Honeywell
GENT

Conventional Duct Detector (17815-01) Data and Installation

Warning

In order to ensure correct and safe operation of the product, all guidelines concerning its transport, storage, installation, and mounting must be observed.

Safety-relevant user information

This manual includes all the information required for the proper use of the product.

The term "qualified personnel' refer to employees from the organisation servicing the fire detection and alarm system, such as project engineers, trained service engineers and trained installation or service personnel. All qualified personnel must be familiar with the safety information included in this manual and on the product itself.

Safety warnings

The following information is given in the interest of personal safety and to prevent damage to the product described in this manual and all equipment connected to it.

Warning: A warning is given to warn of danger of death, severe injury or considerable material damage if the relevant safety precautions are not observed.

Note: Highlights important information which should be read with particular attention.

Overview

The duct detector 17815-01 is used in combination with special Venturi tubes and a fire detector for the surveillance of air ducts in buildings. Note that the relative humidity must not exceed 95% and condensation is not permitted. This unit must only be used indoors.

The kit is mounted on the outside of the air duct with the Venturi tube protruding through a hole into the duct. A sample of air inside the duct is fed into the venturi tube and into the smoke detector, which is located the duct housing. The air is then returned to the duct through the venturi tube. When the smoke density in the sampled air reaches the trigger level of the smoke detector, an alarm signal will be triggered on the fire alarm control panel.

Mounting

The duct detector is aligned in accordance with the arrow on the top cover. Alignment is correct if the arrow points in the same direction as the air flow inside the duct. Please note that the Venturi tube should be located centrally in the duct.
If the detector is to be mounted in the vicinity of reducing dampers or regulating flaps, filter units or bends, the following minimum distances must be observed:

- upstream - at least 5 x the nominal diameter of the duct system
- downstream - at least 3 x the nominal diameter of the duct system

Note:	If the minimum dimensions of the entry and exit paths cannot be provided, care must be taken to ensure an air flow free of turbulence at the Venturi tube when installing the air duct detector. In order to ensure correct operation of the air duct detector, it may be necessary to have the air duct cross-section adapted by the company installing the air duct to the required dimensions.

Calculation of Upstream and Downstream distances

Note:	The value d_h is used in the mounting location, information on page 4.

$d_h = D$

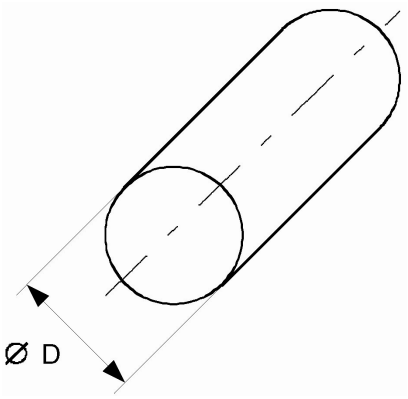


Figure 1 Duct system with circular cross-section

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

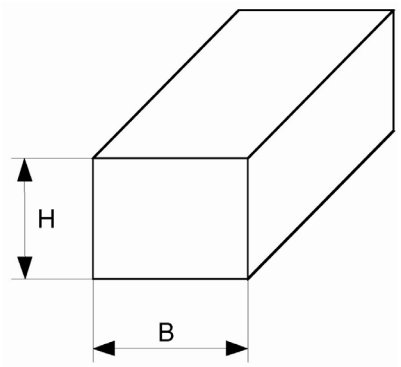


Figure 2 Duct system with rectangular cross-section

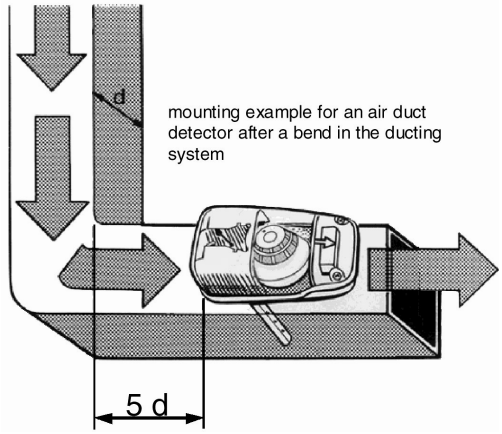


Figure 3 Mounting example for an air duct detector after a bend in the ducting system air intake

