

## IN PARTNERSHIP WITH: MOUNT ANVIL

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### HOME PLUMBING & ELECTRICAL USER GUIDE

CHELSEA BOTANICA  
HAMMERSMITH  
LONDON  
SW6

Integrated Mechanical, Electrical & Plumbing Services

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## 1 GENERAL NOTES ON YOUR PLUMBING, HEATING AND MEV

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### 1-1 GENERAL NOTES

Welcome to your new home. This booklet is provided to help you operate the new heating, domestic hot water, and heat recovery systems within your home.

The heating to your property is generated within a central boiler house located in the plant room on the roof. The heat generated from this energy centre is distributed through the building through a network of district flow & return pipework that split and serve each property in the development.

This district pipework is fed into a Heat Interface Unit (HIU) located within your utility / HIU cupboard. The HIU unit then supplies hot water to the heating circuit and domestic hot water.

Cold water is distributed to the properties from a cold-water storage tank and assisted by booster pumps to generate enough pressure to serve all floors throughout the development and is referred to as the Boosted Cold Water Services (BCWS). This equipment is sited in the basement of the development. The boosted cold water distribution pipework is located within a riser on each floor. The BCWS is a metered supply and more information regarding your meter can be found within this guide.

## 1-2 HEAT INTERFACE UNIT (HIU)

The HIU serves the requirements of both heating and instantaneous domestic hot water to the property. The HIU is also fitted with a heat meter which will monitor how much energy the property is using to generate the hot water and heating.



**The HIU should only be touched by a qualified engineer**

## 1-3 HEAT METER – AUTOMATIC METER READING (AMR)

The heat meter (HM) can be found in the front of the HIU within the service cupboard. The HM shows visual information detailing the energy being used within the property. The HM is connected to a wireless AMR network installed throughout the development, which will be monitored by the site energy supplier remotely to provide your energy bill – more information will be supplied within the Switch2 welcome pack.



## 1-4 HEATING SYSTEM

Your property is fitted with a wet underfloor heating system within the living room, hall, kitchen & bedrooms. The bathrooms are heated via electric towel warmers.

**To optimise the operation of the heating system, it is advised that the system is kept running and the temperature is controlled by the thermostat. Consideration must be given to how the system is designed to operate and the time that may be taken from cold start to set point.**

As with all heating systems, safety measures are fitted within the HIU. These are installed to protect the settings and balancing of the heating system. We would request your cooperation by refraining from tampering with any settings within the HIU.

## 1-5 HEATING EQUIPMENT SCHEDULE

Heat Interface Unit	SAV Series 7 Flatstation
Heat Meter	Switch2 G6
Room Thermostat	neoStat v2

## 2 HOW TO OPERATE YOUR HEATING SYSTEM

### 2-1 HOW TO SWITCH YOUR SYSTEM ON AND OFF

Both the heating and hot water will be generated via the HIU unit sited within the utility cupboard. The HIU is operated via a switched spur located adjacent to the unit – this switch will be clearly labelled “HIU”. The switch must be left in the on position for the system to operate. It is recommended for this to only be switched off when on holiday or for maintenance purposes.

### 2-2 HEATING TIMED CONTROL

Your home will be provided with a programmable room thermostat and thermostatic radiator valves.



Further information can be found here with regards to adjusting set points and occupancy schedules.

<https://www.youtube.com/watch?v=o35Z7baJhDM>

The pre-commissioned schedules ensure that the stat is always on but setting back to a lower temperature through unoccupied periods and nighttime. We would encourage this to be retained and to refrain from periods where the programmer is OFF.

## 3 IN THE EVENT OF AN EMERGENCY

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### LOSS OF HEATING

1. If you have a pre-paid meter, please ensure it has sufficient credit.
2. If the heating is not working:
  - a. Firstly, turn up the room thermostat to a higher setting.
  - b. Ensure the programmer is set to the correct time of the day
  - c. Set the room thermostat to constant, continuous or 24-hour (depending on the type of thermostat).

### LOSS OF HOT WATER

1. If you have no hot water:
  - a. Check that the HIU switch within the HIU / utility cupboard is turned on.

*Note: If the HIU switch is turned on then you should obtain hot water within a minute as this is instantaneous.*

### LEAK ON THE HEATING SYSTEM

If the leak occurs on the heating system then turn the system off by closing both the lever valves labelled as "Secondary Htg I.V" located on the heat interface unit and report the fault to the number provided.

### LEAK ON THE COLD-WATER SYSTEM

If the leak is from a tap then the tap can be isolated by the ball-o-fix type valve located on the pipework to the tap.

If the leak is from general pipework, then the cold water should be isolated from the incoming cold-water stopcock located within the HIU / utility cupboard.

In some instances where a leak or flooding has been as a result of misuse, the contractor will not be liable for any making good, or replacement of items damaged. Examples of this are:

- Bath or sink left to overflow
- Nails through pipework
- Resident's own washing machine or dishwasher not correctly installed
- Toilet blockages where backflow occurs

## 4 HOW YOUR VENTILATION SYSTEM WORKS

### 4-1 MECHANICAL VENTILATION HEAT RECOVERY SYSTEM (MVHR)

The Nuaire MVHR is a continuously running ventilation system. There is a fused spur for the ventilation unit within the HIU / utility cupboard. As this unit is designed to be run continuously it should not be switched off unless maintenance or cleaning is being undertaken. Cleaning of the filters should take place yearly as a minimum or more regularly depending on environmental conditions.



The only control to the unit is a boost switch. This switch enables the unit to be toggled between speeds;

- a. Trickle Speed – Operating on a normal basis
- b. Boost Speed – Activated via light switch operating the bathroom and ensuite and the kitchen via a separate switch on the multi gang switch located below the work top.



## 5 WHAT HAPPENS DURING A POWER CUT?

In the event of a power cut your heating system and continuous ventilation system will stop working. Hot water will still be available, provided the power cut does not affect the centralised plant on the roof.

The room thermostats have a battery installed so that the settings and time will be retained, therefore when power is restored there will be no need to reset these controllers. The display information on the heat meter and room thermostat will go out for the duration of the power cut.

## 6 GENERAL MAINTENANCE ITEMS

We recommend that the following maintenance procedures be undertaken in order to validate all manufacturers guarantees:

### HEATING SYSTEM

6-monthly	Check visible heating pipework for signs of damage or deterioration, ensure that no leaks are evident within the HIU cupboard.
Yearly	Carry out above 6-monthly checks. Arrange for the HIU to be serviced by an approved HIU servicing contractor.

### HOT WATER SYSTEM

Monthly	Inspect isolating valves for any signs of leakage or damage. Operate any taps that are not subject to regular use.
6-monthly	Carry out above monthly checks. Remove shower head nozzle and clean to remove any scale deposits.
Yearly	Carry out above monthly and 6-monthly checks.

### COLD WATER SYSTEM

Monthly	Inspect isolating valves for any signs of leakage or damage. Operate any taps that are not subject to regular use.
Yearly	Carry out above monthly checks. Check the operation of all valves.

## MVHR

1. Clean filters yearly as a minimum, more frequently if required.

*Note: Replacement filter part numbers can be found in the Nuaire Installation and Maintenance manual that has been provided separately.*

## 7 HOW TO LOCATE SERVICE ISOLATION POINTS

In case of an emergency, or if maintenance is to be undertaken within the premises, isolation points can be found on your cold-water system as follows:

The cold-water mains stopcock is located at approximately 1200mm above floor level within the HIU cupboard – this will be clearly labelled, and it is essential to familiarise the location of this when moving into the property. This will isolate all cold-water services within your property. Please note that in the event of the system being isolated there will still be a quantity of water within the system pipework.



Every tap to the property has its own individual isolation provided. This isolation is in the form of a ball-o-fix type valve (image below). To isolate an individual tap, the valve can be found just underneath the appliance. The valve requires a quarter turn with a flat bladed screwdriver.



## **8 INCOMING COLD-WATER METER (BCWS)**

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The cold-water meter for your property is located within your HIU / utility cupboard. The meter is clearly marked. Please note that there is also an isolation valve located within the cupboard above the meter; this will isolate the incoming cold-water supply to your property.

## **9 PLUMBING USER MANUALS PROVIDED WITH THIS GUIDE**

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1. SAV – Series 7 Flatstation HIU Datasheet
2. Switch2 G6
3. Heatmiser neoStat V2 Thermostat
4. Nuaire MVHR User Manual

## **10 GENERAL NOTES ON YOUR ELECTRICAL SERVICES**

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The following information gives you a brief description of the electrical systems that have been installed within your apartment. It will tell you how to use them, where they are located and what their replacement part numbers are in the case that replacements are required.

Although some pictures have been inserted within the text, all information can be found at the back of this pack.

Index of items within this information pack: -

- Mains Electricity Distribution
- Lighting and Switches
- Sockets and supplies to appliances
- Smoke and Heat detectors
- TV / Satellite System
- Telecom System
- Door Entry System
- Communal Areas and Car Park

# **ELECTRICITY CAN KILL SO ALWAYS CONSULT A QUALIFIED ELECTRICIAN.**

## **10-1 MAINS ELECTRICITY DISTRIBUTION**

Within the communal corridors outside your apartment there is an electrical riser cupboard where the mains connections have been made to provide electricity to your apartment.

### **ELECTRICAL SUPPLY**

From this riser cupboard, the supply to your apartment runs into and terminates within the local supply authority cut-out and meter. This runs and connects into your apartment electrical consumer unit, which is located within your HIU / utility cupboard. There is a main switch located alongside the electrical tariff meter. This switch will turn off **ALL** electricity within the apartment.

### **ELECTRICAL METERING**

The electrical tariff meter for your property has been installed by the local authority and will be used by your chosen electricity supplier to calculate your electricity bill.

### **CONSUMER UNIT**

The tariff meter supplies the consumer unit within your HIU / utility cupboard in your apartment. The consumer unit is of metal construction, and it is from here that your apartment's electrical services are supplied. In the event of loss of power to a circuit it is the consumer unit that should be checked to see if a breaker has tripped.

The consumer unit has the details noted within it to identify the different electrical circuits.



The consumer unit then supplies the various electrical circuits as shown below:

<b>TYPICAL DISTRIBUTION BOARD LAYOUT</b>	
<b>SUB MAIN TO APARTMENT</b>	
<b>CONSUMER UNIT MAIN SWITCH</b>	
	RCD UNIT 80A 30mA
1L1	SMOKE & HEAT DETECTORS
2L1	KITCHEN & LIVING ROOM LIGHTING
3L1	KITCHEN RING MAIN
4L1	OVEN
5L1	HOB
6L1	SPARE
	RCD UNIT 80A 30mA
7L1	APARTMENT RING MAIN
8L1	BEDROOM & BATHROOM LIGHTING
9L1	TOWEL RAIL
10L1	HIU/HEATING CONTROL & WASHING MACHINE
11L1	SPARE

Please note this is a generic layout, please refer to your consumer unit schedule for exact circuit description within your apartment. This is located in the flap cover to the consumer unit.

### **APARTMENT CONSUMER UNIT PROTECTIVE DEVICES**

This unit is called a high integrity consumer unit as it contains two residual current devices (RCD's) and these will automatically disconnect the supply should a wiring fault occur or if a defective appliance is plugged into a socket outlet.

The circuits have also been arranged so that in the event of one RCD tripping the other RCD still supplies electricity to the same area albeit on a different circuit.

The individual circuits are protected by Miniature Circuit Breakers (MCB's) and are of a different rating depending on the type of circuit it is supplying.



## 10-2 LIGHTING AND SWITCHES

All lighting is controlled manually by the wall mounted light switches within the apartment. Some switches are single gang or in the case of multi-use areas these have been installed with multiple switches within a single plate.

In some locations the lighting has 2-way lighting control installed to allow the lighting to be controlled from multiple locations. All plate switches are from the Deta Slimline range.



The living room, kitchen, bathrooms, corridors and bedrooms are all fitted with recessed low wattage LED luminaires from Leyton Lighting. All are suitably rated for use in kitchens and living areas. The LED lamp has a 50,000-hour lamp life and is a GU10 LED lamp. To replace a lamp, turn the lights switch off, remove old lamp and replace with new.



### 10-3 SOCKETS AND SUPPLIES TO ELECTRICAL APPLIANCES

13A switched socket outlets have been installed within your apartment. Circuits serving socket outlets are wired in the form of a ring main and are protected by suitably rated MCB units located in the consumer unit as described above. All sockets are from the Deta Slimline range.



Within the kitchen an individual circuit has been installed providing a separate circuit supply for the kitchen hob and oven units. There is a low-level connection point behind the hob/oven unit for connecting the cable to the unit.



There is a multi-gang grid switch located below the kitchen work top. Each of the grid switches is engraved as to which appliance it controls within the apartment's kitchen. Operating these switches will turn on or off that particular appliance. Also located in this location are the kitchen's hob and ovens switches.



Other fixed appliances are controlled by switched spur units – these are generally items that are to be left on such as the heating unit and ventilation system fan.

The switched spur units have been installed with the correct rated fuse.

*Note: Should a fuse blow then you must ensure the blown fuse is replaced with a fuse with the same rating.*

Within the HIU cupboards the switched spurs units are labelled clearly indicating what they supply.



## 10-4 SMOKE AND HEAT DETECTORS

Within the apartment smoke detectors and heat detectors have been installed. The heat detector is fitted in the kitchen with the smoke detectors fitted in all other areas, such as the bedrooms and hallways. The detectors are connected to the mains electrical supply (see circuit chart above) but also contain Lithium battery back-up.



*Note: Please pay attention to the instruction leaflet at the back of this pack, which explains regular testing and cleaning of the detectors. This is essential to maintain the detectors and ensure good working performance.*

## 10-5 TV/SATELLITE SYSTEM

TV points have been provided to the living room and all bedrooms. The system will allow a Sky Q main box to be plugged into the living room TV point. To view Sky in other rooms, Sky Q mini boxes can be used, which work wirelessly via Wi-Fi from the main box. This enables Sky viewing in other rooms, and access to what's been recorded on the main box.

In the bedroom a TV point has been installed for Terrestrial/Freeview services.

Multimedia plate outlets are installed within the living area for power, TV, Broadband and telecom services.



The Quad TV point in the Living Room distributes the following:

- Digital Terrestrial TV (Freeview)
- Local FM radio frequencies
- Local DAB radio frequencies
- Satellite frequencies from the Astra 28.2°E satellite (Sky/Freesat). The Living room Quad TV point has two satellite feeds allowing the use of a Sky Q, Sky Plus/HD, or Freesat box.



The socket marked 'TV' distributes Digital Terrestrial TV (Freeview). This 'TV' socket is a MALE connection so a fly lead with a Female plug on it one end will be required to connect from the wall socket to the TV. (These fly leads are sometimes known as RF leads, male to female, or a male to male lead can have a coax coupler/adapter added to one end to convert to a female connection).

When connecting your TV it is important that care is taken to not accidentally plug into the radio socket, instead of the socket marked 'TV'. Unless your TV is plugged into the 'TV' socket you will not receive Freeview channels correctly. If you have accidentally plugged into the wrong socket and tried tuning the TV, once plugged in to the correct 'TV' socket you should 'auto tune' your TV again.

The two sockets marked SAT distribute Satellite Frequencies. To receive Satellite you will need a Sky or Freesat Satellite receiver, and connect to the F connector sockets with F-to-F connector fly leads.

#### SKY Q

The system is Sky Q ready and will enable a Sky Q box to be used in the Living room. The Sky Q box must be plugged into the 'Sat 2/Q' feed at the Living room TV point, and the Q box set to 'single cable DSCR mode'.

To view Sky in other rooms, Sky Q mini boxes can be used, which work wirelessly via Wi-Fi from the main box. This enables Sky viewing at the other points, and access to what's been recorded on the main Box.

The socket marked 'Radio' distributes local FM and DAB radio channels, and a male-to-male lead can be connected from the FEMALE socket to a radio tuner/HI FI.

### **Bedroom TV Points**

The bedroom TV points distribute Digital Terrestrial TV (Freeview) and are a female coax socket, so a male-to-male coax lead will be required from the socket to the TV.

All televisions, free-view equipment, sky boxes and similar are to be supplied by the resident. Please note the signal availability and strength has been checked to all outlets and left in good working order therefore any reconfiguration and connections is your responsibility. If the system is reported as faulty and the issue is found to be wrong connections, then any call out visit will be chargeable. If you require an engineer to set your systems up, then please let us know and we can arrange for a quotation to be sent to you.

The last modules are for connection of a broadband/telephone line by your preferred supplier.

### **10-6 TELECOM SYSTEM**

Master telecom outlets are located within your HIU / utility cupboard with secondary outlets in the living room and master bedroom, providing each of these rooms with a phone line outlet.



## 10-7 ELECTRICAL ACCESSORIES SCHEDULE

Lighting	Leyton Downlight MAPRL/13W/3K Leyton Fixed Angled Lamp Holder MA/ANGLED-SET-GLS-10-3K
Lighting Accessories	1 Gang 2 Way Switch – S1203 2 Gang 2 Way Switch – S1204 3 Gang 2 Way Switch – S1205 4 Gang 2 Way Switch – S1244 1 Gang Intermediate Way Switch – S1246 1 Gang 2 Way Dimmer Switch – S1410 2 Gang 2 Way Dimmer Switch – S1415
Kitchen Power	Switched Socket 2 Gang - SD1209SSW Switched Socket 2 Gang c/w 2 USBs - SD1288SSW Grid Switch Plate 4 Gang - G3424SS + G3404 Cap, Rocker Marked Fan, white finish - G3565 Cap, Rocker Marked Fridge Freezer, white finish - G3562 Cap, Rocker Marked Dishwasher, white finish - G3556 Cap, Rocker Marked Cooker Hood, white finish - G3560 45A Control Switch 1 Gang c/w Neon – HOB - SD1300OSSW 45A Connection Unit for HOB, White – S12178 Unswitched Socket 1 Gang - FRIDGE FREEZER - S1206 Unswitched Socket 1 Gang - DISHWASHER - S1206 Unswitched Socket 1 Gang - EXTRACT HOOD - S1206 25amp 1 Gang flex outlet plate connection, White - FAN ASSISTED OVEN & MICROWAVE - S1215
General Power	Switched Socket 2 Gang - S1209SDP Switched Socket 2 Gang c/w 2 USBs - S1299 Switched 13A DP Connection Unit c/w LED Indicator - engraved Towel Rail - S1371 Shaver Socket - S1371 Media Plate, White - Living Room & Master Bedroom - S1985 + DB184 Data Panel Front Plate 2G - S1427 BT Slave Module - For Media Plate - S1431 RJ45 CAT6 Module - For Media Plate - S1433 Blank Module - For Media Plate - S1422 Switched Fused Connection Unit - S1371

## 10-8 DOOR ENTRY SYSTEM

The apartment block has been supplied with a Phone Entry / Door Access Control (DAC) system. The system is an audio-visual system that will allow the tenant to see and hear any caller contacting them.

Each apartment has been issued with fob units and these are used to gain entry to the main entrance area from the road level. The fob will also allow access to permitted areas such as garden terraces or podium areas. They will also give entry to the cycle store and bin store on the ground floor. The fob unit is a proximity fob therefore placing your fob near to the wall mounted fob reader will release the magnetic door lock allowing you to enter. Access to flats from the corridor are by manual key locks.

Further information regarding the Door Access Control system will have been provided separately.

## **10-9 COMMUNAL LIGHTING**

All corridor and stairwell lighting are automatically controlled via ceiling mounted presence detection sensors. When a person enters an area, the sensors will detect movement and switch the lighting on. The lighting will come on for a pre-set period, after which the lighting will automatically switch off again. On reactivation the above cycle will then repeat itself.

Emergency lighting has also been provided throughout the building's communal areas. These luminaires will illuminate in the event of a power loss to the lighting circuit. External lighting is provided to garden area and building perimeter including the front main entrance. This is automatically controlled by a photocell unit and/or timeclock, which turns on the lighting at dusk and off again at dawn.

Refuse store, cycle stores and car park areas are controlled from local ceiling mounted presence detections sensors. When a person enters this area, ceiling mounted sensors will detect movement and switch the remaining lights on to give full lighting to all areas.

The lighting will come on for a pre-set period, after which the lighting will automatically switch off again. As other areas, on reactivation the above cycle will then repeat itself.

## **11 ELECTRICAL USER MANUALS PROVIDED WITH THIS GUIDE**

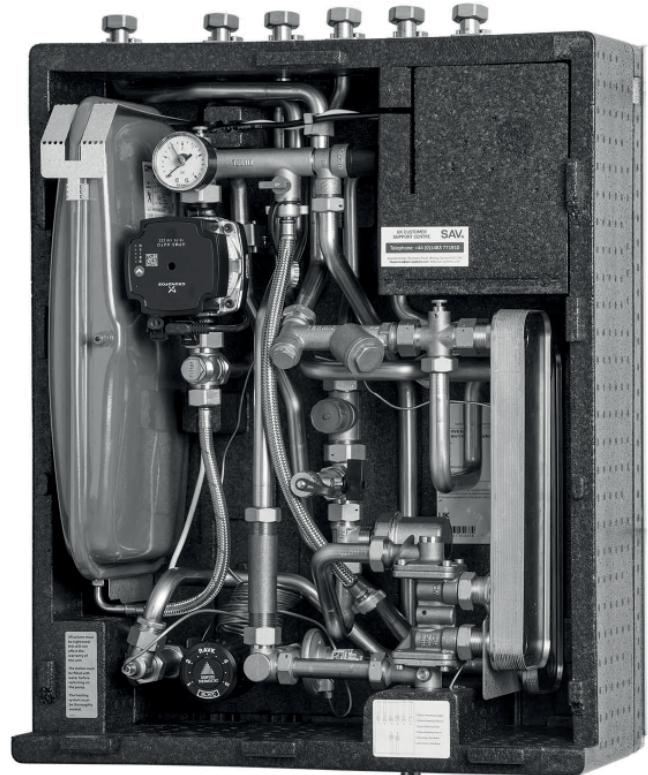
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1. AICO - Smoke & Heat Detector User Manual
2. Phone Entry User Instruction Sheet



Operating Guide

# Termix VVX-IV - 7 Series DS Fully insulated



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## Termix VVX-IV - 7 Series DS Fully insulated

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### Introduction

This heat interface unit (HIU) is intended for connecting to a heat network for the production of both domestic hot water and space heating (HTG). Read through the instructions before starting installation work. Pay particular attention to the safety precautions. The manufacturer assumes no responsibility for failure to follow the instructions. This applies to both personal injury and product damage.

The following operating conditions must be carried out in accordance with the directions below:

#### **Assembly, installation and commissioning**

General assembly, installation and commissioning must be carried out by a qualified and authorised HVAC technician. All electrical connections must be carried out by an authorised electrician.

#### **Daily operations**

After correct installation and commissioning, under normal circumstances further adjustment of the unit will not be necessary.

#### **Maintenance and cleaning**

Regular maintenance of the HIU is shown in the section "maintenance". This section also describes the cleaning procedures.

#### **Dismantling**

Dismantling the HIU must be carried out by an authorised and qualified HVAC technician. For further information regarding disposal, please refer to the section "disposal".

### Warranty and product liability

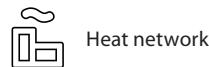
Danfoss A/S' area of responsibility does not include balancing, scope of works or mounting and correct connection of the unit. If changes are carried out to the HIU's configuration or structure, the manufacturer can assume no responsibility. The warranty does not cover incorrect use of the product.

**Glossary of technical terms**

**DHW** Domestic hot water  
**DCW** Domestic cold water  
**HWC** Hot water circulation

**DHF** Heat network supply  
**DHR** Heat network return

**HFL** Heating supply  
**HRL** Heating return

**Key to symbols****Materials****Corrosion protection**

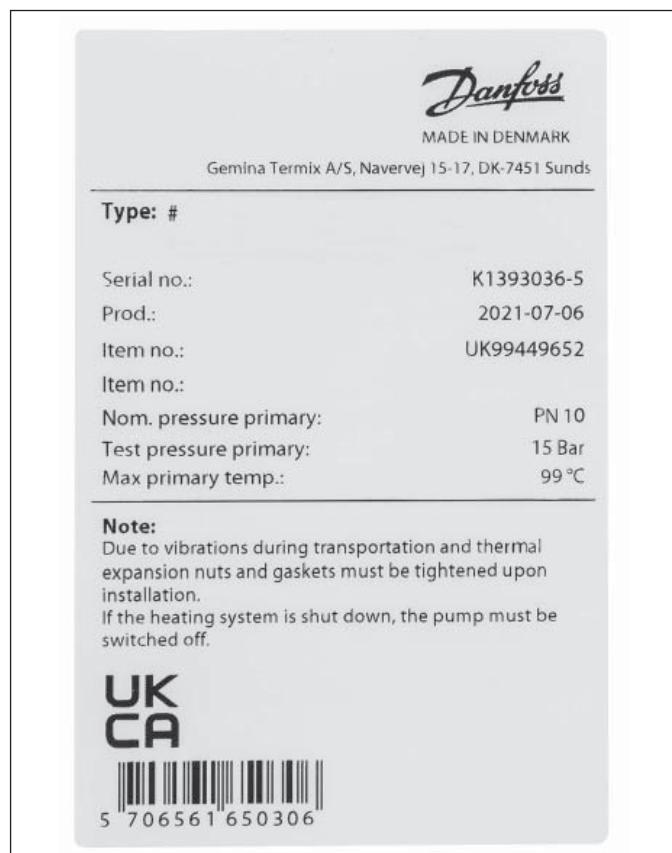
All pipes and components are manufactured in stainless steel and brass. The chloride content in the flow medium should not exceed 150 mg/l. The risk of corrosion increases significantly if the recommended chloride content is exceeded.

**REACH**

All products from Gemina Termix A/S meet the requirements in REACH. One of the requirements in REACH is to inform customers of any content of materials on the REACH candidate list. We hereby inform customers of a material on the candidate list. The product contains brass parts, which contain lead (CAS no: 7439-92-1) in a concentration over 0.1% w/w.

## Termix VVX-IV - 7 Series DS Fully insulated

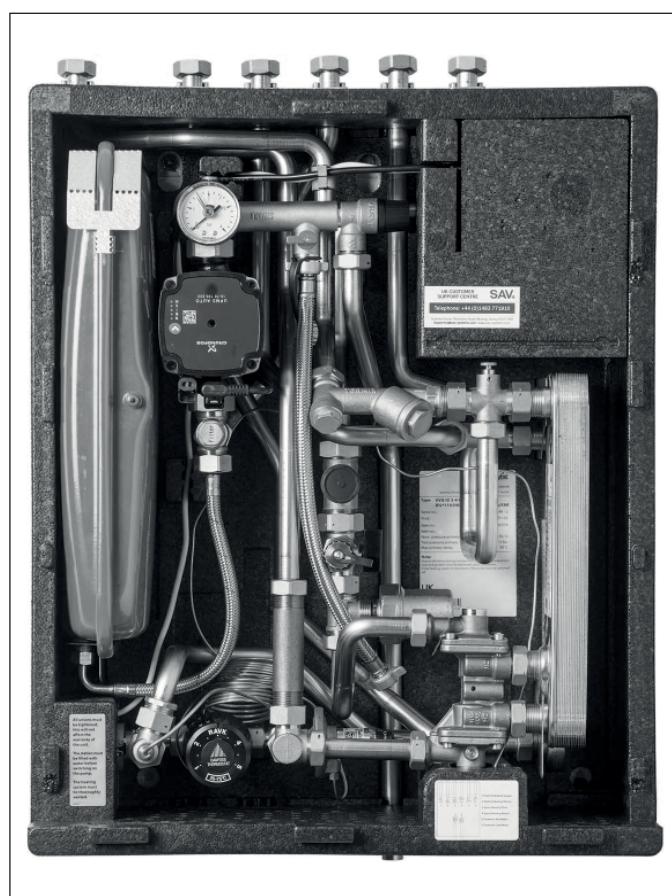
### Unit label



The unit label is affixed to the back plate  
(Image of a unit label is shown as an example).

Should the unit label become unreadable, damaged or fall off completely, then it must be replaced.

New unit label can be ordered.



**All unions must be tightened, this will not affect the warranty of the unit.**

**The station must be filled with water before switching on the pump.**

**The heating system must be thoroughly vented.**

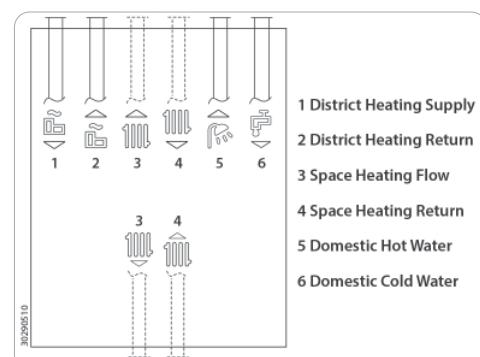
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**SAV.**

**Telephone: +44 (0)1483 771910**

Scandia House, Boundary Road, Woking, Surrey GU21 5BX  
huiservice@sav-systems.com [www.sav-systems.com](http://www.sav-systems.com)



## Termix VVX-IV - 7 Series DS Fully insulated

### Functional specification

The HIU is intended for connecting to a heat network for the production of both domestic hot water and space heating.

