TROX® TECHNIK
The art of handling air

RM-O-M

PREVENTS SMOKE TRANSMISSION VIA THE AIR DUCTS; WITH INTEGRATED AIRFLOW MONITORING

- For monitoring air ducts and preventing smoke transmission via air ducts of ventilation and air-conditioning systems
- Monitors air ducts in conjunction with a fire alarm system or management and control equipment (MBE)
- Flexible use in round and square air ducts with a diameter or height of 100 mm or more
- to provide the control input signal for fire dampers and smoke protection dampers
- With alarm and fault memory in case of power failure
- Suitable for controlling fans
- Optionally with remote display module for operating and status messages with intuitive operating function
- Display of the degree of pollution in %
- With configurable integrated airflow monitoring
- Functional test of the smoke detector by means of test gas can be carried out without auxiliary means on the unit
- Individual expandability via extensive optional accessories
- Supply voltage 230 V AC or 24 V DC
- Can be integrated into an MBE via interface modules
- Can be individually configured and ordered for every application
- VdS recognition number G223017/EN 54-27:2015
- DIBt approval Z-78.6- ... applied for

General information

Application

- Prevents smoke transmission via air ducts of ventilation and air conditioning systems
- Monitors ventilation ducts in conjunction with a fire alarm system
- Can be integrated into management and control equipment (MCE) with TROXNETCOM
- To provide control input signals for fans
- For controlling fire dampers with electric or electric-pneumatic release mechanism
- To provide control input signals for smoke protection dampers with electric spring return actuators

Special characteristics

- Smoke detection based on the optical scattered light principle
- For airflow velocities from 1 – 20 m/s
- Integrated flow sensor
- Power supply: 230 V AC or 24 V DC
- Status messages on the smoke detector or optionally via the display and operating module
- Display: Pollution degree in %, LO (low) at airflow < 0.8 m/s, Normal, Fault, Alarm, Test, Reset
- Functional test of the smoke detector by means of test gas can be carried out without auxiliary means on the unit
- Product- and fabrication-independent application
- Annual maintenance

Classification

- EN 54-27:2015-05; Fire detection and fire alarm systems - Part 27: Smoke detectors for monitoring ventilation ducts
- VdS approval G223017
- General building inspectorate licence has been applied for

Material and surfaces

- Casing: plastic, ABS-V0

Variants

- With probe (air guide profile)
- With sensor head in the duct

Installation and commissioning

- The duct smoke detector must be exposed to a uniform airflow
- Screw the casing onto the air duct with the supplied screws
- The smoke detector may only be mounted on the 4 mounting holes in the bottom of the casing
- Fit the duct smoke detector in the upper third of horizontal air ducts (not near a corner).
- 1.5 × H minimum distance between duct smoke detector and any bends, control units etc.
- Establish power supply
- Mount the upper shell of the casing
- Perform functional test

Accessories

- RM-KIT/DISP-L: Retrofit kit display module DISP, including 8 m connection cable with RJ45 connector
- RM-KIT/DISP-S: Retrofit kit display module DISP, including 0.2 m connection cable with connector RJ45
- RM-KIT/CONSOLE: Mounting console for round air duct
- RM-KIT/TESTER: Test gas spray can, non-flammable
- RM-KIT/EM-RELAY: Expansion module EM-RELAY

Maintenance

- The operator is responsible for the functional safety of a ventilation system
- The operator has the duty of care:
  - Smoke detectors, including all connected components, must be ready for operation at all times
  - Smoke detectors, including all connected components, must be maintained at all times
  - Check the function of smoke detectors at least once a year
  - Smoke detectors must be included in the regular cleaning of the ventilation and air conditioning system
  - For further information on maintenance, inspection and servicing, please refer to the operating and installation instructions