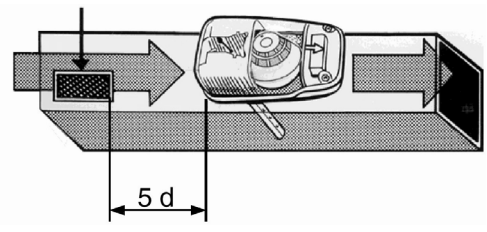


Figure 4 Mounting example for an air duct detector downstream from an air intake

Typical Application Examples for locating the Duct Detectors

Note:	ADD – Duct detector with venturi tube indicating alternative mounting positions.

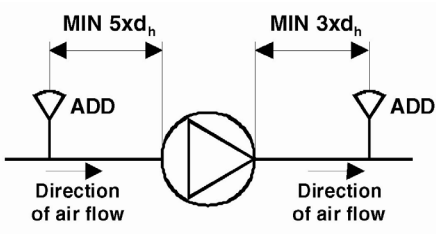


Figure 5 Exhauster

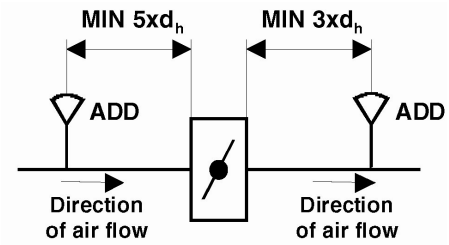


Figure 6 Reducing damper or regulating flap

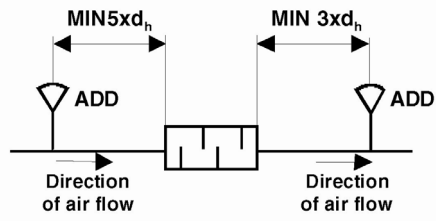


Figure 7 Silencer

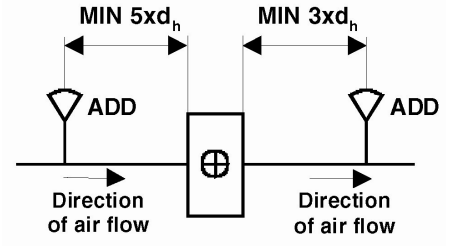


Figure 8 Air reservoir

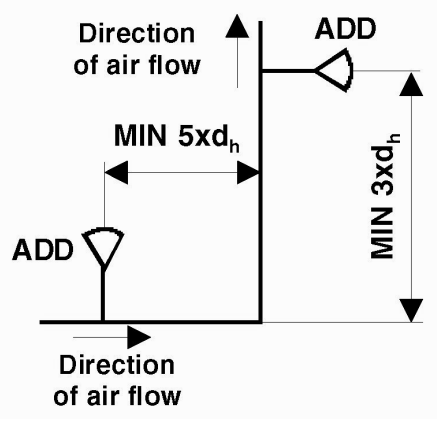


Figure 9 Bend in the air duct system

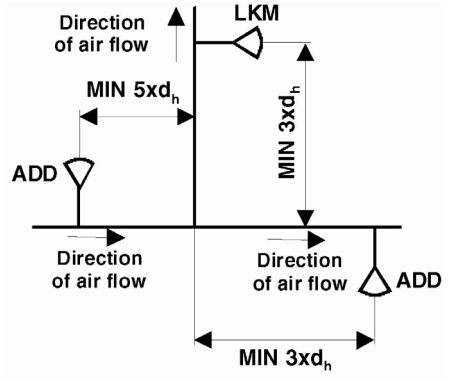


Figure 10 Branch in the air duct system

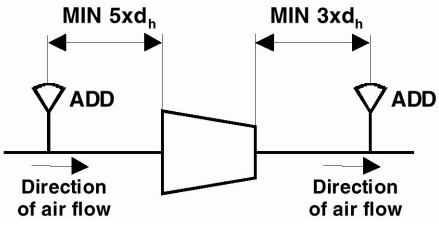


Figure 11 Diameter decrease or increase in the air duct system

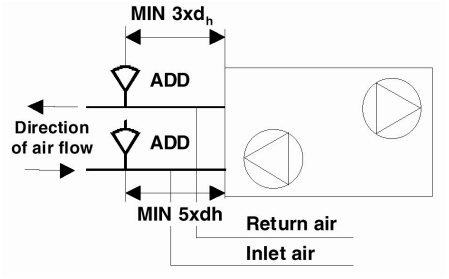


Figure 12 Air control unit

Mounting Kit For Circular And Insulated Air Duct Systems

The mounting kit (part no. 781459, not included) has to be used for mounting the duct detector on insulated or circular air duct systems. The mounting kit can simply be bent to fit the shape of the duct. Pre-punched mounting holes are provided for easy installation.

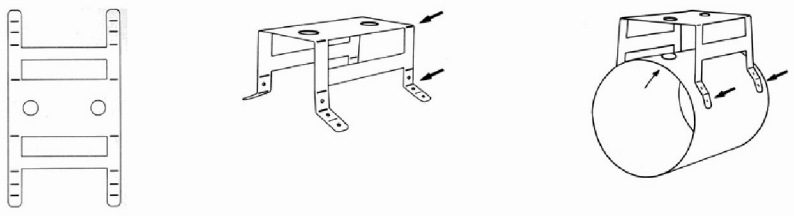


Figure 13 Mounting kit for insulated and circular air duct systems Rubber grommet