The unit must be connected to the household installation in a frost-free location.

### Technical specifications

#### Specifications:

Max. working pressure: See the unit label on the HIU

Max. temperature: See the unit label on the HIU

Power connection: 230 V AC

Sound level: ≤ 55 dB

Ambient temp: 0 - 40°C

(in continuous use)

#### Dimensions for connections:

DHF + DHR + HFL + HRL + DCW + DHW: G 3/4" (internal thread)

#### Weight:

Net weight: 24 - 29 kg

#### Dimensions:

Dimensions: H 710 mm x W 530 mm x D 270 mm

The recommended operational parameters must not be exceeded.

### Personal protective equipment



#### Gloves

It is recommended that suitable work gloves are used in connection with handling and lifting of the HIU.

### Warning of dangerous situations that can arise with reasonably foreseeable misuse

The risk of personal injury or product damage increases considerably if the recommended operational parameters are exceeded.

The unit must always be equipped with safety valves in accordance with local regulations.

**Safety notes****Read the instructions before start-up**

The instructions must be read through before installation and commissioning of the unit. Pay particular attention to the section on safety precautions.

The manufacturer assumes no responsibility for failure to follow the instructions. This applies to both personal injury and product damage.

**Authorised personnel**

Assembly, installation, commissioning and maintenance must only be carried out by a qualified and authorised HVAC or electrical technician.

**Installation requirements**

The unit must be connected to the household installation in a frost-free location.

**Hanging and fastening**

It must be ensured that both the wall and the fastenings of the unit can bear the unit's gross weight.

**Heat source**

The unit is designed for connection to heat network. An alternative energy source can be used as long as the operating conditions are equivalent to heat network at all times.

**Handling**

All lifting and handling of the HIU must be carried out in an ergonomically responsible manner.

**Lifting the unit**

When lifting the HIU, only lift by the pipes that are fixed to the back plate. Otherwise, to the extent possible, the HIU must be lifted by the back plate.

Please refer to the section "Lifting instructions".

**Re-tightening**

As the unit has been subjected to vibrations during transport and lifting/handling it is important that all union connections are re-tightened.

After filling the system with water and once it is in operation, all union connections must be re-tightened again.

**Modifications**

Modifications to the electrical connections on the HIU may only be carried out by an authorised electrician. If changes are carried out to the HIU's configuration or structure, the manufacturer can assume no responsibility.

**Resistance to water on electrical equipment**

Electrical components are not protected against water ingress.

**Safety valve**

A safety valve(s) must always be fitted in accordance with local regulations.

**Connection**

The possibility to shut off all energy sources to the HIU at all times must be established, including the electrical connection. It must be ensured that wires and cables do not come into contact with the hot pipes. It must also be ensured that wires and cables are not placed against sharp edges.

**Warning of high pressure and temperatures**

Particular attention must be given to the installation's permitted system pressure and operating temperature.

The maximum permitted flow temperature and pressure are stated on the unit label.

The risk of personal injury or product damage increases considerably if the recommended operational parameters are exceeded.

**Warning of hot surfaces**

Particular attention must be given to hot surfaces, as these can cause burns to the skin.

**Warning of sharp edges**

It is recommended that suitable work gloves are used in connection with handling and lifting of the HIU.

## Handling, transport and storage

### Handling

All lifting and handling of the HIU must be carried out in an ergonomically responsible manner.

### Transport and storage

The unit must be properly packed during both transit and storage.

Transport temperature: -10 to +65°C  
Storage temperature: +10 to +65°C

When storing the unit prior to installation, it must be stored in a dry, heated place.

If more units are supplied at the same time, they must never be stacked higher than they were at the factory.

## Assembly, installation and commissioning

### Unpacking and preparation

Remove the packaging from the unit.

Cling film and cardboard must be disposed of in accordance with locally applicable legislation.



#### Authorised personnel

Assembly, installation and commissioning must only be carried out by an authorised HVAC technician.

#### Lifting the unit

When lifting the unit out of the cardboard box, only lift by the pipes that are attached to the back plate.  
Otherwise, to the extent possible, the HIU must be lifted by the back plate.

In connection with assembly, the unit must be lifted according to the section "lifting instructions".

#### Warning of transport damage

Before installing the unit, check to ensure the product has not been damaged during transit.

## Termix VVX-IV - 7 Series DS Fully insulated

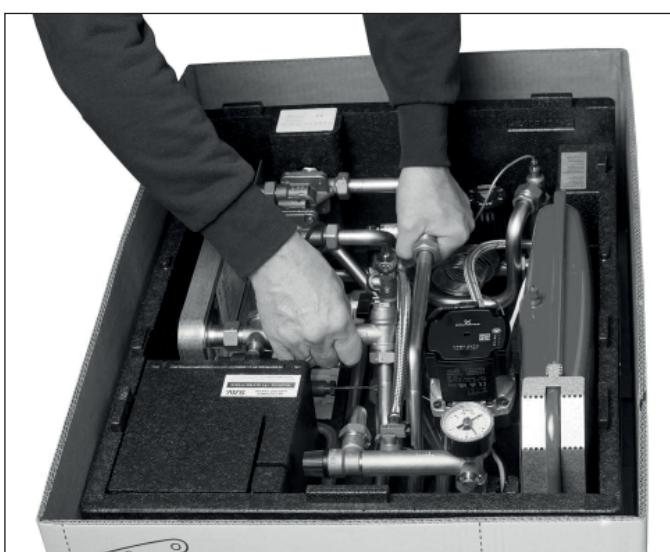
### Lifting instructions



Temporarily remove the inspection hatch.



Temporarily remove the service hatch.



Lift the HIU in the following two places:

1. On the left hand side around the DHR pipe.
2. On the right hand side around the pipe below T-piece attached to the heat exchanger.

Now, hang the HIU onto bolts in the wall.

## Termix VVX-IV - 7 Series DS Fully insulated

### Mounting and installation

The existing installation should be flushed out prior to installation.

Follow the symbols indicated on the HIU for correct connection of the pipes. Please refer to the section "Key to symbols".

#### Adequate space

Please allow adequate space around the HIU for mounting and maintenance purposes.



Installation must comply with local standards and regulations.

#### Orientation

The unit must be mounted so that components, keyholes and labels are placed correctly. If you wish to mount the unit differently please contact your supplier.

#### Mounting

The unit is designed for wall mounting using the 2 x keyholes on the backplate of the unit.

Additional holes for wall mounting to allow the HIU to be flush with the wall.



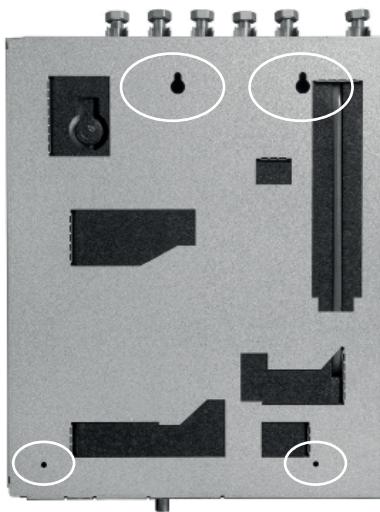
#### Hanging and fastening

It must be ensured that both the wall and the fastenings of the unit can bear the unit's gross weight.

Please refer to the section "Technical specifications".

#### Re-tightening

As the unit has been subjected to vibrations during transit it is important that all screw fittings are re-tightened.



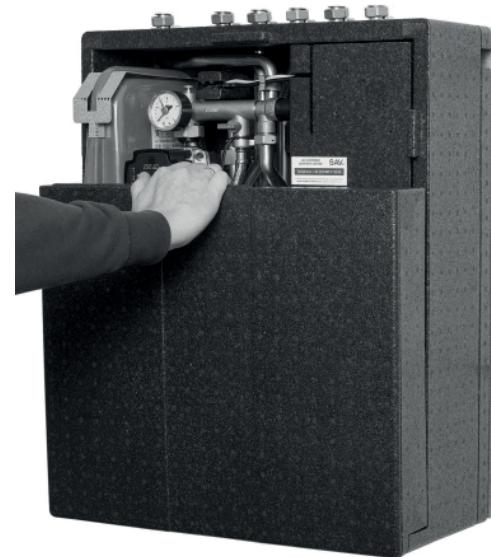
#### Tightening

Due to vibrations during transit, lifting and handling all HIU connections must be checked and tightened before installation.

## Termix VVX-IV - 7 Series DS Fully insulated

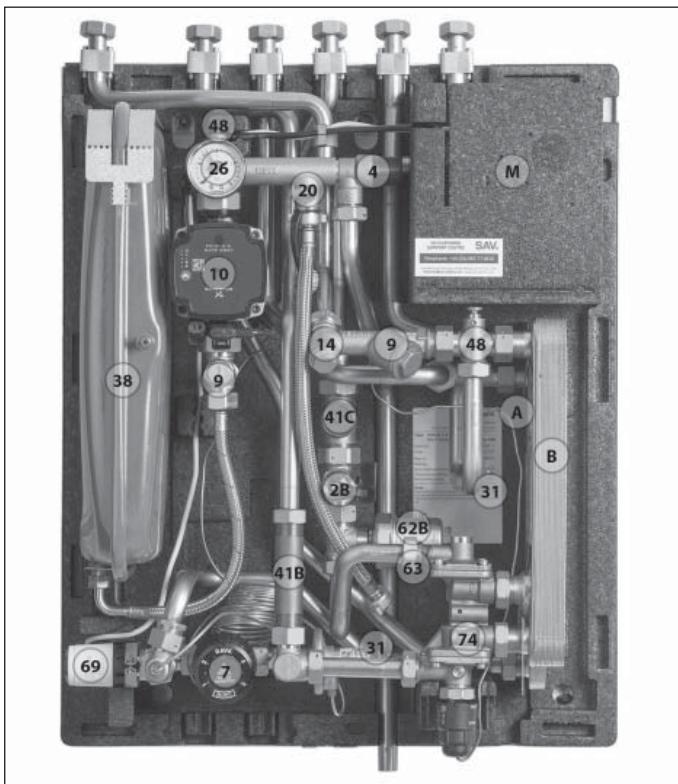
### Dismantling the insulation

#### Disassembly of the inspection- and servicehatch



#### Disassembly of the side frame



**Design**

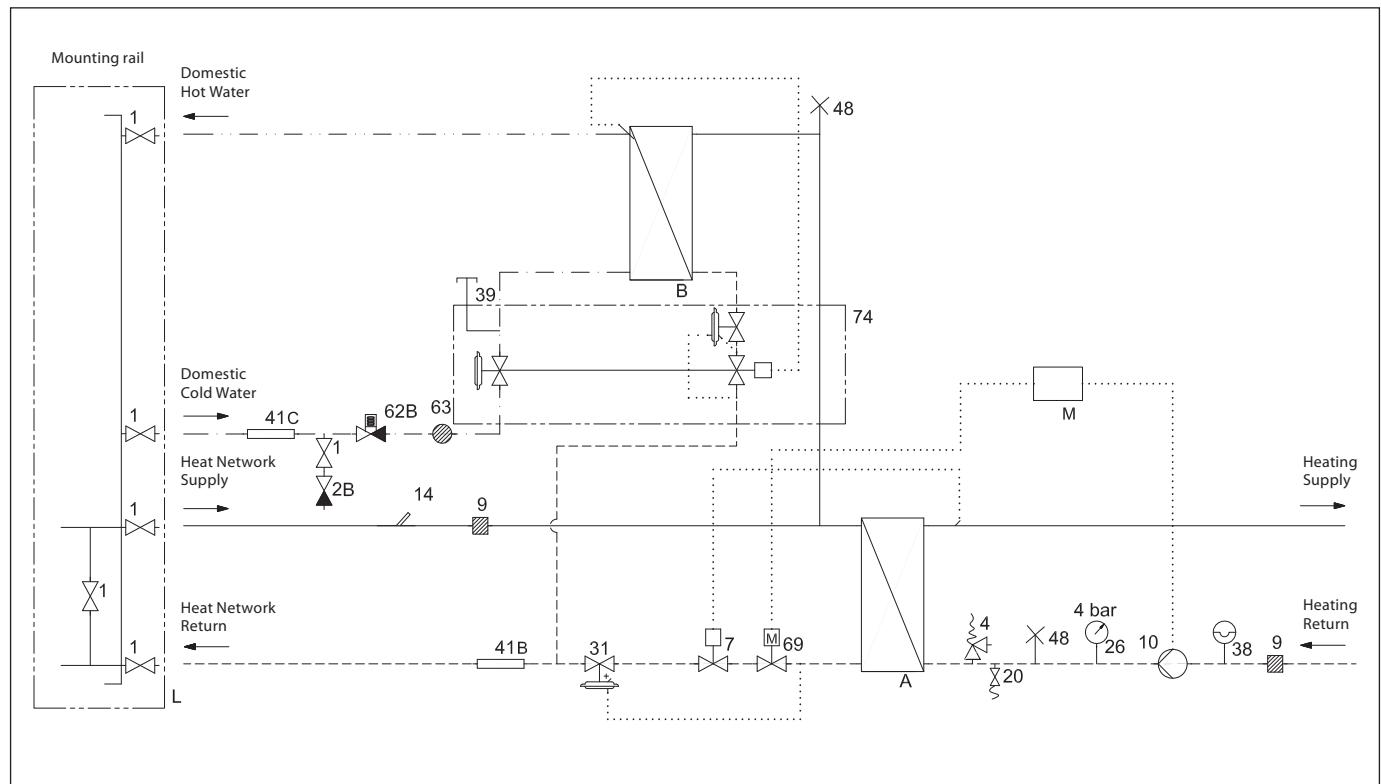
Your HIU may look different from the HIU shown

A	Heat exchanger, HTG	10	Circulator pump	48	Air vent, manual
B	Heat exchanger, DHW	14	Sensor pocket, energy meter	62B	Pressure absorber with non-return valve
M	Electrical wiring box	20	Filling/drain valve	63	Sieve
2B	Double check valve	31	Differential pressure controller	69	On/off valve
4	Safety valve	38	Expansion tank	74	IHP controller, DHW
7	Thermostatic valve, HTG	41B	Fitting piece, energy meter		
9	Strainer	41C	Fitting piece, Shut-off-valve		

Heating flow and return pipes will be fitted as top feed or bottom feed, according to specification

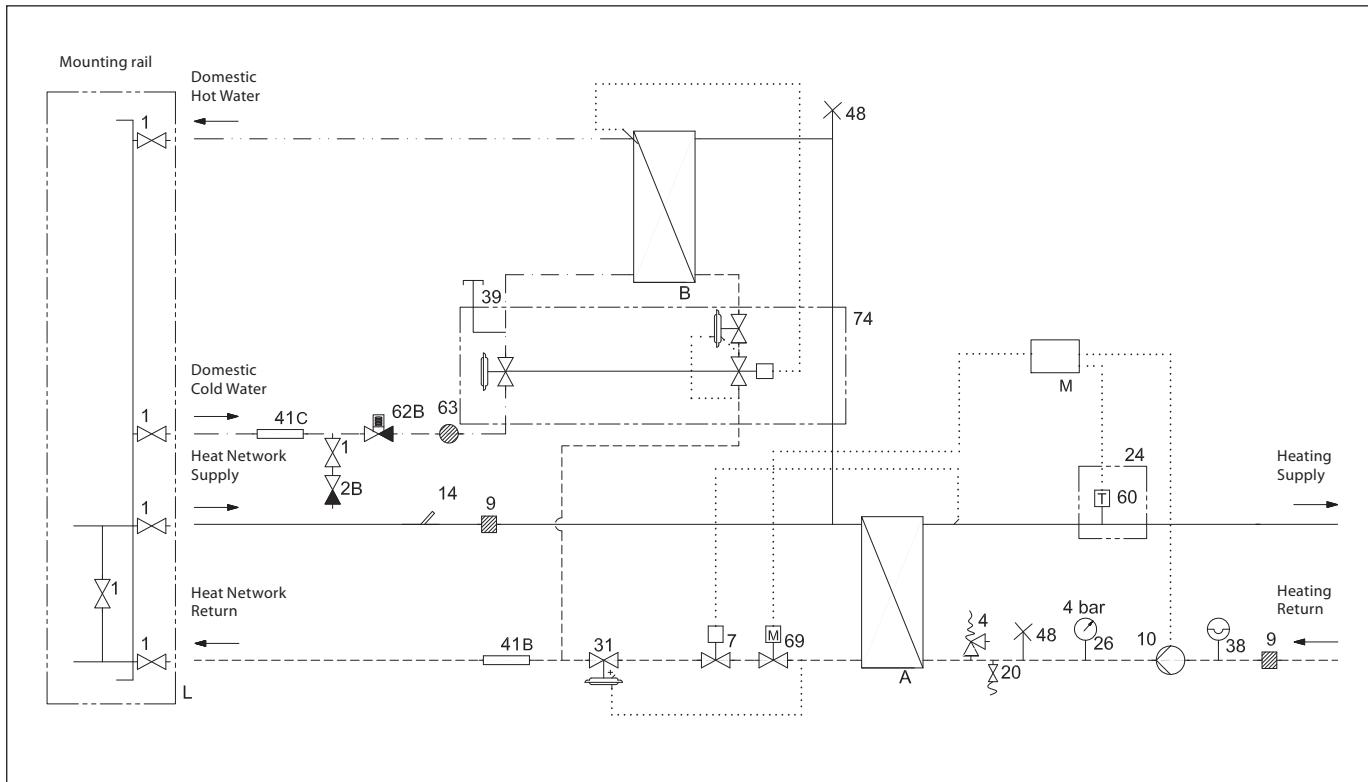
## Termix VVX-IV - 7 Series DS Fully insulated

### Schematic description - Termix VVX-IV RAD



Your HIU may look different from the HIU shown

A	Heat exchanger, HTG	9	Strainer	41B	Fitting piece, energy meter
B	Heat exchanger, DHW	10	Circulator pump	41C	Fitting piece, Shut-off valve
L	Border of delivery	14	Sensor pocket, energy meter	48	Air vent, manual
M	Electrical wiring box	20	Filling/drain valve	62B	Pressure absorber with non-return valve
1	Isolation valve	26	Pressure gauge	63	Sieve
2B	Double check valve	31	Differential pressure controller	69	On/Off valve
4	Safety valve	38	Expansion tank	74	IHP controller, DHW
7	Thermostatic valve, HTG	39	Connection closed		

**Schematic description - Termix VVX-IV UFH**


Your HIU may look different from the HIU shown

A	Heat exchanger, HTG	10	Circulator pump	41C	Fitting piece, Shut-off-valve
B	Heat exchanger, DHW	14	Sensor pocket, energy meter	48	Air vent, manual
L	Border of delivery	20	Filling/drain valve	60	Thermostat (only for UFH)
M	Electrical wiring box	24	Delivered loose with unit	62B	Pressure absorber with non-return valve
1	Isolation valve	26	Pressure gauge	63	Sieve
2B	Double check valve	31	Differential pressure controller	69	On/Off valve
4	Safety valve	38	Expansion tank	74	IHP controller, DHW
7	Thermostatic valve, HTG	39	Connection closed		
9	Strainer	41B	Fitting piece, energy meter		

## Termix VVX-IV - 7 Series DS Fully insulated

### Electrical connections and wiring

Before connecting the unit to an electrical supply, please note the following:

#### Safety notes

Please read the relevant parts of the safety notes.

#### 230 V

The HIU must be connected to 230 V AC and earth.

#### Potential bonding

Potential bonding should be carried out according to DS/HD 60364-4-41:2007 and IEC 60364-5-54:2011.

#### Disconnection

The electrically connected HIU must be disconnected for repairs.

#### Wires and cables

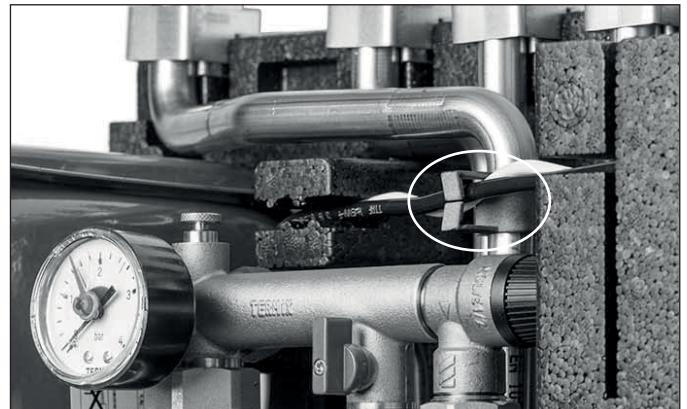
It must be ensured that wires and cables do not come into contact with the hot pipes. It must also be ensured that wires and cables are not placed against sharp edges.

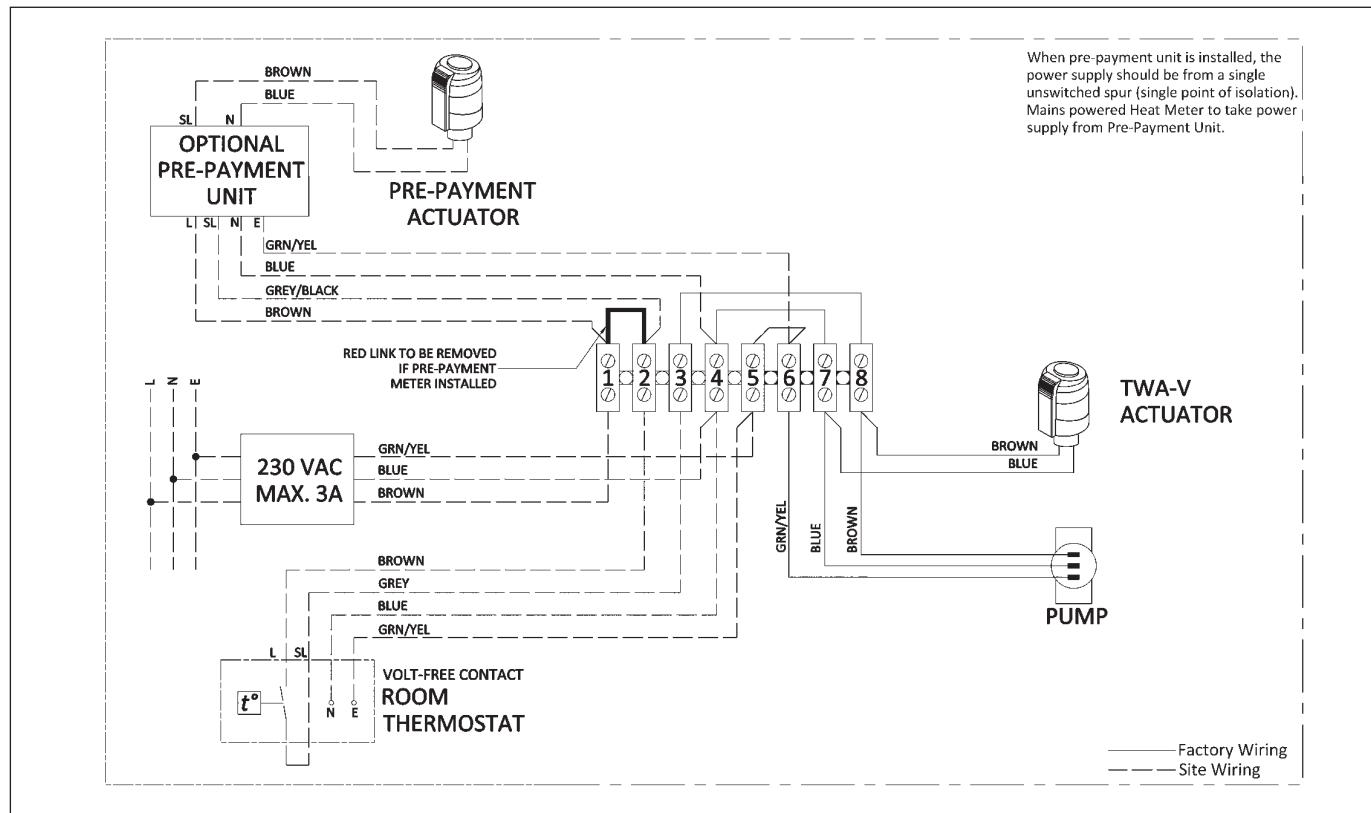
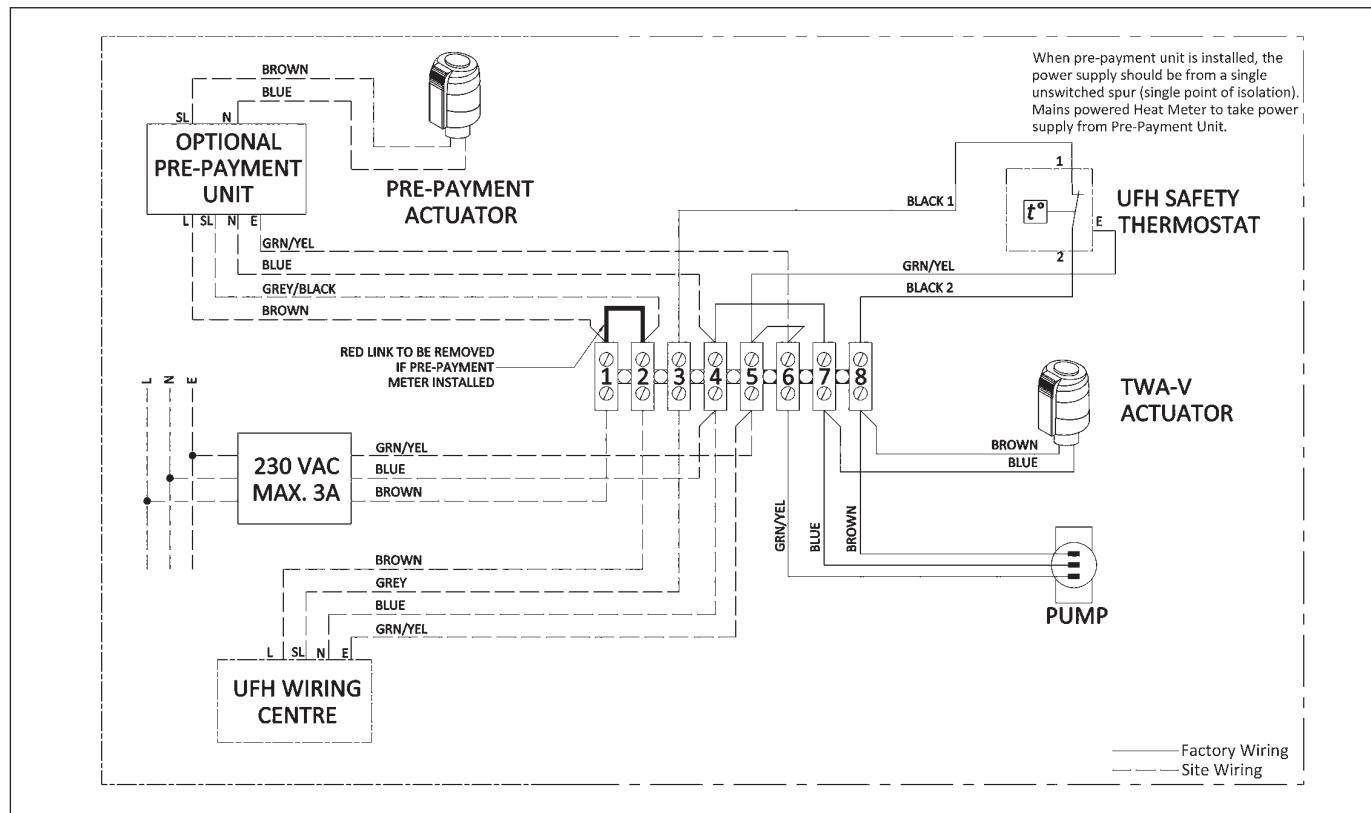


#### Authorised personnel

All electrical installation work may only be carried out by an authorised electrician.

The electrical connection must be carried out in accordance with applicable legislation and local standards.



**Wiring diagram - radiator heating**

**Wiring diagram - underfloor heating**


## Termix VVX-IV - 7 Series DS Fully insulated

### Fitting of energy meter

#### Fitting piece

The HIU is equipped with a fitting piece for the energy meter.

