# Logicool Air Conditioning & Heat Pumps Limited

Site Support Services
01283 218277

Site Visit Report

| Solar Thermal System Commissioning | |
|---|---|
| **Site address** | Winvic Construction, Plot 5 , East Midlands Gateway , Wilder Way , DE74 2BF |
| **Collector Model** | Vitosol 300 TM SP3C |
| **Collector Serial** | 7749031210779203/7749031207751205 |
| **Pump Station Model** | Resol Flowsol B |
| | |
| **Solar Cylinder** | 600L Telford Stainless Steel |
| | |
| **Pipework pressure tested and flushed** | Yes |
| **Safety valve discharge to collection facility** | Yes |
| **High temperature pipe insulation fitted** | Yes |
| **Anti-scald measures** | TMVs on outlets/BMS Monitoring |
| | |
| **Collector area** | 9.2 $m^2$ |
| **System working pressure** | 3.8 bar |
| **Expansion vessel pressure** | 3.5 bar |
| **System max flow rate** | 3.8 l/min |
| **Max pressure** | 6bar |
| **Store set temp** | 50°C |
| **Store max temp** | 60°C |
| **Δt Control** | 6 K |
| **Glycol Concentration** | -20°C |
| | |
| **Installation Company** | Salamanda |
| **Commissioning Engineer** | Dan Colclough |
| **Commissioning Date** | 26/05/23 |

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*for the Better*


01707 282880

Customer Services & Support: **0161 866 6089**

Conditioning Technical — **Option 4** - Heating Technical
ares — **Option 5** - Returns
rranty — **Option 6** - Product Training & Site Services

**vironmentalsystems@meuk.mee.com**
**itsubishielectric.co.uk**

GDOM Mitsubishi Electric Europe Living Environment Systems Division
Hatfield, Hertfordshire, AL10 8XB, England
s Telephone: 01707 282880 Fax: 01707 278881

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419 8800 Fax: (01) 419 8890 International code: (003531)




ng is for guidance only. Please refer to the relevant databook for detailed specification. It is the responsibility of a qualified electrician/electrical engineer to able size and fuse rating based on current regulation and site specific conditions. Mitsubishi Electric's air conditioning equipment and heat pump systems f greenhouse gas, R410A (GWP:2088), R32 (GWP:675), R407C (GWP:1774), R134a (GWP:1430), R513A (GWP:631), R454B (GWP:466), R1234ze (GWP:4). *These GWP values are based on Regulation (EU) No 517/2014 from IPCC 4th edition. In case of Regulation (EU) No.626/2011 from ese are as follows. R410A (GWP:1975), R32 (GWP:550), R407C (GWP:1650) or R134a (GWP:1300).

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Green Gateway
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Mitsubishi Electric UK's commitment to the environment



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# Installer Pack

## Ensuring efficient operation of your Ecodan heating and hot water system

# Commissioning Checklist

This Commissioning Checklist is to be completed in full by the installer who commissioned the Ecodan and associated equipment as a means of demonstrating compliance with the appropriate Building Regulations and then handed to the customer to keep for future reference.

For further information, please refer to Mitsubishi Electric training literature and installation manual. Failure to install and commission this equipment to the manufacturer's instructions may invalidate the warranty but does not affect statutory rights.

## Customer Information

Name: WINVIC

Address: PLOT 5 EMG
DE74 2DL

Telephone:

Email:

## Installer Information

Name: M GILLOTT

Company: SALAMANDA

Telephone: 01773 715224

Email: INFO@SALAMANDA.CO.UK

Address: 5 SWANWICK COURT
ALFRETON
DERBYS
DE55 7AS

ME Installer No. 566147

MCS Installer Reg No.

F-Gas Certification No.

G3 Certification No. 21279/5489

Certified Operative Reg. No. EMC/280/18

## Building Information

(Tick appropriate boxes if applicable)

Heating System Peak Heat Loss (kW):

Peak Hot Water Volume (L):

Building Regulations Notification No.

