



SELV Base Units:
iCON15S – 72591801
iCON30S – 72591901

iCON™ SELV Domestic Ventilators

Installation, Maintenance and Use

iCON SELV (Safety Extra Low Voltage) ventilators are available in 2 model sizes and can be fitted to a wall or ceiling. Each fan requires a suitable sized hole through the wall or ceiling structure which connects into a ducting system venting to the outside. The external opening should be covered by an external grille, available separately from Airflow.

The iCON SELV fans have IPX4 rated housings, they are double-insulated and are suitable for fitting in Zone 1, 2 or 3 of bathrooms, toilets, kitchens, utility rooms and inside shower cubicles.

The iCON SELV transformer unit has an IP55 rated housing and must be fitted outside of Zones 0, 1 and 2. It is usually installed outside the room.

Note: On-off switches for ventilators shall be selected and sited in accordance with electrical safety regulations and standards.

Whilst the iCON range can be used as a simple ventilator powered via the iCON transformer unit, and connected to either a switch or into a lighting circuit, each ventilator can also be fitted with an internal control module. The control function options include: timer, PIR, humidity, pull-cord and various standard combinations of these. Modules are available separately and can be fitted at the time of installation or retrofitted. [See: Modules for iCON SELV]

All installation to be carried out by a qualified person.

Safety Precautions and General Recommendations

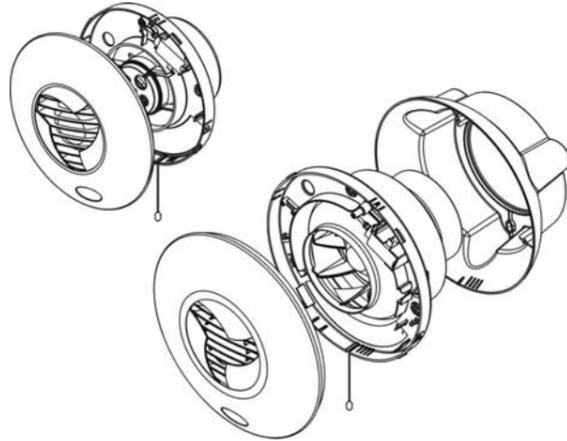
- Observe all appropriate safety precautions when using steps and ladders.
- Wear eye protection when drilling, cutting or breaking out walls or ceilings.
- Check for buried cables or pipes before drilling or cutting walls or ceilings.

IMPORTANT: Read all instructions fully, in conjunction with the diagrams, before commencing installation.

- All relevant regulations and requirements must be strictly obeyed to ensure safe operation and maintenance of iCON domestic ventilators.
- The ventilator must be sited and connected in accordance with all current European regulations or appropriate National standards in other countries.
- iCON SELV ventilator units are not suitable for use in Zone 0, [See also: Installation].
- iCON SELV transformer unit (230V/12V DC) is not suitable for use in Zones 0, 1 or 2. It must be sited out of reach of anyone using the bath, shower or sink, and is best fitted outside the room or in an accessible loft or roof space, [See also: Installation].
- Never cover the transformer unit with thermal insulation or any other material and ensure adequate air circulation.
- The recommended maximum length of cable between the ventilator and transformer is 5m for 1.5 mm² cables. Do not place the ventilator near direct heat sources, e.g. radiant heaters, or where temperatures can exceed 40°C (104°F).
- If a ventilator is placed in a room containing a fuel-burning appliance, e.g. gas-fired boiler, the installer is responsible for ensuring that the air replacement in the room is adequate for both the ventilator and the fuel-burning appliance.