#### Mounting the energy meters:

- **Close isolation valves**

Close the isolation valves on Heat network supply and Heat network return, if there is water in the system.

- **Loosen nuts**

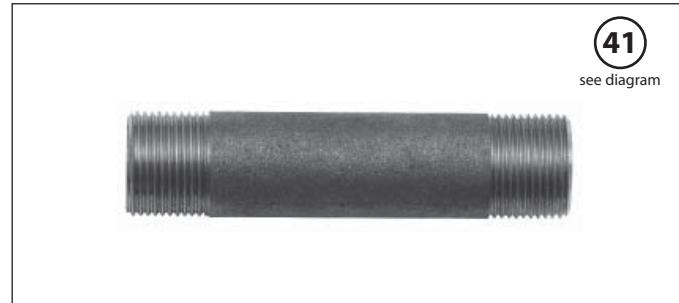
Loosen the nuts on the fitting piece.

- **Remove fitting piece**

Remove the fitting piece and replace it with the energy meter. Don't forget the gaskets.

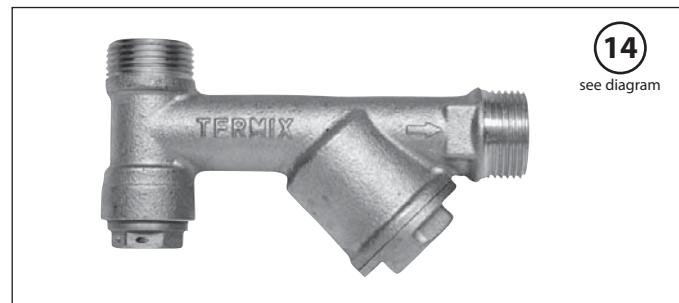
- **Tighten connections**

After mounting of the energy meter, remember to check and tighten all threaded connections.



### Sensor pocket

The sensors of the energy meter is mounted in the sensor pockets.



## Commissioning

Before start-up check that:

- Pipes are connected in accordance with the symbols indicated on the HIU.
- Then slowly open the isolation valve(s) so that the HIU fills with water.
- Ensure that all union fittings and swivel nuts have been re-tightened.
- The heating circuit must be vented before commissioning.
- Monitor the HIU's operation in regard to temperature, pressure, thermal expansion and leaks.
- Provided the HIU functions in accordance with the dimensioning regulations, it can be put into use.



### Re-tighten connections

After water has been added to the system and the system has been put into operation, re-tighten ALL connections.

## Filling of the primary heating system

A flushing bypass or similar should be mounted.

Only introduce heating network water in the HIU once it has been flushed.

## Filling of the secondary heating system

### First fill

When carrying out the first fill, the heat exchanger must be slowly filled with water until it reaches working pressure.

### Pressure gauge

The HTG pressure gauge indicates the pressure of the HTG system. This instruction must be followed strictly to avoid dangerous situations.

### Supply hose

An isolation valve with plug is installed in the HTG return line. To fill the system, the isolation valve must first be closed, the plug removed and a supply hose connected. On re-opening the isolation valve, system fill can commence.

### Filling stop

When filling the system with water, the pressure gauge should be observed closely. Filling must stop when the pressure gauge shows a pressure approximately 1-2 bar higher than the pre-pressure setting. The isolation valve is then closed, the hose removed and the plug replaced.

### Pre-pressure

The expansion vessel is supplied prepressurised to 0.5 bar. The pre-pressure required for the individual HIU will depend on system head (the distance between the lowest and highest point in the system), for example:

Height (m)	Pressure (bar)
0-5	0,5
5-10	1,0
10-15	1,5
15-20	2,0



## Termix VVX-IV - 7 Series DS Fully insulated

**Step 1:**

Remove the inspection hatch and service hatch.

**Step 2:**

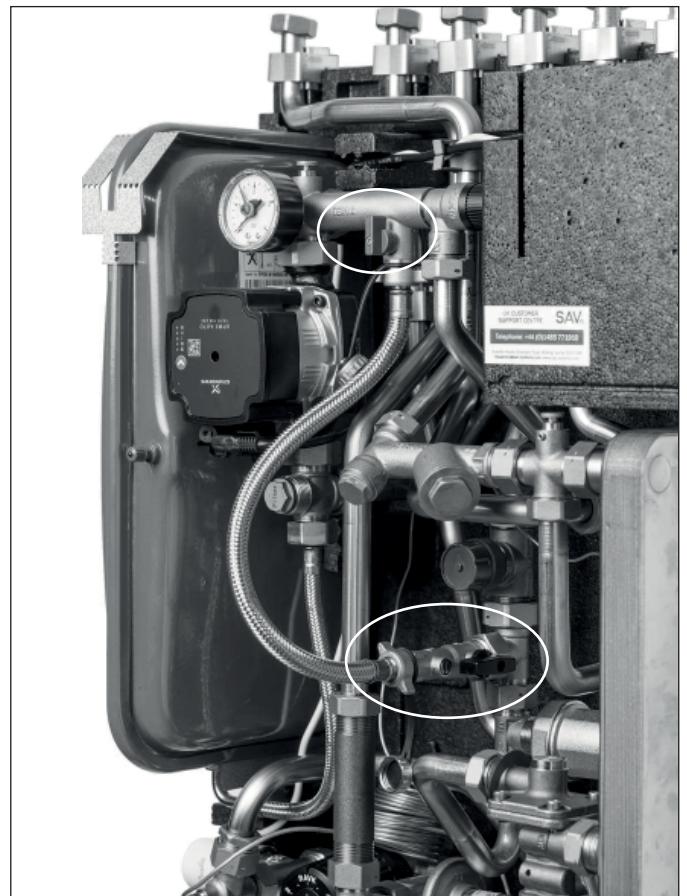
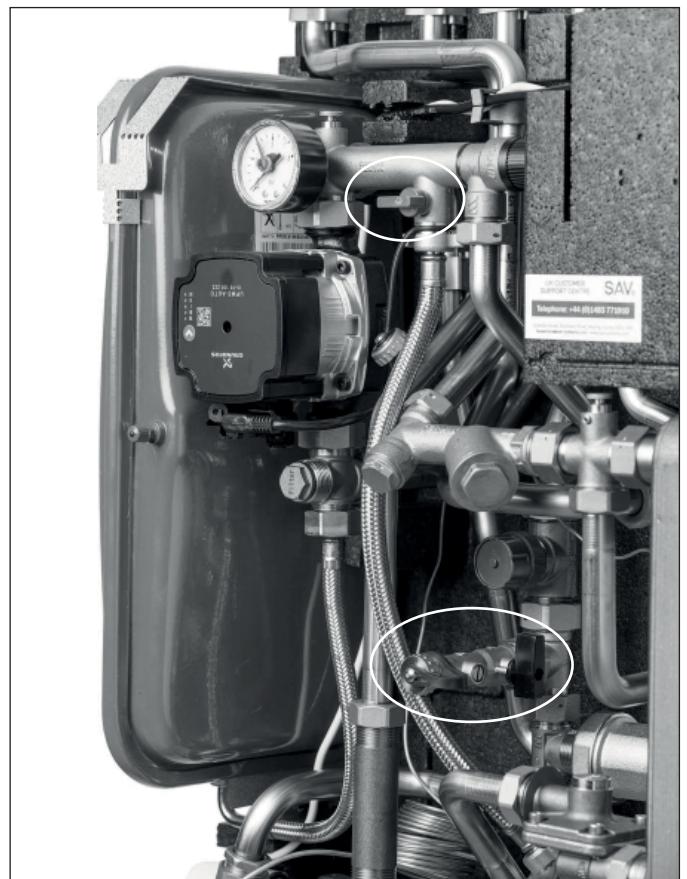
Remove the cap and connect the flexible hose.

**Step 3:**

Open both valves.

**Step 4:**

After filling up the secondary heating system, close both valves, disconnect the flexible hose and refit the insulation.



## Termix VVX-IV - 7 Series DS Fully insulated

### Start-up

#### Start pump

Start the pump and adjust to its highest speed.

#### Remark:

The circulator pump should run for 10 minutes during the first installation.

#### Open isolation valves - primary

The isolation valves should then be opened and the unit observed as it enters service. Visual checking should confirm temperatures, pressures, acceptable thermal expansion and absence of leakage. If the heat exchanger operates in accordance with design, it can be put into regular use.

#### Vent system

Switch off the pump and vent the installation after the radiators have warmed up.

#### Pump settings

Adjust pump to recommended pump settings.

#### Check the strainer

Check strainer on primary heating and space heating.

Strainers should be cleaned regularly by authorized personnel. The frequency of cleaning will depend on operating conditions.



#### Pump

The pump must be switched off during system filling.



### Underfloor heating

#### Pump stop function

If the HIU is used in connection with underfloor heating, the circulation pump must be connected to the pump stop function in the underfloor heating controller. The pump must be stopped if all underfloor heating circuits are closed.

#### Warranty

If this is not possible, then flow must be continued through the by-pass. Failing this, the pump will be at risk of seizure and any remaining warranty is forfeited.

## Operating Guide - Components

### Heating controls

#### RAVK controller (35-75 °C)

Temperature setting

Relation between scale numbers 1-5 and closing temperature.  
(the values given are approximate)

1 = 30 °C  
2 = 40 °C  
3 = 52 °C  
4 = 64 °C  
5 = 76 °C

#### Thermostatic control

The flow temperature in the space heating circuit is controlled using the temperature regulation of the HIU, depending on model and type.

The temperature of the HTG flow line is adjusted as follows:  
To increase the temperature, turn the handle on the thermostatic controller to select a higher number.  
To decrease the temperature, turn the handle on the thermostatic controller to select a lower number.



### Removing the RAVK sensor

#### 1. Setting

Before removing the RAVK sensor from the valve turn to setting 5.

#### 2. Loosen screw

Loosen the screw as much as you can still keeping it in place.

#### 3. Remove

Remove the RAVK sensor.



### Refitting the RAVK sensor

#### 1. Setting

Before refitting the RAVK sensor make sure it is set to 5. Make a note of the position of the arrow.

#### 2. Ridges

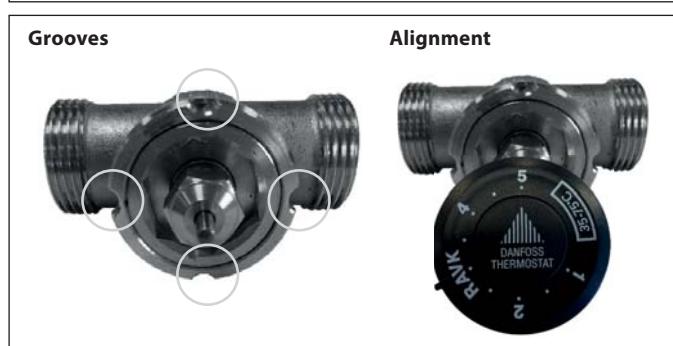
On the exact opposite side of the arrow on the front is a ridge on the inside edge of the sensor housing - and another opposite this one.

#### 3. Grooves

Note the four grooves on the rim of the valve.

#### 4. Alignment

Align the arrow on the front to one of the grooves on the rim of the valve and push the RAVK sensor onto the valve.



## Termix VVX-IV - 7 Series DS Fully insulated

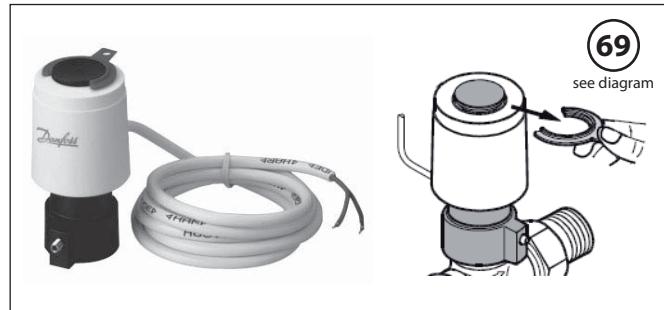
### Thermoactuators

#### Activating the thermoactuators

The thermoactuators are supplied with a "first open" function, which means that they are slightly open for frost protection until the electrical controller is installed. During commissioning, the "first open" function is disabled by removing the red mounting split on the thermoactuator.

Please check that the thermoactuators can fully close following disabling of the "first open" function.

See the installation guide included with the thermoactuator.



### Differential pressure controller

The differential pressure controller smooths out the fluctuations in pressure arriving from the heat network.

The operating pressure in the HIU is thus held steady.

The AVPL can be set within the region of 5 kPa to 25 kPa (0.05 bar to 0.25 bar).



### Circulator pump UPM3

UPM3 pumps can be controlled under constant pressure, proportional pressure or constant speed mode as defined by means of an intelligent user interface.

The variable speed modulating modes allow the pump to match its performance to the system requirements, helping to reduce noise when thermostatic valves are closing down.

Energy labelling class A.



## Termix VVX-IV - 7 Series DS Fully insulated

### Grundfos UPM3 AUTO instructions

#### Control mode

Each push on the button switches to the next program setting. The choice of operation mode depends on the type of heating system and the pressure loss in the system.

#### Remark:

The circulator pump should run for 10 minutes during the first installation.



#### Settings

Function	■■■ / PP Green	■■ / CP Green	 Yellow	 Yellow	 Yellow
Proportional pressure Auto adapt	•				
Constant pressure auto adapt		•			
Proportional pressure 1	•		•		
Proportional pressure 2 (factory setting)	•		•	•	
Proportional pressure 3 - Max	•		•	•	•
Constant pressure 1		•	•		
Constant pressure 2		•	•	•	
Constant pressure 3		•	•	•	•
Constant curve 1			•		
Constant curve 2			•	•	
Constant curve 3 - Max			•	•	•

#### Alarm status

Function	■■■ / PP Red	■■ / CP Green	 Yellow	 Yellow	 Yellow
Power supply failure					
Blocked	•				•
Supply voltage low	•			•	
Electrical error	•		•		

#### Recommended Circulator Pump Settings

The circulator pump (10) setting will be individual to each installation, dependent on the pressure drop across the secondary circuit and the space heating design flow rate.

The below recommendations are intended as a guide.

	PP 1	PP 2	PP 3	CP 1	CP 2	CP 3	CC 1	CC 2	CC 3
Traditional TRVs	•	•	•						
Pressure Independent TRVs (PITRVs)		•	•						
Traditional UFH				•	•	•			
UFH with pressure Independent inserts							•	•	•

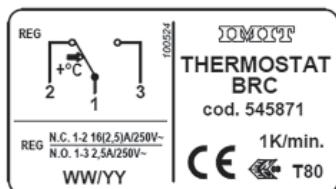
## Termix VVX-IV - 7 Series DS Fully insulated

### IMIT Thermostat

The IMIT thermostat is used to limit the underfloor heating flow temperature. The IMIT thermostat is preset to 60 °C and will shut off the pump and the primary on/off valve when the flow to the underfloor heating exceeds 60 °C.

If not already factory-fitted, the IMIT thermostat should be fitted on the secondary side flow pipe as close to the HIU as possible using the steel band provided.

To adjust the IMIT thermostat, loosen the visible screw. The cover can now be removed and the scale adjusted to the desired temperature.



### Safety valve

The purpose of the safety valve is to protect the HIU from excessive pressure.

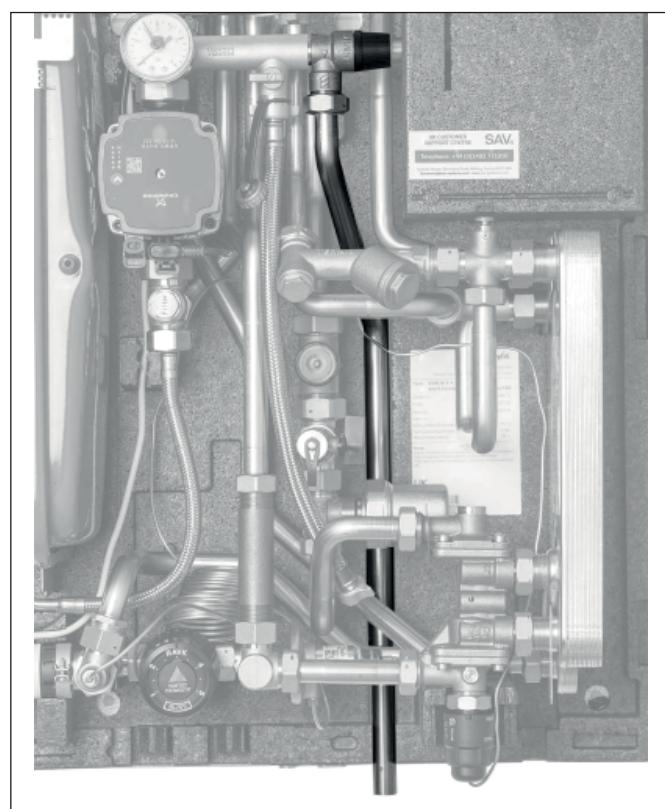
The blow-off pipe from the safety valve must not be closed.

The blow-off pipe outlet should be placed so that it discharges freely and so that any dripping from the safety valve can be clearly seen.



### Access to safety valve

- Remove the inspection hatch, service hatch and frame.
- Complete pipe work from blow-off pipe to drain.



### Waste adaptor

The waste adapter is supplied loose and is used for pipework to the drain.



## Termix VVX-IV - 7 Series DS Fully insulated

### Domestic Hot Water Temperature control

#### Domestic Hot Water temperature control

DHW temperature should typically be adjusted to 45-50 °C, as this provides optimal utilisation of DHW. At DHW temperatures above 55 °C, the possibility of limescale deposits increases significantly.

#### IHPT 180 controller (45-65°C)

The IHPT 180 controller is a self-acting flow-compensated temperature controller with integrated differential pressure controller. By turning the handle for temperature setting in a (+) direction the setting is increased, and by turning it in a (-) direction the setting is decreased.

Turns*	Scale	DHW Temperature Settings (° C)
0	7	64
1	6	61
2	5	58
3	4	55
4	3	52
5	2	48
6	1	44
7	0	43

\* Start position: Handle turned fully in (+) direction.

The values are intended as a guide. Typically best verified at the kitchen tap



### Pressure absorber

The pressure absorber reduces excess pressure created in the system caused by sudden opening/closing of taps, so a discharge outlet is omitted.

The pressure absorber can be used as a substitute to the safety valve. By reducing such excess pressure, the pressure absorber ensures proper functioning of the components located in the system. It will also considerably reduce the noise generated by vibrations that occur due to the sudden closure of taps. The pressure absorber should not be applied in systems with hot water circulation.



### Domestic Hot Water Re-circulation

#### Circulation pipe

The circulation pipe set is mounted directly on the controller. The set includes circulation pipe, single check valve and fitting. When mounting the hot water circulation directly on the controller the hot water circulation temperature will be the same as the idle temperature. The idle temperature is a few degrees lower than the set domestic hot water temperature.

#### Hot water recirculation pump

When a hot water recirculation pump is installed together with the pre-payment unit, it is recommended that the pump takes Switched Live from Terminal 2 in the heating interface wiring box. This is to ensure that the pump stops circulating when no credit is available on the pre-payment unit.



## Termix VVX-IV - 7 Series DS Fully insulated

### Expansion tank



### Heat Exchanger

The heat exchanger is produced in acid-resistant, stainless steel



### Double check valve



### Fill/drain valve

#### Air vent, manual secondary side



#### Air vent, manual

Primary side.



## Termix VVX-IV - 7 Series DS Fully insulated

### Maintenance

The HIU requires little monitoring, apart from routine checks. It is recommended that you read the energy meter at regular intervals and write down the meter readings.

Regular inspections of the HIU in accordance with these instructions are recommended and should include:

#### Strainers

Cleaning of strainers.

#### Meters

Checking of all operating parameters, including meter readings.

#### Temperatures

Check of all temperatures, such as Heat Network Supply temperature and DHW temperature.

#### Connections

Checking all connections for leaks.

#### Safety valves

The operation of the safety valves should be checked by turning the valve head in the indicated direction.

#### Venting

Check that the system is thoroughly vented.

#### Spare parts

Spare parts can be ordered from SAV Systems Ltd. Please ensure that any enquiry includes the HIU's serial number.  
The serial number is found on the unit label.



#### Authorised personnel

All troubleshooting and maintenance may only be carried out by an authorised and qualified HVAC or electrical technician.

## Troubleshooting

In the event of malfunction, check the following before initiating troubleshooting:

- That there is a power supply to the HIU.
- That the strainer on the Heat Network pipe has been cleaned.
- That the Heat Network flow temperature is normal.
- That there is sufficient differential pressure.

**Authorised personnel**

All troubleshooting and maintenance may only be carried out by an authorised and qualified HVAC or electrical technician.

## Measures AFTER troubleshooting

Once the troubleshooting has been completed, undertake the following measures:

- Tighten all union connections.
- Wipe off the HIU and clean up any fluid spills.
- Balance the HIU if necessary.
- Check that pressure and temperature are at normal levels.

**Troubleshooting**


Area of operation	Problem	Possible cause	Solution
Instantaneous water heater, thermostatic	Incorrect DHW temperature	The strainer in the supply or return line is clogged up	Clean the strainer
		Too high DHW flow rate	Check the dimensioning of DHW load, actual flow temperature and differential pressure
		Defective mixer tap	Check if the mixer tap is defective and if so, replace
		Defective or blocked check valve on the circulation valve	Check and replace if defective
		Incorrect set-point on the DHW controller	Set the DHW controller's thermostat to the correct value according to the section "Adjustments, domestic hot water"
		Defective DHW controller	1) Check the sensor: Remove the sensor head from the valve. If the DHW temperature then increases, replace the sensor 2) If the DHW temperature does not increase, replace the entire valve
		Plate heat exchanger has calcified	Replace the heat exchanger
	Domestic hot water flow is too low	The filter on the cold water supply is clogged up	Clean the filter
		Plate heat exchanger has calcified	Replace the heat exchanger
	Long wait for domestic hot water	Idle temperature is too low	Set the DHW controller's thermostat to the correct value according to the section "Adjustments, domestic hot water"
		DHW circulation temperature has been set too low	Set the thermostat higher or turn up the DHW circulation pump
Indirect heating, thermostatic	Incorrect flow temperature for space heating	The strainer in the supply or return line is clogged up	Clean the strainer
		Incorrect set-point on the temperature controller	Set the thermostat of the temperature controller to the correct value according to the section "Temperature control of heating unit"
		Defective temperature controller	1) Check the controller: Remove the thermostat from the valve. If the temperature then increases, replace the thermostat 2) Alternatively, check and exercise the valve. Replace the valve if defective
		Incorrectly set differential pressure regulator	Set the differential pressure regulator to the correct value according to the section "Differential pressure regulator"
		Defective differential pressure regulator	Check and replace if defective
		Air bubbles in the system	Bleed the installation thoroughly
		Incorrect system pressure	Check the system pressure on a pressure gauge and top up with water if necessary
		The pump is not working	Check whether there is power to the pump
		Air in the pump	Make sure there is no air in the pump housing
		The pump is blocked	Exercise the pump using the centre screw
		The pump has been set at too low a level	Set the pump correctly, see the section "Circulation pump UPM3"
		Uneven heat distribution in the building due to incorrectly set balancing valves on heat emitters	Adjust or install balancing valves
		Blocked heat exchanger	Flush the system and check that a strainer has been fitted on the secondary side. Then replace the heat exchanger
	Primary return temperature too high	Space heating flow temperature is too high	Set the thermostat of the temperature controller to the correct value according to the section "Temperature control of heating unit"
		Defective temperature controller	1) Check the controller: Remove the thermostat from the valve. If the temperature then increases, replace the thermostat 2) Alternatively, check and exercise the valve. Replace the valve if defective
		Incorrect setting or dimensioning	Check, set, replace
		Pump pressure is too high	Set the pump to a lower setting, see the section "Circulation pump UPM3"
		Defective non-return valve	Check and replace if defective
		Blocked heat exchanger	Flush the system and check that a strainer has been fitted on the secondary side. Then replace the heat exchanger
	Noise in the unit	Incorrectly set differential pressure regulator	Set the differential pressure regulator to the correct value according to the section "Differential pressure regulator"
		Defective differential pressure regulator	Check and replace if defective
		Pump pressure is too high	Set the pump to a lower setting, see the section "Circulation pump UPM3"

## Deactivation and dismantling

Before beginning the task of dismantling, it must be ensured that:

- All isolation valves on connections are closed.
- The 230V plug has been removed from the socket.
- The unit has cooled down.



### Gloves

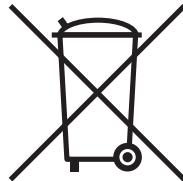
It is recommended that suitable work gloves are used in connection with handling and lifting of the HIU.

## Disposal

This product consists of materials that cannot be disposed of together with household waste.

The product is dismantled and the components sorted into various groups before disposal.

Local legislation governing disposal must be followed.



**Declaration of conformity**ENGINEERING  
TOMORROW**Danfoss A/S**

6430 Nordborg

Denmark

CVR nr.: 20 16 57 15

Telephone: +45 7488 2222

Fax: +45 7449 0949

**UK DECLARATION OF CONFORMITY****Danfoss A/S**

Danfoss District Energy Division

Declares under our sole responsibility that the:

**Product category:** Small substations**Type designations:**

Ø18:	HD	BTD	VMTD mini mix	VX	VVX	One Solar
		BVX	VMTD mix			Mixing loop
			VMTD F mix			Measuring Unit
C28:	CS 28 HD	BV	CS 28 VMTD	CS 28 VX	CS 28 VVX	BL
C32:	CS 32 HD	BV	CS 32 VMTD	CS 32 VX	CS 32 VVX	
C40:		BV	CS 40 VMTD	CS 40 VX	CS 40 VVX	

Covered by this declaration is in conformity with the following directive(s), regulation(s), standard(s) or other normative document(s), provided that the product is used in accordance with our instructions.

**Supply of Machinery (Safety) Regulations 2008****BS EN ISO 12100:2011**

Safety of machinery – General principles for design – Risk assessment and risk reduction

**BS EN 60204-1:2018**

Safety of machinery – Electrical equipment of machines – Part 1: General requirements

**The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (as amended)****BS EN IEC 63000:2018**

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

**Electromagnetic Compatibility Regulations 2016****BS EN 61000-6-1:2007**

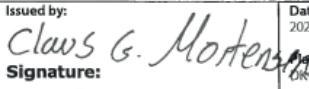
Electromagnetic compatibility (EMC) – Part 6-1: Generic standards – Immunity residential, commercial and light-industrial environments

**BS EN 61000-6-2:2005**

Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments

**BS EN 61000-6-3:2007 + A1:2011**

Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments

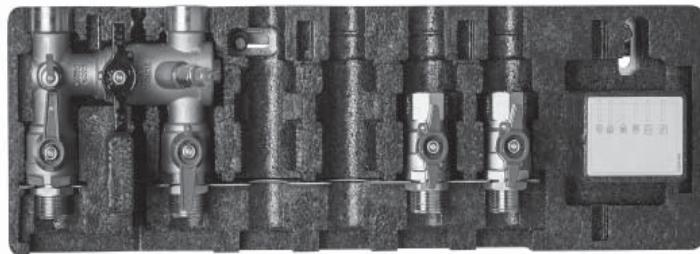
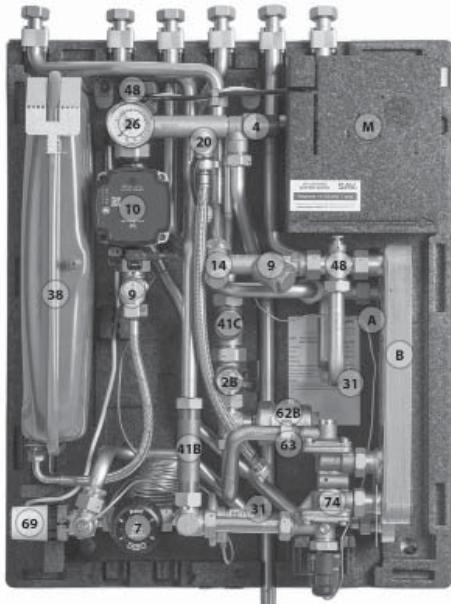
Date: 2022.01.13	Issued by:  <b>Signature:</b> <b>Name:</b> Claus G. Mortensen <b>Title:</b> Quality Manager	Date: 2022.01.13	Approved by:  <b>Signature:</b> <b>Name:</b> Karina Friis Skov <b>Title:</b> Director, Engineering
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Danfoss only vouches for the correctness of the English version of this declaration. In the event of the declaration being translated into any other language, the translator concerned shall be liable for the correctness of the translation

## Termix VVX-IV - 7 Series DS Fully insulated

## Pre hand over check list

Date:	Unit No.:	Carried out by:



Description:	Pos.	Page	OK	Remark:
Connection connected correctly		10		
All connections tightened				
Primary system flushed, through flushing bypass		11		
2 Strainers checked	9	20		
Differential pressure controller adjusted	31	22		
Clip on actuator removed	69	22		
Wiring completed		15-16		
Mains connected				
Room controller connected and working				
Pre payment unit connected and working				
Pump setting completed	10	22-23		
Correct pressure on secondary system	26	18		
System properly vented	48	20		
UFH stat mounted correctly on heating supply line	60	24		
Safety valve checked and piped to drain	4	24		
DHW Temperature setting	74	25		
Heating temperature setting	7	21		
Flushing bypass closed				
Insulation has been remounted				

**SAV Systems Ltd.** · Scandia House · Boundary Road · Woking, Surrey GB-GU21 5BX · Great Britain  
 Tel.: +44 (0) 1483 771910 · info@sav-systems.com · www.sav-systems.com

Any information, including, but not limited to information on selection of product, its application or use, product design, weight, dimensions, capacity or any other technical data in product manuals, catalogues descriptions, advertisements, etc., and whether made available in writing, orally, electronically, online or via download, shall be considered informative, and is only binding if and to the extent, explicit reference is made in a quotation or order confirmation. Danfoss cannot accept any responsibility for possible errors in catalogues, brochures, videos and other material. Danfoss reserves the right to alter its products without notice. This also applies to products ordered but not delivered provided that such alterations can be made without changes to form, fit or function of the product. All trademarks in this material are property of Danfoss A/S or Danfoss group companies. Danfoss and the Danfoss logo are trademarks of Danfoss A/S. All rights reserved.



