Panasonic



6377

Uniguard-4 duct detector chamber

Fire alarm solutions
technical description

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1. INTRODUCTION

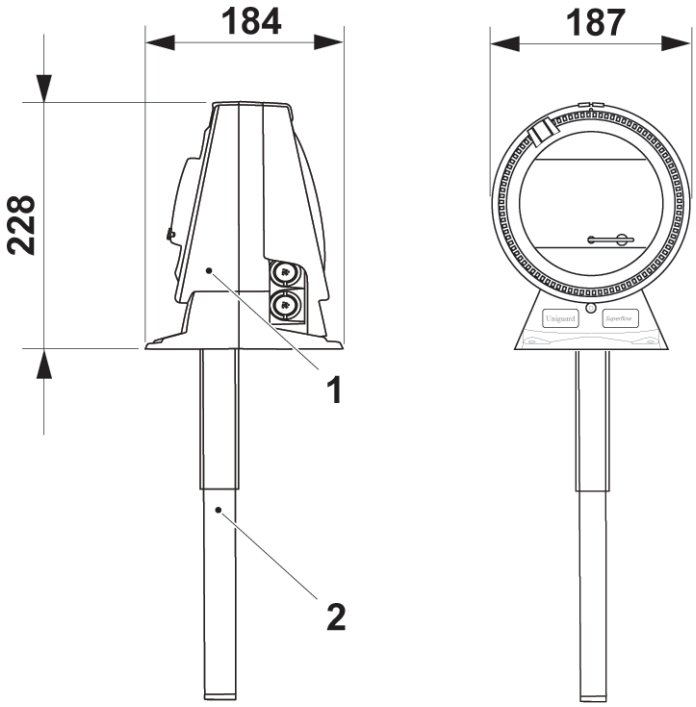
This document describes the Uniguard-4 duct detector chamber;
Type number. UG-4 PEW.
Article number 6377.
The document contains information about the product and instructions on how to mount and connect it.

2. ABBREVIATIONS

UG-4 PEW	Uniguard-4 Panasonic Electric Works

3. GENERAL DESCRIPTION

Uniguard-4 detects smoke in ventilation ducts and combines a smoke detector and an adaptor system where both venturi pipe and housing are specially designed for optimum airflow through the smoke detector.
The system fulfills all the requirements for safe fire detection with airflow speeds from 0,5 m/s to 20 m/s.



(Measures in mm)

1. Detector housing
2. Venturi pipe

3.1. DETECTOR HOUSING

The detector housing has a test hole in the cover.

3.2. VENTURI PIPE

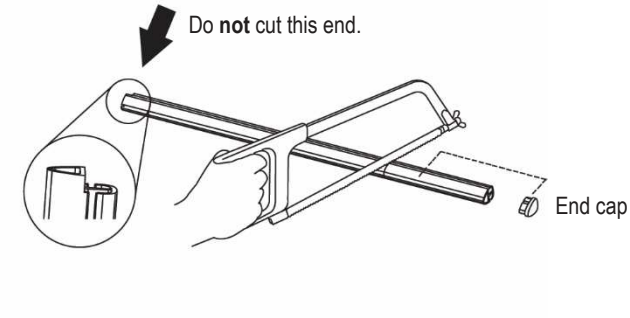
The venturi pipes are available in two lengths;

- Venturi pipe 0.6 m (standard)
- Extension pipe 1.06 m.

The standard venturi 0.6 meter pipe is mounted on the Uniguard-4. For ducts with a Ø of larger than 0.6 meter the extension pipe must be used.

When the ventilation duct is wider than 0.6 m (diameter), the venturi pipe should penetrate the whole duct.

The venturi pipe is made of aluminum and can easily be shortened to required length.



3.2.1. EXTENSION PIPE

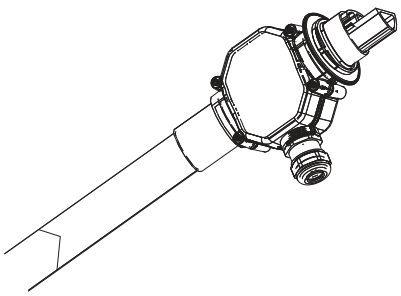
The extension pipe is available in 1.06 meter and used to extend the venturi pipe. The extension pipe must also be used for ducts with a Ø of larger than 0.6 meter.
Place the supplied rubber gasket inside the extension pipe and mount the extension pipe to the venturi pipe with the gasket between. Make sure that the pipes are completely pushed together. Secure the pipe by using the two supplied screws.

