

Installation instructions for the optical detector with built-in control unit, TBLZ-1-72-a GOLD/COMPACT

1. General

The TBLZ-1-72-a optical smoke detector with built-in control unit is used for measuring 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 also has a built-in control unit for controlling fans, fire and combustion gas dampers.

Accessories

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

2. Function

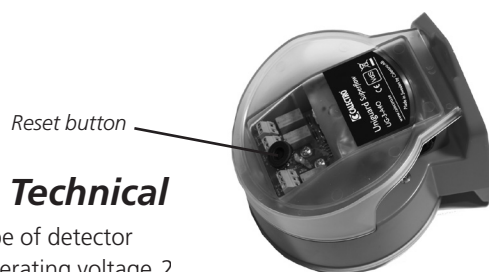
A green LED is lit on the control unit's circuit card when the unit is operating in the normal mode. All the relays are activated.

When combustion gas is detected, a red LED lights up on the circuit card and detector.

If the smoke detector becomes dirty, it becomes more sensitive and slowly switches to alarm mode. To prevent false alarms if dirty, the detector is equipped with a service alarm (green LED on the smoke detector and yellow LED on the circuit card of the control unit). This indicates that the detector requires cleaning.

If a malfunction arises, the green LED will be off and no relays will be activated. Example: If the smoke detector is removed or a power failure occurs.

A tripped alarm can be reset on the rear side of the smoke detector. See illustration.



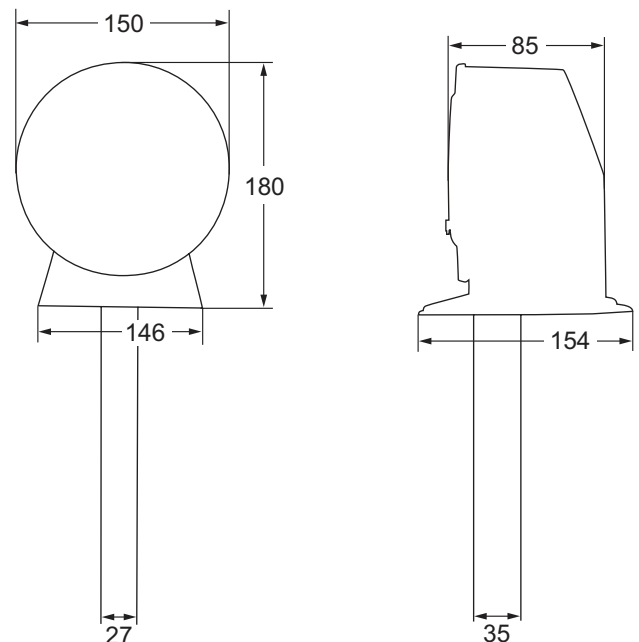
3. Technical

Type of detector	
Operating voltage	2
Power consumption:	
Operation	About 165 mA
Ambient temperature	-10°C to +55°C
Atmospheric humidity	Max. 99% rH
Enclosure class	IP54
Tested and passed To	VdS



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.

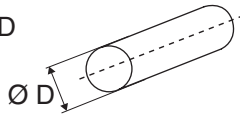
5. Installation and location

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.