# Your G6 User Guide

# Contents

This is the G6 User Guide and has been created to provide you with all the information needed to help you use your G6.

This guide has been split into 5 sections, please take some time to read all the information about the G6 and its functionality. There is also useful tips on pages 14 and 15 with some frequently asked questions and advice on how to save energy.

Your G6	<b>Page 3</b>
Pay As You Go	<b>Page 4 - 8</b>
In-Home Display Screens	<b>Page 9-13</b>
Frequently Asked Questions	<b>Page 14</b>
Energy Advice	<b>Page 15</b>

## Introduction

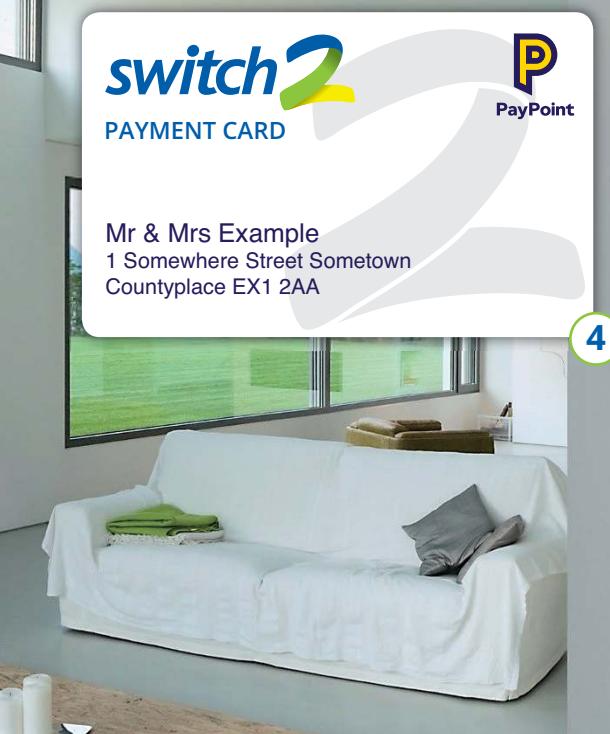
The G6 is an award winning multi-functional energy payment unit from Switch2. The G6 has in-home display functionality built in providing useful consumption information in an easy to understand format.

Using the G6 can help you manage your energy consumption through the in-home display functionality. This shows your energy consumption and daily usage on simple to understand graphs and gauges.



**PLEASE NOTE:** The mode of operation of the G6 in your property is set by your housing association/ development management agent.

# Your G6



The G6 is a simple to use device that consists of:

- 1 Home screen:** Provides the user with useful information such as current credit status and whether the energy supply is on/off. After a period the G6 screen will return to a screensaver which is the Switch2 logo (generally).
- 2 Buttons:** Allow you to interact with the G6 to cycle through menu screens, activate the emergency credit (in pay-as-you-go mode) or clear messages.
- 3 Energy supply indicator:** When illuminated this shows that the energy supply is available.
- 4 Payment card:** If the G6 is running in pay-as-you-go mode then a card is provided allowing you to buy credit to top-up your G6.

# Pay-As-You-Go

## Pay-As-You-Go mode

The G6 is a sophisticated and revolutionary pay-as-you-go unit allowing multiple payment options, in-home display functionality and comfort in the knowledge that the G6 system is being managed by a company with over 35 years experience.

In pay-as-you-go mode your G6 shows how much credit you have remaining and as you use energy credit is deducted accordingly.

Your G6 will generally have a screen saver showing the Switch2 logo and this can be cleared with the press of either button to reveal your home screen.



**PLEASE NOTE:** The mode of operation of the G6 in your property is set by your housing association/ development management agent, and not Switch2.

## Home screen

The amount of money you have on your G6 is displayed on the home screen. The credit amount is shown in a monetary value with the words credit or debt in front. When you have credit, 'ON' is displayed in the top right corner of the screen and shows that the energy supplies controlled by the G6 are available. You will also see the green energy supply indicator is lit.



As you use energy in your home, the credit on your G6 will decrease. If your credit runs out before you top-up your G6, the energy supplies will disconnect and 'OFF' will be displayed in the top right corner. The green supply indicator will now be off.



## How do I buy credit?

You should try and keep your G6 topped up at all times with enough credit to avoid any potential disconnection to your energy supply.

To top-up, you can either call the automated payment line: **0333 313 9171**, or simply visit any outlet where you see the PayPoint sign with your Switch2 payment card. You can find your local PayPoint outlet and opening hours at [www.paypoint.com](http://www.paypoint.com)

Alternatively, you can visit [quickpay.switch2.co.uk](http://quickpay.switch2.co.uk) to top-up online or download the Switch2 Quickpay app for iOS and Android devices.



# Using the Quickpay app

- Top-up anywhere, anytime
- Simple system
- Automatic top-up and regular top-up available
- Available on smartphones and tablets
- Convenient - no need to go out to top-up
- All major credit and debit cards accepted

## Getting started

- 1 Go to the App Store for iOS or the Google Play Store for Android and search '**Switch2**'
- 2 Download the free app
- 3 Once downloaded you'll be asked for your serial number and passcode
- 4 Your serial number is printed below the barcode on the front of your unit
- 5 To access your passcode click on the 'passcode help' button on the app and enter your serial number
- 6 Your unique passcode will be displayed on your prepayment unit.  
Make a note of your passcode here:



## Log in and top-up

- 1 Enter your serial number and passcode into the app
- 2 Select your payment amount and click 'purchase'
- 3 Enter your card details and submit your payment
- 4 You will be advised how quickly the credit will be on your unit\*

**Quickpay can also be accessed from any web enabled device at: [quickpay.switch2.co.uk](http://quickpay.switch2.co.uk)**

\*Please note, credit can be on the unit in as little as 5 minutes but this is dependent on the state of the mobile network connection, so may vary depending on your connection. It is always better to keep your credit level topped up. Emergency credit should only be used if you cannot top-up when required.

# Pay-As-You-Go

## How long does it take to arrive?

Once you have made a payment by topping up online or through PayPoint, we will be notified immediately and the credit will be applied to your G6 unit within 10 minutes\*. Please ensure that when your credit is running low, that you allow enough time for your top-up to arrive on your G6. This will help you to avoid using the emergency credit facility, ensuring that is available for actual emergencies.

## What happens when credit arrives?

When the credit is sent to your G6 you will receive the following message on-screen:

**"Your Purchase of £20 was Applied 06/01/13 at 10:59"**

This message will stay on the screen until the message is cleared. To clear this message and return to the home screen, press the orange button marked **Exit >**



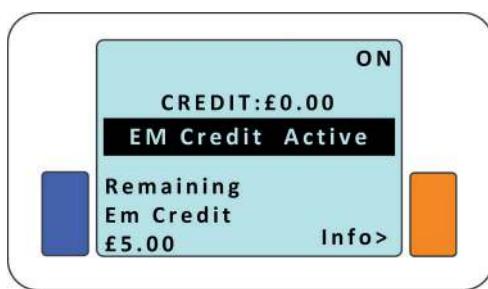
## What if you don't receive your credit?

Sometimes things outside our control can affect credit being sent to your G6 so always try and keep your G6 in credit. If you haven't received your credit by the time indicated above, please contact us on **0333 321 2010**

Please ensure that you keep all of your transaction receipts in case you need to contact us to discuss a purchase which has not arrived.

## You've run out of credit...

If you cannot top-up your G6 and your credit is about to expire, or you have run out, the G6 has an emergency credit facility. This allows you to 'borrow' credit which will reconnect your supplies for a short period of time. This is simply a loan, and **must be paid back in full before the system can be used again**.



The emergency credit facility becomes available to activate when your credit value reaches £1.00 or less. To activate, press the blue button marked **<Press For Em Credit.**



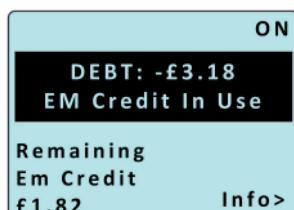
**PLEASE NOTE:** This should only be used in emergency situations where you cannot top-up before your credit is due to expire.

## When using emergency credit



As can be seen in this screen, the emergency credit has been activated and is in use.

The '**Remaining Emergency Credit**' is £5.00, the supply is '**ON**' and energy is currently available.



This screen shows that the emergency credit has reduced to '**£1.82**' and the '**DEBT**' on the unit has increased to '**£3.18**'.

In this state, the supply is still '**ON**' and energy supplies are available.



This screen shows that all of the Emergency credit has been used and the '**DEBT**' is now '**-£5.00**'

The supply is now '**OFF**' and will only be reconnected once the '**DEBT**' has been repaid in full.

If you have used all of your emergency credit you will have to purchase more than the displayed '**DEBT**' before your supply will be turned back on. For example: If your debt = -£5.00 you must buy more than £5.00 to turn your supply back on.



**PLEASE NOTE:** Purchasing LESS than the value of the debt will NOT reconnect your supply. We recommend purchasing at least £5.00 more than the value of the debt to ensure that your supply is reconnected and maintained.

# Pay As You Go

## Friendly disconnection

If you run out of credit and have used all your emergency credit, the G6 has a 'friendly disconnection' mode and will not disconnect you at certain times when topping up may be inconvenient. Debt will continue to increase when your system is in use during this time. The Friendly Disconnection periods are shown in the table below.

Day	Friendly disconnection times
Monday to Friday	8:30pm to 10:00am
Weekends	All Day



## Bank Holidays and special days

Your G6 will not disconnect your supply during certain special days such as Christmas, Boxing day, Easter and other official bank holidays. Over these days if you have exhausted your emergency credit the G6 enters friendly disconnection mode and you will continue to be able to use your system. However on the first following working day your G6 will disconnect your energy supplies and then will not be reinstated until you have bought credit to clear the total debt.

## Lost or damaged card?

Don't worry if you lose your payment card. Simply call us on **0333 321 2010** and we'll arrange for a new card to be sent to your home within 3 - 5 working days.

If you have lost your card, do not worry about someone finding and using your card, it is registered to you and your G6 only and cannot be used to top-up any other G6. Your card has no monetary value and is simply used to identify who has made payments. No money is stored on the card.



**PLEASE NOTE:** Purchasing LESS than the value of the debt will NOT reconnect your supply. We recommend purchasing at least £5.00 more than the value of the debt to ensure that your supply is reconnected and maintained.

# In-Home Display

## In-Home Display

The In-Home Display functionality within the G6 has been designed for monitoring energy consumption and its associated costs in a user-friendly way. Using the In-Home Display can help you to understand your energy usage by showing you how much energy is being used and when.

The G6 communicates with the connected meter (s), and uses the reading information to provide the energy usage information within the In-Home display screens. The In-Home Display functionality will show information relating to up to two meters. This is set by your housing association/ development management agent.

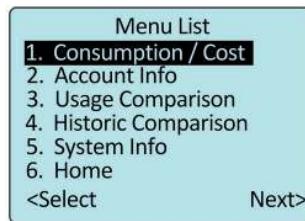
This manual reflects all the features available in the G6, however your display may not have all the screens available.

## Menu navigation

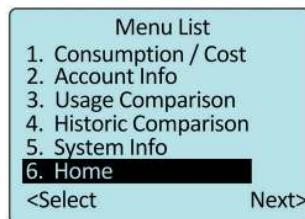
The G6 provides information about energy consumption, payments, current and historical usage. To access these options from the home screen press the orange button marked **Menu** >  This will bring up a new screen showing all the available options.



Press the orange button marked **Next>**  to highlight the desired option. To enter this menu press the blue button marked  <select.



Once in your selected option, navigate through the screens using the orange button marked **Next>**  This will cycle through the available screens in the selected option. To return to the menu list press the blue button marked  <Menu.



The G6 will return back to the home screen if no button is pressed for 60 seconds, or by selecting option '**6. Home**' from within the menu.

# In-Home Display

## 1. Consumption / Cost

The Consumption / Cost screens contain information on the energy you have used, its cost, emissions and your current usage. Icons and text will be displayed on each screen for each energy supply your G6 is controlling.

If you are using your G6 with two supplies i.e. Heat and Gas your G6 screens will show both supply types indicated with the appropriate icon listed below.



Heat



Water



Chilling / Air Conditioning



Electricity



Gas



Daily Standing Charge

### Current Consumption

The Current Consumption screen shows the total units of energy consumed for each fuel over the last 4 full hours. This is updated each hour. The unit of measure for the supply type is displayed alongside the value e.g. the unit of measure for heat is kWh.

Current Consumption

Heat 2.0 kWh  
in the last 4 Full hrs

<Menu      Next>

### Current Emissions

This screen shows the amount of carbon dioxide (CO2) emissions for the energy you have consumed for each fuel during the last 4 hours. This value is displayed in kilograms (kg) of CO2.

Current Emissions

Heat 1.800 kg CO2  
in the last 4 full hrs

<Menu      Next>

### Current Cost

This screen shows the total cost for the energy for each fuel used over the last 4 full hours. This is updated hourly and the information is displayed as a monetary value. Each supply will be shown with its icon and name i.e. radiator icon and 'Heat'.

Current Cost

Heat £0.00  
in the last 4 full hrs

<Menu      Next>

## Current Tariff

This screen shows the cost applied to each unit of energy consumed for each fuel as well as any daily deduction. The supply type and tariff charge (in pence) are shown alongside the supply icon. If there is a standing charge applicable this will be shown as a 'Daily deduction' with the value in pence. If there is no deduction this icon will still be shown however the value will be zero (0.0p).

If you are away from home for a period of time and you have a daily deduction it will continue to be taken from your credit.

Current Tariff	
	Heat 0.0p Per kWh
	Daily deduction 0.0p

## Current Power

This screen shows the current amount of energy you are consuming. Generally this value is read directly from the meter, however not all meters can provide this information. Where an accurate value is not available an estimate is calculated.

Current Power	
	Heat 0.00 kW
	04/01/13 15:30
	Elec 0.00 kW
	04/01/13 15:30

<Menu

Next>

## 2. Account Info

The Account Info screens show your current balances, arrears and purchase history.

### Account Balance

This screen shows your current G6 credit/debt balance and any arrears owed. The PPU balance is the credit or debt value currently on your G6. An Arrears Balance may show on the G6 if an outstanding debt is owed and is to be collected through a repayment agreement. Any repayment agreement will have been discussed with you prior to its implementation.

Account Balance	
PPU Balance	£26.24
Arrears Balance	£0.00
Total Balance	<u>£26.24</u>

<Menu

Next>

### Recent Credits

This screen shows the last 5 credit purchases that have been received by the G6. The time and date stated are the exact time at which the credit was received by the G6 and not the time when the credit was purchased.

Recent Credits	
£20.00	06/01/2013 11:02
£4.65	04/01/2013 10:20
£8.00	21/12/2012 10:37
£5.00	12/12/2012 10:29
£10.00	28/11/2012 10:45

<Menu

Next>

# In-Home Display

## 3. Usage Comparison

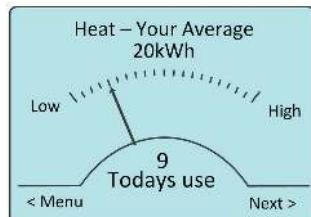
The Usage Comparison screens graphically display your consumption for each fuel. These update throughout the day and can be looked at to easily review your daily usage.

### Your Average

This screen shows the amount consumed today against your daily average use for the last 14 days.

The value above '**Todays use**' shows the total number of units used today since midnight.

Your 14 day average is shown at the top under '**Your Average**' e.g. 20 kWh.



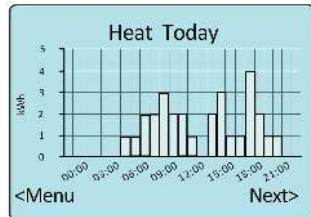
The arrow on the gauge will move round with each unit consumed. When the arrow reaches the middle this indicates that your usage has equalled your 14 day average. When the arrow moves past the centre towards '**High**' this indicates that your usage today is higher than your 14 day average.

## 4. Historic Comparison

The Historic Comparison screens contain graphs displaying your consumption for Today, Yesterday, Last 7 days and the last 12 months\*. In each case the screens will show the supply type with the appropriate period in the title e.g. '**Heat Today**'

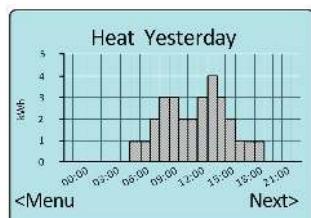
### Today

This graph shows a full 24 hour period from 00:00 to 23:59 for the present day. Each bar shows the amount of consumption during any given hour. At the beginning of the day this graph will be empty and is updated hourly. The number of units is shown on the vertical scale along with the unit of measure.



### Yesterday

This screen shows the full 24 hour period for the previous day. Each bar shows the total consumption during each hour of that day. The number of units is shown on the vertical scale along with the unit of measure..

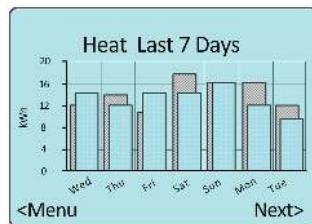


\*Please note if your G6 is replaced or reprogrammed, all historical data will be reset. If your G6 has power disconnected then the values for 'Today' and 'Yesterday' screens will be lost.

## 4. Historic Comparison continued...

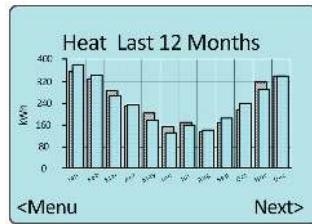
### Last 7 Days

This screen shows a rolling weekly comparison. This shows the last 7 days of consumption compared with the previous 7 days. The lighter bars show the last 7 days, with the darker bars behind showing the previous 7 days.



### Last 12 Months

This screen shows consumption information over the last 12 months compared with the previous 12 months. The lighter bars represent the last 12 months values, with the darker bars behind showing the previous 12 months consumption for comparison. E.g. the first column shows 380 kWhs used last January (lighter bar), compared with 340 kWhs used the previous January (Darker Bars)



## Menu Option 5 - System Info

These screens show system specific information for use by Switch2 engineers.

Depending on the type of meter(s) connected to the G6, the screens 1A &1B may show some useful information:

**SN:** Serial Number of the meter

**Read:** The meter reading

**On, At:** The last time the meter was read by the G6

**Rate:** Tariff Information and daily standing charge

INFO 1A	
METER	1:M-Bus1
SN:	123456
READ:	457
ON:	01/01/12
AT:	00:00
RATE	0.000p / kWh
	0.000p / Day

\*This may not be applicable to your particular installation.

# Frequently Asked Questions

## If you have no heat and hot water...

Have you checked the following:

- Does your Home Screen say ON in the top right corner?
- Do you have enough credit on your G6?
- Have you activated your emergency credit?
- Is your heating programmer turned on?
- Is your room thermostat turned up?

If you have answered YES to all of these, please contact our customer service team on **0333 321 2010**

## Your G6 screen is blank...

Have you checked:

- Have you pressed the orange button and the screen is still blank (no text or images)

If you have answered YES to the above, please contact our customer service team on **0333 321 2010**

## You don't know where your nearest payment outlet is...

Please go online and visit **[www.paypoint.com](http://www.paypoint.com)** and enter your postcode to find a list of the PayPoint outlets in your local area.

## You have a general query with your account...

If you have a query and you can't find an answer in this booklet, please contact us on **0333 321 2010**



**switch2**

Energy Advice

- Get to know your heating controls (programmer) and use this to set the heating to turn on and off when necessary
- If you have individual controls on your radiators make sure these are set at the correct temperature for the rooms where you spend time
- Try turning your room thermostat down 1 degree and see if you are still feeling comfortable, this could save up to 10% of your heating bill
- In winter it is recommended that your living room is kept around 21°C and the rest of your house should be heated to 18°C
- Close your curtains at dusk to help keep the heat in
- Avoid drying clothes on radiators as it lowers the room temperature
- Install energy efficient bulbs where possible in rooms which you regularly use, as they can last up to 15 times longer and provide the same light level at a quarter of the running costs of normal light bulbs
- Turn off the TV and other appliances when they are not in use
- Turn off all lights when they are not in use
- Turn your heating down rather than opening a window to reduce the room temperature
- Never cover radiators as this can reduce their efficiency by 30%

**For general account queries:**

**0333 321 2010**

**Lines open Monday - Friday  
(08:00 - 18:00)**

**To report a fault with your G6  
24 hours a day:**

**0333 321 2010**

**This is your  
payment card**

If your payment card is not attached here and you have not received it in another way, please contact Switch2 today on **0333 321 2010** and we will arrange for a replacement to be sent to you within 3 - 5 working days.

Registered office:

**Switch2 Energy Limited,  
The Waterfront, Salts Mill Road,  
Shipley, Bradford, West Yorkshire  
BD17 7EZ**

Registered in England No: 3516925



This system is powered by a 230V mains electricity supply.  
Please DO NOT attempt to undertake any maintenance.

The System should only be installed, programmed,  
removed or dismantled by an Switch2 technician.

If the system is used in a manner not specified by Switch2,  
the protection level of the equipment may be impaired.

# heatmiser®



neoStat V2





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## What is a Programmable Room Thermostat?

A programmable room thermostat is both a programmer and a room thermostat.

A programmer allows you to set "On" and "Off" periods to suit your own lifestyle.

A room thermostat works by sensing the air temperature, switching on the heating when the air temperature falls below the thermostat setting, and switching it off once this set temperature has been reached.

So a programmable room thermostat lets you choose what times you want the heating to be on, and what temperature it should reach while it is on. It will allow you to select different temperatures in your home at different times of the day (and days of the week) to meet your particular needs and preferences.

Setting a programmable room thermostat to a higher temperature will not make the room heat up any faster. How quickly the room heats up depends on the design and size of the heating system.

Similarly reducing the temperature setting does not affect how quickly the room cools down. Setting a programmable room thermostat to a lower temperature will result in the room being controlled at a lower temperature, and saves energy.

The way to set and use your programmable room thermostat is to find the lowest temperature settings that you are comfortable with at the different times you have chosen, and then leave it alone to do its job.

The best way to do this is to set the room thermostat to a low temperature – say 18°C, and then turn it up by 1°C each day until you are comfortable with the temperature. You won't have to adjust the thermostat further. Any adjustment above this setting will waste energy and cost you more money.

You are able to temporarily adjust the heating program by overriding or using the temperature hold feature. These features are explained further on pages 17 and 18 of this manual.

Programmable room thermostats need a free flow of air to sense the temperature, so they must not be covered by curtains or blocked by furniture. Nearby electric fires, televisions, wall or table lamps may also prevent the thermostat from working properly.



# Installation Procedure



## Do

Mount the thermostat at eye level.

Read the instructions fully so you get the best from our product.



## Don't

Do not install near to a direct heat source as this will affect functionality.

Do not push hard on the LCD screen as this may cause irreparable damage.

*The neoStat V2 is designed to be flush mounted and requires a back box of 35mm (minimum depth) to be sunk into the wall prior to installation.*

## Step 1

Using a small screwdriver, slightly loosen the screw from the bottom face of the thermostat. Then carefully separate the front half from the back plate.

## Step 2

Place the thermostat front somewhere safe.

Terminate the thermostat as shown in the diagrams on pages 28-31 of this booklet.

Note: For time clock wiring connections, terminate as shown on page 38.

## Step 3

Screw the thermostat back plate securely into the back box.

## Step 4

Clip the front of the thermostat onto the back plate, securing it in place with the retaining screw.

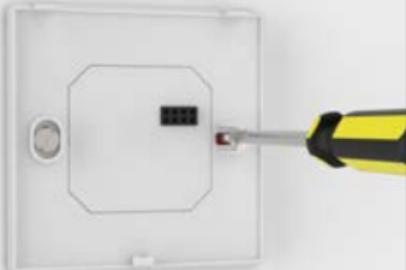
1



2



3



4





## Mode Select

This neoStat V2 can either be used as a thermostat or a time clock. Thermostat mode is the default setting.

To change between thermostat or time clock modes, follow these steps.

- Use the Left / Right keys to scroll to  ..... 
- Press and hold the Tick button for 3 seconds ..... 
- SETUP will be highlighted, now press and hold the tick key for 10 seconds.... 
- Use the Left / Right keys to scroll between modes ..... 

Mode 1 = Thermostat

Mode 2 = Time Clock

- Press the Tick key to confirm selection ..... 

The neoStat V2 will revert to the main display screen for the selected mode.

For time clock mode instructions, first pair the time clock with the neoHub as explained on page 8, then turn to page 33.



## Pairing the neoHub

To pair the neoHub with the neoApp, follow these steps.

- Connect the neoHub to your router with the Ethernet cable provided.
- Connect the power supply to the neoHub.
- The router will automatically assign an IP address to the neoHub, the Link LED will light up RED once the neoHub has connected to your network.
- Once connected to the Heatmiser cloud server, the Link LED will turn GREEN.
- Connect your smartphone or tablet device to the same WiFi network as your router.
- Download the FREE Heatmiser neoApp from the Apple App Store or Google Play Store and register an account.
- Once you have registered your account, press *Sign In*, then press *Add Location*.
- Press the *connect* button on the neoHub to add the location to your account.
- When successfully connected, enter a title for the location (e.g. Home).



## Pairing the neoStat

The next step is to join the neoStat V2 to the neoHub, we recommend joining the neoStat V2 located nearest to the neoHub first.

To add a neoStat V2, follow these steps;

- In the app, select *ADD NEOSTAT*, enter a preset or custom title, then press *NEXT*.
- You now have two minutes to join the neoStat V2 to the neoHub.
- On the neoStat V2, use the Left / Right keys to select , press and hold Tick ..... 
- *SETUP* will be highlighted, now press the tick key once 
- Feature 01 is displayed on screen.



- Press the Tick key once again to pair the neoStat to the neoHub ..... ✓
- The MESH symbol appears flashing on the display.
- When the neoStat V2 successfully connects to the neoHub the MESH symbol will be permanently displayed.
- Press ADD ANOTHER for additional zones or press FINISH to complete setup.

*Please note, you only have to pair the hub to your account once.*

*To pair any additional neoStats, select ZONES, edit, then ADD ZONE.*



## What is a Mesh Network

NeoStats work using a mesh network, meaning neoStats have the ability to send & receive signals via other thermostats on the network. This signal is relayed from one thermostat to another until it reaches its destination. This communication method extends the communication range whilst offering increased network stability when compared with standard RF thermostats.

The Mesh symbol is shown when the device is communicating with the neoHub, if the mesh symbol disappears this indicates connection to the neoHub has been lost.

