

Commissioning & Servicing Handbook

Making sure your Ecodan
System is installed, tested,
and fully operational



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:

Telephone:

Email:

Address:

Installer Information

Name:

Company:

Telephone:

Email:

MCS Installer Reg No.

G3 Certification No.

Address:

ME Installer No.

F-Gas Certification No.

Certified Operative Reg. No.

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. Qty: Serial No.

Type: Monobloc Split Other

Application: Heating & Hot Water Heating Only Hybrid Cascade

Hot Water System Information

Manufacturer:

Model No. Qty: Serial No.

Type: Vented Unvented 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	<input type="checkbox"/> Room Thermostat & Programmer/Timer	<input type="checkbox"/> Programmable Room Thermostat	<input type="checkbox"/> Load/Weather Compensation	<input type="checkbox"/> Optimum Start Control	
2	Time & Temperature Control to Hot Water	<input type="checkbox"/> Cylinder Thermostat & Programmer/Timer		<input type="checkbox"/> Combined with Heat Pump main controls		
3	Hybrid System - synchronised control of boiler and heat pump fitted	<input type="checkbox"/> Yes	If Yes - boiler model switching point (Quote Tariff or Temperature Level)		<input type="text"/>	
4	Heating Zone Valves (including underfloor loops)	<input type="checkbox"/> Pre-existing	<input type="checkbox"/> Fitted	<input type="checkbox"/> Not Required		
5	Hot Water Zone Valves	<input type="checkbox"/> Pre-existing	<input type="checkbox"/> Fitted	<input type="checkbox"/> Not Required		
6	Thermostatic Radiator Valves	<input type="checkbox"/> Pre-existing	<input type="checkbox"/> Fitted	<input type="checkbox"/> Not Required		
7	Outdoor Sensor	<input type="checkbox"/> Pre-existing	<input type="checkbox"/> Built In	<input type="checkbox"/> Provided		
8	Heat Pump Safety Interlock (3)	<input type="checkbox"/> Pre-existing	<input type="checkbox"/> Built In	<input type="checkbox"/> Provided		
9	Flow & Cylinder temperature sensors correctly positioned?			<input type="checkbox"/> No	<input type="checkbox"/> Yes	
10	Automatic Bypass System	<input type="checkbox"/> Pre-existing	<input type="checkbox"/> Fitted	<input type="checkbox"/> Not Required		
11	Buffer Vessel Fitted	<input type="checkbox"/> No	<input type="checkbox"/> Yes	If Yes, Volume: <input type="text"/>	Litres: <input type="text"/>	
12	Plate Heat Exchanger fitted to give hydronic separation			<input type="checkbox"/> No	<input type="checkbox"/> Yes	
13	Expansion vessel for heating is sized, fitted & charged in accordance with manufacturers instructions?				<input type="checkbox"/> Yes	
14	Legionella protection for stored hot water provided by timed temperature control?				<input type="checkbox"/> Yes	
15	Weather Compensation Settings	<input type="text"/> °C flow at	<input type="text"/> °C outdoor &	<input type="text"/> °C flow at	<input type="text"/> °C outdoor	
16	Control System	<input type="checkbox"/> FTC2	<input type="checkbox"/> FTC3	<input type="checkbox"/> FTC4	<input type="checkbox"/> FTC5 <input type="checkbox"/> FTC6 <input type="checkbox"/> FTC7	
17	Third Party Controls?	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Manufacturer Name & Mode: <input type="text"/>		
18	Are third party controls correctly interlocked?				<input type="checkbox"/> No	<input type="checkbox"/> Yes