3.2.2. VENTURI EFFECT

The cross-section (shape) of the venturi pipe gives an optimum of venturi effect. The slots alongside the venture pipe, for the inlet and the outlet of the venturi air stream, gives maximum air flow and make the venturi pipe “self-adjusting” with a stable and uniform flow from the whole cross section of the ventilation duct.

3.2.3. VENTURI PIPES WITH BUILT-IN FAN

A venturi pipe with a built-in booster fan can be used if the air flow is low. The venturi pipe with built-in fan is available in 0.6 m. The venturi pipe with built-in fan can be extended with the extension pipe.



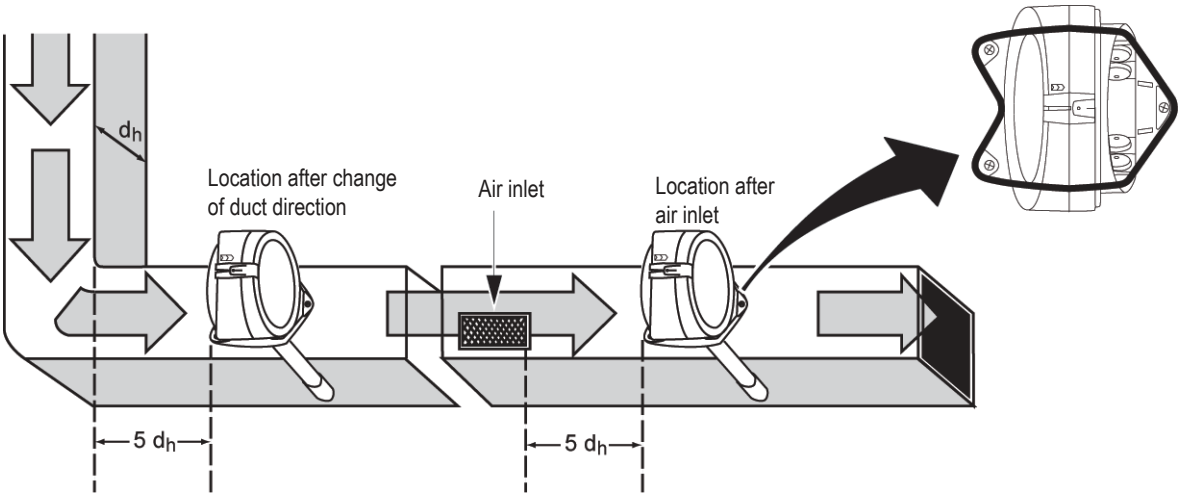
For the built-in fan, an extra 24 V AC or 24 V DC, 75 mA is required.

4. MOUNTING

The Uniguard-4 must be mounted on the ventilation ducts. The Uniguard-4 can be installed on any side of the duct.

For the airflow through the adaptor to be representative of the airflow in the ventilation duct, install the detector at a place where normally flow meters etc. should be mounted.
We recommend that the Uniguard-4 is mounted at an equal distance from heating, cooling, or humidity devices, and similar to the positioning for flow monitors.
A distance of 3 times the duct diameter (dh) should be left **before** a damper, filter or change of the duct direction, and 5 times the duct diameter (dh) **after** these devices.

