



Installation, User and Service Manual

Reversible air/water "Split Inverter" heat pump

HPI S

MIT-S 4-8/E

MIT-S 11-16/E

MIT-S 22-27/E

MIT-S 4-8/H

MIT-S 11-16/H

MIT-S 22-27/H

Dear Customer,


Thank you very much for buying this appliance.

Please read through the manual carefully before using the product, and keep it in a safe place for later reference. In order to ensure continued safe and efficient operation we recommend that the product is serviced regularly. Our service and customer service organisation can assist with this.

We hope you enjoy years of problem-free operation with the product.

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1 Safety instructions and recommendations

1.1 Safety

Operation	<p> Danger This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.</p> <p> Warning This appliance is equipped with a radioelectric antenna. When the appliance is operating normally, all persons must keep at least 20 cm away from this antenna to ensure they are protected from its electromagnetic field. The user may only be within this limit when the appliance is powered off.</p>
Electrical	<p>The appliance is intended to be permanently connected to the domestic water mains network.</p> <p>Before any work on the appliance, carefully read all documents that accompany the product. These documents are also available on our website. See the last page.</p> <p>Install the appliance in accordance with national rules on electrical installation. A disconnection device must be fitted to the fixed wiring in accordance with installation rules.</p> <p>If a power supply cable comes with the appliance and it turns out to be damaged, it must be replaced by the manufacturer, its after sales service or persons with similar qualifications in order to obviate any danger.</p> <p>If the appliance is not wired in the factory, carry out the wiring according to the wiring diagram described in the chapter Electrical Connections.</p> <p>This appliance must be connected to the protective earthing. Earthing must comply with the prevailing installation standards. Earth the appliance before making any electrical connections.</p> <p>Type and calibre of the protective equipment: refer to the "Recommended cable cross-sections" chapter.</p> <p>To connect the appliance to the electricity mains, refer to the "Electrical Connections" chapter.</p> <p>In order to prevent any danger owing to the unexpected reset of the thermal circuit breaker, this appliance must not be powered through an external switch, such as a timer, or be connected to a circuit which is regularly switched on and off by the electricity provider.</p>

<p>Domestic water</p>	<p> Caution Draining the domestic hot water tank:</p> <ol style="list-style-type: none"> 1. Shut off the domestic cold water inlet. 2. Open a hot water tap in the installation. 3. Open a valve on the safety unit. 4. When the water stops flowing, the domestic hot water tank has been drained. <hr/> <p> Caution</p> <ul style="list-style-type: none"> • The pressure limiter device (safety valve or safety unit) must be regularly operated in order to remove limescale deposits and ensure that it is not blocked. • A pressure limiter device must be fitted to a discharge pipe. • As water may flow out of the discharge pipe on the pressure limiter device, the pipe must be kept open to the air, in a frost-free environment, and at a continuous downward gradient. • A pressure reducer (not provided) is required when the supply pressure exceeds 80% of the pressure limiter device calibration and must be located upstream of the appliance. • There must be no cut-off devices between the pressure limiter device and the domestic hot water tank. <p>To ascertain the type, specifications and connection of the pressure limiter device, refer to the chapter Connecting the Domestic Hot Water Tank to the Drinking Water Mains in the Installation and Service Manual.</p>
<p>Hydraulics</p>	<p> Caution Respect the minimum and maximum water pressure and temperature to ensure the appliance operates correctly. See chapter on Technical Specifications.</p>
<p>Installation</p>	<p> Important Allow the space required to install the appliance correctly, referring to the chapter Dimensions of the Appliance.</p>

1.2 General instructions

The system must satisfy each point in the rules in force in the country that govern works and interventions in individual homes, blocks of flats or other buildings.

Only qualified professionals are authorised to work on the appliance and the heating installation. They must respect prevailing local and national regulations during fitting, installation and maintenance of the installation.

Commissioning must be performed by a qualified professional.

1.3 Electrical safety

Before making any electrical connections, earth the appliance in accordance with prevailing standards.



Danger

Danger of electric shock: the length of the conductors between the traction arrester device and the terminal blocks must be such that the active conductors are put under tension before the earth conductor.

Only qualified professionals may carry out electrical connections, always with the power off.

Separate the very low voltage cables from the 230/400 V power supply cables.

1.4 Refrigerant safety



Warning

Refrigerant fluid and pipes:

- Use only **R410A** refrigerant fluid to fill the installation.
- Use tools and pipe components especially designed for use with **R410A** refrigerant fluid.
- Use copper pipes deoxidised with phosphorus to carry the refrigerant fluid.
- Store the refrigerant connection pipes away from dust and humidity (risk of damage to the compressor).
- Do not use a load cylinder.
- Protect the heat pump components, including the insulation and structural elements. Do not overheat the pipes as brazed components may cause damage.
- Contact between the refrigerant fluid and a flame may result in emissions of toxic gases.

France: Pursuant to Article L. 113-3 of the French Consumer Code, the equipment must be installed by a certified operator whenever the refrigerant load is in excess of 5 tonnes of CO₂ equivalent or when a refrigerant connection is necessary (the case with split systems, even when fitted with a quick coupling device).

All work on the refrigeration circuit must be done by a qualified professional, according to prevailing codes of practice and safety in the profession (recovery of the refrigerant, brazing under nitrogen). All brazing work must be done by qualified brazers.

Do not touch the refrigeration connection pipes with your bare hands while the heat pump is running. Danger of burn or frost injury.

In the event of a refrigerant leakage:

1. Switch off the appliance.
2. Open the windows.
3. Do not use a naked flame, do not smoke, do not operate electrical contacts.
4. Avoid contact with the refrigerant. Danger of frost injuries.

Locate the probable leak and seal it immediately. Use only original parts to replace a defective refrigeration component.

Use only dehydrated nitrogen for detecting leaks or for pressurised tests.

Do not allow the refrigerant fluid to escape into the atmosphere.

1.5 Domestic water safety

In accordance with safety rules, a safety valve calibrated to 0.7 MPa (7 bar) must be mounted on the tank's domestic cold water inlet.

A pressure reducer (not supplied) is necessary if the supply pressure exceeds 80% of the safety valve or safety unit calibration. This component must be located upstream of the appliance.

There must be no cut-off devices between the safety valve or safety unit and the domestic hot water tank.

The hydraulic installation must be capable of handling a minimum flow rate at all times.

Heating water and domestic water must not come into contact with each other. Domestic water must not circulate through the exchanger.

Limit temperature at the draw-off point: the maximum domestic hot water temperature at the draw-off point is subject to special regulations in the various countries in which the appliance is sold in order to protect the user. These special regulations be observed when installing the appliance.

Take precautions with the domestic hot water.

Depending on the heat pump settings, the domestic hot water temperature may exceed 65°C.

A domestic expansion vessel (not supplied) of a suitable size may be connected between the domestic cold water input and the safety unit, and prevents the domestic safety valve being activated. No cut-off device must be located between these two components.

To limit the risk of burns, install a device limiting the temperature of the hot water, such as a thermostatic mixing valve, for example. France: Order of 30th November 2005 modifying article 36 of the order of 23rd June 1978 relating to fixed installations for heating and the supply of domestic hot water in residential buildings, offices, or establishments open to the general public.

1.6 Hydraulic safety

When making the hydraulic connection, it is imperative that the standards and corresponding local directives be respected.

If radiators are connected directly to the heating circuit: install a differential valve between the indoor unit and the heating circuit.

Fit drainage valves between the indoor unit and the heating circuit.

Do not add any chemical products to the heating water without first consulting a water treatment specialist. For example: antifreeze, water softeners, products to increase or reduce the pH value, chemical additives and/or inhibitors. These may cause faults in the heat pump and damage the heat exchanger.

1.7 Recommendations for the installation

Keep this document close to the place where the appliance is installed.

Install the heat pump's indoor unit in a frost-free location.

Do not install the heat pump in a place that has an atmosphere with a high salt content.

Do not install the heat pump in a place exposed to steam and combustion gases.

Do not install the heat pump in a place that may be covered in snow.

Install the heat pump's indoor unit and outdoor unit on a solid, stable structure able to bear its weight.

Insulate the pipes to reduce heat losses to a minimum.

Apply refrigerant oil to the beaded parts to facilitate tightening and improve the seal.

Do not make any modifications to the heat pump without the written consent of the manufacturer.

To benefit from warranty cover, no modifications should be made to the appliance.

1.8 Recommendations for operation

Keep the heat pump accessible at all times.

Never remove or cover the labels and data plates affixed to appliances. Labels and data plates must be legible throughout the entire lifetime of the appliance.

Immediately replace damaged or illegible instructions and warning stickers.

Give preference to the OFF or frost protection mode rather than switching off the system to leave the following functions running:

- Anti blocking of pumps
- Frost protection

The frost protection function does not work if the heat pump is switched off.

Regularly check the presence of water and pressure in the heating system.

Do not touch radiators for long periods. Depending on the heat pump settings, the temperature of the radiators may exceed 60 °C.

Do not drain the installation, except in cases of absolute necessity. E.g.: several months' absence with the risk of temperatures in the building falling below freezing.

If the home is unoccupied for a long period and there is a risk of frost, drain the indoor unit and the heating system.

1.9 Specific instructions for service, maintenance and breakdowns

Maintenance work must be carried out by a qualified professional.

Only a qualified professional is authorised to set, correct or replace the safety devices.

Before any work, switch off the power supply to the heat pump, the indoor unit and the hydraulic/electrical back-up.

Wait for approx. 20-30 seconds for the outdoor unit capacitors to be discharged, and check that the lights on the outdoor unit PCBs have gone out.

Before working on the refrigeration circuit, switch off the appliance and wait a few minutes. Certain items of equipment such as the compressor and the pipes can reach temperatures in excess of 100°C and high pressures, which may cause serious injuries.

Locate and correct the cause of power cut before resetting the safety thermostat.

Only genuine spare parts may be used.

Removal and disposal of the heat pump must be carried out by a qualified professional in accordance with prevailing local and national regulations.

After maintenance or repair work, check the entire heating system to ensure that there are no leaks.

Remove the casing only to perform maintenance and repair work. Put the casing back in place after maintenance and repair work.

For heat pumps with a refrigerant fluid load of more than 5 tonnes of CO₂ equivalent, the user must have an annual leak-tightness test performed on the refrigerant equipment.

1.10 Liabilities

Tab.1

Manufacturer's liability	<p>Our products are manufactured in compliance with the requirements of the various Directives applicable. They are therefore delivered with the CE marking and any documents necessary. In the interests of the quality of our products, we strive constantly to improve them. We therefore reserve the right to modify the specifications given in this document.</p> <p>Our liability as manufacturer may not be invoked in the following cases:</p> <ul style="list-style-type: none"> • Failure to abide by the instructions on installing the appliance. • Failure to abide by the instructions on using the appliance. • Faulty or insufficient maintenance of the appliance.
Installer's liability	<p>The installer is responsible for the installation and initial commissioning of the appliance. The installer must observe the following instructions:</p> <ul style="list-style-type: none"> • Read and follow the instructions given in the manuals provided with the appliance. • Install the appliance in compliance with prevailing legislation and standards. • Carry out initial commissioning and any checks necessary. • Explain the installation to the user. • If maintenance is necessary, warn the user of the obligation to check the appliance and keep it in good working order. • Give all the instruction manuals to the user.
User's liability	<p>To guarantee optimum operation of the system, the user must abide by the following instructions:</p> <ul style="list-style-type: none"> • Read and follow the instructions given in the manuals provided with the appliance. • Call on a qualified professional to carry out installation and initial commissioning. • Ask your installer to explain your installation to you. • Have the required inspections and maintenance carried out by a qualified installer. • Keep the instruction manuals in good condition close to the appliance.

2 Symbols used

2.1 Symbols used in the manual

This manual uses various danger levels to draw attention to special instructions. We do this to improve user safety, to prevent problems and to guarantee correct operation of the appliance.



Danger

Risk of dangerous situations that may result in serious personal injury.



Danger of electric shock

Risk of electric shock.



Warning

Risk of dangerous situations that may result in minor personal injury.



Caution

Risk of material damage.



Important

Please note: important information.



See

Reference to other manuals or pages in this manual.

2.2 Symbols used on the appliance

Fig.1

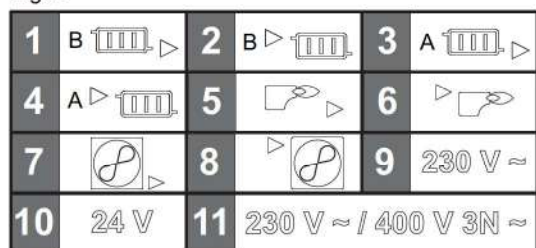


M002628-A

Caution: danger of electric shock

- 1 Disconnect the mains power prior to carrying out any work.
- 2 Work on the appliance is only authorised if carried out by a qualified engineer

Fig.2

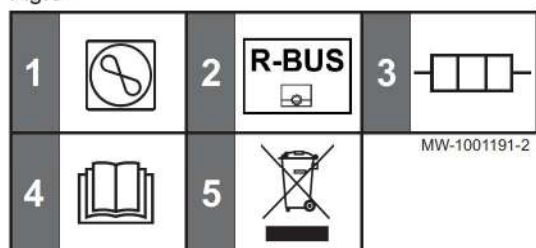


MW-1001193-2

- 1 CIRCB1 heating circuit flow
- 2 CIRCB1 heating circuit return
- 3 CIRCA0 heating circuit flow
- 4 CIRCA0 heating circuit return
- 5 Refrigeration fluid connection - liquid line
- 6 Refrigeration fluid connection - gas line
- 7 Safety extra-low voltage power supply cable
- 8 Power supply cable 230 V / 400 V
- 9 Power cord 230 V

2.3 Symbols used on the data plate

Fig.3



MW-1001191-2

- 1 Heat pump: refrigerant type, maximum operating pressure
- 2 Compatibility with the Smart TC° connected thermostat.
- 3 Electrical back-up: power supply and maximum output
- 4 Before installing and commissioning the appliance, carefully read the instruction manuals provided
- 5 Dispose of used products in an appropriate recovery and recycling structure

3 Technical specifications

3.1 Homologations

3.1.1 Directives

De Dietrich hereby declares that the radio equipment type HPI S is in compliance with the directives and standards below. It has been manufactured and put into circulation in accordance with the requirements of the European Directives.

The full text of the EU declaration of conformity is supplied separately with your appliance.

- Low Voltage Directive 2014/35/EU
Generic standard: EN 60335-1
Relevant standards: EN 60335-2-21, EN 60335-2-40
- Electromagnetic Compatibility Directive 2014/30/EU
Generic standards: EN 61000-6-3, EN 61000-6-1
Relevant Standard: EN 55014
- Radio Equipment Directive 2014/53/EU
- Pressure Equipment Directive 2014/68/EU
- RoHS Directive 2017/2012/EU
- Energy labelling directive
2017/1369/EU, No. 811/2013, No. 812/2013
2009/125/EC, No. 813/2013, No. 814/2013
- MCS and HARP certifications.

In addition to the legal requirements and guidelines, the supplementary guidelines in this manual must also be followed.

Supplements or subsequent regulations and guidelines that are valid at the time of installation shall apply to all regulations and guidelines specified in this manual.

3.1.2 Factory test

Before leaving the factory, each indoor unit is tested on the following points:

- Tightness of the heating circuit
- Electrical safety
- Tightness of the refrigerant circuit

3.1.3 Bluetooth® wireless technology

This product is equipped with Bluetooth wireless technology.

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by BDR Therman Group is under license. Other trademarks and trade names are those of their respective owners.

Fig.4 Logo



AD-3001854-01

3.2 Technical data

3.2.1 Compatible heating devices

Tab.2

Outdoor unit	Associated/compatible indoor units
AWHP 4.5 MR	MIT-S 4-8/E MIT-S 4-8/H
AWHP 6 MR-3	MIT-S 4-8/E MIT-S 4-8/H
AWHP 8 MR-2	MIT-S 4-8/E MIT-S 4-8/H
AWHP 11 MR-2	MIT-S 11-16/E MIT-S 11-16/H
AWHP 11 TR-2	MIT-S 11-16/E MIT-S 11-16/H
AWHP 16 MR-2	MIT-S 11-16/E MIT-S 11-16/H
AWHP 16 TR-2	MIT-S 11-16/E MIT-S 11-16/H
AWHP 22 TR-2	MIT-S 22-27/E MIT-S 22-27/H
AWHP 27 TR-2	MIT-S 22-27/E MIT-S 22-27/H

3.2.2 Heat pump

The specifications are valid for a new appliance with clean heat exchangers.

Maximum operating pressure: 0.3 MPa (3 bar)

Tab.3 Indoor unit technical specifications

Specifications	MIT-S
Operating temperature range	+7 °C to +30 °C
Bluetooth® frequency band	2400 – 2483.5 MHz
Bluetooth® output	+5 dBm
GSM/GPRS frequency band	880 MHz – 925 MHz 1710 MHz – 1785 MHz
GSM/GPRS power	31.2 dBm (E-GSM 900 MHz) 29.9 dBm (DCS 1800 MHz)

Tab.4 Outdoor unit conditions of use

Limit operating temperatures	AWHP 4.5 MR	AWHP 6 MR-3	AWHP 8 MR-2	AWHP 11 MR-2 AWHP 11 TR-2	AWHP 16 MR-2 AWHP 16 TR-2	AWHP 22 TR-2	AWHP 27 TR-2
Water in heating mode	+18 °C / +55 °C	+18 °C / +60 °C	+18 °C / +60 °C	+18 °C / +60 °C	+18 °C / +60 °C	+18 °C / +60 °C	+18 °C / +60 °C
Outdoor air in heating mode	-15 °C / +35 °C	-15 °C / +35 °C	-20 °C / +35 °C	-20 °C / +35 °C	-20 °C / +35 °C	-20 °C / +35 °C	-20 °C / +35 °C
Water in cooling mode	+7 °C / +25 °C	+7 °C / +25 °C	+7 °C / +25 °C	+7 °C / +25 °C	+7 °C / +25 °C	+7 °C / +25 °C	+7 °C / +25 °C
Outdoor air in cooling mode	+10 °C / +46 °C	+7 °C / +46 °C	+7 °C / +46 °C	+7 °C / +46 °C	+7 °C / +46 °C	+7 °C / +46 °C	+7 °C / +46 °C

Tab.5 Heating mode: outside air temperature +7 °C, water temperature at the outlet +35 °C. Performances in accordance with EN 14511-2.

Measurement type	Unit	AWHP 4.5 MR	AWHP 6 MR-3	AWHP 8 MR-2	AWHP 11 MR-2	AWHP 11 TR-2	AWHP 16 MR-2	AWHP 16 TR-2	AWHP 22 TR-2	AWHP 27 TR-2
Heat output	kW	4.60	5.87	8.26	10.56	10.56	14.19	14.19	21.70	24.40
Coefficient of performance (COP)	-	5.11	4.18	4.27	4.18	4.18	4.22	4.22	3.96	3.80
Absorbed electrical power	kWe	0.90	1.41	1.93	2.53	2.53	3.36	3.36	5.48	6.42
Nominal water flow rate ($\Delta T = 5$ K)	m ³ /hour	0.80	1.04	1.47	1.88	1.88	2.67	2.67	3.80	4.20

Tab.6 Heating mode: outside air temperature +2 °C, water temperature at the outlet +35 °C. Performances in accordance with EN 14511-2.

Measurement type	Unit	AWHP 4.5 MR	AWHP 6 MR-3	AWHP 8 MR-2	AWHP 11 MR-2	AWHP 11 TR-2	AWHP 16 MR-2	AWHP 16 TR-2	AWHP 22 TR-2	AWHP 27 TR-2
Heat output	kW	3.47	3.74	5.93	10.19	10.19	11.38	11.38	16.11	14.70
Coefficient of performance (COP)	-	3.97	3.30	3.12	3.20	3.20	3.22	3.22	3.13	3.13
Absorbed electrical power	kWe	0.88	1.11	1.90	3.19	3.19	3.53	3.53	5.14	4.70

Tab.7 Cooling mode: outside air temperature +35 °C, water temperature at the outlet +7 °C. Performances in accordance with EN 14511-2.

Measurement type	Unit	AWHP 4.5 MR	AWHP 6 MR-3	AWHP 8 MR-2	AWHP 11 MR-2	AWHP 11 TR-2	AWHP 16 MR-2	AWHP 16 TR-2	AWHP 22 TR-2	AWHP 27 TR-2
Cooling output	kW	4.52	4.50	6.65	10.54	10.54	10.37	10.37	12.13	14.07
Energy efficiency ratio (EER)	-	2.77	2.71	3.00	2.77	2.77	2.89	2.89	2.80	2.82
Absorbed electrical power	kWe	1.63	1.66	2.22	3.81	3.81	3.59	3.59	4.33	4.99

Tab.8 Cooling mode: outside air temperature +35 °C, water temperature at the outlet +18 °C. Performances in accordance with EN 14511-2.

Measurement type	Unit	AWHP 4.5 MR	AWHP 6 MR-3	AWHP 8 MR-2	AWHP 11 MR-2	AWHP 11 TR-2	AWHP 16 MR-2	AWHP 16 TR-2	AWHP 22 TR-2	AWHP 27 TR-2
Cooling output	kW	6.39	7.41	10.29	15.49	15.49	18.36	18.36	23.23	23.52
Energy efficiency ratio (EER)	-	2.98	2.90	3.15	3.48	3.48	2.81	2.81	2.88	2.85
Absorbed electrical power	kWe	2.14	2.56	3.27	4.45	4.45	6.53	6.53	8.07	8.25

Tab.9 Common specifications

Measurement type	Unit	AWHP 4.5 MR	AWHP 6 MR-3	AWHP 8 MR-2	AWHP 11 MR-2	AWHP 11 TR-2	AWHP 16 MR-2	AWHP 16 TR-2	AWHP 22 TR-2	AWHP 27 TR-2
Total dynamic head at nominal flow rate	kPa	62	61.80	49.30	39.30	39.30	21.30	21.30	-	-
Nominal air flow rate	m ³ /h	2680	2700	3000	6000	6000	6000	6000	8400	8400
Power voltage of the outdoor unit	V	230	230	230	230	400	230	400	400	400
Start-up amperage	A	5	5	5	5	3	6	3	-	-
Maximal amperage	A	12	13	17	29.5	13	29.5	13	19	21
Sound power - In-side ⁽¹⁾	dB(A)	43	43	51	51	51	51	51	43	43

Measurement type	Unit	AWHP 4.5 MR	AWHP 6 MR-3	AWHP 8 MR-2	AWHP 11 MR-2	AWHP 11 TR-2	AWHP 16 MR-2	AWHP 16 TR-2	AWHP 22 TR-2	AWHP 27 TR-2
Acoustic power - Outside ⁽²⁾	dB(A)	58	65	65	69	69	69	69	77	77
R410A refrigerant	kg	1.4	1.3	3.2	4.6	4.6	4.6	4.6	7.1	7.7
R410A refrigerant ⁽³⁾	tCO ₂ e	2.923 (2.694)	2.714 (2.501)	6.682 (6.157)	9.605 (8.850)	9.605 (8.850)	9.605 (8.850)	9.605 (8.850)	14.825 (13.660)	16.078 (14.815)
Refrigerant connection (Liquid - Gas)	inch	1/4 - 1/2	1/4 - 1/2	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8	3/8 - 3/4 ⁽⁴⁾ or 3/8 - 1	1/2 - 3/4 ⁽⁴⁾ or 1/2 - 1
Maximum precharged length	m	7	10	10	10	10	10	10	20	20

(1) Noise radiated by the envelope - Test run in accordance with the NF EN 12102 standard, temperature conditions: air 7 °C, water 55 °C.
(2) Noise radiated by the envelope - Test run in accordance with the NF EN 12102 standard, temperature conditions: air 7 °C, water 45 °C for AWHP 4.5 MR only (inner and outer sides).
(3) The quantity of refrigerant in tonnes of CO₂ equivalent is calculated using the following formula: quantity (in kg) of refrigerant x GWP/ 1000. The Global Warming Potential (GWP) of the R410A is 2088 following the IPCC fourth assessment report (1924 following IPCC fifth assessment report).
(4) Warning: the refrigerant connection lengths are limited to 20 m with the 3/4" gas pipe.

3.2.3 Heat pump weight

Tab.10 Indoor unit

Indoor unit	Unit	MIT-S 4-8/E	MIT-S 4-8/H	MIT-S 11-16/E	MIT-S 11-16/H	MIT-S 22-27/E	MIT-S 22-27/H
Net weight	kg	59	53	66	60	66	60
Gross weight	kg	70	64	77	71	77	71

Tab.11 Outdoor unit

Outdoor unit	Unit	AWHP 4.5 MR	AWHP 6 MR-3	AWHP 8 MR-2	AWHP 11 MR-2	AWHP 11 TR-2	AWHP 16 MR-2	AWHP 16 TR-2	AWHP 22 TR-2	AWHP 27 TR-2
Weight	kg	54	42	75	118	130	118	130	135	141

3.2.4 Combination heaters with medium-temperature heat pump

Tab.12 Technical parameters for heat pump combination heaters (parameters declared for medium-temperature application)

Product name	Symbol	Unit	AWHP 4.5 MR	AWHP 6 MR-3	AWHP 8 MR-2
Air-to-water heat pump			Yes	Yes	Yes
Water-to-water heat pump			No	No	No
Brine-to-water heat pump			No	No	No
Low-temperature heat pump			No	No	No
Equipped with a supplementary heater			Yes	Yes	Yes
Heat pump combination heater			No	No	No
Rated heat output under average conditions ⁽¹⁾	<i>Prated</i>	kW	3	4	6
Rated heat output under colder conditions	<i>Prated</i>	kW	5	4	6
Rated heat output under warmer conditions	<i>Prated</i>	kW	4	5	6
Declared capacity for heating for part load at an indoor temperature of 20 °C and outdoor temperature T_j					
$T_j = -7$ °C	<i>Pdh</i>	kW	3.8	3.4	5.6
$T_j = +2$ °C	<i>Pdh</i>	kW	4.3	2.2	2.9
$T_j = +7$ °C	<i>Pdh</i>	kW	4.5	2.1	6.4
$T_j = +12$ °C	<i>Pdh</i>	kW	5.5	2.6	4.3
$T_j =$ bivalent temperature	<i>Pdh</i>	kW	3.1	3.9	5.6

Product name	Symbol	Unit	AWHP 4.5 MR	AWHP 6 MR-3	AWHP 8 MR-2
T_j = operation limit temperature	P_{dh}	kW	3.1	3.9	5.6
Bivalent temperature	T_{biv}	°C	-10	-10	-10
Degradation coefficient ⁽²⁾	C_{dh}	-	1.0	1.0	1.0
Seasonal space heating energy efficiency under average conditions	η_s	%	134	125	129
Seasonal space heating energy efficiency under colder conditions	η_s	%	109	116	119
Seasonal space heating energy efficiency under warmer conditions	η_s	%	179	172	169
Declared coefficient of performance or primary energy ratio for part load at an indoor temperature of 20 °C and outdoor temperature T_j					
T_j = -7 °C	COP_d	-	1.64	1.75	1.95
T_j = +2 °C	COP_d	-	3.46	3.18	3.22
T_j = +7 °C	COP_d	-	4.96	4.56	4.57
T_j = +12 °C	COP_d	-	7.90	6.41	6.55
T_j = bivalent temperature	COP_d	-	1.20	1.56	1.70
T_j = operation limit temperature	COP_d	-	1.20	1.56	1.70
Operation limit temperature for air-to-water heat pumps	TOL	°C	-10	-10	-10
Heating water operating limit temperature	$WTOL$	°C	55	60	60
Electrical power consumption					
Off mode	P_{OFF}	kW	0.009	0.009	0.009
Thermostat-off mode	P_{TO}	kW	0.049	0.049	0.049
Stand-by	P_{SB}	kW	0.012	0.016	0.018
Crankcase heater mode	P_{CK}	kW	0.000	0.055	0.055
Supplementary heater					
Rated heat output	P_{sup}	kW	0.0	0.0	0.0
Type of energy input			Electricity	Electricity	Electricity
Other specifications					
Capacity control			Variable	Variable	Variable
Sound power level, indoors - outdoors	L_{WA}	dB	43 - 58	43 - 65	51 - 65
Annual energy consumption under average conditions	Q_{HE}	kWh	2353	2124	3499
Annual energy consumption under colder conditions	Q_{HE}	kWh	4483	3721	4621
Annual energy consumption under warmer conditions	Q_{HE}	kWh	1249	1492	1904
Rated air flow rate, outdoors for air-to-water heat pumps	-	m ³ /h	2680	2700	3300
(1) The rated heat output P_{rated} is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating $sup(T_j)$.					
(2) If C_{dh} is not determined by measurement, the default degradation coefficient is $C_{dh} = 0.9$.					

Tab.13 Technical parameters for heat pump combination heaters (parameters declared for medium-temperature application)

Product name	Symbol	Unit	AWHP 11 MR-2 AWHP 11 TR-2	AWHP 16 MR-2 AWHP 16 TR-2
Air-to-water heat pump			Yes	Yes
Water-to-water heat pump			No	No
Brine-to-water heat pump			No	No
Low-temperature heat pump			No	No
Equipped with a supplementary heater			Yes	Yes
Heat pump combination heater			No	No
Rated heat output under average conditions ⁽¹⁾	P_{rated}	kW	6	9
Rated heat output under colder conditions	P_{rated}	kW	4	7
Rated heat output under warmer conditions	P_{rated}	kW	8	13

Product name	Symbol	Unit	AWHP 11 MR-2 AWHP 11 TR-2	AWHP 16 MR-2 AWHP 16 TR-2
Declared capacity for heating for part load at an indoor temperature of 20 °C and outdoor temperature T_j				
$T_j = -7$ °C	P_{dh}	kW	6.8	8.6
$T_j = +2$ °C	P_{dh}	kW	5.3	6.5
$T_j = +7$ °C	P_{dh}	kW	9.0	12.9
$T_j = +12$ °C	P_{dh}	kW	7.7	9.9
$T_j =$ bivalent temperature	P_{dh}	kW	6.3	8.8
$T_j =$ operation limit temperature	P_{dh}	kW	6.3	8.8
Bivalent temperature	T_{biv}	°C	-10	-10
Degradation coefficient ⁽²⁾	C_{dh}	-	1.0	1.0
Seasonal space heating energy efficiency under average conditions	η_s	%	125	121
Seasonal space heating energy efficiency under colder conditions	η_s	%	113	113
Seasonal space heating energy efficiency under warmer conditions	η_s	%	167	161
Declared coefficient of performance or primary energy ratio for part load at an indoor temperature of 20 °C and outdoor temperature T_j				
$T_j = -7$ °C	COP_d	-	1.82	1.85
$T_j = +2$ °C	COP_d	-	3.17	3.02
$T_j = +7$ °C	COP_d	-	4.54	4.34
$T_j = +12$ °C	COP_d	-	6.19	5.75
$T_j =$ bivalent temperature	COP_d	-	1.20	1.35
$T_j =$ operation limit temperature	COP_d	-	1.20	1.35
Operation limit temperature for air-to-water heat pumps	TOL	°C	-10	-10
Heating water operating limit temperature	$WTOL$	°C	60	60
Electrical power consumption				
Off mode	P_{OFF}	kW	0.009	0.009
Thermostat-off mode	P_{TO}	kW	0.049	0.035
Stand-by	P_{SB}	kW	0.021	0.021
Crankcase heater mode	P_{CK}	kW	0.055	0.055
Supplementary heater				
Rated heat output	P_{sup}	kW	0.0	0.0
Type of energy input			Electricity	Electricity
Other specifications				
Capacity control			Variable	Variable
Sound power level, indoors - outdoors	L_{WA}	dB	51 - 69	51 - 69
Annual energy consumption under average conditions	Q_{HE}	kWh	3999	5861
Annual energy consumption under colder conditions	Q_{HE}	kWh	3804	5684
Annual energy consumption under warmer conditions	Q_{HE}	kWh	2580	4120
Rated air flow rate, outdoors for air-to-water heat pumps	-	m ³ /h	6000	6000
(1) The rated heat output P_{rated} is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating $sup(T_j)$.				
(2) If C_{dh} is not determined by measurement, the default degradation coefficient is $C_{dh} = 0.9$.				

Tab.14 Technical parameters for heat pump combination heaters (parameters declared for medium-temperature application)

Product name	Symbol	Unit	AWHP 22 TR-2	AWHP 27 TR-2
Air-to-water heat pump			Yes	Yes
Water-to-water heat pump			No	No
Brine-to-water heat pump			No	No
Low-temperature heat pump			No	No
Equipped with a supplementary heater			Yes	Yes

Product name	Symbol	Unit	AWHP 22 TR-2	AWHP 27 TR-2
Heat pump combination heater			No	No
Rated heat output under average conditions ⁽¹⁾	<i>Prated</i>	kW	11	14
Rated heat output under colder conditions	<i>Prated</i>	kW	12	14
Rated heat output under warmer conditions	<i>Prated</i>	kW	18	20
Declared capacity for heating for part load at an indoor temperature of 20 °C and outdoor temperature T_j				
$T_j = -7$ °C	<i>Pdh</i>	kW	10.3	12.4
$T_j = +2$ °C	<i>Pdh</i>	kW	10.0	8.9
$T_j = +7$ °C	<i>Pdh</i>	kW	5.8	11.8
$T_j = +12$ °C	<i>Pdh</i>	kW	6.9	18.1
$T_j =$ bivalent temperature	<i>Pdh</i>	kW	10.9	12.4
$T_j =$ operation limit temperature	<i>Pdh</i>	kW	10.9	14.1
Bivalent temperature	T_{biv}	°C	-10	-7
Degradation coefficient ⁽²⁾	<i>Cdh</i>	-	1.0	1.0
Seasonal space heating energy efficiency under average conditions	η_s	%	114	112
Seasonal space heating energy efficiency under colder conditions	η_s	%	111	103
Seasonal space heating energy efficiency under warmer conditions	η_s	%	143	141
Declared coefficient of performance or primary energy ratio for part load at an indoor temperature of 20 °C and outdoor temperature T_j				
$T_j = -7$ °C	<i>COPd</i>	-	1.95	1.67
$T_j = +2$ °C	<i>COPd</i>	-	2.80	2.86
$T_j = +7$ °C	<i>COPd</i>	-	3.76	4.12
$T_j = +12$ °C	<i>COPd</i>	-	4.85	5.06
$T_j =$ bivalent temperature	<i>COPd</i>	-	1.64	1.67
$T_j =$ operation limit temperature	<i>COPd</i>	-	2.80	2.86
Operation limit temperature for air-to-water heat pumps	<i>TOL</i>	°C	-10	-10
Heating water operating limit temperature	<i>WTOL</i>	°C	60	60
Electrical power consumption				
Off mode	<i>P_{OFF}</i>	kW	0.010	0.014
Thermostat-off mode	<i>P_{TO}</i>	kW	0.049	0.023
Stand-by	<i>P_{SB}</i>	kW	0.021	0.021
Crankcase heater mode	<i>P_{CK}</i>	kW	0.055	0.055
Supplementary heater				
Rated heat output	<i>P_{sup}</i>	kW	0.0	0.0
Type of energy input			Electricity	Electricity
Other specifications				
Capacity control			Variable	Variable
Sound power level, indoors - outdoors	L_{WA}	dB	43 - 77	43 - 77
Annual energy consumption under average conditions	Q_{HE}	kWh	7681	9993
Annual energy consumption under colder conditions	Q_{HE}	kWh	10578	13164
Annual energy consumption under warmer conditions	Q_{HE}	kWh	10025	11541
Rated air flow rate, outdoors for air-to-water heat pumps	-	m ³ /h	6000	6000
(1) The rated heat output <i>Prated</i> is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating $sup(T_j)$.				
(2) If <i>Cdh</i> is not determined by measurement, the default degradation coefficient is $Cdh = 0.9$.				



See
The back cover for contact details.

3.2.5 Circulating pumps



Important

The benchmark for the most efficient circulating pumps is $EEL \leq 0.20$.

The exchanger circulating pump (sometimes called the "heat pump circulating pump") does not need any adjustment. It is automatically configured with the codes CN1 and CN2 when the appliance is commissioned. The heating circulating pump must be configured using the speed settings button, according to the heating circuit specifications.

