

1 Safety instructions

Smoke Switches are used for fire safety and must be tested for correct operation after installation. If they are not correctly installed, proper operation cannot be guaranteed.

Any special national or regional regulations must be observed.

The sensing chamber of the Smoke Switch must not be opened.

2 Application

The Optical Smoke Switch ORS 142 detects both smouldering and open fires with smoke emission. An additional temperature sensor reacts at a temperature of about 70°C. In the event of an alarm, a fault, or a power failure, a relay contact opens. The accessories include a mains unit NG 519 and control unit NAG 03 for power supply and additional control tasks (see Section 8 "Ordering data").



In places with background interference such as steam, dust, dew formation, or smoke from a production process, we recommend use of our Heat Switch TDS 247 (see Section 8 "Ordering data").

3 Additional functions

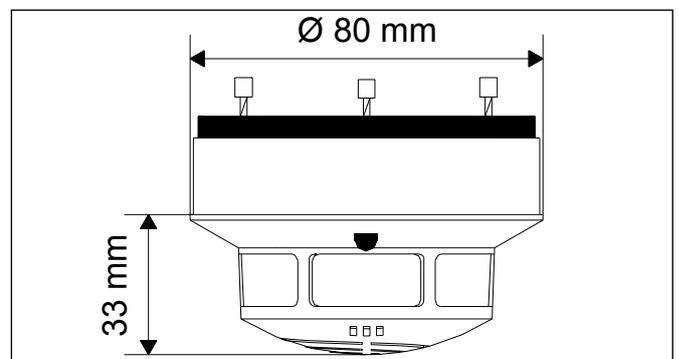
In addition, the evaluation electronics of the ORS 142 monitor the sensing chamber of the detector for slight contamination, heavy contamination, and faults. The ORS 142 provides visual indication of its status. By means of a communication interface, the various operating conditions can be read out and individually processed using the status indicator RZA 142. An auto drift compensation ensures a constant difference between the base signal and the alarm threshold.

4 Mounting and electrical connections

The Smoke Switch ORS 142 must be mounted as shown in the following illustrations. It must only be mounted on a horizontal surface.

4.1 Mounting dimensions

Dimensions of Smoke Switch ORS 142 without base:

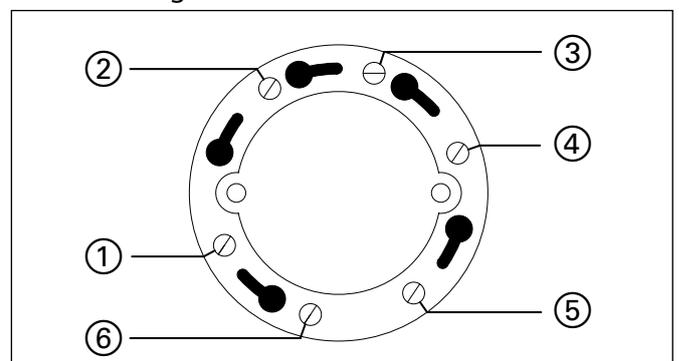


4.2 Electrical connections

Any commercially-available cable can be used. For installations in which severe electromagnetic interference is to be expected, we recommend the use of screened cables.

Recommended conductor cross-section: 0.6 ... 0.8 mm

Terminal assignment in base for ORS 142:



1	18 V DC to 28 V DC
2	GND
3	Communication interface
4	Relay contact
5	Relay contact
6	free

Connecting the relay contacts:

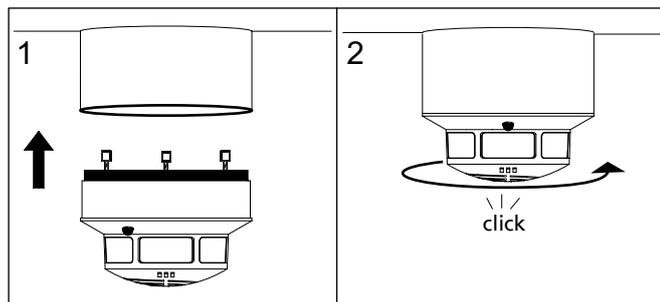
4		in operation - slight contamination - heavy contamination
4		- power failure - fault - alarm

4.3 Installing the Smoke Switch



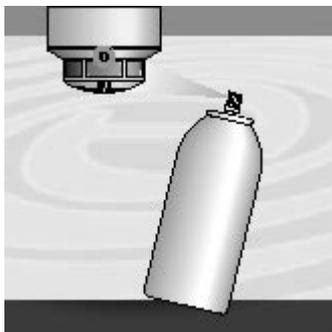
Install the Smoke Switch only when the power supply is switched off!

The Smoke Switch is fitted directly in its base, as shown in the illustrations below:



Please see Section 8 "Ordering data" for the bases available for mounting Smoke Switch ORS 142.

5 Testing the Smoke Switch

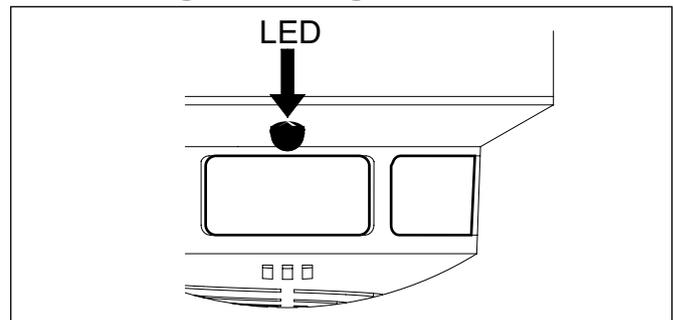


After installation, the Smoke Switch must be tested for correct operation using the test aerosol. When carrying out tests, be sure to follow the safety instructions printed on the can of Test Aerosol 918/5.

6 Maintenance instructions

The LED display provides a permanent indication of the operational status of the Smoke Switch. To avoid false alarms, when the LEDs signal "heavy contamination", replace the Smoke Switch or send it for servicing in our works.

6.1 Meanings of LED signals



Signal, frequency	LED colours	Meaning
	Green	In operation
	Green/yellow	Slight contamination
	Green/yellow	Heavy contamination
	Yellow	Fault
	Red	Alarm
	"Off"	Power failure

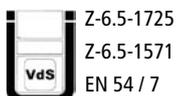
7 Technical data for ORS 142

Switches off due to overheating	ca. 70°C
Operating voltage	18 V DC ... 28 V DC
Current draw at 28 V DC	
Quiescent	max. 21 mA
Alarm condition	max. 10 mA
Fault condition	max. 25 mA
Relay contacts	
Switched voltage	max. 30 V DC
Switched current	max. 1 A
Switched power	max. 30 W
Protection rating	IP 42
Ambient temperature for operation	-20 °C ... +60 °C
Weight	120 g

8 Ordering data

Product designation, description	Order no..
Smoke Switch ORS 142	5000552
Heat Switch TDS 247	5100158
Base 143 A for surface mounting on ceilings	5000350
Base 143 W for surface mounting on walls	5000513
Base 143 AF for surface mntg. in damp areas	5000356
Base 143 UH for flush mounting in ceilings	5000359
Mains NG 519	5400080
230 V AC / 24 V DC, 350 mA	
Mains unit NAG 03	5400081
230 V AC / 24 V DC, 900 mA	
Test aerosol 918/5	6900331

Specifications subject to change without notice. Delivery subject to availability.



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