- The installer is responsible for ensuring that the capacity of the ventilator does not cause combustion fumes to be drawn into a room containing non-balanced flue fuel-burning appliances. Air intakes should be at least 500mm away from the flue.
- To optimise airflow within the room, ventilators should be placed as far away as possible and opposite to the main source of air replacement, without infringing forbidden zones.
- All wall and ceiling holes for iCON ventilators should be lined with ducting, such as rigid plastic soil pipe; aluminium or stainless steel are also acceptable. Flexible ducting can be used provided that it is fixed to remain taut and has generous bend radii to avoid kinking.
- Do not connect the exhaust from the ventilator into ducting that is also used for venting non-electrical appliances or equipment.
- Do not connect the exhaust air from the ventilator into the flues of fuel-burning appliances.
- The transformer unit shall be connected to a double-pole, isolating mains switch (230V/50Hz) conforming to Cat.III or with a contact separation of at least 3 mm.
- An external 3A fuse is required for each transformer unit. The transformer and the ventilator unit do not have an internal fuse.
- iCON SELV units are double insulated, and therefore do not require an earth connection.
- Always isolate the transformer unit from the mains supply before removing the fan cover for maintenance, [See also: Maintenance].

Installation



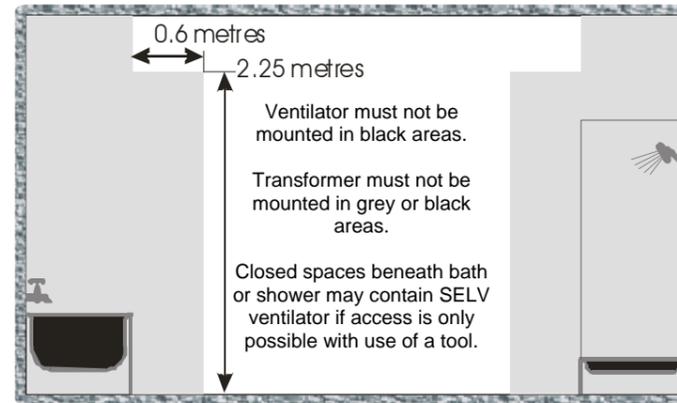
Your iCON ventilator packaging contains:

| iCON15S | iCON30S |
|--|--------------------------------|
| Fan assembly (7591801) | Fan assembly (72591901) |
| - | Skirt (82594401) |
| Fixing Pack (82592901) | Fixing Pack (82593301) |
| 2 x Plastic wall Plugs | 3 x Plastic wall Plugs |
| 2 x 5mm x 32mm Pan head screws | 3 x 4mm x 32mm Pan head screws |
| 1 x Cable clamp | 1 x Cable clamp |
| 2 x M3 x 10 Flange head screws | 2 x M3 x 10 Flange head screws |
| 1 x Cable grommet | 3 x M3 x 8 Flange head screws |
| | 1 x Cable grommet |
| iCON SELV Transformer (82334101) | |
| Fixing Pack (72334401) | |
| 2 x Cable clamps | |
| 4 x Cable clamp screws (Pan head, self tapping: 3.5mm x 14mm long) | |
| 2 x Cable grommets (max. cable size: 7.5mm OD) | |
| 2 x Mounting screws (Pan head, self tapping: 4mm x 32mm long) | |
| 2 x Plastic wall plugs | |
| Instruction Booklet (9021433) - keep for future reference | |

Note: Control modules are packaged separately.

Positioning Transformer

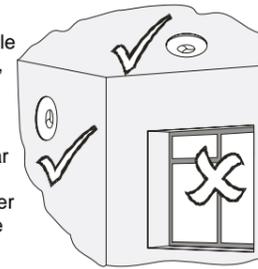
The iCON SELV transformer unit cannot be fitted in Zone 0, 1 or 2 and must be sited out of reach of anyone using the bath, shower or sink. The units are usually installed outside the room or in an accessible loft or roof space with adequate circulation of air around the transformer unit to avoid overheating. The unit can be mounted on the side or top of a roof joist. **Note:** Never cover the transformer unit with thermal insulation or other materials. The recommended distance between the transformer unit and the ventilator depends on the cable used. The maximum distance for a 1.5mm² cable, is 5m; shorter for a smaller cable and longer for a larger cable. [See: Mounting transformer].