DNO Notification: Connect & Notify ☐ Apply to Connect ☐

# Commissioning Checklist

## Heat Pump Information

(Tick appropriate boxes if applicable)

Heat Pump Technology: Air Source ✓ Ground Source ☐ Water Source ☐ Other ☐

Model No. PUZ-WM85 Qty: 2 Serial No. 3A00004 / 3A00015

Type: AIR TO WATER Monobloc ✓ Split ✓ Other ✓

Application: Heating & Hot Water ☐ Heating Only ☐ Hybrid ☐ Cascade ☐

## Hot Water System Information

Manufacturer:

Model No. Qty: Serial No.

Type: Vented ☐ Un-Vented ✓ Thermal Store ☐ Other ☐

Application: Direct ☐ In-Direct ✓

## Electrical & Hydronic Control Information

Manufacturer:

Model No. Qty: Serial No.

Type: Wired ☐ Wireless ☐

## Wi-Fi Adapter Information

Manufacturer:

Model No. Qty: Serial No.

MAC ID Address:

## Supplementary Hybrid System Information

Manufacturer:

Model No. Qty: Serial No.

Type: Vented ☐ Gas Boiler ☐ Oil Boiler ☐ Other ☐

Application: Heating & Hot Water ☐ Heating Only ☐ Hybrid ☐ Cascade ☐

# Commissioning Checklist

## Electrical & Hydronic Controls - System & Heat Pump

(Tick appropriate boxes if applicable)

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | Time & Temperature Control to Heating | ✓ Room Thermostat & Programmer/Timer | Programmable Room Thermostat | Load/Weather Compensation | Optimum Start Control | |
| 2 | Time & Temperature Control to Hot Water | Cylinder Thermostat & Programmer/Timer | ✓ Combined with Heat Pump main controls | | | |
| 3 | Hybrid System - synchronised control of boiler and heat pump fitted | Yes | If Yes - boiler model switching point (Quote Tariff or Temperature Level) | | | |
| 4 | Heating Zone Valves (including underfloor loops) | | Pre-existing | Fitted | ✓ Not Required | |
| 5 | Hot Water Zone Valves | | Pre-existing | Fitted | ✓ Not Required | |
| 6 | Thermostatic Radiator Valves | | Pre-existing | Fitted | ✓ Not Required | |
| 7 | Outdoor Sensor | | Pre-existing | Built In | ✓ Provided | |
| 8 | Heat Pump Safety Interlock (3) | | Pre-existing | Built In | ✓ Provided | |
| 9 | Flow & Cylinder temperature sensors correctly positioned? | | | No | ✓ Yes | |
| 10 | Automatic Bypass System | | Pre-existing | Fitted | ✓ Not Required | |
| 11 | Buffer Vessel Fitted | No | ✓ Yes | If Yes, Volume | — | Litres 48 |
| 12 | Plate Heat Exchanger fitted to give hydronic separation | | | | ✓ No | Yes |
| 13 | Expansion vessel for heating is sized, fitted & charged in accordance with manufacturers instructions? | | | | | Yes |
| 14 | Legionella protection for stored hot water provided by timed temperature co l? | | | | | ✓ Yes |
| 15 | Weather Compensation Settings | 50 °C flow at | 0 °C outdoor & | 40 °C flow at | 15 °C outdoor | |
| 16 | Control System | | FTC2 | FTC3 | FTC4 | ✓ FTC5 FTC6 |
| 17 | Third Party Controls? | ✓ No | Yes | Manufacturer Name & Mode | | |
| 18 | Are third party controls correctly interlocked? | | | | ✓ No | Yes |

## All Systems

(Tick appropriate boxes if applicable)

| | | | | |
|---|---|---|---|---|
| 1 | The heating system has been filled and pressure tested | | | ✓ Yes |
| 2 | Expansion vessel for heating is sized, fitted & charged in accordance with manufacturer's instructions | | | ✓ Yes |
| 3 | The system has been flushed and cleaned in accordance with BS7593 2019 and heat pump manufacturer's instructions | | | ✓ Yes |
| 4 | What system cleaner was used? | Brand: FERNOX | Product | F3 |
| 5 | What heating system inhibitor was used? | Brand: FERNOX | Product | HP-5 |
| 6 | What heat pump anti-freeze has been used? | Brand: FERNOX | Product | HP-5 |
| 7 | What is the heat pump anti-freeze concentration level? | 20 % | | |

