MITSUBISHI ELECTRIC

Commissioning & Servicing Handbook

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

Trustpilot

ecodan.me.uk/HomeownerPortal

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:	Address:
Telephone:	
Email:	

Installer Information

Name:	Address:
Company:	
Telephone:	
Email:	ME Installer No.
MCS Installer Reg No.	F-Gas Certification No.
G3 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	☐ 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:
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	ºC flow at	ºC outdoor &	ºC flow at	ºC outdoor
16	Control System	☐ FTC2	☐ FTC3	☐ FTC4	☐ FTC5 ☐ FTC6 ☐ FTC7
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:	Product:	
5	What heating system inhibitor was used?	Brand:	Product:	
6	What heat pump anti-freeze has been used?	Brand:	Product:	

Commissioning Checklist

All Systems

(Tick appropriate boxes if applicable)

7	What is the heat pump anti-freeze concentration level?		%				
8	System filter fitted in accordance with BS 7593: 2019?					☐ Yes	
9	Outdoor fuse rating		A		Type		
10	Indoor fuse rating if independently supplied		A		Type		
11	Cylinder coil surface area or Plate heat exchanger		M²	☐ Plate Heat Exchanger Fitted		☐ Not Available Heating Only	
12	Legionella protection		ºC every		Days		
13	DHW speed settings						
14	Primary heating speed settings						
15	Measured flowrate	Domestic Hot Water		Litres/Min		Heating	Litres/Min
16	Measured steady state delta T (Flow and Return)		ºC	Flow Temperature	ºC	Return Temperature	ºC

Outdoor Unit

1	Is the heating system adequately frost protected and pipes insulated to prevent heat loss?		☐ Yes
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	Adequate ventilation and protective zones (if required)	☐ No	☐ Yes
8	ASHP only: Does the outdoor unit have adequate airflow as per the manufacturers guidelines?	☐ No	☐ Yes
9	Has suitable consideration been made for condensate discharge?	☐ No	☐ Yes
10	Flow and return isolation valves fitted?	☐ No	☐ Yes
11	Anti-Vibration mounting pads fitted?	☐ No	☐ Yes
12	Refrigerant type:	Weight (kG):	
13	Has the condensate drain been installed to the manufacturers instructions?	☐ No	☐ Yes

Commissioning Checklist

Heating Mode

1	The heating system has been filled and pressure tested					☐	Yes
2	Heating Temperatures	Heating Flow Temperature		ºC	Heating Return Temperature		ºC
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		ºC	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?	☐ Sealed	☐ Open
2	What is the maximum primary flow temperature?		°C

All Systems				
1	What is the incoming static cold water pressure at the inlet to the system?			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 ?			°C
7	What is the maximum hot water flow rate at set thermostat temperature (measured at high flow outlet) ?			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 ?			°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) ?		
2	What is the pressure reducing valve setting ?		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 ?	ºC
2	What is the maximum hot water temperature ?	ºC

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

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:

ecodan®
Renewable Heating Technology

MITSUBISHI ELECTRIC
Changes for the Better

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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).

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