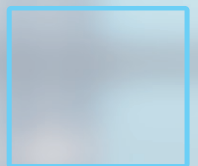
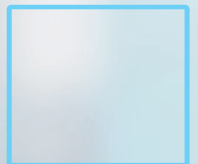
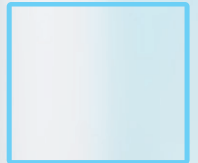
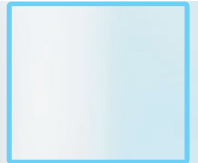


DUCT SMOKE DETECTOR

KRM-X = the New Safety Generation

KRM-X[®] Oppermann Duct Smoke Detector for Monitoring Ventilation Systems



TurboTube – one size fits all

This patented sensor tube with a flow-optimized (red) end plug has a sampling profile with two closed, inner channels and two scoop-shaped, open outer channels, allowing extremely uniform measurement gas sampling across the entire tube length even at very low flow speeds.

The standard length of 0.16 m supports monitoring of all duct cross-sections from Ø 100 mm. The TurboTube sensor tube can be quickly installed independently of the KRM-X housing. This allows shorter installation times and more cost-effective operations for the tradesman. The TurboTube makes the installation orientation and housing alignment of the KRM-X extremely flexible.

DigiSense

The integrated alarm threshold tracking in the KRM-X ensures consistent sensitivity up to an alarm threshold of 70 % contamination. The large display allows the contamination level to be checked at a glance. The continuous airflow monitor uses a blue LED for signaling. The electronics are monitored continuously and make smoke detector malfunctions visible, amongst other occurrences. Functions are checked and malfunctions are reset with buttons on the housing. An additional input contact is used to trigger tests via remote commands.

EasyInstall and EasyFunction

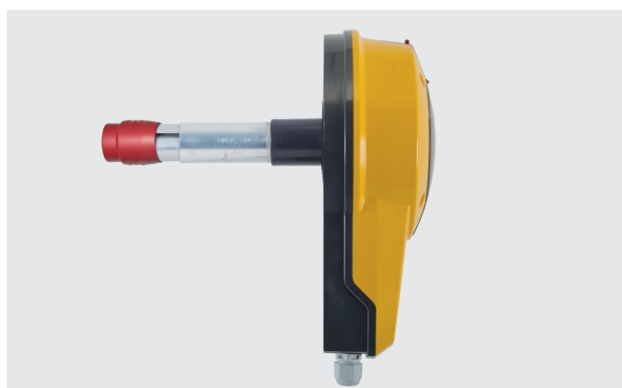
The rugged housing of the KRM-X includes a smoke detector and flow monitor, electronics, terminals, and a user interface. Clearly designed graphics, a 2-digit contamination indicator, and the colored LEDs support intuitive and ergonomic operation. Every detail was optimized based on extensive experience. The spring terminals are located in a large terminal compartment for easy access and arranged directly behind the opening for the cable glands.

A new, optimized test spray opening allows for even more reliable testing without the need to open the housing.

RS485 Bus interface

The bus-compatible KRM-X has an RS485 interface as a particularly innovative feature. This allows all functions and signals to be directly transmitted to an automation station or a gateway. The unique BACnet or Modbus interface and straightforward connection to building automation networks make the KRM-X particularly suited for large buildings and premises. Oppermann supplies appropriate accessories for direct analysis of KRM-X signals. The AZE 1.2 can monitor up to 99 KRM-X sensors and transmit signals to the central building control systems via the RS485 interface.

Perfectly conceived details and function.
Digital contamination indication in %



AZE1.2 display unit



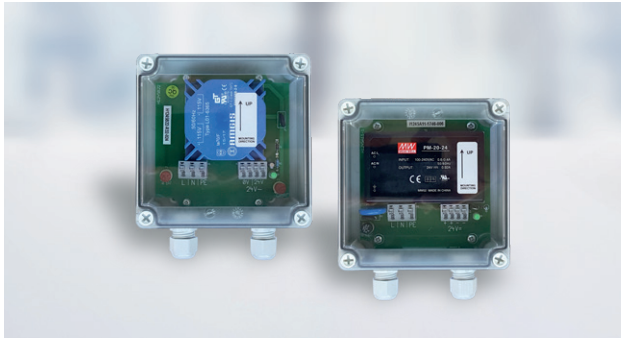
All functions directly in view in a single location

The AZE 1.2 allows up to 99 Modbus-compatible KRM-X data points to be conveniently read at a glance from a central location. This is ideal for the system operator, particularly when no DDC-based visualization is available. All data can be cost-effectively and efficiently read from all connected detectors in a single location to perform targeted maintenance or other operations. If contamination, a malfunction, or an alarm is detected, this is also centrally displayed on the AZE 1.2. Even the flow and temperature on all connected duct smoke detectors can be displayed. The AZE 1.2 can route collective messages for alarm, contamination, malfunction, and service to the DDC via potential-free changeover contacts. The RS485 Modbus RTU interface is a particularly innovative feature. It is used to centrally report all KRM data to the DDC, where the data can also be visualized.