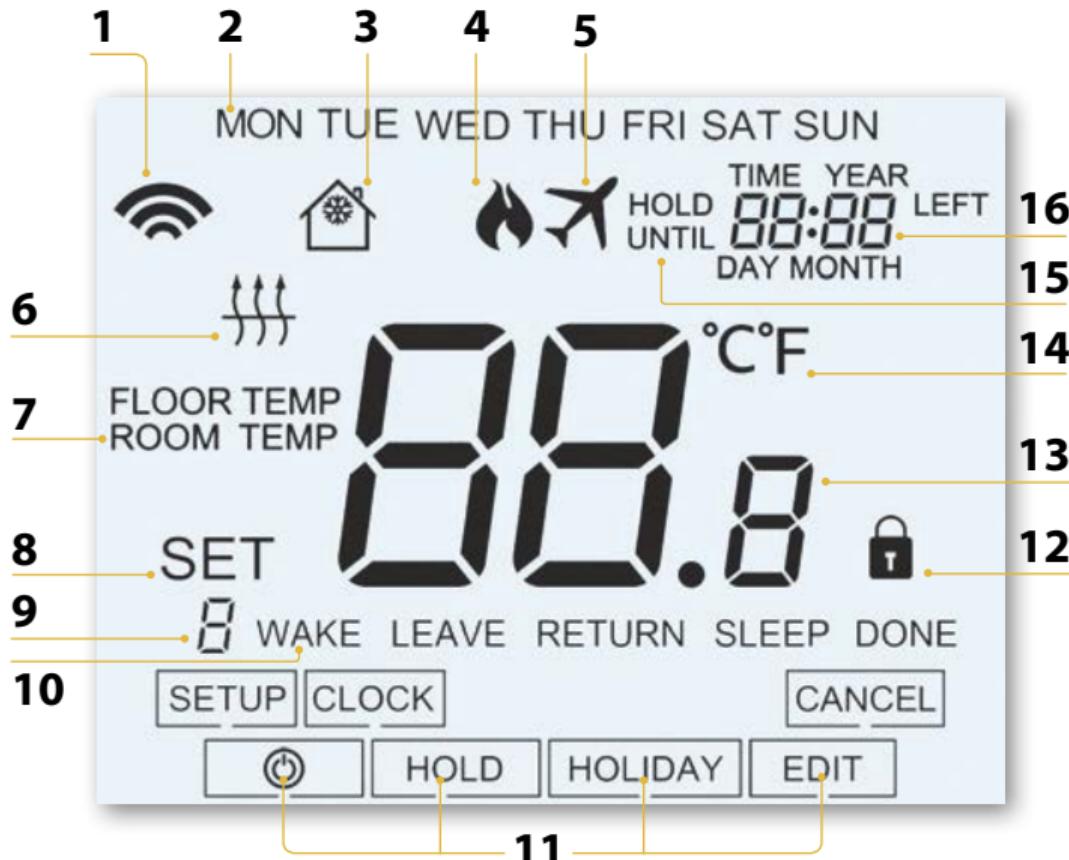


## Approach Sensor

The neoStat V2 uses proximity to detect when you are about to use the touch keys. As you approach the neoStat V2, the touch keys and backlight will light up. This can be useful if you need to adjust the set temp or timer in a dark room.

# 1 Mode 1 - Thermostat



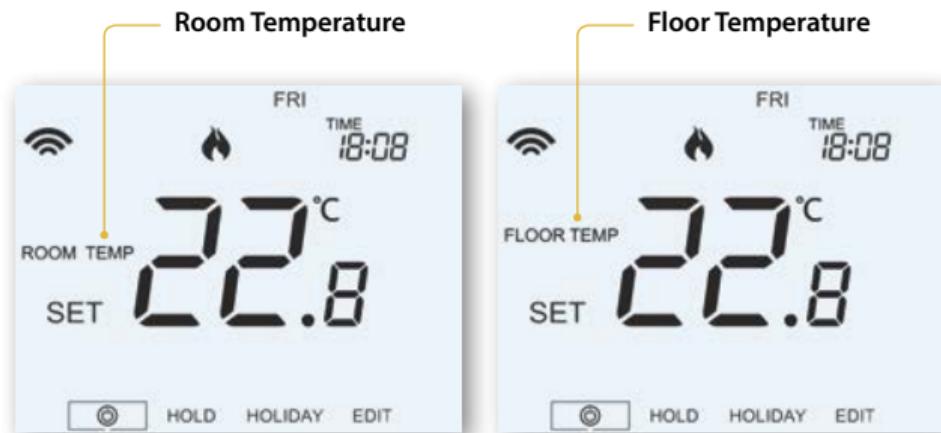


1. Mesh Symbol - Displayed when connected to the neoHub.
2. Day Indicator - Displays the day of the week.
3. Frost Protection – Displayed when frost protection is enabled.
4. Flame Symbol – Displayed when the thermostat is calling for heat and flashes when optimum start is active.
5. Holiday – Displayed when the thermostat is in holiday mode.
6. Floor Limit Symbol – Displayed when the floor probe has reached the floor temperature limit configured in the setup menu.
7. Floor/Room Temp - Indicates the displayed sensor mode.
8. Set - Displayed when changes are being made to the current set point.
9. Program Indicator - Displayed during programming (6 level mode) to show which level is being altered.
10. Program Indicator - Displayed during programming (4 level mode) to show which level is being altered.
11. Main Menu - Displays which option is currently selected.
12. Keypad Lock Indicator – Displayed when the keypad is locked.
13. Temperature – Displays the current sensor temperature.
14. Temperature Format - Degrees Celsius or Fahrenheit.
15. Hold Left - Displayed when a temperature hold is active, the remaining time will be shown.
16. Time/Day/Month/Year - Displays when setting the Clock/Calendar or a Holiday Period.



## Temperature Display

The neoStat V2 can be configured for different sensor options such as built in air sensor, floor sensor or both. The display will clearly indicate which sensor is being used by showing either "Room Temp" or "Floor Temp" before the actual temperature value.



When the neoStat V2 is set to use both the air & the floor sensor, the room temperature will be displayed by default.

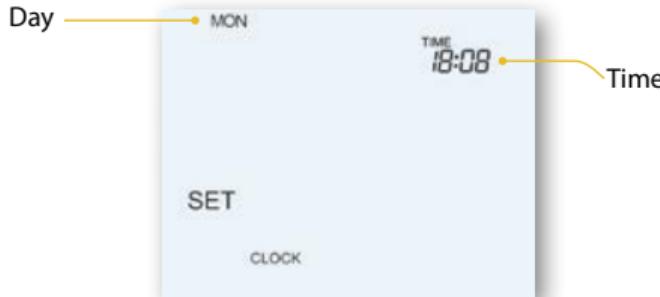
To view the current floor temperature, press and hold the Left and Right arrow keys for 5 seconds, the floor temperature will then be displayed ..... < >



# Setting the Clock

To set the clock, follow these steps.

- Use the Left / Right keys to scroll to .....
- Press and hold Tick to turn off the display .....
- Use the right arrow key to select CLOCK .....
- Press Tick to confirm selection .....
- Use Up / Down keys to set the year .....
- Press Tick to confirm selection .....
- Repeat the steps to set the Month, Date & Time .....
- Press Tick to confirm the new clock settings .....
- Use the down arrow to scroll to .....
- Press Tick to turn the display on .....





## Comfort Levels Explained

The neoStat V2 offers three program mode options; Weekday/Weekend programming, 7 Day programming and 24 Hour programming. There is also the option to use the thermostat as a Non-Programmable thermostat.

When thermostats are connected to the mesh network, the program mode for the system is configured by using the neoApp.

The thermostat is supplied with comfort levels already programmed, but these can be changed easily. The default times and temperature settings are;

07:00 - 21°C (Wake)   09:00 - 16°C (Leave)   16:00 - 21°C (Return)   22:00 - 16°C (Sleep)

If you only want to use 2 levels, you should program the unused levels to --:--

*For Weekday/Weekend programming, the four comfort levels are the same for Mon-Fri, but can be different for Sat-Sun. For 7 Day programming each day of the week can have four different comfort levels. In 24 Hour mode all days are programmed with the same comfort levels.*

- To program the comfort levels, use the Left / Right keys to scroll to EDIT ..... <> ✓
- Press Tick to confirm selection ..... ✓
- Use the Left / Right keys to select day / period of week (the selection will flash). <> ✓
- Press Tick to confirm selection ..... ✓
- WAKE will now flash and the current time and temperature setting will be shown.
- Press Tick to alter WAKE settings ..... ✓

- Use the Up / Down keys to set the hours .....
- Press Tick to confirm .....
- Use the Up / Down keys to set the minutes .....
- Press Tick to confirm .....
- Use the Up / Down keys to set the temperature .....
- Press Tick to confirm the settings .....
- Press the right arrow key .....
- LEAVE will now flash and the current settings will be displayed.
- Press Tick to alter LEAVE settings .....
- Repeat these steps to set all comfort levels.
- For any unused periods set time to --:--
- Use the Left / Right keys to scroll to DONE and press Tick .....



## Temperature Control

The Up / Down keys allow you to adjust the set temperature .....  

When you press either key, you will see the word SET and the desired temperature value. Use the Up / Down keys to adjust the SET value .....  

Press Tick to confirm settings and return to the main display ..... 



*Note: This new temperature is maintained only until the next programmed comfort level. At this time, the thermostat will revert back to the programmed levels.*



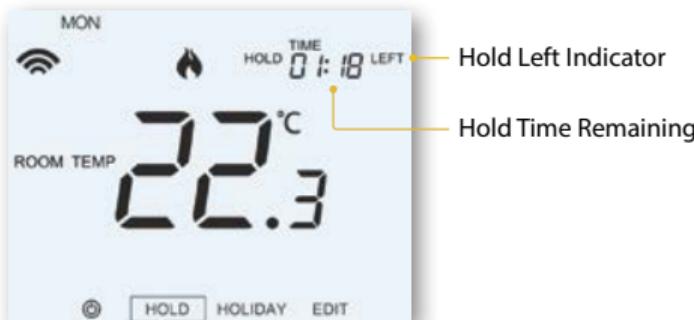
## Temperature Hold

The temperature hold function allows you to manually override the current operating program and set a different temperature for a desired period.

- Use the Left / Right keys to scroll to HOLD.....
- Press Tick to confirm selection ..
- Use the Up / Down keys to set the desired Hold period ..
- Press Tick to confirm selection ..
- Use the Up / Down keys to set the desired Hold temperature ..
- Press Tick to confirm selection ..

You will see the HOLD LEFT indication is displayed on screen.

The time will countdown the set duration and then revert to the normal program.



To cancel a temperature Hold, with hold selected on the main menu, press the tick key and then press tick again while Cancel is highlighted.



## Locking the neoStat V2

The neoStat V2 has a keypad lock facility. To activate the lock follow these steps.

- Use the 'Left/Right' keys to scroll to 'HOLD' & press ✓ for 10 seconds ..... <>✓
- The display will show 0000. At this point enter a four digit pin number.
- Use the Up / Down keys to enter the first two digits ..... ^v
- Press ✓ to confirm ..... ✓
- Use the Up / Down keys to enter the second two digits ..... ^v
- Press ✓ to confirm ..... ✓

The display will return to the main screen and display the keypad lock indicator ..... 🔒

*Note: The keypad lock indicator is only displayed when the lock is active.*



## Unlocking the neoStat V2

To unlock the neoStat V2 press Tick once. The display will show 00:00 and you will need to enter the four digit pin number you set previously.

- Use the Up / Down and ✓ keys to enter the first two digits ..... ^v✓
- Use the Up / Down and ✓ keys to enter the second two digits ..... <>✓

The display will unlock and return to the main screen.



## Frost Mode

Use the Left / Right keys to scroll to the Power Icon ..... <>

The frost icon will toggle ON/OFF each time Tick is pressed .....

In this mode, the neoStat will display the frost icon and will only turn the heating ON should the room temperature drop below the set frost temperature (see page 23).

If the heating is turned ON whilst in frost mode, the flame symbol will be displayed.

To cancel the frost protect mode, navigate to the Power button again and press Tick.





## Power On/Off

When the flame icon is absent there is no requirement for heating to achieve the set temperature, but the neoStat remains active.

To turn the neoStat V2 off completely, scroll to the Power Icon and hold the Tick key for approximately 3 seconds until the display shows SETP & CLOCK ..... 

After 30 seconds SETUP & CLOCK will clear, with only the power icon remaining.

The display and heating output will be turned OFF.

To turn the thermostat back ON, press the Tick key once ..... 

Thermostat completely OFF



Thermostat powered ON





## Holiday

In thermostat mode, the holiday function reduces the set temperature in your home to the frost protection temperature setting (see page 23).

The thermostat will maintain this temperature for the duration of the holiday and will then automatically return to the program mode on your return.

In time clock mode, the holiday function maintains the timed output as OFF.

Set a date & time for the holiday period to end, using the steps below;

- Use the Left / Right keys to scroll to HOLIDAY and press Tick ..... <>✓
- Use the Up / Down keys to set the year ..... ▲▼✓
- Press Tick ..... ✓
- Use the Up / Down keys to set the month ..... ▲▼✓
- Press Tick ..... ✓
- Repeat the steps to set the Date & Time ..... ▲▼✓
- Pressing Tick to confirm selection ..... ✓

*Note: The holiday period will start immediately, and will return to the normal program at the time & date you have configured.*

- Use the Left / Right keys to scroll to HOLIDAY and press Tick ..... <>
- CANCEL will be highlighted, Press Tick to cancel ..... ✓



## Optional Settings Explained

THE FOLLOWING SETTINGS ARE OPTIONAL AND IN MOST CASES NEED NOT BE ADJUSTED.

**Feature 01 – Pairing To neoHub:** This function is used to connect the thermostat to the neoHub.

**Feature 02 - Switching Differential:** This function allows you to increase the switching differential of the thermostat. The default is 1°C which means that with a set temperature of 20°C, the thermostat will switch the heating on at 19°C and off at 20°C. With a 2°C differential, the heating will switch on at 18°C and off at 20°C.

**Feature 03 - Frost Protect Temperature:** This is the temperature maintained when the thermostat is in Frost Mode. The range is 07 - 17°C. The default is 12°C and is suitable for most applications.

**Feature 04 – Output Delay:** To prevent rapid switching, an output delay can be entered. This can be set from 00 - 15 minutes. The default is 00 which means there is no delay.

**Feature 05 – Temperature Up/Down Limit:** This function allows you to limit the use of the up and down temperature arrow keys. This limit is also applicable when the thermostat is locked and so allows you to give others limited control over the heating system.

**Feature 06 – Sensor Selection:** On this neoStat, you can select which sensor should be used. You can select between air temperature only, floor temperature, or both. When you enable both sensors, the floor sensor is used as a floor limiting sensor and is designed to prevent the floor from overheating.

**Feature 07 – Floor Temp Limit:** This function is available when mode 06 is set to 03 or 04. You can set a floor limiting temperature between 20-45°C (28°C is the default setting). Note: Air Sensor only MUST NOT be used to control electric under-floor heating. Floor Sensor or Both should be used.

**Feature 08 – Optimum Start:** Optimum start will delay the start up of the heating system to the latest possible moment to avoid unnecessary heating and ensure the building is warm at the programmed time. The thermostat uses the rate of change information to calculate how long the heating needs to raise the building temperature 1°C (with a rate of change of 20, the thermostat has calculated the heating needs 20 minutes to raise the building temperature 1°C) and starts the heating accordingly.

**Feature 09 – Rate of Change:** Number of minutes for 1°C temperature rise.

**Feature 10 –** Not used on this model.

**Feature 11 –** Not used on this model.

**Feature 12 – Program Mode:** Non-Programmable, Weekday/Weekend (5/2), 7 Day Programming or 24 Hour. The thermostat offers three programming modes and the option of configuring it to work as a non-programmable thermostat.

**Weekday/ Weekend** - allows you to program 4 comfort levels for the weekday and 4 different comfort levels for the weekend.

**7 Day Program Mode** - Each day has 4 comfort levels that can be programmed independently.

**24 Hour Mode** - All days are programmed the same and repeat continuously.

**Feature 13 - Temperature Format:** This function allows you to select between °C and °F.



## Adjusting the Optional Settings

- Use the Left / Right keys to scroll to .....
- Press and hold the Tick button for 3 seconds .....
- SETUP will be highlighted, now press the tick key once .....



- Use the Up / Down keys to scroll through features .....
- Use the Left / Right keys to adjust the setting within each feature .....
- Press Tick to confirm and exit setup menu .....





# Optional Settings - Feature Table

FEATURE	DESCRIPTION	SETTING
01	Pairing	Used to add zone to the neoHub
02	Switching Differential	00.5 = 0.5°C 01 = 1.0°C (Default) 02 = 2.0°C 03 = 3.0°C
03	Frost Protection Temperature	07° - 17°C (12°C = Default)
04	Output Delay	00 - 15 Minutes (00 = Default)
05	Up/Down Temperature Limit	00° - 10°C (00 = Default)
06	Sensor Selection	00 = Built in Sensor (Default) 01 = Remote Air Sensor 02 = Floor Sensor Only 03 = Built in & Floor Sensor 04 = Remote Air & Floor Sensor
07	Floor Temperature Limit	20°C - 45°C (28°C = Default)
08	Optimum Start	00 - 05 Hours (00 = Default)
09	Rate of Change	Minutes to raise by 1°C
10	Not used on this model	
11	Not used on this model	
12	Program Mode	00 = Non - Programmable 01 = Weekday/Weekend (Default) 02 = 7 Day Programming 03 = 24 Hour Mode
13	Temperature Format	00 = °C, 01 = °F (00 = Default)



## Re-calibrating the Thermostat

If you need to re-calibrate the thermostat, follow these steps.

- Use the Left / Right keys to scroll to the  .....  
- Press and hold Tick to turn the display OFF ..... ✓
- Press and hold the Tick and Down keys together for 10 seconds ..... ✓ 
- The current temperature will appear on the display.
- Use the Up / Down keys to configure the new temperature value .....  
- Press the Tick key to confirm the change and the display will go blank .... ✓
- Press the down arrow to highlight the  ..... ✓ 
- Press the Tick key once to turn the thermostat ON ..... ✓



## Error Codes

When terminated for thermostat operation the screen will display an error code if a fault is detected.

E0 = The internal sensor has developed a fault.

E1 = The remote FLOOR probe has not been connected.

The remote FLOOR probe has not been wired correctly.

The remote FLOOR probe is faulty.

E2 = The remote AIR probe has not been connected.

The remote AIR probe has not been wired correctly.

The remote AIR probe is faulty.



## Floor Temperature Sensor Probe Type

The neoStat is configured as default for compatibility with 10K sensor probes.

The thermostat is also compatible with two other common probe values which are 12K or 15K. To change the neoStat to use a different probe type, follow these steps;

- Use the Left / Right keys to scroll to .....
- Press and hold Tick to turn the display OFF .....
- Press and hold the Up and Down keys together for 5 seconds .....
- Use the Left / Right keys to scroll between the different probe values .....



10 = 10K Probe



12 = 12K Probe



15 = 15K Probe

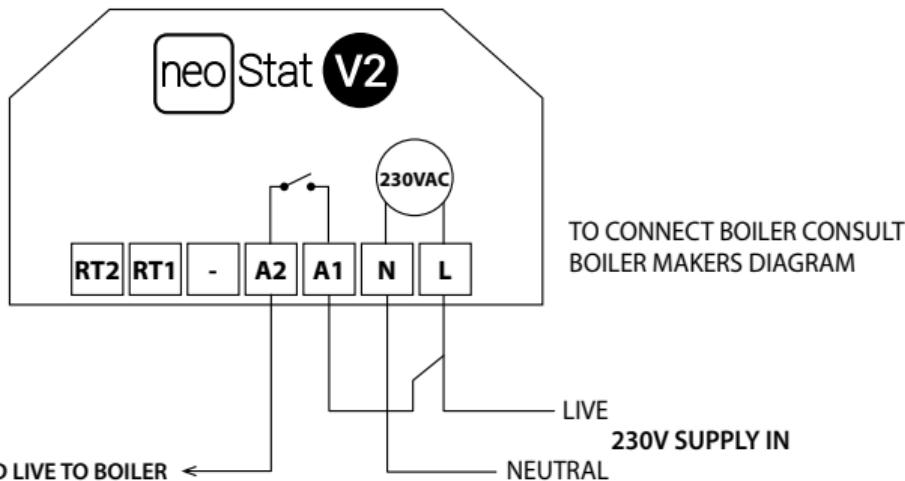
- Press the Tick key to confirm selection .....

The neoStat will revert to the main display configured for the new probe type.

*Note: This change should only be carried out by an experienced technician who has accurately verified the probe value being used.*



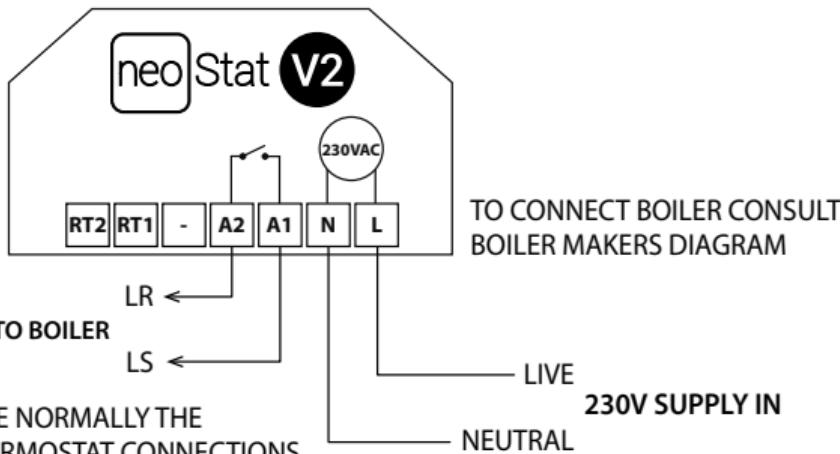
# Wiring Diagram - neoStat to Boiler S/L



This product must only be installed by a qualified electrician  
and comply with local installation regulations.



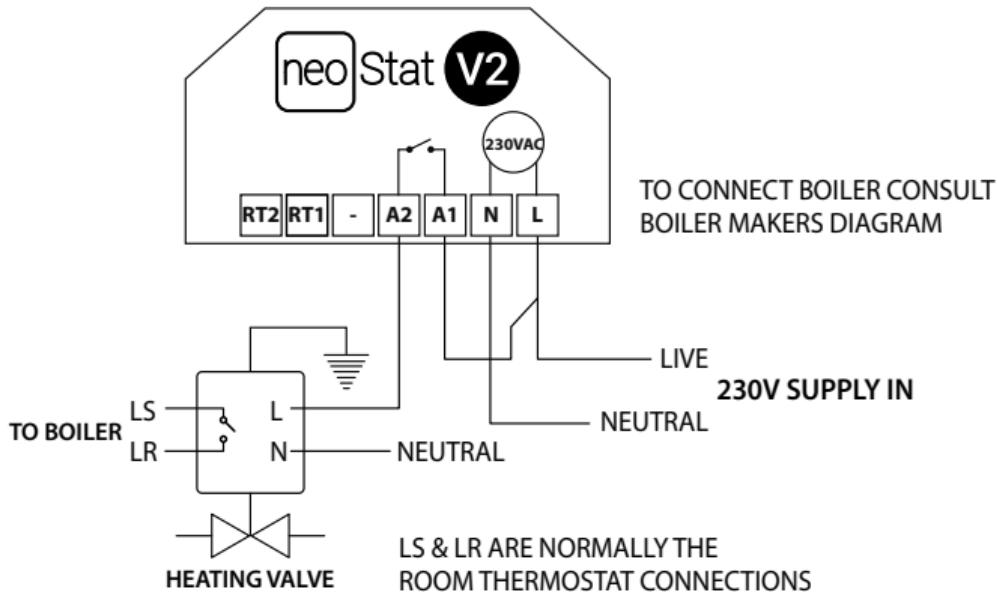
# Wiring Diagram - neoStat to Boiler Voltfree



This product must only be installed by a qualified electrician  
and comply with local installation regulations.



# Wiring Diagram - neoStat to Valve

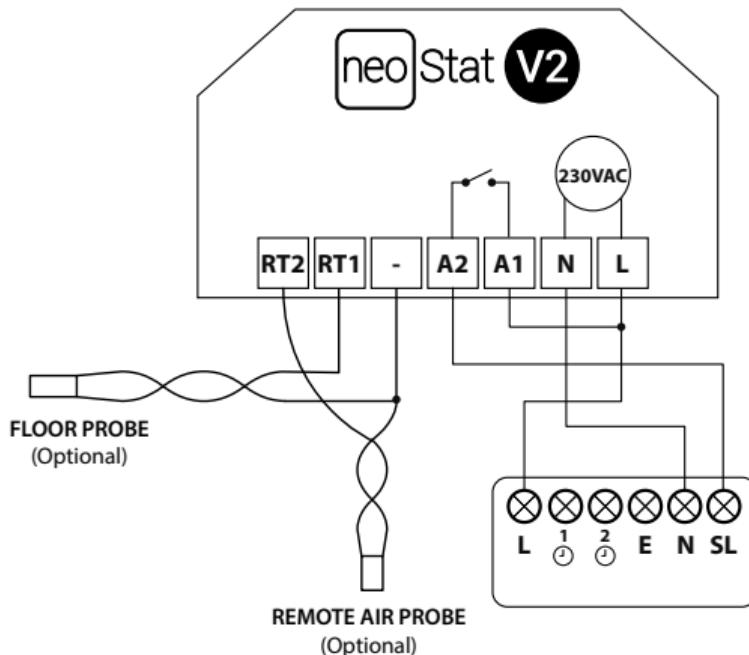


This product must only be installed by a qualified electrician  
and comply with local installation regulations.



# Wiring Diagram

## neoStat to UH8 and Optional Remote Probe Connections



This product must only be installed by a qualified electrician  
and comply with local installation regulations.



## Factory Reset

To reset the device to factory default settings, follow these steps:

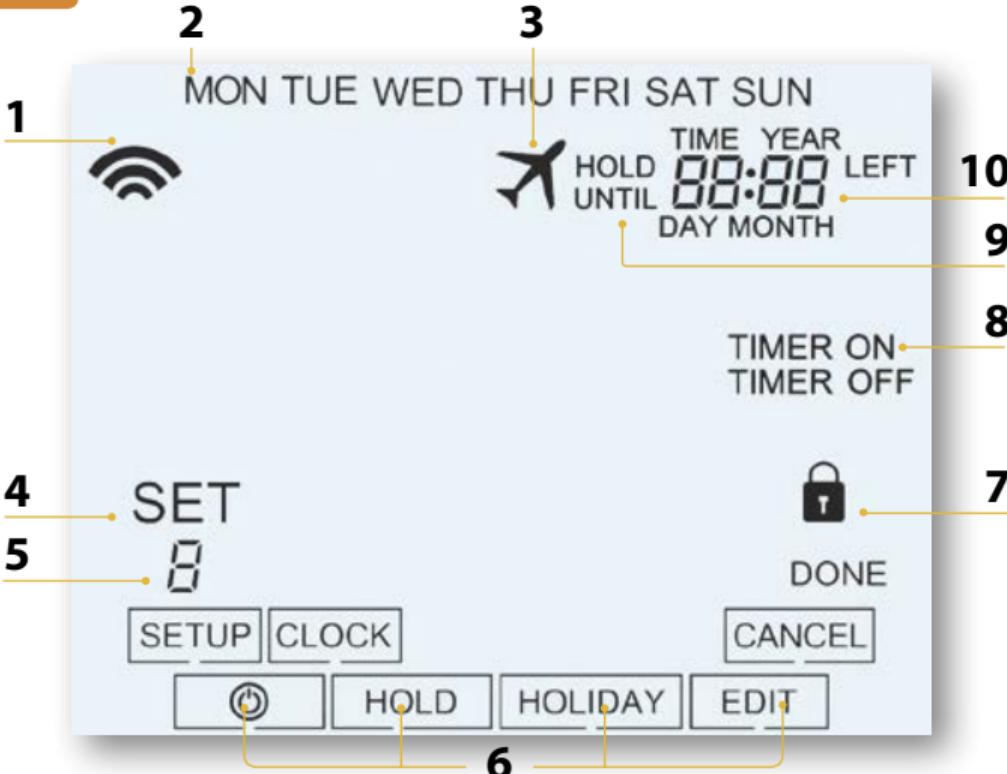
- Use the Left / Right keys to scroll to  ..... 
- Press and hold Tick to turn the display OFF ..... 
- SETUP will be highlighted ..... 
- Press and hold the Tick key for 10 seconds ..... 
- All of the icons on the display will appear for 2 seconds, then you will see the number 1 or 2 flashing.
- Use the Left / Right keys to scroll between modes (selection will flash) ..... 
  - Mode 1 = Thermostat
  - Mode 2 = Time Clock
- Press the Tick key to confirm selection ..... 

The neoStat will revert to the main display screen for the selected mode.

*Note: Factory reset will cancel all parameters that were entered during the set-up and pairing operations. These processes must be repeated after factory reset is completed.*

**2**

## Mode 2 - Time Clock



1. Mesh Symbol - Displayed when connected to the neoHub.
2. Day Indicator - Displays the day of the week.
3. Holiday – Displayed when the time clock is in holiday mode.
4. Set - Displayed when changes are being made to the current set point.
5. Program Indicator - Displayed during programming to show which level is being altered.
6. Main Menu - Displays which option is currently selected.
7. Keypad Lock Indicator – Displayed when the keypad is locked.
8. Timer Status – Displays the current state of the timed output.
9. Hold Left - Displayed when a timer hold is active, the remaining time will be shown.
10. Time/Day/Month/Year - Displays when setting the Clock/Calendar or a Holiday Period.