# Commissioning Checklist

## All Systems

(Tick appropriate boxes if applicable)

| | | | | | |
|---|---|---|---|---|---|
| 8 | System filter fitted in accordance with BS 7593. 2019? | | | | ✓ Yes |
| 9 | Outdoor fuse rating | A | Type | | |
| 10 | Cylinder coil surface area or Plate heat exchanger | 1 M² | Plate Heat Exchanger Fitted | Not Available Heating Only | |
| 11 | Legionella protection | 60 °C every | 7 Days | | |
| 12 | Circulating pump(s) speed settings? | 3 | | | |
| 13 | Measured flowrate | Domestic Hot Water 19 Litres/Min | | Heating 19 Litres/Min | |
| 14 | Measured steady state delta T (Flow and Return) | 5DT °C | Flow Temperature 40 °C | Return Temperature 35 °C | |

## Outdoor Unit

| | | | | |
|---|---|---|---|---|
| 1 | Is the heating system adequately frost protected and pipes insulated to prevent heat loss? | | | |
| 2 | Split only: The refrigerant circuit has been evacuated and charged in accordance with manufacturer's instructions | | | ✓ Yes |
| 3 | The heat pump is fitted on a solid/stable surface capable of taking its weight | | | ✓ Yes |
| 4 | The necessary heat pump defrost provision been put in place | | | ✓ Yes |
| 5 | The heat pump fan free from obstacles and operational | | | ✓ Yes |
| 6 | Is all external pipework insulated? | | No | ✓ Yes |
| 7 | ASHP only. Does the outdoor unit have adequate airflow as per the manufacturers guidelines? | | No | ✓ Yes |
| 8 | Has suitable consideration been made for condensate discharge? | | No | ✓ Yes |
| 9 | Flow and return isolation valves fitted? | | No | ✓ Yes |
| 10 | Anti-Vibration mounting pads fitted? | | No | ✓ Yes |
| 11 | Refrigerant type. R32 | | Weight (kG) | |
| 12 | Has the condensate drain been installed to the manufacturers instructions? | | No | ✓ Yes |

## Heating Mode

| | | | | | |
|---|---|---|---|---|---|
| 1 | The heating system has been filled and pressure tested | | | | Yes |
| 2 | Heating Temperatures | Heating Flow Temperature °C | Heating Return Temperature °C | | |
| 3 | Emitter type | Underfloor Heating | Radiators | Towel Rail | |
| 4 | Emitters balanced? | | | | Yes |
| 5 | Air removed from system? | | | Not Required | Yes |
| 6 | System correctly balance/rebalanced | | | | Yes |

# Commissioning Checklist

## Domestic Hot Water Mode - Measure & Record

(Tick appropriate boxes if applicable)

| | | | | | |
|---|---|---|---|---|---|
| 1 | Is the heat pump connected to a hot water cylinder? | ✓ Unvented | Vented | Thermal store | Not Connected |
| 2 | Hot water cylinder size | 600 Litres | | | |
| 3 | Domestic hot water target temperature | 55 °C | Cylinder heat up | 40 Minutes | |
| 4 | Hot water has been checked at all outlets | ✓ Yes | | | |
| 5 | Have Thermostatic blending valves been fitted? | Not Required | ✓ Yes | | |

## Additional System Information

| | | | | | |
|---|---|---|---|---|---|
| 1 | Water Flow rate setting of the heat pump at commissioning (l/min): | 20 | | | |
| 2 | Additional heat sources connected | Gas Boiler | Oil Boiler | Electric Heater | ✓ Solar Thermal |
| | | Other | | | |
| 3 | Remove & clean line strainer if present | No | ✓ Yes | Not Applicable | |
| 4 | The operation of the heat pump and system controls have been demonstrated to the end-user | No | ✓ Yes | Not Applicable | |

## All installations

| | | |
|---|---|---|
| 1 | All electrical work complies with the appropriate Regulations | ✓ Yes |
| 2 | The heat pump and associated products have been installed and commissioned in accordance with the manufacturer's instructions | ✓ Yes |
| 3 | The operation of the heat pump and system controls have been demonstrated to and understood by the customer | ✓ Yes |
| 4 | The manufacturer's literature, including Benchmark Checklist and Service Record, has been explained and left with the customer | ✓ Yes |

