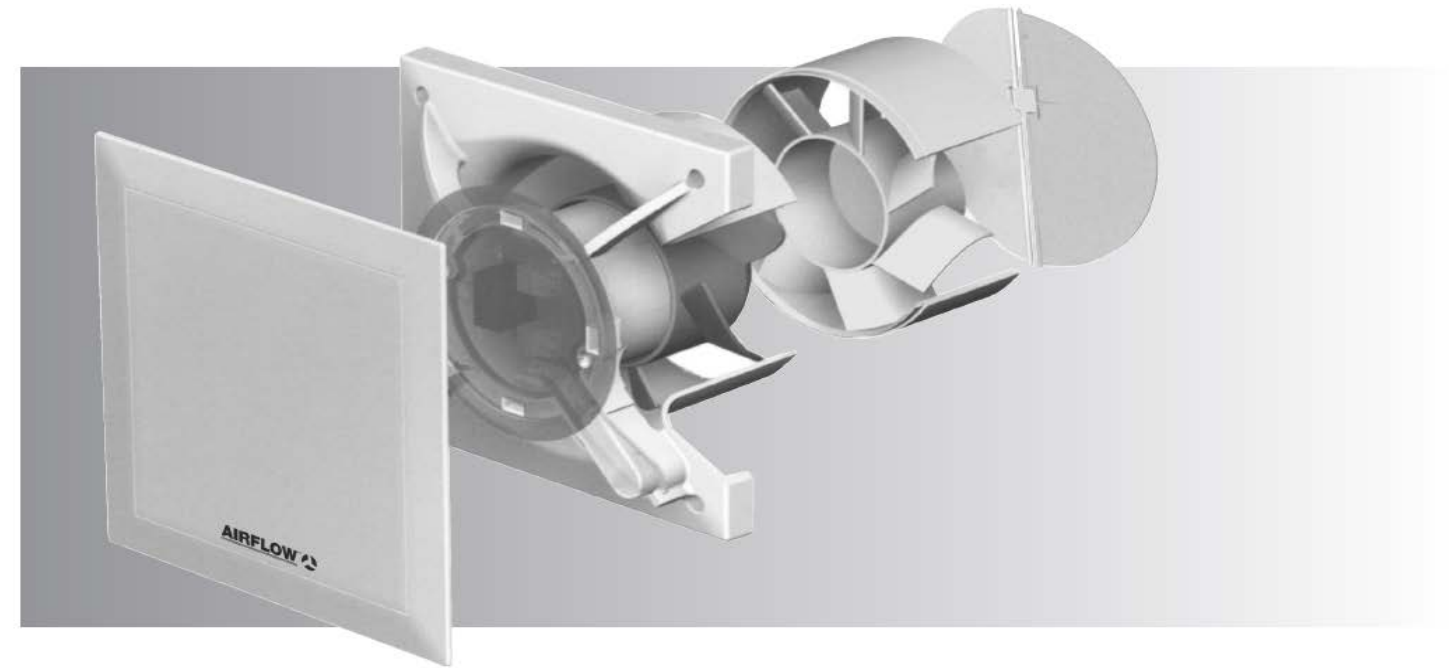


AIRFLOW™

Installation and Operating Instructions QuietAir 100/120mm Axial Fan



MODEL:QT 100MST - Two Speed Fan (75/90m³/hr)

QT 120MST - Two Speed Fan (150/170m³/hr)

with Motion Sensor and Timer



- Low Energy
- Whisper Quiet
- Long Life
- Extra Safe

Warranty:

Applicable to units installed and used in the United Kingdom. Airflow's Warranty covers the QuietAir fan for TWO years. The Warranty can be upgraded to THREE years from date of purchase against faulty material or workmanship by registering on our web site at www.airflow.com. The Warranty covers the product only and not the installation cost.

