SDD-OE

Optical single tube smoke detector for duct mounting

SDD-OE is a single tube smoke detector for duct mounting which is intended for smoke detection in ventilation systems. The detector is available with or without service alarm.

- **Smoke detector of optical principle**
- **RFI-protected (radio interferences)**
- **Multiple detectors can be connected to one control unit (does not apply to SDD-OE65-RAC)**
- **Models with service alarm**
- **Compact design. The detector is bayonet mounted to simplify service and maintenance.**
- **Temperature range -20...+60°C**

SDD-OE is an optical smoke detector for mounting on all duct types. It reacts on visible and invisible smoke particles and can therefore detect fire at an early stage. The aluminium venturi tube is mounted in the duct through a hole, Ø 30 mm. The tube can be shortened to fit all duct sizes.
The detector housing has a window giving a clear view of the flow indicator and the alarm LED.

Different models

The smoke detectors in the SDD-series come in different versions. The basic model has functions required for the supervision of a ventilation system.
Detectors with service alarm are used to indicate that cleaning is needed. Detectors with auxiliary fans are used to monitor ventilation ducts even when the normal ventilation fans are shut off. There are two models for 24 V AC supply voltage, with and without auxiliary fan.

Control unit

The detector is intended to be connected to a control unit of the type ABV... (not models with 24 V AC supply). See overleaf.

Working principle

The detector has a pulsing LED that is located in a chamber designed to exclude light from any external source. At an angle to the LED is a photo diode which normally does not register the light emitted by the LED. In the event of smoke entering the chamber, the light pulse from the LED will be scattered and registered by the photo diode. If it detects smoke on the two following pulses, a red LED will light up on the detector.

Service alarm

SDD-OE50 and SDD-OE50-M have a service alarm function for detecting the degree of contamination over time. When contamination is at a level where there is a risk for malfunction, an alarm is triggered. A red LED will light up on the detector and a yellow on the control unit.

Flow control

The detector has a built-in flow indicator with a red signal flag which is located on the air inlet. During normal operation, it will be lifted by the flow of air, indicating correct air flow through the detector.

Function test

The detector has a red plastic plug on the side of the lid to simplify control with e.g. test gas.

Approval

Approved according to EN-54, also tested and approved by SBSC.

Mounting

Drill the required hole for the tube in the duct. The venturi tube can be shortened for smaller ducts.
The venturi tube has lips that match the tube holder on the housing.

The detector should be mounted at least three duct widths away from duct bends and fresh air inlets.
The holder is designed so that it will also fit directly onto round ducts.

For larger ventilation ducts, a longer venturi tube can be ordered.

Mounting plates

When the detector has to be mounted at a distance from the duct (e.g. when insulation material is used) the mounting plate TDS should be used.
Distance bushing for mounting on the venturi tube is delivered with the mounting plate.

Maintenance

Operation checks and cleaning of the detector should be carried out once a year to ensure proper function. The cover can be cleaned using a vacuum cleaner.

Models

SDD-OE65	Basic model
SDD-OE50	With service alarm
SDD-OE65-RAC	With AC power supply and relay output only
SDD-OE65-RACM	With AC power supply and relay output only. With auxiliary fan.
SDD-OE50-M	With service alarm and auxiliary fan
TDS	Mounting plate for insulated ducts
VR2000	Longer venturi tube, 2000 mm

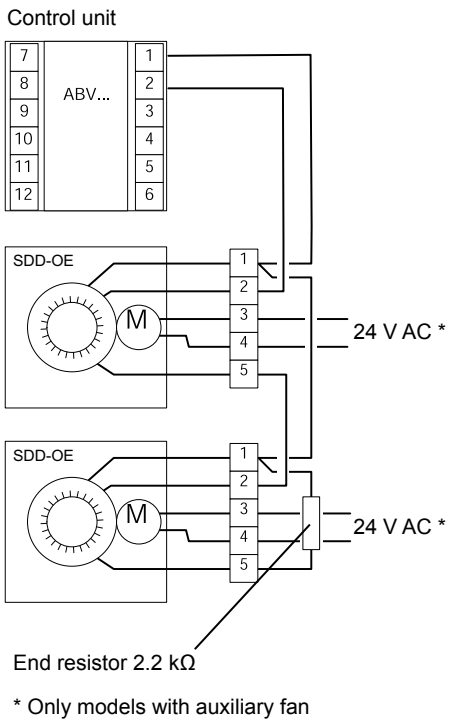
Technical data

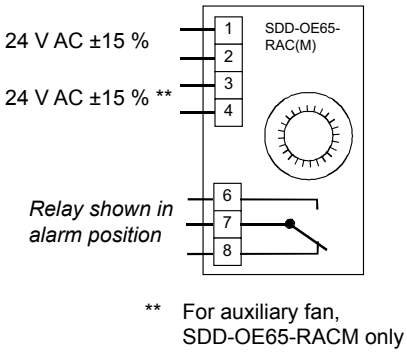
Supply voltage	9...33 V DC (via control unit) 24 V AC ±15 % for RAC(M) models
Power consumption, incl. end resistor (not RAC(M))	
- normal operation	40 mA at 24 V DC
- in the event of an alarm	52 mA at 24 V DC
- in the event of a service alarm	20 mA at 24 V DC
Operating temperature	-20...+60°C (non-condensing)
Air humidity	Max. 95 % RH
Air velocity	Up to 20 m/s
Protection class	IP54
Detector principle	Optical
CE	The product conforms with the requirements of European EMC standards CENELEC EN50081-1 and EN50082-1 and carries the CE-mark. **RoHS:** This product conforms to the Directive 2011/65/EU of the European Parliament and of the Council.

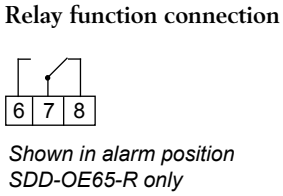
Indicators

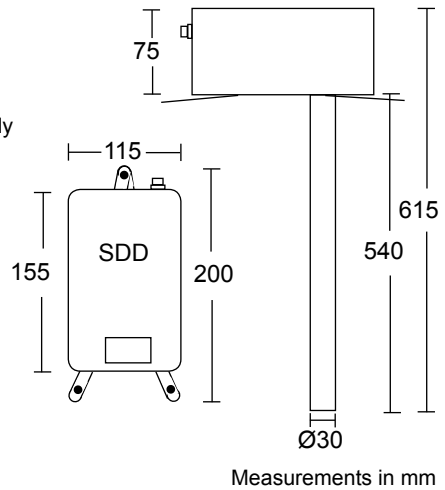
- smoke alarm	Red light
- service alarm	Red light (yellow on the control unit)
Venturi tube	Aluminium, 30 mm diameter. Length 530 mm for ducts up to 1.3 m.
Relay (SDD-OE65-R and RAC(M))	Change-over, 24 V AC/DC, 2 A

Dimensions and wiring









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