# Mains Pressure Hot Water Storage System Commissioning Checklist

## Domestic Hot Water Mode - Measure & Record

(Tick appropriate boxes if applicable)

| | | | |
|---|---|---|---|
| 1 | Is the primary circuit a sealed or open vented system? | ✓ Sealed | Open |
| 2 | What is the maximum primary flow temperature? | 55 °C | |

## All Systems

| | | | |
|---|---|---|---|
| 1 | What is the incoming static cold water pressure at the inlet to the system? | 2.5 Bar | |
| 2 | Has a strainer been cleaned on installation debris (if fitted) ? | No | ✓ Yes |
| 3 | Is the installation in a hard water area (above 200ppm) ? | ✓ No | Yes |
| 4 | If Yes, has a water scale reducer been fitted ? | No | Yes |
| 5 | What type of scale reducer has been fitted ? | | |
| 6 | What is the hot water thermostat set temperature ? | 55 °C | |
| 7 | What is the maximum hot water flow rate at set thermostat temperature (measured at high flow outlet) ? | 19 l/min | |
| 8 | Time and temperature controls have been fitted in compliance with Part L of the Building Regulations? | ✓ Yes | |
| 9 | Type of control system (if applicable) | ✓ Y Plan | S Plan | Other |
| 10 | Is the cylinder solar (or other renewable) compatible ? | No | ✓ Yes |
| 11 | What is the hot water temperature at the nearest outlet ? | 43 °C | |
| 12 | All appropriate pipes have been insulated up to 1 metre or the point where they become concealed | ✓ Yes | |

## Unvented Systems

| | | | |
|---|---|---|---|
| 1 | Where is the pressure reducing valve situated (if fitted) ? | PLANT DECK | |
| 2 | What is the pressure reducing valve setting ? | 3 Bar | |
| 3 | Has a combined temperature and pressure relief valve and expansion valve been fitted and discharge tested ? | No | ✓ Yes |
| 4 | The tundish and discharge pipework have been connected and terminated to Part G of the Building Regulations | ✓ Yes | |
| 5 | Are all energy sources fitted with a cut out device ? | No | ✓ Yes |
| 6 | Has the expansion vessel or internal air space been checked ? | No | ✓ Yes |

# Mains Pressure Hot Water Storage System Commissioning Checklist

## Thermal Stores Only

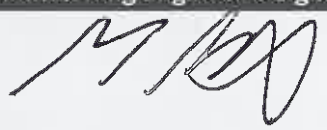
(Tick appropriate boxes if applicable)

| | | |
|---|---|---|
| 1 | What store temperature is achievable ? | 60 °C |
| 2 | What is the maximum hot water temperature ? | 50 °C |

## All Installations

| | | |
|---|---|---|
| 1 | The hot water system complies with the appropriate Building Regulations | ✓ Yes |
| 2 | The system has been installed and commissioned in accordance with the manufacturer's instructions | ✓ Yes |
| 3 | The system controls have been demonstrated to and understood by the customer | ✓ Yes |
| 4 | The manufacturer's literature, including Benchmark Checklist and Service Record, has been explained and left with the customer | ✓ Yes |

## Commissioning Engineer's Signature



## Customer's Signature*

* (To confirm satisfactory demonstration and receipt of manufacturers' literature)

## Date

25-5-23

All installations in England and Wales must be notified to Local Authority Building Control (LABC) either directly or through a Competent Persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer.



# Annual Service Tasks

## Mechanical Tasks

(Tick appropriate boxes if applicable)

| | |
|---|---|
| 1 | Inspect and clean evaporator fins. Repair damaged fins using a fin comb if required |
| 2 | Check visually for signs of oil leaks which may indicate a refrigerant leak (check for leaks if necessary) |
| 3 | Check integrity of refrigerant / water pipe work and lagging, repair lagging if required |
| 4 | Check system operation |
| 5 | Check the antifreeze and if necessary top up the concentration as per manufacturer's recommendations |
| 6 | Check and clean the magnetic particle filter |
| 7 | Check system pressure |
| 8 | Release any air from the primary/heating systems |

## Controller Tasks

| | |
|---|---|
| 9 | Check for the correct operation and temperature setting of the thermostats |
| 10 | Check the operation of the zone valves |
| 11 | Check the operation and the timing of the immersion heater |

## On Completion

**Check that the whole system is working satisfactorily**

Mitsubishi Electric recommends that the frequency of maintenance visits to be a maximum of 12 months between inspections.