In the event of any defective parts being found, Airflow Developments Ltd reserve the right to repair or at our discretion replace without charge provided that the unit

1. Has been installed and used in accordance with the fitting and wiring instructions supplied with each unit
2. Has not been connected to an unsuitable electrical supply
3. Has not been subjected to issue, neglect or damage.
4. Has not been modified or repaired by any person not authorised by Airflow Developments Ltd.
5. Has been installed in accordance with latest Building Regulations and IEE wiring regulations.

Airflow Developments shall not be liable for any loss, injury or other consequential damage, in the event of a failure of the equipment or arising from, or in connection with, the equipment excepting only that nothing in this condition shall be construed as to exclude or restrict liability for negligence.

This warranty does not in any way affect any statutory or other consumer rights.

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RANGE

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Correct Disposal of This Product (Waste Electrical & Electronic Equipment)
(Applicable in the European Union and other European countries with separate collection systems)
This marking shown on the product or its Operation and Installation Instruction, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.
Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.
Business users should contact their supplier and check the terms and conditions of the purchase contract.
This product should not be mixed with other commercial wastes for disposal.

CHAPTER 1

INSTALLATION AND OPERATING INSTRUCTIONS

WARNING

- 1.0 Important information
To ensure safety and correct operation please read and observe the following instructions carefully before proceeding. The electrical connection must be fully isolated from the supply up to the final assembly ! Keep the installation and operating instructions as a reference at the device. After the final assembly the document must be handed out to the operator (tenant/owner).
- 1.1 Warning and safety instructions
Accompanying symbol is a safety-relevant prominent warning label. All safety regulations and/or symbols must be absolutely adhered to, so that any danger situation is avoided.
- 1.2 Warranty – Exclusion of liability
If the preceding instructions are not observed all warranty claims and accommodation treatment are excluded. This also applies to any liability claims extended to the manufacturer. The use of accessories not offered or recommended is not permitted. Potential damages are not liable for warranty.
- 1.3 Certificates
If the product is installed correctly and used for its intended purpose, it conforms to all applicable British and European legislation at its date of manufacture.
- 1.4 Receipt
Please check delivery immediately on receipt for accuracy and damage. If damaged, please notify carrier immediately. In case of delayed notification, any possible claim may be void.
- 1.5 Storage
When storing for a prolonged time the following steps are to be taken to avoid damaging influences: Protection of motor by dry, air- dustproof packing (plastic bags with drying agent and moisture indicators). The storage place must be water proof, vibration-free and free of temperature variations. When storing for several years or non rotation of motor an inspection of the bearings with possible relubrication and an electrical inspection to VDE 0701 and VDE 0530 are absolutely necessary before starting operation. When transshipping (especially over longer distances) check if the packing is adequate for method and manner of transportation. Damages due to improper transportation, storage or putting into operation are not liable for warranty.
- 1.6 Application/Operation
The fans are designed for air extraction of living spaces. If the unit is to be used in other applications where high humidity, excessive dust, temperature in excess of 40 °C or long periods at standstill (not running), please contact your local dealer for advice. This also applies for special technical and electrical applications. The complete fan corresponds to protection IP 45 (jet water-protected) , protection class II and is suitable for use in zone 1 of bathrooms.

NOTE

The fan may only be used for its intended purpose !

- 1.7 Performance
The unit must be installed correctly to achieve the optimum performance. This applies to the installation of the unit, the ducting and the replacement air supply.
If installing in a room where the fan can affect a fuel burning device (e.g. a gas boiler) which has a balanced flue, it is the installer's responsibility to ensure that there is sufficient replacement air to prevent fumes being drawn down the flue when the fan is operating at maximum extract rate.
The catalogue noise levels stated are A-rated sound power levels LWA (to DIN 45635 T.1). The A-rated sound pressure level LPA depends on the acoustic condition in the room in which it is installed. These affect considerably the adjusting noise.
- 1.8 General information
Intake air duct: Every room which must be ventilated must have an intake air opening to prevent negative pressure conditions.
- 1.9 Safety
- All servicing and installations may only be carried out by a certified electrician.
 - The fans may be operated only with the rated voltage indicated on the type plate.
 - Technical data on type plate are to be adhered to without fail.
 - The degree of protection given on the type plate is only valid with designed installation in accordance with these installation and operating instructions and with closed fascia.