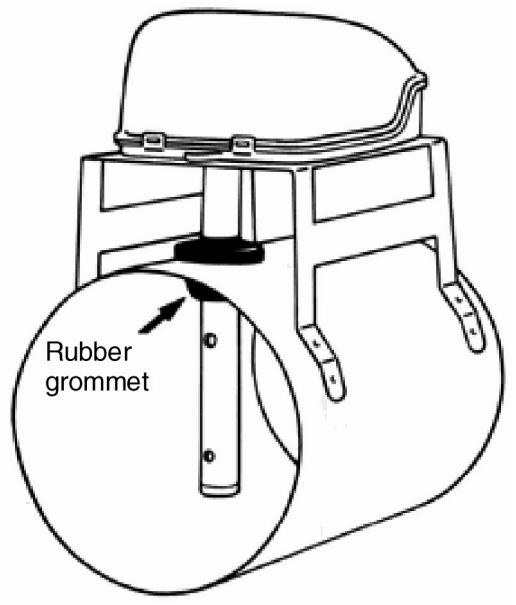


Figure 14 Mounting example, circular air duct systems

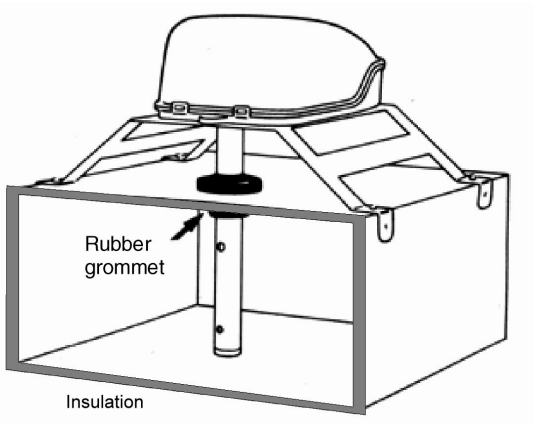


Figure 15 Mounting example, insulated rectangular air duct system

Selection and fitting of the Venturi tube

Venturi tubes are available in three different lengths which can then be cut to the required length. If a duct mounting kit is to be used then the venturi tube length has to be increased to take account of the spacing introduced by the kit, see fig 14 & 15. Any venturi tube holes which are outside the duct must be sealed ensuring that the inside of the tube is not blocked.

Diameter of the air duct	Length of the Venturi tube
0.14 m to 0.8 m	0.6 m
#0.8 m to 1.4 m	1.5 m
1.4 m to 2.7 m	2.8 m

This tube is supplied as standard with the duct detector kit.

Air duct diameters up to 0.8 m:

1 The length of the Venturi tube should be approx. 90 % of the diameter of the air duct.

2 Shorten the Venturi tube, if necessary. Please observe the note (Do not shorten this end) on the tube itself.

3 Close the end of the Venturi tube by means of the supplied sealing cap. See Figure 16 below.

Air duct diameters between 0.8 m and 2.7 m:

1 The length of the Venturi tube has to be approx. 30 mm greater than the diameter of the air duct.

Please note any additional distance introduced by the mounting kit.