Positioning Ventilator

The iCON SELV range of ventilators is suitable for bathrooms, inside shower cubicles, toilets, kitchens, utility rooms and can be fitted in Zone 1 (BS 7671:2001).

Note: The assignment of Zone numbers is affected by the internal layout of any particular room, e.g. position of water sources, the presence of permanent wall partitions, whether shower heads are demountable or fixed, [See also: Safety Recommendations].



Surface or Recessed Mount

| Configuration options (Ceiling or wall mounting) | | |
|--|-----------------|---|
| Recessed | Recessed | Surface Mount |
| Models: iCON15S | Models: iCON30S | Models: iCON30S using the skirt supplied. |

Ducting

The iCON ventilator units are designed to slide into standard sized ducting or pipes, [See: Safety Recommendations]. The hole sizes made in ceiling or walls largely depend on the type of ducting used, [See: Cutting holes].

Cutting Holes

| Configuration options | Typical hole size required (mm) | |
|-----------------------|---------------------------------|------------------|
| | iCON15S | iCON30S |
| Recessed | 110 ¹ | 160 ² |
| Surface Mount | Not available | 110 ¹ |

- Notes:**
- Hole size to suit duct 100 mm ID, e.g. typical soil pipe, or to suit the pipe being used.
 - In cavity wall, make hole in inner wall to clear 150 mm diameter. In outer wall make hole as per Note 1.

Ventilator Front Cover

Removal

The front cover of the ventilator unit has a bayonet-type fitting. Remove the retaining screw in the front cover using a screwdriver. Rotate the front cover a few degrees anticlockwise and remove.

Refitting

Reverse the removal procedure to refit the front cover.



Fixing Holes

Recessed Mount

- Slide ventilator unit into the ducting in the wall or ceiling.
- Check orientation is correct, i.e. for wall mount, the pull-cord slot is at bottom.
- Spot through fixing hole positions (2 fixing holes for iCON15S; 3 fixing holes for iCON30S).
- Drill holes suitable for wall plugs supplied in the fixing kit.
- Secure ventilator unit to structure using screws supplied (two 5mm x 32mm for iCON15S; three 4mm x 32mm for iCON30S).

Surface Mount

- Position skirt over the hole in the wall or ceiling.
- Check orientation is correct, i.e. pull-cord slot is at the bottom of skirt for wall mounting, [See: Installation diagram].
- Spot through three fixing hole positions in skirt.
- Drill holes suitable for wall plugs supplied in the fixing kit.
- Secure skirt to wall or ceiling using screws supplied in fixing kit (three size 4mm x 32mm screws).
- Fit ventilator unit into skirt.
- Check orientation is correct, i.e. align pull cord slots in fan and skirt. [See: Installation diagram].
- Secure ventilator unit with three M3 x 8 screws.

Module: All installation and adjustment to be carried out by a qualified person.

Always isolate the transformer and ventilator units from the power supply before disassembling the equipment

Fitting and Wiring

- Remove the front cover, [See: Ventilator Front Cover - Removal].
- Lift the terminal block away from fan housing.
- Push the two connector pins at one end of the module into the electrical terminal block and tighten with a suitable screwdriver. Ensure that the leads are under the retaining clip.
- Fit slot in power connector end of module into the location block in the fan housing.
- Push module back into the fan body ensuring that the terminal block locates over the 2 retaining pillars.

- For modules with pull-cords:** ensure that the pull-cord is properly located within the cord slot at the bottom of the fan housing

- For modules with PIR control:** remove the oval lens cap fitted at the bottom of the front cover of the fan unit. Replace it with the translucent lens supplied with the PIR module.