# Setting the Switching Times

To program the switching times, follow these steps.

- Use the Left / Right keys to scroll to EDIT and press Tick ..... 
- Use the Left / Right keys to select day/period of the week ..... 
- Press Tick to confirm selection ..... 
- 1 will now flash and the current ON time will be displayed.  
The OFF time can be viewed by pressing the Down key ..... 
- Select a switching time and press the Tick key ..... 
- Use the Up / Down keys to select the ON time HOURS and press Tick .....  
- Use the Up / Down keys to select the ON time MINUTES .....  
- Press Tick to confirm selection ..... 
- Use the Up / Down keys to select the OFF time HOURS and press Tick .....  
- Use the Up / Down keys to select the OFF time MINUTES .....  
- Press Tick to confirm selection ..... 
- Press the Right arrow key ..... 
- 2 will now flash and the current ON time will be displayed.
- Repeat the steps above to set all periods. For any unused periods enter -- :-
- When complete, use the Left / Right keys to scroll to DONE and press Tick to confirm all changes ..... 



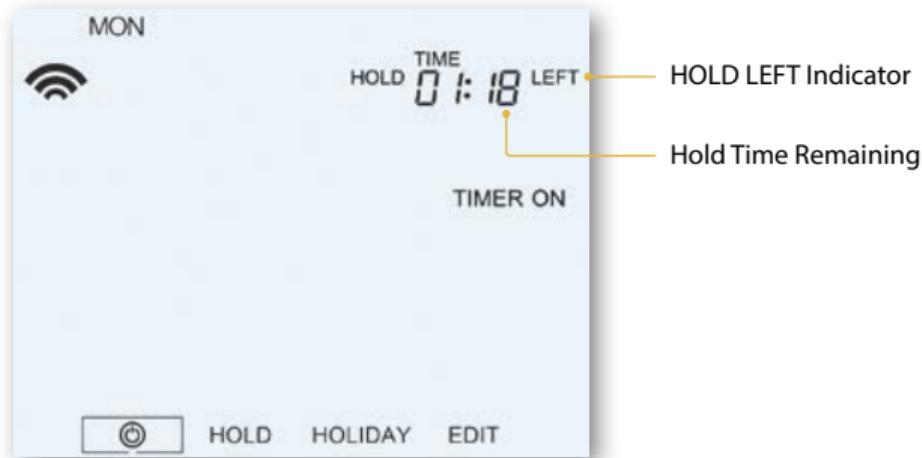
## Timer Override

To override the timed output on, follow these steps.

- Use the Up / Down keys to set the override duration e.g. 02:00 hours .....
- Press Tick to confirm settings and return to main display .....



Hold Left and the remaining time will now be displayed.





## Optional Features Explained

**Feature 01 – Pairing To neoHub:** This function is used to connect the time clock to the neoHub.

**Feature 02 - Weekday/Weekend (5/2), 7 Day Programming or 24 Hour Mode:**

The time clock offers three programming methods;

**Weekday/ Weekend (5/2)** - Allows you to program 4 on/off switching times for the weekdays and 4 on/off switching times for the weekend.

**7 Day Program Mode** - Each day has 4 on/off switching times that can be programmed independently.

**24 Hour Mode** - All days are programmed with the same on/off switching times.

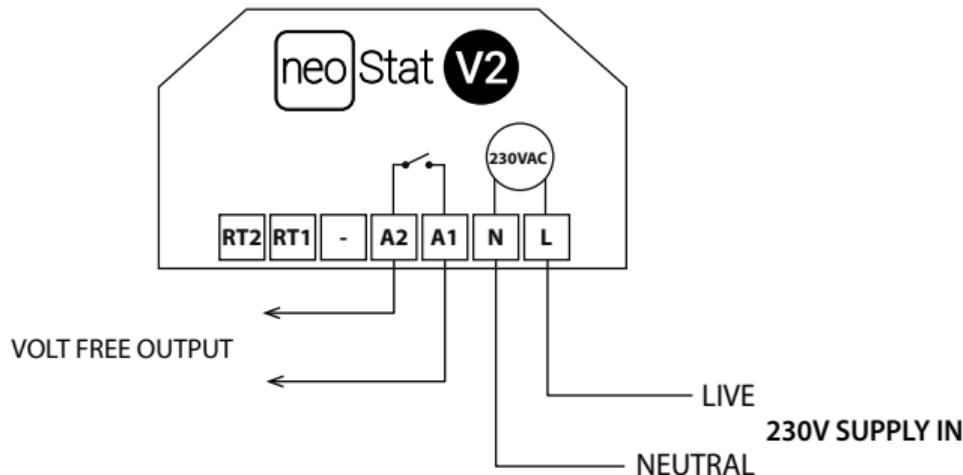


## Optional Settings - Feature Table

FEATURE	DESCRIPTION	SETTING
01	Pairing	Used to pair to the neoHub
02	Program Mode	01 = Weekday/Weekend Programming (Default) 02 = 7 Day Programming 03 = 24 Hour Mode



# Wiring Diagram - Time Clock Mode



FOR 230V OUTPUT ON A2  
LINK LIVE TO A1

This product must only be installed by a qualified electrician  
and comply with local installation regulations.



## Notes



## Notes



## Notes



## Want More Information?

Call our support team on: +44 (0)1254 669090

Or view technical specifications directly on our website:  
[www.heatmiser.com](http://www.heatmiser.com)



PDF



FAQ

### Heatmiser UK Ltd

Units 1-5 Hurstwood Court, Mercer Way  
Shadsworth Business Park, Blackburn,  
Lancashire, BB1 2QU, United Kingdom.



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# MVHR ECO - ECO3 RANGE

## USER GUIDE FOR OCCUPANTS

MRXBOX-ECO3 / MRXBOX-ECO3-OH

MRXBOXAB-ECO3 / MRXBOXAB-ECO3-OH

**Today's homes are built with extra insulation to keep warm air in and reduce energy costs. This however leaves very little opportunity for your home to be naturally ventilated.**

Ventilation establishes a good level of indoor air quality and an environment that is free from condensation, odours and indoor pollutants caused by cooking, washing and day to day living. It is therefore important that you have adequate ventilation in your home.

### How do I operate the unit?

**At installation your unit will have been set to run continuously to a level that will adequately ventilate your home for the majority of the day.**

However, there will be occasions when the humidity/ moisture levels in your home will rise; this is usually due to activities such as cooking and bathing or showering. During these times your unit has the functionality to increase its extract rates via a boost mode, and remove the excess moisture.

There are a few ways in which the **ECO3** system can be set to boost. A housing provider/ housebuilder will determine system settings as part of the installation, but you may override these functions with manual operation. The most common method is via remote switches which may also be provided at the time of install; usually situated in the kitchen and bathroom areas. To increase the extract rates manually simply set the switch to boost, and when you are ready to resume normal operation turn it back off.

The system installed in your home has an integral humidistat (AB models only). This means that it measures the humidity in your wet rooms, i.e. kitchen and bathrooms, and will automatically switch to boost should the humidity levels rise above normal.



Having the **Nuaire ECO3** ventilation unit installed in your home will not only ensure that your property has good indoor air quality, it will protect the fabric of your home from condensation and mould, thus resulting in a healthier living environment.

**Please note that your boost setting may have been commissioned with a run-on timer which will result in the boost function running between 5 to 30 minutes after it has turned off. This is to ensure the excess moisture is totally cleared.**

### What maintenance is required?

The filters (located on the front of the unit) need to be cleaned or replaced, depending on your environment, every 12-18 months.

For replacement filters either scan the QR code located on the front panel of your unit or contact Nuaire and quote part number **MVHR-ECO3-FILTERKIT**.

**If I need some advice, who do I contact?**

**In the first instance please contact your housing provider or house builder.**

Nuaire have a team of technical experts on hand to help. Our operating hours are 9am to 5pm Monday to Friday (excluding Bank Holidays). Contact us on **029 2085 8400**.

When calling Nuaire, if possible, please check your fan for the serial number located on the fan label.

# MRXBOX-ECO5 USER GUIDE

## YOUR HOME HAS BEEN FITTED WITH A MECHANICAL HEAT RECOVERY VENTILATION SYSTEM.

This system operates by continuously extracting air from the wet rooms within your property (e.g. kitchens and bathrooms) and simultaneously pulling in fresh air from outside which is filtered, introduced and extracted via a network of ducting.

Having this Nuaire ECO5 ventilation unit installed in your home will not only ensure that your property has good indoor air quality, it will protect the fabric of your home from condensation and mould, resulting in a healthier living environment.



**VENTILATION  
ESTABLISHES  
A GOOD LEVEL  
OF INDOOR AIR  
QUALITY**

## HOW DO I OPERATE THE UNIT?

At installation your unit will have been set to run continuously to a level that will adequately ventilate your home for the majority of the day.

However, there will be occasions when the humidity/moisture levels in your home will rise; this is usually due to activities such as cooking and bathing or showering. During these times your unit has the functionality to increase its extract rates via a boost mode, and remove the excess moisture.

There are a few ways in which the ECO5 system can be set to boost.

A housing provider/ housebuilder will determine system settings as part of the installation, but you may override these functions with manual operation. The most common method is via remote switches which may also be provided at the time of install; usually situated in the kitchen and bathroom areas. To increase the extract rates manually simply set the switch to boost, and when you are ready to resume normal operation turn it back off.

The system installed in your home has an integral humidistat. This means that it measures the humidity in your wet rooms, i.e. kitchen and bathrooms, and will automatically switch to boost should the humidity levels rise above normal.

**Please note that your boost setting may have been commissioned with a run-on timer which will result in the boost function running between 5 to 30 minutes after it has turned off. This is to ensure the excess moisture is totally cleared.**

## WHAT MAINTENANCE IS REQUIRED?

The filters (located on the front of the unit) need to be cleaned or replaced, depending on your environment, every 12-18 months.

For replacement filters either scan the QR code located on the front panel of your unit or contact Nuaire and quote part number **MVHR-ECO3/5-FILTKIT**.



If I need some advice, who do I contact? Nuaire have a team of technical experts on hand to help. Our operating hours are 9am to 5pm Monday to Friday (excluding Bank Holidays) contact us on 029 2085 8400 (option 2). When calling Nuaire, if possible, please check your fan for the serial number located on the fan label.



# IAQBOX

## Indoor Air Quality Box

## Installation and Maintenance

### 1.0 Introduction

Nuaire's range of inline carbon supply filters has been specifically designed to reduce the level of airborne contaminants entering a building, in particular nitrogen dioxide ( $\text{NO}_2$ ), thus improving indoor air quality (IAQ). The filter unit incorporates a carbon filter and a range of particulate pre-filters are available. Units should be fitted on the supply leg of ducting and therefore do not require insulation (see Figure 3).

Unit Code	Height (mm)	Width (mm)	Length (mm)	Max Weight (kg)
IAQBOX-S	170	346	858	15.8
IAQBOX-D	170	645	858	27.8

#### CODE DESCRIPTION:

IAQBOX - S - PM10

1 2 3

#### 1. Indoor Air Quality Box

#### 2. Unit Width:

S = Single

D = Double

#### 3. Optional Particulate Pre-Filter:

PM10 = Removal of particulate matter (10 microns +)

PM2.5 = Removal of particulate matter (2.5 microns +)

### 1.1 Particulate Filter (Optional)

High urban PM (Particulate Matter) emissions may require an additional filter to meet air quality standards.

### 1.2 Performance Data

Nuaire's carbon filters have been independently tested and offer up to 99.5% reduction in  $\text{NO}_2$ . The unit meets planning obligations and world health organisation's recommendations.

### 1.3 Resistance Data

When selecting the MVHR unit please ensure that the resistance through the carbon filter has been allowed for. Please see [www.nuaire.co.uk/iaqbox](http://www.nuaire.co.uk/iaqbox) for further details.

Figure 1. IAQBOX-S dimensions

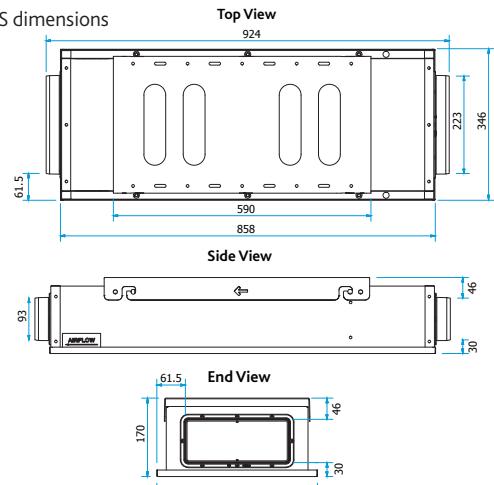


Figure 2. IAQBOX-D dimensions

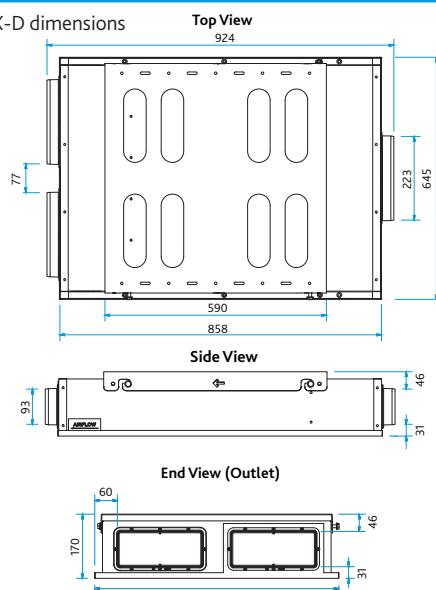
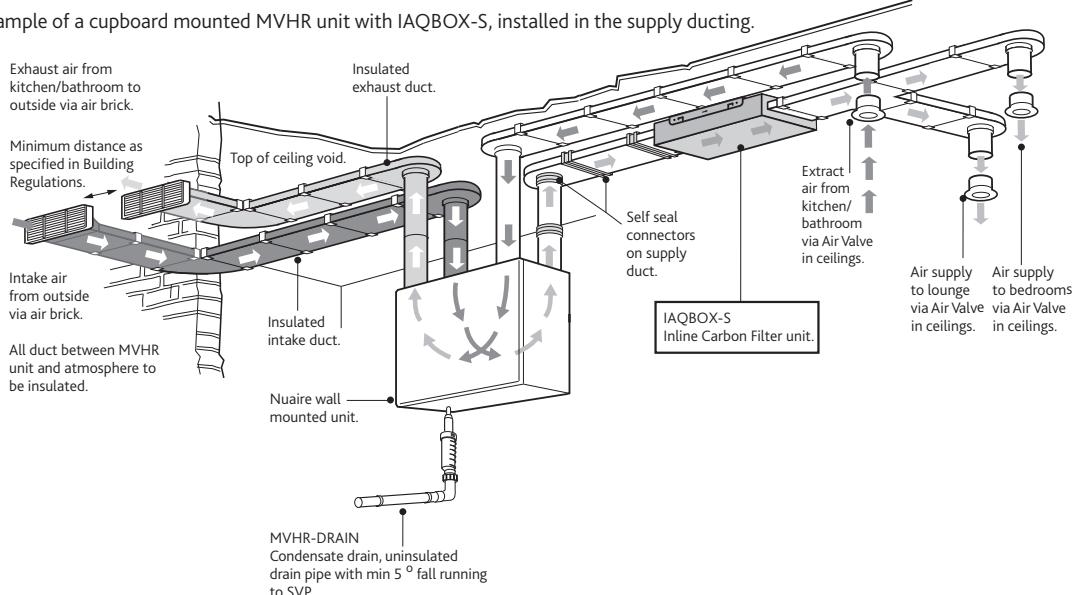


Figure 3. Typical example of a cupboard mounted MVHR unit with IAQBOX-S, installed in the supply ducting.



# Installation and Maintenance

## IAQBOX - Indoor Air Quality Box

### 2.0 Installation

Installation must be carried out by competent personnel, in accordance with good industry practice, the appropriate authority and in conformance with all statutory and governing regulations.

The mounting surface must be of a solid construction and capable of supporting the full weight of the unit.

Units are supplied complete with a mounting bracket for quick and easy surface mounted installation.

Access to the unit for maintenance is granted via the bottom panel. Ensure that an access panel has been allowed for maintenance to the unit, the space required is shown below.

Unit Code	Access Requirements	
	Width (mm)	Length (mm)
IAQBOX-S	386	898
IAQBOX-D	685	924

### 2.1 Choosing a Spigot (IAQBOX-D Only)

Refer to the system design drawing for the spigot configuration requirements for each installation.

Once the required spigot configuration is known, the relevant aperture(s) can be cut out. Fix the required spigot(s) to the unit with the self-tapping screws provided and seal with silicone to eliminate air leakage.

If choosing the single spigot configuration, the aperture that is not required must be sealed off with the blanking plate provided. Fix the plate with the self-tapping screws provided and seal with silicone.

### 2.2 Ceiling Mounting

- Remove unit from packaging and unscrew the outer locking bolts (two bolts on the left and right side of the unit) from the mounting bracket, storing them for later use (see Figure 4).
- Loosen the inner mounting bolts and slide/lift the mounting bracket off the unit (see Figure 5).
- Locate the mounting bracket into the desired position, with the arrows pointing in the direction of airflow. Use the bracket to mark the required drill holes.
- Using the appropriate fixings, secure the bracket to the ceiling.
- Check the orientation of the unit matches that of the mounting bracket by aligning the direction of the arrow on the bracket with the direction of the arrow on the units' airflow label.
- With the inner mounting bolts still protruding from the unit (5mm), offer the unit up to the mounting bracket, sliding up and across so that all four bolts rest in the bracket slots. Tighten all bolts.
- Lock the unit in position by refitting the outer locking bolts that were removed earlier.

Figure 4. Outer locking bolt.

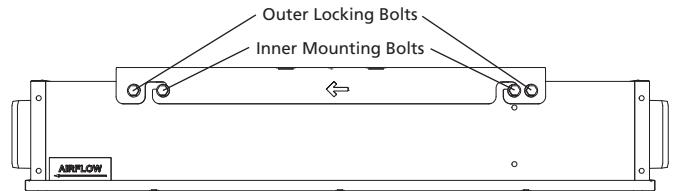
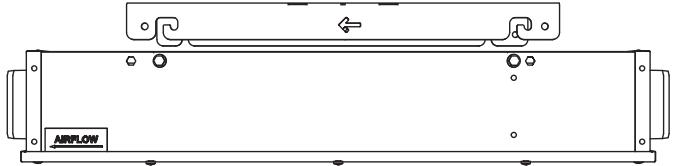


Figure 5. Removing mounting bracket.



### 2.3 Limited Access

It is possible to fit this unit close to a wall/obstacle which prevents the locking bolts from being installed along one side. The two unused locking bolt holes should be plugged by screwing in the rubber plugs provided before installing. All four mounting bolts **MUST** be tightened and the remaining two locking bolts **MUST** be used.

# Installation and Maintenance

## 3.0 Maintenance

Appropriate PPE (Personal Protective Equipment) should be worn during maintenance. Precautions may also be needed to protect the surrounding area from excess carbon residue.

To ensure the carbon filter maintains its high reduction of NO<sub>2</sub> the filter must be replaced once the end of its lifespan has been reached. The lifespan of the carbon filter in normal circumstances is shown in the table below.

Unit Code	Carbon Filter Lifespan	Carbon Filter Weight (kg)
IAQBOX-S	2 years	6
IAQBOX-D	4 years	12

### IMPORTANT

The carbon filter block is supported by a retaining clamp, loosening the clamp will result in the filter being freed. Be prepared to support the whole weight of the carbon filter block.

### Replacing Single Carbon Filter - IAQBOX-S

- Unscrew the fixings securing the lid in place and remove lid from unit (see Figure 6).
- Whilst supporting the back of the carbon filter block, loosen the retaining clamp bolt and rotate the clamp in order to release the block (see Figure 7).
- Pulling firmly on the rear edge of the carbon filter block will lever the filter to approximately a 45° angle (A). At this position it can be removed from the unit (B) (see Figure 8).
- Replace the carbon filter in the reverse operation to the above process. Ensure the filter is fitted in the same orientation as before. Firmly push the filter back into position to compress the rubber seal. Rotate the clamps back and tighten clamp bolt prior to removing support from the replacement carbon filter block.
- If the foam strips behind the carbon filter (Figure 7) sustain any damage during the removal or installation. Remove and replace foam strips with new foam supplied with replacement filter.
- Refit the unit lid.
- Wash hands thoroughly after handling.

### 3.1 Replacing Double Carbon Filter - IAQBOX-D

- Unscrew the fixings securing the lid in place and remove lid from unit (see Figure 9).
- Whilst supporting the back of the carbon filter block, loosen the retaining clamp bolt and rotate the clamp in order to release the block (see Figure 10).
- Pulling firmly on the rear edge of the carbon filter block will lever the filter to approximately a 45° angle (A). At this position it can be removed from the unit (B) (see Figure 11).
- Replace the carbon filter in the reverse operation to the above process. Ensure the filter is fitted in the same orientation as before. Firmly push the filter back into position to compress the rubber seal. Rotate the clamps back and tighten clamp bolt prior to removing support from the replacement carbon filter block.
- If the foam strips behind the carbon filter (Figure 10) sustain any damage during the removal or installation. Remove and replace foam strips with new foam supplied with replacement filter.
- Refit the unit lid.
- Wash hands thoroughly after handling.

### IAQBOX - Indoor Air Quality Box

Figure 6. Single carbon filter block retaining clip.

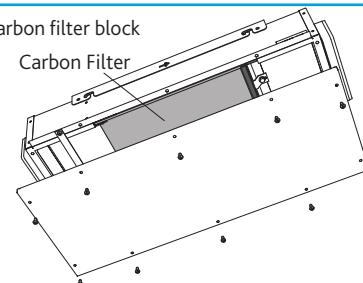


Figure 7. Single carbon filter block retaining clip.

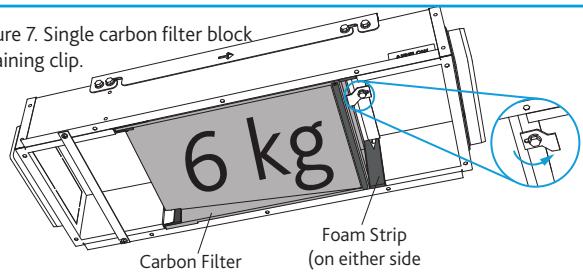


Figure 8. Single carbon filter block removal.

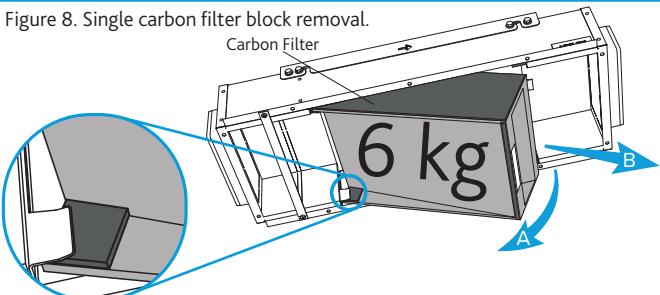


Figure 9. IAQBOX-D access.

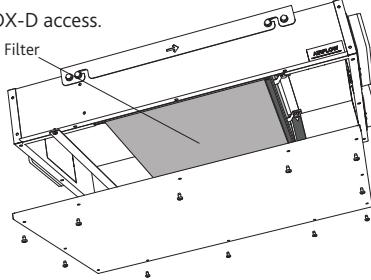


Figure 10. Double carbon filter block retaining clip.

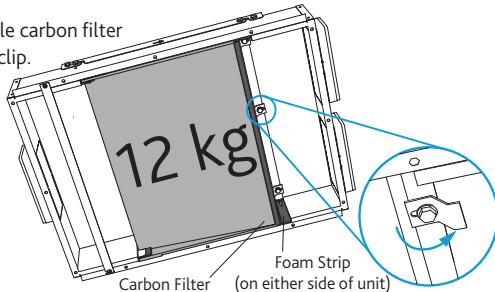
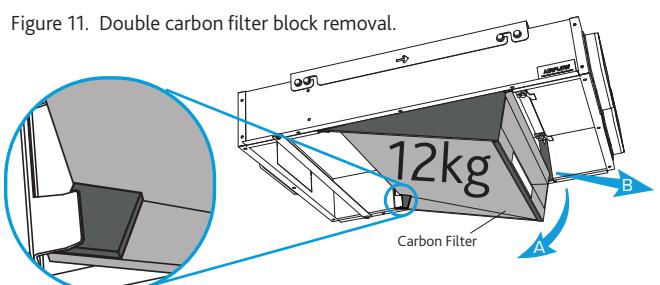


Figure 11. Double carbon filter block removal.



# Installation and Maintenance

## IAQBOX - Indoor Air Quality Box

### IMPORTANT

Carbon filters / pellets are not to be ingested.

### 3.2 Replacing Air Filter (If Applicable)

To ensure effective particulate filtration and low system resistance, optional air filters must be replaced every 12 months. Replacement filters are available for purchase direct from Nuaire, with the relevant part codes shown in section 3.3 of this document.

- Unscrew the fixings securing the lid in place and remove lid from unit.
- Rotate the strap through 90° to allow removal of the filter, the fixing screw may need to be loosened to allow strap to rotate (see Figure 12 & Figure 13).
- Fit the replacement filter ensuring the airflow direction matches the air flow of the unit (if applicable).
- Rotate strap back into position and refit unit lid.

Figure 12. IAQBOX-S air filter removal.

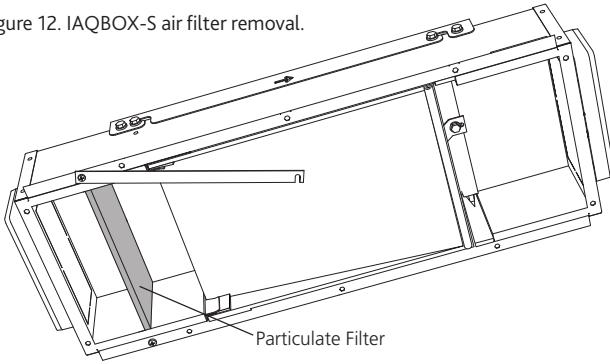
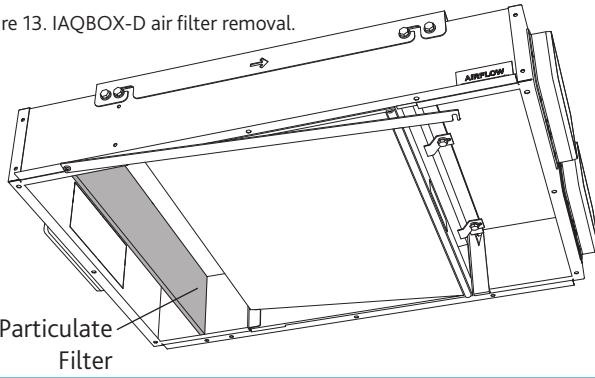


Figure 13. IAQBOX-D air filter removal.



### 3.3 Replacement Filters

Replacement filters can be purchased direct from Nuaire using codes provided in the table below.

Unit Code	Carbon Filter	Particulate Filter
IAQBOX-S	CARBON-FILTERKIT-S	-
IAQBOX-S-PM2.5	CARBON-FILTERKIT-S	PM2.5-FILTERKIT-S
IAQBOX-D	CARBON-FILTERKIT-D	-
IAQBOX-D-PM2.5	CARBON-FILTERKIT-D	PM2.5-FILTERKIT-D

### 4.0 Warranty

The 5 year warranty starts from the day of delivery and includes parts and labour for the first year. The remaining period covers parts only, filter replacement is not covered by the unit warranty.

This warranty is void if the equipment is modified without authorisation, is incorrectly applied, misused, disassembled, or not installed, commissioned and maintained correctly. For technical assistance or further product information, including spare parts and replacement components, please contact the After Sales Department.

**Telephone: 02920 858 400**



Mains Powered

**Ei3024 / 3016 / 3014**

**Alarms**

**Instruction Manual**

Read and retain carefully for as long as the product is being used. It contains vital information on the operation and installation of your Alarm. The manual should be regarded as part of the product.

If you are just installing the unit, the manual **MUST** be given to the householder. The manual is to be given to any subsequent user.

**aico**®



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# Installer Guide

1

## Introduction

The Ei3024 is a Multi-Sensor Fire Alarm with heat enhanced optical smoke sensor and automatic dust compensation, delivering a faster response to a wider range of fires. It detects both smoke and heat from a fire and is ideal for hallway, landing, living room and bedroom areas.