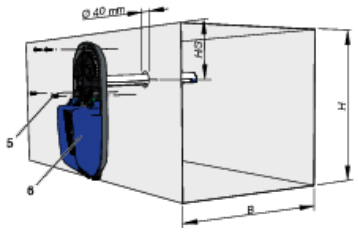
Replacement parts

- RM-KIT/RM-SRD3000: TROX sensor head
- RM-KIT/COVER: Replacement casing
- RM-KIT/GROMMET: sealing grommet cable bushing
- RM-KIT/TUBE SCREW: Replacement screw for mounting the probe (air guide profile) into mounting plate
- RM-KIT/DISP BRACKET: Replacement bracket for display module DISP-L

TECHNICAL INFORMATION

Application, Technical data, SPECIFICATION TEXT, Order code

RM-O-M with lance (air guide profile) on angular air duct



5 Fastening screws

6 Casing

Internal fuse	500 mA, slow-blow
maximum cross-section of connection cable	2.5 mm²
Relay contact FD Alarm (fire alarm), motherboard	230 V AC/24 V DC; 8A
Relay contact Sys Fail (system error), motherboard	24 V DC; 1A
Relaiskontakt Alarm BMS*, EM-RELAY	24 V DC; 1A
Relay contact Airflow (airflow monitoring), EM-RELAY	24 V DC; 1A
Relay contact Pollution (monitoring of pollution level), EM-RELAY	24 V DC; 1A
IP protection level	IP 42
Protection class (230V AC/24 V DC)	II (protective insulation) / III (protective extra-low voltage)
Minimum length air guide profile	90 mm (600 mm in scope of delivery)
permissible airflow velocity	1.0 – 20 m/s
Alarm threshold for volume flow rate	0.8 m/s
Alarm threshold for increased contamination	> 70 %
Operating temperature	-10 to 65 °C
Relative humidity	5 % to 90 %, no condensation
Storage temperature	-20 to 70 °C
Weight	maximum 1.1 kg (without air guide profile)
Dimensions	340 × 144 × 80 mm (L × W × H)
EC conformity	Construction Products Regulation (EU) no. 305/2011
Approvals	
EN 54-27:2015	Fire detection systems - Smoke detectors for monitoring ventilation ducts
General building inspectorate licence	Z-78.6- ...
VdS approval number	G223017

*BMS: Building Management System = Management and control equipment (MCE)

Material

- Housing: plastic, ABS-V0

Technical data

- Detection principle: optical scattered light principle
- Power supply DC: 24 V ±10 %
- Power supply AC: 230 V AC ±15 %, 50 - 60 Hz
- Operating voltage range DC: 21.6 V DC - 28.8 V DC ± 3%
- Switch-off range DC: < 22.3 V DC and > 28.0 V DC
- Power consumption without accessories (nominal operation): 5 VA (at 230 V AC); 3.6 W (at 24 V DC)
- Power consumption with display or expansion module (nominal operation): 6 VA (at 230 V AC); 4.8 W (at 24 V DC)
- Current consumption without accessories (nominal operation): 40 mA (at 230 V AC); 150 mA (at 24 V DC)
- Current consumption with display or expansion module (nominal operation): 50 mA (at 230 V AC); 200 mA (at 24 V DC)
- Maximum connected load spring return actuator: 10 VA (230 V AC/24 V DC)
- Relay contact FD alarm (motherboard): 230 V AC or 24 V DC; 8 A
- Relay contact Sys Fail (system error), motherboard: 24 V DC; 1A
- Relay contact alarm BMS, EM-RELAY: 24 V DC; 1A
  - BMS: Building Management System = Management and control equipment (MCE)
- Relay contact Airflow (airflow monitoring), EM-RELAY: 24 V DC; 1A
- Relay contact Pollution (monitoring of pollution level), EM-RELAY: 24 V DC; 1A