- P Available pressure (kPa)
- D Water flow rate in cubic metres per hour (m³/h)
- 3 Speed 3
- 4 Speed 4
- 6 Speed 6
- 7 Speed 7
- 8 Speed 8

Fig.5 Variable pressure

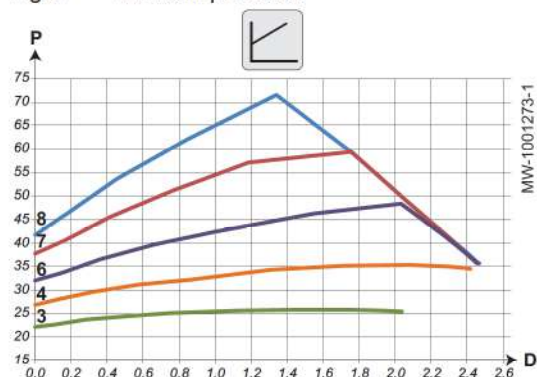
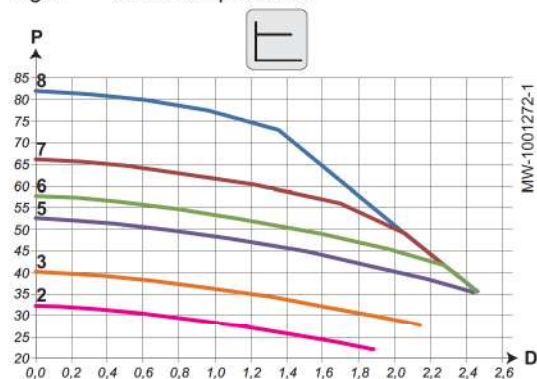


Fig.6 Constant pressure



- P Available pressure (kPa)
- D Water flow rate in cubic metres per hour (m³/h)
- 2 Speed 2
- 3 Speed 3
- 5 Speed 5
- 6 Speed 6
- 7 Speed 7
- 8 Speed 8

3.2.6 Sensor specifications

■ Outdoor temperature sensor specifications

Tab.15 AF60 outdoor temperature sensor

Temperature	°C	-20	-16	-12	-8	-4	0	4	8	12	16	20	24	30	35
Resistor	Ω	2392	2088	1811	1562	1342	1149	984	842	720	616	528	454	362	301

■ Heating flow sensor specifications

Tab.16 NTC heating flow sensor

Temperature	°C	0	10	20	25	30	40	50	60	70	80	90
Resistor	Ω	32014	19691	12474	10000	8080	5372	3661	2535	1794	1290	941

■ Specifications of the heat pump flow and return temperature sensors

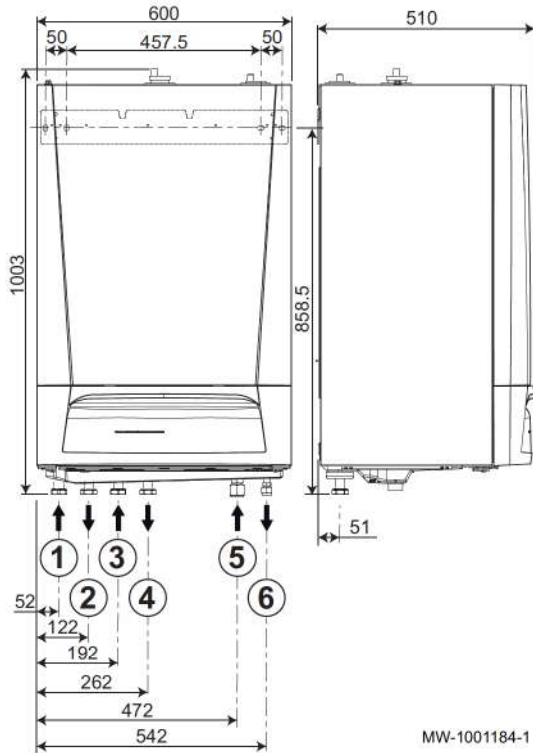
Tab.17 PT1000 temperature sensor

Temperature	°C	-10	0	10	20	30	40	50	60	70	80	90	100
Resistor	Ω	961	1000	1039	1077	1117	1155	1194	1232	1271	1309	1347	1385

3.3 Dimensions and connections

3.3.1 Indoor module

Fig.7

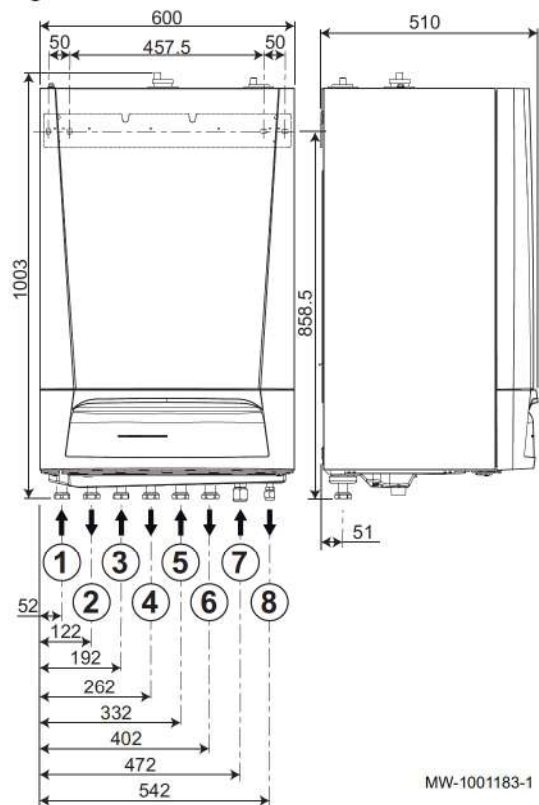


With electrical backup

- 1 Three-way valve circuit return (optional) - G1"
- 2 Three-way valve circuit flow (optional) - G1"
- 3 Direct circuit return - G1"
- 4 Direct circuit flow - G1"
- 5 Refrigerant connection - gas line
 - 5/8" for the 4.5 to 16 kW models
 - 3/4" for the 22 to 27 kW models
- 6 Refrigerant connection - liquid line
 - 3/8" for the 4.5 to 16 kW models
 - 1/2" for the 22 to 27 kW models

MW-1001184-1

Fig.8



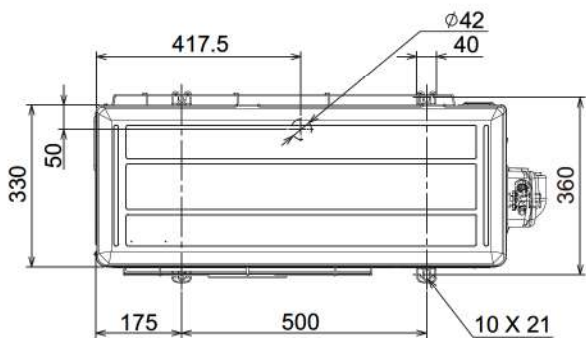
MW-1001183-1

with hydraulic backup

- 1 Three-way valve circuit return (optional) - G1"
- 2 Three-way valve circuit flow (optional) - G1"
- 3 Direct circuit return - G1"
- 4 Direct circuit flow - G1"
- 5 Return to the backup boiler - G1"
- 6 Flow to the backup boiler - G1"
- 7 Refrigerant connection - gas line
 - 5/8" for the 4.5 to 16 kW models
 - 3/4" for the 22 to 27 kW models
- 8 Refrigerant connection - liquid line
 - 3/8" for the 4.5 to 16 kW models
 - 1/2" for the 22 to 27 kW models

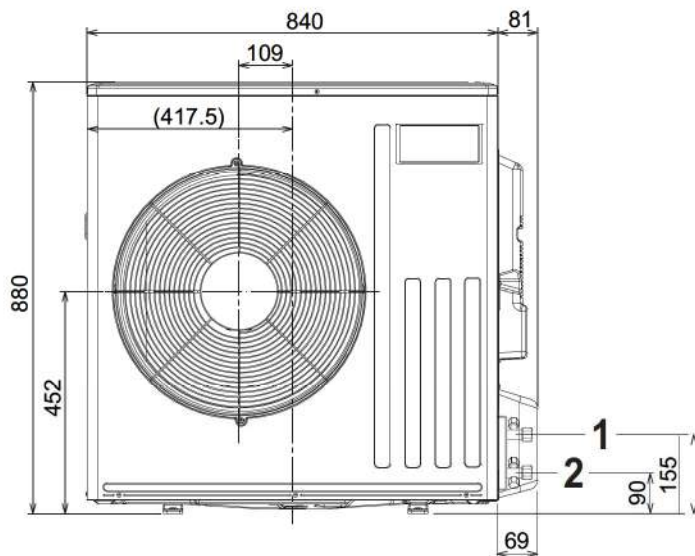
3.3.2 AWHP 4.5 MR outdoor unit

Fig.9



MW-1000430-2

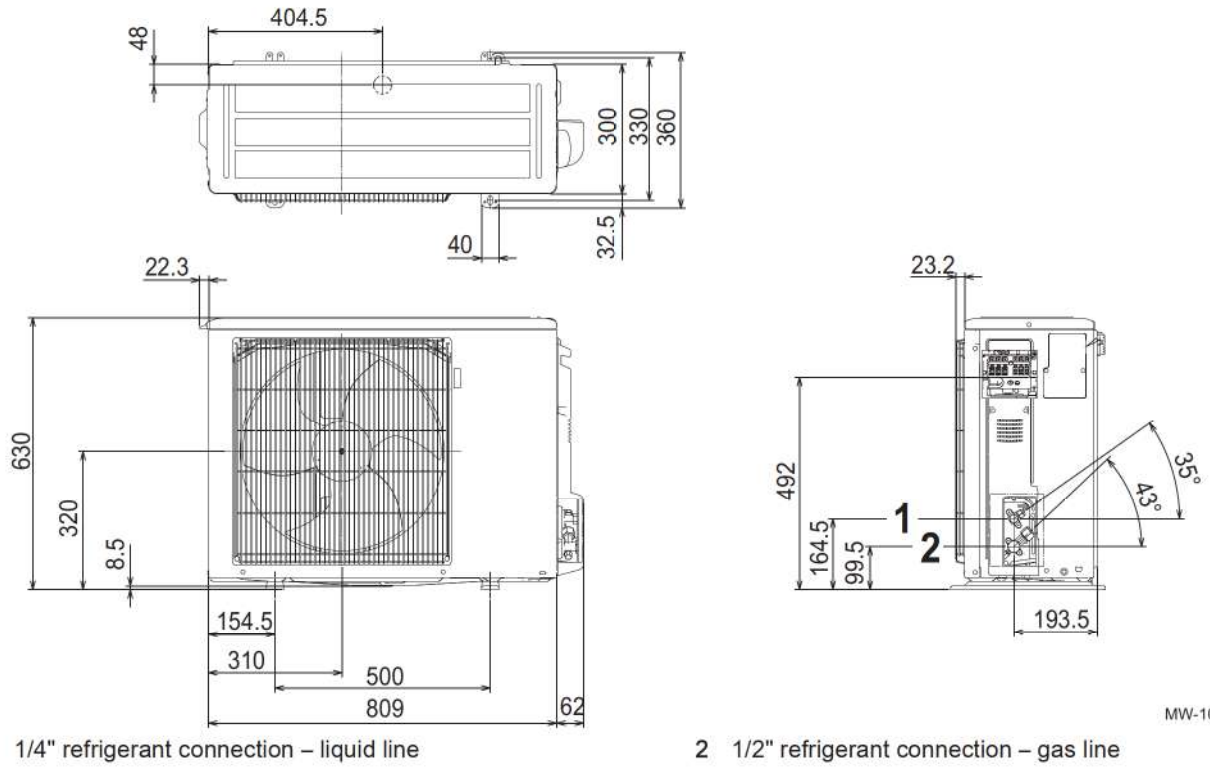
- 1 1/4" refrigerant connection – liquid line



- 2 1/2" refrigerant connection – gas line

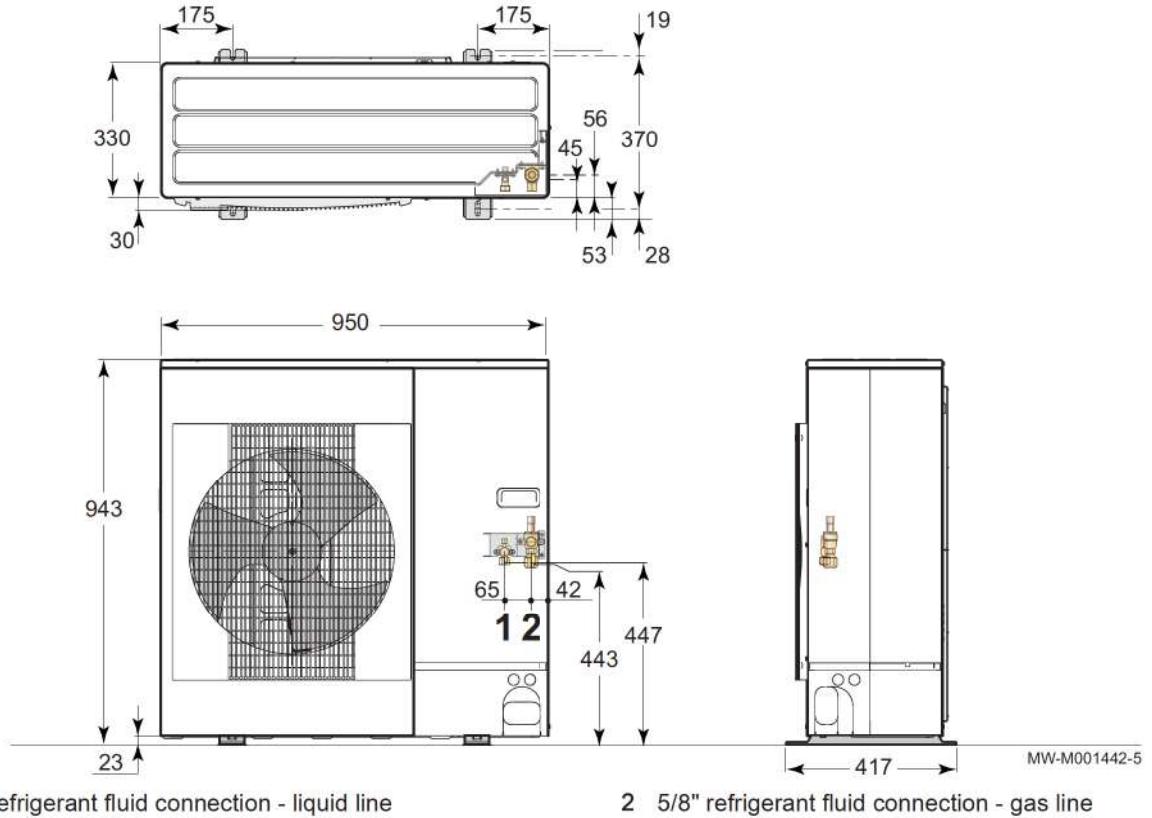
3.3.3 AWHP 6 MR-3 outdoor unit

Fig.10



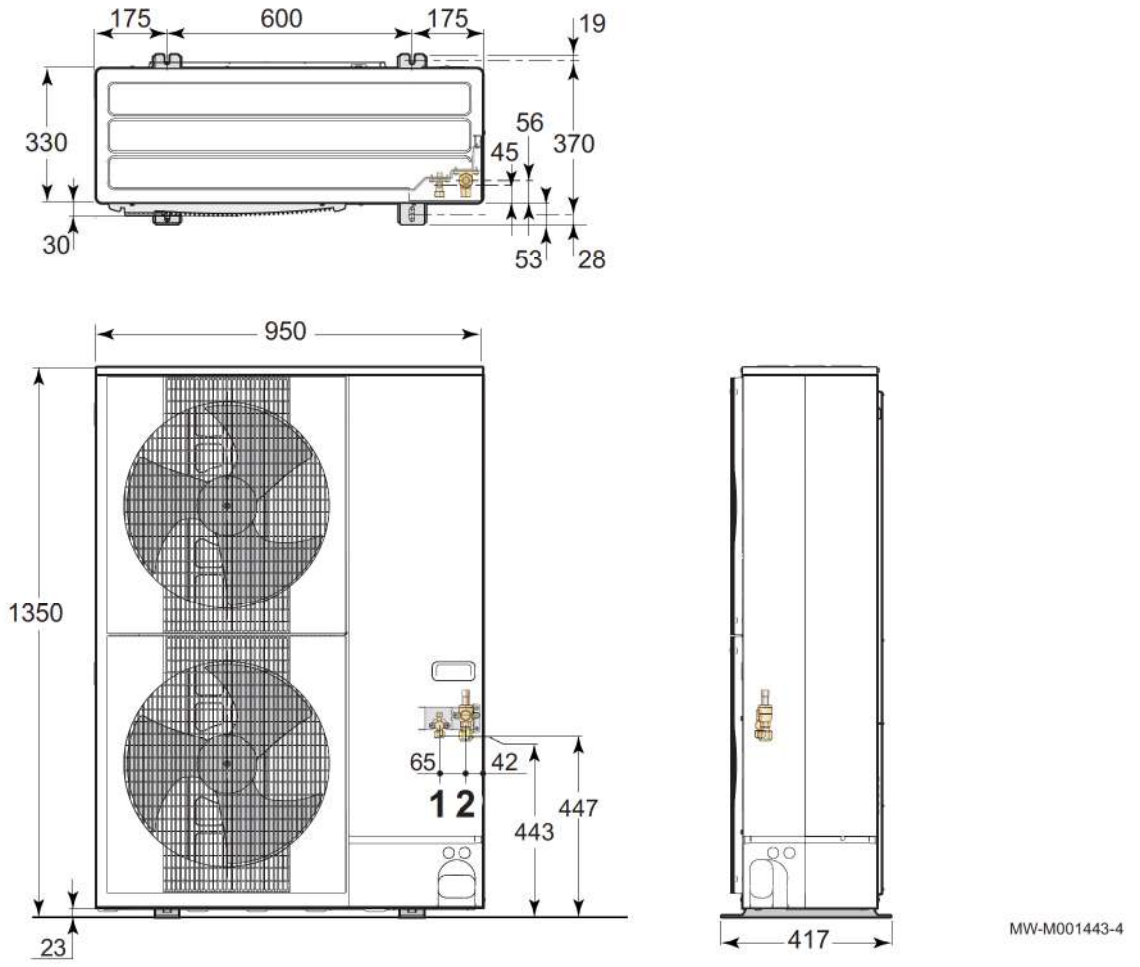
3.3.4 AWHP 8 MR-2 outdoor unit

Fig.11



3.3.5 AWHP 11 MR-2 – AWHP 16 MR-2 – AWHP 11 TR-2 –
AWHP 16 TR-2 outdoor units

Fig.12



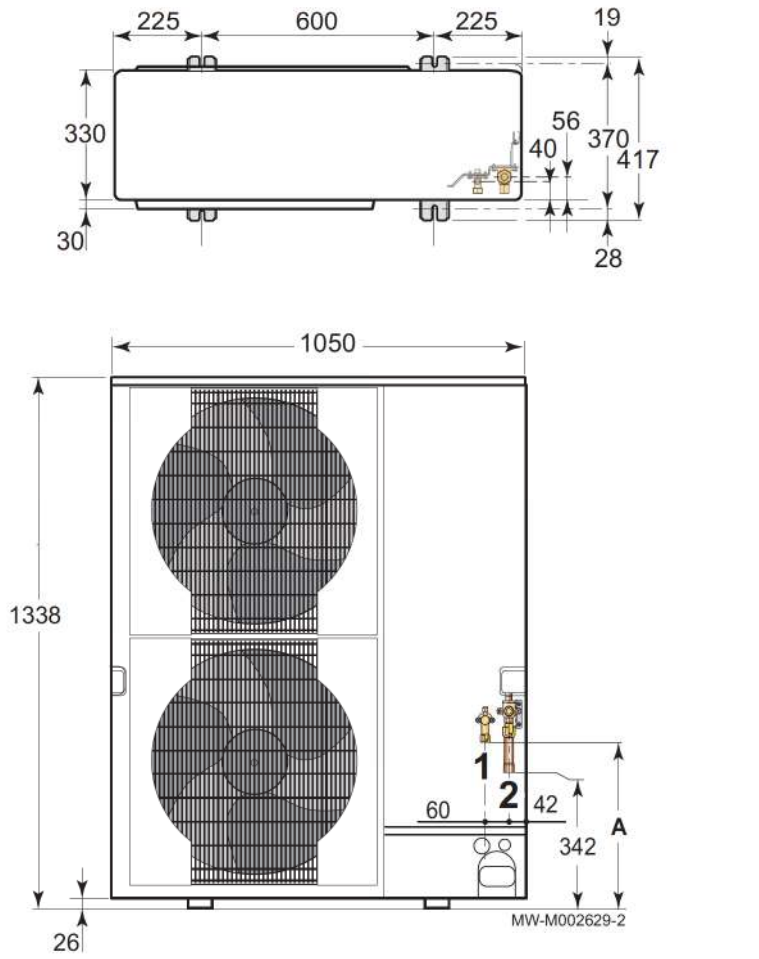
1 3/8" refrigerant fluid connection - liquid line

2 5/8" refrigerant fluid connection - gas line

MW-M001443-4

3.3.6 AWHP 22 TR-2 and AWHP 27 TR-2 outdoor units

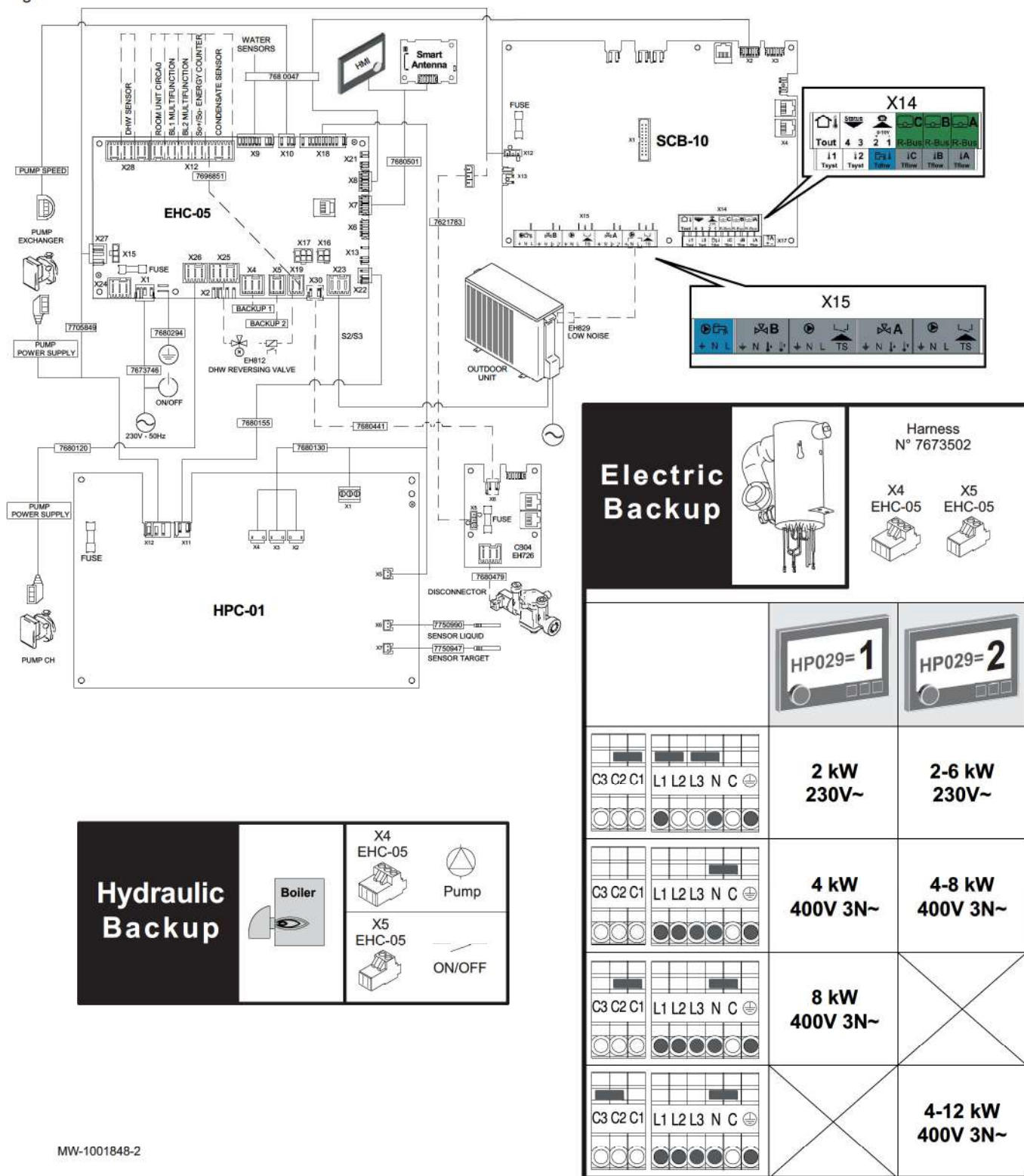
Fig.13



- 1 Refrigerant connection - liquid line
 - AWHP 22 TR-2: 3/8" flare
 - AWHP 27 TR-2: 1/2" flare
 - 2 3/4" flare refrigerant fitting - gas line
- A AWHP 22 TR-2: 450 mm
AWHP 27 TR-2: 424 mm

3.4 Electrical diagram

Fig.14



MW-1001848-2

Tab.18

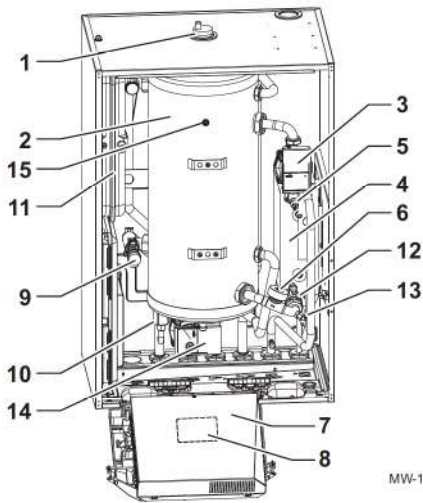
Text on the diagram	Description
230V~ - 50 Hz	Power supply
BACKUP 1	<ul style="list-style-type: none"> Hydraulic version: Hydraulic backup pump Electrical version: Electrical backup - stage 1
BACKUP 2	<ul style="list-style-type: none"> Hydraulic version: Hydraulic backup ON/OFF contact Electrical version: Electrical backup - stage 2
BL1 MULTIFUNCTION	BL1 multifunction input

Text on the diagram	Description
BL2 MULTIFUNCTION	BL2 multifunction input
Boiler	Boiler
CB04	Automatic filling kit (option)
CONDENSATE SENSOR	Condensation sensor for underfloor heating
DHW REVERSING VALVE	Domestic hot water tank three-way valve
DHW SENSOR	Domestic hot water tank sensor
DISCONNECTOR	Disconnecter
EHC-05	Central unit PCB: heat pump control system
Electric backup	Electrical backup
FUSE	Fuse
Harness	Cable harness
HMI	User interface
HPC-01	PCB: interface for the outdoor unit
Hydraulic backup	Hydraulic backup
LOW NOISE	Silent running kit for the outdoor unit (option)
ON/OFF	On/off
OUTDOOR UNIT	Outdoor unit
Pump	Circulating pump
PUMP CH	Heating circulating pump
PUMP EXCHANGER	Heat pump circulating pump
PUMP POWER SUPPLY	Pump electrical power supply
PUMP SPEED	Pump speed control
ROOM UNIT CIRCA0	Smart TC° connected room thermostat or on/off thermostat or OpenTherm modulating thermostat for the CIRCA0 direct circuit
S2/S3	S2 and S3 terminal blocks on the outdoor unit
SCB-10	PCB: management of additional heating and domestic hot water circuits
SENSOR LIQUID	Exchanger refrigerant temperature sensor
SENSOR TARGET	Water temperature sensor on the exchanger outlet
Smart Antenna	GTW-22 PCB: Bluetooth® communication
SO+/SO- ENERGY COUNTER	SO+/SO- energy meter
WATER SENSORS	Temperature sensors

4 Description of the product

4.1 Main components

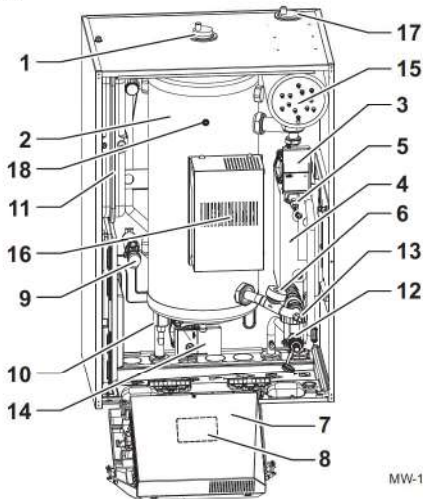
Fig.15



with hydraulic backup

- 1 Automatic air vent
- 2 Low-loss header
- 3 Heat pump circulating pump
- 4 Plate heat exchanger
- 5 Heat pump flow temperature sensor
- 6 Flow meter
- 7 Switching control panel unit
- 8 Electrical diagram
- 9 Safety valve
- 10 Electronic pressure gauge
- 11 Expansion vessel
- 12 Filter
- 13 Heat pump return temperature sensor
- 14 Heating circulating pump
- 15 Heating flow temperature sensor

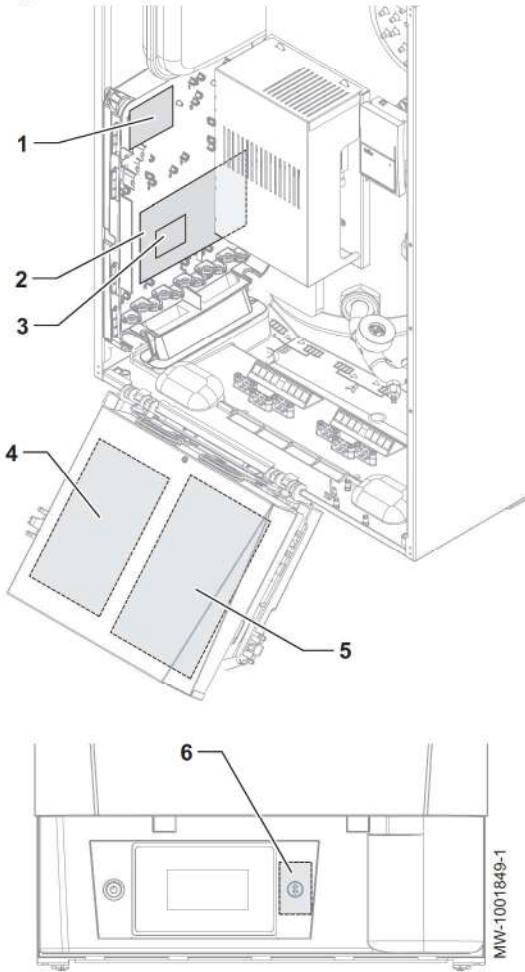
Fig.16



With electrical backup

- 1 Automatic air vent
- 2 Low-loss header
- 3 Heat pump circulating pump
- 4 Plate heat exchanger
- 5 Heat pump flow temperature sensor
- 6 Flow meter
- 7 Switching control panel unit
- 8 Electrical diagram
- 9 Safety valve
- 10 Electronic pressure gauge
- 11 Expansion vessel
- 12 Magnetic filter
- 13 Heat pump return temperature sensor
- 14 Heating circulating pump
- 15 Electric preheater
- 16 PCB for controlling the electric preheater
- 17 Automatic air vent
- 18 Heating flow temperature sensor

Fig.17



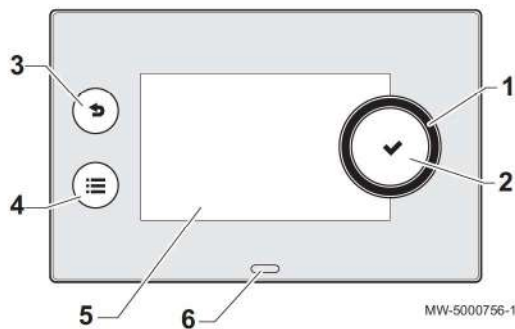
Position of the PCBs

- 1 CB04 PCB option: filling kit
- 2 SCB-10 PCB: management of additional heating and domestic hot water circuits
- 3 AD249 PCB (option): management of heating circuit C1 and auxiliary circuit AUX1
- 4 EHC-05 central unit PCB: control system for the heat pump, the first heating circuit and domestic hot water
- 5 HPC-01 PCB: interface with the outdoor unit
- 6 GTW-22 PCB: Bluetooth® communication

4.2 Control panel description

4.2.1 Description of the user interface

Fig.18



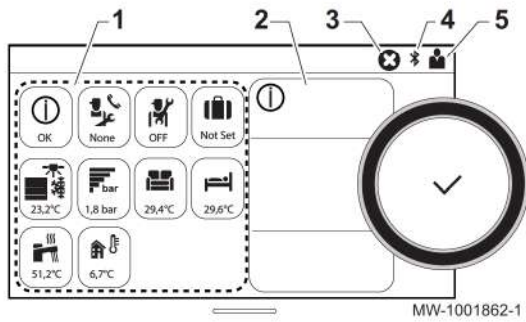
- 1 Rotary knob to select a menu or setting
- 2 Validation button ✓
- 3 Back key ↶ to return to the previous level or previous menu
- 4 Main menu key ☰
- 5 Display screen
- 6 LED for status indication:
 - continuous green = normal operation
 - flashing green = warning
 - red fixed = blockage
 - flashing red = lockout

4.2.2 Description of the home screen

The home screen is displayed automatically after the appliance is started up.

The screen goes into standby if no key is pressed for five minutes. Press one of the buttons on the user interface to exit the standby screen and display the home screen.


Fig.19



1 Access icons for menus and parameters

The selected icon is highlighted.

2 Information on the selected icon

3  error notification: only visible if an error occurs



4 Bluetooth® on indicator

5 Navigation level:










-  : User level

-  : Installer level.

This level is reserved for installers and is protected by an access

code. When this level is active, the  icon becomes .

Tab.19 Icons on the home screen and information

Icon	Information	Description of the icon
	Error status	Information on operation of the appliance
	Maintenance status	Maintenance message
	Installer access	Installer Level
	Holiday programme	Holiday mode in all circuits simultaneously
	Air source heat pump	Heat pump flow temperature display
	Water pressure	Current water pressure display
	CIRCA/CIRCB	Symbol representing the circuit used Circuit temperature display
	DHW tank	Temperature display for the domestic hot water
	Outdoor temperature	Outdoor temperature display

5 Installation

5.1 Installation regulations



Warning

The components used for the connection to the cold water supply must comply with the prevailing standards and regulations in the country concerned.

Pursuant to Article L. 113-3 of the French Consumer Code, the equipment must be installed by a certified operator whenever the refrigerant load is more than two kilograms or when a refrigerant connection is necessary (the case with split systems, even when fitted with a quick coupling device).



Caution

Installation of the heat pump must be done by a qualified professional in accordance with prevailing local and national regulations.

Regulations for France: residential buildings

- Standard NF DTU 65.16: Installation of heat pumps
- Standard NF DTU 65.17: Hot water radiator heating system.
- Standard NF DTU 65.14: Installation of hot water underfloor heating.
- Standard NF DTU 65.11: Safety devices for central heating installations relating to the building
- Set of recommendations: Hot water central heating systems - Book 3114 from the Centre Scientifique et Technique du Bâtiment (Scientific and Technical Centre for Building).
- Local Sanitary Regulations (RSD)
- For appliances connected to the electricity network: Standard NF C 15-100 - Low voltage electrical installations.

Regulations for France: establishments open to the general public

- Safety regulations against fire and panic in establishments open to the general public: Articles CH - Heating, ventilation, refrigeration, air conditioning and production of steam and domestic hot water.
- Instructions specific to each type of establishment open to the general public (hospitals, stores, etc.).

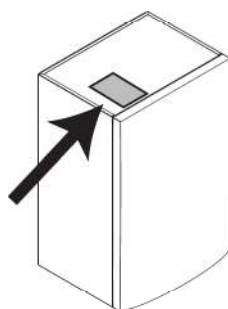
5.2 Standard delivery

Tab.20

Package	Contents
Outdoor unit	<ul style="list-style-type: none"> • An outdoor unit • A manual
Indoor unit	<ul style="list-style-type: none"> • An indoor unit • An accessories bag containing: <ul style="list-style-type: none"> - an outdoor temperature sensor - a mechanical pressure gauge with a T fitting • A documentation bag containing: <ul style="list-style-type: none"> - an installation, use and service manual - a quick user guide - a list of important points to ensure successful installation - a maintenance key

5.3 Data plates

Fig.20



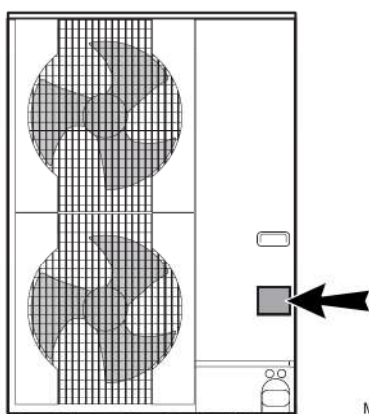
MW-1001195-1

The data plates identify the product and provide the following important information. They must be accessible at all times.

Important

- Never remove or cover the data plates and labels affixed to the heat pump.
- The data plates and labels must be legible throughout the entire lifetime of the heat pump. Immediately replace damaged or illegible instructions and warning labels.

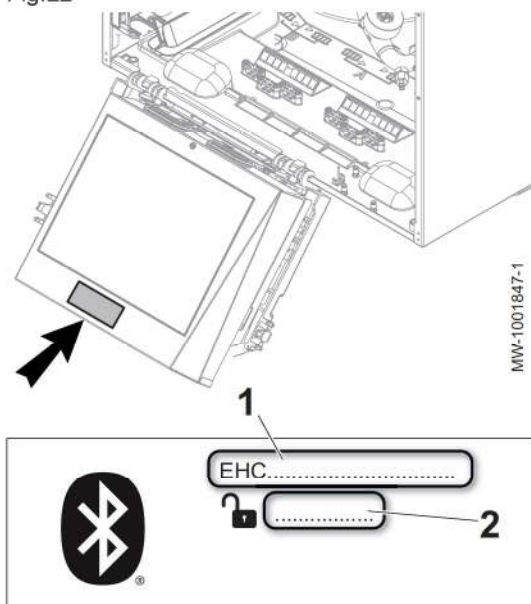
Fig.21



MW-M001832-1

5.4 Bluetooth® label

Fig.22



MW-1001847-1

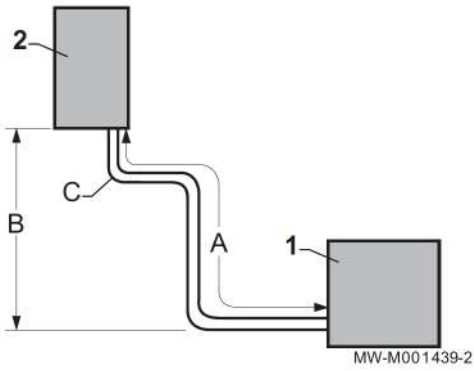
Use the information provided on the Bluetooth® label to establish a Bluetooth® connection between the smartphone and the heat pump at the time of commissioning.

- 1 Name of appliance
- 2 Pairing code

5.5 Respecting the distance between the indoor unit and the outdoor unit

To ensure that the heat pump functions correctly, respect the connection constraints between the outdoor unit and the indoor unit: minimum and maximum lengths, maximum height difference and maximum number of elbows.

Fig.23



1. Respect constraints A, B and C between the outdoor unit (1) and the indoor unit (2).

Only for AWHP 22 TR-2 and AWHP 27 TR-2 models:

If the length of the refrigerant connections is less than 20 m, it is possible to use annealed pipe for the gas pipe with a diameter of 3/4" without using braze-on adapters. The output in cooling mode may be reduced to 20% depending on the length used.

Tab.21

	A: Maximum/minimum length (m)	B: Maximum height difference (m)	C: Maximum number of elbows
AWHP 4.5 MR	2 to 30	30	10
AWHP 6 MR-3	2 to 40	30	15
AWHP 8 MR-2	2 to 40	30	15
AWHP 11 MR-2	2 to 75	30	15
AWHP 11 TR-2	2 to 75	30	15
AWHP 16 MR-2	2 to 75	30	15
AWHP 16 TR-2	2 to 75	30	15
AWHP 22 TR-2 in 3/4"	2 to 20	20	15
AWHP 22 TR-2 in 1"	2 to 70	30	15
AWHP 27 TR-2 in 3/4"	2 to 20	20	15
AWHP 27 TR-2 in 1"	2 to 70	30	15

2. Make one or two horizontal loops with the refrigerant connections to reduce disruption.

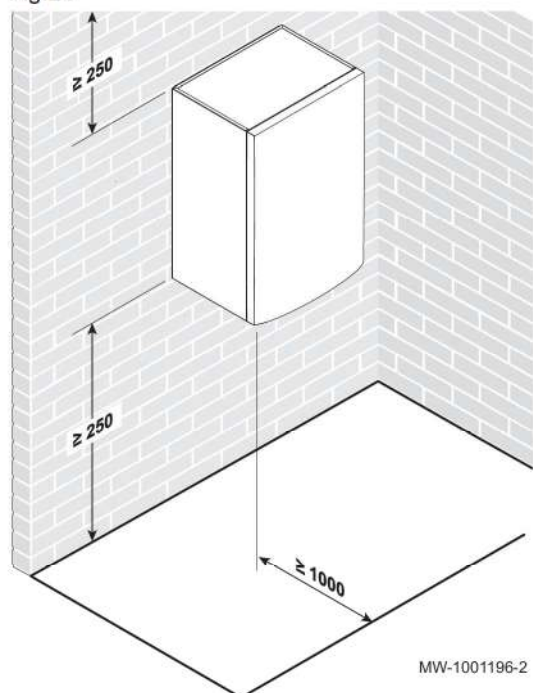
If the length of the refrigerant connections is less than 2 metres, disruptions can occur:

- Functional disruptions caused by a fluid overload,
- Noise pollution caused by the circulation of the refrigerant.

5.6 Positioning the indoor unit

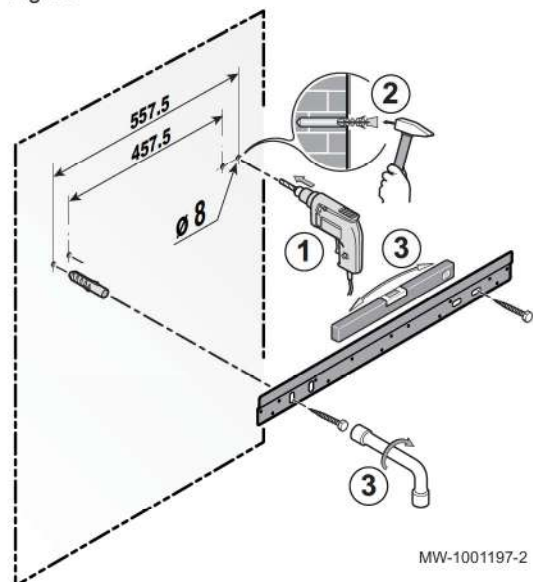
5.6.1 Allowing sufficient space for the indoor module

Fig.24



Allow sufficient space around the heat pump indoor module to ensure adequate access and facilitate maintenance.

Fig.25



5.6.2 Fitting the assembly rail

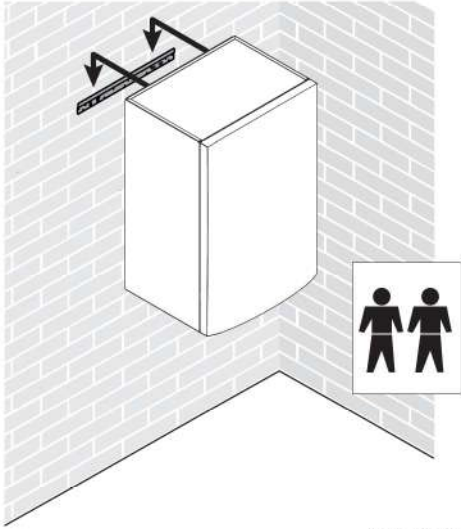
1. Drill 2 holes with a diameter of 8 mm.

i Important
Check that the wall is able to bear the weight of the indoor unit.

i Important
Extra holes are provided on the mounting rail in case one or other of the standard locating holes prevents the correct location of the plug.

2. Put the plugs in place.
3. Fix the mounting rail to the wall using the hexagonal head screws provided for this purpose. Set the level using a spirit level.

Fig.26



MW-1001198-1

5.6.3 Mounting the unit on the wall

1. Position the indoor unit above the mounting rail so that it rests snugly against it.



Important

Two people are required to lift and install the indoor unit correctly.

2. Gently lower the indoor unit.

5.7 Hydraulic connections

5.7.1 Special precautions for connecting the heating circuit

- When making the connection, always comply with the applicable local standards and directives.
- Depending on the heating system installation, install a filter on the heating return circuit.
- Depending on the heating system installation, install a sludge collector or a magnetic filter and/or additional mechanical filter on the heating return, just before the heat pump, if necessary.
- If components made from composite materials are used (polyethylene connection pipes or flexible hose), we recommend components with an anti-oxygen barrier.