Frequency of maintenance may increase dependent upon the equipment and local water conditions e.g. hard water, scale forming, water containing a high proportion of solids.

Failure to maintain the system to the above minimum recommendations could result in the warranty becoming null and void.

Please fill in the Service Record sheet to confirm the above tasks have been carried out on the Ecodan outdoor unit.

# Service Record

It is recommended that your Ecodan is serviced regularly and that the appropriate Service Interval Record is completed.

## Service Provider

Before completing the appropriate Services Interval Record below, please ensure you have carried out the service as described in the manufacturer's instructions.

Always use the manufacturer's specified spare part when replacing components.

### Service 1

Engineer Name: Date:

Company Name:

Telephone No: Operative ID No:

System inhibitor concentration has been checked and appropriate action taken, in accordance with BS 7593 and heat pump manufacturers' instructions. Yes N/A

Comments:

### Service 2

Engineer Name Date

Company Name:

Telephone No Operative ID No:

System inhibitor concentration has been checked and appropriate action taken, in accordance with BS 7593 and heat pump manufacturers' instructions. Yes N/A

Comments:

### Service 3

Engineer Name: Date:

Company Name:

Telephone No: Operative ID No:

System inhibitor concentration has been checked and appropriate action taken, in accordance with BS 7593 and heat pump manufacturers' instructions. Yes N/A

Comments:

### Service 4

Engineer Name Date.

Company Name

Telephone No: Operative ID No:

System inhibitor concentration has been checked and appropriate action taken, in accordance with BS 7593 and heat pump manufacturers' instructions. Yes N/A

Comments:

### Service 5

Engineer Name. Date:

Company Name:

Telephone No Operative ID No

System inhibitor concentration has been checked and appropriate action taken, in accordance with BS 7593 and heat pump manufacturers' instructions. Yes N/A

Comments:

Heating | Product Information

MITSUBISHI ELECTRIC

# PUZ-WM85YAA(-BS)

## Ecodan R32
## **Monobloc** Air Source Heat Pump

R32

### Key Features:

- A+++ high efficiency system
- Ultra quiet noise levels
- Maintains full heating capacity at low temperatures
- Zero carbon solution
- MELCloud enabled

### Key Benefits:

- Ultra low running cost
- Flexible product placement
- Confident and quick product selection
- Help to tackle the climate crisis
- Remote control, monitoring, maintenance and technical support