2 Shorten the Venturi tube, if necessary. Please observe the note (Do not shorten this end) on the tube itself.

3 Close the end of the Venturi tube by means of the supplied rubber seal. See Figure 18 on page 7.

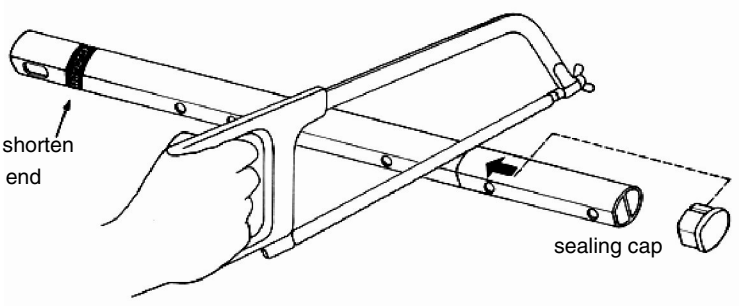


Figure 16 Cutting the Venturi tube

Mounting Venturi Tubes up to 0.6 m

Cut the following holes into the air duct:

- Mounting Venturi tubes up to 0.6 m without a mounting kit. (Mounting hole diameter: 35 mm)

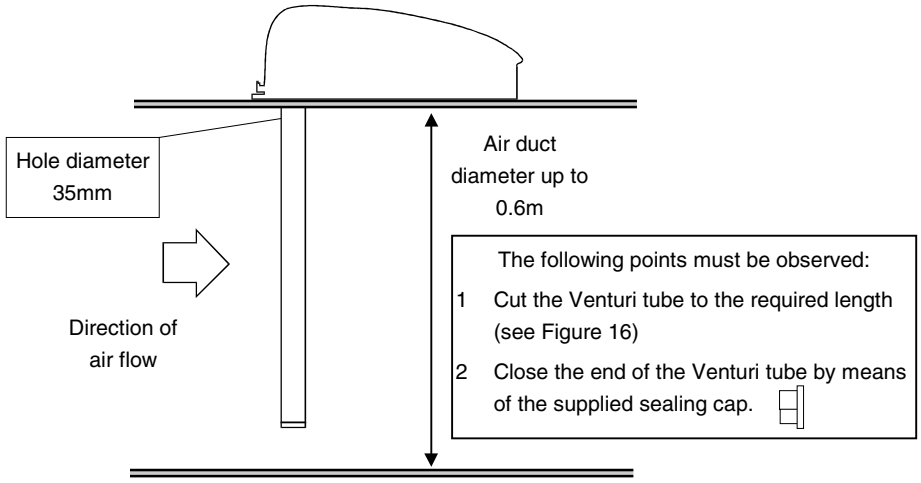


Figure 17 Mounting Venturi tubes up to 0.6 m

Mounting Venturi Tubes Between 0.8 m and 2.8 m

Cut the following holes into the air duct:

- Mounting Venturi tubes between 0.8 m and 2.8 m with or without a mounting kit. (Mounting hole diameters: 35 mm and 48 mm.)