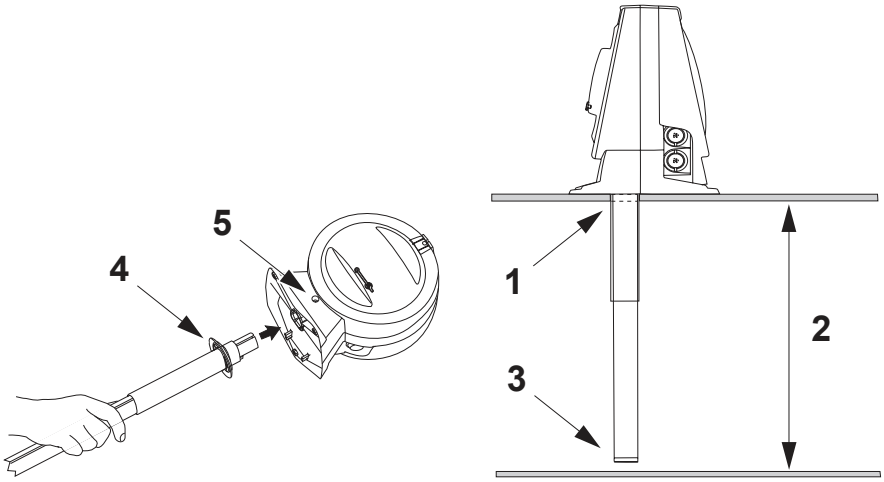
The arrow-shaped foot of the Uniguard, shall be installed in the air flow direction. See below.



Do not drill any holes in the cover for signs or such.
Holes will cause air leakages and seriously disturb the function of the detector.

4.1. MOUNTING PROCEDURE

a) Drill a hole in the duct: - without UG-bracket - Ø 38 mm
   See also section 4.1.3. MOUNTING WITH UG-BRACKET on page 11.
b) Measure the diameter of the duct.
c) Shorten the pipe, if necessary. The pipe should penetrate approximately 90% of the width of the duct.
d) Insert the end plug.
e) Mount the black gasket on the pipe.
f) Insert the pipe into the bottom of the Uniguard-4.
g) Secure the pipe with the locking screw.
h) Mount the pipe and the Uniguard-4 on the duct.
i) Secure the bottom (foot) of the Uniguard-4 with the three screws.
   With insulated or circular ducts - use the Uniguard-4 bracket 6382.



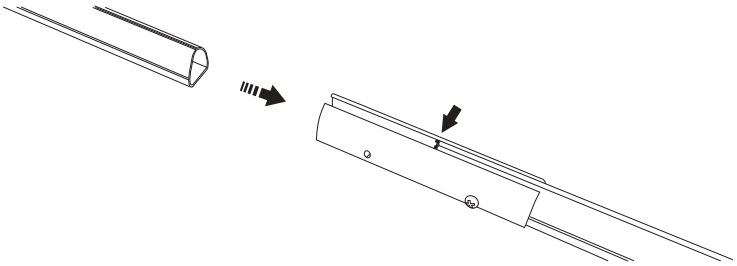
1. Hole Ø 38 mm
2. Max 0,6 m
3. End plug
4. Black gasket
5. Locking screw

4.1.1. MOUNTING ON LARGE DUCTS

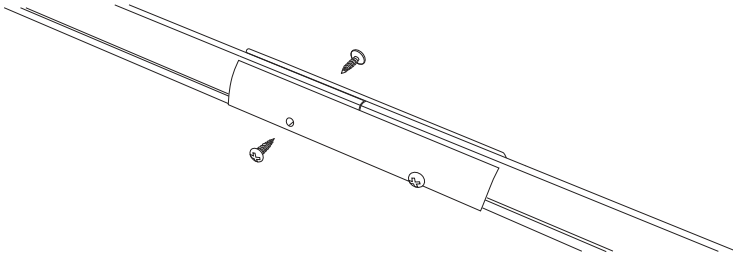
For ducts with a diameter larger than 0,6 m the extension pipe must be used. The venturi pipe should penetrate the whole duct.

Follow the instructions in section 4.1. MOUNTING PROCEDURE on page 8.