NOTE

WARNING**1.10 Electrical connection**

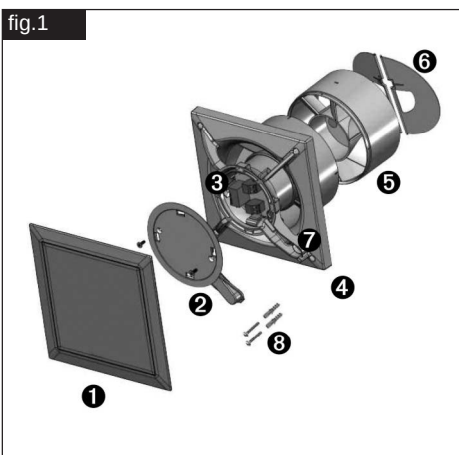
All work must be carried out with the equipment fully isolated from the power supply. The electrical connection are to be carried out in accordance with the relevant wiring diagram and are only to be done by a certified electrician. The electrical connection must be fully isolated from the supply up to the final assembly !
All relevant safety regulation, national standards and norms are to be adhered to. An appliance is required for cut off from the supply with a minimum of 3 mm contact opening of each pole.
The rated voltage and frequency must correspond with the data on the type plate. The insertion of mains supply cable is carried out via a cable grommet which is included in the delivery. Never lead cable over sharp edges. The equipment corresponds to protection IPX5 (jet water-protected).
In addition, they correspond to the safety class II.

1.11 Overview of type.

QuietAir 100MST with motion sensor and timer
QuietAir 120MST with motion sensor and timer

CHAPTER 2**SCOPE OF DELIVERY AND ASSEMBLY****2.0 Scope of delivery / packing unit**

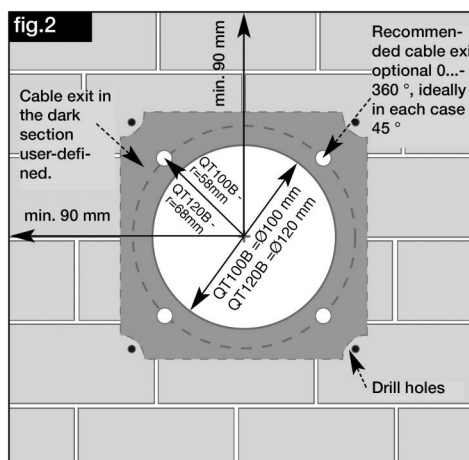
Leave the fan in its box until installation. Check that the fan is in good condition and has not been damaged in transit.



1. Fascia
2. Cover of control board including 2 x fastening screws
3. Electronic control board
4. Casing with impeller
5. Guide vane removable at reduced installation depth
6. Removable back draught shutter
7. Cable grommet
8. Assembly kit
2 x screws with plugs for wall mounting