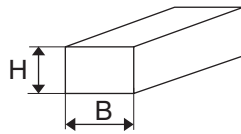
Hydraulic diameter
CIRCULAR DUCT

$$d_h = D$$

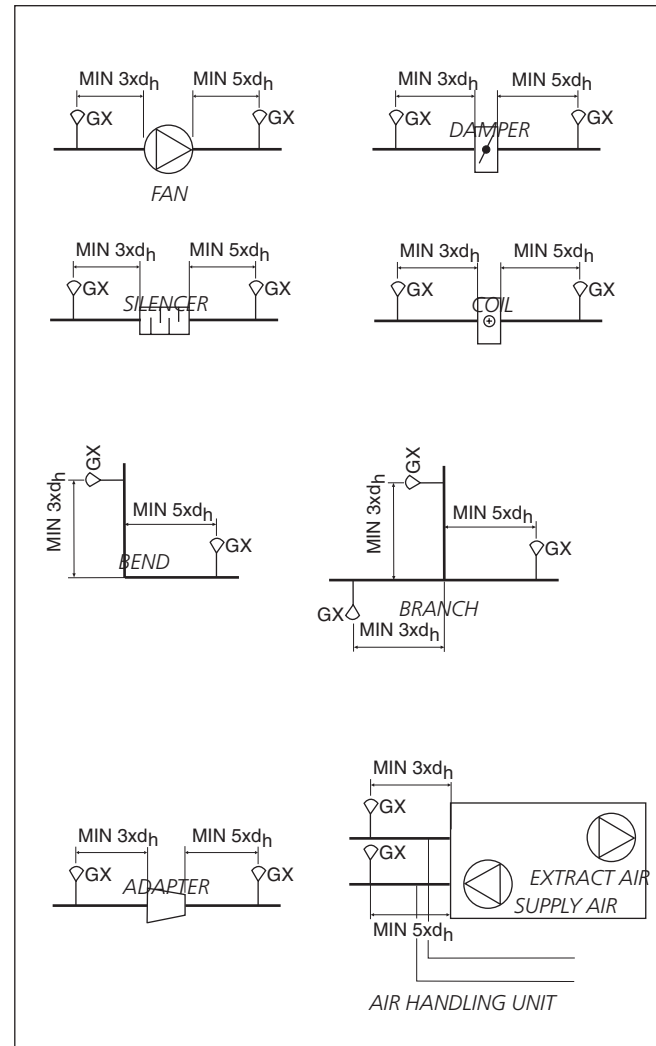


RECTANGULAR DUCT

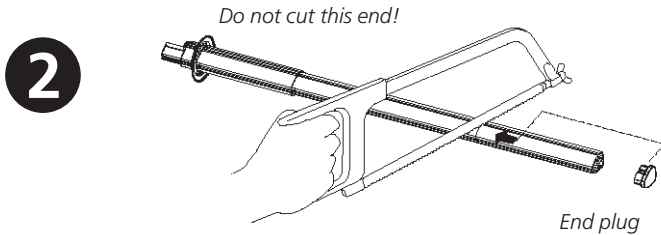
$$d_h = \frac{2 \times H \times B}{H + B}$$



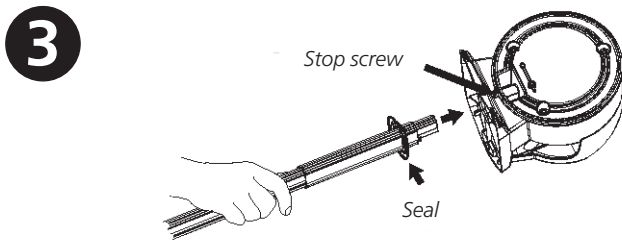
Examples of sources of disturbance



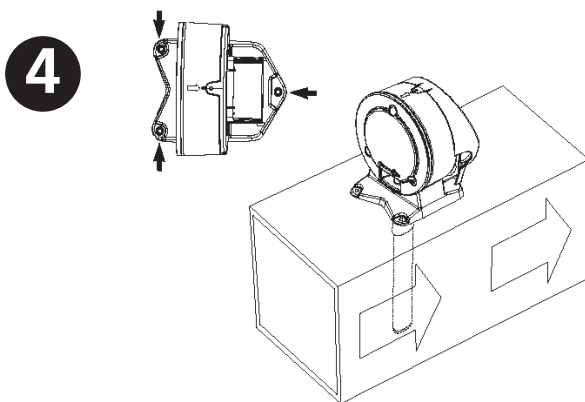
- 1** Drill holes in the duct.
- Make holes without 38 mm installation bracket.
 - Make holes with 51 mm installation bracket (see point 9).



- 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.



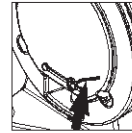
- Insert the seal onto the tube.
- Insert the tube into the bottom of the detector box.
- Lock the tube using the stop screw



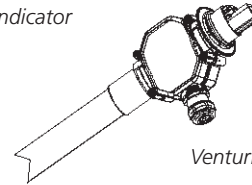
- Install the tube and detector on the duct.
- Secure the detector box at 3 points at the markings of the arrows.