The Ei3016 is an Optical Smoke Alarm, with a proven optical sensor and automatic dust compensation delivering a fast response to smouldering fires. It is ideal for hallway, landing and living room areas.

The Ei3014 is a Heat Alarm with a Class A1 heat detection sensor. It can only be used as part of a fire detection system, i.e. interconnected with Aico/Ei Electronics mains powered Multi-Sensor Fire or Smoke Alarms. It is ideal for kitchens, garages, boiler houses and other areas where there are normally high levels of fumes, smoke or dust i.e. places where Smoke Alarms cannot be installed without the risk of excessive nuisance alarms.

Up to 12 Alarms can be interconnected so that if one senses fire, all Alarms sound. It can be a hardwired interconnection, a wireless interconnection or a mixture of both (for the wireless option an Ei3000MRF SmartLINK module needs to be added to each Alarm – sold separately).

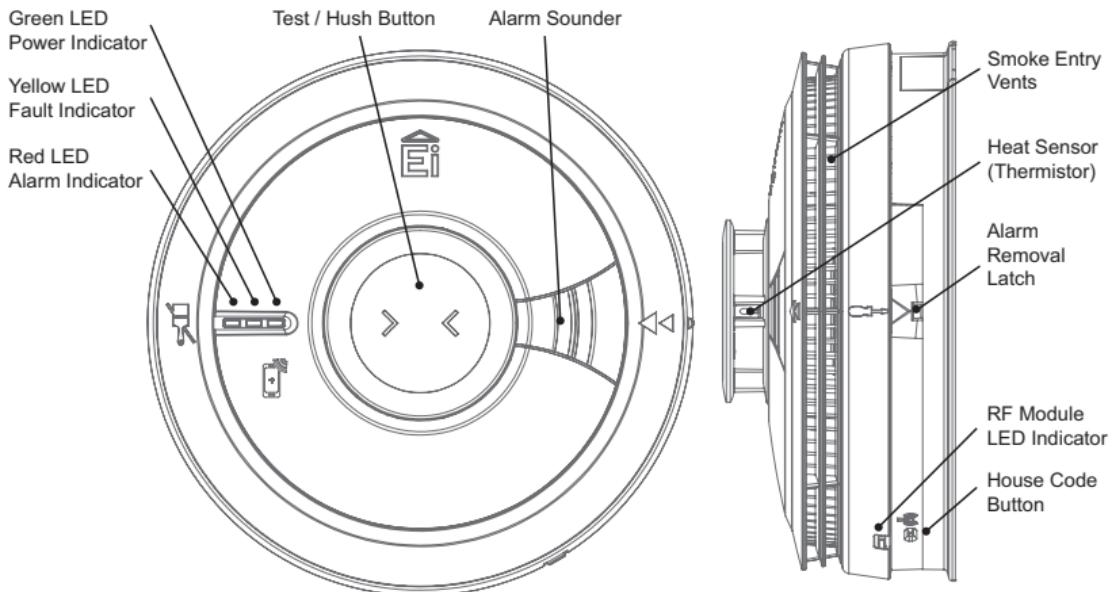
The Ei3000 series is supplied with a mounting plate that allows very quick and simple installation of the Alarm. The mains and battery power is automatically connected as the Alarm slides onto the mounting plate. Each Alarm comes with built-in rechargeable backup batteries to power the Alarm in the event of a mains failure.

## **AudioLINK+**

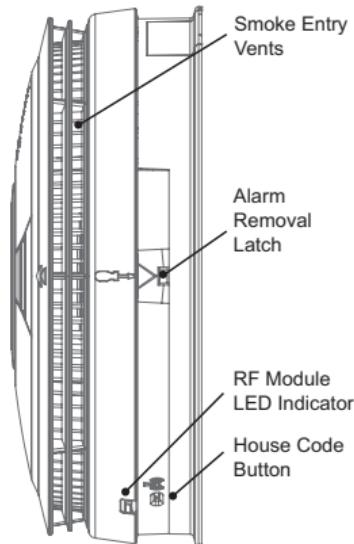
The Ei3000 series Alarms are AudioLINK+ enabled. This feature allows the user to download information from the Alarm through the use of a smart phone App. For more information on using this feature, please refer to the relevant section on [www.aico.co.uk](http://www.aico.co.uk).

## 1.1 Overview

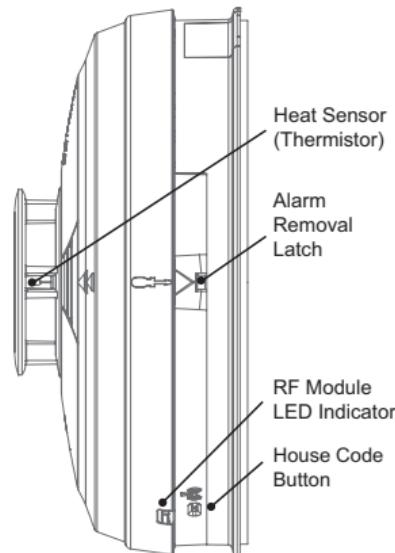
**Ei3024 Multi-Sensor Fire Alarm**



**Ei3016 Optical Alarm**



**Ei3014 Heat Alarm**



## 1.2 Technical Specifications

<b>Optical Sensor</b>	Optical (Ei3024 and Ei3016)
<b>Heat Sensor</b>	Thermistor Class A1 Detection (Ei3014 and Ei3024)
<b>Power Supply</b>	100-250V AC, 50Hz, 0.25W
<b>Battery Backup</b>	Built-in 10-year rechargeable Vanadium Pentoxide Lithium cells. Fully charged, the battery will provide up to 6 months (without module fitted) or 3 months (with module fitted) back-up without mains power
<b>Alarm Sounder</b>	Piezoelectric
<b>Alarm Sound Level</b>	85dB(A) at 3 meters (min)
<b>Memory Feature</b>	Indicates that the Alarm has previously detected fire
<b>Self Test</b>	Sensors, batteries and electronics are automatically tested periodically
<b>Test/Hush Button</b>	Checks sensors, electronics, interconnection and sounder. If the unit is in alarm when pressed, it silences the alarm for 10min
<b>Visual Indicators</b>	Green LED – Power supply    Yellow LED – Fault, EOL Red LED – Memory or alarm (if coincides with sounding)
<b>AudioLINK+</b>	Enabled
<b>Operational Life</b>	10 years

<b>Interconnection</b>	Up to 12 units can be interconnected via a hardwired or wireless system (using optional Ei3000MRF SmartLINK module)
<b>Fixings</b>	Supplied with Easi-fit anti-tamper mounting plate with integral terminal block and wiring cover, includes screws and wall plugs
<b>Operating &amp; Storage Temperature</b>	-10°C to +40°C*
<b>Humidity Range</b>	15% to 95% RH (non-condensing)
<b>Plastic Material</b>	UL94V-0 flame retardant rated
<b>Dimensions</b>	Ei3024 and Ei3014: Product: - Ø150mm x 66mm Package - 155mm x 155mm x 70mm Ei3016: Product: - Ø150mm x 63mm Package - 155mm x 155mm x 65mm
<b>Weight</b>	350g (including packaging)
<b>Guarantee</b>	10 years
<b>Approvals</b>	KM522831, KM83678, EN14604:2005+AC 2008, BS5446-2:2003

\* Temperature and Humidity conditions are for normal operation and storage. Units will function outside these ranges as required by the specific product Standards. Extended exposure to conditions outside these ranges can reduce product life. For advice on prolonged operation outside these ranges consult the manufacturer.

# 2

## Installation

## 2.1 Important Safety Instructions

**WARNING:** Mains operated Alarms must be installed and interconnected by a qualified electrician in accordance with the local appropriate Regulations for Electrical Installations. Failure to install this Alarm correctly may expose the user to shock or fire hazards and damage the product.

The Alarm is designed to be permanently mounted, using its own built-in terminal block to connect it to the mains. The mounting plate can be screwed directly to the ceiling. Alternatively, it can be screwed to a standard junction box (BS 4662 single gang accessory box). It requires a typical current of 3mA. The Alarm must not be exposed to dripping or splashing. There are important markings on the underside of the Alarm.

**WARNING:** The installation of main operated Heat Alarms should comply with BS 7671.

**ATTENTION:** Alternative Energy Sources - (Wind, Solar, UPS etc.)

This product is designed to be connected to a Pure or True Sine Wave 230V AC supply.

If connecting to a power source that utilises an inverter, e.g. PV solar panel, the Total Harmonic Distortion (THD) must be less than 5%. If in doubt please check with the manufacturer of the inverter. This also applies to battery powered UPS (Uninterruptible Power Supply) inverters.

**ATTENTION:** Light Dimmer Circuits – The Alarms must not be powered from a light dimmer circuit.

**ATTENTION:** Do not install Alarms in new or renovated buildings until all work is completed.

**ATTENTION:** The Alarm must not be connected when the house wiring insulation is being checked with high voltages. i.e. Do not use a high voltage insulation tester on the Alarm.

**ATTENTION:** The Alarm must be continuously powered 24 hours a day so it is important that it is not on a circuit that can be turned off by a switch.

**ATTENTION: (UK)** BS 5839-6:2019 gives the following recommendations regarding the mains supply to be used in a Grade D system. The power supply for the Alarms should be derived from the public electricity supply to the dwelling. The mains supply to the Alarms should take the form of either:

- (a) an independent circuit at the dwelling's main distribution board, in which case no other electrical equipment should be connected to this circuit (other than a the supply to a dedicated social alarm control unit); or
- (b) a separately electrically protected, regularly used local lighting circuit.

(See BS 5839-6:2019 for further information).

**WARNING:** An all-pole mains switch shall be incorporated in the electrical installation of the building.

## 2.2 Where to locate the Alarm

The advice here follows the guidance in British Standard BS 5839-6:2019 in general (for further information refer to the relevant standards).

The main reason for fitting Smoke/Heat/Multi-Sensor Alarms in dwellings is to ensure that when there is a fire, sufficient early warning is given so that everybody can escape safely. This means that the fire Alarms should ideally be located near all potential sources of fires and that the alarm should be heard throughout the house – particularly in the bedrooms.

It is also important that nuisance/false alarms are minimised to ensure the Alarms are not disabled or ignored.

A single Smoke Alarm will give some protection if it is properly installed, but most homes will require two or more to ensure that a reliable early warning is given. For recommended protection you should put individual Smoke Alarms in all rooms where fire is most likely to break out (apart from the kitchen and bathroom).

BS 5839-6:2019 gives guidance on:

- how many Alarms to install
- what type of Alarm to use
- where to position Alarms

The above points will depend on the type of dwelling to be protected and the level of fire risk.

## **Fire Risk Assessment**

The 'Grade' and 'Category' of system that should be installed depends on the fire risk. It is therefore recommended that a Fire Risk Assessment is undertaken. The Risk Assessment would be based on a combination of probabilities:

- fire occurring
- injury or death to occupant
- system operating correctly with a fire
- early detection and warning to occupants in the event of a fire

The greater the risks, the more comprehensive and reliable systems needs to be.

LD (Life protection in Dwellings) Systems define the level of fire protection required for households, depending on the fire risk and regulations. Aico/Ei Electronics recommends that an LD1 system be installed for optimum protection.

Please see following pages for detailed information.

# UK Requirements (BS 5839-6:2019)

## LD1 OPTIMUM PROTECTION

for dwellings where occupants may be at high risk (e.g. elderly)

**Optimum Protection LD1:** As LD2, but in addition Smoke or Heat Alarms should be located in all rooms and other areas of the dwelling.  
(apart from toilets or bathroom)

*Interconnect all Alarms*

## LD2 BASIC PROTECTION

for new or materially altered dwellings or existing dwellings with poor structural fire precautions

**Basic Protection LD2:** Smoke or Heat Alarms in all rooms or areas that present a high fire risk to occupants.  
(apart from toilets or bathroom)

*Interconnect all Alarms*



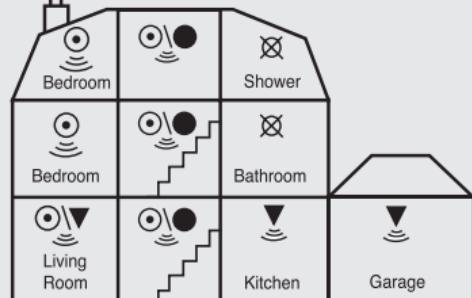
**Multi-Sensor or Smoke Alarms** located:  
• on each storey  
• every 7.5 m of hallways and escape routes  
• within 3m of all bedroom doors  
(apart from toilets & bathrooms )



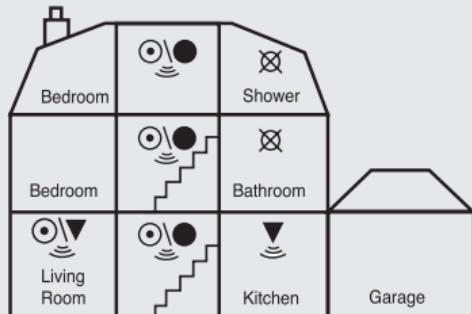
**Heat Alarms** located in:  
• each Kitchen  
(Heat Alarms must be within 5.3m of potential fire sources)



**Multi-Sensor or Heat Alarms** located in:  
• each Living room (i.e. most frequently used daytime room)



Multi Storey Dwelling LD1



Multi Storey Dwelling LD2



## 2.3 Which Alarm in what room?

Location	Ei3024 Mutil-Sensor Fire Alarm	Ei3016 Optical Smoke Alarm	Ei3014 Heat Alarm (i)
Hall, Corridors, Escape routes	✓	✓	✗
Kitchens / Garages	✗	✗	✓ (iii)
Living Rooms	✓	✓	✓ (ii)
Bedrooms	✓	✓	✗
Shower / Bathrooms	✗	✗	✗

(i) A Heat Alarm should only be used in a room adjoining an escape route, in conjunction with Multi-Sensor Fire Alarms or Smoke Alarms on the escape routes. All the Alarms should be interconnected to ensure the early warning will be heard.

(ii) Some Fire authorities (concerned with the slow response of Heat Alarms) advise that Multi-Sensor Fire Alarms or Smoke Alarms should be fitted in living rooms. This is acceptable according to BS 5839-6:2019 provided there are clearly not going to be problems with nuisance alarms. Fit Heat Alarms only if nuisance alarms are very likely and it is acceptable that a warning will only be given by the Heat Alarm when there is a very significant flaming fire in the room. If the door(s) and windows are not closed to contain the fire and heat, it is extremely unlikely that the Heat Alarm would respond before a Multi-Sensor Fire Alarm or Smoke Alarm sited outside in the corridor.

(iii) In enclosed kitchens with doors closed.

## Improved Audibility

The effectiveness of a Category LD2 system can be significantly enhanced if an additional Alarm (interconnected) is installed in the master bedroom. This will help ensure that a responsible person will quickly be alerted to a fire and can arrange for an orderly evacuation of children and other vulnerable occupants.

## Grade D System

The mains powered Ei3024 Multi Sensor Fire Alarm, Ei3016 Smoke Alarm and Ei3014 Heat Alarm with rechargeable battery back-up, covered by these instructions are suitable for the requirements for a Grade D System.

A Grade D system is needed for:

- new or materially altered dwellings up to three-storeys, with no floor over 200m<sup>2</sup> in area.
- Existing dwellings with poor structural fire precautions, up to three storeys, with no floor over 200m<sup>2</sup> in area.
- Houses in Multiple Occupation (HMOs) of one or two-storeys, with no floor over 200m<sup>2</sup> in area.
- Individual dwellings units of two or more rooms in HMOs.

Check that a Grade D system is adequate for the dwelling into which the system is being installed.

## 2.4 Where in the room?

*The locations must comply with applicable building regulations*

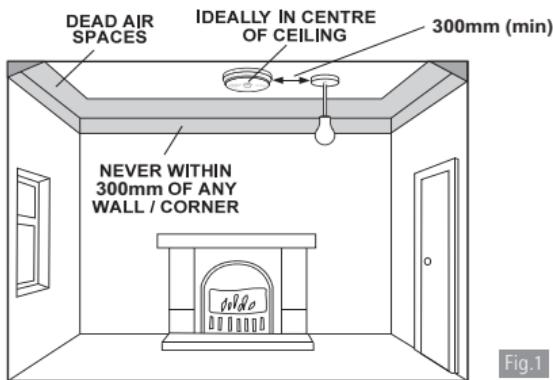


Fig. 1

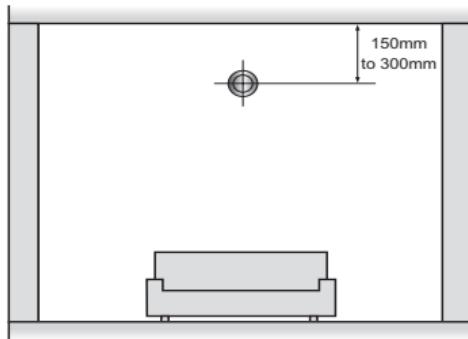


Fig.2

## Ceiling Mounting

Hot smoke rises and spreads out, so a central ceiling position is the preferred location. The air is "dead" and does not move in corners, therefore Alarms must be mounted away from corners. Fit the Alarm:

- At least 300mm away from walls (see Figure 1).
- At least 300mm from any light fitting or decorative object which might obstruct smoke / heat entering the Alarm.

## Wall Mounting (Ei3016 only)

If ceiling mounting is impractical, only the Ei3016 Optical Smoke Alarm may be mounted on a wall, provided that:

- a) the top of the detection element is between 150mm and 300mm below the ceiling (see Figure 2);
- b) the bottom of the detection element is above the level of any door openings;

Wall mounting should only be considered where close spaced beams or similar obstructions may preclude ceiling mounting. It is considered to be the responsibility of the installer/client to determine if the presence of asbestos in the ceiling material would make ceiling mounting 'impractical'.

## Sloping Ceiling

With a sloping or peaked ceiling install a Smoke or Multi-Sensor Fire Alarm within 600mm of the peak (measured vertically) and a Heat Alarm within 150mm.

If the height of the peak is less than 600mm in the case of Smoke or Multi-Sensor Fire Alarms or 150mm in the case of Heat Alarms, it is regarded as being flat. (see Figure 3).

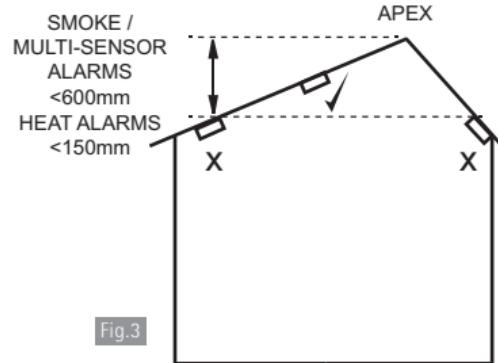


Fig.3

## 2.5 Locations to avoid

**DON'T place Smoke, Heat or Multi-Sensor Fire Alarms in any of the following areas:**

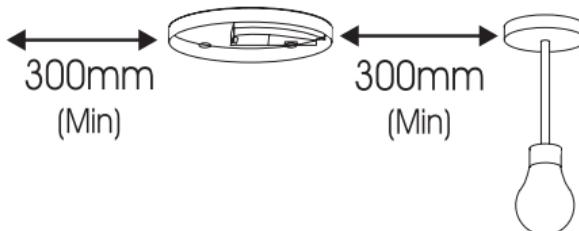
- Bathrooms, shower rooms or other rooms where the Alarm may be triggered by steam, condensation.
- Places where the normal temperature can exceed 40°C or be below -10°C (e.g. furnace rooms, directly above ovens or kettles etc.) as the heat/steam could cause nuisance alarms.
- Near a decorative object, door, light fitting, window moulding etc., that may prevent heat or smoke from entering the Alarm.
- Surfaces that are normally warmer or colder than the rest of the room (e.g. attic hatches). Temperature differences might stop heat or smoke from reaching the Alarm.

- Next to or directly above heaters or air conditioning vents, windows, wall vents etc. where air draughts can change the direction of airflow and cause rapid temperature fluctuations.
- In very high or awkward areas (e.g. over stairwells) where it may be difficult to reach the Alarm (for testing, hushing etc.).
- In or near very dusty or dirty areas as dust build-up on the optical smoke sensor can impair performance. It can block the insect screen mesh and prevent smoke from entering the sensor. Dust build up can also increase the response time of the heat sensor.
- Locate the Alarm at least 1m from dimmer controlled lights and wiring as some dimmers can cause interference.
- Locate the Alarm at least 1.5m and route wiring at least 1m away from fluorescent light fittings as electrical "noise" and/or flickering may affect the Alarm. Do not wire into the same circuit as fluorescent lights or dimmers.
- In insect infested areas. Small insects getting into the optical smoke sensor can cause intermittent false alarms. Insects and contamination on the heat sensor can increase its response time.
- In a damp or humid area.

Do not locate **Heat Alarms** directly above a sink or cooker – Keep at least 1 m horizontal distance between these items and the Alarm.

## 2.6 Mounting and wiring

**WARNING:** to prevent injury, this apparatus must be securely attached to the ceiling or wall in accordance with the installation instructions.



1. Select a location complying with the advice in previous sections.

2. Disconnect the AC mains supply from the circuit that is going to be used.

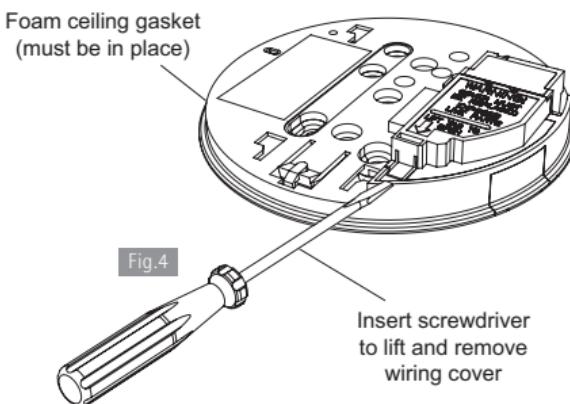
3. Lift off the wiring cover as shown in Figure 4.

**L: Live** - connect to the house wires coloured brown or marked L.

**N: Neutral** - connect to the house wires coloured blue or marked N.

**IC: Interconnect** - see figures 5 and 6 and further information in Section 2.7.

**WARNING:** *Wiring must be installed in compliance with local regulations.*



**WARNING:** Mixing (or poorly terminating) the Live and Neutral connections when interconnecting Alarms may damage all the Alarms - ensure that the same colour wires are used throughout the premises for Live, Neutral and Interconnect wires.

We strongly recommend that you check for the following **before connecting the Alarm**:

- check for Live and Neutral using a two probe tester.
- check for Live using a neon tester.
- check that the Interconnect wire is NOT connected to Live, Neutral or Earth. **Do not use an Earth wire for the Interconnect line.**

**Note:** The Alarm does not need to be earthed. However the terminal marked  is provided for the convenience of the installer so that any copper Earth wire or cable coloured green and yellow, can be safely terminated.

To interconnect Alarms connect all the IC terminals together as shown in Figure 9 (see **Interconnecting Alarms** section).

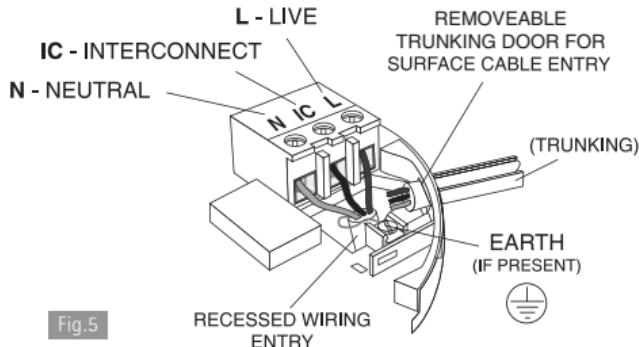


Fig.5

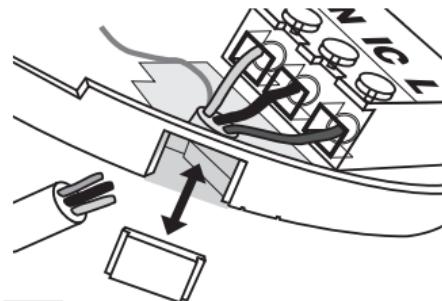


Fig.6

4. If the mains wires are recessed, bring the wires through the rear hole in the mounting plate as shown in Figure 5.

If the mains wires are being brought along the surface:

(a) position the mounting plate so the cable trunking is as shown in Figure 5.

(b) the mounting plate has a removable section, take it out to interface directly with 25mm trunking as shown in Figure 6. If interfacing to 16mm trunking carefully cut around the marked section, leaving the top intact and replace the section. (If you are not using surface wiring, the removable section must be left in place for electrical safety reasons).

There are two other positions which are also suitable for the surface wiring to enter (and exit) the Alarm, one next to the removable section and another directly opposite.

5. Carefully align the mounting plate and screw into place. If using RF interconnection, ensure that all mounting plates are facing the same orientation as shown in Figure 10 (see Interconnecting Alarms

section). Connect the wires to the terminal block. With recessed wiring, ensure the rear gasket seals around the edge of the hole in the ceiling or wall. This is to prevent air draughts affecting the smoke/heat entering the Alarm. If the hole is too large or the Alarm does not seal it, it should be sealed with silicone rubber or equivalent.

6. Replace the wiring cover and carefully line up the Alarm on the mounting plate and slide on (see Figure 7).
7. Connect the mains power to the Alarm circuit. Check the green light on the front of the Alarm is on.
8. Press and hold the test/hush button for 10 seconds (see Figure 8). The alarm will sound. Check that any interconnected Alarms also sound within this period. The test/hush button sounds the local alarm and on release this alarm stops immediately, and all the interconnected Alarms can then be heard in the distance as they will continue to sound for a further 3 seconds.
9. Attach the 'fuse board label' provided on or near the distribution board and write in date installed and the number of Alarms on the circuit.
10. Ensure the Alarm operates correctly - see **TESTING and MAINTAINING YOUR ALARM** section.

Fig.7

**Slide on the Alarm**

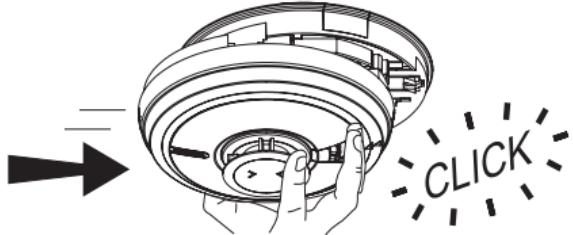
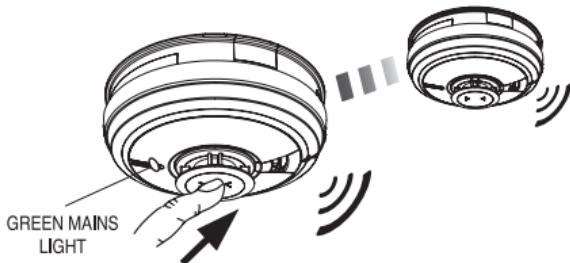


Fig.8

**Test Alarms**



## 2.7 Interconnecting Alarms

With interconnected Alarms, when one device detects fire, all will sound. All Alarms will sound but only Alarms detecting the emergency event will be flashing their red LED alarm indicator.

**Heat Alarms** must always be interconnected to Smoke or Multi-Sensor Fire Alarms to ensure early warning.

Any Ei3000 series Alarm can be hardwire interconnected with other Aico/Ei Electronics mains Alarms such as Ei2110e, Ei160e and Ei140RC Series.

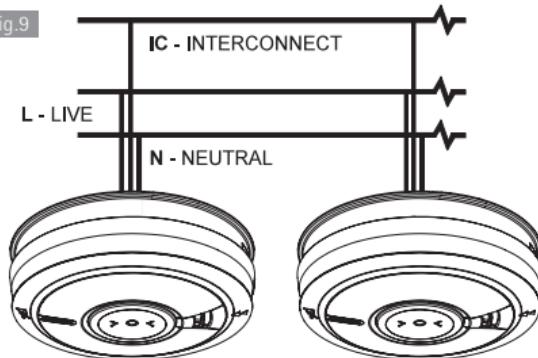
**Note:** A maximum of 12 Fire / Smoke / Heat / CO Alarms and accessory devices can be interconnected in an Aico/Ei Electronics Alarm system. If you wish to connect more than 12 Alarms, contact the Aico Technical Department on 01691 664100.

**WARNING:** Do not hardwire interconnect mains powered Alarms with low voltage or battery powered Aico/Ei Electronics Alarms/devices or any other type of Alarm produced by another manufacturer. Doing so may damage the Alarms and could result in a shock or fire hazard.