3.0 Preparation for wall or ceiling installation (surface mounted)

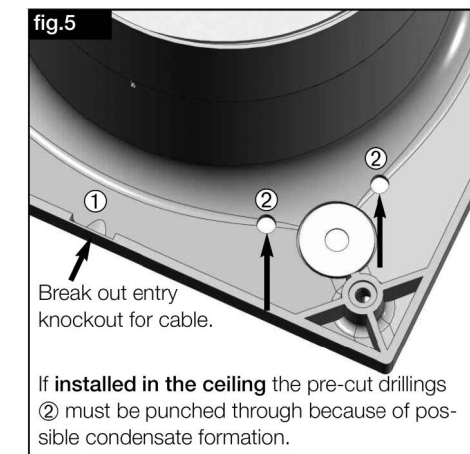
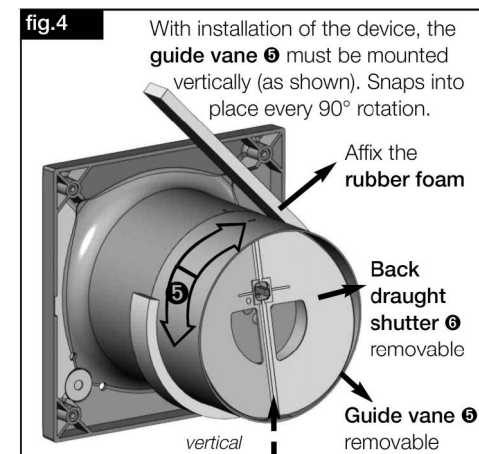
The assembly and start-up of the fan unit should be carried out first after finishing all other work and after the final cleaning in order to avoid damage and contamination of the fan unit.
The position of the cable exit is variable (see fig.2/3).

NOTE**3.1 Cable exit from the wall**

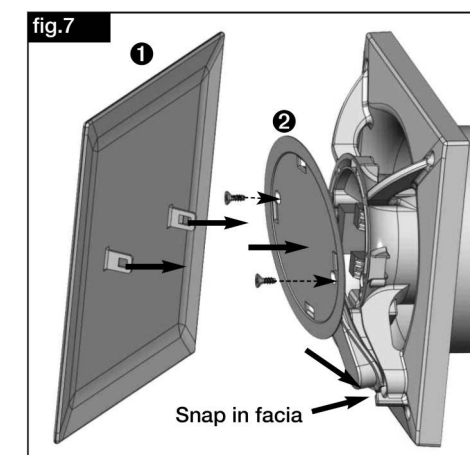
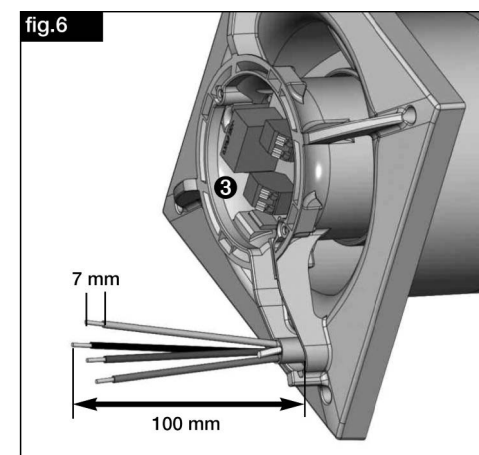
- Distance to the duct centre depending on cable exit 58/68 mm with a variable position under the casing.
- For a simple assembly an exit is recommended as shown (turnable by 90° in each case).
The optimal position is 45° each if the cable exit is directly at the position of the cable grommet.
- Duct inside diameter QT100MST = 100mm / QT120MST = 120mm and distance to room corners: at least 90 mm
- Mounting hole radius QT100MST = 58mm / QT120MST = 68mm

NOTE**3.2 Drill holes**

- Set casing against the wall, mark the holes and drill. Fasten with at least 2 screws and plugs. For surface installation the casing is provided with a side entry knockout (Fig.5, Pos.1) for the cable ! The mains supply cable is to be kept in such a way that no ingress of moisture is made possible along the cable.