5.7.2 Connecting the heating circuit

Heating installations must be able to guarantee a minimum flow rate at all times.



Important

To ensure maintenance and accessibility to the various components in the module, the hydraulic pipes have been purposely designed with a degree of play. This play is necessary and controlled. This pipe design guarantees the leak-tightness of the product.

1. Make the hydraulic connections between the indoor unit, the heating circuit and the boiler if there is hydraulic backup.
2. Install an automatic air vent at the highest point on the heating circuit.
3. Calculate the volume of water in the heating circuit and check the volume of the appropriate expansion vessel. Use the maximum temperature of the circuit in heating mode or, failing that, a minimum of 55 °C. If the volume of the integrated 10-litre expansion vessel is not sufficient, add an external vessel to the heating circuit. Refer to NF DTU 65.11.

Fig.27



MW-1001199-1

4. Connect the heating return for the indoor unit. Place the pressure gauge and its pipe on the heating return. The pressure gauge is supplied with the indoor unit.
5. Connect the heating flow for the indoor unit.

**Caution**

To avoid twisting the pipes inside the appliance, hold the nuts on the indoor unit side using a spanner.

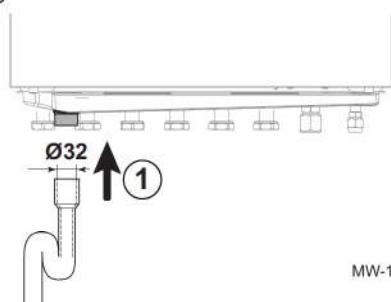
5.7.3 Connecting the safety valve drain pipe

1. Connect the outlet pipe to the waste water discharge.

**Caution**

The discharge pipe in the safety valve or unit must not be blocked.

Fig.28



MW-1001200-1

5.7.4 Checking the heating circuit

1. Check the volume of the expansion vessel(s) is sufficient for the volume of water in the heating installation.
2. Check the inflation pressure of the expansion vessel(s).
3. Check that the heating circuit contains the correct amount of water. If necessary, top up with more water.
4. Check that the water connections are leak-tight.
5. Check that the heating circuit has been correctly purged.
6. Check that the filters are not clogged. Clean them if necessary.
7. Check that the valves and thermostatic radiator valves are open.
8. Check that all settings and safety devices are working correctly.

5.8 Flushing the installation

5.8.1 Flushing new installations and installations less than 6 months old

Before filling the heating installation, it is essential to remove any debris (copper, caulking, soldering flux) from the installation.

1. Clean the installation with a powerful universal cleaner.
2. Flush the installation with at least 3 times the volume of water contained in the central heating system (until the water runs clear and shows no impurities).

5.8.2 Flushing an existing installation

Before filling the heating installation, it is essential to remove any sludge deposits which have accumulated in the heating circuit over the years.

1. Remove any sludge from the installation.
2. Flush the installation with at least 3 times the volume of water contained in the central heating system (until the water runs clear and shows no impurities).

5.9 Filling the installation



For more information, see
Configuring and using the CB04 auto-filling option kit, page 81

5.9.1 Treatment of the heating water

In many cases, the heat pump and the heating system can be filled with mains water, without treating the water.



Caution

Do not add any chemical products to the heating water without first consulting a water treatment specialist. For example: antifreeze, water softeners, products to increase or reduce the pH value, chemical additives and/or inhibitors. These may cause faults in the heat pump and damage the heat exchanger.

The water in the installation must comply with following characteristics:

Tab.22 Heating water specifications

Specifications	Unit	Total system output
		≤ 70 kW
Potential of hydrogen (pH)	-	7.5 - 9
Conductivity at 25°C	µS/cm	10 to 500
Chlorides	mg/litre	≤ 50
Other components	mg/litre	< 1
Total water hardness	°f	7 - 15
	°dH	4 - 8.5
	mmol/l	0.7 - 1.5

If water treatment proves necessary, De Dietrich recommends the following manufacturers:

- Cillit
- Climalife
- Fernox
- Permo
- Sentinel

5.9.2 Filling the heating circuit

Before filling the heating system, flush it thoroughly.



Important

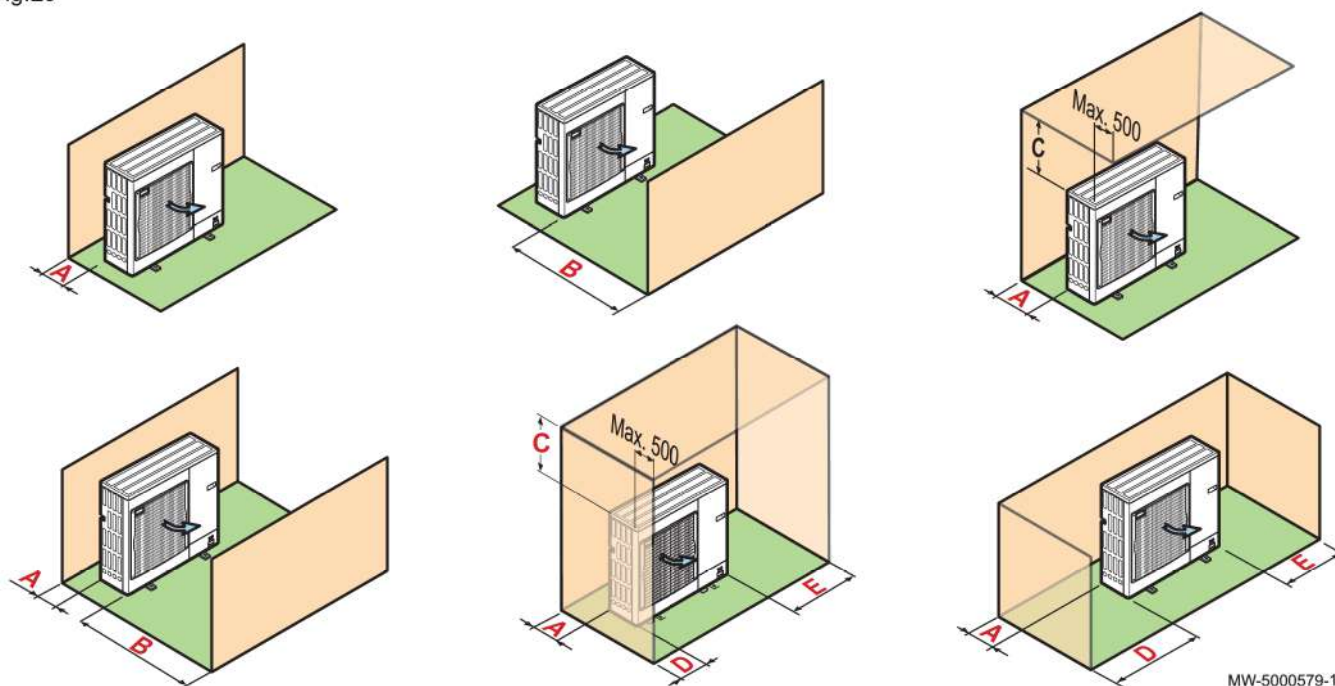
- The use of glycol to fill the heating circuit is formally prohibited.
 - The use of glycol in the heating circuit invalidates the warranty.
1. Fill the installation until a pressure of 0.15 to 0.2 MPa (1.5 to 2 bar) is achieved.
 2. Check for water leaks.
 3. Completely vent the indoor unit and the installation to ensure optimal running.

5.10 Putting the outdoor unit in place

5.10.1 Allowing sufficient space for the outdoor unit

Minimum distances from the wall are necessary in order to guarantee optimum performance.

Fig.29



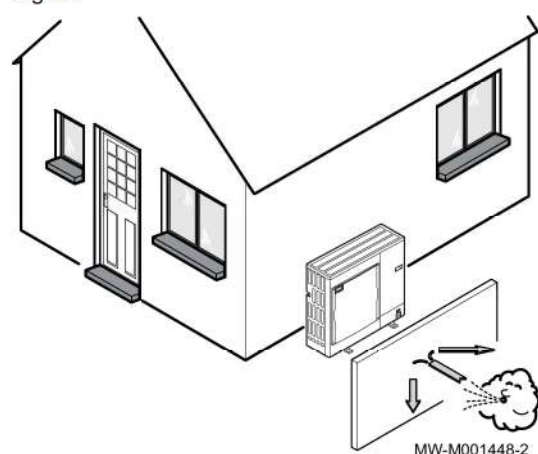
MW-5000579-1

Tab.23

Outdoor unit	A	B	C	D	E
AWHP 4.5 MR	100	500	1000	200	300
AWHP 6 MR-3	100	500	1000	200	300
AWHP 8 MR-2	100	500	1000	200	300
AWHP 11 MR-2	150	1000	1500	300	500
AWHP 11 TR-2	150	1000	1500	300	500
AWHP 16 MR-2	150	1000	1500	300	500
AWHP 16 TR-2	150	1000	1500	300	500
AWHP 22 TR-2	150	1000	1500	300	500
AWHP 27 TR-2	150	1000	1500	300	500

5.10.2 Selecting the location of the outdoor unit

Fig.30



To ensure the outdoor unit operates correctly, its location must meet certain conditions.

1. Decide on the ideal location for the outdoor unit, bearing in mind the space it requires and any legal directives.
2. Observe the IP24 protection rating of the outdoor unit during installation.
3. Avoid the following locations as the outdoor unit is a source of noise:
 - Prevailing winds,
 - Close to sleep zones,
 - Close to a terrace,
 - Opposite a wall with windows.
4. Nothing must obstruct the free circulation of air around the outdoor unit (intake and outlet).

5. Ensure the support meets the following specifications:
 - Flat surface that can support the weight of the outdoor unit and its accessories (concrete base, concrete blocks or sill).
 - No rigid connection to the building served to avoid the transmission of vibration.
 - Sufficient above ground elevation (200 mm) to keep it above water, ice and snow.
 - Base with a metal frame to allow condensates to be discharged correctly.



Important

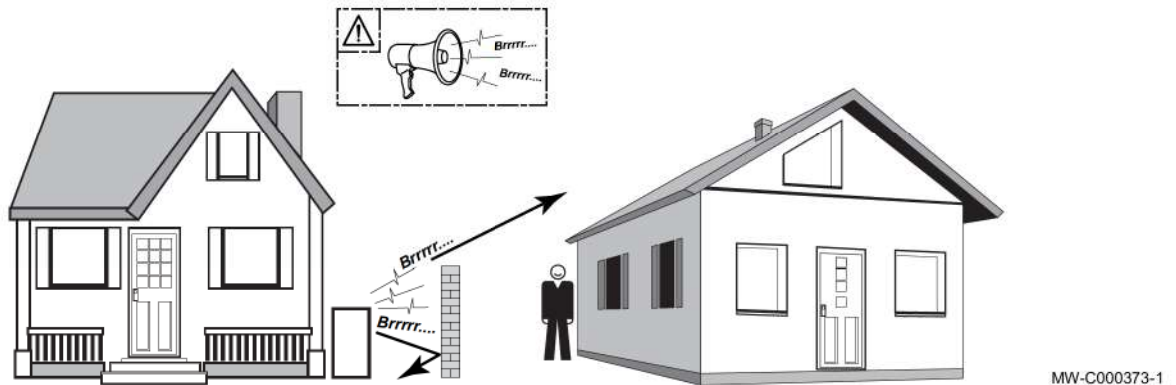
- The width of the base must not exceed the width of the outdoor unit.
- The condensate discharge must be regularly cleaned in order to prevent any blockages.

5.10.3 Choosing the location of a noise abatement screen

When the outdoor unit is too close to neighbours, a noise abatement screen can be fitted to reduce noise pollution.

Install this type of equipment in compliance with prevailing legislation and standards.

Fig.31

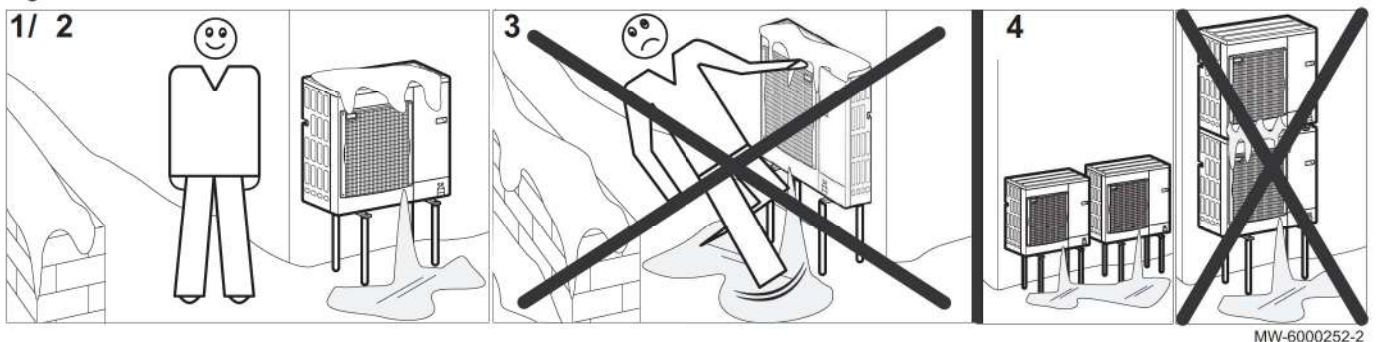


1. Locate the noise abatement screen as close as possible to the source of noise whilst allowing for the free circulation of air in the exchanger on the outdoor unit and maintenance work.
2. Respect the minimum positioning distances of the outdoor unit from the noise abatement screen.

5.10.4 Selecting the location of the outdoor unit in cold and snowy regions

Wind and snow can significantly reduce the performance of the outdoor unit. The location of the outdoor unit must meet the following conditions.

Fig.32



1. Install the outdoor unit sufficiently high off the ground to allow condensates to be discharged correctly.

2. Ensure the base meets the following specifications:

Specifications	Reason
Maximum width equal to the width of the outdoor unit.	
Height at least 200 mm greater than the average depth of the covering of snow.	This helps to protect the exchanger from snow and prevent the formation of ice during the defrosting operation.
Location as far as possible from the thoroughfare.	The condensates discharge may freeze, causing a potential hazard (sheet of black ice).

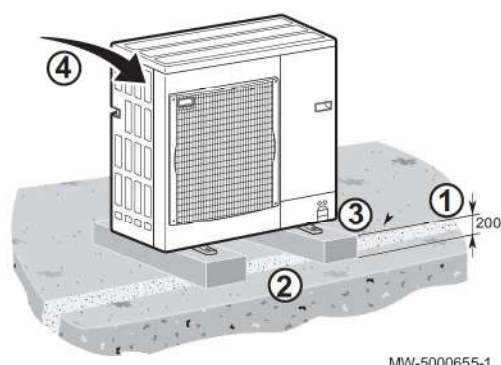
3. If the outdoor temperatures drop below zero, take the necessary precautions to prevent the risk of freezing in the evacuation pipes.
4. Place the outdoor units beside each other and not on top of each other to prevent the condensates from the lower unit to freeze.

5.10.5 Installing the outdoor unit on the ground

When installing on the ground, a concrete base must be installed, with no rigid connection to the building served to avoid the transmission of vibrations. Install the rubber mounting support, package EH879.

1. Dig a run-off channel with a pebble bed.
2. Install a concrete base frame with a minimum height of 200 mm capable of bearing the weight of the outdoor unit.
3. Install the rubber mounting support, package EH879.
4. Install the outdoor unit on the concrete base frame.

Fig.33



MW-5000655-1

5.10.6 Installing the outdoor unit on wall brackets

For maintenance and vibration reasons, the preferred location of the outdoor unit is on solid ground. However, mounting the outdoor unit on wall brackets is also an option.

When mounting the outdoor unit on wall brackets, pay attention to the following points:

- Use the appropriate brackets and anti-vibration dampers, package EH95 or EH250 according to the output of the outdoor unit.
- Choose a solid wall with enough mass to damp vibrations.
- Choose a location that is easily accessible for maintenance.
- Make sure the outdoor unit can move the air it needs freely (space around the unit and wind direction).
- Make sure the melting water can be discarded easily when defrosting.

5.11 Refrigeration connections

5.11.1 Preparing the refrigerant connections



Danger

Only a qualified professional may carry out the installation in conformity with current legislation and standards.

To allow exchanges between the indoor module and the outdoor unit, fit 2 refrigerant connections: flow and return.

Pursuant to Article L. 113-3 of the French Consumer Code, the equipment must be installed by a certified operator whenever the refrigerant load is in excess of 5 tonnes of CO₂ equivalent or when a refrigerant connection is necessary (the case with split systems, even when fitted with a quick coupling device).

1. Install the refrigerant connection pipes between the indoor unit and the outdoor unit.
2. Respect the minimum curve radii of 100 to 150 mm.

3. Adhere to the minimum and maximum distances between the indoor module and the outdoor unit.
4. Cut the pipes with a pipe cutter and deburr.
5. Angle the opening in the pipe downwards to ensure no particles can get inside, while preventing oil traps.
6. If the pipes are not connected immediately, plug them to prevent moisture from entering.

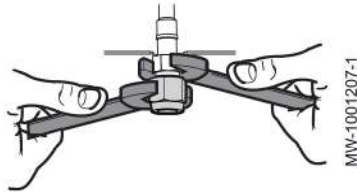


For more information, see

Respecting the distance between the indoor unit and the outdoor unit, page 35

5.11.2 Connect the refrigerant connections to the indoor unit

Fig.34



Caution

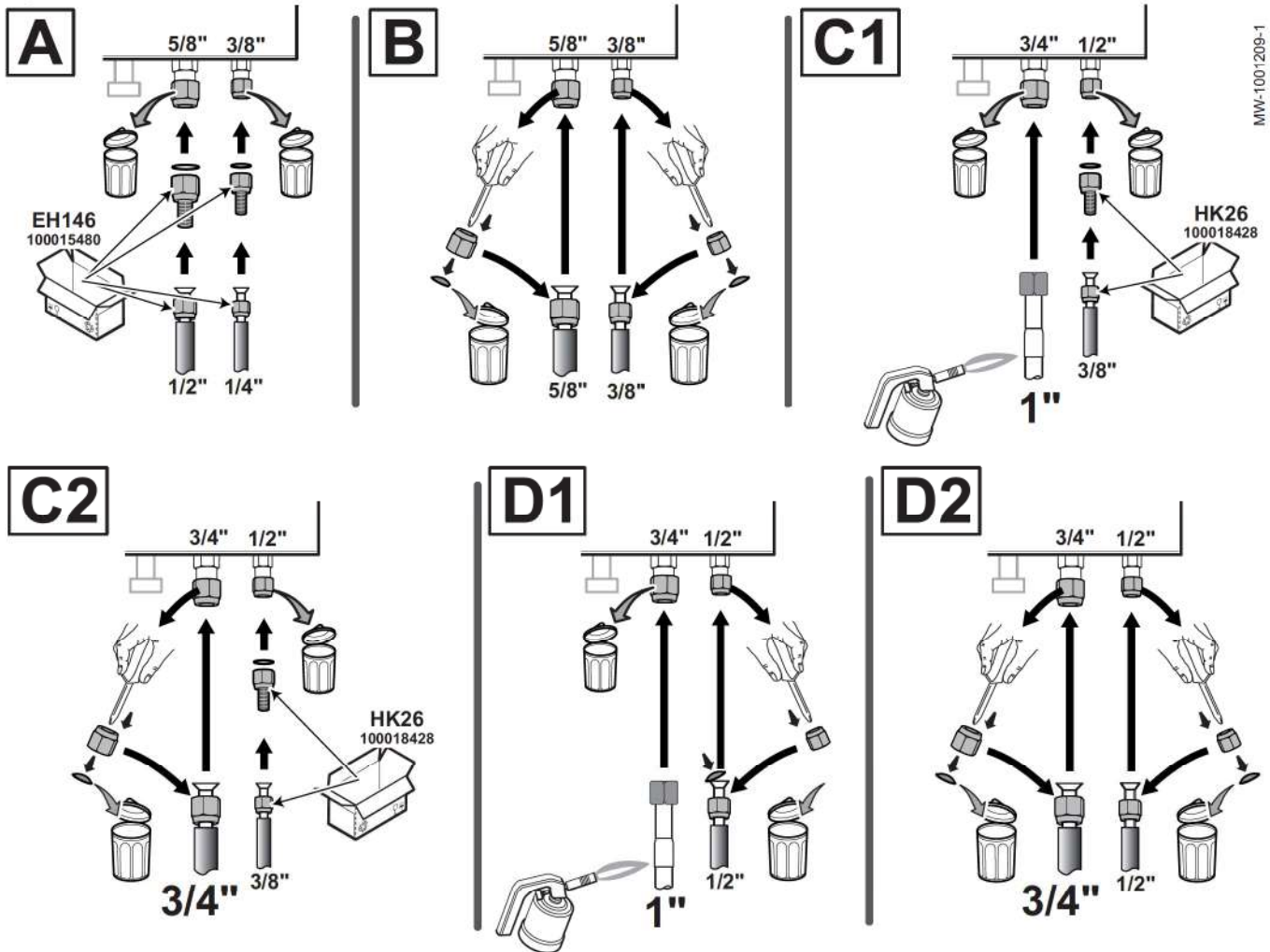
Keep the refrigerant connection in place on the indoor unit with a spanner so as not to twist the internal pipe.



Important

For the AHP 22 TR-2 and AHP 27 TR-2 models
If the length of the piping is less than 20 metres, it is possible to use 3/4" diameter annealed pipe for the gas pipe without using braze-on adapters. The output in cooling mode may be reduced to 20% depending on the length used.

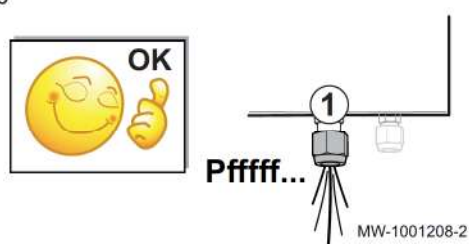
Fig.35



Tab.24

Fig.	Outdoor unit	Instructions
A	AWHP 4.5 MR AWHP 6 MR-3	<ul style="list-style-type: none"> • Discard the original nuts. • Use the adapters from the package EH146.
B	AWHP 8 MR-2 AWHP 11 MR-2 AWHP 11 TR-2 AWHP 16 MR-2 AWHP 16 TR-2	<ul style="list-style-type: none"> • Use the original nuts. • Remove and discard the caps.
C1	AWHP 22 TR-2 with 1"	<ul style="list-style-type: none"> • Discard the original nuts. • Gas line: use the 3/4" to 1" adapter (braze-on type) from the accessories bag. • Liquid line: use the 1/2" to 3/8" adapter from the package HK26.
C2	AWHP 22 TR-2 with 3/4"	<ul style="list-style-type: none"> • Gas line: use the original nut. Remove and discard the cap. • Liquid line: discard the original nut. Use the 1/2" to 3/8" adapter from the package HK26.
D1	AWHP 27 TR-2 with 1"	<ul style="list-style-type: none"> • Gas line: discard the original nut. Use the 3/4" to 1" adapter (braze-on type) from the accessories bag. • Liquid line: use the original nut. Remove and discard the cap.
D2	AWHP 27 TR-2 with 3/4"	<ul style="list-style-type: none"> • Use the original nuts. • Remove and discard the caps.

Fig.36



1. Check the exchanger leak-tightness: partially unscrew the "gas" nut.
⇒ A release noise should be heard, which is proof that the exchanger is watertight.
2. Undo the nuts on the indoor unit.
3. Fit the connections as shown in the above table, using the copper gaskets for the adapters and adhering to the torque load.

Tab.25 Tightening torque applied

External diameter of the pipe (mm/inch)	External diameter of the cone fitting (mm)	Torque load (N.m)
6.35 - 1/4	17	14 - 18
9.52 - 3/8	22	34 - 42
12.7 - 1/2	26	49 - 61
15.88 - 5/8	29	69 - 82
19.05 - 3/4	36	100 - 120

4. Bead the pipes.
5. Connect the pipes and tighten the nuts, adhering to the torque load and applying refrigerant oil to the beaded parts to facilitate tightening and improve leak-tightness.

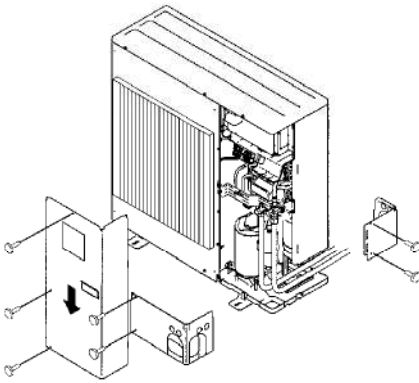
**Caution**

- For the AWHP 22 TR-2 and AWHP 27 TR-2 models
- Do not overheat the pipe. Protect the insulation and the indoor unit during brazing.
 - Use hard solder.

- **Using the 1" braze-on gas pipe:**
Braze the 1" gas pipe onto the braze-on adapter, circulating dehydrated nitrogen inside the pipe to prevent oxidation.
- **Using the 3/4" crown gas pipe:**
Slip the nut onto the pipe. Bead the pipes.

5.11.3 Connecting the refrigerant connections to the outdoor unit

Fig.37

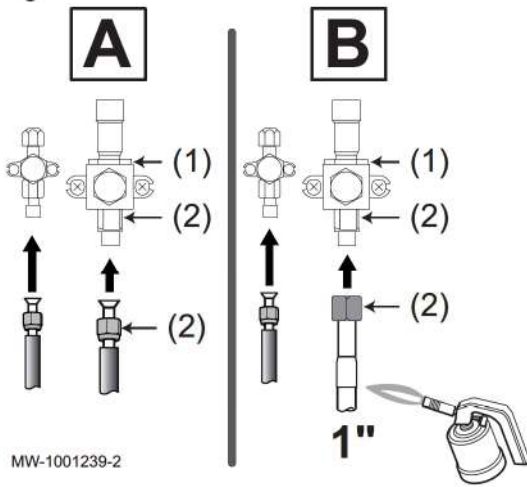


MW-5000512-2

1. Remove the protective side panels from the outdoor unit.
2. Unscrew the nuts on the stop valves.

Caution
 Keep the refrigerant connection in place on the outdoor unit with a spanner so as not to twist the internal pipe.

Fig.38



MW-1001239-2

- (1) Do not use a spanner on this part of the valve, there is a danger of the refrigerant leaking.
 - (2) Recommended position of the spanners for tightening the nut.
3. Thread the nuts onto the pipes.

Tab.26

Fig.	Outdoor unit	Instructions
A	AWHP 4.5 MR AWHP 6 MR-3 AWHP 8 MR-2 AWHP 11 MR-2 AWHP 11 TR-2 AWHP 16 MR-2 AWHP 16 TR-2 AWHP 22 TR-2 with 3/4" AWHP 27 TR-2 with 3/4"	Use the original nuts.
B	AWHP 22 TR-2 with 1" AWHP 27 TR-2 with 1"	3/8" liquid line: use the original nut. 5/8 gas line: use the 3/4" to 1" adapter (braze-on type).

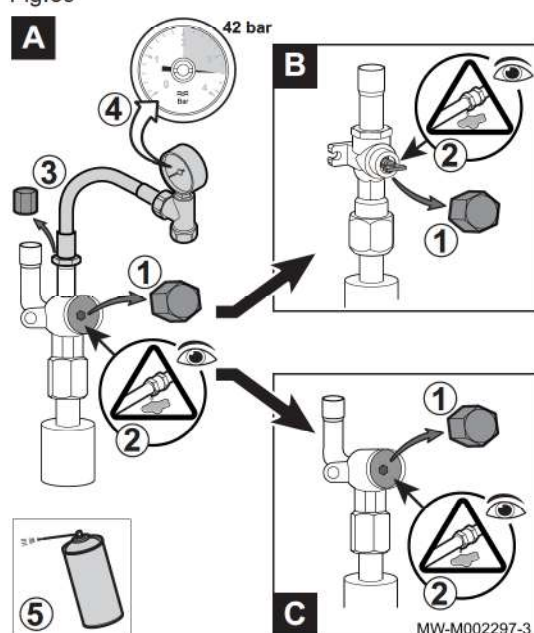
4. Bead the pipes.
Models AWHP 22 TR-2 and AWHP 27 TR-2 (1" braze-on fitting): Slip the nut onto the adapter. Bead the adapter. Braze the connecting pipe to the local pipe without oxygen. Braze in a nitrogen atmosphere.
5. Apply refrigerant oil to the beaded parts to facilitate tightening and improve the seal.
6. Connect the pipes and tighten the nuts with a torque wrench.

Caution
 Keep the refrigerant connection in place on the outdoor unit with a spanner so as not to twist the internal pipe.

Tab.27 Tightening torque applied

External diameter of the pipe (mm/inch)	External diameter of the cone fitting (mm)	Torque load (N.m)
6.35 - 1/4	17	14 - 18
9.52 - 3/8	22	34 - 42
12.7 - 1/2	26	49 - 61
15.88 - 5/8	29	69 - 82
19.05 - 3/4	36	100 - 120

Fig.39



5.11.4 Testing the leak-tightness of the refrigerant connections

1. Remove the plugs from the stop valves A and B / C.
2. Check that A and B / C stop valves are closed.
3. Remove the plug from the service connection on A stop valve.
4. Connect the pressure gauge and the nitrogen bottle to the stop valve A then progressively build up the pressure in the refrigerant connection pipes and the indoor module to 42 bar, in 5 bar increments.
5. Check the leak-tightness of the fittings using a leak detector spray. If leaks appear, repeat the steps in order and check the leak-tightness once again.
6. Release the pressure and release the nitrogen.

5.11.5 Evacuation

Perform evacuation after checking that the refrigerant circuit is entirely free of leaks. Evacuation is necessary to remove air and moisture from the refrigerant circuit.

1. Check that the A and B / C stop valves are closed.
2. Connect the vacuum gauge and the vacuum pump to the service connection on A stop valve.
3. Produce a vacuum in the indoor unit and the refrigerant connection pipes.
4. Check the vacuum according to the recommendations table below:

Tab.28

Outdoor temperature	°C	≥ 20	10	0	- 10
Vacuum pressure to be reached	Pa (bar)	1000 (0.01)	600 (0.006)	250 (0.0025)	200 (0.002)
Evacuation time after reaching the vacuum pressure	h	1	1	2	3

5. Close the valve between the vacuum gauge / vacuum pump and A stop valve.
6. Disconnect the vacuum gauge and the vacuum pump after it has shut down.
7. Open the valves.

5.11.6 Opening the stop valves

Once the leak-tightness has been checked and the refrigerant circuit evacuated, open the stop valves to allow the refrigerant fluid to circulate.

Fig.40

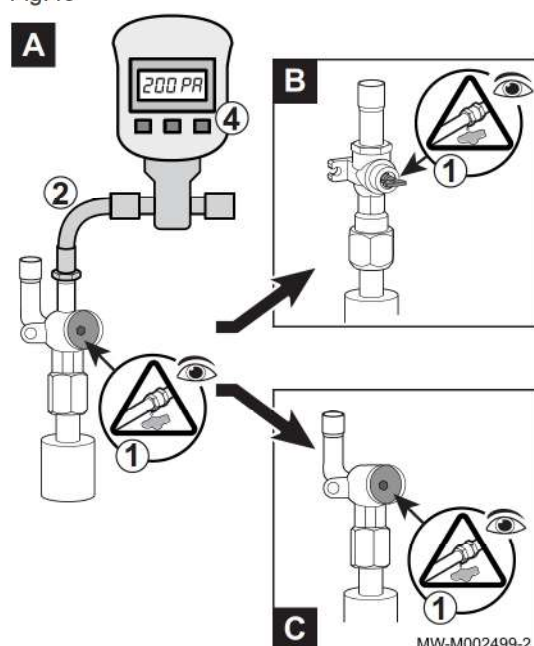
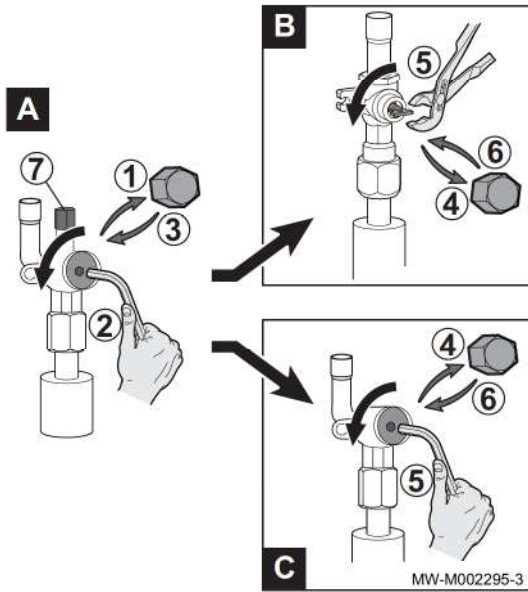


Fig.41



1. Remove the cap from the refrigerant stop valve, liquid line.
2. Open the valve A with a hexagonal wrench by turning anti-clockwise until it stops.
3. Put the cap back in place.
4. Remove the cap from the refrigerant stop valve B or C, gas line.
5. Open the valve.

Valve B	Open the valve with pliers by turning it a quarter turn anti-clockwise.
Valve C	Open the valve with a hexagonal spanner by turning anti-clockwise until it stops.

6. Put the cap back in place.
7. Tighten all the caps with a torque wrench with a torque load of 20 to 25 N·m.
8. Depending on the length of the refrigerant pipes, it may be necessary to add refrigerant.

5.11.7 Adding the necessary quantity of refrigerant

If the refrigerant connection pipes exceed the lengths below, add refrigerant via the refrigerant stop valve using a safety loader.



Caution

Prevent oil traps.

Cap the pipes to prevent moisture from entering if they are not to be connected immediately.

Tab.29 Quantity of refrigerant to be added

Length of refrigerant pipe	7 m	10 m	15 m	20 m	30 m	L [m]
AWHP 4.5 MR ⁽¹⁾	0	+ 0.045 kg	+ 0.120 kg	+ 0.195 kg	+ 0.345 kg	+ X g ⁽²⁾

(1) The outdoor unit is pre-charged with 1.3 kg of refrigerant.
 (2) Calculation of the quantity X of refrigerant to be added (grams): $X = Y \times (L - 7)$, where L is the length of the refrigerant pipe (in metres) and Y is the refrigerant charge (= 15 grams/metre).

Tab.30 Quantity of refrigerant to be added

Length of refrigerant pipe	11 to 20 m	21 to 30 m	31 to 40 m	41 to 50 m	51 to 60 m	61 to 75 m
AWHP 6 MR-3	0.2 kg	0.4 kg	0.6 kg	not permitted	not permitted	not permitted
AWHP 8 MR-2	0.15 kg	0.3 kg	0.9 kg	not permitted	not permitted	not permitted
AWHP 11 MR-2	0.2 kg	0.4 kg	1.0 kg	1.6 kg	2.2 kg	2.8 kg
AWHP 11 TR-2	0.2 kg	0.4 kg	1.0 kg	1.6 kg	2.2 kg	2.8 kg
AWHP 16 MR-2	0.2 kg	0.4 kg	1.0 kg	1.6 kg	2.2 kg	2.8 kg
AWHP 16 TR-2	0.2 kg	0.4 kg	1.0 kg	1.6 kg	2.2 kg	2.8 kg
AWHP 22 TR-2 with 3/4" gas pipe	Pre-charged in the factory	Not permitted	Not permitted	Not permitted	Not permitted	Not permitted
AWHP 27 TR-2 with 3/4" gas pipe	Pre-charged in the factory	Not permitted	Not permitted	Not permitted	Not permitted	Not permitted
AWHP 22 TR-2 with 1" gas pipe	Pre-charged in the factory	Pre-charged in the factory	0.9 kg	1.8 kg	2.7 kg	3.6 kg
AWHP 27 TR-2 with 1" gas pipe	Pre-charged in the factory	Pre-charged in the factory	1.2 kg	2.4 kg	3.6 kg	4.8 kg

5.11.8 Checking the refrigeration circuit

1. Check the position of the outdoor unit, distance from the wall.
2. Check the tightness of the refrigerant connections.
3. Ensure that the evacuation pressure has been checked before filling.
4. Ensure that the evacuation time and the outdoor temperature have been checked during evacuation.

5.12 Electrical connections

5.12.1 Recommendations



Warning

- Only qualified professionals may carry out electrical connections, always with the power off.
- Earth the appliance before making any electrical connections.

- Make the electrical connections on the appliance in accordance with the requirements of the prevailing standards,
- Make the electrical connections on the appliance in accordance with the information given in the electrical schematics delivered with the appliance,
- Make the electrical connections on the appliance in accordance with the recommendations of these instructions.



Important

Electrical conformity for earthing

France	NFC 15–100 standard
Belgium	RGEI standard
Germany	VDE 0100 standard
Other countries	Installation standards in force



Caution

- The installation must be fitted with a main switch.
- Three phase models must always be fitted with neutral.



Caution

Power the appliance via a circuit that includes an omnipolar switch with contact opening distance of 3 mm or more.

- Single phase models: 230 V (+6%/-10%) 50 Hz
- Three-phase models: 400 V (+6%/-10%) 50 Hz

When making electrical connections to the mains, respect the following polarities.

Tab.31

Colour of the wire	Polarity
Brown wire	Live
Blue wire	Neutral
Green/yellow wire	Earth



Caution

Secure the cable with the cable clamp provided. Be careful that you do not invert any of the wires.

5.12.2 Recommended cable cross section

The electrical characteristics of the mains power supply available must correspond to the values given on the data plate.

The cable will be carefully chosen according to the following information:

- Maximum intensity of the outdoor unit. See table below.
- Distance of the appliance from the original power supply.
- Upstream protection.
- Neutral operating conditions.

**Important**

The maximum permissible current on the power supply cable of the indoor unit must not exceed 6 A.

Tab.32

Appliance	Power supply type	Cable cross section (mm ²)	Circuit breaker curve C (A)	Maximum amperage (A)
Indoor unit	Single phase	Cable provided (3 x 1.5)	10	-
Electrical backup	Single phase	3 x 6	32	-
	Three phase	5 x 2.5	16	-
BUS cable ⁽¹⁾	-	2 x 0.75	-	-
AWHP 4.5 MR	Single phase	3 x 2.5	16	12
AWHP 6 MR-3	Single phase	3 x 2.5	16	13
AWHP 8 MR-2	Single phase	3 x 4	25	17
AWHP 11 MR-2	Single phase	3 x 6	32	29.5
AWHP 11 TR-2	Three phase	5 x 2.5	16	13
AWHP 16 MR-2	Single phase	3 x 10	40	29.5
AWHP 16 TR-2	Three phase	5 x 2.5	16	13
AWHP 22 TR-2	Three phase	5 x 4	25	19
AWHP 27 TR-2	Three phase	5 x 6	32	21

(1) Connection cable linking the outdoor unit to the indoor unit

**Important**

For the "inverter" outdoor unit power supply, use a residual-current device (RCD) compatible with high harmonics:

- Single-phase applications: use a type A (sufficient in certain cases) or type B RCD, or equivalent.
- Three-phase applications: use a type B RCD, or equivalent.

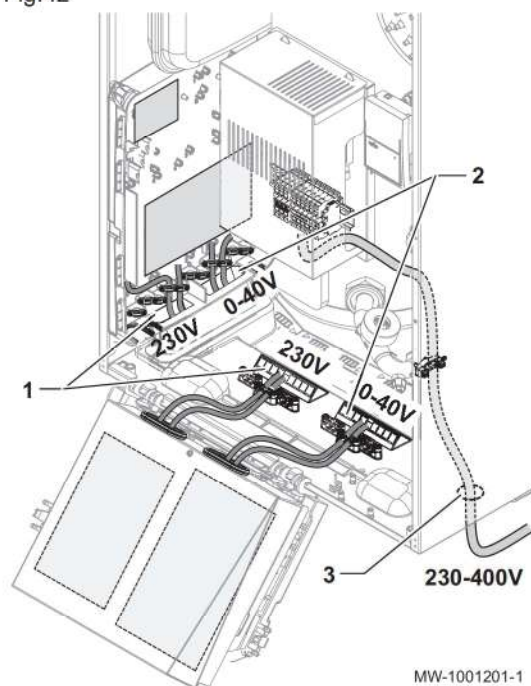
5.12.3 Routing the cables



Caution

Separate the sensor cables from the 230/400 V circuit cables. Secure all the cables exiting the indoor unit using the traction arrester devices supplied in the accessories bag.

