Smoke detector installation TBLZ-2-49-a GOLD/COMPACT

1. General

Smoke detector TBLZ-1-49-a is used to measure smoke gases in ventilation ducts. It consists of an optical detector mounted in an adapter system in which both the tube and enclosure are designed for optimum airflow through the detector. The system meets all fire safety requirements at air speeds between 0.2m/s and 20m/s. The smoke detector is used together with a control unit (installed in equipment cubicle ELQA or separate equipment cubicle for smoke function) for controlling fans, smoke and combustion gas dampers.

Accessories

Use an installation bracket when installing on circular or insulated ducts.

2. Function

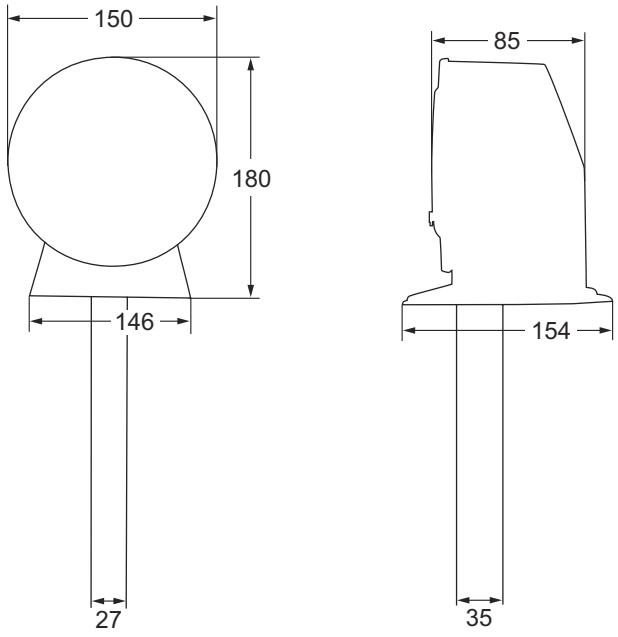
When combustion gas is detected the LED on the detector lights red and the alarm signal is forwarded to the control unit.
If the smoke detector becomes dirty, it becomes more sensitive and switches to alarm mode more slowly. To prevent false alarms if dirty, the detector is equipped with a service alarm (green LED). This indicates that the detector requires cleaning.

3. Technical Data

Detector type	Optical
Operating voltage	24VDC (from control unit)
Power consumption:	
In-operation	Max 0.04mA
Service alarm	~ 13mA
Combustion gas alarm	~ 50mA
Ambient temperature	-20°C to +50°C
Humidity	Max 99% rH
Degree of protection	IP54
Weight	800g

Dimensions

Venturi tube length of 600 mm or 1500 mm.



(All dimensions are given in mm)

4. Maintenance

When the smoke detector becomes dirty, it becomes more sensitive and may trigger the service alarm. This can be delayed by vacuuming the detector once a year.

5. Installation and location

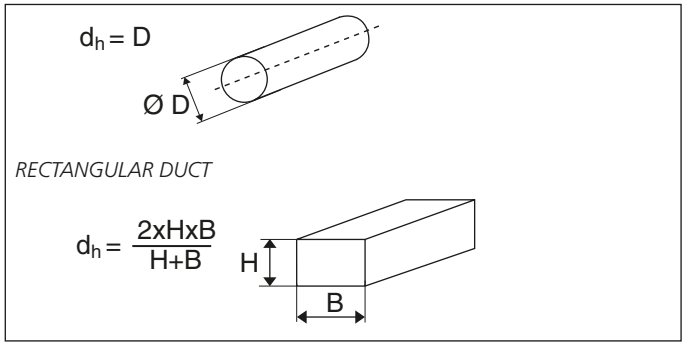
Position the smoke detector in the direction of flow, according to the arrow on the cover. The smoke detector is location-independent and can be installed on any side of the duct.

In the event of large temperature differences, e.g. outside or in cold attics, the detector must be insulated from the surrounding air (due to the risk of condensation build-up in the detector housing).

