Max. 80 ° C	Storage Temperature	Max. 80 ° C
Rel. Humidity	Max. 90 %	Rel. Humidity	Max. 90 %
Protection system According to DIN 400500	IP 40	Protection system According to DIN 400500	IP40
Weight	~ 100 g (RMS-D II) ~ 500 g (RMS-V II)	Weight	~ 100 g (RMS-D II) ~ 500 g (RMS-V II)

**! Warning!****Handling Instructions****! Notice!**

- This device was manufactured and tested with great care. It is in good working condition.
- The technical information is to be observed before and during operation, otherwise damages may occur and the guarantee becomes invalid.
- To avoid damage to people and machinery, observe all of the following notifications.
- This device is only for use as described in this handbook. By any other use, the liability and guarantee become invalid.
- Installation / Mounting and Connection may only be done when the device is turned off and deactivated!
- The device is to be protected from all types of impurities during mounting and operation.
- Impurities on the device or its surface can cause malfunctions or a complete breakdown.
- The connecting cable and plug may only be disconnected and connected when the device is in a deactivated condition.
- Follow the connector pin assignment!
- Make sure the voltage is in range!
- Make sure the connecting voltage corresponds to our data!
- This device can be destroyed by incorrect connections, reversed voltage or electrical surges!
- All external and mechanical changes makes the liability and guarantee invalid.
- Impacts to the device can cause malfunctions!
- Disassembling can destroy the device.
- Opening the device makes the guarantee invalid!
- Observe the surrounding temperature and other manufacturers' instructions!