Fig.42



- 1 230 V~ circuit cables
- 2 0-40 V safety extra-low voltage cables
- 3 230 - 400 V electrical back-up power supply cables (only for models with an electrical back-up)

5.12.4 Description of the connection terminal blocks

■ Possible connections

Several heating zones can be connected to the EHC-05 and SCB-10 PCBs. The options can be increased with the AD249 optional PCB.

The connections for the sensors or pumps of each zone are on each PCB.

Tab.33

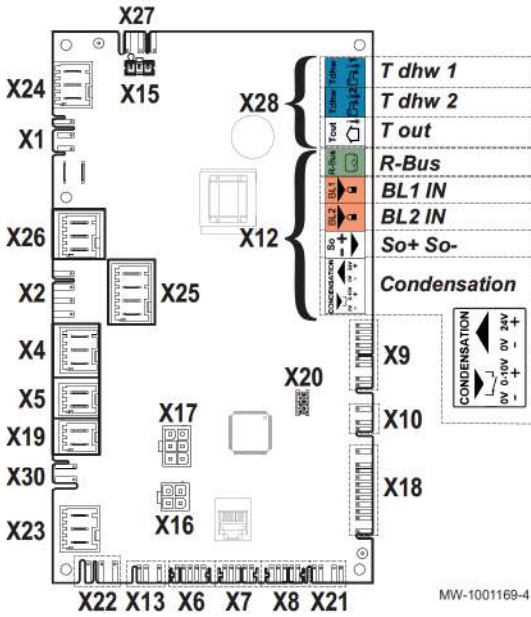
Circuits	CIRCA0 (EHC-05)	DHW (EHC-05)	CIRCA1 (SCB-10)	CIRCB1 (SCB-10)	CIRCC1 (with AD249 op- tion)	CIR- CAUX1 (with AD249 op- tion)	DHW1 (SCB-10)
Convection fan	X		X	X	X		
Underfloor heating	X ⁽¹⁾		X	X	X		
Radiator	X		X	X	X		
365-day radiator	X		X	X	X		
Continuous heating	X		X	X	X		
Timer programme			X	X	X	X	X
Swimming pool			X	X	X		
Domestic hot water production		X	X	X	X	X	X
Domestic hot water production, electric only			X	X	X		
Stratified tank (2 sensors)		X					X
Buffer tank used as a low-loss header	X	X	X	X	X	X	X

Circuits	CIRCA0 (EHC-05)	DHW (EHC-05)	CIRCA1 (SCB-10)	CIRCB1 (SCB-10)	CIRCC1 (with AD249 option)	CIR-CAUX1 (with AD249 option)	DHW1 (SCB-10)
Buffer tank for storage				X			
Deactivation	X	X	X	X	X	X	X

(1) Use the direct zone underfloor heating option

■ Description of the EHC-05 PCB

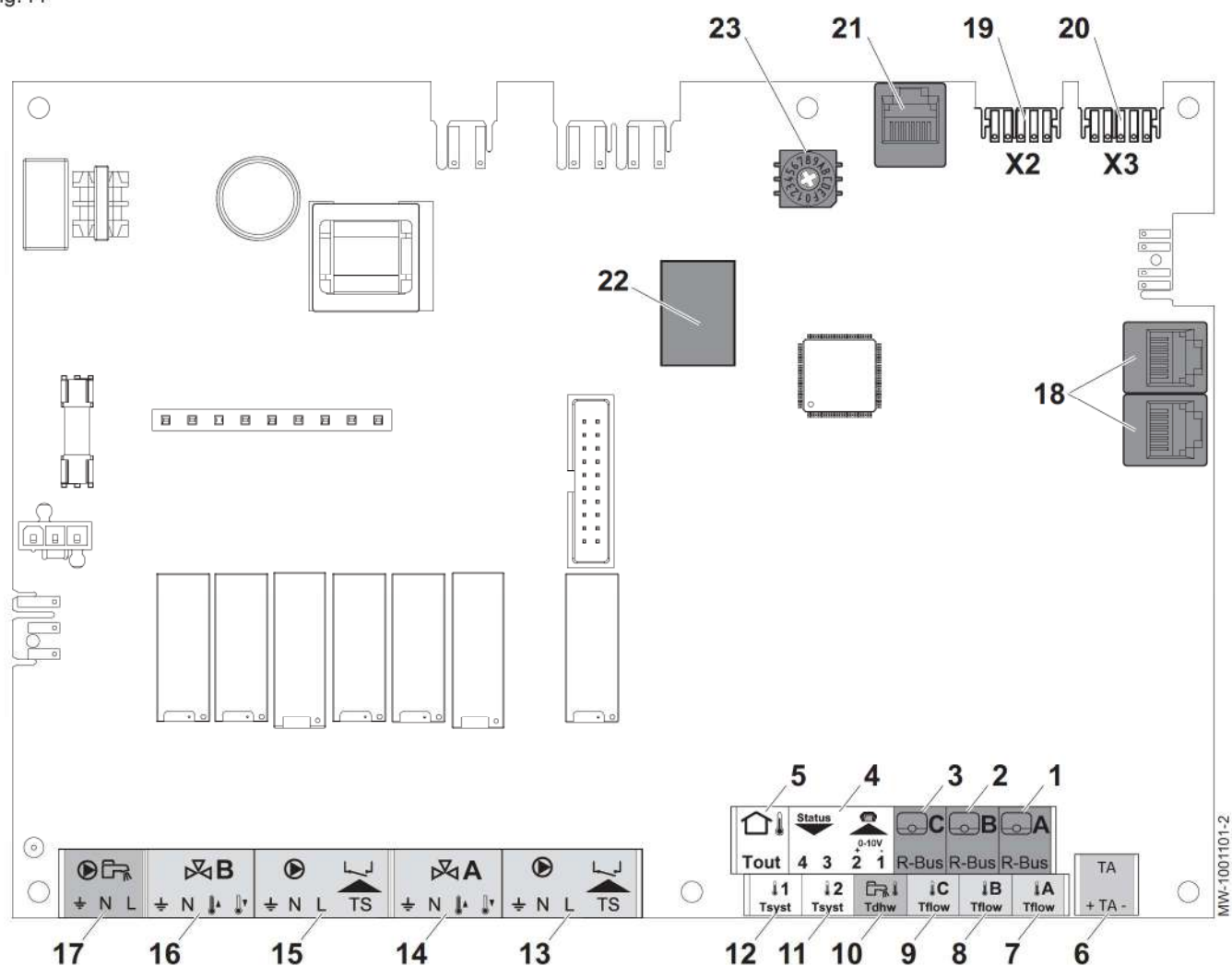
Fig.43



MW-1001169-4

■ Description of the SCB-10 PCB

Fig.44

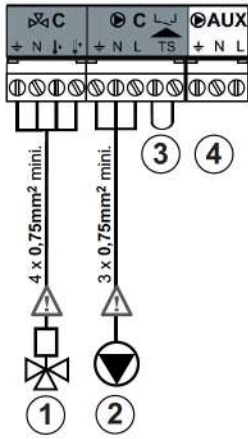


- | | |
|--|---|
| <p>1 Smart TC° connected room thermostat, on/off thermostat or OpenTherm modulating thermostat - CIRCA1 circuit</p> <p>2 Smart TC° connected room thermostat, on/off thermostat or OpenTherm modulating thermostat - CIRCB1 circuit</p> <p>3 Smart TC° connected room thermostat, on/off thermostat or OpenTherm modulating thermostat - CIRCC1 circuit</p> <p>4 Programmable and 0-10 V input</p> <p>5 Outdoor temperature sensor</p> <p>6 Impressed current anode</p> <p>7 Flow sensor - CIRCA1 circuit</p> <p>8 Flow sensor - CIRCB1 circuit</p> <p>9 Flow sensor - CIRCC1 circuit</p> <p>10 Domestic hot water sensor - DHW1 second domestic hot water circuit</p> | <p>11 System sensor 2</p> <p>12 System sensor 1</p> <p>13 Pump and safety thermostat - CIRCA1 circuit</p> <p>14 Three-way valve - CIRCA1 circuit</p> <p>15 Pump and safety thermostat - CIRCB1 circuit</p> <p>16 Three-way valve - CIRCB1 circuit</p> <p>17 Domestic hot water tank sensor - DHW1 second domestic hot water circuit</p> <p>18 Connectors for S-BUS cables used for cascade</p> <p>19 L-BUS connection</p> <p>20 L-BUS connection to EHC-05 PCB</p> <p>21 Tool service connector</p> <p>22 MODBUS connectors</p> <p>23 Coding wheel, selects the generator number in the cascade</p> |
|--|---|

■ Description of the three-way valve and auxiliary circuit AD249 PCB

The AD249 PCB is an additional board which is connected to the SCB-10 PCB to enable it to control a third heating circuit and auxiliary functions.

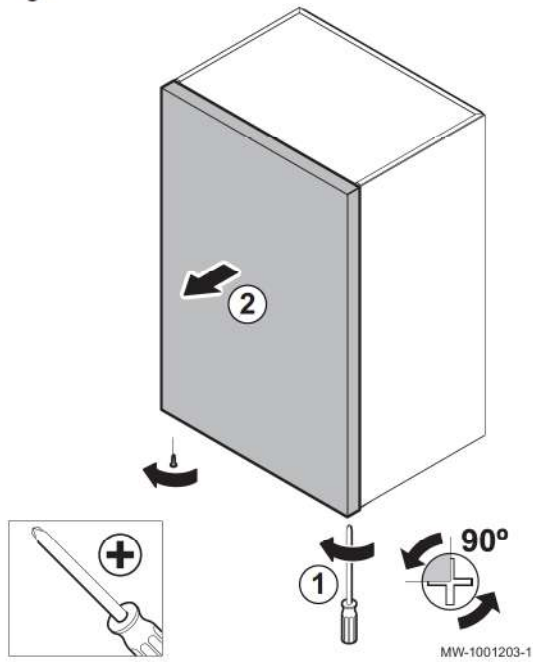
Fig.45



MW-1001681-1

- 1 Three-way valve - CIRCC1 circuit
- 2 Circuit pump - CIRCC1 circuit
- 3 Safety thermostat - CIRCC1 circuit (factory fitted bridge)
- 4 Auxiliary pump - CIRC AUX1 circuit

Fig.46

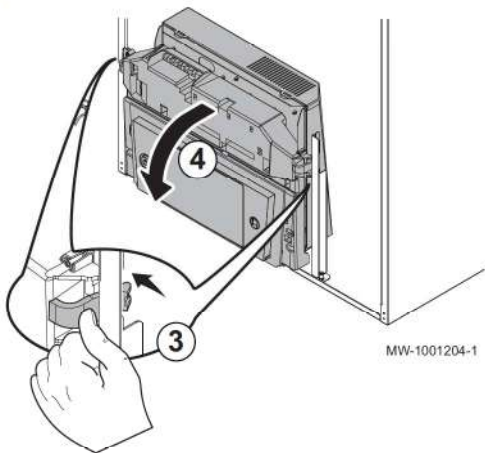


MW-1001203-1

5.12.5 Accessing the PCBs

1. Unscrew the two screws under the front panel by a quarter turn.
2. Remove the front panel.

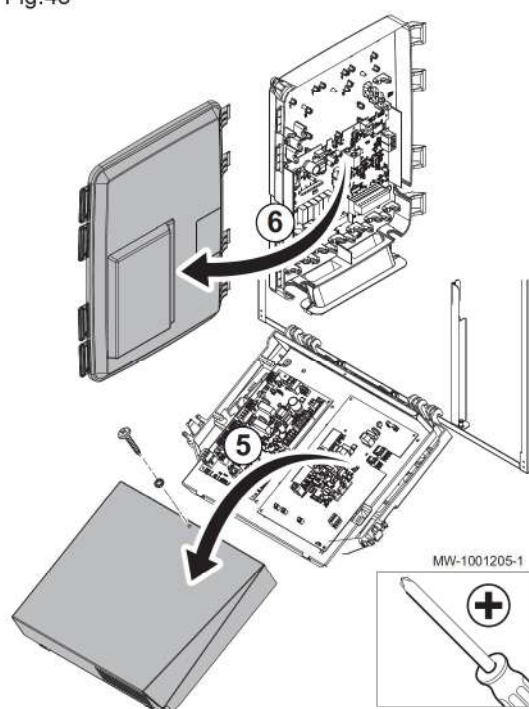
Fig.47



MW-1001204-1

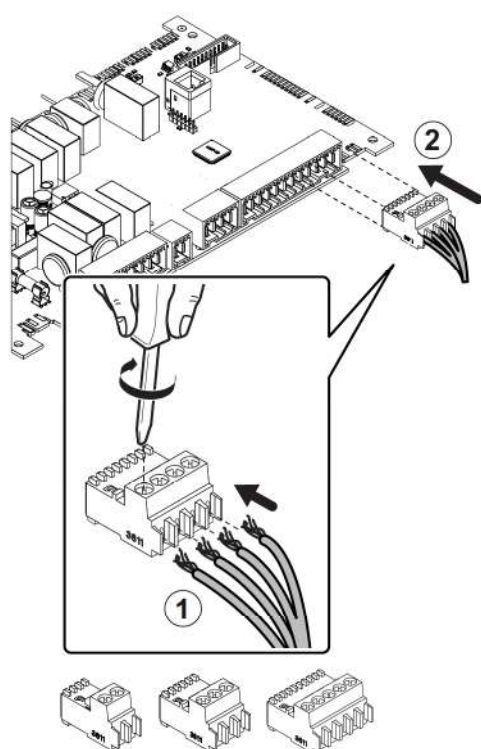
3. Open the holding clips located on the sides.
4. Tilt the control panel forwards.

Fig.48



5. Remove the screw and the control panel cover.
6. Unclip the PCB cover.

Fig.49



5.12.6 Connecting the cables to the PCBs

Keyed connectors are present on different terminal blocks as standard. Use these to connect the cables to the PCBs. If there are no connectors on the terminal block to be used, take the connector provided with the kit.

Coloured stickers are provided with certain accessories. Use these to mark each end of the cable with the same colour before passing the cables into the cable feed-throughs.

1. Insert and screw down the wires in the corresponding connector inputs.
2. Insert the connector into the corresponding terminal block.
3. Feed the cable into the cable duct and adjust the length of the cable accordingly.
4. Lock it in position with a cable clamp or a traction arrester device.



Caution

Danger of electric shock: the length of the conductors between the traction arrester device and the terminal blocks must be such that the active conductors are put under tension before the earth conductor.



For more information, see
Routing the cables, page 51

5.12.7 Electrically connecting the outdoor unit

■ Outdoor unit terminal block

The electrical connection of the outdoor unit must be made via a dedicated circuit. Before connecting, check that the cross-section of the cable and the circuit breaker on the electric panel are suitable.

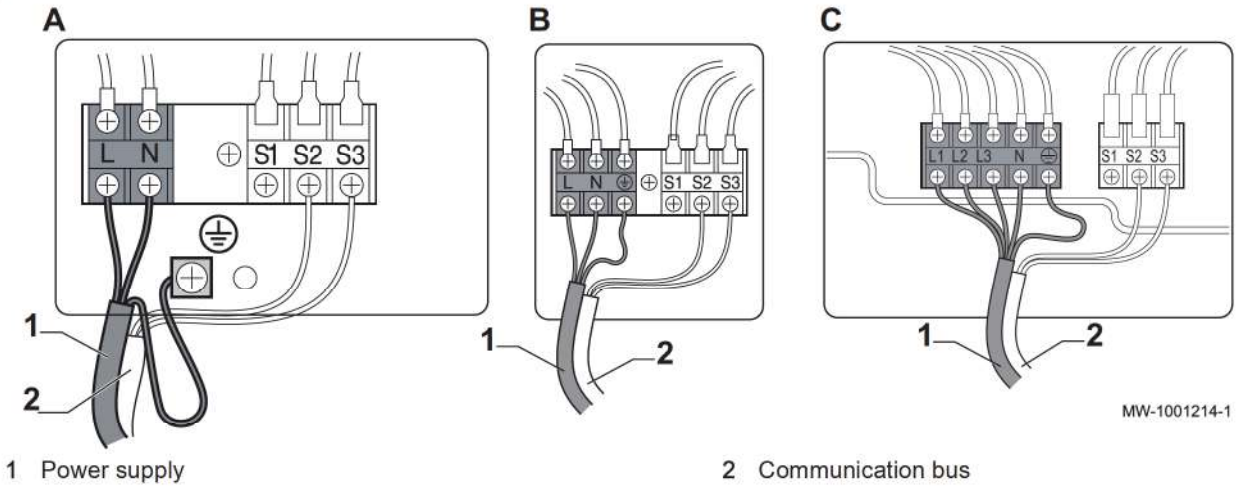
Danger

- Do not connect anything to S1.
- The earth wire must be 10 mm longer than the N and L wires.

Tab.34 Electrical connection diagram

A	B	C
AWHP 4.5 MR	AWHP 6 MR-3 AWHP 8 MR-2 AWHP 11 MR-2 AWHP 16 MR-2	AWHP 11 TR-2 AWHP 16 TR-2 AWHP 22 TR-2 AWHP 27 TR-2

Fig.50



■ Connecting the AWHP 4.5 MR unit

The electrical connection of the outdoor unit must be made via a dedicated circuit. Before connecting, check that the cross-section of the cable and the circuit breaker on the electric panel are suitable.

1. Remove the service panel.
2. Remove the earth connection present on the appliance and discard.

Fig.51

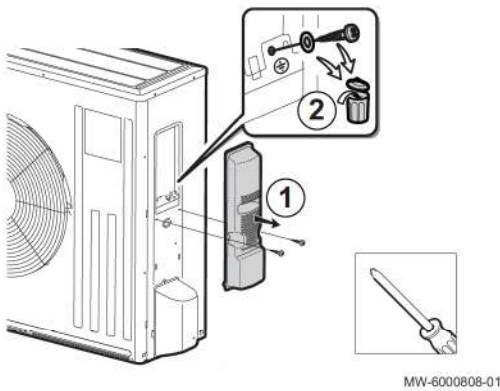
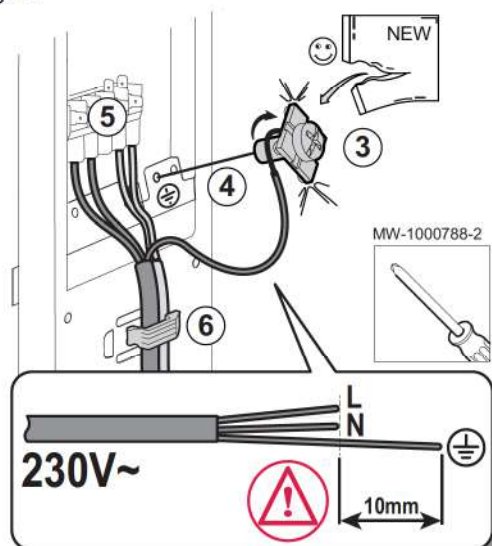


Fig.52



- Place the stripped part of the earth wire (⊕) on the screw with the square washer provided.

! Danger
The earth wire must be 10 mm longer than the N and L wires.

- Secure the screw with the earth wire on the chassis. Ensure that the earth wire is correctly placed under the washer, in contact with the chassis.
- Connect the other wires to the appropriate terminals.
- Feed the cable into the cable duct and adjust the length of the cable accordingly. Lock it in position using the traction arrester device.
- Put the service panel back in place.

■ Connecting the AWHP 6 MR-3 unit

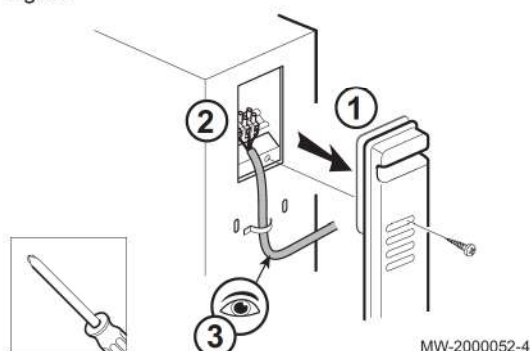
The electrical connection of the outdoor unit must be made via a dedicated circuit. Before connecting, check that the cross-section of the cable and the circuit breaker on the electric panel are suitable.

- Remove the service panel.
- Connect the cables to the appropriate terminals.

! Danger
The earth wire must be 10 mm longer than the N and L wires.

- Feed the cable into the cable duct and adjust the length of the cable accordingly. Lock it in position using the traction arrester device.
- Put the service panel back in place.

Fig.53



■ Connect the AWHP 8 MR-2, AWHP 11 MR-2, AWHP 11 TR-2, AWHP 16 MR-2, AWHP 16 TR-2, AWHP 22 TR-2, AWHP 27 TR-2 unit

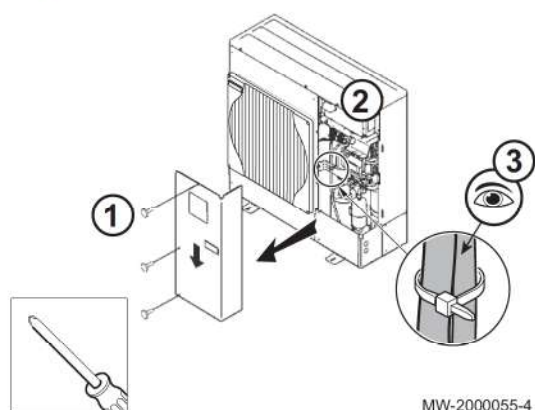
The electrical connection of the outdoor unit must be made via a dedicated circuit. Before connecting, check that the cross-section of the cable and the circuit breaker on the electric panel are suitable.

- Remove the service panel from the outdoor unit.
- Connect the cables to the appropriate terminals.

! Danger
The earth wire must be 10 mm longer than the N and L wires.

- Feed the cable into the cable duct and adjust the length of the cable accordingly. Lock it in position with a cable clamp.
- Put the service panel back in place.

Fig.54



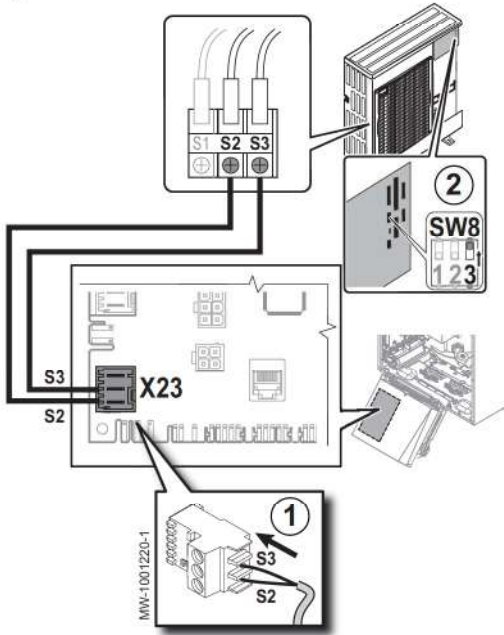
5.12.8 Connecting the indoor module

- Remove the front panel of the casing.

2. Fit the cable clamps and run the cables through the cable clamps.
3. Connect the power supply cable to the electric panel.
4. Connect the various components to the corresponding terminals on the indoor module.
5. Connect the electrical back-up.
6. Connect the hydraulic back-up.
7. Tighten the cable clamps.
8. Put the front panel back in place.

5.12.9 Connecting the outdoor unit bus

Fig.55



1. Connect the outdoor unit bus between the S2 and S3 terminals on the X23 connector in the indoor unit's EHC-05 central unit PCB.
2. Position the SW8-3 switch (except for AWHP 4.5 MR) for the outdoor unit PCB to ON.

Danger
Do not connect anything to S1.

5.12.10 Connecting the outdoor temperature sensor

The connection of an outdoor temperature sensor is mandatory to ensure the correct operation of the appliance.

■ Connecting the outdoor temperature sensor

1. Connect the outdoor temperature sensor to the T Out input on the SCB-10 PCB of the indoor unit.

Important
Use a cable with a minimum cross-section of 2x0.35 mm² and a maximum length of 30 m.

Fig.56

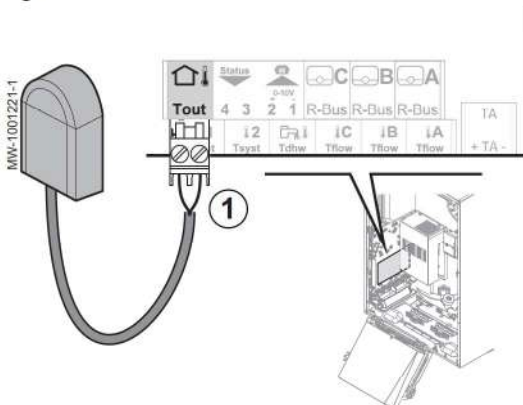
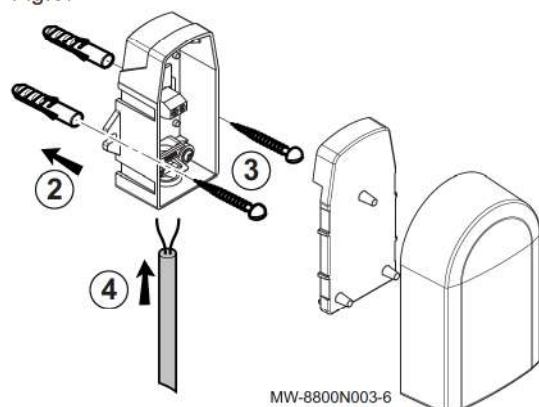


Fig.57



■ Fitting the outdoor temperature sensor

Plugs diameter 4 mm/drill diameter 6 mm

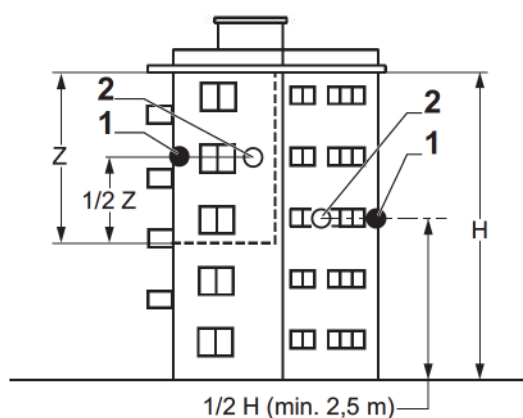
1. Choose a recommended location for the outdoor sensor.
2. Put the 2 plugs in place, delivered with the sensor.
3. Secure the sensor using the screws provided (diameter 4 mm).
4. Connect the cable to the outdoor temperature sensor.

■ Recommended positions

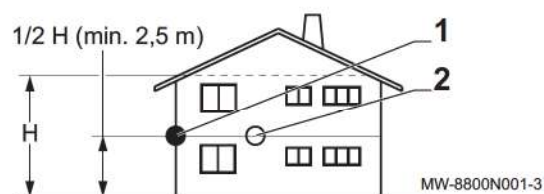
Place the outside sensor in a position that covers the following characteristics:

- On a façade of the area to be heated, on the north if possible.
- Half way up the wall of the area to be heated.
- Under the influence of changes in the weather.
- Protected from direct sunlight.
- Easy to access.

Fig.58



- 1 Optimum location
- 2 Possible position



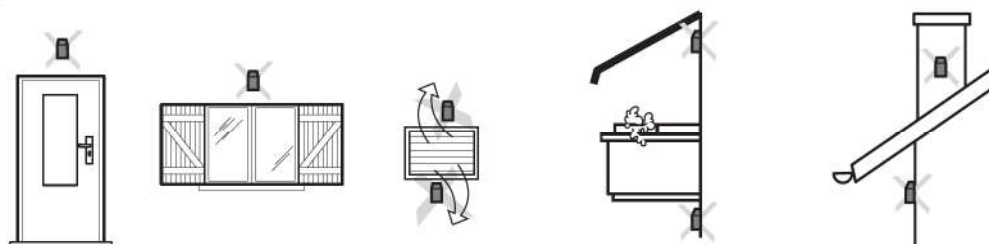
- H Inhabited height controlled by the sensor
Z Inhabited area controlled by the sensor

■ Positions to be avoided

Avoid placing the outside sensor in a position with the following characteristics:

- Masked by an element of the building (balcony, roof, etc.).
- Close to a disruptive heat source (direct sunlight, chimney, ventilation grid, etc.).

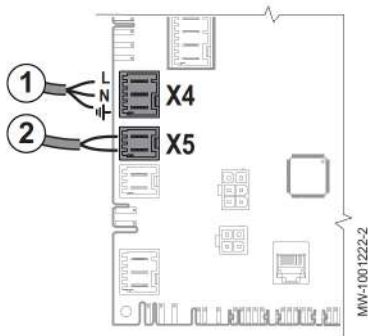
Fig.59



MW-3000014-2

5.12.11 Connecting the hydraulic back-up

Fig.60

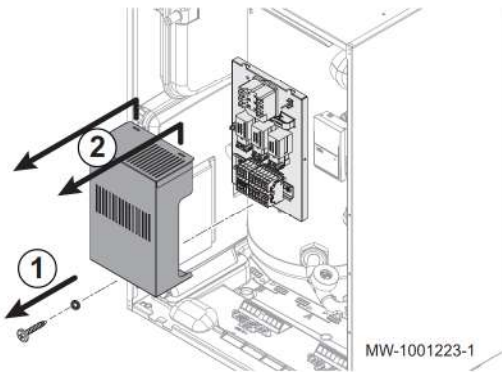


1. Connect the back-up boiler pump (live / neutral / earth) to the X4 connector on the EHC-05 central unit PCB in the indoor module.
2. Connect the dry ON/OFF contact in the back-up boiler to the X5 connector in the EHC-05 central unit PCB in the indoor module.

5.12.12 Connecting and configuring the electrical back-up

■ Accessing the indoor module terminal blocks

Fig.61



1. Remove the retaining screw.
2. Remove the protective cover.

■ Connecting and configuring the electrical backup

Choose the total output of the electrical backup based on the power supply mode, the size of the home and its energy performance.

Tab.35

Power supply	Total output (stage 1 + stage 2)	Bridge	Setting the Backup type parameter (HP029)
Single phase	2 kW (2 kW + 0 kW)	Bridge between C1 and C2	1 Electrical Stage
	6 kW (2 kW + 4 kW)	Bridge between C1 and C2	2 Electrical Stages
Three phase	4 kW (4 kW + 0 kW)	Remove bridge	1 Electrical Stage
	8 kW (4 kW + 4 kW)	Remove bridge	2 Electrical Stages
	8 kW (8 kW + 0 kW)	Bridge between C1 and C2	1 Electrical Stage
	12 kW (8 kW + 4 kW)	Bridge between C1 and C2	2 Electrical Stages
	12 kW (4 kW + 8 kW)	Bridge between C2 and C3	2 Electrical Stages

Fig.62 Single-phase power supply

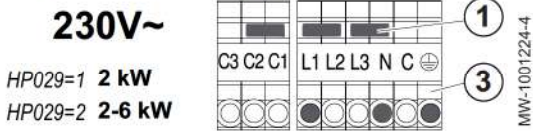
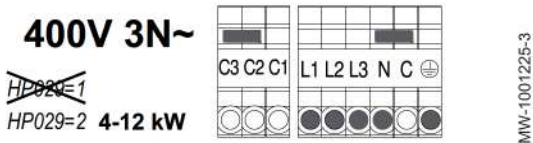
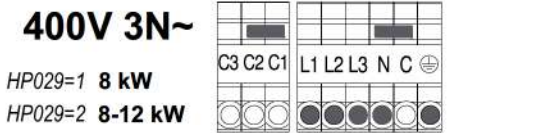
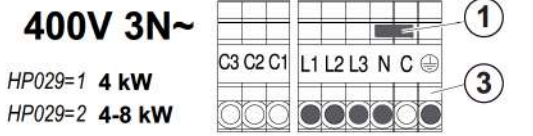


Fig.63 Three-phase power supply



1. Fit the bridges.
2. Feed the electrical backup power supply cable into the cable duct reserved for the 230/400 V circuit cables.

Caution
 Adjust the length of the cables and lock them in position with a cable clamp or a traction arrester device.
 The length of the conductors between the traction arrester device and the terminals must be such that the active conductors are put under tension before the earth conductor.

3. Connect the power supply cables using the push buttons.
 - L1: Live 1
 - L2 : Live 2
 - L3 : Live 3
 - N: Neutral
 - ⊕ : Earth

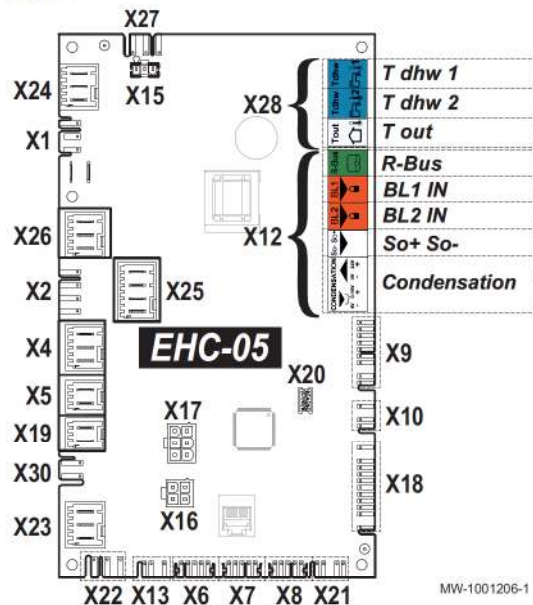
4. Configure the heat pump parameters.

Tab.36

Access	Parameter	Description
Air Src heat pump > Parameters, counters, signals > Adv. Parameters	Backup type HP029	Type of backup used in the heat pump
	Backup 1 capacity HP034	Declaration of the capacity of the 1st stage of the electrical backup used for the energy counter
	Backup 2 capacity HP035	Declaration of the capacity of the 2nd stage of the electrical backup used for the energy counter

5.12.13 Connecting options

Fig.64



1. Connect the options according to the configuration of the installation to the X12 or X28 connector on the EHC-05 PCB in the indoor module.

Tab.37 Connecting the options to X28

X28 connector	Description
T dhw 1	Optional: Connection of a second domestic hot water sensor for domestic hot water tanks with two sensors. Top sensor.
T dhw 2	Connection of the main domestic hot water sensor: <ul style="list-style-type: none"> • for tanks designed with a single sensor, • for domestic hot water tanks with two sensors. Bottom sensor.
T out	Not used

Tab.38 Connecting the options to X12

X12 connector	Description
R-Bus terminals	Connection of the Smart TC° connected thermostat, an on/off thermostat (ON/OFF) or a modulating thermostat.
BL1 IN and BL2 IN	Connection of multi-function dry contact inputs
SO+/SO- input	Connection of an electrical energy meter
Condensation terminals	Connection of a condensation sensor for under-floor cooling

5.12.14 Checking the electrical connections

1. Check the mains electricity connection to the following components:
 - Outdoor unit
 - Indoor unit
 - Depending on the version of the appliance, the immersion heater (electrical backup) or the backup boiler (hydraulic backup)
2. Check the connection between the indoor unit and the backup boiler (hydraulic backup): backup boiler pump control and heating demand or burner start-up control.
3. Check that the bus cable is correctly positioned between the indoor unit and the outdoor unit, that it is a double-insulated cable and that it is separated from the power supply cables.
4. Check the compliance of the circuit breakers and residual current devices (RCD) used:
 - Circuit breaker and residual current device (RCD) of the outdoor unit
 - Indoor unit circuit breaker
 - Depending on the version of the appliance, the immersion heater (electrical backup) or the backup boiler (hydraulic backup)
5. Check the positioning and connection of the sensors:
 - Outdoor temperature sensor
 - Room temperature sensor (if present)
 - Flow sensor for the second circuit (if present)
6. Check the connection of the circulating pump(s).
7. Check the connection of the different options.
8. Check that the wires and terminals are properly tightened or connected to the terminal blocks.
9. Check the separation of the power and safety extra-low voltage cables.
10. Check the connection of the underfloor heating safety thermostat (if used).
11. Check that traction arrester devices are used for all cables exiting the appliance.

6 Commissioning

6.1 General

The commissioning procedure for the heat pump is performed:

- the first time it is used,
- after a prolonged shutdown.

Commissioning of the heat pump allows the user to review the various settings and checks to be made to start up the heat pump in complete safety.

6.2 Commissioning procedure with smartphone



Caution

Commissioning must only be performed by a qualified professional.

We have created a smartphone application to help you commission and configure the parameters for the heating installation.

1. Download the **De Dietrich START** application from **Google Play** or from the **App Store**.
2. Switch on the appliance.
3. Check that the **Bluetooth®** function is activated on the heat pump.
4. Follow the application's instructions on the smartphone for commissioning and configuring the heating installation. To establish the **Bluetooth®** connection between the smartphone and the heat pump, use the information given on the **Bluetooth®** label.

Once the procedure is complete, your installation is fully configured.



For more information, see

Bluetooth® label, page 35

Activating/deactivating the Bluetooth® for the appliance, page 82

Fig.65



6.3 Commissioning procedure without smartphone



Caution

Initial commissioning must be performed by a qualified professional.

1. Refit all the panels, fascias and covers on the indoor unit and outdoor unit.
2. Arm the circuit breakers on the electric panel:
 - Outdoor unit circuit breaker
 - Indoor unit circuit breaker
 - Electrical backup circuit breaker
 - Hydraulic backup circuit breaker
3. Activate the on/off switch on the indoor unit.
 - ⇒ The heat pump is switched on. The **Welcome** message is displayed.

Fig.66

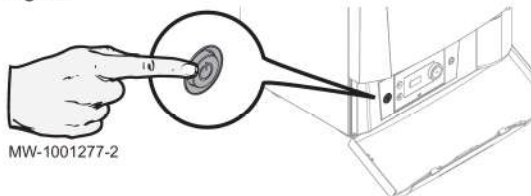
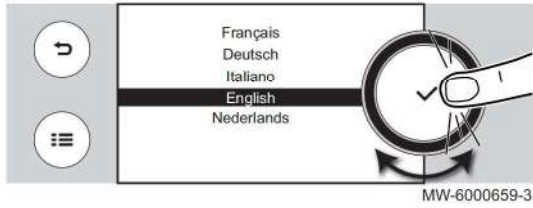


Fig.67



4. Select the country and language.
5. Activate the **Daylight Saving Time** function.
6. Set the date and time.
7. Set the CN1 and CN2 parameters. The values are available on the data plate of the indoor unit. They are also shown in the table below. The CN1 and CN2 parameters are used to indicate to the system the type of outdoor unit and backup present on the installation. They can be used to preconfigure the parameters based on the installation configuration.
8. Select **Confirm** to save the settings.
9. The heat pump begins its vent cycle.

Points to check:

- After commissioning, domestic hot water production takes priority. Keep this operating mode to increase the temperature and check that the heat pump is operating correctly.
- At the end of the vent cycle, if the heat pump does not start, check the flow temperature on the user interface. The flow temperature must be above 10 °C to enable the outdoor unit to start. This protects the condenser during defrosting. If the flow temperature is below 10 °C, the backups start instead of the outdoor unit. The outdoor unit takes over when the flow temperature reaches 20 °C.



For more information, see [Configuring and using the CB04 auto-filling option kit, page 81](#)

6.3.1 Configuration numbers CN1 and CN2

Configuration numbers allow the heat pump to be configured according to the type of backup and the outdoor unit model installed.

Tab.39

Outdoor unit	CN1 Electrical backup	CN1 Hydraulic backup	CN2
AWHP 4.5 MR	1	2	7
AWHP 6 MR-3	3	4	7
AWHP 8 MR-2	5	6	7
AWHP 11 MR-2 AWHP 11 TR-2	7	8	7
AWHP 16 MR-2 AWHP 16 TR-2	9	10	7
AWHP 22 TR-2	11	12	7
AWHP 27 TR-2	13	14	7

6.4 Final instructions for commissioning

1. Check that the following installation components are switched on correctly:
 - Circulating pumps
 - Outdoor unit
 - Heating back-ups
2. Check the setting of the thermostatic mixing valve (for domestic hot water production).
3. Shut down the heat pump and carry out the following operations:
 - After about 10 minutes, vent the air in the heating system.
 - Check the hydraulic pressure on the user interface. If necessary, top up the water level in the heating system.
 - Check the fouling level of the filter(s) present both in the heat pump and on the installation. If necessary, clean the filter(s).
4. Restart the heat pump.

5. Explain how the system works to the users.
6. Hand over all manuals to the user.



For more information, see


Cleaning the magnetic filter, page 112

Checking the operation of the appliance, page 112

7 Settings

7.1 Menu tree

Tab.40

Menus accessible using the  button
Bluetooth
Installation Setup
Commissioning Menu
Advanced Service Menu
Error History
System Settings
Version Information

7.2 Accessing the Installer level

Certain parameters, which may affect the operation of the appliance, are protected by an access code. Only the installer is authorised to modify these parameters.