- IP protection class: IP 42

- Protection class 230 V AC/24 V DC: II (protective insulation)/III (protective extra-low voltage)
- Minimum length of lance (air guide profile): 90 mm (600 mm in scope of delivery)
  - Cutting to the required length is done by the customer
  - Further information on the installation of the air guide profile can be found in the operating and installation instructions
- Permissible airflow velocity: 1 – 20 m/s
- Alarm threshold for volume flow rate: < 0.8 m/s
- Alarm threshold for increased contamination: > 70 %
- Operating temperature range: -10 – 65 °C
- Storage temperature: -20 to 70 °C
- Relative humidity: 5 – 90 %, no condensation
- Weight: maximum 1.1 kg (without air guide profile)
- Dimensions: 340 × 144 × 80 mm (L × B × H)

Zulassungen

- VdS approval G223017

Standards and guidelines

- EN 54-27:2015-05; Fire detection and fire alarm systems - Part 27: Smoke detectors for monitoring ventilation ducts

Accessories

- Aluminium air guide profile, length 600 mm, standard
- Sensor head, optical scattered light principle
- Removable display module with 7-segment display for operating and status messages - see link
- Mounting of the display module directly on the smoke detector (central mounting)
  - Length connection cable: 0.2 m
  - Mounting of the display module by means of mounting brackets (decentralised mounting)
    - Remote operability due to long connection cable
    - Length connection cable: 8.00 m
- EM relay board for evaluation of alarm, contamination and airflow monitoring

Equivalence criteria

- Can be used flexibly with lance (air guide profile) or sensor head in the duct
- Removable display module with magnetic surface for operating and status messages
- Function test can be carried out from the outside
- Simple function test with test spray via integrated maintenance opening in the transparent housing
- With display of the degree of pollution and quiescent value tracking
- Permissible air velocity 1 - 20 m/s with warning limit at < 0.8 m/s
- Can be integrated into MCE, regardless of manufacturer

Manufacturer: TROX GmbH

Order code

- Depending on configuration

Life cycle assessment
A life cycle assessment is available for the product series in form of an Environmental Product Declaration (EPD) that has been checked and published by a programme holder.

RM-O-M	–	S	–	T	/	DISP-L	/	R	/	CRD	/	OFF
1		2		3		4		5		6		7

1 Type
RM-O-M Duct smoke detector, multifunctional

2 Detection principle
S Release if smoke is detected

3 Installation variant
T Detection via probe (air duct profile)
D Detection directly in the air duct*

4 Attachment
No entry: without attachment
DISP-S Display module with 0.2 m connection cable
DISP-L Display module with 8 m connection cable

5 Expansion module
No entry: without expansion module
R EM-RELAY additional switch contacts
A EM-ASI (for bus interface AS-Interface)*
W EM-BACMOD-RM (for bus interface BACnet MS/TP)*
M EM-BACMOD-RM (for bus interface Modbus RTU)*

6 Accessories
No entry: without accessories
CRD Console for round duct (only with installation variant T)

7 Airflow monitoring
No entry: ON
OFF deactivated (for use in air transfer dampers / MFD)Bestellbeispiel: RM-O-M-S-T/DISP-L/R/CRD/OFF

Type	RM-O-M Duct smoke detector, multifunctional
Smoke detection	Release if smoke is detected
Installation variant	Detection via lance (air duct profile)
Attachment	Display module with 8 m connection cable
Expansion module	EM-RELAY additional switch contacts
Accessories	Console for round duct (only with installation variant T)
Airflow monitoring	deactivated (for use in air transfer dampers)

*Variant expected to be available end of quarter 2/2024

Variants

Application

Central installation:

- Attachment of the magnetic display module directly to the smoke detector
- Length connection cable: 0.2 m

Application

Decentralised mounting in installation situations that are difficult to access:

- Fastening the magnetic display module to the mounting bracket
- Mounting the bracket with 3 fixing screws
- Remote controllability through long connection cable, length: 8.00 m

RM-O-M DISP-S

RM-O-M DISP-L

With mounting bracket (right)