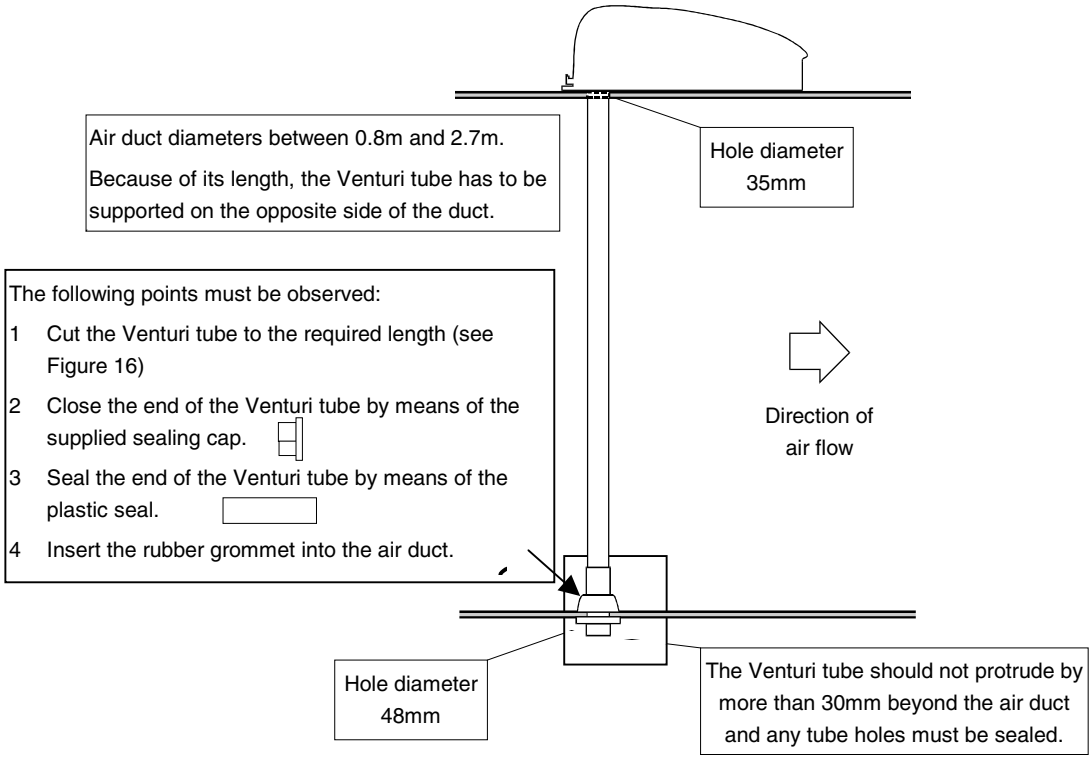


Figure 18 Mounting Venturi tubes between 0.8 m and 2.8 m

Fitting the Venturi Tube

Mount the Venturi tube into the bottom part of the duct detector.