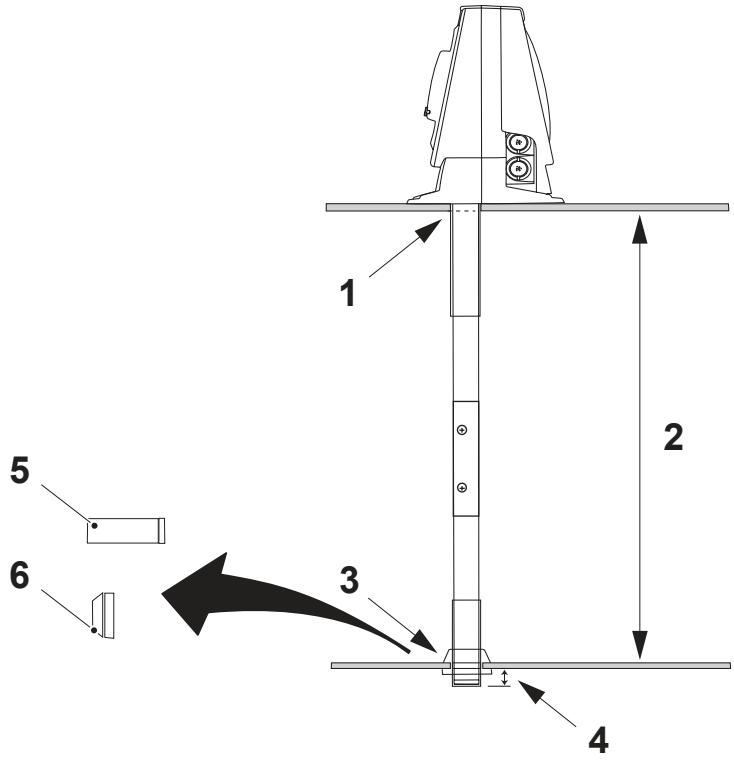
a) Place the supplied rubber gasket inside the venturi pipe.
b) Mount the extension pipe to the regular venturi pipe with the gasket between, see arrow. Make sure that the pipes are completely pushed together.



c) Secure the pipes by using the two supplied screws.



a) Drill a Ø 51 mm hole in the bottom of the duct.
b) If necessary, cut the extension pipe to required length.
c) Insert the end-plug.
d) Put on the rubber gasket, TET 26-35.



1. Hole Ø 38 mm
2. More than 0,6 m
3. Hole Ø 51 mm
4. Venturi pipe max 30 mm outside the duct wall
5. End-plug
6. Rubber gasket, TET 26-35

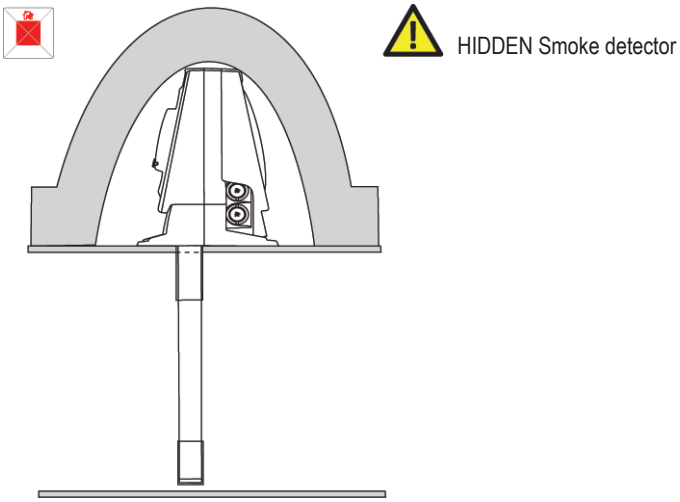
4.1.2. COLD ENVIRONMENTS / OUTDOOR

Mounting the Uniguard for example in cold attics or outdoor can cause problems with condensation.

INDOOR

Use insulation cover of 100-200 mm and protect the entire Uniguard.

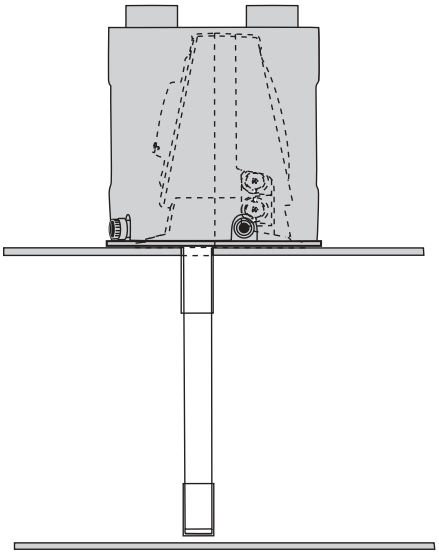
A sign should be used to show location of the detector. Also use an external LED, indicating fire alarm.