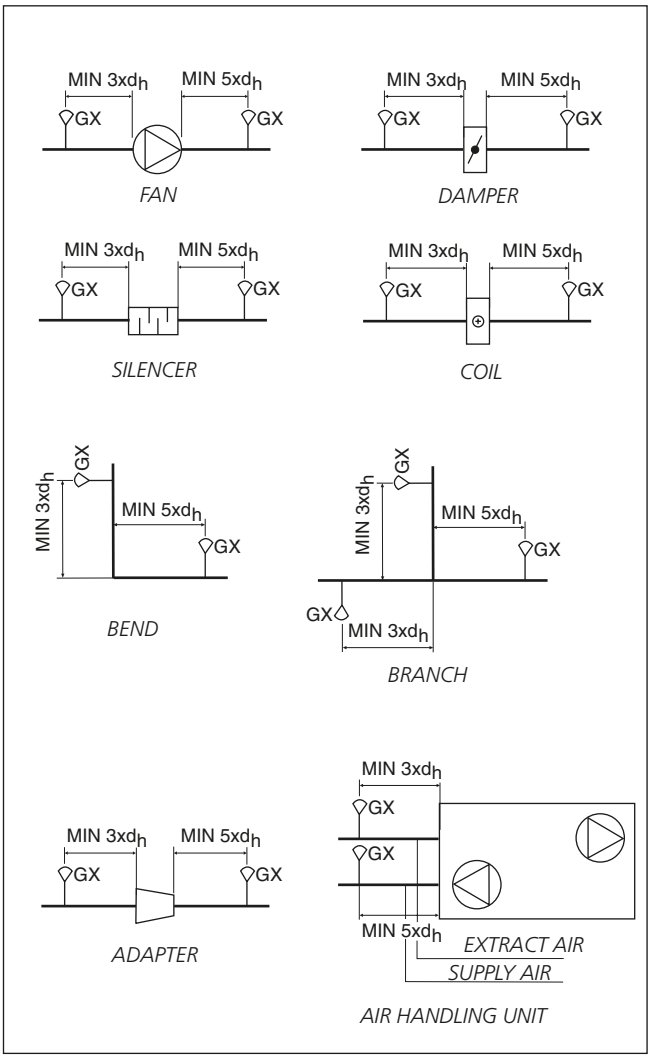
To ensure optimum combustion gas detection the smoke detector must be positioned so that the distance **to** the nearest interfering source in the duct (see example of interfering sources below), in the direction of airflow, is the same as 3 x the duct's hydraulic diameter. Nearest location **after** an interfering source must be at least 5 x the duct's hydraulic diameter.

Hydraulic diameter

CIRCULAR DUCT

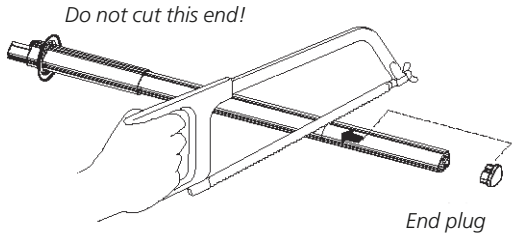


Examples of sources of disturbance



1 Drill holes in the duct.
- Make holes without 38 mm installation bracket.
- Make holes with 51 mm installation bracket (see point 9).

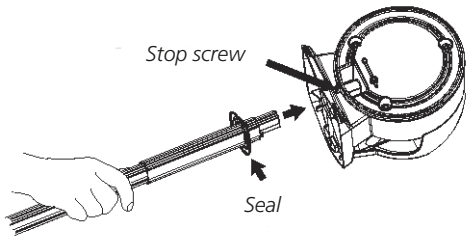
2



- Measure the ventilation duct.
- Cut the tube.
- The tubes must cover at least 90% of the duct's width.

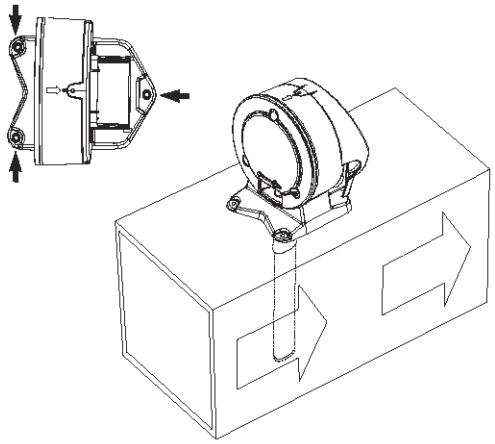
Detectors with venturi tubes of 600 mm are intended for ducts with a max. duct width of 600 mm.
- Insert the end plug.

3



- Insert the seal onto the tube.
- Insert the tube into the bottom of the detector box.
- Lock the tube using the stop screw

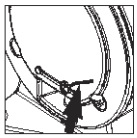
4



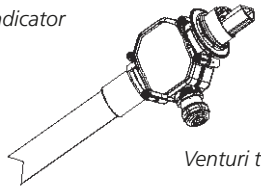
- Install the tube and detector on the duct.
- Secure the detector box at 3 points at the markings of the arrows.

Important! IMPORTANT!
The direction arrows (see the shape of the detector's base or the top of the housing) must point in the same direction as the air flow in the duct.

5 Flow indicator.
The detector is equipped with an indicator, a red plastic tab, which, when the detector is correctly installed, swings out due to the air flow.



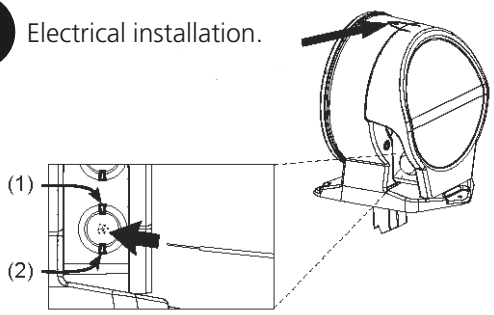
Flow indicator



Venturi tube with auxiliary fan

Important!
If the indicator does not move, consider moving the detector or install a fan tube.