1 Fit the Venturi tube gasket onto the venturi tube making sure it is the correct way round.

2 Fit the Venturi tube into the hole in the bottom part of the duct detector.

3 Fasten the Venturi tube to the duct detector using the screw supplied.

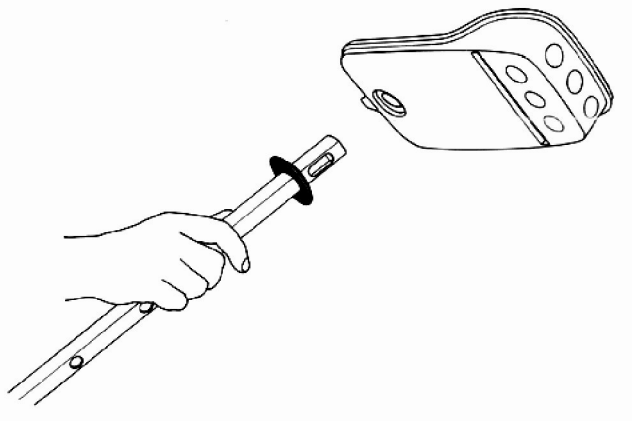


Figure 19 Mounting the Venturi tube

Mounting the Duct Detector on to the Air Duct

1 Mount the duct detector onto the air duct as shown in the following illustrations:

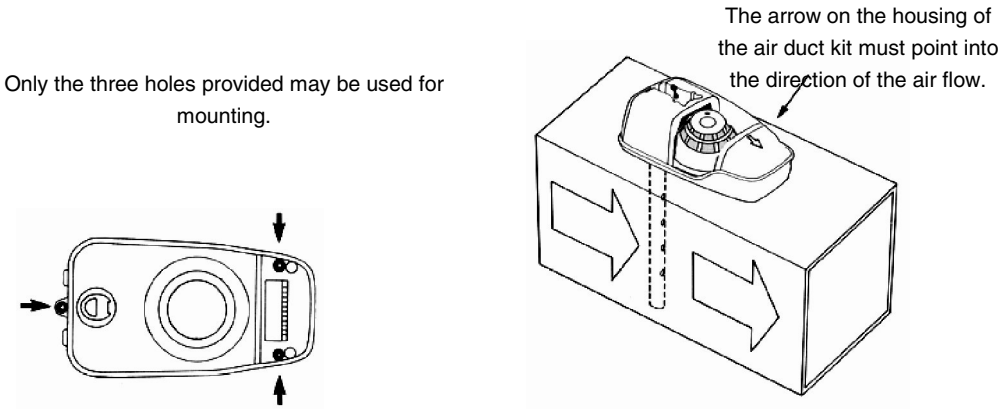
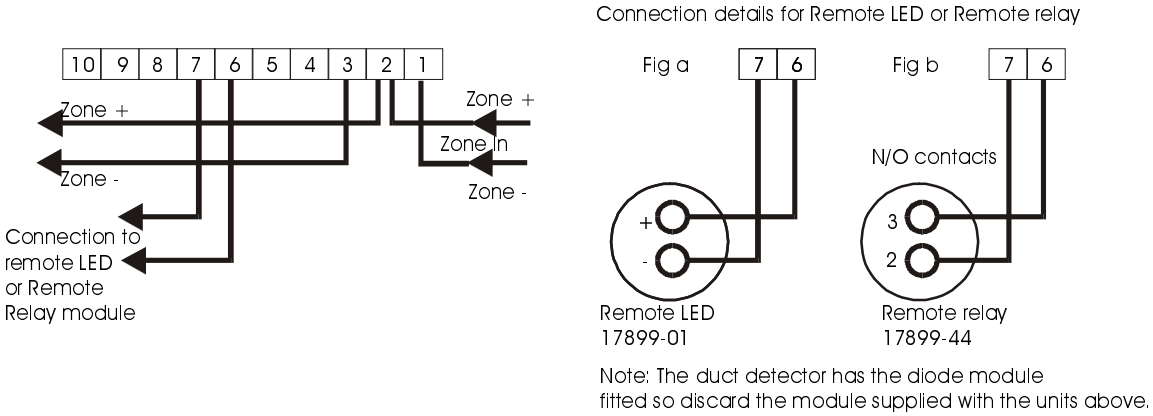


Figure 20 Mounting and orientation of the air duct detector.

Detector Base Wiring

The base terminals are pre-wired to the terminal block. All external connections are made inside the duct detector via the terminal block.

Terminal connection



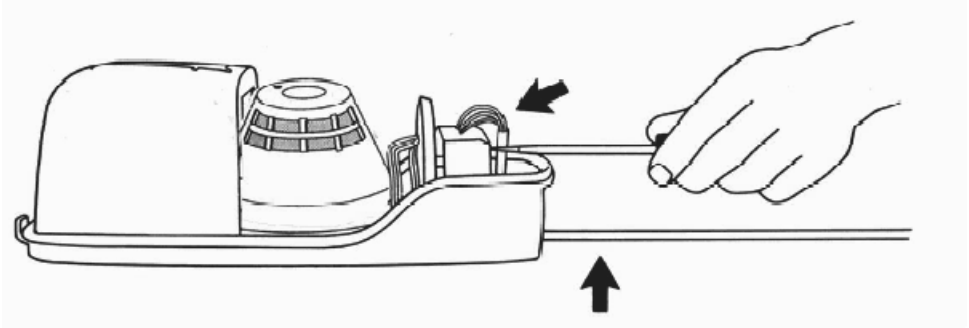


Figure 21 Wiring of the duct detector

Mounting the deflector unit after fitting or removal of Detector

Fig 22 - illustrates the part that is removed to replace the detector.