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.



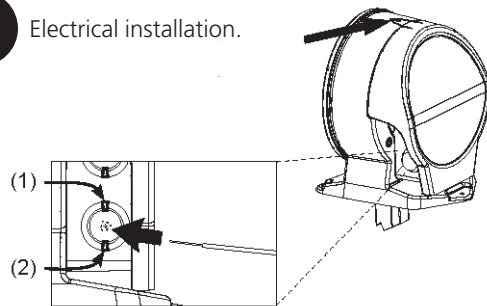
Flow indicator



Venturi tube with auxiliary fan

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

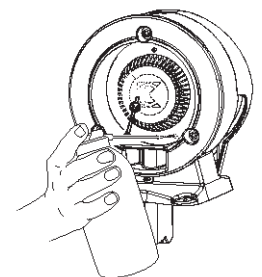
- 6** Electrical installation.



- 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 the cables according to the wiring diagram in Section 6.

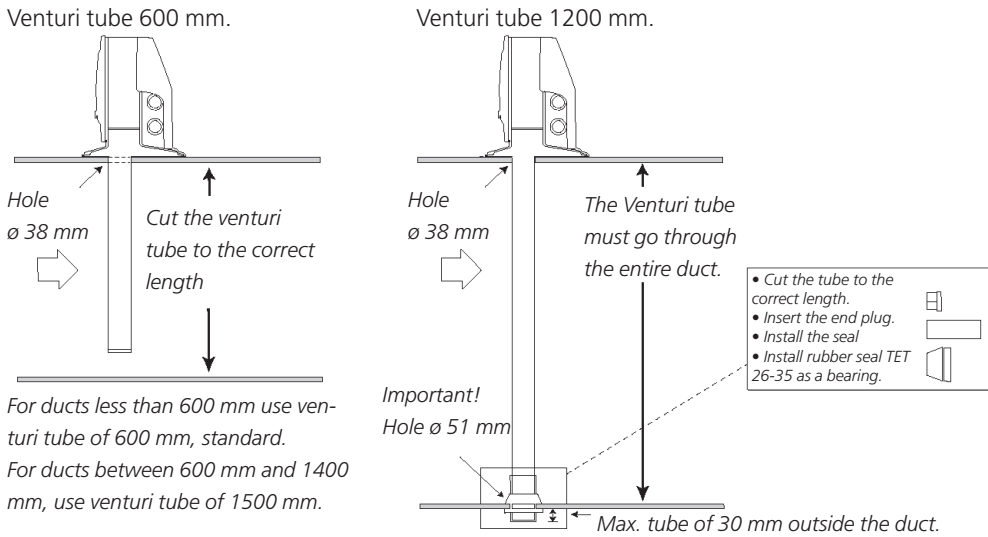
- 7** Performance checks.
- Check the detector using the smoke detector tester in spray form.

- Move the "test hole plug" to the side and then quickly spray.
- In the event of a tripped alarm, the LED shines red on the circuit board and the detector. In the event of a tripped service alarm, the LED shines green on the detector and yellow on the circuit board.
- Reinstall the test hole plug.