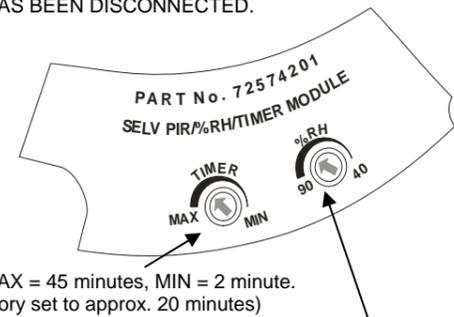
Note: The lens must be replaced in order for the PIR module to function properly. Ensure that the orientation of the lens is correct, i.e. lens face should be flush with surface.

- Connecting external DC cable into the Ventilator:** Fix the supplied sealed grommet into the cable entry hole. Pierce the grommet to allow the mains cable to be pulled through while maintaining the integrity of the seal. Connect the cable to the 3-way power connector [See: Wiring for details of the possible wiring schemes] ensuring that the supplied cable clamp is fitted.
- Refit the front cover, [See: Ventilator Front Cover - Refitting].

Module Adjustment

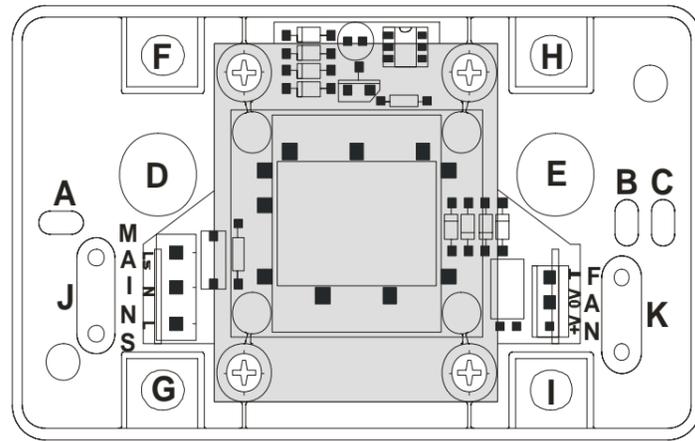
DO NOT OPEN THE UNIT OR ADJUST THE CONTROLS UNLESS THE POWER TO THE UNIT HAS BEEN DISCONNECTED.

A module with a Timer or Humidistat control is supplied preset, but may be adjusted by the installer.



Relative humidity (%RH): 40% to 90% (Factory set to approx. 60%RH)

Mounting Transformer



- ✎ Unscrew the 2 retaining screws and remove the cover.
- ✎ Using the transformer base, spot through the fixing holes (A, B or C).
Note: Choice of fixing positions (A, B or C) depends on the location.
- ✎ **Ceiling or wall mounting:** Drill to accept plastic wall plugs and then screw the transformer unit to the support using the 2 mounting screws (Pan head, self tapping: 4mm x 32 long) supplied in the fixing kit.
- ✎ **Loft or roof space:** Screw the transformer unit to the support using the 2 mounting screws (Pan head, self tapping: 4mm x 32 long) supplied in the fixing kit.
- ✎ Connect the cable, [See: Wiring Transformer].
- ✎ Replace the transformer cover and secure with the two retaining screws.

Wiring

All installation to be carried out by a qualified person.

Wiring Transformer

The 230V mains cable can be routed into the transformer unit via the positions D (bottom), G (side) or F (side); whichever is most convenient.

- ✎ **D (bottom):** Knock-out the plastic moulding, using a screw driver.
- ✎ **G or F (side):** Drill a 10mm Ø hole in the housing and fit the cable grommet supplied in the transformer fixing kit.
- ✎ Pass cable into the transformer and allow sufficient cable inside the box to make the electrical connections to MAINS-side connector, [See: Wiring diagram]
- ✎ Secure cable with the cable clamp (J) and 2 clamp screws (Pan head, self tapping: 3.5mm Ø x 14mm long) supplied in the transformer fixing kit.