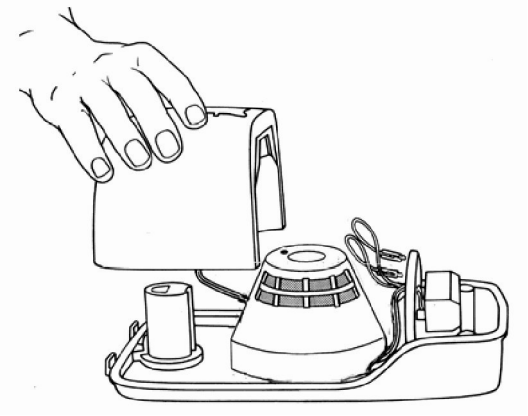


Figure 22 Mounting the deflector unit (illustration shows similar device)

Final Check

Please check the following items very carefully:

1 The arrow on the air duct detector must point in the direction of the air flow inside the air duct.

2 All holes in the air duct must be sealed appropriately

3 The air duct housing must not show any signs of damage. Additional holes MUST not be drilled into the cabinet.

4 The tongue of the flow indicator must be oscillating while there is air flowing through the air duct.

Detector function test

The smoke detector can be tested in the normal way as shown below.

Warning: Detector zones which are disabled or in test mode will not signal any alarms in case of fire.

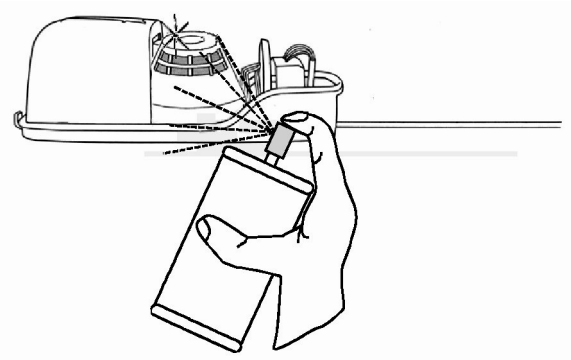


Figure 23 Detector function test

Final Assembly

Close the housing and secure it by means of the screws supplied.

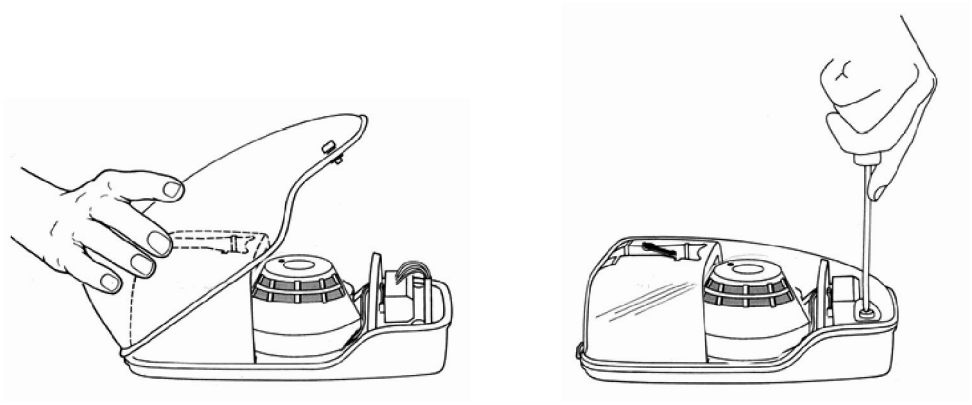


Figure 24 Closing and securing the air duct detector housing

Specifications

Housing (main unit)

Type	Venturi principle air duct kit
Detector cable connection	0.6 mm _ to 1.5 mm² max.
Air velocity	1 m/s to 20 m/s
Ambient temperature	-10 °C to +60 °C
Storage temperature	-10 °C to +60 °C
Protection class	IP 54
Housing	ABS plastic
Weight	approx. 700 g
Dimensions (W x H x D)	120 x 110 x 300 (mm)

Venturi tubes

Length	0.6 m	1.5 m	2.8 m
Weight	0.2 kg	0.6 kg	1.2 kg
Material	Aluminium		

Accessories

Description	**Part no.**
Venturi tube 0.6 m	781456
Venturi tube 1.5 m	781457
Venturi tube 2.8 m	781458
Mounting kit for circular and insulated air ducts	781459
Remote LED	17899-01
Remote Relay module	17899-44

WEEE Directive:
At the end of their useful life, the packaging, product and batteries should be disposed of via a suitable recycling centre.
Do not dispose of with your normal household waste.
Do not burn.

At the end of their useful life, the packaging, product and batteries should be disposed of via a suitable recycling centre and in accordance with national or local legislation.

Honeywell Gent reserves the right to revise this publication from time to time and make changes to the content hereof without obligation to notify any person of such revisions of changes.

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