HIDDEN Smoke detector

OUTDOOR

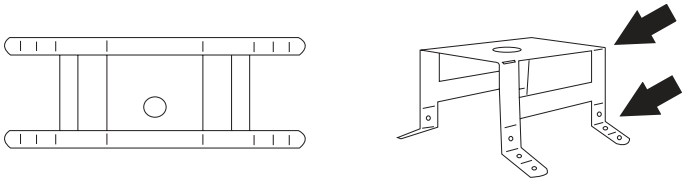
For outdoor location use protection cover for example Calectro´s UG-COVER.



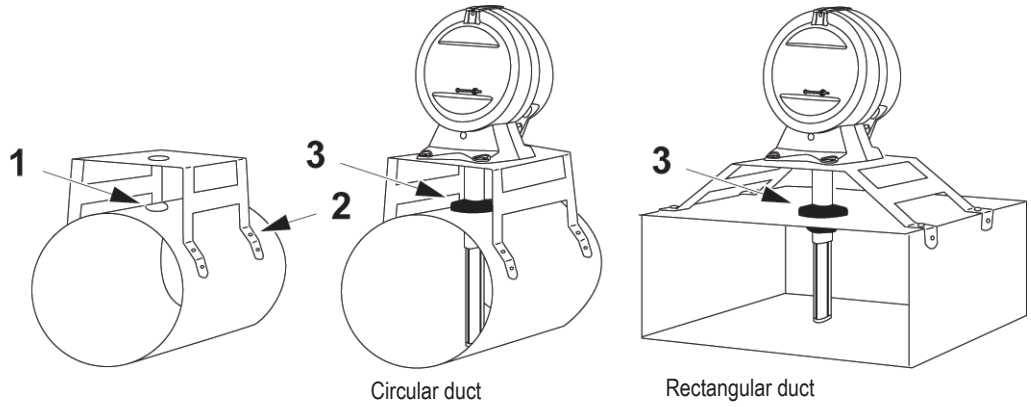
4.1.3. MOUNTING WITH UG-BRACKET

The UG-bracket is used for circular or insulated rectangular ducts. Using the UG-bracket, the diameter of the duct can be as small as 100 mm.

a) The UG-bracket is suppled flat. It is easily bent and shaped to fit a circular or rectangular duct.



b) Drill a hole in the duct, Ø 51 mm.
c) Fix the bracket on to the duct.
d) Make sure to mount the rubber gasket on to the venturi pipe.