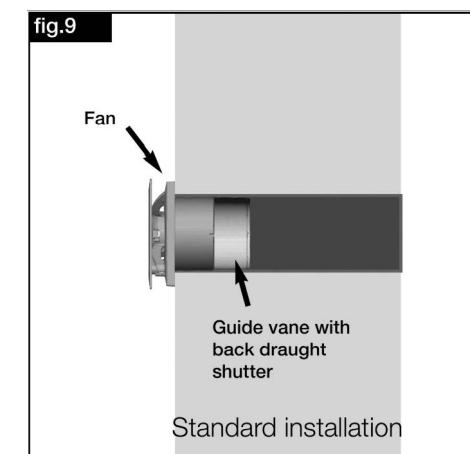
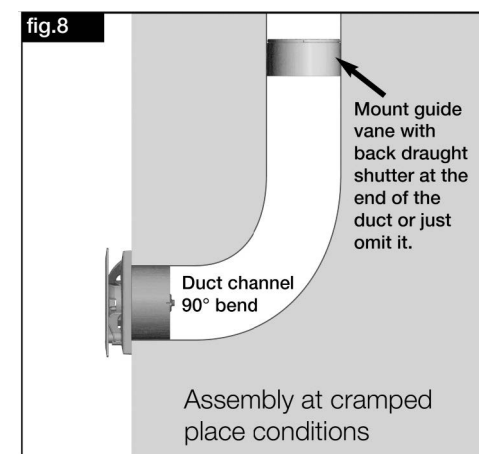
3.3 Wall or ceiling installation**3.4 Cable connections**

1. Pull cable through grommet, don't cut open!
2. Cut cable at least to length 180 mm and remove cable jacket at least 100 mm in length.
3. Connect fan according to wiring diagram (see page 5).
4. Run cable in the conduit. Ensure cable / grommet is sealed to maintain IP45.



- Length of single conductor 100 mm
- Length of stripped insulation 7 mm
- Strip plastic-sheathed cable flush with conduit.

1. Press cover of control board (2) on casing and fasten with screws.
2. Snap in fascia. (1)



Installation and Operation Instructions

CHAPTER 4

ELECTRICAL CONNECTION

WARNING

4.0 Electrical connection

All work must be carried out with the equipment fully isolated from the power supply. The electrical connection is to be carried out in accordance with the relevant wiring diagram and are only to be done by a certified electrician. The fans may not be operated with transformer controllers. All relevant safety regulation, national standards and norms are to be adhered to.

4.1 Electronic control board

The electronic control board allows the operation with 2 speeds (75/90 m³/hr) for QT100MST and (150/170 m³/hr) for QT120MST. The control board is fitted into a splash-proof casing.

EMV regulation

Important indication for the electromagnetic compatibility

Interference resistance according to DIN EN 55014-2 depending upon impulse form and energy rate of 1000 V to 4000 V. With operation with fluorescent tubes, switch power supplies, electronically regulated halogen bulbs etc. these values can be exceeded.

In this case additional suppression shielding activities are necessary (L -, C or RC elements, protection diodes, resistors).

NOTE

CHAPTER 5

CLEANING AND MAINTENANCE

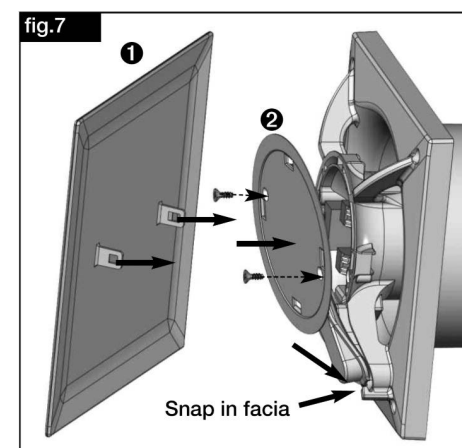
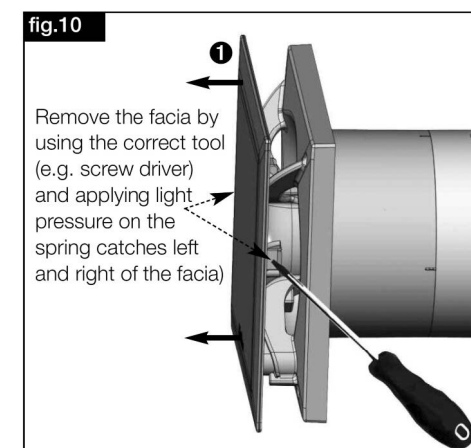
5.0 Cleaning and maintenance