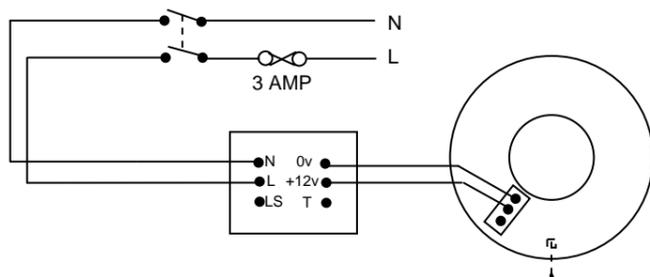
The output cable to the ventilator, typically 1.5mm² for a 5m cable run, can be routed into the transformer unit via the positions E (bottom), H (side) or I (side); whichever is most convenient.

- ✎ **E (bottom):** Knock-out the plastic moulding, using a screw driver.
- ✎ **H or I (side):** Drill a 10mm Ø hole in the housing and fit the cable grommet supplied in the transformer fixing kit.
- ✎ Pass cable into the transformer and allow sufficient of cable inside the box to make the electrical connections to FAN-side connector, [See: Wiring diagram]
- ✎ Secure cable with the cable clamp (K) and 2 clamp screws (Pan head, self tapping : 3.5mm Ø x 14mm long) supplied in the transformer fixing kit.

Wiring Ventilator

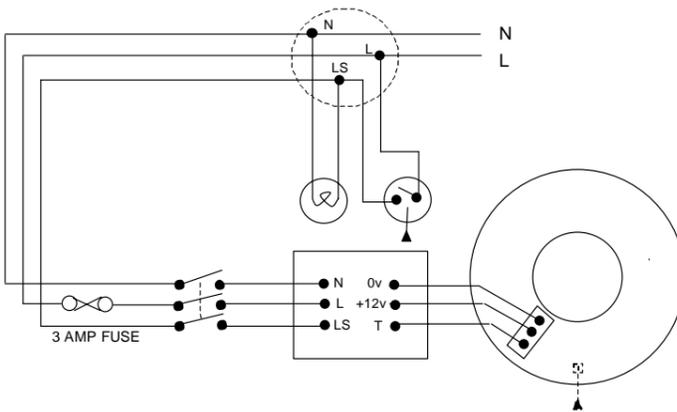
Note: Check that the cable clamp and sealed grommet, supplied in the fixing kit, are properly fitted and ensure that the mains cable is firmly secured.

A. Control module with no external switching



B. Control module with external switching

For electrical connections to modules, [See: Modules].



Operating Instructions

When the iCON ventilator is switched on, the motor will run for approximately 45 seconds before the iris shutters open. When the mains power is switched off, the motor will stop and the iris shutters will start closing after 25 seconds. The delay in opening and closing of the iris shutters is normal.

Installation with Control Module

Operation with control modules varies with the particular one fitted. An iCON ventilator with a control module fitted starts either when the:

- ✎ infra-red sensor (PIR) detects someone in the room.
- ✎ humidity exceeds the set level (HUMIDISTAT).
- ✎ unit is switched on (TIMER) and continues to work for a pre-set period.

Units with a combination of these functions start when any one triggers.

The iCON ventilator will stop when the control module senses:

- ✎ no one in the room (PIR) and set period has elapsed.
- ✎ humidity has reduced to the set level (HUMIDISTAT) and set period has elapsed.
- ✎ pull cord being operated and set period has elapsed (Pull Cord options).
- ✎ set period has elapsed (TIMER).

Units with a combination of these functions stop when the last function no longer triggers and the set period has elapsed.

Trouble-shooting

If, after carrying out the following checks, the iCON ventilator then fails to work correctly, contact the installer or AIRFLOW Service Department.