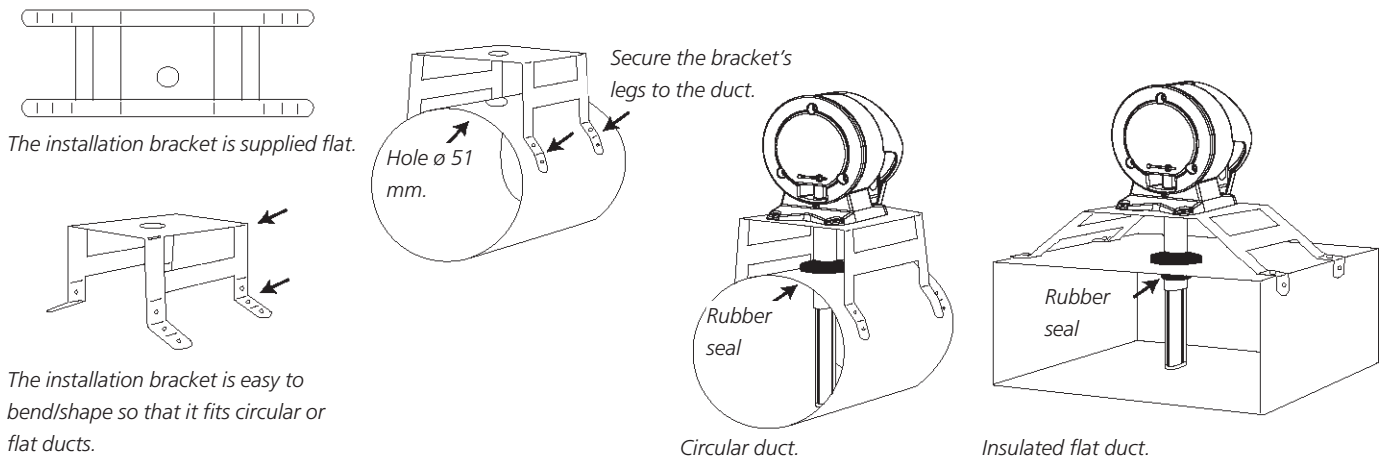


Important!
Do NOT drill holes for signs or similar in the plastic cover. This can cause leakage that seriously affects the function of the detector.

8 Installing different tubes in different duct widths.



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.



- 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.

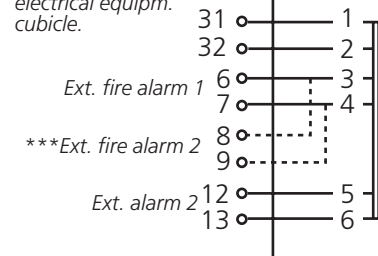
6. Electrical connections

The electrical connections should be wired by a qualified electrician in accordance with local electrical safety regulations.

SMOKE FUNCTION

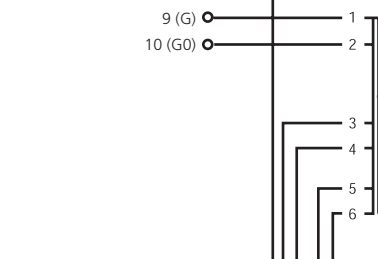
GOLD

Wiring terminals on the control unit and on the electrical equipm. cubicle.

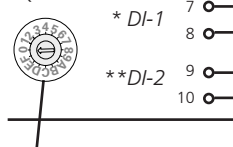


COMPACT

Wiring terminals on the control unit

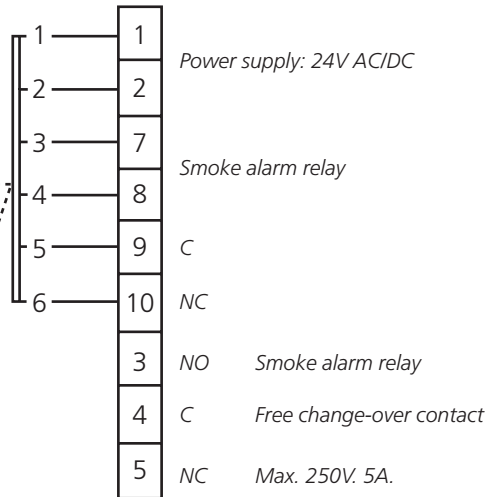


Wiring terminals on the IQnomic+ module



* Should be selected for ext. fire alarm in the micro terminal.
** Should be selected for ext. alarm in the micro terminal.
*** Alternative connections

Smoke detector, supervisory unit



Function selector switch set to position 0.

Function:

If the smoke detector in the duct trips, the alarm is forwarded to GOLD/COMPACT, external fire alarm.

When the smoke detectors become dirty, a service alarm is initiated and is forwarded to GOLD/COMPACT via the external alarm 2.

Alarms can be reset on the smoke detector and in the hand-held micro terminal.