6 Electrical installation.



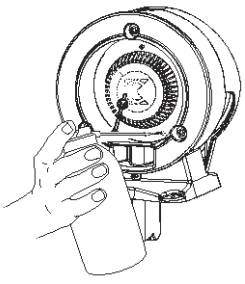
- Open the cover above the junction hood by lifting the catch.
- Insert the cable through any cable grommet.

When using another type of grommet, remove them premounted by first pressing through one side and then through the other (1-2).
- Connect wiring according to the wiring diagram in the instructions for equipment cubicles.

7 Performance checks.
Check the detector using the smoke detector tester in spray form.

- Move the "test hole plug" to the side and then quickly spray.

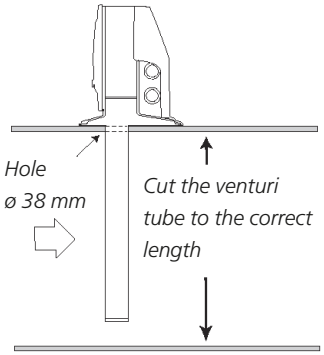
In the event of a deployed alarm the LED lights red on the circuit board and the detector. In the event of a deployed service alarm the LED on the circuit board lights yellow and green on the detector.
- Reinstall the test hole plug.



Important!
Do NOT drill holes for signs or similar in the plastic cover. This can cause leakage that seriously affects the function of the detector.

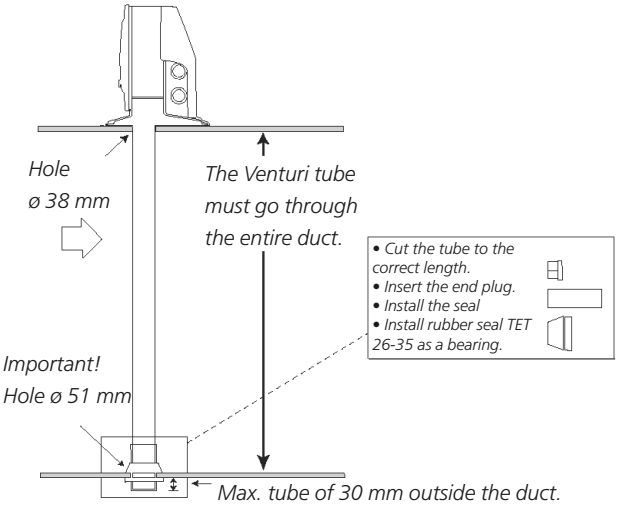
8 Installing different tubes in different duct widths.

Venturi tube 600 mm.



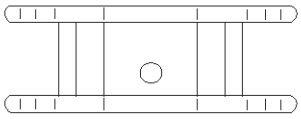
For ducts less than 600 mm use venturi tube of 600 mm, standard.
For ducts between 600 mm and 1400 mm, use venturi tube of 1500 mm.

Venturi tube 1200 mm.

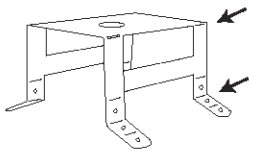


9 Installation bracket TBLZ-1-53 for circular ducts or insulated flat ducts.

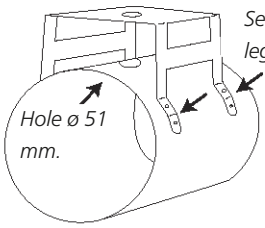
The duct diameter can be as small as 100 mm using the bracket.

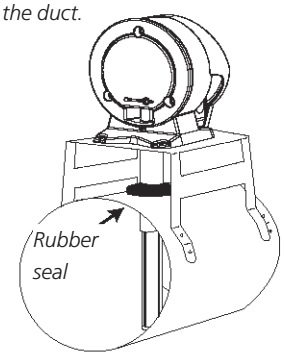


The installation bracket is supplied flat.

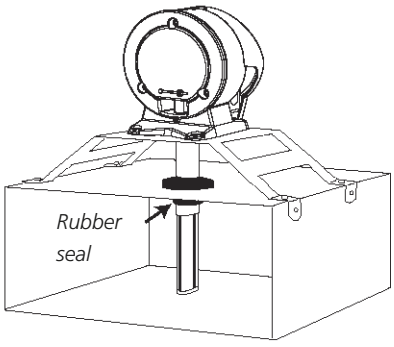


The installation bracket is easy to bend/shape so that it fits circular or flat ducts.





Circular duct.



Insulated flat duct.

10 Final checks

- Check that the direction of the arrows is towards the direction of flow.
- Check that the plug for the test hole is properly installed.
- Check that the flow indicator shows flow (rocks).
- Full scale tests with smoke generator are recommended to check the function.

Troubleshooting.

The smoke detector deploys without any smoke present.

• The smoke detector is faulty, dirty or positioned so that condensation can build up, see point 8. The detector insert must be replaced.

Only the control unit triggers an alarm.

• Check that the termination resistor is installed in the last smoke detector.
• Check that the coil's resistance is 2.2kΩ from the control unit.
• Check that the control unit is OK by installing the 2.2kΩ resistor in the smoke detector output on the control unit.
• Use a voltmeter to check that 21-24 VDC with the correct polarity is in terminal 1 (-) and terminal 2 (+).