AZE 1.2 Technical Specifications

Supply voltage:	24 V AC/DC	
Power consumption:	250 mA (without KRM-X)	
Display:	plain text display/KRM-X status and configuration query	
LEDs:	alarm:	red
	contamination:	yellow
	malfunction:	yellow
	operation:	green
Replay outputs:		
Alarm:	1 changeover contact 1 opening contact	
Contamination, malfunction, service mode:	1 changeover contact each	
Rated ambient temperature:	0 °C – 50 °C	
Rated relative humidity:	0 – 90 % rh, non-condensing	
Protection type:	IP 20	
Cable connection:	spring terminals 0.5 – 2.5 mm ²	

Accessories



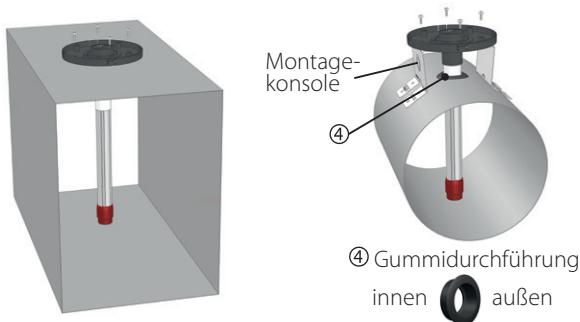
NT power supply

The power supply units (24 V DC or 24 V AC) are reliable sources of power for KRM-X duct smoke detectors with DIBt certification (types KRM-2-DZ, KRM-2-DZ-MOD and KRM-2-DZ-BAC) with 24V AC or DC when the KRM-X also powers the FD / SPD.



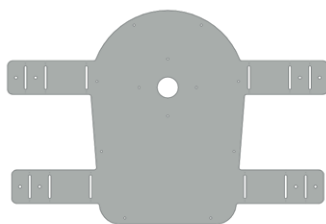
WDG Spraywater-protected housing for KRM-X

for outdoor or cold environment installation for protection of the analysis electronics against condensation moisture.



Mounting bracket for KRM-X

for installing the KRM-X duct smoke detector on round or insulated ducts; including rubber bushing to seal the probe tube against the air duct.



Large mounting bracket for KRM-X with WDG

larger mounting bracket for installing the KRM duct smoke detector together with the spraywater-protected type WDG housing on round or insulated ducts; including rubber bushing for sealing the probe tube against the air duct.



Aerosol spray ASR

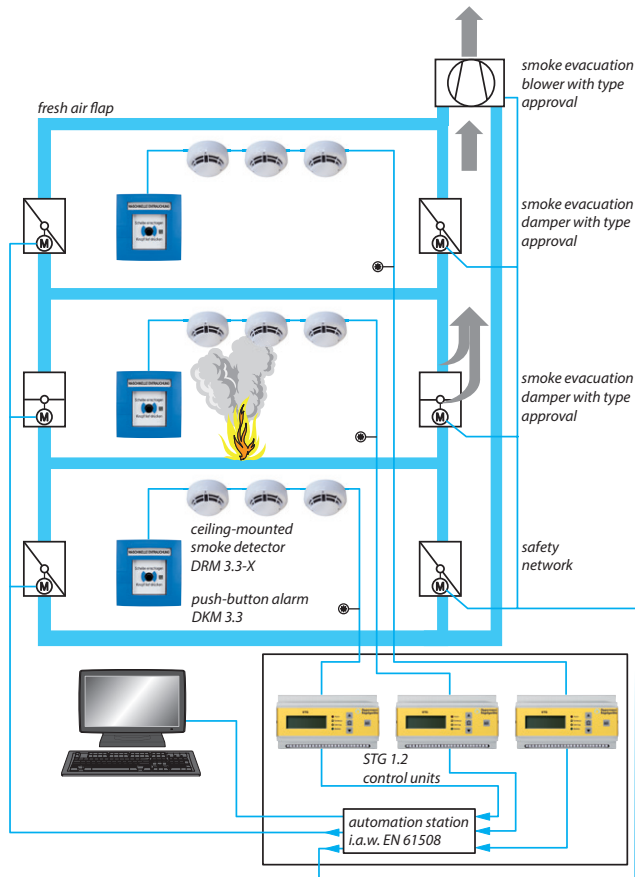
For the functional test and to trigger smoke detectors, adapted to the optical system. Free from oil mist, free from residues, non-flammable.