All Systems		(Tick appropriate boxes if applicable)	
1	The heating system has been filled and pressure tested	<input type="checkbox"/> Yes	
2	Expansion vessel for heating is sized, fitted & charged in accordance with manufacturer's instructions	<input type="checkbox"/> Yes	
3	The system has been flushed and cleaned in accordance with BS7593: 2019 and heat pump manufacturer's instructions	<input type="checkbox"/> Yes	
4	What system cleaner was used?	Brand: <input type="text"/>	Product: <input type="text"/>
5	What heating system inhibitor was used?	Brand: <input type="text"/>	Product: <input type="text"/>
6	What heat pump anti-freeze has been used?	Brand: <input type="text"/>	Product: <input type="text"/>

Commissioning Checklist

All Systems		(Tick appropriate boxes if applicable)	
7	What is the heat pump anti-freeze concentration level?	<input type="text"/>	%
8	System filter fitted in accordance with BS 7593: 2019?	<input type="checkbox"/> Yes	
9	Outdoor fuse rating	<input type="text"/> A	<input type="text"/> Type
10	Indoor fuse rating if independently supplied	<input type="text"/> A	<input type="text"/> Type
11	Cylinder coil surface area or Plate heat exchanger	<input type="text"/> M ²	<input type="checkbox"/> Plate Heat Exchanger Fitted <input type="checkbox"/> Not Available Heating Only
12	Legionella protection	<input type="text"/> °C every	<input type="text"/> Days
13	DHW speed settings	<input type="text"/>	
14	Primary heating speed settings	<input type="text"/>	
15	Measured flowrate	Domestic Hot Water <input type="text"/> Litres/Min	Heating <input type="text"/> Litres/Min
16	Measured steady state delta T (Flow and Return)	<input type="text"/> °C	Flow Temperature <input type="text"/> °C Return Temperature <input type="text"/> °C

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

Commissioning Checklist

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 Fan Coil Underfloor Heating Radiators Towel Rail
- 4 Emitters balanced? Yes
- 5 Air removed from system? Not Required Yes
- 6 System correctly balance/rebalanced Yes

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 Litres
- 3 Domestic hot water target temperature °C Cylinder heat up 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):
- 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? | <input type="checkbox"/> Sealed | <input type="checkbox"/> Open |
| 2 | What is the maximum primary flow temperature? | <input type="text"/> | °C |

All Systems

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

Unvented Systems

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

Mains Pressure Hot Water Storage System Commissioning Checklist

Thermal Stores Only

(Tick appropriate boxes if applicable)

- | | | | |
|---|---|----------------------|----|
| 1 | What store temperature is achievable ? | <input type="text"/> | °C |
| 2 | What is the maximum hot water temperature ? | <input type="text"/> | °C |

All Installations

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

Commissioning Engineer's Signature

Customer's Signature*

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

Date

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.

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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:	<input type="text"/>	Date:	<input type="text"/>
Company Name:	<input type="text"/>		
Telephone No:	<input type="text"/>	Operative ID No:	<input type="text"/>
System inhibitor concentration has been checked and appropriate action taken, in accordance with BS 7593 and heat pump manufacturers' instructions.			
			<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Comments:	<input type="text"/>		

Service 2

Engineer Name:	<input type="text"/>	Date:	<input type="text"/>
Company Name:	<input type="text"/>		
Telephone No:	<input type="text"/>	Operative ID No:	<input type="text"/>
System inhibitor concentration has been checked and appropriate action taken, in accordance with BS 7593 and heat pump manufacturers' instructions.			
			<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Comments:	<input type="text"/>		

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

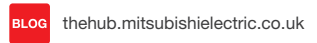
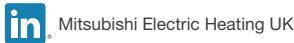
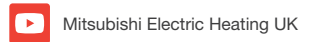
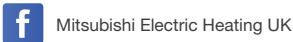
Comments:



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Note: 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), R290 (GWP:3), R32 (GWP:675), R407C (GWP:1774), R134a (GWP:1430), R513A (GWP:631), R454B (GWP:466), R454C (GWP:148), 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 IP CC 3rd edition, these are as follows. R410A (GWP:1975), R32 (GWP:550), R407C (GWP:1650) or R134a (GWP:1300).

