

## Type RM-O-3-D



### FOR SMOKE DETECTION IN DUCTS

Duct smoke detector used to prevent smoke from spreading through the ducts of ventilation and air conditioning systems

- To provide the control input signal for fire dampers
- To provide the control input signal for smoke protection dampers
- Can be installed into the inspection access openings of rectangular fire dampers
- For airflow velocities up to 20 m/s
- For any airflow direction
- Contamination level indicator
- Automatic adjustment of the alarm threshold, hence long service life and little requirement for maintenance
- Volt-free signal and alarm relays

Optional equipment and accessories

- Integration into the central BMS with TROXNETCOM
- Voltage monitoring module (24 V DC)



### Application

- Duct smoke detectors of Type RM-O-3-D are used to control fire dampers with electric or electric-pneumatic release mechanisms (power off to close)
- Control of smoke protection dampers with electric spring return actuators
- Used to prevent smoke from spreading through the ducts of ventilation and air conditioning systems
- Integration into the central BMS with TROXNETCOM

### Special characteristics

- Smoke detection based on the principle of light scattering
- For airflow velocities from 1 to 20 m/s
- For any airflow direction
- Can be fitted onto the FK-EU
- With volt-free signal and alarm relays
- Integral signal lamps
- Contamination level indicator and automatic adjustment of the alarm threshold, hence long service life
- Can be used with products of any make or model
- Annual maintenance

### Classification

- Building inspectorate licence Z-78.6-67 from the DIBt, Berlin, Germany

### **Variants**

- RM-O-3-D: Duct smoke detector

### **Parts and characteristics**

- Duct smoke detectors with power supply unit, sensor electronics, and sensor head
- Reset/Test push button
- Signal lamp, green – operation (system monitoring)
- Signal lamp, red – release (alarm)
- Signal lamp, yellow – pollution (indicates contamination)

### **Accessories**

- Voltage monitoring module (24 V DC)

### **Materials and surfaces**

- Plastic casing

### **Standards and guidelines**

- Building inspectorate licence Z-78.6-125 from the DIBt, Berlin, Germany
- Guideline regarding fire protection requirements on ventilation systems (Lüftungsanlagen-Richtlinie, LÜAR)

### **Maintenance**

- The functional reliability of the duct smoke detector must be tested at least every 12 months; this has to be arranged by the owner of the ventilation system; functional tests must be carried out in compliance with the basic maintenance principles stated in EN 13306 and DIN 31051.
- Duct smoke detectors must be included in the regular cleaning schedule of the ventilation system
- For details on maintenance and inspection refer to the installation and operating manual

## **TECHNICAL INFORMATION**

## Functional description

A functional test should be carried out before commissioning, then once per year and after any modification, e.g. repair.

### Without smoke

Press Reset/Test push button on the duct smoke detector or in the engineering room (option). The voltage supply to the smoke detector which is attached to the fire damper or smoke protection damper is interrupted, and the damper closes as a consequence.

Once the push button has been released, the damper OPENS, either due to a spring return actuator or a pneumatic actuator.

**Note:** Fire dampers whose release mechanism includes electromagnets can be opened manually.

### With smoke

Spray test gas into the duct through an opening right before the duct smoke detector

If the threshold value is exceeded, the voltage supply to the duct smoke detector which is attached to the fire damper or smoke protection damper is interrupted, and the damper closes as a consequence.

To re-open the damper after the sensor head has become free of smoke, press the Test/Reset push button on the duct smoke detector.

Once the push button has been released, the damper OPENS, either due to a spring return actuator or a pneumatic actuator.

**Note:** Fire dampers whose release mechanism includes electromagnets can be opened manually.

EMC immunity to	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
Supply voltage	230 V AC +10/-15 %, 50/60 Hz or 24 V DC $\pm$ 6 %
Power rating	3 VA
Micro fuse	T 100 L 250 V
Protection level	IP 42
Ambient temperature	0 – 60 °C
Permitted airflow velocity	1 – 20 m/s
Acceptable humidity	$\leq$ 90 % relative humidity, non-condensing
Alarm threshold for increased contamination	$>$ 70 %
System monitoring	$>$ 90 %; no smoke detector; smoke detector data transmission error
Alarm relay contact (release, contamination)	250 V 2 A, 24 V DC 100 W
Weight	Approx. 0.7 kg

Duct smoke detector (smoke detection based on the principle of light scattering) to prevent smoke from spreading through the ducts of ventilation and air conditioning systems.

For controlling and releasing fire dampers and smoke protection dampers with general building inspectorate licence and fitted with an electric or electric-pneumatic release mechanism (power off to close).

### Special characteristics

- Smoke detection based on the principle of light scattering
- For airflow velocities from 1 to 20 m/s
- For any airflow direction
- Can be fitted onto the FK-EU
- With volt-free signal and alarm relays
- Integral signal lamps
- Contamination level indicator and automatic adjustment of the alarm threshold, hence long service life
- Can be used with products of any make or model
- Annual maintenance

### Materials and surfaces

- Plastic casing

### Technical data

- EMC immunity to EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
- Supply voltage: 230 V AC +10/-15 %, 50/60 Hz or 24 V DC  $\pm$  6 %
- Power rating: 3 VA
- Micro fuse: T 100 L 250 V
- Protection level: IP 42
- Ambient temperature: 0 – 60 °C
- Airflow velocity: 1 – 20 m/s
- Humidity:  $\leq$  90 % relative humidity, non-condensing
- Alarm threshold for increased contamination:  $>$  70 %
- System monitoring:  $>$  90 %; no smoke detector; smoke detector data transmission error
- Alarm relay contact (release, contamination): 250 V 2 A, 24 V DC 100 W
- Weight: approx. 0.7 kg

# RM – O – 3 – D

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## 1 Type

RM-O-3-D Duct smoke detector

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