Smoke detector RM 3.3-X

fits all type KRM-X® duct smoke detectors; also suitable as replacement for ceiling-mounted DRM 3.3-X smoke detectors.



Fire protection – automated smoke evacuation



Mechanical smoke evacuation systems

This diagram shows an example of how sensors, actuators, and automation stations interact to effectively prevent the spread of fire and smoke with an air conditioning system installed in the building.

If one of the smoke detectors installed in the fire compartment triggers an alarm, the STG 1.2 control unit and the automation station open the associated smoke evacuation damper and switch on the smoke evacuation blower. Other smoke evacuation dampers are closed to focus the exhaust air volume to one smoke zone.

STG 1.2 control unit



For DRM ceiling-mounted smoke detector/ DKM push-button alarm – bus compatible.

- Up to 99 DRM 3.3-X ceiling-mounted smoke detectors push-button alarms can be connected
- The status and contamination of each alarm can be queried
- Large LCD display plus 4 additional LEDs
- RS485 Modbus interface for forwarding information to the central building control system
- 4 changeover contacts for alarm, malfunction, service, and contamination
- 1 opening contact for alarm
- Short-circuit and broken cable monitor

Technical Specifications KRM-X

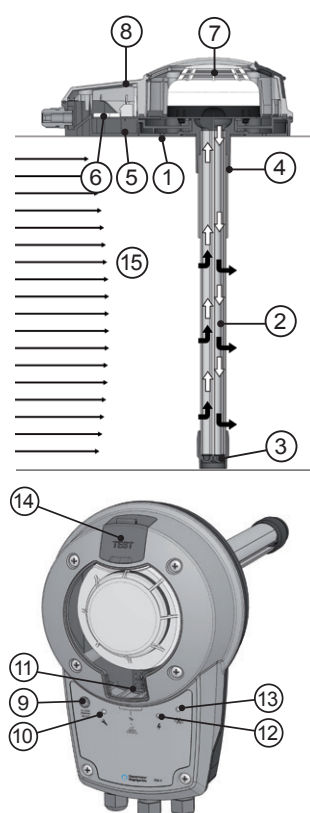
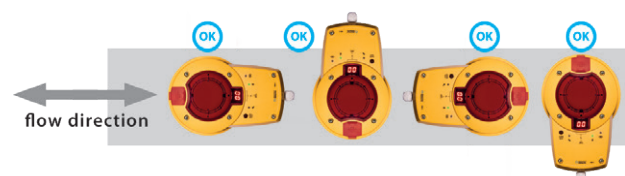
Detector type:	scattered light
Nominal current:	max. 120 mA (24 V); 30 mA (230 V)
Relay outputs:	potential-free
Alarm relay locked:	1 changeover contact 250 V, 8 A 1 opening contact 250 V, 8 A
Contamination relay:	1 opening contact 250 V, 6 A
System malfunction relay:	1 opening contact 250 V, 6 A (DZ only)
Airflow relay:	1 opening contact 250 V, 6 A (DZ only)
Operating temperature:	-20 °C – +50 °C
Rated relative humidity:	10 – 95 % rh non-condensing
Rated flow velocity:	1 – 20 m/s
Protection type:	IP 65
Testing:	EN54-27
VdS approval:	G219046/G219053
DIBt certification:	Z-78.6-249

Configurations

230 V AC	24 V AC/DC
KRM-X-1	KRM-X-2
KRM-X-1-MOD	KRM-X-2-MOD
KRM-X-1-BAC	KRM-X-2-BAC
KRM-X-1-DZ	KRM-X-2-DZ
KRM-X-1-DZ-MOD	KRM-X-2-DZ-MOD
KRM-X-1-DZ-BAC	KRM-X-2-DZ-BAC

DZ = DIBt certification MOD =  Modbus BAC =  BACnet

Installation orientation



- 1 Adapter plate with gasket
- 2 Patented sensor tube (max. length 3 m)
- 3 End plug
- 4 Rubber bushing (for insulated or round ducts only)
- 5 Housing bottom with gasket
- 6 Electronics
- 7 Optical smoke detector
- 8 Housing top with gasket
- 9 LED red: Alarm/Reset button
- 10 LED yellow: Malfunction
- 11 LED display: sensor contamination in %
- 12 LED green: in operation
- 13 LED blue: airflow below 1 m/s
- 14 Opening for test gas
- 15 Air duct

Note: subject to change without notice. The local rules and regulations apply in each case.
Non-binding operational example without claim to completeness.
Specification sheets and the price list can be found on our website.



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