To access the installer level:


1. Select the  icon.
2. Enter the code 0012.

⇒ The **Installer level** is activated . After modifying the desired settings, exit the **Installer level**.

3. To exit the **Installer level**, select the  icon, then **Confirm**.

If no actions are taken for 30 minutes, the system will automatically exit the **Installer level**.

7.3 Searching for a parameter or a measured value


If you know the code for a parameter or a measured value, using the  **Rechercher des points de données** function is the easiest way to access it directly.



1. Follow the access path described below.

Tab.41

Access
 > Installation Setup > Search for datapoints

2. Enter the code for the required parameter or measured value using the rotary button.
3. Press the confirm button  to start the search.
 - ⇒ The requested parameter or measured value is displayed.

7.4 Configuring the heating circuit

7.4.1 Setting the heating curve

The relationship between the outdoor temperature and the central heating flow temperature is controlled by a heating curve. This can be adjusted according the requirements of the installation.

To set the heating curve for a zone:




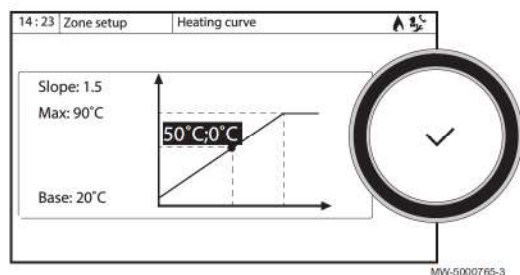
1. Select the icon for the **zone** to be modified; , for example.
2. Select **Heating Curve**.
3. Set the following parameters:

Fig.68



Tab.42

Parameter	Description
Slope:	Value of the heating curve gradient. <ul style="list-style-type: none"> • underfloor heating circuit: gradient between 0.4 and 0.7 • radiator circuit: gradient of approx. 1.5
Max:	Maximum temperature of the circuit
Base:	Curve base point temperature (default value: Off = automatic mode). If Base: Off, the curve base point temperature becomes equal to the room set point temperature
50 °C; 0 °C	Water temperature in the circuit for an outdoor temperature. This data is visible all along the curve.





7.4.2 Configuring underfloor cooling or a convection fan

This function is only available when the Zone Function parameter is set to **Mixing Circuit** or **Fan Convector** (Installation configuration menu > CIRCA1, CIRCB1 or CIRCC1 > Circuit function).



1. Configure the following parameters:

Tab.43

Access	Parameter	Description	Adjustment required
 Air Src Heat pump > Parameters, counters, signals > Parameters	CH function on AP016	Enable central heating heat demand processing	Deactivating heating also deactivates cooling. On
 Air Src heat pump > Parameters, counters, signals > Adv. Parameters	Cooling mode AP028	Configuration of the cooling mode	Active cooling on
 CIRCA0,  CIRCA1, CIRCB1, CIRCC1 > Parameters, counters, signals > Parameters	Floor Cool. setpoint CP270, CP271, CP273, CP274	Cooling flow temperature setpoint for the underfloor cooling	18 °C (default value) Set the temperature according to the type of floor and the level of humidity.
	Fan Cool. setpoint CP280, CP281, CP283, CP284	Cooling flow temperature setpoint for the fan convector	7 °C (default value) Set the temperature according to the type of floor and the level of humidity.
	RevContactOTH cool CP690, CP691, CP693, CP694	Reversed OpenTherm contact in cooling mode for heat demand per zone	<ul style="list-style-type: none"> • No • Yes Check the setting according to the thermostat or room sensor used.


2. If necessary, force cooling or modify the cooling temperatures for the CIRCA0, CIRCA1, CIRCB1 or CIRCC1 circuits.

7.5 Configuring the hydraulic backup

7.5.1 Configuring the backup boiler

To ensure optimal performance of the heat pump system with a backup boiler, it is necessary to configure the parameters of the backup boiler.

1. Adjust the boiler in 24/7 comfort mode.
2. Adjust the heating setpoint temperature to a temperature 5 °C above the domestic hot water setpoint temperature.

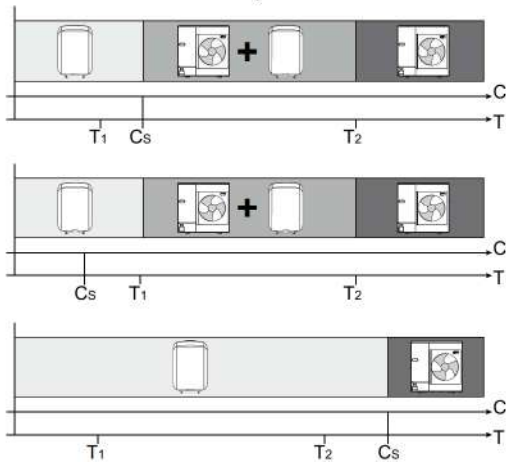
 See Boiler installation manual

7.5.2 Configuring the hybrid operating mode

Hybrid operating mode is only available for appliances with a hydraulic backup.

The hybrid function consists of an automatic switch between the heat pump and the boiler, according to the cost, the consumption or emission of CO₂ of each heat generator.

Fig.69 Influence of outdoor temperatures and bi-valency.





MW-5000542-1



- C** COP: Coefficient of performance
- C_S** Threshold COP: if the coefficient of performance of the heat pump is higher than the threshold coefficient of performance, the heat pump takes priority. Otherwise only the boiler backup is enabled. The heat pump COP depends on the outdoor temperature and the heating water setpoint temperature.
- T** Outdoor temperature
- T₁** Min. Outdoor T. HP (HP051) parameter: Minimum outdoor temperature below which the compressor of the Heat Pump is stopped
- T₂** Bivalent temperature parameter (HP000): Bivalent temperature

1. Configure the heat pump parameters

Tab.44

Access	Parameter	Description	Adjustment required
 23.5 Air Src heat pump > Parameters > Parameters, counters, signals	Bivalent temperature HP000	Bivalent temperature	5 °C
	Hybrid mode HP061	Hybrid mode selection to choose on what basis the hybrid system will optimise	Set according to the optimisation required. See following table. <ul style="list-style-type: none"> • No Hybrid • Hybrid Cost • Primary Energy • Hybrid CO₂
	Peak elec. cost HP062	Peak rate electricity cost (in cents)	Enter the price of electricity at peak rate. By default: 15 euro cents
	Off-peak elec. cost HP063	Off-peak electricity cost (in cents)	Enter the price of electricity at off-peak rate. By default: 13 euro cents
 23.5 Air Src heat pump > Parameters, counters, signals > Adv. Parameters	Gas or oil cost HP064	Cost of gas per m ³ or oil per litre (in cents)	Enter the price of fuel. By default: 80 euro cents
	Min. Outdoor T. HP HP051	Minimum outdoor temperature below which the compressor of the Heat Pump is stopped	Retain the default value: -20 °C

2. Choose the optimisation for energy consumption

Tab.45

Value of the Hybrid mode (HP061) parameter	Description
Primary Energy	Optimisation of primary energy consumption: the control system chooses the generator that consumes the least primary energy. The switch between the heat pump and the boiler occurs at the value of the coefficient of performance threshold COP Threshold (HP054).
Hybrid Cost	Optimisation of energy costs for the consumer (factory setting): the control system chooses the cheapest generator according to the coefficient of performance of the heat pump and according to energy cost. <ul style="list-style-type: none"> • Peak elec. cost (HP062) : Peak rate electricity cost (in cents) • Off-peak elec. cost (HP063) : Off-peak electricity cost (in cents) • Gas or oil cost (HP064) : Cost of fossil energy (oil or gas) - price per litre or per m³
Hybrid CO2	Optimisation of CO ₂ emissions: the control system chooses the generator that emits the least CO ₂ .
No Hybrid	No optimisation: the heat pump always starts up first, regardless of the conditions. The boiler back-up starts up afterwards, if necessary.

7.6 Drying the screed

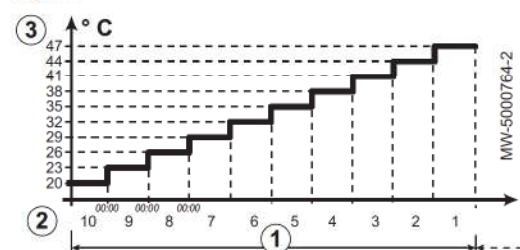
7.6.1 Drying screed with an outdoor unit connected

The screed drying function reduces the drying time of the screed for underfloor heating. This function must be activated for each zone.

Every day at midnight, the setpoint temperature is recalculated and the number of days is decreased.

For the screed drying times, follow the screed manufacturer's specifications.

Fig.70



- ① Number of days of drying
- ② Drying start temperature
- ③ Drying end temperature

**Important**

If the return water temperature is below 10 °C, screed drying will start using the electrical back-up until the return water reaches a temperature of 20 °C (to prevent it taking too long, particularly in winter).

Tab.46 Example: to prepare the screed on which the floor covering will be applied, the parameters need to be adjusted every seven days

Day	① Number of days of drying	② Drying start temperature	③ Drying end temperature	Remarks
1 to 7	7	+25 °C	+55 °C or maximum authorised flow temperature	In increments of 5 K
8 to 14	7	+55 °C or maximum authorised flow temperature	+55 °C or maximum authorised flow temperature	No night reduction
15 to 21	7	+55 °C or maximum authorised flow temperature	+25 °C	In increments of 5 K



1. Set the parameters for the circuit with screed to be dried.

Tab.47

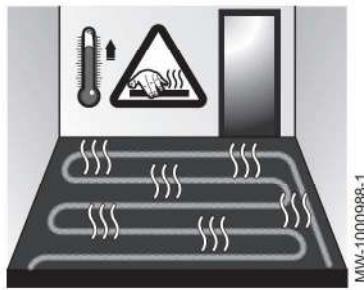
Access	Adjustment required	Parameter	Description
CIRCA0, , CIRCA1, CIRCB1 or CIRCC1 > Set Screed Drying	① Number of days of drying	Zone screed drying	Setting of the screed drying program of the zone
	② Drying start temperature	ScreedStartTemp	Setting of the start temperature of the screed drying program of the zone
	③ Drying end temperature	ScreedStopTemp	Setting of the stop temperature of the screed drying program of the zone

The screed drying programme will start immediately and continue for the selected number of days.

At the end of the programme, the selected operating mode will restart.

7.6.2 Drying screed without the heat pump outdoor unit

Fig.71



The indoor module can be used for drying screed using the electrical back-up. It is not necessary to connect the outdoor unit.

1. Switch on the indoor module and activate the screed drying function.
2. Adjust the parameters for screed drying.
 - ⇒ If the outdoor unit is not connected, the back-ups will start automatically.

7.7 Configuring a room thermostat

7.7.1 Configuring an on/off or modulating thermostat

The on/off thermostat or the OpenTherm (OT) modulating thermostat is connected to the R-Bus terminals on the EHC-05 PCB or the SCB-10 optional PCB.

The PCBs are delivered with a bridge on the R-Bus terminals.

The R-Bus input can be configured to add the flexibility of use depending on the type of thermostat: on/off or OpenTherm modulating.



1. Configure the R-Bus input:

Tab.48 Configuration of the R-Bus input for using an on/off thermostat (dry contact)

Access	Parameter	Description
CIRCA0, , CIRCA1, CIRCB1 or CIRCC1 > Parameters, counters, signals > Parameters	OTH LogicLev contact CP640, CP641, CP643	Configuration of the on/off input contact direction for heating mode. <ul style="list-style-type: none"> • Closed (default value): heating demand when contact is closed • Open: heating demand when contact is open
	RevContactOTH cool CP690, CP691, CP693	Reversal of the direction of the logic in cooling mode compared to heating mode. <ul style="list-style-type: none"> • No (default value): cooling demand uses the same logic as the heating demand • Yes: cooling demand uses the reverse logic to the heating demand

2. Configure the on/off contact parameters for the heating and cooling:

Tab.49 OTH LogicLev contact and RevContactOTH cool parameter settings

Value of the OTH LogicLev contact parameter (CP640, CP641, CP643)	Value of the RevContactOTH cool parameter (CP690, CP691, CP693)	Position of the on/off contact for heating	Position of the on/off contact for cooling
Closed (default value)	No (default value)	Closed	Closed
Open	No	Open	Open
Closed	Yes	Closed	Open
Open	Yes	Open	Closed

7.7.2 Configuring a thermostat with a heating/cooling control contact

The AC thermostat (air conditioning) is always connected to the **R-Bus** and **BL1** terminals on the **EHC-05 PCB**. The AC thermostat is only compatible with configurations with a single heating circuit.

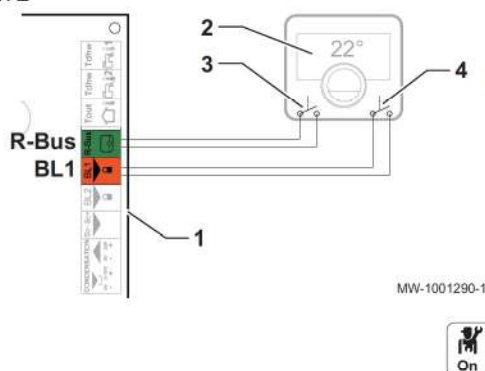
Priority will be given to the AC thermostat input over the other Summer/Winter modes (Auto/Manual).

The PCBs are delivered with a bridge on the **R-Bus** terminals.

1. Connect the AC thermostat to the **BL1** input on the **EHC-05 PCB**.


- 1 EHC-05 PCB
- 2 Room unit
- 3 Output: On/Off
- 4 "Heating/cooling contact" output

Fig.72




2. Configure the heat pump parameters.

Tab.50

Access	Parameter	Description	Adjustment required
 Air Src heat pump > Parameters, counters, signals > Adv. Parameters	BL function AP001	BL input function selection (BL1)	Heating Cooling
	BL1 contact config. AP098	BL1 input contact configuration Closed: function active when BL contact is closed Open: function active when BL contact is open	Closed or Open

Tab.51

Access	Parameter	Description	Adjustment required
 CIRCA0> Parameters, counters, signals > Parameters	OTH LogicLev contact CP640	OpenTherm Logic level contact of the zone Closed: heating demand when contact is closed Open: heating demand when contact is open	Closed or Open
	RevContactOTH cool CP690	Reversed OpenTherm contact in cooling mode for heat demand per zone No: follows the heating logic Yes: follows the reverse of the heating logic	No or Yes

Tab.52 Configuration A - by default

Value of the OTH LogicLev contact (CP640) parameter	Value of the BL1 contact config. (AP098) parameter	The BL1 multifunction input is	Operating mode for the heat pump	If the OT contact is open	If the OT contact is closed
Closed (default value)	Closed (default value)	Open	Cooling	No cooling demand	Cooling demand
Closed (default value)	Closed (default value)	Closed	Heating	No heating demand	Heating demand

Tab.53 Configuration B

Value of the OTH LogicLev contact (CP640) parameter	Value of the BL1 contact config. (AP098) parameter	The BL1 multifunction input is	Operating mode for the heat pump	If the OT contact is open	If the OT contact is closed
Closed	Open	Open	Heating	No heating demand	Heating demand
Closed	Open	Closed	Cooling	No cooling demand	Cooling demand

Tab.54 Configuration C

Value of the OTH LogicLev contact (CP640) parameter	Value of the BL1 contact config. (AP098) parameter	The BL1 multifunction input is	Operating mode for the heat pump	If the OT contact is open	If the OT contact is closed
Open	Closed	Open	Cooling	Cooling demand	No cooling demand
Open	Closed	Closed	Heating	Heating demand	No heating demand

Tab.55 Configuration D

Value of the OTH LogicLev contact (CP640) parameter	Value of the BL1 contact config. (AP098) parameter	The BL1 multifunction input is	Operating mode for the heat pump	If the OT contact is open	If the OT contact is closed
Open	Open	Open	Heating	Heating demand	No heating demand
Open	Open	Closed	Cooling	Cooling demand	No cooling demand

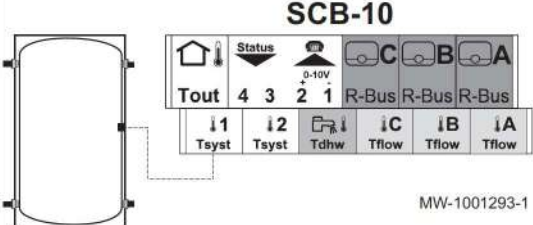
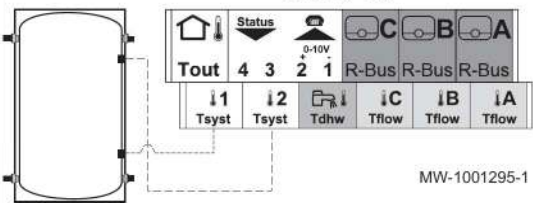
7.8 Configuring a buffer tank

7.8.1 Installing a buffer tank

A buffer tank is used to separate the heating circuits or to store energy. The buffer tank is used with one or two temperature sensors. The CIRCA0 circuit cannot be used at the same time as a buffer tank.

1. Connect the temperature sensor(s) for the buffer tank to the corresponding connectors:

Tab.56

Connection	Description
Fig.73 One sensor  <p>MW-1001293-1</p>	Buffer tank temperature sensor to the Tsyst1 connector on the SCB-10 PCB
Fig.74 Two sensors  <p>MW-1001295-1</p>	<ul style="list-style-type: none"> • Buffer tank bottom temperature sensor to the Tsyst1 connector on the SCB-10 PCB • Buffer tank top temperature sensor to the Tsyst2 connector on the SCB-10 PCB



2. Configure the pump for the CIRCA0 zone as a system pump:

Tab.57

Access	Parameter	Description	Adjustment required
Air Src Heat pump > Parameters, counters, signals > Adv. Parameters	Boiler Pump function AP102	Configuration of the boiler pump as zone pump or system pump (feed lowloss header)	No: all demands

3. Deactivate the CIRCA0 : circuit

Tab.58

Access	Parameter	Description	Adjustment required
CIRCA0	Zone Function CP020	Functionality of the zone	Disable

4. Activate the buffer tank function by selecting the number of sensors:

Tab.59

Access	Parameter	Description	Adjustment required
> Installation Setup > Buffer tank off	Type Buffer Tank BP001	Type of buffer tankn	Depending on the situation: <ul style="list-style-type: none"> • Disabled • One sensor • Two sensors

5. Select the operating mode for the buffer tank.

Tab.60

Buffer tank operating mode	Adjustment required
Buffer tank used as a low-loss header.	By default, the buffer tank is managed as a low-loss header and does not require any specific settings. The temperature setpoint for the buffer tank is equal to the maximum temperature setpoint value taken from all the associated circuits. Example: with the temperature set points of CIRCA1: 22 °C, CIRCB1: 21 °C and CIRCC1: 20.5 °C, the buffer tank setpoint will be: (Maximum temperature for CIRCA1, CIRCB1, CIRCC1) = 22 °C.
Buffer tank used in storage mode	Configure the buffer tank load. For more detailed information, see: Configuring the buffer tank for storage, page 74

7.8.2 Configuring the buffer tank for storage

Firstly, it is necessary to have installed the buffer tank in accordance with the instructions in the Installing a buffer tank, page 72 section.

The buffer tank is used to store energy either via the buffer tank timer programme or by a contact connected to the TEL digital input.

To use the timer programme for the buffer tank, access the menu > **Installation Setup > B. tampon 1 sonde** or **B. tampon 2 sondes > Programme du ballon tampon** and configure the load timers.

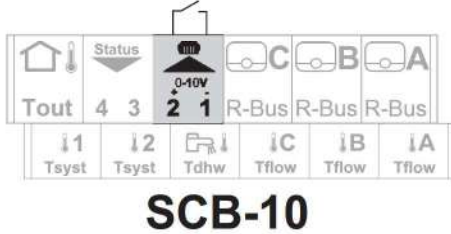
To use the TEL digital input, access the menu > **Installation Setup > Entrée digitale > Parameters** and set the following parameters:

- **Digital input config (EP046)** : Buffer Tank input.
- **Logic level Digi In (EP056)** : Open or Closed, depending on whether the buffer tank must be loaded when the contact is opened or closed.

On both cases, configure the system as follows:

1. Select the setpoint temperature control mode for the buffer tank load:

Fig.75



MW-1001294-1

Tab.61

Access	Parameter	Description	Adjustment required
> Installation Setup > B. tampon 1 sonde or B. tampon 2 sondes	Buff Tank HC Strat. BP002	Heating Cooling Control strategy used with buffer tank	<ul style="list-style-type: none"> • Fixed setpoint • Calculated setpoint • Dedicated slope

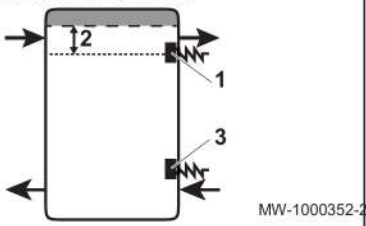
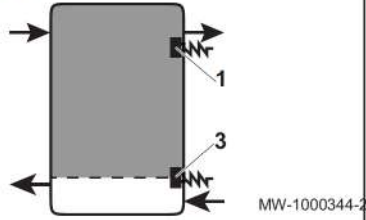
Tab.62 Buff Tank HC Strat. (BP002)

Adjustment required	Description
<ul style="list-style-type: none"> • Fixed setpoint 	The buffer tank setpoint temperature is equal to the value for the parameter Stp Buffertank Heat (BP003) or Setp Buffertank Cool (BP004) . Example: 55 °C
<ul style="list-style-type: none"> • Calculated setpoint 	The buffer tank setpoint temperature is equal to the highest setpoint for the connected heating circuits with the overheating temperature set by the parameter BufferTankTcalOffset (BP013) . Example: with CIRCA1 : 22°C, CIRCB1 : 21 °C and BufferTankTcalOffset : 10 °C, the buffer tank setpoint will be: 22 °C + 10 °C = 32 °C
<ul style="list-style-type: none"> • Dedicated slope 	The buffer tank setpoint temperature depends on the outdoor temperature, the parameters Stp Buffertank Heat (BP003) and Buffer Tank Slope (BP005) and the following formula: Buffer tank setpoint = (- outdoor temperature) x Buffer Tank Slope + Stp Buffertank Heat Example: (- -5 °C) x 1.5 + 55 °C = 62.5 °C

Tab.63 Buffer tank management with one sensor


Buffer tank status	Description
<p>Fig.76 Buffer tank in demand</p> <p style="text-align: right; font-size: small;">MW-1000347-2</p>	<p>The buffer tank is in load demand when the temperature measured by the sensor is less than the difference between the buffer tank temperature setpoint and the temperature hysteresis.</p> <ol style="list-style-type: none"> 1 Sensor temperature = buffer tank setpoint temperature - BufferTank HystStart (BP014): Hysteresis of temperature which determines the start of Buffer Tank storage 2 BufferTank HystStart (BP014) : Hysteresis of temperature which determines the start of Buffer Tank storage
<p>Fig.77 Buffer tank loaded</p> <p style="text-align: right; font-size: small;">MW-1000346-2</p>	<p>The buffer tank is loaded when the temperature measured by the sensor is equal to the buffer tank temperature setpoint.</p> <ol style="list-style-type: none"> 1 Sensor temperature = buffer tank setpoint temperature + BufferTank HystStop (BP019): Hysteresis of temperature which determines the start of Buffer Tank storage

Tab.64 Buffer tank management with two sensors (optional)

Buffer tank status	Description
Fig.78 Buffer tank in demand 	The buffer tank is in load demand when the temperature measured by the top sensor is less than the difference: temperature setpoint - temperature hysteresis. 1 Buffer tank top sensor temperature = buffer tank setpoint temperature - BufferTank HystStart (BP014): Hysteresis of temperature which determines the start of Buffer Tank storage 2 BufferTank HystStart (BP014): Hysteresis of temperature which determines the start of Buffer Tank storage 3 Temperature of the buffer tank bottom sensor
Fig.79 Buffer tank loaded 	The buffer tank is loaded when the temperature measured by the bottom sensor is equal to the buffer tank temperature setpoint. 1 Sensor temperature in the top of the buffer tank 3 Temperature of the buffer tank bottom sensor = buffer tank setpoint temperature + BufferTank HystStop (BP019): Hysteresis of temperature which determines the start of Buffer Tank storage


2. Configure the temperature setpoint parameters for the buffer tank load:

Tab.65 Parameters to configure

Access	Parameter	Description	Factory setting
 > Installation Setup > B. tampon 1 sonde or B. tampon 2 sondes > Parameters	Stp Buffertank Heat BP003	Temperature setpoint for buffer tank in heating mode From 5 °C to 100 °C	70 °C
	Setp Buffertank Cool BP004	Temperature setpoint for Buffer tank in cooling mode From 5 °C to 25 °C	18 °C
	Buffer Tank Slope BP005	Buffer Tank Slope From 0 to 4	1.5
	BufferTankTcalOffset BP013	Offset to add to the calculate Setpoint of the Buffer Tank From 0 °C to 20 °C	5 °C
	BufferTank HystStart BP014	Hysteresis of temperature which determines the start of Buffer Tank storage From 1 °C to 20 °C	6 °C
	BufferTank HystStop BP019	Hysteresis of temperature which determines the stop of buffer tank storage From -30 °C to +30 °C	0 °C Do not change the value


3. Configure the backups so that they will start when the buffer tank set point is greater than 60 °C:

Tab.66

Access	Parameter	Description	Adjustment required
 23.5 Air Src Heat pump > Parameters, counters, signals > Parameters	Bivalent temperature HP000	Bivalent temperature: Above the bivalent temperature, the backup energy source is not allowed to operate	5 °C

4. Configure the parameter **Max CH flow setpoint (AP063)**:

Tab.67

Access	Parameter	Description	Adjustment required
 Air Src Heat pump > Parameters, counters, signals > Adv. Parameters	Max CH flow setpoint AP063	Maximum central heating flow temperature setpoint	Enter a temperature higher than the buffer tank set point, otherwise the buffer tank temperature will be limited by this parameter.

7.9 Improving comfort

7.9.1 Improving heating comfort

The system does not allow the simultaneous production of heating and domestic hot water.


If the heating causes any kind of discomfort, the following settings can be adjusted to improve the comfort level:

- Modify the timer programming for domestic hot water production. Schedule domestic hot water production at night, for example.
- Modify the domestic water production setting parameters.



1. Adjust the following domestic hot water production setting parameters:

Tab.68

Access	Parameter	Description	Adjustment required
 DHW tank > Parameters, counters, signals > Parameters	Hysteresis DHW DP120	Hysteresis temperature relative to the DHW temperature setpoint	Increase the setpoint temperature differential triggering the domestic hot water tank to be charged
	Min. CH before DHW DP048	Minimum heating duration between two periods of domestic hot water production	Increase the minimum heating duration between two domestic hot water production runs

2. If possible, set the production of domestic hot water for overnight periods using the timer programming for the domestic hot water tank.

7.9.2 Improving domestic hot water comfort

The system does not allow the simultaneous production of heating and domestic hot water.

If the domestic hot water causes any kind of discomfort, the following settings can be adjusted to improve the comfort level:

- Modify the timer programming for domestic hot water production. Schedule domestic hot water production based on your usage habits.
- Modify the domestic hot water production setting parameters. The consumption of electricity may rise.



1. Adjust the following domestic hot water production setting parameters:

Tab.69

Access	Parameter	Description	Adjustment required
DHW tank > Parameters, counters, signals > Parameters	Hysteresis DHW DP120	Hysteresis temperature relative to the DHW temperature setpoint	Reduce the target temperature differential triggering the domestic hot water tank load.
	Min. CH before DHW DP048	Minimum heating duration between two periods of domestic hot water production	Reduce the minimum heating duration between two domestic hot water production runs
	Max. DHW duration DP047	Maximum duration of the domestic hot water production	Increase the maximum authorised duration for domestic hot water production
	DHW management DP051	ECO mode: use of the heat pump only. Comfort mode: use of the heat pump and backup energy sources	Select Comfort (HP+Boiler) to systematically use the heat pump and the back-ups.



For more information, see

Activating and configuring a timer programme for domestic hot water, page 106

7.9.3 Reducing the noise level of the outdoor unit

To reduce the noise level of the outdoor unit during certain time ranges, particularly at night, you can install the silent running kit, available as an option (package EH829). With this kit, the system gives temporary precedence to silent running rather than temperature control.



Important

The silent running kit is not compatible with the AWHP 4.5 MR outdoor unit.

1. Connect the silent running kit to the outdoor unit.
2. Connect the silent running kit to the indoor unit, to one of the CIRCA1, CIRCB1, CIRCC1 or CIRCAUX1 zone pump outlets of the SCB-10 PCB.
3. Set the timer programming for this zone: silent mode corresponds to the Sleep activity.

7.10 Configuring sources of energy

7.10.1 Configuring the estimated electrical energy consumption function

Tab.70 Energy meter

Connections	The electrical energy meter is connected to the S0+/S0- input on the EHC-05 PCB. Do not install meters for the electrical backups.
Energy meter specifications	<ul style="list-style-type: none"> • Minimum admissible voltage: 27 V • Minimum admissible intensity: 20 mA • Minimum pulse time: 25 ms • Maximum frequency: 20 Hz • Pulse weight: between 1 and 1000 Wh <p>If the meter pulse weight is given in number of pulses/kWh, the pulse weight must be one of the following numbers: 1, 2, 4, 5, 8, 10, 20, 25, 40, 50, 100, 125, 200, 250, 500 or 1000 Wh.</p>

Energy metering provides information on:

- electrical energy consumption,
- the production of thermal energy for heating, domestic hot water and cooling modes.

The thermal energy from the hydraulic or electrical backup is automatically factored in by the control system to provide the full tally of restored thermal energy.



1. Configure the following parameters:

Tab.71

Access	Parameter	Description	Adjustment required
Air Src Heat pump > Parameters, counters, signals > Adv. Parameters	Elec. Pulse value HP033	Value of the pulse coming from the electrical counter	The adjustment depends on the type of energy meter installed. Adjustment range: 0 (no metering) to 1000 Wh. Factory setting: 1 Wh
	Backup 1 capacity HP034	Declaration of the capacity of the 1st stage of the electrical backup used for the energy counter	
	Backup 2 capacity HP035	Declaration of the capacity of the 2nd stage of the electrical backup used for the energy counter	

Tab.72 Parameter value based on the type of energy meter

Number of pulses per kWh	Values to be configured for the Elec. Pulse value (HP033) parameter
1000	1
500	2
250	4
200	5
125	8
100	10
50	20
40	25
25	40
20	50
10	100
8	125
5	200
4	250
2	500
1	1000

Tab.73 Output of the electrical backups

Situation	Configuration and adjustments to be made
If there is no immersion heater	Set the Backup 1 capacity (HP034) and Backup 2 capacity (HP035) parameters to 0.
If an immersion heater is fitted	Set the Backup 1 capacity (HP034) and Backup 2 capacity (HP035) parameters according to the configuration of the output for the electrical backups.

7.10.2 Supplying the heat pump with photovoltaic energy

When lower cost electrical energy is available, such as photovoltaic energy, the heating circuit and domestic hot water tank (if present) can be overheated. Underfloor cooling cannot be supplied with power in this way.

1. Cut off the mains electricity to the indoor unit.
2. Connect a dry contact to the BL1 or BL2 IN multifunction input.
3. Switch the indoor unit back on.



4. Configure the heat pump parameters.

Tab.74 Input parameters

Access	Parameter	Description	Adjustment required
Air Src Heat pump > Parameters, counters, signals > Parameters	BL function AP001	BL input function selection (BL1)	<ul style="list-style-type: none"> • Photovoltaic HP Only or • PV HP And backup
	BL2 function AP100	BL2 input function selection	<ul style="list-style-type: none"> • Photovoltaic HP Only or • PV HP And backup

5. In order to voluntarily overheat the installation and benefit from low-tariff electricity, set the set point temperatures that can be exceeded.

Tab.75 Voluntary overheating parameters

Access	Parameter	Description	Adjustment required
Air Src Heat pump > Parameters, counters, signals > Parameters > Adv. Parameters	Offset heating - PV HP091	Heating setpoint temperature offset when photovoltaic energy is available	Set the authorisation to exceed the heating temperature setpoint between 0 and 30°C
	Offset DHW - PV HP092	Domestic hot water setpoint temperature offset when photovoltaic energy is available	Set the authorisation to exceed the domestic hot water temperature setpoint between 0 and 30°C

7.10.3 Connecting the installation to a Smart Grid

The heat pump can receive and manage control signals from the "smart" energy distribution network (**Smart Grid Ready**). Based on the signals received by the terminals of the **BL1 IN** and **BL2 IN** multifunction inputs, the heat pump shuts down or voluntarily overheats the heating system in order to optimise electricity consumption.

Tab.76 Operation of the heat pump in a Smart Grid

BL1 IN input	BL2 IN input	Operating
Inactive	Inactive	Normal: The heat pump and the electrical backup operate normally
Active	Inactive	Shutdown: The heat pump and the electrical backup are shut down
Inactive	Active	Energy-saving: The heat pump voluntarily overheats the system without the electrical backup
Active	Active	Super energy-saving: The heat pump voluntarily overheats the system with the electrical backup

Overheating is activated depending on whether the dry contact on inputs BL1 and BL2 is open or closed, and the **BL1 contact config.** (AP098) and **BL2 contact config.** (AP099) parameters which control the activation of functions depending on whether the contacts are open or closed.

1. Switch off the power supply to the indoor unit.
2. Connect the **Smart Grid** signal inputs to the **BL1 IN** and **BL2 IN** inputs on the EHC-05 PCB. **Smart Grid** signals come from dry contacts.
3. Turn on the electricity supply and switch on the heat pump.
4. Configure the **BL function** parameters (AP001) and **BL2 function** (AP100).




Tab.77

Access	Parameter	Adjustment required
Air Src Heat pump > Parameters, counters, signals > Parameters > Adv. Parameters	BL function (BL1) AP001	Smart Grid ready
	BL2 function AP100	Smart Grid ready

⇒ The heat pump is ready to receive and manage **Smart Grid** signals.

- Choose the directions of the BL1 IN and BL2 IN multifunction inputs by setting the BL1 contact config. (AP098) and BL2 contact config. (AP099) parameters.


Tab.78

Access	Parameter	Adjustment required
 Air Src Heat pump > Parameters, counters, signals > Parameters > Adv. Parameters	BL1 contact config. AP098	BL1 input contact configuration <ul style="list-style-type: none"> • Open = input active on Open contact • Closed = input active on Closed contact
	BL2 contact config. AP099	BL2 input contact configuration <ul style="list-style-type: none"> • Open = input active on Open contact • Closed = input active on Closed contact



- Configure the temperature offsets for the voluntary overheating by configuring the Offset heating - PV (HP091) and Offset DHW - PV (HP092) parameters.

Tab.79

Access	Parameter	Adjustment required
 Air Src Heat pump > Parameters, counters, signals > Parameters > Adv. Parameters	Offset heating - PV HP091	Heating setpoint temperature offset when photovoltaic energy is available
	Offset DHW - PV HP092	Domestic hot water setpoint temperature offset when photovoltaic energy is available

7.11 Saving and restoring settings

7.11.1 Saving the installer details

The name and phone number of the installer can be saved so that the user can find it easily.



- Press the  key.
- Select **System Settings > Installer Details**.
- Enter the name and phone number.

7.11.2 Saving the commissioning settings

You can save all installation-specific settings. These settings can be restored if necessary, for example after replacement of the main electronic control system board.



- Press the  key.
- Select **Advanced Service Menu > Save as commissioning settings**.
- Select **Confirm** to save the settings.

When you have saved the commissioning settings, the option **Revert commissioning settings** is available in the **Advanced Service Menu**.

7.11.3 Reverting to the commissioning settings

If the commissioning settings were saved, you can revert to the values specific to your installation.

To revert to the commissioning settings




- Press the  key.
- Select **Advanced Service Menu > Revert commissioning settings**.
- Select **Confirm** to revert to the commissioning settings.

7.11.4 Reverting to the factory settings

To revert to the factory settings for the heat pump:



1. Press the  key.
2. Select **Advanced Service Menu > Reset to Factory Settings**.
3. Select **Confirm** to revert to the factory settings.

7.12 Configuring and using the CB04 auto-filling option kit

The CB04 auto-filling option kit (package EH726) is used to fill the heating circuits or to maintain the optimal pressure in the heating circuits, without human intervention. After having followed the instructions for assembly of the option kit, simply configure a few parameters to automatically obtain or maintain an optimal pressure. The heat pump does not start up during the auto-filling phase.




1. Activating the auto-filling function:

Tab.80

Access	Parameter	Adjustment required
 > Installation Setup > Heating circuit autofill > Settings	Auto Filling AP014	Auto

2. If necessary, start filling the installation:


Tab.81

Access	Parameter
 > Installation Setup > Heating circuit autofill >	Start water filling: Select this parameter to start filling the installation. The parameter Filling Inst Timeout (AP023) defines the maximum duration authorised to obtain a pressure of 0.3 bar during the first water fill with the auto-filling kit option (60 minutes by default).

⇒ If there is an error on the user interface, restart the auto-filling function as many times as needed.

3. Configuring the auto-filling function:

Tab.82

Access	Parameter	Description	Factory setting
 > Installation Setup > Heating circuit autofill > Settings	Min. water pressure AP006	Appliance will report low water pressure below this value From 0 bar to 6 bar	0.3 bar
	Filling Inst Timeout AP023	Maximum duration authorised to obtain a pressure of 0.3 bar during the first water fill with the auto-filling kit. From 0 Min to 60 Min	60 minutes
	Filling Interval AP051	The minimum time that is allowed between two top-up fillings. From 0 to 65535 days	90 days
	Top up timeout AP069	Maximum time to top up the water in the circuit during operation. 0 Min to 65535 Min	5 minutes
	Operational Pressure AP070	The operational water pressure the device should be working on. From 0 bar to 2.5 bar	2 bar
	InstallMaxTimeOut AP071	Maximum time that is needed to fill the complete installation. From 0 Sec to 3600 Sec	3600 seconds



For more information, see
Filling the installation, page 40
Commissioning procedure without smartphone, page 63

7.13 Activating/deactivating the Bluetooth® for the appliance

The installer can enter all the settings via the smartphone application. To do this, activate the **Bluetooth®** function to enable communication between the appliance and the smartphone.



1. Press the  key.
2. Select **Bluetooth**.
3. Modify the value of the Bluetooth enabled parameter:

On	Bluetooth® activated
Off	Bluetooth® deactivated




For more information, see
 Bluetooth® label, page 35
 Commissioning procedure with smartphone, page 63

7.14 List of parameters

The appliance parameters are described directly in the user interface. Some of these parameters are listed in the following chapters with additional information, and their default values.

7.14.1 Bluetooth menu

To access the Bluetooth menu, press the  button.

Tab.83

Parameters	Description of the parameters	Factory setting
Bluetooth enabled	Activate the Bluetooth function to enable communication with the appliance: <ul style="list-style-type: none"> • On: Bluetooth® activated • Off: Bluetooth® deactivated 	On
Current pairing code	Bluetooth® pairing code (specific to each appliance). This code is given on a label affixed to your appliance.	-



For more information, see
 Bluetooth® label, page 35

7.14.2 Installation Setup > CIRCA0 > Parameters, counters, signals

The **CIRCA0** circuit is on the EHC-05 PCB. In the **CIRCA0** sub-menu, you will find all parameters related to the heating of the CIRCA0 circuit. The code of these parameters starts with CP.

CP : Circuits Parameters = Heating circuit parameters

Tab.84

Parameter	Description	Factory setting
MaxZoneTFlowSetpoint CP000	Maximum Flow Temperature setpoint zone CIRCA0: can be set from 7 °C to 75 °C	Electrical backup: 75 Hydraulic backup: 75
Zone Function CP020	Type of CIRCA0 connected to the EHC-05 PCB: <ul style="list-style-type: none"> • Disable = heating circuit deactivated • Direct = radiators. Cooling not possible. • Mixing Circuit = underfloor heating. Cooling possible. • Swimming pool = not available • High Temperature = not used • Fan Convecteur = convection fan. Cooling possible. 	Direct

Parameter	Description	Factory setting
MaxReducedRoomT.Lim CP070	Max Room Temperature limit of the circuit in reduced mode, that allows switching to comfort mode Can be set from 5 °C to 30 °C	16
Zone HCZP Comfort CP210	Comfort footpoint of the temperature of heat curve of the circuit <ul style="list-style-type: none"> • can be set from 16 to 90 °C • set to 15 = the curve base point temperature is set automatically and is the same as the room setpoint temperature 	15
Zone HCZP Reduced CP220	Reduced footpoint of the temperature of heat curve of the circuit <ul style="list-style-type: none"> • can be set from 6 to 90 °C • set to 15 = the curve base point temperature is set automatically and is the same as the room setpoint temperature 	15
Zone Heating Curve CP230	Heating curve temperature gradient of the zone Can be set from 0 to 4	1.5
ZoneRoomUnitInfl CP240	Adjustment of the influence of the zone room unit Can be set from 0 to 10	3
TypeReducedNightMode CP340 Parameter linked to the CP070 parameter	Type of reduced night mode, stop or maintain heating of circuit <ul style="list-style-type: none"> • Stop heat demand: heating is deactivated when the room set point temperature set in the timer programme is below the threshold set in CP070. • Continue heat demand: the heating set point is maintained independently of the threshold set in CP070. 	Continue heat demand
Control strategy CP780	Selection of the control strategy for the zone <ul style="list-style-type: none"> • Automatic • Room Temp. based • Outdoor Temp. based • Outdoor & room based 	Automatic

7.14.3 Installation Setup > Tank DHW > Parameters, counters, signals

The Tank DHW circuit is on the EHC-05 PCB. A domestic hot water sensor must be connected to the EHC-05 PCB to display these parameters in the Tank DHW sub-menu. The code of these parameters starts with DP.