ALWAYS ISOLATE THE TRANSFORMER AND VENTILATOR UNITS FROM THE POWER SUPPLY BEFORE REMOVING THE COVER.

| | |
|--|--|
| Ventilator iris shutters do not open or shut immediately when fan is switched on or off. | A delay of approximately 45 seconds is normal operation for iCON ventilators. |
| Ventilator does not switch on | Check wiring to transformer. Check external 3A fuse. Check wiring to module. Check PULL CORD on unit. |
| Ventilator iris shutters do not open | An incorrectly assembled front cover may impede the iris shutters: |
| Ventilator iris shutters do not close | Remove and replace front cover, [See: Removing front cover/Reassembling]. Contact AIRFLOW. |
| Ventilator does not switch off | Check wiring connections to switch, unit and module. |
| Ventilator continues to work for an excessively long time after leaving the room | Adjust modules: Reduce TIMER, increase HUMIDISTAT, [See: Fitting/Installation - Modules]. |

Maintenance

ALWAYS ISOLATE THE TRANSFORMER AND VENTILATOR UNITS FROM THE POWER SUPPLY BEFORE REMOVING THE COVER.

Safety

When installed according to these instructions the iCON range of ventilators is completely safe. The materials used do not constitute a hazard. The module covers are made of a flame retardant material.

Cleaning

- ✎ The external housing of the ventilator can be wiped with a damp cloth. Do not use household cleaners containing abrasives.
- ✎ Cleaning of the internal parts such as the impeller should be carried out using a soft brush. **Note:** Always ensure that the ventilator is isolated from the power supply before inserting the brush into the impeller duct.
- ✎ Never clean any parts of the fan assembly by immersing in water or using a dishwasher.

Technical Specification

Features

Flexible operation for a range of domestic uses in bathrooms, shower cubicles, toilets, kitchens and utility rooms.

- ✎ Lubricated for life motor
- ✎ Double insulated Class II rated.
- ✎ Ventilator housing IPX4
- ✎ Transformer conforms to BS3535
- ✎ Transformer housing IP55
- ✎ Conforms to current building regulations.

iCON SELV Range Ventilator Unit

| iCON ventilator model | iCON15S | iCON30S |
|--------------------------------------|--|---------------------|
| Part number | 72591801 | 72591901 |
| Fan size (mm) | Ø197 x89 depth | Ø225 x141 depth |
| Maximum ambient temperature (°C) | 40 | 40 |
| Fan Voltage (V) | 12 DC | 12 DC |
| Mounting | Wall or Ceiling NOT Window | |
| | Recessed | Surface or Recessed |
| Colour | White | White |
| Usage ¹ | Bathroom – in wet and splash zones and within en-suite and shower cubicles, Toilet, Kitchen, Utility Room. | |
| iCON Transformer ¹ | Single phase (82334101) | |
| Mains frequency (Hz) | 50 | 50 |
| Power (W) | 12 | 21 |
| Voltage (V) | 230 | 230 |

Note: 1 Transformer unit must not be fitted in wet or splash areas, (Zones 0, 1 or 2).

Modules for iCON SELV Range

| SELV Module Description | Part No. | Wiring Diagram | Trigger Input | Timer ¹ | PIR | Humidity ² | Pull Cord Momentary | Pull Cord Latching |
|---------------------------------|----------|----------------|---------------|--------------------|-----|-----------------------|---------------------|--------------------|
| Pull Cord Module | 72573603 | A | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ |
| PIR Humidity Timer Module | 72574201 | A,B | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| Humidity Pull Cord Timer Module | 72574202 | A,B | ✓ | ✓ | ✗ | ✓ | ✓ | ✗ |
| PIR Timer Module | 72574203 | A,B | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ |
| Pull Cord Timer Module | 72574204 | A,B | ✓ | ✓ | ✗ | ✗ | ✓ | ✗ |

Notes: 1: Run on 2 - 45 minutes 2: Adjustable 40-90 %RH
PIR: Passive infra-red

Options and Spares

| Description | iCON Model Part Number | |
|----------------------------|------------------------|----------|
| | iCON15S | iCON30S |
| Skirt ¹ | ✗ | 82594401 |
| External grille (Ø 100 mm) | 82596201 | 82596201 |
| External grille (Ø 150 mm) | ✗ | ✗ |

Note 1: A skirt is supplied with the iCON30S ventilator unit for surface mounting.

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