Systems using more than 3 or 4 Alarms must be very carefully planned to ensure nuisance alarms are not excessive. e.g. from cooking fumes or steam. The following is suggested:

- In an RF system an Aico/Ei Electronics Control Switch (Ei450) should be incorporated and be readily accessible to all occupants so that the source of an alarm can be quickly identified. This is especially important when both Fire and CO Alarms are used in the same system as the occupant will need to open all windows and doors if it is a CO incident but do the opposite to slow down a fire.

Fig.9



Make electrical connections as shown in Figure 9. Wiring must be installed in compliance with local regulations.

In the UK it is recommended that the following coloured cores are used (for example with triple flat 6243YH cable).

**230V supply** : Brown

**Neutral** : sleeved blue at terminations

**Interconnect** : Black

The interconnect wire (minimum 0.75mm<sup>2</sup> cable) must be treated as if it was Live. It should be insulated and sheathed.

A maximum of 250 metres of wire can be used (maximum resistance between detectors 50 Ohms). Alarms should be interconnected only within the confines of a single family living unit. If they are connected between different units, there may be excessive nuisance alarms. Everybody may not be aware that they are being tested or that it is a nuisance alarm caused by cooking etc.

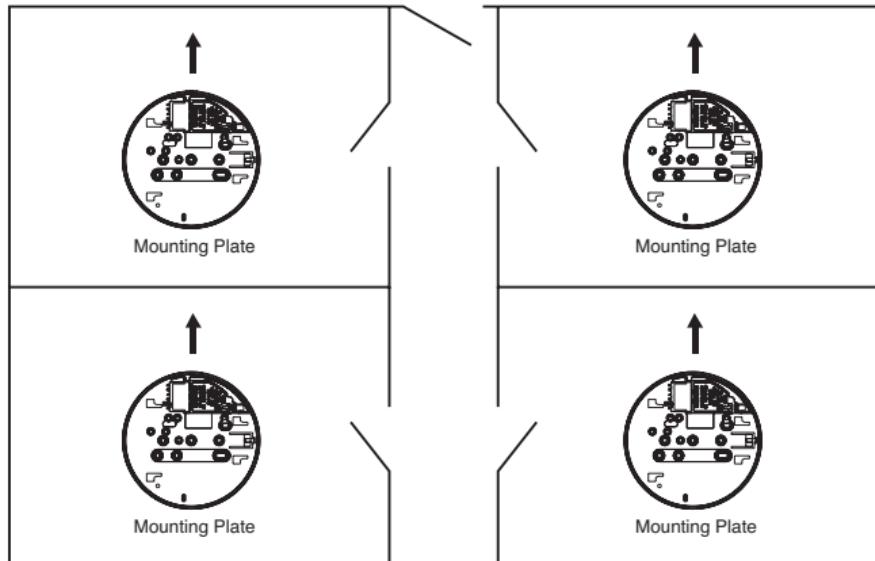
The Alarm can also be RF interconnected to other RF Alarms and devices by installing an Ei3000MRF SmartLINK Module. See the User manual for the Ei3000MRF for further details on RF interconnection. For maximum RF signal strength, orientate all mounting plates in the same direction to ensure the antennas of the RF modules are all facing the same way as shown in figure 10.

Front Wall

Front Wall

Fig.10

Orientate all  
mounting plates  
in the same  
direction



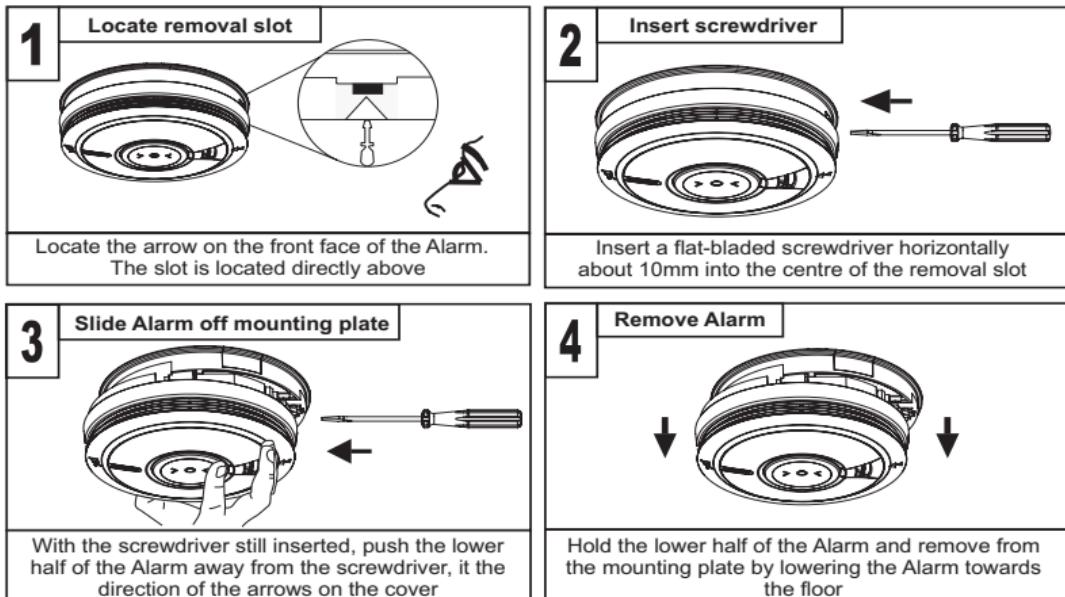
It is also equipped to work in a hybrid system (combination of hard-wired and RF interconnected Alarms and devices).

**Please note** in a hybrid system containing CO / Heat / Fire / Smoke Alarms we recommend using an Ei3000 series Alarm as the hybrid link to the RF section of the system. (Please refer to the Ei3000MRF booklet for further clarification).

Ensure the Alarms operate correctly - see **TESTING YOUR ALARM** in the user section.

## 2.8 Removing the Alarm

**\* Disconnect mains before removal \***



# User Guide

3

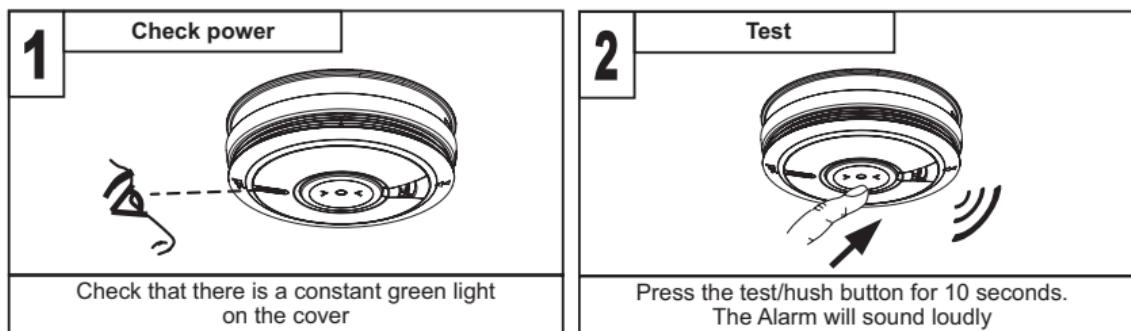
Testing

### 3.1 Testing and maintaining your Alarm

Frequent testing of all your Alarms is a requirement to ensure they are functioning correctly. Guidelines and best practices for testing are as follows:

1. After the system is installed.
2. Once monthly thereafter.
3. After prolonged absence from the dwelling (e.g. after holiday period).
4. After repair or servicing of any of the systems elements or household electrical works.

#### Inspecting and Testing procedure



- (i) Check that the **green LED power indicator** is on continuously.
- (ii) Check also that there are no faults i.e. NO green, yellow or red LED flashing (if this is the case please see indicator summary table).

- (iii) Press the **test/hush button** for up to 10 seconds and ensure that the Alarm sounds. This tests the sensor, electronics and sounder are working. The Alarm will stop when the button is released. Pressing the test/hush button simulates the effect of smoke and/or heat and therefore is the best way to ensure the Alarm is operating correctly. (Refer to indicator summary table if you see Red or Yellow LED flashes).
- (iv) **Interconnected Alarms only** - Test the first unit by pressing the test/hush button for 10 seconds. All the Alarms should sound within 10 seconds of the first alarm sounding. After releasing the test/hush button, the local alarm will stop sounding immediately and the interconnected Alarms will be heard sounding in the distance for a further 3-4 seconds. This feature gives an audible verification that the interconnection is OK. Check all the other Alarms in the same way.
- (v) Check the functioning of the mains battery back-up directly after installation and then at least yearly as follows:
  - Turn off the mains power at the distribution board and check that the green indicator light is now flashing (1 flash every 48 seconds) to indicate the Alarm is on backup battery power.
  - Press the Test/Hush button for up to 10 seconds and ensure the alarm sounds loudly.
  - Monitor the Alarm over a 3 minute period for any fault chirps and or yellow LED fault indicator flashes (Refer to "**Fault Modes**" table on what to do if this occurs).
  - Turn the mains supply at the distribution board back on.

### **Switching off Mains for long periods**

If the premises are regularly being left without mains power for long periods the Alarms should be removed from their mounting plates and the Ei3000MRF modules (if fitted) should be removed to prevent the batteries becoming fully depleted. (This is sometimes done with holiday homes which are only occupied in the summer).

The Ei3000MRF modules (if required) must be re-fitted to the Alarms and the Alarms must be re-attached to the mounting plates when the premises are re-occupied. Ensure to match the original RF module back to the same Alarm head.

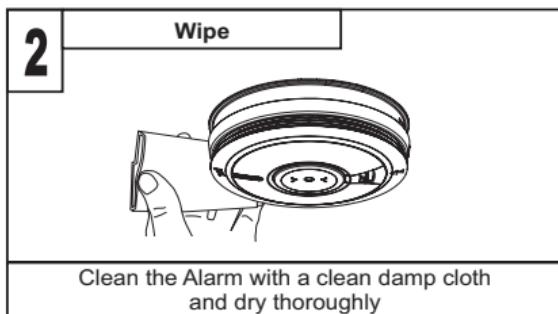
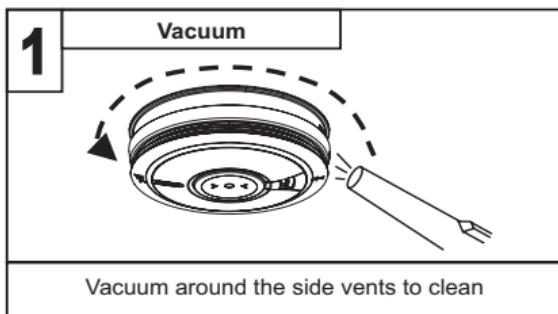
Long term storage (over 1 year) can damage the batteries to the extent that they may not recharge when the Alarms are re-connected to the mains supply.

### **DO NOT TEST WITH FLAME**

This can set fire to the Alarm and damage the house. We do not recommend testing the Alarm with heat and/or smoke as the results can be misleading unless effective apparatus is used.

## **3.2 Cleaning your Alarm**

Clean your Alarm regularly. In dusty areas it may be necessary to clean the Alarm more frequently.



Use the narrow nozzle attachment of your vacuum cleaner to remove dust, insects and cobwebs from the sides and cover slots where the airflow enters. Clean the outside cover by occasionally wiping with a clean damp cloth then dry thoroughly with a lint free cloth. Do not use any cleaning agents, bleaches, detergents or polishes, including those in aerosol cans.

## DO NOT PAINT YOUR ALARM

Other than the cleaning described above, no other customer servicing of this product is required. Servicing or repairs, when needed, must be performed by the manufacturer.

All Alarms are prone to dust and insect ingress, which can cause false alarms or failure to alarm. In certain circumstances, even with regular cleaning, contamination can build up in the smoke sensing chamber causing the Alarm to sound or fail. Contamination is beyond our control, it is totally unpredictable and is considered normal wear and tear. For this reason, contamination is not covered by the guarantee.

# 4

What to do in  
case of alarm

**WARNING:** If your Alarm sounds and you are unsure of the cause, it should be assumed that the alarm is due to an actual fire and the dwelling should be evacuated immediately.

- (i). Check room doors for heat or smoke. Do not open a hot door. Use an alternate escape route. Close all doors behind you as you leave.
- (ii). If smoke is heavy, crawl out, staying close to floor. Take short breaths, if possible, through a wet cloth or hold your breath. More people die from smoke inhalation than from flames.
- (iii). Get out as fast as you can. Do not stop for packing. Have a prearranged meeting place outside for all family members. Check everybody is there.
- (iv). Call the Fire Brigade immediately on a mobile phone or from a neighbour's house. Make sure to call the Brigade for all fires no matter how small - fires can suddenly spread. Also call the Brigade even if the alarm is automatically transmitted to a remote manned centre - the link may have failed.
- (v). **NEVER** re-enter a burning house.



# 5

## Indicator Summary Tables & Troubleshooting

## Indicator summary table

Normal mode					
Mode	Action	Green LED (power)	Yellow LED (fault)	Red LED (alarm)	Sound
Power up	Slide onto mounting plate	 x 1	 x 1	 x 1	—
Standby	—		—	—	—
Testing (monthly)	Press and hold test/hush button	 *	—	—	
In alarm mode					
Detecting fire	—		—		
Activated via interconnect	—		—	—	
Pressing Silence Button on Alarm detecting fire	—		—		 x 10mins

\* With the test/hush button held the green LED will flicker/pulse every second

 = LED on solid  = LED flashing

Memory mode			
Status	Action	Red LED (alarm)	Sound
0-24h	—	 every 48 sec x2	—
>24h +	Press and hold test/hush button	 every 8 sec x2	
To erase the memory	Keep test/hush button pressed for >20s		Sounds until test/hush button is released

The Alarm memory is an important feature where even if the house is unoccupied during an alarm condition it warns the homeowner that the Alarm has previously detected Fire and been in alarm.

The memory feature also helps identify the unit which has previously triggered an entire alarm system, which can also be very helpful after the entire alarm system has gone into alarm and then stopped, for no obvious reason. Once the source alarm has been identified, appropriate action can be taken e.g. in the case of a fire alarm event in memory, investigate the cause of nuisance / false alarms by ensuring kitchen or bathroom doors are kept closed to prevent very hot air or steam from cookers / showers reaching the heat sensor on the Alarm, locate the Alarm further away from the source of steam or condensation, replace the Alarm if it is thought to be defective or remove the unit in the short term.

The memory feature has two operation modes:

- memory indication for 24 hour period after alarm.
- memory recall on demand

**24-hour memory indicators:** For 24 hours after alarming, the red LED will flash twice every 48 seconds (approx)

**Memory recall on demand:** To review the memory status at any time, press and hold the test/hush button, the red LED will flash twice to convey the alarm event in memory, if any.

**Reset Memory:** Hold down the test/hush button for at least 20 seconds. Cover the sounder with a cloth to muffle the alarm during this time. Clearing of the memory is indicated by a 1-second-long flash of the red LED. Please note that the alarm memory will also be reset if the Alarm is removed from its mounting plate.

Fault modes and Memory indicator					
What you hear / see				What it means	What to do
Green LED <sup>1</sup> (power)	Yellow LED <sup>2</sup> (fault)	Red LED (alarm)	Chirps		
every x1 48 sec	—	—	—	AC mains off	Reconnect AC mains power
—	every x1 48 sec	—	1	AC mains off Low battery backup	Reconnect AC mains power
1	every x1 48 sec	—	1	Low battery backup	Replace Alarm
1	every x2 48 sec	—	1 x2	Sensor fault	Replace Alarm
1	every x3 48 sec	—	1 x3	End of Life	Replace Alarm
1	every x4 8 sec	—	1 x4	Max Dust Compensation has been reached	see Maximum Dust Compensation section
1	Flashes as per fault type	—	—	Fault chirps have been silenced. Rate of the yellow LED flashing indicates fault type	If required chirping can be silenced again by pressing Silence button
1	—	when pressing test/hush button	—	There has been an alarm in your absence	Check Alarm memory section

**1** ON when AC mains power is switched on, flashes every 48s when on backup battery, OFF when both AC mains and backup battery are off.

**2** If you are unsure of the amount of flashes of the Yellow LED you can at any time while a fault condition exists, press the test/hush button. The relevant number of flashes will then be 8s apart.

**Note:** Fault chirps can be silenced by pressing the Test/Hush button.

The Alarm can communicate its status and history through various Led flashes and chirps/beeps. However, a more comprehensive report of all such events is available through the AudioLINK download via the smart phone App.

## **Low Battery Backup Fault**

If the battery backup supply is depleted, the sounder will give one short chirp with one yellow LED fault indicator flash every 48 seconds. In this case check that the green LED power indicator is on continuously. If it is off, or flashing every 48 seconds, the Alarm is not receiving 230V AC mains power and is being powered by the battery backup. The chirp every 48 seconds indicates that the battery is depleted. The battery is not replaceable. Check fuses, circuit breakers and wiring to determine the cause of the interruption to the mains power. If in doubt, contact a qualified electrician. Once mains power is reinstated, the chirps should cease within 2 hours as the battery charges up. If the chirping persists for over 2 hours with the green light on, there may be some other problem with the Alarm. The Alarm must be returned for repair or replacement - see **GETTING YOUR ALARM SERVICED** section.

## **Sensor Fault**

The Alarm regularly checks the optical smoke sensor and/or thermistor heat sensor for correct operation. If the Alarm has found a fault with the sensor, it will give 2 short chirps with 2 yellow LED flashes every 48 seconds. In this case, the Alarm must be returned for repair or replacement - see **GETTING YOUR ALARM SERVICED** section.

## **End of Life**

Once the Alarm passes its 10th year of installation, it will give 3 short chirps with 3 yellow LED flashes every 48 seconds to indicate it has reached its end of useful life.

The entire Alarm must be replaced (Also check the replace by date on the label on the side of the Alarm). Disconnect the mains first and replace the Alarm - see 'Removing the Alarm' section.

## **Maximum Dust Compensation (Ei3016 and Ei3024 only)**

The Alarm monitors the dust contamination build-up in the optical smoke chamber and then compensates for it, reducing the possibility of false alarms.

If however, the Alarm gives 4 short chirps with 4 yellow LED flashes when the test/hush button is pressed, it indicates that the Alarm has reached the maximum dust compensation. When this occurs, the Alarm will continue to operate as normal, but there is an increased risk of false alarms caused by dust contamination. If contamination has occurred quickly (e.g. due to dust from carpets being replaced) and the Alarms are sounding, the dust compensation may take some hours to operate. In this situation, remove the Alarm from the ceiling, leave it disconnected for 5 minutes, then reinstall the unit (the air must be clean i.e., dust and smoke free). The dust compensation will now operate quickly, within 60 seconds.

## **Temporarily Silencing the Fault chirps**

If the test / hush button is pressed on an Alarm that is giving fault chirps and yellow LED fault indicator flashes, the Alarm will be silenced (Fault Hush mode) for a period of 12 hours. However, the Alarm will sound / function as normal within that period should it detect Fire (except if the fault detected is a sensor fault). The yellow LED fault indicator will continue to flash as before to indicate the fault is still present. This is a useful feature should the fault occur at night as it keeps the disturbance at a time when people in the building are trying to sleep to a minimum. The fault chirps will return 12 hours later. A low backup battery fault and an end of life fault can be hushed as often as required.

**A sensor fault condition can only be hushed once.**

<p><b>Your Alarm does not sound when you press the test/hush button</b></p>	<ul style="list-style-type: none"> <li>• Check the Alarm is secured correctly on the mounting plate.</li> <li>• Wait 15 seconds after connecting the power before button testing.</li> <li>• Hold button down firmly for at least 10 seconds.</li> <li>• If the Alarm does not sound, then your Alarm must be returned for repair or replacement - see <b>GETTING YOUR ALARM SERVICED</b> section.</li> </ul>
<p><b>Your Alarm sounds for no apparent reason</b></p>	<ul style="list-style-type: none"> <li>• If, when the Alarm sounds, there is no sign of smoke, heat or noise to indicate that there is a fire, you should get your family into a safe place, before you start investigating.</li> </ul> <p>Check the house carefully in case there is a small fire smouldering somewhere.</p> <p>Check for smoke, fumes, steam, very hot air etc.</p> <ul style="list-style-type: none"> <li>• Locate the Alarm that sounds and has flashing red LED.</li> <li>• If you have thoroughly investigated and are sure that it is just a nuisance alarm, simply press the Test/Hush button briefly to silence the Alarm for 10 minutes. This will also silence any interconnected Alarms for the same period. When the Alarm is in 'Hush' mode the red LED will continue to flash while it detects the presence of smoke or heat.</li> </ul> <p>The Alarm will reset to normal functionality at the end of the 10 minute. If additional silenced time is required, simply push the Test/Hush Button again.</p> <ul style="list-style-type: none"> <li>• If you experience frequent nuisance/false alarms, it may be necessary to re-locate the Alarm away from the source of the fumes or if it continues to sound without smoke or heat being present and cleaning the Alarm does not solve the problem, it needs to be replaced.</li> </ul>

<b>Interconnected Alarms do not all sound</b>	<ul style="list-style-type: none"> <li>• Hold test/hush button for at least 10 seconds to ensure that the signal is transmitted to all the interconnected Alarms.</li> <li>• If this is not the case and you have a hardwired interconnection, we recommend you consult a qualified electrician.</li> <li>• If the Alarm is fitted with an RF module for wireless interconnection, check that all Alarms in the the RF system are powered and are house-coded correctly. (see the Ei3000MRF SmartLINK module manual).</li> </ul>
<b>Pressing the Test/Hush button does not silence the Alarm</b>	<p>Always make sure that you are pressing the Test/Hush button on the Alarm that sounds with the red LED flashing.</p>
<b>Your Alarm chirps/beeps/flashes</b>	<p>In standby mode, the Alarm does not sound, beep, chirp or flash. The only light on is the green power LED.</p> <p>The Alarm automatically monitors the battery, sensor and electronics periodically to ensure that all are satisfactory. If a fault has been found, the Alarm alerts the occupier to this via short chirps from its sounder and its yellow LED fault indicator flashes every 48 seconds. The Alarm will also indicate any faults when the test/hush button is pressed.</p> <p>See indicator summary table on the next pages.</p>

# 6 Important safeguards

When a fire system is installed, basic safety precautions should always be followed, including those listed below:

- Please read all instructions.
- **IMPORTANT:** Experience has shown that children may not be woken by fire alarm tones. It is important that children are never left alone in a house. Families should have a fire escape plan that is rehearsed, so that everyone knows how to escape when fire occurs. The immediate priority when fire occurs is to ensure that any sleeping children are woken from sleep and are immediately taken to a place of safety outside the property, along with all other occupants. The fire and rescue service should always be called without delay, no matter how small the fire.
- Use the Testing of the Alarm as a means to familiarise your family with the alarm sound and to practice fire drills regularly with all family members. Rehearse emergency escape plans so everyone at home knows what to do in case the Alarm sounds. Further information can be obtained from your local fire prevention officer.
- To maintain sensitivity to Fire, do not paint or cover the Alarm in any manner and; do not allow cobwebs, dust or grease to accumulate.
- If the Alarm has been damaged in any way or does not function properly, do not attempt a repair. Return the Alarm - see Section 7 - '**SERVICE AND GUARANTEE**' section.
- This appliance is only intended for premises having a residential type environment.
- Fire Alarms are not a substitute for insurance. The supplier or manufacturer is not your insurer.
- Do not dispose of your Alarm in a fire.

7

# Limitations of Fire Alarms

## Limitations of Fire Alarms

Multi-Sensor Fire / Smoke / Heat Alarms can significantly help to reduce the risk of fire fatalities. However independent authorities have stated that these systems may be ineffective in some fire situations. There are a number of reasons for this:

- The Alarms will not work if the mains power supply is off or disconnected and the backup battery is depleted. Test regularly to ensure the power supply is functioning as required.
- The Alarms will not detect fire if sufficient heat/smoke does not reach the Alarms. Heat/smoke may be prevented from reaching the Alarm if the fire is too far away, for example, if the fire is on another floor, behind a closed door, in a chimney, in a wall cavity, or if the prevailing air drafts carry the heat/smoke away. Installing Heat Alarms and Smoke Alarms on both sides of closed doors and throughout the house or premises as recommended in this leaflet will very significantly improve the probability of early detection.
- The Alarms may not be heard. An Alarm may not wake a person who has taken drugs or alcohol.
- The Alarms may not detect every type of fire to give sufficient early warning.
- The Alarms don't last indefinitely. The manufacturer recommends regular testing and replacement after, at most, 10 years, as a precaution.

# 8

## Service and Guarantee

## **8.1 Getting your Alarm serviced**

If, within the guarantee period, your Alarm fails to work after you have carefully read all the instructions, checked the unit has been installed correctly, and is receiving AC power, then contact us.

If you are advised to return your Alarm, please ensure that the Alarm is placed in a padded box, not attached to the mounting plate (as the Alarm can give beeps or alarm if the Test/Hush button is pressed during shipping), with the proof of purchase and a note stating the nature of the fault.

## **8.2 Guarantee**

Aico guarantees this Alarm for ten years from the date of purchase against any defects that are due to faulty materials or workmanship. If this Alarm should become defective within the guarantee period, we shall at our discretion repair or replace the faulty unit. This guarantee excludes batteries which have degraded due to external factors outside of reasonable use and/or Aico's control.

This guarantee only applies to normal conditions of use and service, and does not include damage resulting from accident, neglect, misuse, unauthorised dismantling, or contamination howsoever caused. This guarantee excludes incidental and consequential damage.

This guarantee does not apply to any Alarm that has been modified in any way by a third party or has been fitted with a third party element.

Do not interfere with the Alarm or attempt to tamper with it. This will invalidate the guarantee but more importantly may expose the user to shock or fire hazards.

This guarantee is in addition to your statutory rights as a consumer.

The crossed out wheelie bin symbol that is on your product indicates that this product should not be disposed of via the normal household waste stream. Proper disposal will prevent possible harm to the environment or to human health. When disposing of this product please separate it from other waste streams to ensure that it can be recycled in an environmentally sound manner. For more details on collection and proper disposal, please contact your local government office or the retailer where you purchased this product.



KM522831

KM83678

EN14604:2005+AC 2008

BS5446-2:2003

 <b>2797</b>	 <b>0086</b>		
Ei Electronics, Shannon, Co. Clare, Ireland <b>18</b> DoP No.18-0001	Ei Electronics, Shannon, Co. Clare, Ireland <b>21</b> DoP No.18-0001		
<b>EN14604:2005 + AC:2008</b> <b>Smoke Alarm Devices:</b> <b>Ei3016, Ei3024</b>			
<b>Fire Safety</b>			
Nominal activation conditions/ sensitivity, response delay (response time) and performance under fire condition	<b>Pass</b>	Vibration resistance	<b>Pass</b>
Operational reliability	<b>Pass</b>	Humidity resistance	<b>Pass</b>
Tolerance to voltage supply	<b>Pass</b>	Corrosion resistance	<b>Pass</b>
Response delay and temperature resistance	<b>Pass</b>	Electrical stability	<b>Pass</b>

 	 
Heat Alarm Devices: <b>Ei3014, Ei3024</b>	Heat Alarm Devices: <b>Ei3014, Ei3024</b>

The Declaration of Performance may be consulted at [www.eielectronics.com/compliance](http://www.eielectronics.com/compliance)



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**Aico**

Oswestry, Shropshire SY10 8NR, U.K.

Tel: 01691 664100

**[www.aico.co.uk](http://www.aico.co.uk)**

# YOUR VOGUE VIDEO HANDSET USER GUIDE

**1**

The visitor presses the button for your flat number or dials your number on the main entrance panel

**2**

Your video handset will ring and the video monitor will display an image of the caller. If the call is not answered the system will reset to allow other calls.

**3**

Press Call Accept if you wish to speak.

**4**

**5**

If you press the "unlock" button the main entrance panel will beep. Your visitor can now enter.

**6**

Please ask your visitor to ensure the door closes behind them. Press the handset button to end the call.

**7**

1. Call Accept. The videomonitor will display for the length of the call. Press again to end the call.  
 2. Unlock. This will allow the visitor to enter.  
 3. Privacy. Press this to silence the call.  
 4. Concierge Button (CB) / Call Back / Camera Switch Button (if applicable)  
 5. Adjust the loudspeaker volume with +/-  
 6. To alter the ringtone, press +/- to start the ringtone, then press CB to select the ringtone options and +/- to set the volume.

**8**

Remember: it is up to you to control who comes into the building. Only let people in if you are sure of their identity. If you do not wish to speak or let them in simply replace the handset.

**9**

If you do not want to be disturbed press the "privacy" button once. The red light will come on. Please note: you will not receive any calls for 8 hours when the red light is on. If you wish to receive calls before the 8 hour time-out press the "privacy" button again and the red light will go off.

**10**

For your exit from the building push the exit button and open the door.