DP : Direct Hot Water Parameters = Domestic hot water tank parameters

Tab.85 Parameters menu

Parameter	Description	Factory setting
DhwMaxTemp DP046	Max. flow temperature for domestic hot water production. Can be set from 10 to 70 °C	70 °C
Max. DHW duration DP047	Maximum authorised duration for domestic hot water production. Can be set from 1 to 10 hours	3 hours
Min. CH before DHW DP048	Minimum heating duration between two domestic hot water production runs. Can be set from 0 to 10 hours	2 hours
DHW management DP051	ECO mode: use of the heat pump only. Comfort mode: use of the heat pump and backup energy sources: <ul style="list-style-type: none"> • ECO (Only HP): use of the heat pump only • Comfort (HP+Boiler): use of the heat pump and backups 	ECO (Only HP)
Hysteresis DHW DP120	Hysteresis temperature relative to the DHW temperature setpoint Can be set from 0 °C to 40 °C	15

Tab.86 Adv. Parameters menu

Parameter	Description	Factory setting
Delay StartBackupDHW DP090	Electrical backup start-up time delay for domestic hot water. Can be set from 0 to 120 min	90 min
Delay stop BackupDHW DP100	Electrical backup shutdown time delay for domestic hot water. Can be set from 0 to 120 min	2 min
Delay BackupStageDHW DP110	Electrical backup second stage start-up time delay for domestic hot water. Can be set from 0 to 255 min	5 min
DHW backup type DP334	Backup type used for domestic hot water production: <ul style="list-style-type: none"> Indoor Unit: indoor unit electrical backups DHW Tank: DHW tank electrical backups IDU/DhwTank Cooling: indoor unit electrical backups in winter/DHW tank electrical backups in cooling mode 	Indoor Unit

7.14.4 Installation Setup > CIRCA1/CIRCB1/DHW1/CIRCC1/CIRCAUX1 > Parameters, counters, signals

Depending on the installation configuration, only certain circuits are available. The CIRCA1 \ CIRCB1 \ DHW1 \ CIRCC1 \ CIRCAUX1 circuits are on the SCB-10 PCB. In the corresponding sub-menus, you will find all parameters related to the heating of the circuit. The code of these parameters starts with CP.

CP : Circuits Parameters = Heating circuit parameters

Tab.87 Correspondence between the parameters and the circuits

<ul style="list-style-type: none"> CPxx0 parameters ending in 0 correspond to the CIRCA1 circuit CPxx1 parameters ending in 1 correspond to the CIRCB1 circuit CPxx2 parameters ending in 2 correspond to the DHW1 circuit CPxx3 parameters ending in 3 correspond to the CIRCC1 circuit CPxx4 parameters ending in 4 correspond to the CIRCAUX1 circuit

Tab.88 Parameters menu

Parameter	Factory setting for each circuit	Description
MaxZoneTFlowSetpoint CP000 CP001 CP002 CP003 CP004	CIRCA1: Electrical backup: 50 CIRCA1: Hydraulic backup: 75 CIRCB1: Electrical backup: 50 DHW1: Electrical backup: 95 CIRCC1: Electrical backup: 50 CIRCAUX1: Electrical backup: 95 CIRCAUX1: Hydraulic backup: 75	Maximum Flow Temperature setpoint zone For circuit CIRCA1: Can be set from 7 °C to 100 °C
Zone Function CP020 CP021 CP022 CP023 CP024	CIRCA1: Direct CIRCB1: Disable DHW1: Disable CIRCC1: Disable CIRCAUX1: Disable	Functionality of the zone <ul style="list-style-type: none"> Disable Direct Mixing Circuit Swimming pool High Temperature Fan Convector DHW tank Electrical DHW Time Program ProcessHeat DHW Layered DHW Internal tank DHW Commercial Tank

Parameter	Factory setting for each circuit	Description
Zone HCZP Comfort CP210 CP211 CP212 CP213 CP214	CIRCA1: 15 CIRCB1: 15 DHW1: 15 CIRCC1: 15 CIRCAUX1: 15	Comfort footpoint of the temperature of heat curve of the circuit <ul style="list-style-type: none"> • Can be set from 15 °C to 90 °C • set to 15 = the curve base point temperature is set automatically and is the same as the room setpoint temperature
Zone HCZP Reduced CP220 CP221 CP222 CP223 CP224	CIRCA1: 15 CIRCB1: 15 DHW1: 15 CIRCC1: 15 CIRCAUX1: 15	Reduced footpoint of the temperature of heat curve of the circuit <ul style="list-style-type: none"> • can be set from 6 to 90 °C • set to 15 = the curve base point temperature is set automatically and is the same as the room setpoint temperature
TypeReducedNig htMode CP340 CP341 CP342 CP343 CP344	CIRCA1: Continue heat demand CIRCB1: Continue heat demand CIRCC1: Continue heat demand CIRCAUX1: Continue heat demand	Type of reduced night mode, stop or maintain heating of circuit <ul style="list-style-type: none"> • Stop heat demand • Continue heat demand
Control strategy CP780 CP781 CP782 CP783 CP784	CIRCA1: Automatic CIRCB1: Automatic CIRCC1: Automatic CIRCAUX1: Automatic	Selection of the control strategy for the zone <ul style="list-style-type: none"> • Automatic • Room Temp. based • Outdoor Temp. based • Outdoor & room based

Tab.89 Adv. Parameters menu

Parameter	Factory setting for each circuit	Description
ConfigZonePump Out CP290 CP291 CP292 CP293 CP294	CIRCA1: Zone output CIRCB1: Zone output DHW1: DHW mode CIRCC1: Zone output CIRCAUX1: DHW looping	Configuration of Zone Pump Output <ul style="list-style-type: none"> • Zone output • CH mode • DHW mode • Cooling mode • Error report • Burning • Service flag • System error • DHW looping • Primary pump • Buffer pump
Zone Buffered CP770 CP771 CP772 CP773 CP774	CIRCA1: Yes CIRCB1: Yes DHW1: Yes CIRCC1: Yes CIRCAUX1: Yes	The zone is after a Buffer tank <ul style="list-style-type: none"> • No • Yes

7.14.5 Installation Setup > Air Src Heat pump > Parameters, counters, signals > Parameters

HP : Heat-pump Parameters = Heat pump parameters

AP : Appliance Parameters = Appliance advanced parameters

Tab.90

Parameter	Description	Factory setting
Bivalent temperature HP000	Above the bivalent temperature, the backup energy source is not allowed to operate Can be set from -10 °C to 20 °C	5
Delay StartBackup CH HP030	Start-up time delay for backups in central heating mode Can be set from 0 Min to 600 Min	0
Delay stop backup CH HP031	Shutdown time delay for backups in central heating mode Can be set from 0 Min to 600 Min	4
Delay Min.Outdoor T. HP047	Start-up time delay for backups corresponding to the minimum outdoor temperature HP049. <ul style="list-style-type: none"> • can be set from 0 Min to 60 Min • value accepted when HP030 = 0 	8
Delay Max.Outdoor T HP048	Start-up time delay for back-ups corresponding to the maximum outdoor temperature HP050. <ul style="list-style-type: none"> • can be set from 0 Min to 60 Min • value accepted when HP030 = 0 	30
Min.Outdoor T.backup HP049	Minimum outdoor temperature used to set HP047. Can be set from -30 °C to 0 °C	-10
Max.Outdoor T.backup HP050	Maximum outdoor temperature used to set HP048. Can be set from -30 °C to 20 °C	15
Min. Outdoor T. HP HP051	Minimum outdoor temperature authorising heat pump operation. Can be set from -20 °C to 5 °C	-20
Delay BackupStage CH HP108	Time delay for activating the second electrical backup stage in central heating mode Can be set from 1 Min to 255 Min	4
Min. water pressure AP006	Appliance will report low water pressure below this value Can be set from 0 bar to 6 bar	0.3
Forced cooling mode AP015	The cooling mode is forced whatever the outdoor temperature <ul style="list-style-type: none"> • No • Yes 	No
CH function on AP016	Enable central heating heat demand processing <ul style="list-style-type: none"> • Off • On 	On
DHW function on AP017	Enable domestic hot water heat demand processing <ul style="list-style-type: none"> • Off • On 	On
MessMinWaterPressure AP058	Warning message indicating that pressure is low Can be set from 0 bar to 2 bar	0.8

7.14.6 Installation Setup > Air Src Heat pump > Parameters, counters, signals > Adv. Parameters

HP : Heat-pump Parameters = Heat pump parameters

AP : Appliance Parameters = Appliance advanced parameters

PP : Pump Parameters = Pump parameters

Tab.91 Adv. Parameters menu

Parameter	Description of the advanced parameters	Factory setting EHC-05
Max. HP Flow T. HP002	Maximum flow temperature of the heat pump without backup energy sources. Can be set from 20 °C to 65 °C	65
Min. HP Cooling T. HP003	Minimum flow temperature of the heat pump in cooling mode Can be set from 5 °C to 30 °C	5
Minimum flow rate HP010	Minimum flow rate. Can be set from 0 l/min to 90 l/min	7 for 4.5 kW 6 for 6 kW 9 for 8 kW 13 for 11 kW 17 for 16 kW 23 for 22 kW 28 for 27 kW
Flow rate warning HP011	Flow rate that triggers a warning message indicating that flow rate becomes insufficient Can be set from 0 l/min to 95 l/min	10 for 4.5 kW 11 for 6 kW 16 for 8 kW 22 for 11 kW 29 for 16 kW 35 for 22 kW 37 for 27 kW
Backup type HP029	Type of backup used in the heat pump: <ul style="list-style-type: none"> • No Backup • 1 Electrical Stage • 2 Electrical Stages • Boiler Backup 	2 Electrical Stages
Elec. Pulse value HP033	Value of the pulse coming from the electrical counter. Can be set from 0 Wh to 1000 Wh	1
Backup 1 capacity HP034	Declaration of the capacity of the 1st stage of the electrical backup used for the energy counter. <ul style="list-style-type: none"> • can be set from 0 kW to 10 kW • value accepted when HP031 = 0 	0
Backup 2 capacity HP035	Declaration of the capacity of the 2nd stage of the electrical backup used for the energy counter. <ul style="list-style-type: none"> • can be set from 0 kW to 10 kW • value accepted when HP031 = 0 	0
COP Threshold HP054	COP threshold above which the heat pump is authorised to operate.	2.5
Hybrid mode HP061	Not used	No Hybrid
Boiler efficiency HP068	Not used	100
Cool.Setpoint offset HP079	Maximum offset applied to the cooling setpoint when a 0-10V humidity sensor is used Can be set from 0 °C to 15 °C	5
Humidity level HP080	Relative humidity level over which the offset is added to the cooling setpoint Can be set from 0 % to 100 %	70
Setpoint Hyst. Low HP089	Heat pump trip differential in relation to the temperature setpoint. Can be set from 0 to 10°C	4 °C
Offset heating - PV HP091	Heating setpoint temperature offset when photovoltaic energy is available Can be set from 0 °C to 30 °C	0
Offset DHW - PV HP092	Domestic hot water setpoint temperature offset when photovoltaic energy is available Can be set from 0 °C to 30 °C	0
kW rating DHW backup HP145	Power supply for the domestic hot water tank electrical backup. Can be set from 0 to 10 kW	0

Parameter	Description of the advanced parameters	Factory setting EHC-05
BL function AP001	BL input function selection (BL1): <ul style="list-style-type: none"> • Full blocking of the installation – frost protection not guaranteed • Partial blocking of the installation – installation frost protection • User reset locking • Backup relieved • Generator relieved • Gen.&Backup relieved • High, Low Tariff • Photovoltaic HP Only • PV HP And backup • Smart Grid ready • Heating Cooling 	Partial blocking
Manual Heat Demand AP002	Enable manual heat demand function. In this mode, the temperature set point used will be that for the AP026 parameter	Désactivé
Setpoint manual HD AP026	Flow temperature setpoint for manual heat demand. <ul style="list-style-type: none"> • can be set from 7 to 70 °C • value accepted when AP002 = Activated 	40
Cooling mode AP028	Configuration of the cooling mode <ul style="list-style-type: none"> • Off • Active cooling on 	Off
Max CH flow setpoint AP063	Maximum central heating flow temperature setpoint. Can be set from 20 °C to 75 °C	Hydraulic backup: 75 Electrical backup: 75
Humidity sensor AP072	Humidity sensor configuration: <ul style="list-style-type: none"> • No • OnOff • 0-10V sensor 	No
BL1 contact config. AP098	BL1 input contact configuration: <ul style="list-style-type: none"> • input active on Open contact • input active on Closed contact 	Open
BL2 contact config. AP099	BL2 input contact configuration: <ul style="list-style-type: none"> • input active on Open contact • input active on Closed contact 	Open
BL2 function AP100	BL2 input function selection <ul style="list-style-type: none"> • Full blocking of the installation – frost protection not guaranteed • Partial blocking of the installation – installation frost protection • User reset locking • Backup relieved • Generator relieved • Gen.&Backup relieved • High, Low Tariff • Photovoltaic HP Only • PV HP And backup • Smart Grid ready • Heating Cooling 	Partial blocking
De-aeration cycle AP101	De-air cycle settings: <ul style="list-style-type: none"> • No deair at power up • Always deair at pwr 	Always deair at pwr
Boiler Pump function AP102	Type of use for heating circulating pump. Adjustable: <ul style="list-style-type: none"> • 0: Operates when there is a heat pump demand. • 1: only operates if there is a CIRCA0 demand 	1
CH Pump postrun time PP015	Central heating pump post run time Can be set from 0 Min to 99 Min	3

7.14.7 Installation Setup > Product management. B > Parameters, counters, signals

NP : Network Parameters = Cascade parameters

Tab.92 Parameters

Parameter	Description	Factory setting SCB-10
Cascade Permutation NP005	Choice of the leading generator,.AUTO: Switching of order every 7 days Can be set from 0 to 127	0
Cascade Type NP006	Cascading boilers by adding successively or in parallel, the boilers function simultaneously <ul style="list-style-type: none"> • Traditional • parallel 	Traditional
CascTOutsideHeat Parl NP007	Outdoor start temperature heating of all stages in parallel mode Can be set from -10 °C to 20 °C	10
CascTPostRunGenePump NP008	Duration of post operation of the cascade generator pump Can be set from 0 Min to 30 Min	4
CascInterStageTime NP009	Switch on and switch off timing for the producer of the cascade Can be set from 1 Min to 60 Min	4
CascTOutsideCool Para NP010	Outdoor start temperature cooling of all stages in parallel mode Can be set from 10 °C to 40 °C	30
CascadeTypeAlgo NP011	Choice of Cascade Algorithm type, power or temperature <ul style="list-style-type: none"> • Temperature • Power 	Temperature
CascPowerRiseTime NP012	Cascade, Time to reach Temperature Septoint Can be set from 1 to 10	1
CascForceStop Pprim NP013	Force Primary Pump to Stop on cascade <ul style="list-style-type: none"> • No • Yes 	No
Cascade Mode NP014	Functionnement Mode of cascade : automatic, heating or cooling <ul style="list-style-type: none"> • Automatic • Heating • Cooling 	Automatic

Tab.93 Adv. Parameters

ADV parameter	Description of the ADV advanced parameters	Factory setting SCB-10
NP001	Hysteresis high for Producer Manager Can be set from 0.5 °C to 10 °C	3
NP002	Hysteresis low for Producer Manager Can be set from 0.5 °C to 10 °C	3
NP003	Maximum error gain for Producer Manager Can be set from 0 °C to 10 °C	10
NP004	Proportional Factor for cascade with Temperature algorithm Can be set from 0 to 10	1

7.14.8 Installation Setup > Outside temp > Parameters, counters, signals

AP : Appliance Parameters = Appliance advanced parameters

Tab.94 Parameters

Parameter	Description	Factory setting SCB-10
Outdoor sensor AP056	Enable outdoor sensor <ul style="list-style-type: none"> • No outside sensor • AF60 • QAC34 	AF60
Summer Winter AP073	Outdoor temperature: upper limit for heating <ul style="list-style-type: none"> • can be set from 15 °C to 30.5 °C • set to 30.5 °C = the automatic switch between Summer and Winter mode is deactivated, and the system stays in heating mode 	22
Season cross-over AP075	Temperature variance from set outdoor upper temp. limit in which the generator will not heat or cool Can be set from 0 to 10 °C	4

7.14.9 Installation Setup > Digital input > Parameters, counters, signals

EP : Entry Parameters = Input parameters

Tab.95 Parameters

Parameter	Description	Factory setting SCB-10
Digital input config EP046	Sets the general configuration of the digital input <ul style="list-style-type: none"> • Stop heating + DHW • Stop heating • Stop DHW • Forced setpoint • Buffer Tank input 	Stop heating + DHW
Logic level Digi In EP056	Sets the logic level contact of the Smart Control Board digital input <ul style="list-style-type: none"> • Open • Closed • Off 	Closed
Req FlowSetp digi In EP066	Requested flow setpoint when digital input is configured to forced heat Can be set from 7 °C to 100 °C	80

7.14.10 Installation Setup > Analogue input > Parameters, counters, signals

EP : Entry Parameters = Input parameters

Tab.96 Adv. Parameters

ADV parameter	Description of the ADV advanced parameters	Factory setting SCB-10
Sensor input config EP036	Sets the general configuration of the sensor input Tsyst1 <ul style="list-style-type: none"> • Disabled • DHW tank • DHW tank top • Buffer tank sensor • Buffer Tank top • System (cascade) 	Disabled
Sensor input config EP037	Sets the general configuration of the sensor input Tsyst2 <ul style="list-style-type: none"> • Disabled • DHW tank • DHW tank top • Buffer tank sensor • Buffer Tank top • System (cascade) 	Disabled

7.14.11 Installation Setup > 0-10 V input > Parameters, counters, signals

EP : Entry Parameters = Input parameters

Tab.97

Parameter	Description	Factory setting SCB-10
SCB func. 10V PWMIn EP014	Smart Control Board function 10 Volt PWM input <ul style="list-style-type: none"> • Off • Temperature control • Power control 	Off
Min Setp Temp 0-10V EP030	Sets the minimum set point temperature for 0 - 10 volts for the Smart Control Board Can be set from 0 °C to 100 °C	0
Max Setp Temp 0-10V EP031	Sets the maximum set point temperature for 0 - 10 volts for the Smart Control Board Can be set from 0.5 °C to 100 °C	100
Min Setp Volt 0-10V EP034	Minimum voltage for 0-10 V input corresponding to the minimum setpoint Can be set from 0 V to 10 V	0.5
Max Setp Volt 0-10V EP035	Maximum voltage for 0-10 V input corresponding to the maximum set point Can be set from 0 V to 10 V	10

7.14.12 Installation Setup > Appliance status > Parameters, counters, signals

EP : Entry Parameters = Input parameters

Tab.98 Parameters

Parameter	Description	Factory setting SCB-10
Status relay func. EP018	Status relay function <ul style="list-style-type: none"> • No Action • Alarm • Alarm Inverted • Compressor on • Compressor off • Reserved • Reserved • Service request • Heat pump in heating mode • Heat pump in domestic hot water mode • CH pump on • Locking or Blocking 	Locking or Blocking

7.15 Description of the parameters

7.15.1 Running the back-up in heating mode

■ Start-up conditions for the backup

The backups are authorised to start up normally except in the case of active backup relief, limitation linked to bi-valency or hybrid mode operation for example.

If the heat pump should also be limited, the backups are nevertheless authorised to operate to guarantee heating comfort.


The backups can also operate where defrosting is necessary to guarantee the safety of the plate heat exchanger, without taking into account temperature values, bivalency and the BL1 and BL2 inputs.

Conditions that allow backup relief:


If the **BL function** (AP001) or **BL2 function** (AP100) parameters are set to Backup relieved, Gen.&Backup relieved or Photovoltaic HP Only and the corresponding BL input is activated, the backups will be deactivated.

In heating mode, the backup is managed by the following parameters:

Tab.99 Parameter for heating production

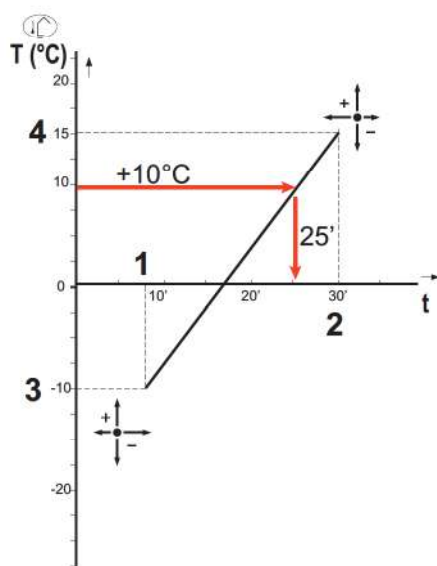
Access	Parameter	Description	Adjustment required
 Air Src heat pump > Parameters, counters, signals > Parameters	BL function AP001	BL input function selection (BL1)	<ul style="list-style-type: none"> • Backup relieved • Gen.&Backup relieved • PV HP And backup
	BL2 function AP100	BL2 input function selection	<ul style="list-style-type: none"> • Backup relieved • Gen.&Backup relieved • PV HP And backup

Tab.100

Access	Parameter	Description	Value
 23.5 Air Src Heat pump > Parameters, counters, signals > Parameters	Delay StartBackup CH HP030	Delay time for starting the backup energy source for the heating circuits Can be set from 1 to 600 minutes. If the Delay StartBackup CH (HP030) parameter is set to 0, the time delay for activating the backup is set depending on the outdoor temperature.	20 minutes
	Delay stop backup CH HP031	Delay time for stopping the backup energy source for the heating circuits	4 minutes (default value)

If the Delay StartBackup CH parameter is set to 0, the time delay for activating the backup is set depending on the outdoor temperature: the lower the outdoor temperature, the quicker the backup will be activated.

Fig.80



- t Time (minutes)
- T Outdoor temperature (°C)
- 1 Delay Min.Outdoor T. (HP047)
- 2 Delay Max.Outdoor T (HP048)
- 3 Min.Outdoor T.backup (HP049)
- 4 Max.Outdoor T.backup (HP050)




Important

In this example, with the factory-set parameters, if the outdoor temperature is 10 °C, the backup will start up 25 minutes after the outdoor unit of the heat pump.

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Tab.101 Time delay curve parameters for tripping the backup when Delay StartBackup CH (HP030) is set to 0.

Access	Parameter	Description	Value
 23.5 Air Src Heat pump > Parameters, counters, signals > Parameters	Delay Min.Outdoor T. HP047	Minimum duration of the time delay for tripping the backup Can be set from 0 to 60 minutes	8 minutes (default value)
	Delay Max.Outdoor T HP048	Maximum duration of the time delay for tripping the backup. Can be set from 0 to 60 minutes	30 minutes
	Min.Outdoor T.backup HP049	Minimum outdoor temperature for the time delay for tripping the backup. Can be set from -30 to 0 °C	-10 °C
	Max.Outdoor T.backup HP050	Maximum outdoor temperature for the time delay for tripping the backup. Can be set from -30 to +20 °C	15°C

- **Backup operation if an error occurs on the outdoor unit**

If an error occurs on the outdoor unit during a system heating demand, the hydraulic or electrical backup starts up after 3 minutes to guarantee heating comfort.

- **Backup operation when defrosting the outdoor unit**

When the outdoor unit is defrosting, the control system ensures the protection of the system by starting up the backup if necessary.


If the backup is not sufficient to ensure the protection of the outdoor unit during defrosting, then the outdoor unit is switched off.

- **Operation when the outdoor temperature falls below the operating threshold of the outdoor unit**

If the outdoor temperature is below the minimum operating temperature of the outdoor unit as defined by the **Min. Outdoor T. HP (HP051)** parameter, the outdoor unit is not authorised to operate.

If the system has a demand pending, the backup or electric boiler starts up immediately to guarantee heating comfort.

Tab.102


Access	Parameter	Description	Value
 Air Src heat pump > Parameters, counters, signals > Adv. Parameters	Min. Outdoor T. HP HP051	Minimum outdoor temperature for the heat pump to shut down.	-15 °C for 4.5 kW -15 °C for 6 kW -20 °C for 8 kW -20 °C for 11 kW -20 °C for 16 kW

7.15.2 Running the back-up in domestic hot water mode

- **Start-up conditions for the backup**

The start-up conditions for the backup producing domestic hot water are described in the following table.



Tab.103

Access	Parameter	Description	Adjustment required
 23.5 Air Src Heat pump > Parameters, counters, signals > Adv. Parameters	BL function AP001	BL input function selection (BL1)	The operation of the BL1 blocking input can be set to: <ul style="list-style-type: none"> • Full blocking • Partial blocking • User reset locking • Backup relieved • Generator relieved • Gen.&Backup relieved • High, Low Tariff • Photovoltaic HP Only • PV HP And backup • Smart Grid ready • Heating Cooling
	BL1 contact config. AP098	BL1 input contact configuration	BL1 input contact configuration: <ul style="list-style-type: none"> • Open • Closed
	BL2 contact config. AP099	BL2 input contact configuration	BL2 input contact configuration: <ul style="list-style-type: none"> • Open • Closed
	BL2 function AP100	BL2 input function selection	The operation of the BL2 blocking input can be set to: <ul style="list-style-type: none"> • Full blocking • Partial blocking • User reset locking • Backup relieved • Generator relieved • Gen.&Backup relieved • High, Low Tariff • Photovoltaic HP Only • PV HP And backup • Smart Grid ready • Heating Cooling

■ Operating description

The behaviour of the hydraulic or electrical backup in domestic hot water mode depends on the configuration of the **DHW management** parameter (DP051).

Tab.104 Behaviour of the hydraulic or electrical backup

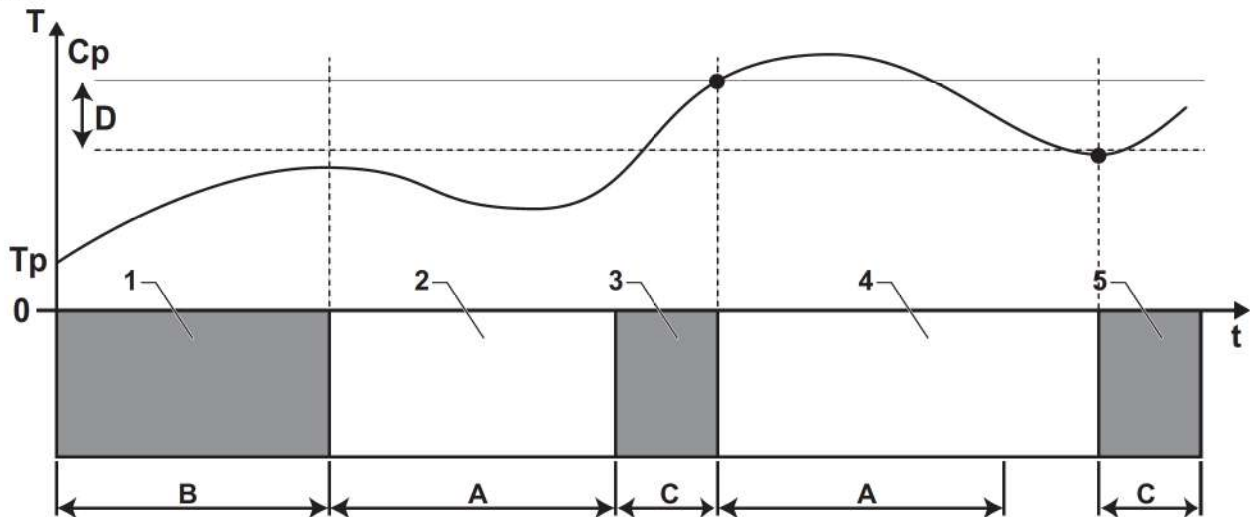
Access	Parameter	Operating description	Adjustment required
Installation Setup >  DHW tank > Parameters, counters, signals > Parameters	DHW management DP051	If set to Economy : the system gives priority to the heat pump during domestic hot water production. Recourse to the hydraulic or electrical backup is only taken if the Delay StartBackupDHW (DP090) time delay has elapsed in domestic hot water mode, unless hybrid mode is activated. In that case, hybrid logic takes over.	ECO (Only HP)
		If set to Comfort , the domestic hot water production mode gives priority to comfort by accelerating domestic hot water production by simultaneously using the heat pump and the electrical or hydraulic backup. In this mode, there is no maximum time for domestic hot water production as the use of the backups helps to ensure domestic hot water comfort more quickly.	Comfort (HP+Boiler)
Installation Setup >  DHW tank > Parameters, counters, signals > Adv. Parameters	Delay StartBackupDHW DP090	Delay time for starting the backup energy source for DHW	90

7.15.3 Operation of the switch between heating and production of domestic hot water

The system does not allow the simultaneous production of heating and domestic hot water.

The switch logic between domestic hot water mode and heating mode operates as follows:

Fig.81




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- A Min. CH before DHW (DP048): Minimum heating duration between two domestic hot water production runs
- B Max. DHW duration (DP047): Maximum authorised duration for domestic hot water production
- C Duration for producing domestic hot water (less than DP047) to reach the DHW set point
- Cp DHW comfort setpoint (DP070): Domestic hot water "Comfort" set point temperature
- DHW reduced setpoint (DP080): Domestic hot water "Reduced" setpoint temperature
- T Temperature
- Tp DHW tank temp bottom (DM001): Domestic hot water temperature (lower temperature sensor)
- DHW tank temp top (DM006): Domestic hot water temperature (upper temperature sensor)
- t Time
- D Hysteresis DHW (DP120): Set point temperature differential triggering the domestic hot water tank to be charged


Tab.105

Phase	Operating description
1	Domestic hot water production only. When switching on, if domestic hot water production is authorised and acceleration of domestic hot water production is not required, DHW management ((DP051) configured as ECO (Only HP)), a domestic hot water production cycle is started up for a maximum duration that can be adjusted and fixed by the Max. DHW duration(DP047) parameter. In the event of insufficient heating comfort, the heat pump is running too long in domestic hot water mode: reduce the maximum duration of domestic hot water production.
2	Heating only. Production of domestic hot water is off. Even if the domestic hot water set point is not reached, a minimum heating period is forced. This period can be adjusted and defined with the Min. CH before DHW parameter (DP048). After the heating period, tank loading is enabled again.
3	Domestic hot water production only. When the domestic hot water set point is reached, a period in heating mode begins.
4	Heating only. When the Hysteresis DHW(DP120) differential is reached, domestic hot water production is triggered. If there is not enough domestic hot water (e.g. if the domestic hot water does not heat up quickly enough): reduce the trip differential (hysteresis) by modifying the value of the Hysteresis DHW parameter (DP120). The DHW tank will then heat up the water more quickly.
5	Domestic hot water production only.

Tab.106 Configuration of the domestic hot water

Access	Parameter	Description
 DHW tank > Parameters, counters, signals > Parameters	DHW management DP051	ECO mode: use of the heat pump only. Comfort mode: use of the heat pump and backup energy sources
	DHW comfort setpoint DP070	Comfort temperature setpoint from the Domestic Hot Water tank
	Hysteresis DHW DP120	Hysteresis temperature relative to the DHW temperature setpoint
	DHW reduced setpoint DP080	Reduced temperature setpoint from the Domestic Hot Water tank

Tab.107 Configuration of the duration

Access	Parameter	Description
 DHW tank > Parameters, counters, signals > Parameters	Max. DHW duration DP047	Maximum duration of the domestic hot water production
	Min. CH before DHW DP048	Minimum heating duration between two periods of domestic hot water production

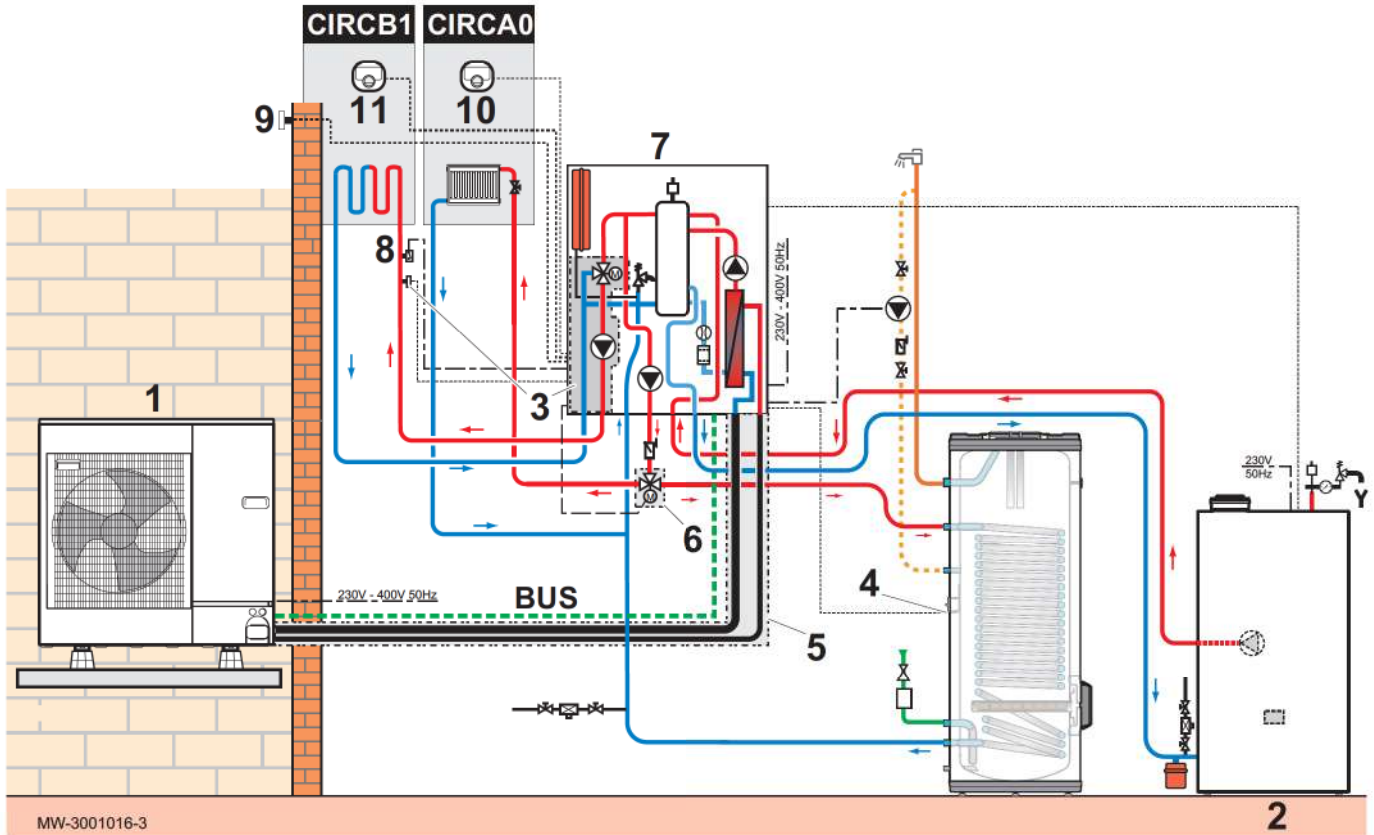
Tab.108 Temperatures

Access	Signal	Description
 DHW tank > Parameters, counters, signals > Signals	DHW tank temp bottom DM001	Domestic Hot Water tank temperature (bottom sensor)
	DHW tank temp top DM006	Domestic Hot Water tank temperature (top sensor)

8 Connection and installation examples

8.1 Installation with hydraulic back-up, two circuits and a domestic hot water tank

Fig.82 Connect CIRCA0 to EHC-05 and CIRCB1 to SCB-10

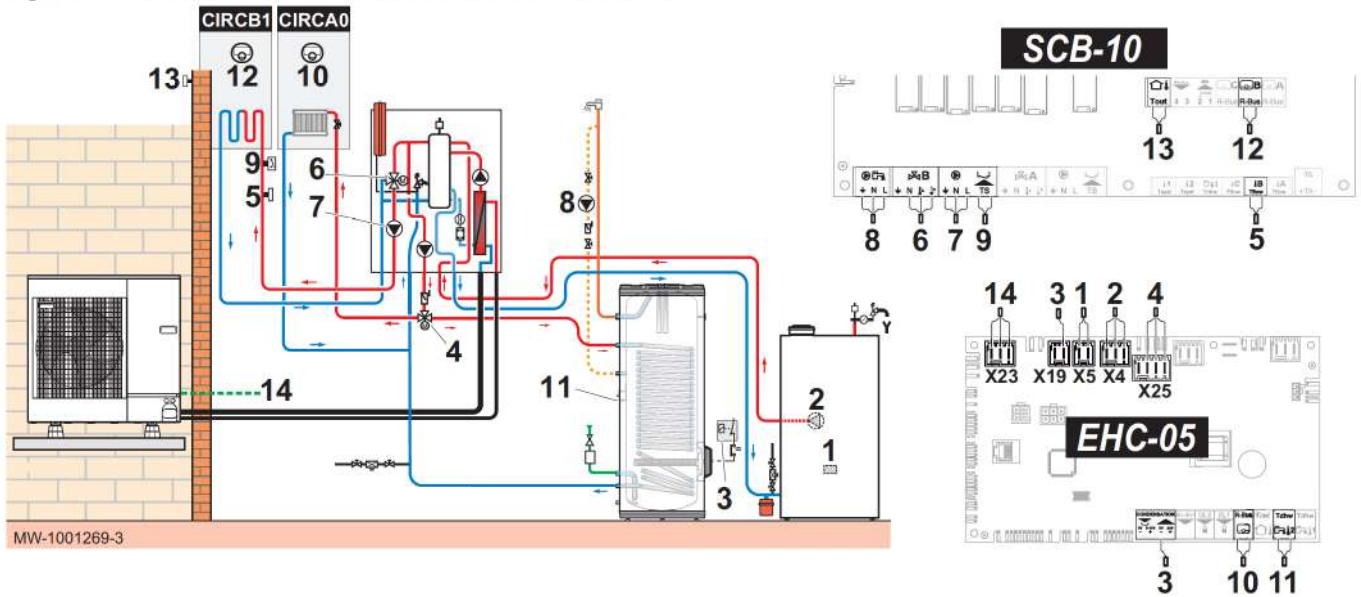


- | | |
|---|---|
| 1 Outdoor unit | 7 Indoor unit with hydraulic backup |
| 2 Gas or oil boiler | 8 Safety thermostat |
| 3 HK21: Three-way internal valve kit | 9 Outdoor temperature sensor |
| 4 AD212: Sensor - domestic hot water circuit (DHW) | 10 AD324: Smart TC° thermostat - CIRCA0 circuit |
| 5 EH114: Refrigerant connection 5/8" – 3/8", 5 m | 11 AD324: Smart TC° thermostat - CIRCB1 circuit |
| 6 EH812: Heating/domestic hot water reversing valve | |

8.1.1 Make the electrical connections

1. Connect the accessories and options to the EHC-05 PCB, respecting the 230-400 V and 0-40 V cable feed-throughs.
2. Connect the accessories and options to the SCB-10 PCB, respecting the 230-400 V and 0-40 V cable feed-throughs.
 - ⇒ The icons corresponding to the CIRCB1 circuit and the Domestic Hot Water circuit (DHW) appear on the user interface. The CIRCA0 circuit icon is present by default.