- **IMPORTANT!** Before cleaning, ensure that the fan is isolated from the power supply to prevent unintentional restart! Cleaning and maintenance must **NOT** be carried out by children.
- Clean cover, protective guard and visible housing parts **ONLY** with a damp cloth.
- In principle the device is maintenance-free however the unit is not user serviceable. Nevertheless all necessary maintenance work must be carried out by a qualified electrician.
- Excessive deposits of dirt, dust, fats etc. on the impeller, motor, protective grids and especially between housing and impeller are not allowed; as it can lead to heavy imbalance in the impeller, overheat the motor or even block the impeller. In these instances the device must be cleaned.

5.1 Dismantling of fascia

Procedure:

1. Isolate the device from the power supply and prevent unintentional restart!
2. Remove the fascia (1) by using the correct tool (e.g. screw driver) and applying light pressure on the spring catches left and right of the fascia (Fig.10).
3. Unfasten the screws of the control board cover (2) (Fig.7).



CHAPTER 6

TROUBLESHOOTING

6.0 Troubleshooting

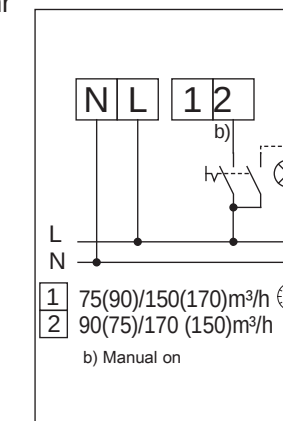
- If the thermal protection trips this could be the result of dirt build-up, a hard running impeller and/or bearings. Too high winding temperature through insufficient motor cooling, or too high air flow temperature could be the cause of disturbance.
- Abnormal noises can mean worn out bearings.
- Vibrations can originate from an unbalanced or dirty impeller or due to the installation.
- Extreme performance reduction can occur if the fan must work against too high resistance of the ventilation system or if there is a lack of sufficient supply air (causing also higher sound level).