Circular duct

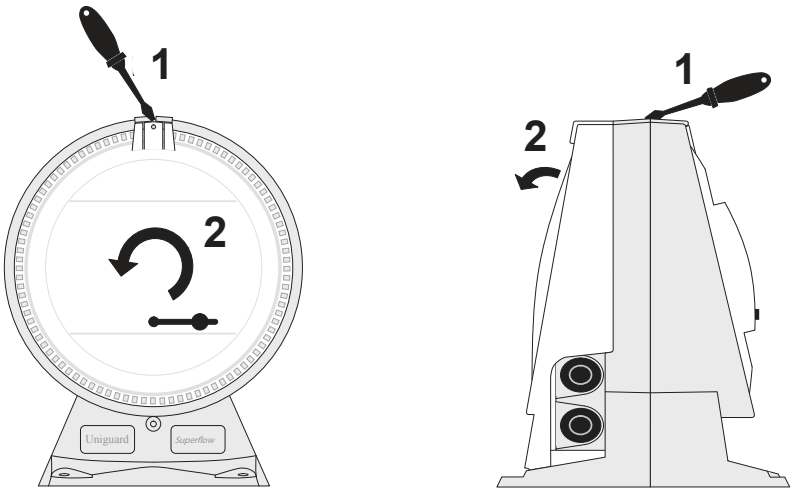
Rectangular duct

1. Hole Ø 51 mm
2. Fixing points
3. Rubber gasket

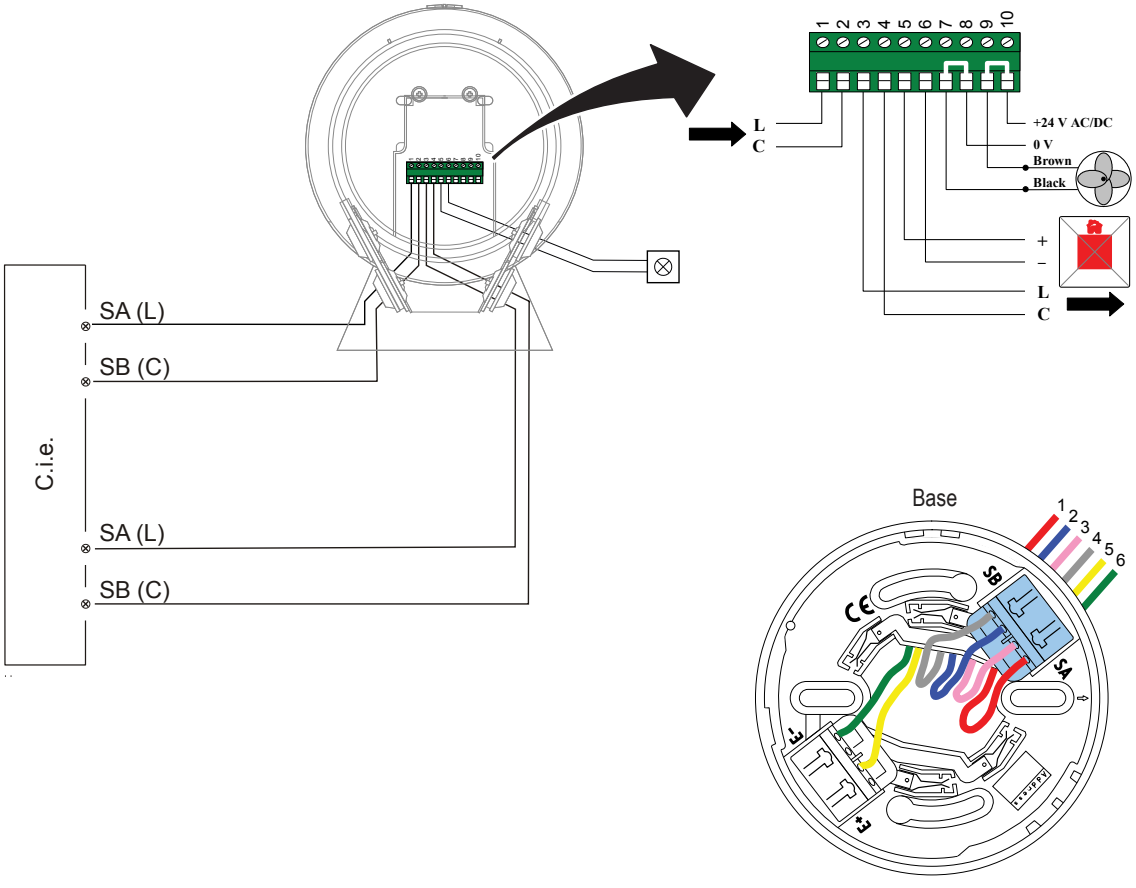
5. INSTALLATION AND WIRING

Screen wire termination is not provided.