Fig.83 Connect CIRCA0 to EHC-05 and CIRCB1 to SCB-10



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- 1 X5: Hydraulic backup on/off contact, controls the burner for the backup boiler
- 2 X4 : Control of the backup boiler pump
- 3 X19: Control signal for the immersion heater, used to control the immersion heater on the EH812 reversal valve kit
- 3 X12: 24V supply for the condensation sensor, used to control the immersion heater on the EH812 reversal valve kit
- 4 X25: Reversing valve from the EH812 reversing valve kit - CIRCA0 / Domestic Hot Water (DHW) circuit
- 5 Flow sensor - CIRCB1 circuit
- 6 Three-way valve – CIRCB1 circuit
- 7 Pump power supply - CIRCB1 circuit
- 8 Recirculating pump - DHW circuit
- 9 Safety thermostat for underfloor heating flow - CIRCB1 circuit
- 10 X12 R-Bus: Smart TC° thermostat - CIRCA0 circuit
- 11 X28 Tdhw2: AD212 sensor - DHW circuit
- 12 Smart TC° thermostat - CIRCB1 circuit
- 13 Outdoor temperature sensor
- 14 X23: Outdoor unit bus connection

8.1.2 Applying the parameters

1. To configure the backup boiler: at first start-up or after resetting the factory settings, set the CN1 and CN2 parameters according to the information on the data plate and the outdoor unit output.
2. Configure and check the parameters of the radiator circuit (CIRCA0).



Tab.109

Access	Parameter	Description	Adjustment required
CIRCA0 > Parameters, counters, signals > Parameters	Zone Function CP020	Functionality of the zone	Direct This setting does not enable cooling.
	MaxZoneTFlowSetpoint CP000	Maximum Flow Temperature setpoint zone	75 °C Adjust the temperature as required.

3. Set the heating curve on the CIRCA0 circuit to a gradient of 1.5. Adapt the values of the heating curve in order to obtain optimum comfort.



4. Configure the underfloor heating circuit parameters (CIRCB1).

Tab.110

Access	Parameter	Description	Adjustment required
19.8 CIRCB1 > Parameters, counters, signals > Parameters	Zone Function CP020	Functionality of the zone	<ul style="list-style-type: none"> Mixing Circuit Fan Convector Only these 2 settings are used for cooling.
	MaxZoneTFlowSetpoint CP000	Maximum Flow Temperature setpoint zone	40 °C Adjust the temperature as required.

5. Set the heating curve on the CIRCB1 circuit to a gradient of between 0.4 and 0.7. Adapt the values of the heating curve in order to obtain optimum comfort.



6. Configure the parameters of the domestic hot water tank circuit (DHW).

Tab.111

Access	Parameter	Description	Adjustment required
51.2°C DHW tank > Parameters, counters, signals > Parameters	Max. DHW duration DP047	Maximum duration of the domestic hot water production	3 hours Adjust the duration according to need
	Min. CH before DHW DP048	Minimum heating duration between two periods of domestic hot water production	2 hours Adjust the duration according to need
	DHW management DP051	ECO mode: use of the heat pump only. Comfort mode: use of the heat pump and backup energy sources	ECO (Only HP)
	Hysteresis DHW DP120	Hysteresis temperature relative to the DHW temperature setpoint	15 °C Adjust the temperature as required



7. Configure the heat pump parameters.

Tab.112

Access	Parameter	Description	Adjustment required
23.5 Air Src Heat pump > Parameters, counters, signals > Adv. Parameters	Cooling mode AP028	Configuration of the cooling mode	Configuration of the cooling mode: Active cooling on

⇒ Authorisation for cooling has been set.



- Configure the parameters for the immersion heater on the domestic hot water tank.

Tab.113

Access	Parameter	Description	Adjustment required
DHW tank > Parameters, counters, signals > Adv. Parameters	DHW backup type DP334	Backup type used for domestic hot water production	IDU/DhwTank Cooling
Air Src Heat pump > Parameters, counters, signals > Adv. Parameters	kW rating DHW backup HP145	Declaration of the kW rating of the electrical backup in the DHW tank. Used for electrical counting.	2.4 kW

- Configure the timer programme for the domestic hot water 1 (DHW1) to configure the operating hours of the recirculating pump. See the user guide.
- Configure the timer programmes for the CIRCA0, CIRCB1 and DHW circuits.



For more information, see Data plates, page 35

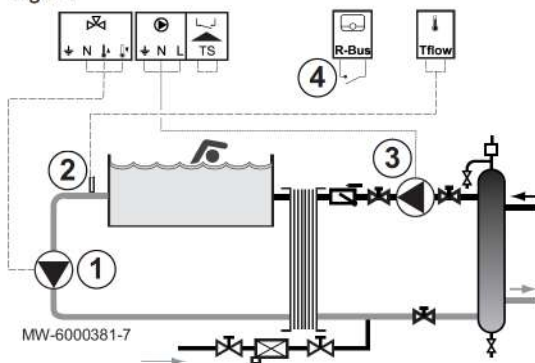
8.2 Installation with a swimming pool

8.2.1 Connecting a swimming pool

To control swimming pool heating, you will need the AD249 optional PCB and a swimming pool thermostat. A low-loss header will also be required to ensure the heat pump operates correctly with a swimming pool.

The electrical connection of a swimming pool is made to the AD249 optional PCB.

Fig.84



- Connect the swimming pool's secondary pump to terminal block of the selected circuit (CIRCA1, CIRCB1 or CIRCC1).

Three-way valve terminal block	Connecting the pump
Earthing connector	Earth wire
N connector	Pump neutral
Opening control connector	Power supply for pump

- Connect the swimming pool temperature sensor to the TFlow terminal block.
- Connect the swimming pool's primary pump to terminal block of the selected circuit (CIRCA1, CIRCB1 or CIRCC1).
- Connect the swimming pool heating cut-off control to the R-Bus terminal block.

Factory configuration:

- The thermostat contact is open when the swimming pool temperature is higher than the thermostat set point and the swimming pool is not heated. Only the frost protection function is still running.
- The thermostat contact is closed when the swimming pool temperature is lower than the thermostat set point and the swimming pool is heated.

8.2.2 Configuring swimming pool heating



1. Configure the parameters on the selected circuit (CIRCA1, CIRCB1 or CIRCC1).

Tab.114

Access	Parameter	Description	Adjustment required
CIRCA1	Zone Function CP020	Functionality of the zone	Swimming pool
	Zone TSwimmPool setp CP540	Setpoint of swimming pool when Zone is configured on Swimming Pool	26 °C

**Important**


Backup operation follows the same logic as heating mode. If necessary, it is possible to block operation of the backups with the BL inputs.

9 Operation

9.1 Regional and ergonomic parameters

You can personalise your appliance by modifying the parameters linked to your geographic location and the ergonomics of the control panel.



1. Press the  key.
2. Select **System Settings**.
3. Carry out one of the following operations:

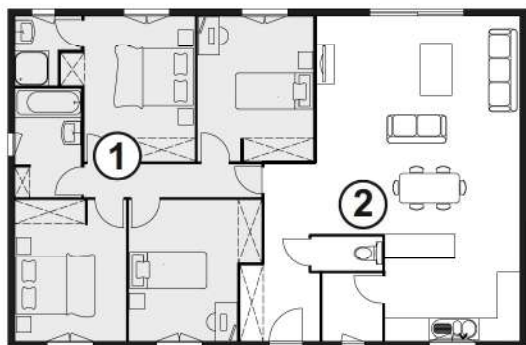
Tab.115

Menu	Description
Set Date and Time	Setting the date and time
Select Country and Language	Select the country and language.
Daylight Saving Time	Setting the automatic change to daylight saving time. These changes will be carried out on the last Sunday in March and October
Installer Details	Display the installer details
Cost calculation	Enter the tariffs for the energy used
Set Heating Activity Names	Modify the name of activities used to program heating periods
Set Cooling Activity Names	Modify the name of activities used to program cooling periods
Set Screen Brightness	Setting the screen brightness
Set click sound	Switch the sound of the rotary knob on or off
Firmware Update	Function not available
License Information	Display the creation licenses for the internal software

9.2 Personalising the zones

9.2.1 Definition of the term "zone"

Fig.85



MW-1001145-2

Zone: term given to the different hydraulic circuits (CIRCA, CIRCB). It indicates several rooms served by the same circuit.


Tab.116 Example:

Key	Zone	Factory-set name
①	Zone 1	CIRCA
②	Zone 2	CIRCB

9.2.2 Changing the name and symbol of a zone

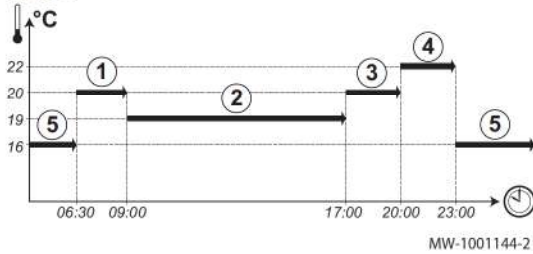
The name and symbol for a zone are factory-set as shown in the appendix. If you desire, you can personalise the name and symbol of the zones in your installation.



1. Select the icon of the zone to be modified, , for example.
2. Select **Zone configuration > Zone friendly Name**.
3. Change the name of the zone (20 characters maximum).
4. Select **Icon display zone**
5. Select the symbol to be associated with the zone.
6. Enter the chosen name and symbol in the table provided at the back of the manual.

9.3 Personalising the activities

Fig.86



9.3.1 Definition of the term "Activity"


Activity: this term is used when programming time ranges. It refers to the client's desired comfort level for different activities during the course of the day. One set point temperature is associated to each activity. The last activity of the day remains valid until the first activity of the following day.

Tab.117 Example:

Start of the activity	Activity	Set point temperature
6:30	Morning ①	20 °C
9:00	Away ②	19 °C
17:00	Home ③	20 °C
20:00	Evening ④	22 °C
23:00	Sleep ⑤	16 °C


9.3.2 Changing the name of an activity

The name of the different activities is factory-set: Sleep, Home, Away, Morning, Evening and Custom. If you wish, you can personalise the name of the activities for all of the zones in your installation.

1. Press the  key.
2. Select **System Settings**.
3. Select **Set Heating Activity Names** or **Set Cooling Activity Names**.
4. Select the activity you want to change.
5. Change the name of the activity (10 characters max.).

9.3.3 Changing the temperature of an activity

The temperatures for the different activities are factory-set as shown in the appendix. If you desire, you can personalise the temperatures for these activities for all of the zones in your installation. These activities are used in the timer programmes.

1. Select the icon for the zone to be programmed, , for example.
2. Select **Set Heating Activity Temperatures**, either for heating or for cooling.
⇒ Information on the selected menu is given in the lower part of the screen.
3. Select the activity you want to change.
4. Modify the temperature for the activity.
5. Enter the chosen temperature in the table provided at the back of the manual.

9.4 Room temperature for a zone

9.4.1 Selecting the operating mode






To set the room temperature for the different living zones, you can choose between five operating modes. We recommend the **Scheduling** operating mode which enables the room temperature to be modulated according to your needs and to optimise your energy consumption.



1. Select the icon for the affected zone, , for example.

2. Select the desired operating mode:

Tab.118

Mode	Description
 Scheduling	The room temperature is modulated according to the timer programme chosen. Recommended mode.
 Manual	The room temperature is constant.
 Short temperature change	The room temperature is forced for a defined period.
 Holiday	The room temperature is reduced during an absence period to save energy.
 Antifrost	The installation and equipment are protected against frost during the winter period.

9.4.2 Activating and configuring a timer programme for heating

A timer programme can be used to vary the room temperature in a living zone depending on activities during the day. This can be programmed for each day of the week.




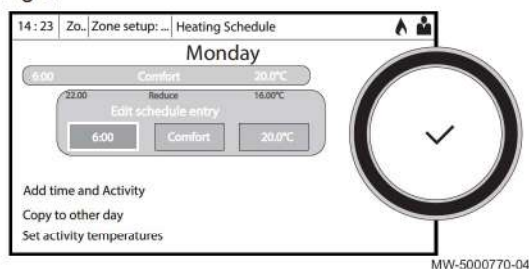
- Select the icon for the zone to be programmed, , for example.
 - ⇒ Information on the current operating mode is given in the upper part of the screen.
- To activate the timer programming or to change the timer programme, select **Scheduling**.
- Select the timer programme to be activated.
 - ⇒ Information on the active timer programme is given in the upper part of the screen.
- To modify the timer programme, select **Zone configuration > Heating Schedule**.
- Select the programme to be modified.
 - ⇒ The programmed activities for Monday are displayed. The last activity of the day remains active until the first activity of the following day.
- Select the day to be modified.
- Carry out the following actions according to your needs:
 - **Modify** the timings for programmed activities.
 - **Add** a new time range.
 - **Delete** a programmed activity (choose the activity "Delete").
 - **Copy** programmed daily activities to other days.
 - **Modify temperatures** linked to an activity.

Fig.87



9.4.3 Activating and configuring a timer programme for cooling

You can modify the timer programme linked to the **Cooling** mode. In the **Scheduling** operating mode, the Cooling timer programme is activated automatically when the average outdoor temperature over a 24-hour period has been greater than 22 °C. If you would prefer that this mode is triggered at a different temperature, ask your installer to modify this parameter in your installation.




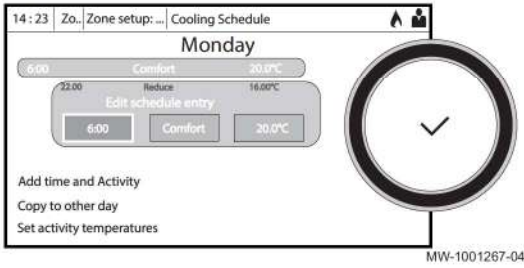
- Select the icon for the zone to be programmed, , for example.
 - ⇒ Information on the current operating mode is given in the upper part of the screen.

Fig.88




2. To modify the timer programme for the Cooling mode, select **Zone configuration > Cooling Schedule**.
 - ⇨ The programmed activities for Monday are displayed. The last activity of the day remains active until the first activity of the following day.
3. Select the day to be modified.
4. Carry out the following actions according to your needs:
 - **Modify** the timings for programmed activities.
 - **Add** a new activity.
 - **Delete** a programmed activity (choose the activity "Delete").
 - **Copy** programmed daily activities to other days.
 - **Modify** temperatures linked to an activity.

9.4.4 Changing the room temperature temporarily

Regardless of the operating mode selected for a zone, it is possible to modify the room temperature for a defined period. Once this time has elapsed, the selected operating mode will restart.



1. Select the icon of the zone to be modified, , for example.
2. Select **Short temperature change**.
3. Define the duration in **Hour** and in **Minute**.
4. Set the temporary room temperature setpoint for the circuit selected.

9.5 Domestic hot water temperature






9.5.1 Selecting the operating mode

For the production of domestic hot water, you can choose between five operating modes. We recommend the **Scheduling** mode which enables domestic hot water production periods to be programmed according to your needs and to optimise your energy consumption.



1. Select the  **DHW tank** icon.
2. Select the desired operating mode:

Tab.119

Mode		Description
	Scheduling	The domestic hot water is produced according to the timer programme chosen
	Manual	The domestic hot water temperature remains at the comfort temperature permanently
	Hot water boost	The production of domestic hot water is forced at the comfort temperature for a defined duration
	Holiday	The domestic hot water temperature is reduced during an absence period to save energy
	Antifrost	The equipment and the system are protected when the heat pump is in frost protection mode.

9.5.2 Activating and configuring a timer programme for domestic hot water

A timer programme can be used to vary the domestic hot water temperature depending on activities during the day. This can be programmed for each day of the week.




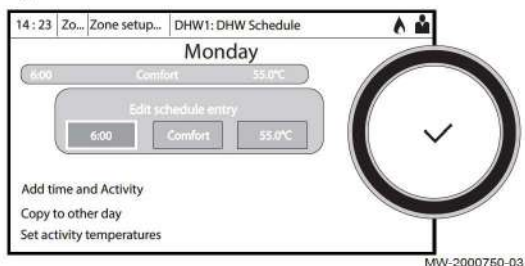
1. Select the  **DHW tank** icon.
 - ⇨ Information on the current operating mode is given in the upper part of the screen.
2. To activate the timer programming or to change the timer programme, select **Scheduling**.

Fig.89




3. Select the timer programme to be activated.
 - ⇒ Information on the active timer programme is given in the upper part of the screen.
4. To modify the timer programme, select **Zone configuration > DHW Schedule**.
5. Select the programme to be modified.
 - ⇒ The programmed activities for Monday are displayed. The last activity of the day remains active until the first activity of the following day.
6. Select the day to be modified.
7. Carry out the following actions according to your needs:
 - **Modify** the timings for programmed activities.
 - **Add** a new activity.
 - **Delete** a programmed activity (choose the activity "Delete").
 - **Copy** programmed daily activities to other days.
 - **Modify** temperatures linked to an activity.

9.5.3 Forcing domestic hot water production (override)

Regardless of the selected operating mode, you can force domestic hot water production to the comfort temperature (DHW comfort setpoint parameter) for a defined duration.



1. Select the  DHW tank icon.
2. Select **Hot water boost**.
3. Define the duration in **Hour** and in **Minute**.


9.5.4 Modifying the domestic hot water set point temperatures

The production of domestic hot water operates with two set point temperature parameters:

- **DHW comfort setpoint**: used in the Scheduling, Manual and Hot water boostmodes
- **DHW reduced setpoint**: used in the Scheduling, Holiday and Antifrostmodes

You can change these set point temperature settings to adapt them to your needs.



1. Select the  DHW tank icon.
2. Select **Comfort DHW set point** to modify this set point.
3. Select **Zone configuration > Domestic Hot Water Setpoints > Reduced DHW set point** to modify this set point.

9.6 Managing the heating, cooling and domestic hot water production

9.6.1 Switching the central heating on/off


Your appliance will automatically deactivate the heating function and switch to cooling mode when the temperature exceeds 22 °C (factory setting). However, you can manually switch off the heating function for all circuits to save energy during the summer period, for example.



Important

If the heating function is shut off, then the cooling will also be shut off.



1. Select the  Air Src Heat pump icon.
2. Select **CH function on**.
3. Select the desired value:
 - **Off** to stop the heating function.
 - **On** to switch the heating function on again.

9.6.2 Forcing cooling

Your appliance will automatically switch to cooling mode when the outdoor temperature exceeds 22 °C (factory setting). However, you can force cooling mode at any time, regardless of the outdoor temperature.

1. Select the  icon.
2. Select **Force summer mode**.
3. Select **On**.

9.6.3 Periods of absence or going on holiday

If you will be absent for several weeks, you can reduce the room temperature and domestic hot water temperature in order to save energy. To do this, activate the **Holiday** operating mode for all zones, including for domestic hot water.


1. Select the  **Holiday Mode** icon.
2. Set the following parameters:

Tab.120

Parameter	Description
Start date holiday	Set the date and time for the start of the absence period.
End date holiday	Set the date and time for the end of the absence period.
Wished room temperature during holiday	Set the desired room temperature for the absence period
Reset	Restart or cancel the holiday programme

9.7 Monitoring the energy consumption

If your installation is equipped with an energy meter, you can monitor your energy consumption.

1. Select the  **Air Src Heat pump** icon.
 ⇒ The energy consumed since the last energy consumption meter reset is displayed:

Tab.121

Parameter	Description
Cool Energy consumed	Energy consumed for cooling
DHW energy consumed	Energy consumed for domestic hot water
CH Energy Consumed	Energy consumed for central heating

2. To reset the meters to zero, select **Reset counters for the energy consumption**.

9.8 Starting and stopping the heat pump

9.8.1 Starting the heat pump

1. Switch on the outdoor unit and the indoor unit.
 ⇒ The heat pump will begin an automatic vent cycle (which lasts approx. three minutes), run each time the power is switched on.
2. Check the hydraulic pressure in the installation indicated on the user interface.

 **Important**
 Recommended hydraulic pressure between 1.5 and 2.0 bar.

9.8.2 Shutting down the heat pump

The heat pump must be shut down in certain situations, for example during any intervention on the equipment. In other situations, such as an extended absence period, we recommend that the **Holiday** operating mode is used in order to benefit from the heat pump anti-blocking function and to protect the installation from frost.

To shut down the heat pump:

1. Switch off the power to the outdoor unit.
2. Switch off the power to the indoor unit.

10 Maintenance

10.1 General

An annual inspection with a leak-tightness check in accordance with prevailing standards is obligatory.

Maintenance operations are important for the following reasons:

- To guarantee optimum performance.
- To extend the life of the equipment.
- To provide an installation which offers the user optimum comfort over time.



Caution

Only qualified professionals are authorised to carry out maintenance work on the heat pump and the heating system.



Danger of electric shock

Before any work, switch off the mains electricity to the heat pump and the hydraulic or electrical backup if present.



Danger of electric shock

Check the discharge from the capacitors of the outdoor unit.



Caution

Before working on the refrigeration circuit, switch off the appliance and wait a few minutes. Certain items of equipment such as the compressor and the pipes can reach temperatures in excess of 100°C and high pressures, which may cause serious injuries.




Caution

Do not drain the installation, except in cases of absolute necessity. E.g.: several months' absence with the risk of temperatures in the building falling below freezing.

10.2 Maintenance message

When a maintenance operation is required, your appliance will alert you in two ways:

- A maintenance message will appear on the screen.
- The  Maintenance Status icon on the home screen flashes.

10.3 Displaying the maintenance information

Your appliance gives you information on necessary maintenance and servicing operations.



1. Select the  Maintenance Status icon.

- Consult the information linked to the maintenance and servicing of your appliance:

Information	Description
Maintenance required	Indicates the necessity of maintenance: yes/no
Current maintenance	Type of maintenance to come
Service run hours	Number of hours that the appliance has been producing energy since last service
Hours since service	Number of hours since the previous servicing of the appliance
Starts since service	Number of heat generator starts since the previous servicing.

10.4 Configuring the maintenance message

The control panel on the indoor unit is used to display a message whenever maintenance is necessary.

To configure the maintenance message:



- Select the **Maintenance** icon.
- Select **Service notification**.
- Select the desired type of notification:

Type of notification:	Description
None	No maintenance message
Custom notification	The maintenance message will be displayed after the number of heat pump operating hours defined by the Service hours mains parameter: Hours powered to raise a service notification or after the number of compressor operating hours defined by the Maintenance hours parameter.

- With the **Custom notification** notification type, set the number of operating hours before a maintenance message is sent:

Parameter	Description
Maintenance hours (AP009)	Compressor operating hours before a maintenance message is sent
Service hours mains (AP011)	Operating hours switched on before a maintenance message is sent

10.5 Checking the safety components

- Check that the safety components are operating correctly, particularly the safety valve on the heating circuit.
- Check the electrical connections.
- Change any and all parts and cables considered defective.
- Check all screws and nuts (cover, support, etc.).
- Change damaged sections of lagging.

10.6 Check the hydraulic pressure

Regularly check the hydraulic pressure in the installation. It should be between 1.5 and 2 bar.




- Select the **Water Pressure** icon.
- Check the pressure that is displayed in the right section of the main screen.
- If the pressure is less than 1.5 bar, contact the installer so that they check the condition of the expansion vessel, check hydraulic leak-tightness and top up the water.

10.7 Checking the operation of the appliance

This function is used to force the heat pump and backup in heating or cooling mode, in order to check that they are working correctly.



1. Press the  key.
2. Select **Commissioning Menu**.
3. Select **Load Test**.
4. Select the operating mode for which you would like to see the information. **Off**, **Medium power** or **Control unit Cooling**.
 To test operation in heating mode, it is possible to modify the system setpoint temperature.
 To test operation in cooling mode, the minimum setpoint is 10 °C but this can be set to a higher temperature.
 It is strongly advised not to leave the system in this operating mode for long periods as the heating circuits (mixing valves, pumps) are not regulated.

10.8 Cleaning the magnetic filter

To prevent clogging of the plate heat exchanger, the magnetic filter on the plate heat exchanger inlet must be cleaned every year as part of annual maintenance.

If the installation has a flow fault, the filter needs to be fully cleaned.

10.8.1 Magnetic filter annual maintenance

Fig.90

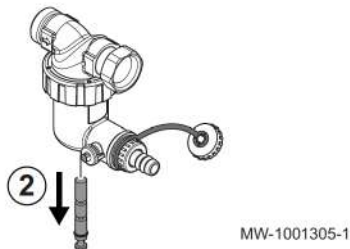


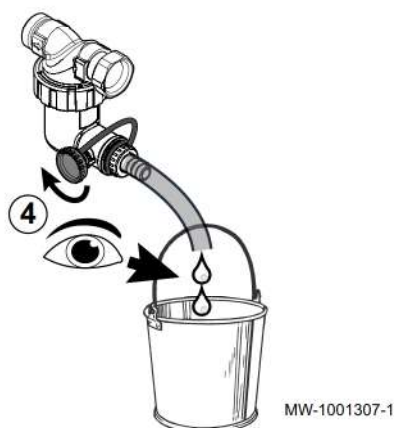
Fig.91



1. Power off the appliance.
2. Remove the magnet from the filter.
 ⇒ The magnetic particles stuck inside the filter will drop to the bottom and be ejected via the drain.

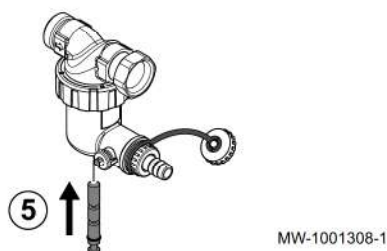
3. Connect a pipe to the filter valve, then open the valve by a quarter turn.

Fig.92



- Once the water running out of the pipe is clear, re-close the valve. If necessary, open and close the valve several times to create surges, and clean the filter better.

Fig.93



- Refit the magnet. Pushing it in fully.

Fig.94



- Check the pressure in the installation. If the pressure is less than 1.5 bar, top up the water.
- Power the appliance back on.
- Check the pressure in the installation. If the pressure is less than 1.5 bar, top up the water.
- Activate the heating and check the flow rate in the installation. If the flow rate is too low, clean the filter fully.

10.8.2 Full cleaning of the magnetic filter

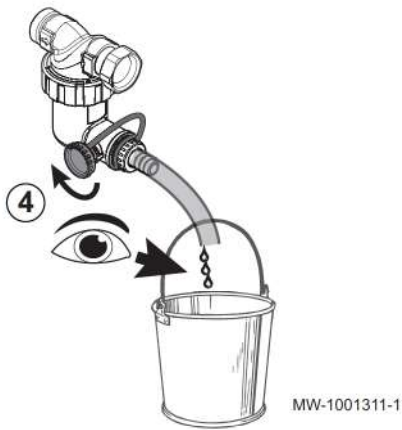
Activate the heating and check the flow rate in the installation. If the flow rate in the installation is too low, fully clean the magnetic filter. This operation requires the appliance to be fully drained.

Fig.95



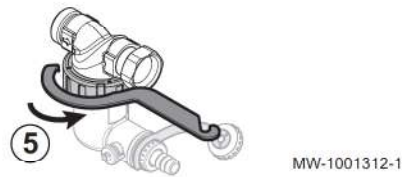
- Power off the appliance.
- Isolate the appliance from the water supply.
- Drain the appliance: connect a drain pipe to the filter nipple, then open the valve on the filter tap by a quarter turn.

Fig.96



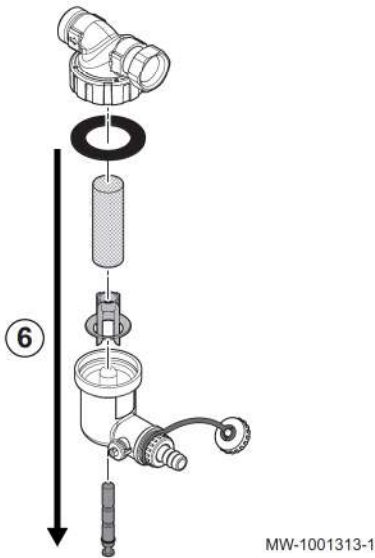
4. Once water stops running out of the pipe, close the valve on the filter.

Fig.97



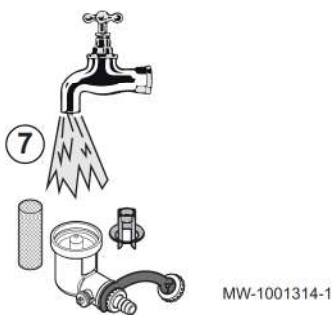
5. Unscrew the sludge container using the handling tool provided in the accessories bag.

Fig.98



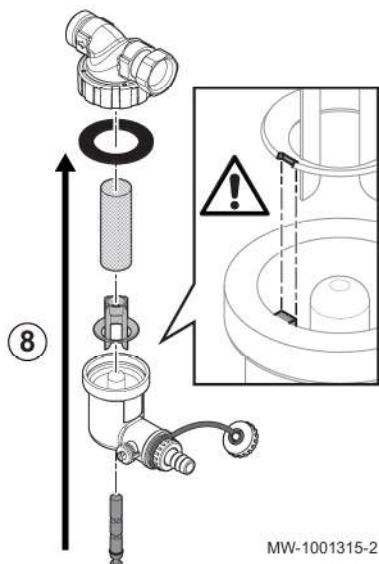
6. Disassemble the different parts of the mud pot.
⇒ The magnetic particles stuck inside the filter body will drop to the bottom.

Fig.99



7. Clean the various parts with clean water.

Fig.100



8. Refit the sludge collector.

**Caution**

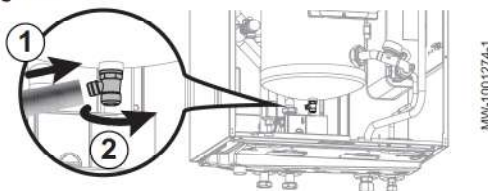
Risk of breakage.

- Observe the keyway of the plastic part: align the notch with the pin.
- Replace the seal if necessary.
- Check that the seal is correctly positioned before tightening with the maintenance key provided.

9. Open the stop valves and reactivate the water supply to the appliance.
10. Re-commission the appliance.

10.9 Draining the heating circuit

Fig.101



1. Connect a hose (internal diameter: 8 mm) to the drain valve on the heating circuit.
2. Open the drain valve.
3. Await the complete drainage of the heating circuit.

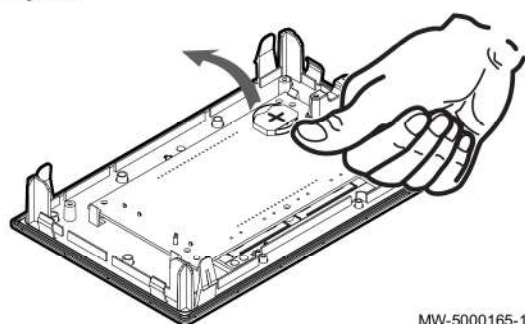
10.10 Replacing the battery in the control panel

If the indoor unit is switched off, the control panel battery takes over to keep the correct time.

The battery must be replaced when the time is no longer saved.

1. Remove the front panel by pulling firmly upwards.
2. Tilt the control panel bracket forwards and hang it in a horizontal position.
3. Remove the battery located in back plate of the control panel by pushing it gently forwards.
4. Insert a new battery.

Fig.102

**Important**

Battery type:

- CR2032, 3 V
- Do not use rechargeable batteries
- Do not discard used batteries in the dustbin. Take them to an appropriate collection place.

5. Re-assemble everything.

10.11 Cleaning the casing

1. Clean the outside of the appliance using a damp cloth and a mild detergent.

11 Troubleshooting

11.1 Fault finding

Tab.122

Problems	Probable causes	Corrections
The radiators are cold.	The heating setpoint temperature is too low.	Increase the value of the room temperature setpoint or, if a room unit is connected, increase the temperature on it.
	The heating mode is deactivated.	Activate the heating mode.
	The radiator valves are closed.	Open the valves on all radiators connected to the heating system.
	The heat pump is not operating.	<ul style="list-style-type: none"> • Check that the heat pump is switched on. • Check the fuses and switches on the electrical installation.
	The water pressure is too low (< 1 bar).	Top up the system with water.
There is no domestic hot water.	The domestic hot water setpoint temperature is too low.	Increase the domestic hot water setpoint temperature.
	The domestic hot water mode is deactivated.	Activate the domestic hot water mode.
	The appliance is in reduced domestic hot water mode	<ul style="list-style-type: none"> • Check and modify the comfort and reduced time ranges for the domestic hot water. • Adapt the domestic hot water setpoint temperature.
	The shower head is restricting the water flow.	Clean the shower head; replace it if necessary.
	The heat pump is not operating.	<ul style="list-style-type: none"> • Check that the heat pump is switched on. • Check the fuses and switches on the electrical installation.
	The water pressure is too low (< 1 bar).	Top up the installation with water.
Significant variations in domestic hot water temperature	Insufficient water supply	<ul style="list-style-type: none"> • Check the water pressure in the installation. • Open the valve.
	The domestic hot water hysteresis is too high	Contact the professional responsible for maintenance of the heat pump.
The heat pump does not work.	The heating setpoint temperature is too low.	Increase the value of the room temperature setpoint or, if a room unit is connected, increase the temperature on it.
	The heat pump is not operating.	<ul style="list-style-type: none"> • Check that the heat pump is switched on. • Check the fuses and switches on the electrical installation.
	The water pressure is too low (< 1 bar).	Top up the system with water.
	An error code appears on the display.	Correct the error if possible.
The heat pump runs short-cycling in domestic hot water mode	The temperature setpoint is too low	Increase the setpoint
The water pressure is too low (< 1 bar).	Not enough water in the installation.	Top up the system with water.
	Water leak.	Contact the professional responsible for maintenance of the heat pump.

Problems	Probable causes	Corrections
Clicking in the central heating pipes	The central heating pipe clamps are too tight.	Slightly loosen the clamps.
	There is air in the heating pipes.	Vent any air in the domestic hot water tank, the pipes and the taps to prevent the annoying noises likely to be produced during heating or when drawing off water.
	The water is circulating too quickly in the central heating system.	Contact the professional responsible for maintenance of the heat pump.
Significant water leak underneath or in the vicinity of the heat pump.	The pipes on the heat pump or the central heating are damaged.	Contact the professional responsible for maintenance of the heat pump.

11.2 Resolving operating errors

If your appliance malfunctions, the status LED flashes and/or changes colour and a message containing an error code is displayed on the main screen of the control panel. This error code is important for the correct and rapid diagnosis of the type of malfunction and for any technical assistance that may be needed.

If an error occurs:

1. Make a note of the code displayed on the screen.
2. Remedy the problem described by the error code or contact the installer.
3. Switch the heat pump off and back on to check that the cause of the error has been removed.
4. If the code is displayed again, contact the installer.

11.2.1 Types of error code

The control panel can display three types of error codes:

Tab.123

Type of code	Code format	Colour of the status LED
Warning	Axx.xx	Green flashing
Blockage	Hxx.xx	Continuous red
Lock out	Exx.xx	Red flashing

11.2.2 Warning codes

A warning code signals that the optimal operating conditions are not fulfilled. The system continues to operate safely, but there is a risk of shutdown if the situation continues to deteriorate.

If the situation improves, the warning code may disappear spontaneously.

When one of the codes below is displayed continuously, contact the professional responsible for maintenance of the heat pump.

Tab.124 List of warning codes linked to the EHC-05 PCB

Code	Message	Description
A02.06	Water Press Warning	Water Pressure Warning active
A02.18	OBD Error	Object Dictionary Error
A02.22	System flow warning	System water flow warning active
A02.55	Inval or miss SerNR	Invalid or missing device serial number
A02.80	Missing Cascade Ctrl	Missing Cascade controller

11.2.3 SCB-10 warning codes

A warning code signals that the optimal operating conditions are not fulfilled. The system continues to operate safely, but there is a risk of shutdown if the situation continues to deteriorate.

If the situation improves, the warning code may disappear spontaneously.

When one of the codes below is displayed continuously, contact the professional responsible for maintenance of the heat pump.

Tab.125 List of warning codes linked to the SCB-10 PCB

Code	Message	Description
A00.32	TOutside Open	Outside temperature sensor is either removed or measures a temperature below range
A00.33	TOutside Closed	Outside temperature sensor is either shorted or measures a temperature above range
A00.34	TOutside Missing	Outside temperature sensor was expected but not detected
A02.18	OBD Error	Object Dictionary Error: • Reset CN1 and CN2
A02.37	Uncritic device lost	Uncritical device has been disconnected: • Bad connection: check the wiring and connectors. • Faulty SCB PCB: replace SCB PCB
A10.45	RoomTempZoneA miss	Measure of Room Temperature Zone A is missing
A10.46	RoomTempZoneB miss	Measure of Room Temperature Zone B is missing
A10.47	RoomTempZoneC miss	Measure of Room Temperature Zone C is missing
A10.50	T_DHW top D miss	Domestic Hot Water temperature sensor top zone DHW is missing
A10.54	Temp. Zone DHW miss.	Temperature sensor Zone DHW is missing
A10.56	T_DHW Zone AUX miss	Domestic Hot Water temperature sensor Zone AUX is missing

11.2.4 Blocking codes


A blocking code signals an anomaly affecting the heating system.

Several examples:

- The system automatically attempts to correct the error (for example in the event of a fault related to the flow rate).
- The error is still present and the system functions in defect mode (for example, in the event of a fault affecting the outdoor unit, the backup is started up).
- The system is shut down but automatically switches on again when the error disappears.

When one of the codes below is displayed, contact the professional responsible for maintenance of the heat pump.

Tab.126 List of blocking codes linked to the EHC-05 PCB

Code	Message	Description
H00.17	DHW sensor Closed	<p>Domestic Hot Water tank temperature sensor is either shorted or measures a temperature above range</p> <ul style="list-style-type: none"> • Check the wiring between the central unit PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.32	TOutside Open	<p>Outside temperature sensor is either removed or measures a temperature below range</p> <ul style="list-style-type: none"> • Check the wiring between the central unit PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary. <p>The outdoor temperature sensor must always be connected to the EHC-05 PCB. If the outdoor sensor is connected to the SCB-10 PCB in error, the factory values of parameters CN1 and CN2 must be reset.</p>
H00.33	TOutside Closed	<p>Outside temperature sensor is either shorted or measures a temperature above range</p> <ul style="list-style-type: none"> • Check the wiring between the central unit PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.34	TOutside Missing	<p>Outside temperature sensor was expected but not detected</p> <ul style="list-style-type: none"> • Check the wiring between the EHC-05 central unit PCB and the sensor. • Check that the outdoor temperature sensor is connected to the EHC-05 PCB. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary. • Activate automatic detection of all the options and accessories. • Reset the factory settings for the CN1 and CN2 parameters. <p> Important This solution also resets all the other parameters.</p>
H00.47	HP flow sensor removed or below range	<p>Heat pump flow temperature sensor is either removed or measures a temperature below range</p> <ul style="list-style-type: none"> • Check the wiring between the central unit PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.48	THp Flow Closed	<p>Heat pump flow temperature sensor is either shorted or measures a temperature above range</p> <ul style="list-style-type: none"> • Check the wiring between the central unit PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.49	THp Flow Missing	<p>Heat pump flow temperature sensor was expected but not detected</p> <ul style="list-style-type: none"> • Check the wiring between the central unit PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.51	THp Return Open	<p>Heat pump return temperature sensor is either removed or measures a temperature below range</p> <ul style="list-style-type: none"> • Check the wiring between the central unit PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.

Code	Message	Description
H00.52	THp Return Closed	Heat pump return temperature sensor is either shorted or measures a temperature above range <ul style="list-style-type: none"> • Check the wiring between the central unit PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.57	T DHW Top Open	Domestic Hot Water top temperature sensor is either removed or measures a temperature below range <ul style="list-style-type: none"> • Check the wiring between the central unit PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.58	T DHW Top Closed	Domestic Hot Water top temperature sensor is either shorted or measures a temperature above range <ul style="list-style-type: none"> • Check the wiring between the central unit PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H02.02	Wait Config Number	Waiting For Configuration Number Waiting for configuration parameters to be entered <ul style="list-style-type: none"> • Configure CN1 / CN2 depending on the output of the outdoor unit installed (CNF menu). Central unit PCB replaced: heat pump not configured
H02.03	Conf Error	Configuration Error The configuration parameters entered are incorrect. <ul style="list-style-type: none"> • Configure CN1 / CN2 depending on the output of the outdoor unit installed (CNF menu).
H02.04	Parameter Error	Parameter Error <ul style="list-style-type: none"> • Restore the factory settings. • If the error is still present: change the central unit PCB.
H02.05	CSU CU mismatch	CSU does not match CU type <ul style="list-style-type: none"> • Software change (software number or version parameter inconsistent with the memory).
H02.07	Water Press Error	Water Pressure Error active <ul style="list-style-type: none"> • Check the hydraulic pressure in the heating circuit. • Check the wiring between the central unit PCB and the pressure sensor. • Check the connection of the pressure sensor.
H02.09	Partial block	Partial blocking of the device recognized BL input on the central unit PCB terminal block open <ul style="list-style-type: none"> • Check the contact on the BL input. • Check the wiring. • Check parameters AP001 and AP100.
H02.10	Full Block	Full blocking of the device recognized BL input on the central unit PCB terminal block open <ul style="list-style-type: none"> • Check the contact on the BL. input • Check the wiring. • Check parameters AP001 and AP100.