MELCloud

Manufactured in the UK

037-0033-20-05


ecodan®
Renewable Heating Technology

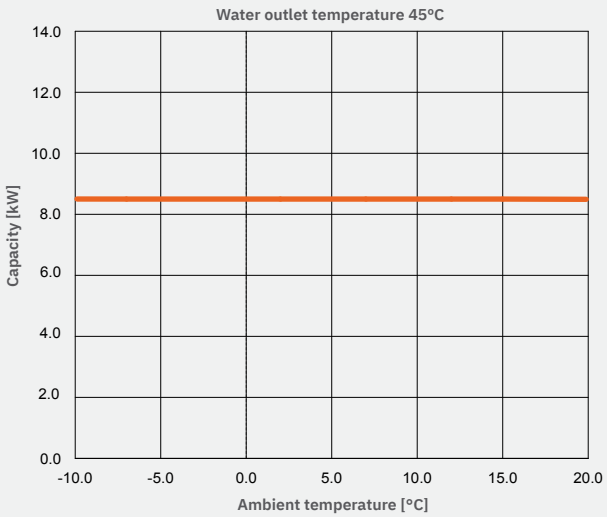
ecodan.co.uk

**Heating** | **Product Information**

# PUZ-WM85YAA(-BS)
Ecodan R32
Monobloc Air Source Heat Pump

| OUTDOOR UNIT | | PUZ-WM85YAA(-BS) |
|---|---|---|
| HEAT PUMP SPACE HEATER - 55˚C | ErP Rating | A++ |
| | $\eta_s$ | 139% |
| | SCOP (MCS) | 3.46 |
| HEAT PUMP SPACE HEATER - 35˚C | ErP Rating | A+++ |
| | $\eta_s$ | 193% |
| | SCOP (MCS) | 4.81 |
| HEAT PUMP COMBINATION HEATER - Large Profile*1 | ErP Rating | A+ |
| | $\eta_{wh}$ | 145% |
| HEATING*2 (A-7/W35) | Capacity (kW) | 8.5 |
| | Power Input (kW) | 3.27 |
| | COP | 2.60 |
| OPERATING AMBIENT TEMPERATURE (°C DB) | | -20 ~ +35 |
| SOUND DATA*3 | Pressure Level at 1m (dBA) | 45 |
| | Power Level (dBA)*4 | 58 |
| WATER DATA | Pipework Size (mm) | 28 |
| | Flow Rate (l/min) | 24 |
| | Water Pressure Drop (kPa) | 15.0 |
| DIMENSIONS (mm) | Width | 1050 |
| | Depth | 480 |
| | Height | 1020 |
| WEIGHT (kg) | | 111 |
| ELECTRICAL DATA | Electrical Supply | 400v, 50Hz |
| | Phase | Three |
| | Nominal Running Current [MAX] (A)*5 | 2.9 [11.5] |
| | Fuse Rating - MCB Sizes (A)*6 | 16 |
| REFRIGERANT CHARGE (kg) / $CO_2$ EQUIVALENT (t) | R32 (GWP 675) | 2.2 / 1.49 |

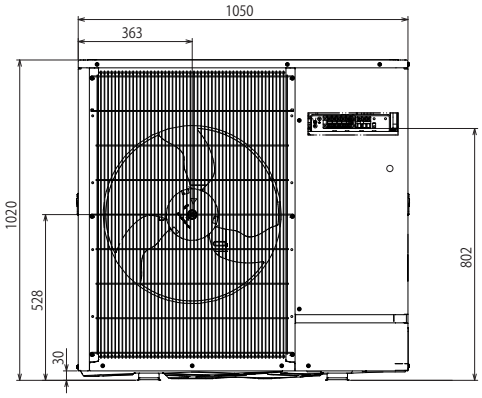
## NOMINAL HEATING CAPACITY



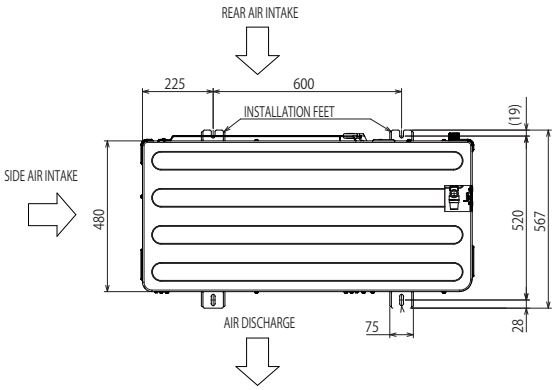

**Notes:**
*1 Combination with EHPT20X Cylinder
*2 Under normal heating conditions at outdoor temp: -7°CDB / -8°CWB, outlet water temp 35°C, inlet water temp 30°C.
*3 Under normal heating conditions at outdoor temp: 7°CDB / 6°CWB, outlet water temp 55°C, inlet water temp 47°C as tested to BS EN14511.
*4 Sound power level tested to BS EN12102.
*5 Under nominal heating conditions at outdoor temp: 7ºC, outlet water temp: 35ºC.
*6 MCB Sizes BS EN60898-2 & BS EN60947-2.
$\eta_s$ is the seasonal space heating energy efficiency (SSHEE) $\eta_{wh}$ is the water heating energy efficiency

## PUZ-WM85YAA(-BS) DIMENSIONS

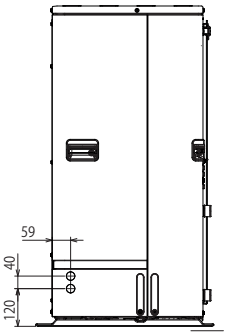
FRONT VIEW




UPPER VIEW




SIDE VIEW




All dimensions (mm)