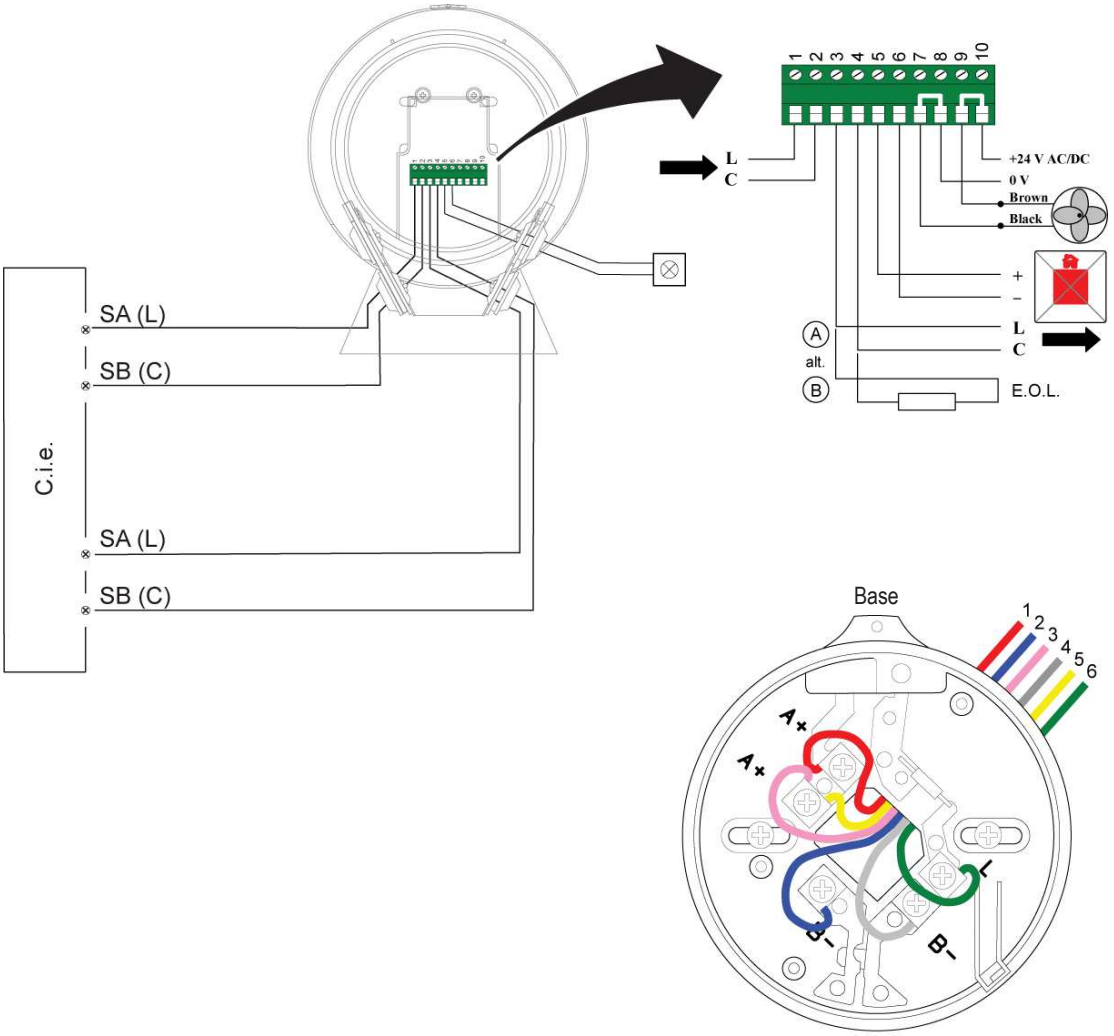
5.1. OPEN THE UNIGUARD



5.2. WIRING FOR UNIGUARD WITH 3312, 3312F/FL (4401)



5.3. WIRING FOR UNIGUARD WITH 2324 (4452)



6. FINAL CHECKS

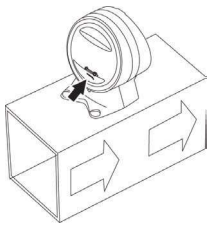
6.1. FUNCTION TEST

When installation is complete, the detector should be tested. This can be carried out with smoke or suitable test spray.
Move the test hole plug to the side. Briefly release a spray of aerosol and wait until the detector LED is turned on.

Do not forget to refit the test hole plug after the test.

6.2. FLOW INDICATOR

The Uniguard is supplied with an indicator, a red plastic “tongue”, which – when the detector is correctly installed – is bent outwards due to the airflow.



If the indicator does not move, you should consider a new positioning of the Uniguard, or install Uniguard with a pipe with built-in fan.

6.3. CHECK

- Check that the air flow direction arrows have the same direction as the air flow in the duct
- Check that the plastic plug of the test hole is properly mounted
- Check that the flow indicator oscillates ensuring proper air flow through the detector
- It is recommended that smoke from a smoke generator is introduced into the duct to check the function of the detector

7. TECHNICAL DATA

All current consumptions are valid by nominal voltage and by 25 °C.

Duct air flow velocity	0.5 to 20 m/s
Material	ABS
Ambient temperature: Operating Storage	 -10 to +50 °C -25 to +75 °C
Ambient humidity	Maximum 99 % RH (Non condensing)
Ingress protection rating	IP 54
Size: H x W x D	 228 x 187 x 184 mm
Weight (including batteries):	690 g (Housing only)
Colour	Grey (RAL 7040)

8. APPROVALS

Applicable directive/ Approval	Applicable standards	Notified body
RoHS	EN IEC 63000	Self declaration

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