Installation and Operation Instructions

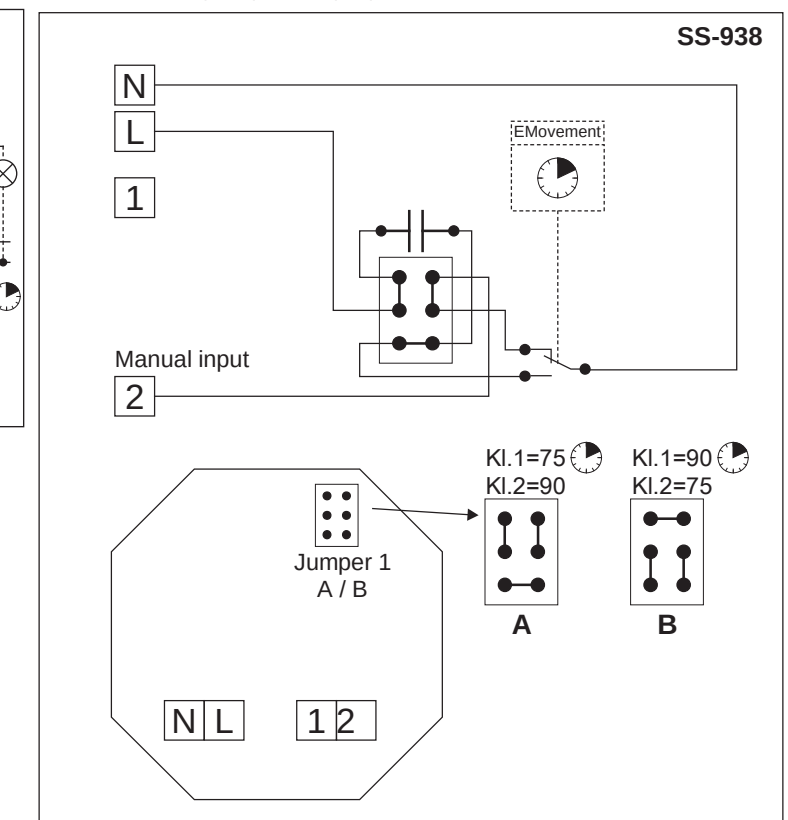
Wiring diagram overview

QT100MST - 75(90)m³/hr
QT120MST - 150(170)m³/hr

Connection client



Internal functional principle / Jumper position



WARNING

Electrical connections:

- Terminal N/L:
The supply voltage of 230V is connected permanently to terminal N/L.
- Switching on the fan is carried out by detection of movement via the infra red motion sensor.
- The timer fixed run-on period of 15 minutes begins as soon as movement is registered by the sensor.
- Terminal 1:
Inactive
- Terminal 2:
The fan can be wired for continuous operation via terminal 2 (see wiring diagram).
- The motion sensor overrides the manual operation when movement is detected (terminal 2).
- When connecting to the light circuit (terminal 1 or 2), a two-pole switch must be used.
- Wiring in parallel of several fans is not permitted.

Jumper

Depending on the jumper setting, the fan QT100MST runs at 75 m³/hr or 90 m³/hr rather than fan QT120MST which runs at 150 m³/hr or 170 m³/hr

Jumper 1 (see wiring diagram SS-938)

QT100/120MST

Position A – Factory setting

K1. 1 = 75 m³/hr / 150 m³/hr, activation via motion sensor
K1. 2 = 90 m³/hr / 170 m³/hr manual on

Position B

K1. 1 = 90 m³/hr / 170 m³/hr, activation via motion sensor
K1. 2 = 75 m³/hr / 150 m³/hr, manual on

Operation mode of the motion sensor

The sensor registers the heat emission of human beings within its range. If a person enters a room, the sensor activates the fan into operation. When no more movement is registered within the room, the timer run-on period of approx 15 minutes starts. The timer is reset to 15 minutes every time the sensor registers movement during the run on period.

Maximum monitoring range

Maximum distance of 5 m within an angle span of 100° horizontal and 82° vertical.

(Standard installation position, cable entry down right)

The temperature difference between object and background must be at least 4°C. Lowest object speed is 0.5 to 1.5 m/s. The effective range depends on the temperature difference and speed of movement.

The sensor cannot detect movement, if it is covered or obscured, e.g. by a shower curtain or the like. When installing the fan the best detection span is reached if the predominant direction of motion takes place in the room crossways to the sensor. There is an area directly in front of the sensor (0°), where no detection can be possible.

Operation test – Test mode:

Initially when applying the supply voltage, the fan is in the test mode for 1 minute. In the first 9 seconds the sensor is disabled and the fan switches on. After 9 sec. the fan stops, and the sensor is ready for use. For the remaining 51 sec. the fan starts with every movement registered in the monitoring area, however, the fan will only operate for 5 seconds. After 60 seconds the test mode is complete. Thereafter any detected movement will result in the fan operating for the fixed 15 minute run-on period.

Addendum – 10/2016

The Building Regulations 2010, Statutory Instrument Part 9, paragraph 42, imposes a requirement that testing and reporting of mechanical ventilation performance is conducted in accordance with an approved procedure.

Compliance with this requirement by an assessed and registered 'Competent Person' should follow a 'Best Practice' process and adopt air flow measurement, Method A – The Unconditional Method – using a suitable UKAS certified measuring instrument. Generically referred to as a 'Zero Pressure Air Flow Meter' or 'Powered Flow Meter'.

Further information on this method is detailed in NHBC Building Regulations Guidance Note G272a 10/13 and BSRIA 'A Guide to Measuring air flow rates' document BG46/2015