MITSUBISHI ELECTRIC
*Changes for the Better*

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**IRELAND Mitsubishi Electric Europe,** Westgate Business Park, Ballymount, Dublin 24, Ireland. Telephone: (01) 419 8800 Fax: (01) 419 8890 International code: (003531)




**Note:** Refer to 'Installation Manual' and 'Instruction Book' for further 'Technical Information'. The fuse rating is for guidance only and please refer to the relevant databook for detailed specification. It is the responsibility of a qualified electrician/ electrical engineer to select the correct cable size and fuse rating based on current regulation and site specific conditions. Mitsubishi Electric's air conditioning equipment and heat pump systems contain a fluorinated greenhouse gas, R410A (GWP:2088), R32 (GWP:675), R407C (GWP:1774), R134a (GWP:1430), R513A (GWP:631), R454B (GWP:466), R1234ze (GWP:7) or R1234yf (GWP:4). *These GWP values are based on Regulation (EU) No 517/2014 from IPCC 4th edition. In case of Regulation (EU) No.626/2011 from IPCC 3rd edition, these are as follows. R410A (GWP:1975), R32 (GWP:550), R407C (GWP:1650) or R134a (GWP:1300).

**Effective as of February 2021**

Green Gateway greengateway.mitsubishielectric.co.uk

SALAMANDA BUILDING SERVICES LIMITED

5 Swanwick Court, Alfreton, Derbyshire. DE55 7AS
Tel: 01773 715234 E: info@salamandaltd.co.uk

**SYSTEM OVERVIEW**

The project consists of the installation of domestic hot water including solar, boosted cold water, ventilation, rainwater harvesting, and air conditioning services into the main offices, hub office & gate house of 'Plot 5' building East Midlands Gateway development. As part of the building there is a new control panel, referenced MCP1, installed on the plant deck at the 2nd floor office level.
All mechanical HVAC plant within the plant deck and toilet extract ventilation are automatically controlled by a Ambiflex MF3200 DDC controller housed within a single section control panel. The Ambiflex MF3200 also integrates the electricity metering.
New Domestic Hot Water services plant monitored / controlled as outlined below:

- 2No. DHWS Air Source Heat Pump.
- 1No. DHWS Secondary Pump.
- 1No. DHWS High Temperature Thermostat
- 1No. DHWS High Temperature Safety Shut Off Valve
- 1No. DHWS Immersion Heater.

**MAIN OFFICE DHWS**

The Domestic Hot Water System consists of one cylinder, Air Source Heat Pump, solar system, and secondary pump which serves the Main Offices as a whole.
The DHWS secondary pump runs continuously when the associated HWS time zone is occupied.
The Air Source Heat Pump and solar system run 24/7 to ensure the secondary flow temperature is at the occupied domestic hot water setpoint before the building is occupied.
Should the maximum recorded temperature rise above the DHWS high temperature setpoint of 65°C (adjustable), the HWS system will be disabled and a DHWS high temperature alarm will be raised on the control panel. The HWS system will automatically restart when the maximum temperature drops below the HWS high limit setpoint.
In the event of an ASHP and / or solar failure, the immersion heater can be switched on to heat the DHWS cylinder.

Hot water for the main offices is generated via an air-source heat-pump system. External condenser units located on the plant deck serve a twin-coil hot water cylinder. The ASHP serves the primary coil, whilst the second coil is served by a solar system, comprising solar collectors on the roof of the building, and a solar pump station located on the plant deck beside the cylinder.
Hot water pipework is designed such that water at 50°C is achieved within 60 seconds of the outlet opening in accordance with BS8558:2011. Dead-legs to be kept to a minimum on the basis of local point-of-use distribution.
The copper pipework that serves the office core areas runs from the plant deck and distributes to all outlets as required. Thermostatic blending valves or TMV tap are incorporated on hot water outlets to wash basins. The cleaners sinks have been supplied with unregulated hot water, service valves are fitted within 300mm of the appliance or associated blending valve.
Hot water pipework is installed to all outlets with service valves and flow restrictors within 300mm of the appliance.
All pipework where concealed, within voids & risers is fitted with foil faced rockwool thermal insulation with identification applied in accordance with the specification.