Code	Message	Description
H02.23	System flow error	<p>System water flow error active Flow problem Insufficient flow: open a radiator valve. The circuit is clogged:</p> <ul style="list-style-type: none"> • Check that the filters are not obstructed and clean them if necessary. • Clean and flush the installation. <p>No circulation:</p> <ul style="list-style-type: none"> • Check that the valves and thermostatic valves are open, • Check that the circulating pump is working, • Check the wiring, • Check the pump supply: if the pump does not work, replace it. <p>Too much air: completely vent the indoor unit and the installation for optimum performance. Incorrect wiring: check the electrical connections. Flow meter:</p> <ul style="list-style-type: none"> • Check the electrical connections and the direction of the flow meter (arrow to the right). • Replace the flow meter if necessary.
H02.25	ACI error	<p>Titan Active System short circuited or on an open circuit</p> <ul style="list-style-type: none"> • Check the connection cable. • Check that the anode has not short-circuited and is not broken.
H02.36	Funcnt device lost	<p>Functional device has been disconnected No communication between the central unit PCB and the additional circuit PCB</p> <ul style="list-style-type: none"> • Check the connection of the supply cable between the PCBs. • Check the connection of the BUS cable between the PCBs. • Run automatic detection.
H02.37	Uncritic device lost	<p>Uncritical device has been disconnected No communication between the central unit PCB and the additional circuit PCB</p> <ul style="list-style-type: none"> • Check the connection of the supply cable between the PCBs. • Check the connection of the BUS cable and the PCBs. • Run automatic detection.
H02.60	Unsupported function	The zone doesn't support the selected function
H06.01	HP Unit Failure	<p>Heat Pump Unit Failure occurred Heat pump outdoor unit fault</p> <ul style="list-style-type: none"> • Check the wiring between the central unit PCB and the communication bus on the outdoor unit. • Check the connection of the communication cable between the central unit PCB and the interface PCB. • Check the connection of the supply cable between the central unit PCB and the interface PCB. • Check the connection of the outdoor unit supply cable.

11.2.5 SCB-10 blocking codes

A blocking code signals an anomaly affecting the heating system.

Several examples:

- The system automatically attempts to correct the error (for example in the event of a fault related to the flow rate).
- The error is still present and the system functions in defect mode (for example, in the event of a fault affecting the outdoor unit, the backup is started up).
- The system is shut down but automatically switches on again when the error disappears.

When one of the codes below is displayed, contact the professional responsible for maintenance of the heat pump.

Tab.127 List of blocking codes linked to the SCB-10 PCB

Code	Message	Description
H00.69	TbufferTankOpen	Buffer Tank temperature sensor is either removed or measures a temperature below range
H00.70	TbufferTankClosed	Buffer Tank temperature sensor is either shorted or measures a temperature above range
H00.71	TbufferTankTopOpen	Buffer Tank top temperature sensor is either removed or measures a temperature below range
H00.72	TbufferTankTopClosed	Buffer Tank top temperature sensor is either shorted or measures a temperature above range
H00.74	TBufferTankMissing	Buffer Tank temperature sensor was expected but not detected
H00.75	TBufferTankTop Miss	Buffer Tank Top temperature sensor was expected but not detected
H00.76	TcascadeFlow Open	Cascade Flow temperature sensor is either removed or measures a temperature below range
H00.77	TcascadeFlow Closed	Cascade Flow temperature sensor is either shorted or measures a temperature above range
H00.78	TcascadeFlow missing	Cascade Flow temperature sensor was expected but not detected
H02.02	Wait Config Number	Waiting For Configuration Number
H02.03	Conf Error	Configuration Error
H02.04	Parameter Error	Parameter Error
H02.05	CSU CU mismatch	CSU does not match CU type
H02.16	Int CSU Timeout	Internal CSU Timeout
H02.36	Funct device lost	Functional device has been disconnected
H02.40	Function unavailable	Function unavailable
H02.45	Full Can Conn Matrix	Full Can Connection Matrix
H02.46	Full Can Device Adm	Full Can Device Administration
H02.47	Failed Conn Funct Gr	Failed Connecting Function Groups
H02.48	Funct Gr Conf Fault	Function Group Configuration Fault
H02.49	Failed Init Node	Failed Initialising Node
H02.55	Inval or miss SerNR	Invalid or missing device serial number
H02.61	Unsupported function	Zone A doesn't support the selected function
H02.62	Unsupported function	Zone B doesn't support the selected function
H02.63	Unsupported function	Zone C doesn't support the selected function
H02.64	Unsupported function	Zone D doesn't support the selected function
H02.65	Unsupported function	Zone E doesn't support the selected function
H02.66	TAS not connected	The anti corrosion protection (TAS) of the Domestic Hot Water tank is not connected
H02.67	TAS short-circuit	The anti corrosion protection (TAS) of the Domestic Hot Water tank is shortend
H10.00	T Flow Zone A Open	Flow temperature sensor Zone A Open
H10.01	T Flow Zone A Closed	Flow temperature sensor Zone A Closed
H10.02	T Dhw Zone A Open	Domestic Hot Water temperature sensor Zone A Open
H10.03	T Dhw Zone A Closed	Domestic Hot Water temperature sensor Zone A Closed
H10.04	TSwimmPoolZoneA Open	Swimming Pool Temperature Sensor Zone A Open
H10.05	TSwimmPoolZoneAClose	Swimming Pool Temperature Sensor Zone A Closed
H10.09	T Flow Zone B Open	Flow temperature sensor Zone B Open
H10.10	T Flow Zone B Closed	Flow temperature sensor Zone B Closed
H10.11	T Dhw Zone B Open	Domestic Hot Water Temperature Sensor Zone B Open
H10.12	T Dhw Zone B Closed	Domestic Hot Water temperature sensor Zone B Closed
H10.13	TSwimmPoolZoneB Open	Swimming Pool Temperature Sensor Zone B Open
H10.14	TSwimmPoolZoneBClose	Swimming Pool Temperature Sensor Zone B Closed
H10.18	T Flow Zone C Open	Flow temperature sensor Zone C Open

Code	Message	Description
H10.19	T Flow Zone C Closed	Flow temperature sensor Zone C Closed
H10.20	T Dhw Zone C Open	Domestic Hot Water Temperature Sensor Zone C Open
H10.21	T Dhw Zone C Closed	Domestic Hot Water temperature sensor Zone C Closed
H10.22	TSwimmPoolZoneC Open	Swimming Pool Temperature Sensor Zone C Open
H10.23	TSwimmPoolZoneCClose	Swimming Pool Temperature Sensor Zone C Closed
H10.27	T Flow Zone DHW open	Flow temperature sensor Zone DHW open
H10.28	Sens. ZoneDHW closed	Flow temperature sensor Zone DHW closed
H10.29	Sensor Zone DHW open	Temperature sensor Zone DHW open
H10.30	T Zone DHW closed	Domestic Hot Water temperature sensor Zone DHW closed
H10.36	Sensor Zone AUX open	Flow temperature sensor Zone AUX open
H10.37	Sens. ZoneAUX closed	Flow temperature sensor ZoneAUX closed
H10.38	T Dhw Zone AUX open	Domestic Hot Water temperature sensor Zone AUX open
H10.39	Sens. ZoneAUX Closed	Domestic Hot Water temperature sensor Zone AUX closed

11.2.6 Lockout codes

A lockout code signals a major anomaly affecting the heating system: the heating system is shut down as the safety conditions are not fulfilled.

Two operations are necessary for the system to resume normal operation:

1. Remove the causes of the anomaly.
2. Acknowledge the error message manually on the control panel.

When one of the codes below is displayed, contact the professional responsible for maintenance of the heat pump.

Tab.128 List of lockout codes

Code	Message	Description
E00.00	TFlow Open	Flow temperature sensor is either removed or measures a temperature below range
E00.01	TFlow Closed	Flow temperature sensor is either shorted or measures a temperature above range
E02.13	Blocking Input	Blocking Input of the Control Unit from device external environment Input BL open. <ul style="list-style-type: none"> • Check the wiring. • Check the component connected to the BL. contact • Check the component connected to the AP001 and AP100. contacts
E02.24	System flow locking	System water flow locking active Insufficient flow: open a radiator valve The circuit is clogged: <ul style="list-style-type: none"> • Check that the filters are not obstructed and clean them if necessary. • Clean and flush the installation. No circulation: <ul style="list-style-type: none"> • Check that the valves and thermostatic valves are open. • Check that the filters are not obstructed. • Check that the circulating pump is working. • Check the wiring. • Check the pump supply: if the pump does not work, replace it. Too much air: <ul style="list-style-type: none"> • Completely vent the indoor module and the installation for optimum running. • Check that the automatic air vents are properly open (also check the hydroblock). Incorrect wiring: check the electrical connections. Flow meter: <ul style="list-style-type: none"> • Check the electrical connections and the direction of the flow meter (arrow to the right). • Replace the flow meter if necessary.

11.3 Displaying and clearing the error memory

The error memory stores the 32 most recent errors. You can check the details of each error and then clear it from the error memory.

To display and clear the error memory:



1. Press the key.
2. Select **Error History**.
 - ⇒ The list of the 32 most recent errors is displayed with the error code, a short description and the date.
3. Carry out the following actions according to your needs:
 - Show the details of an error: select the desired error.
 - To clear the error memory, press and hold the rotary knob.

11.4 Accessing information on the hardware and software versions

Information about the hardware and software versions of the different appliance components is stored in the user interface.

To access:

1. Press the key.
2. Select the **Version Information** menu.
3. Select the component for which you would like to see the version information.

Component	Description
Appliance Info	Information on the indoor unit
EHC-05	Information on the main EHC-05 PCB for the heat pump
MK3	Information on the user interface
SCB-10	Information on the SCB-10 PCB for the heat pump
GTW-22	Information on the PCB for Bluetooth® communication

11.5 Configuring the system after replacing the EHC-05 PCB

11.5.1 Auto-detecting options and accessories

Use this function after replacing a power circuit board on the heat pump in order to detect all the devices connected to the L-BUS communication bus.

To detect devices connected to the L-BUS communication bus:



1. Press the key.
2. Select **Advanced Service Menu > Auto Detect**.
3. Select **Confirm** to carry out the auto-detect.

11.5.2 Configuring the type of outdoor unit and the type of backup

The configuration numbers must be reset if the EHC-05 PCB is replaced or if there is a setting error.

To reset the configuration numbers:



1. Press the key.
2. Select **Advanced Service Menu > Set Configuration Numbers > EHC-05**.
3. Set the CN1 and CN2 parameters. The values are available on the data plate of the indoor unit.
The CN parameters are used to indicate the type of outdoor unit and the back-up type present on the installation.
4. Select **Confirm** to save the settings.



For more information, see
Data plates, page 35
Configuration numbers CN1 and CN2, page 64

11.6 Resetting the safety thermostat



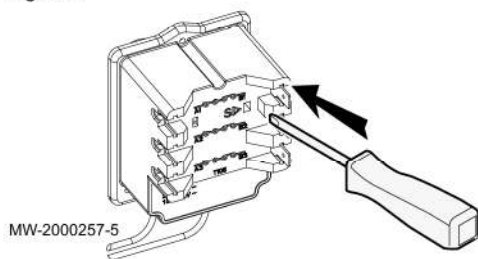
Danger

Before carrying out any work on the indoor unit, cut off its power supply and the electrical back-up immersion heater.

If you suspect that the safety thermostat was triggered:

1. Cut off the power supply to the indoor unit and the electrical back-up immersion heaters by lowering the circuit breakers on the electric panel.
2. Locate and correct the cause of power cut before resetting the safety thermostat.
3. Remove the front panel of the indoor unit and the protective cap.
4. If the safety thermostat has been triggered, use a flat-headed screwdriver to press the reset button on the thermostat. If not, look for an alternative cause for the power to the immersion heater having been cut.
5. Refit the front panel on the indoor unit and the protective cover.
6. Switch the mains supply to the indoor unit and the electrical back-up immersion heater back on.

Fig.103



12 Decommissioning and disposal

12.1 Decommissioning procedure

To decommission the heat pump temporarily or permanently:

1. Switch off the heat pump.
2. Shut off the electrical power supply to the heat pump: outdoor unit and indoor module.
3. Shut off the supply to the electrical back-up if an electrical back-up is present.
4. Shut off the supply to the boiler if hydraulic back-up is present.
5. Drain the central heating system.

12.2 Disposal and recycling

Fig.104



Warning

Removal and disposal of the heat pump must be carried out by a qualified professional in accordance with prevailing local and national regulations.

1. Switch off the heat pump.
2. Cut the mains supply to the heat pump.
3. Recover the refrigerant in accordance with prevailing regulations.



Important

Do not allow the refrigerant to escape into the atmosphere.

4. Disconnect the refrigerant connections.
5. Close the water mains.
6. Drain the installation.
7. Dismantle all hydraulic connections.
8. Dismantle the heat pump.
9. Scrap or recycle the heat pump in accordance with prevailing local and national regulations.

13 Energy savings

Energy-saving advice:

- Do not block ventilation outlets.
- Do not cover the radiators. Do not fit curtains in front of the radiators.
- Install reflective panels behind the radiators to prevent heat losses.
- Insulate the pipes in rooms that are not heated (cellars and lofts).
- Close the radiators in rooms not in use.
- Do not run hot (or cold) water pointlessly.
- Install an energy-saving shower head, which can save up to 40 % energy.
- Take showers rather than baths. A bath consumes twice as much water and energy.

14 Product fiche and package fiche

14.1 Product fiche

Tab.129 Product fiche for heat pump space heaters

	Unit	AWHP 4.5 MR	AWHP 6 MR-3	AWHP 8 MR-2
Space heating energy efficiency class under average climate conditions		A⁺⁺	A⁺⁺	A⁺⁺
Rated heat output under average climate conditions (<i>Prated or Psup</i>)	kW	3	4	6
Seasonal space heating energy efficiency under average climate conditions	%	134	125	129
Annual energy consumption under average climate conditions	kWh	2353	2124	3499
Sound power level L_{WA} indoors ⁽¹⁾	dB (A)	43	43	51
Rated heat output, under colder - warmer climate conditions	kW	5 – 4	4 - 5	6 - 6
Seasonal space heating energy efficiency, under colder - warmer climate conditions	%	109 – 179	116 - 172	119 - 169
Annual energy consumption, under colder - warmer climate conditions	kWh	4483 – 1249	3721 - 1492	4621 - 1904
Sound power level L_{WA} outdoors	dB (A)	58	65	65
(1) If applicable				

Tab.130 Product fiche for heat pump space heaters

	Unit	AWHP 11 MR-2	AWHP 11 TR-2	AWHP 16 MR-2	AWHP 16 TR-2
Space heating energy efficiency class under average climate conditions		A⁺⁺	A⁺⁺	A⁺	A⁺
Rated heat output under average climate conditions (<i>Prated or Psup</i>)	kW	6	6	9	9
Seasonal space heating energy efficiency under average climate conditions	%	125	125	121	121
Annual energy consumption under average climate conditions	kWh	3999	3999	5861	5861
Sound power level L_{WA} indoors ⁽¹⁾	dB (A)	51	51	51	51
Rated heat output, under colder - warmer climate conditions	kW	4 - 8	4 - 8	7 - 13	7 - 13
Seasonal space heating energy efficiency, under colder - warmer climate conditions	%	113 - 167	113 – 167	113 - 161	113 - 161
Annual energy consumption, under colder - warmer climate conditions	kWh	3804 - 2580	3804 - 2580	5684 - 4120	5684 - 4120
Sound power level L_{WA} outdoors	dB (A)	69	69	69	69
(1) If applicable.					

Tab.131 Product fiche for heat pump space heaters

	Unit	AWHP 22 TR-2	AWHP 27 TR-2
Space heating energy efficiency class under average climate conditions		A⁺	A⁺
Rated heat output under average climate conditions (<i>Prated or Psup</i>)	kW	11	14
Seasonal space heating energy efficiency under average climate conditions	%	114	112
Annual energy consumption under average climate conditions	kWh	7681	9993
Sound power level L_{WA} indoors ⁽¹⁾	dB (A)	43	43
Rated heat output, under colder - warmer climate conditions	kW	12 - 18	14 - 20
Seasonal space heating energy efficiency, under colder - warmer climate conditions	%	111 - 143	103 – 141

	Unit	AWHP 22 TR-2	AWHP 27 TR-2
Annual energy consumption, under colder - warmer climate conditions	kWh	10578 - 10025	13164 - 11541
Sound power level L_{WA} outdoors	dB (A)	77	77
(1) If applicable.			

**See**

For specific precautions about assembling, installing and maintaining: See Safety

**For more information, see**

Compatible heating devices, page 17

14.2 Product fiche – Temperature controller

Tab.132 Product fiche for the temperature controller

	Unit	DIEMATIC Evolution
Class		II
Contribution to space heating energy efficiency	%	2

14.3 Package fiche - Medium-temperature heat pumps

**Important**

'Medium-temperature application' means an application where the heat pump space heater or heat pump combination heater delivers its declared capacity for heating at an indoor heat exchanger outlet temperature of 55 °C.

Fig.105 Package fiche for medium-temperature heat pumps indicating the space heating energy efficiency of the package

Seasonal space heating energy efficiency of heat pump ①
'I' %

Temperature control
 from fiche of temperature control

Class I = 1%, Class II = 2%, Class III = 1.5%,
 Class IV = 2%, Class V = 3%, Class VI = 4%,
 Class VII = 3.5%, Class VIII = 5%

②
 + %

Supplementary boiler
 from fiche of boiler

Seasonal space heating energy efficiency (in %)

③
 (- 'I') x 'II' = ± %

Solar contribution
 from fiche of solar device

Collector size (in m²)

Tank volume (in m³)

Collector efficiency (in %)

Tank rating ⁽¹⁾
 A* = 0.95, A = 0.91,
 B = 0.86, C = 0.83,
 D - G = 0.81

('III' x + 'IV' x) x 0.45 x (/100) x = + %

(1) If tank rating is above A, use 0.95

Seasonal space heating energy efficiency of package under average climate ⑤
 %

Seasonal space heating energy efficiency class of package under average climate

☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
G	F	E	D	C	B	A	A*	A**	A***
<30%	≥30%	≥34%	≥36%	≥75%	≥82%	≥90%	≥98%	≥125%	≥150%

Seasonal space heating energy efficiency under colder and warmer climate conditions

⑤
Colder: - 'V' = % **Warmer:** + 'VI' = %

The energy efficiency of the package of products provided for in this fiche may not correspond to its actual energy efficiency once installed in a building, as this efficiency is influenced by further factors such as heat loss in the distribution system and the dimensioning of the products in relation to building size and characteristics.

AD-3000745-01

- I The value of the seasonal space heating energy efficiency of the preferential space heater, expressed in %.
- II The factor for weighting the heat output of preferential and supplementary heaters of a package as set out in the following table.
- III The value of the mathematical expression: 294/(11 · Prated), whereby "Prated" is related to the preferential space heater.
- IV The value of the mathematical expression 115/(11 · Prated), whereby "Prated" is related to the preferential space heater.
- V The value of the difference between the seasonal space heating energy efficiencies under average and colder climate conditions, expressed in %.
- VI The value of the difference between the seasonal space heating energy efficiencies under warmer and average climate conditions, expressed in %.

Tab.133 Weighting of medium temperature heat pumps

Prated / (Prated + Psup) ⁽¹⁾⁽²⁾	II, package without hot water storage tank	II, package with hot water storage tank
0	1.00	1.00
0.1	0.70	0.63
0.2	0.45	0.30
0.3	0.25	0.15
0.4	0.15	0.06
0.5	0.05	0.02
0.6	0.02	0
≥ 0.7	0	0

(1) The intermediate values are calculated by linear interpolation between the two adjacent values.
(2) Prated is related to the preferential space heater or combination heater.

Tab.134 Package efficiency

	Unit	AWHP 4.5 MR	AWHP 6 MR-3	AWHP 8 MR-2
Seasonal space heating energy efficiency of package	%	136	127	131

Tab.135 Package efficiency

	Unit	AWHP 11 MR-2	AWHP 11 TR-2	AWHP 16 MR-2	AWHP 16 TR-2	AWHP 22 TR-2	AWHP 27 TR-2
Seasonal space heating energy efficiency of package	%	127	127	123	123	116	114



For more information, see
Compatible heating devices, page 17

15 Spare parts

15.1 General

If inspection or maintenance work reveals the need to replace a heat pump component, use only recommended spare parts and equipment.



Caution

Only genuine spare parts may be used.



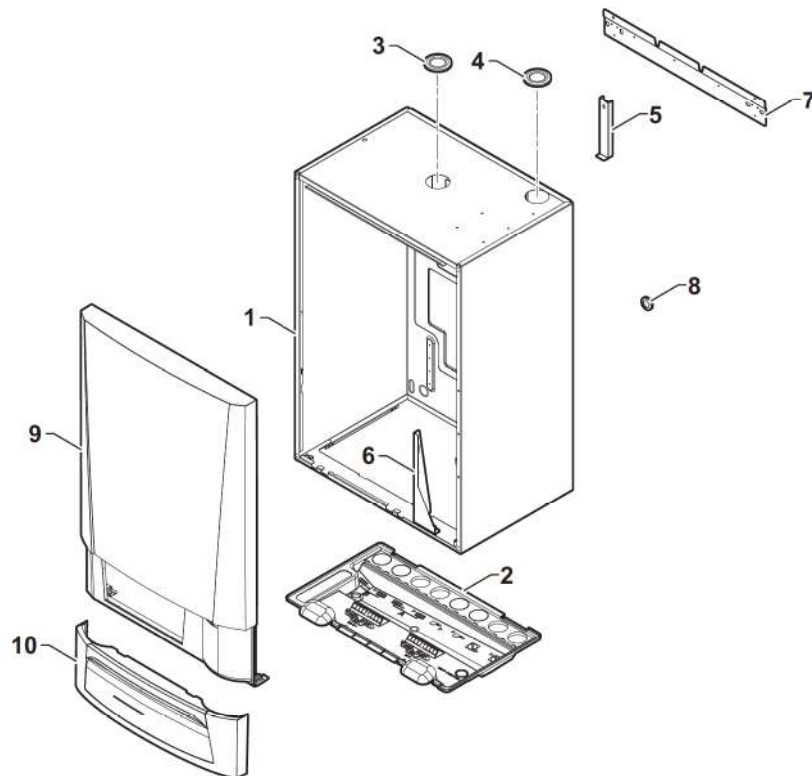
Important

To order a spare part, give the reference number shown on the list.

15.2 Indoor unit

15.2.1 Casing

Fig.106



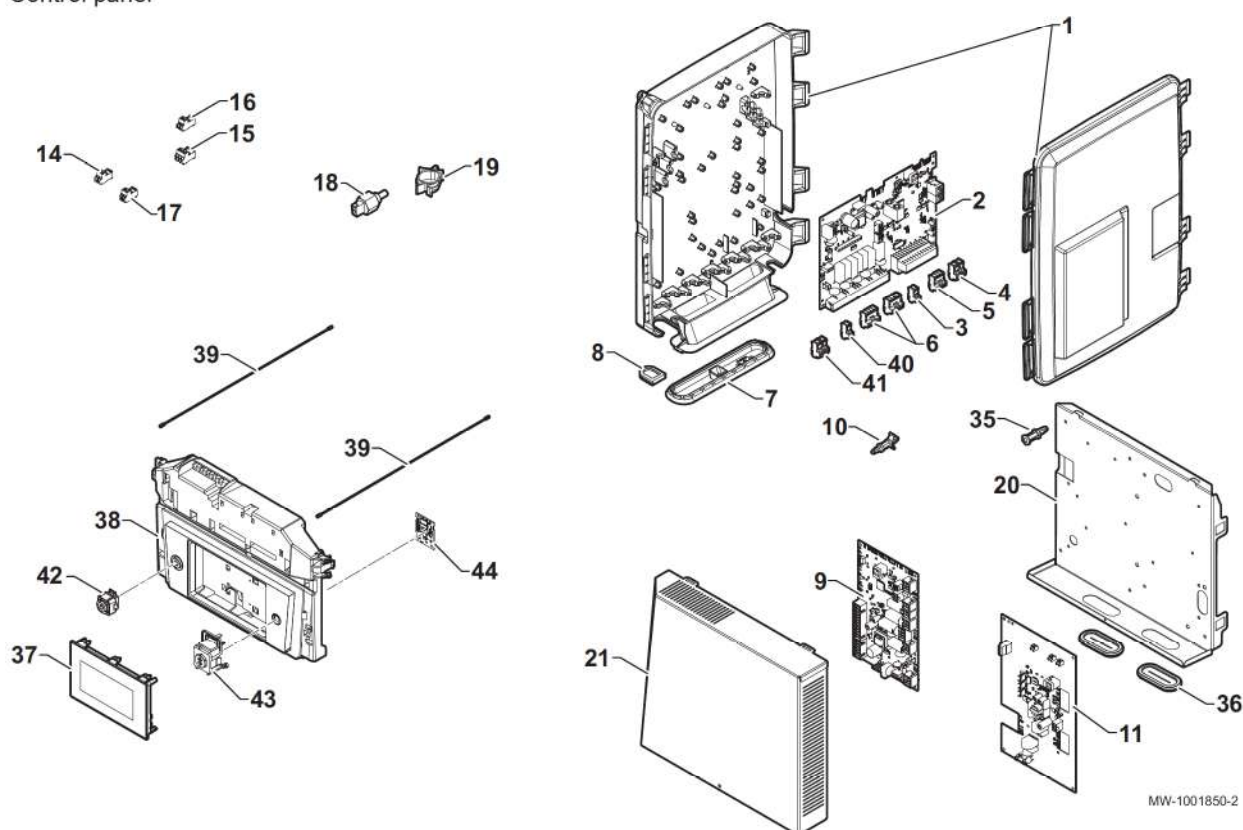
MW-3000608-3

Tab.136

Markers	Reference	Description
1	300025324	Assembled casing
2	300025281	Casing bottom
3	55125	Pipe feed
4	55125	Pipe feed for electrical backup
4	95320588	Pipe feed for hydraulic backup
5	7666862	Tank blocking plate
6	200020022	Blocking piece for control panel
7	300027772	Casing cross-bar support
8	300025063	Diaphragm cable grommet, dg-pvc 21/e1
9	7693765	Front panel
10	7667173	HMI flap

15.2.2 Control system

Fig.107 Control panel



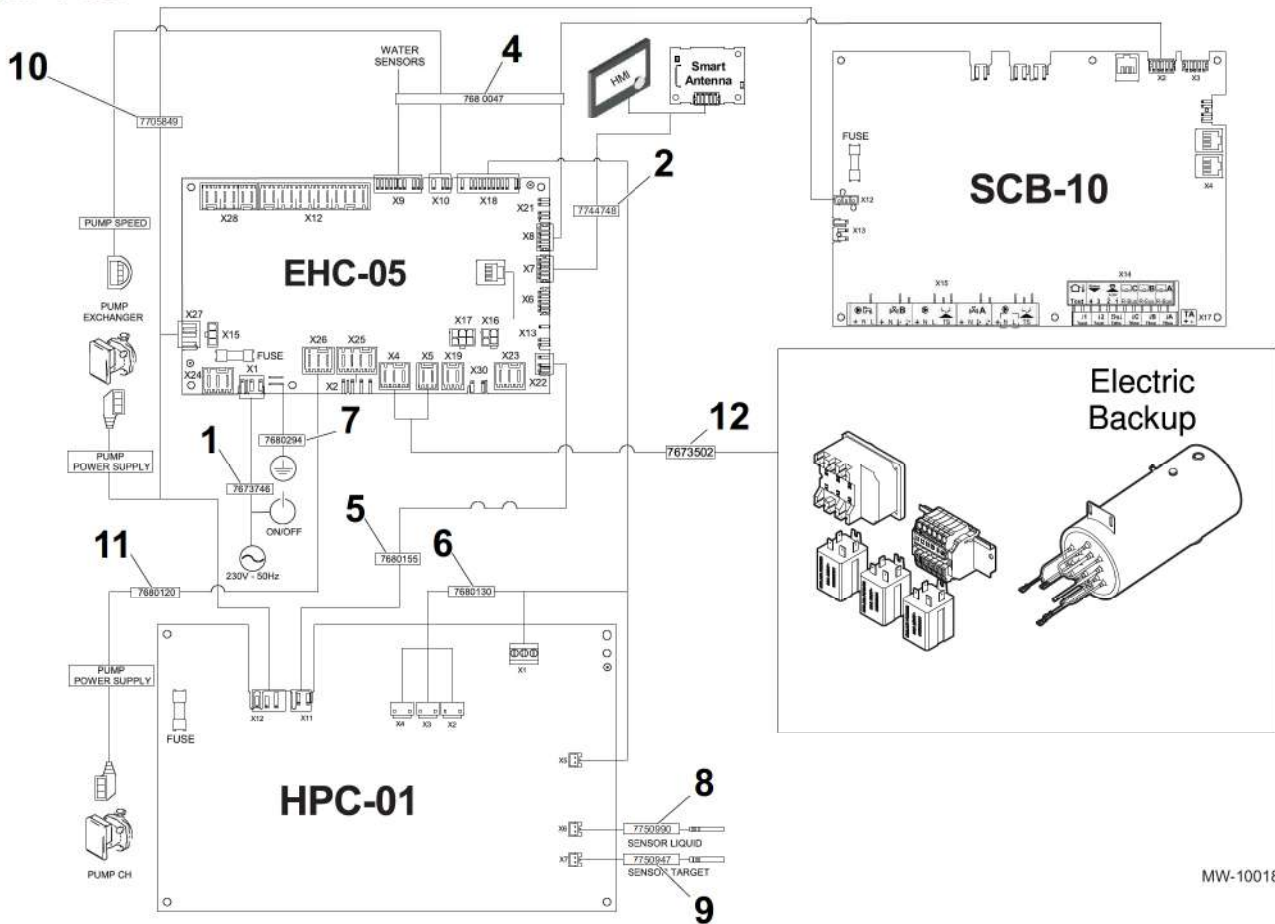
MW-1001850-2

Tab.137 List of spare parts for the control panel

Marker	Reference	Description
1	S100860	SCU casing
2	7704493	SCB-10 PCB
3	7632096	2-pin connector (white)
4	7632095	2-pin connector (green)
5	300009102	4-pin telephone relay connector
6	300009081	5-pin connector TS + Pump B + bridge
7	S100869	SCU gasket
8	S100862	SCU grommet (5x)
9	7684855	EHC-05 central unit PCB
10	300020012	Clip-on interface PCB holder series 100-0
11	7653678	HPC-01 interface PCB
14	200009965	2-point BL connector (orange)
15	7685026	rast5 4-pin connector, three-way valve
16	7638205	LUMB 361102f07k13m08 connector
17	300008957	2-pin DHW sensor connector
18	7609871	PT1000 temperature sensor
19	95320950	Cable clamp
20	7688781	Painted card support
21	7688785	Painted panel cover
35	300020013	Clip-on interface PCB holder series 100-2
36	7681470	Oblong grommet membrane
37	7695388	MK3 display for heat pump
38	7745285	Control panel
39	115525	Cord for control panel
40	7680712	rast5 connector, 2-pin (terminal X5)

Marker	Reference	Description
41	7680714	rast5 connector, 3-pin (terminal X4)
42	7675263	Complete On/Off switch (grey)
43	7745075	Bluetooth® PCB bracket
44	7715094	GTW-22 PCB for Bluetooth® communication

Fig.108 PCBs



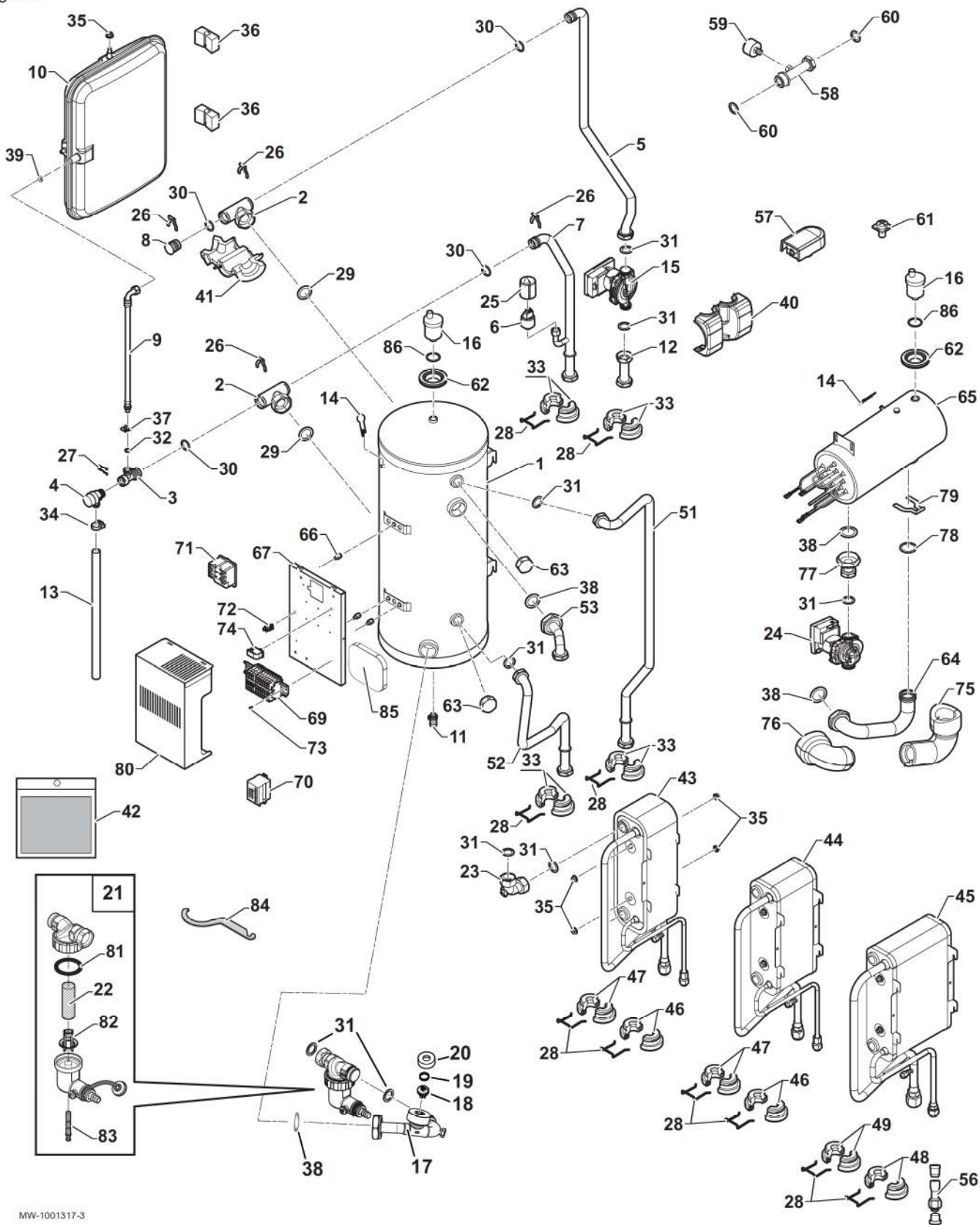
MW-1001851-2

Tab.138 List of spare parts for the PCBs

Marker	Reference	Description
1	7673746	EHC power supply harness
2	7744748	L-Bus cable, 700 mm
4	7680047	Sensor harness
5	7680155	S2-S3 cable
6	7680130	EHC-HPC harness
7	7680294	Earth wire
8	7750990	Liquid sensor
9	7750947	Heating sensor
10	7705849	Harness
11	7680120	EHC power supply harness - CH pump
12	7673502	EHC harness, electrical backup

15.2.3 Other components

Fig.109



MW-1001317-3

Tab.139

Markers	Reference	Description
1	300025284	Tank unit
2	300025388	Quick-connection T-shaped piece

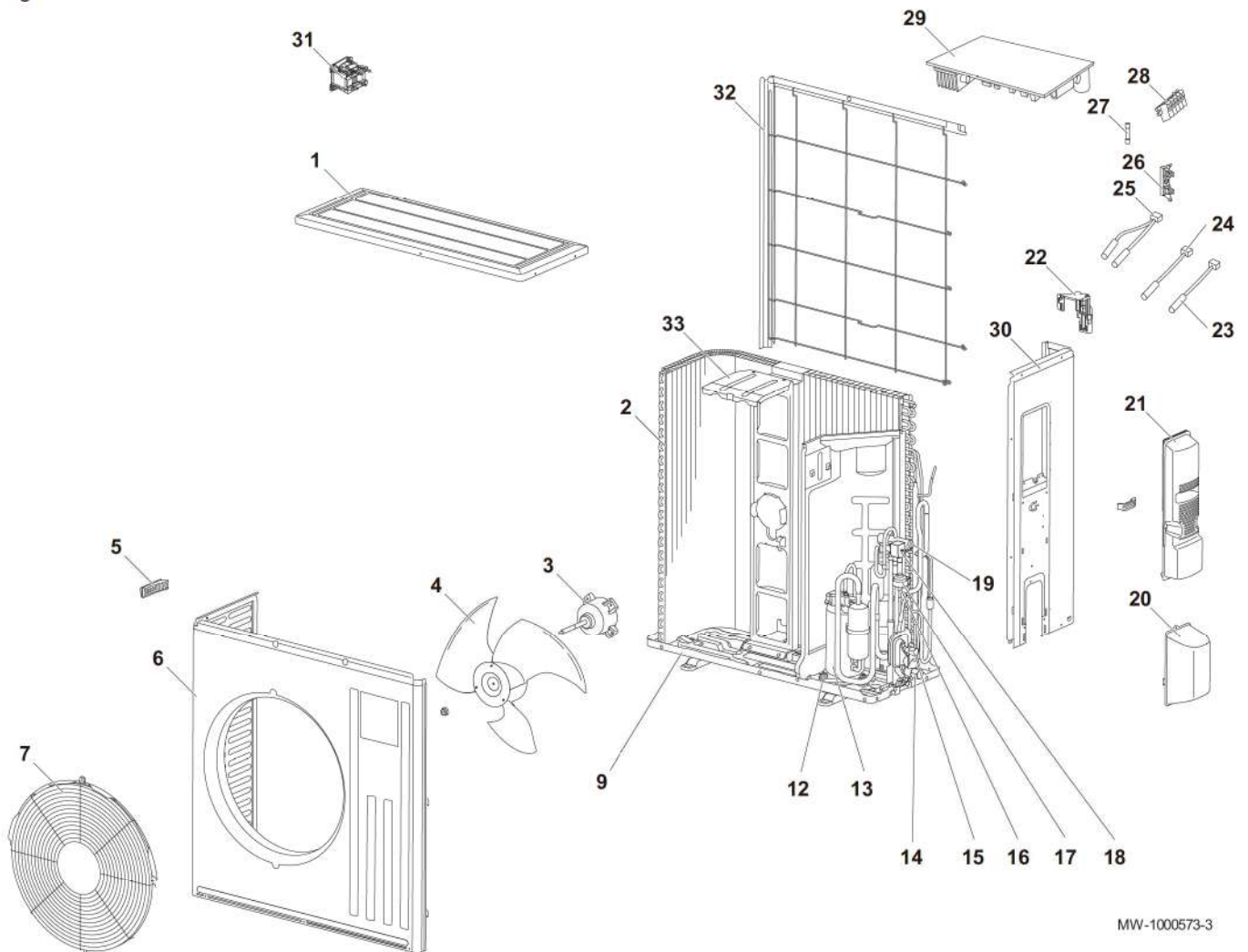
Markers	Reference	Description
3	300025387	T-shaped safety valve
4	200022010	3.5 bar safety valve
5	7674063	Heating flow pipe, tank
6	7709960	Eltek pressure gauge
7	7674060	Heating return pipe
8	300025325	Quick-release T connection plug
9	300025392	DN8 flexible hose, l450
10	300025395	9510-762 expansion vessel
11	0295174	Drain valve 1/4"
12	300025257	Heating flow pipe, three-way valve
13	300003563	PVC pipe, Ø 20 x 16 mm
14	300023286	Bulb blocking pin
15	7657318	Y.P.RS15/7.5 RKA 130 9 circulating pump
16	94918138	Automatic air vent
17	7705608	Plate heat exchanger tube, tank
18	300025396	Huba detector head
19	300025363	Wave spring, CS112 l2 0 189
20	300025329	Flow detector nut
21	7697417	Complete magnetic filter
22	7715767	Filter
23	7672888	Circulating pump tube, heating
24	7657259	Circulating pump Y. P. RS15/7.5 PWM 130 12
25	7700519	Pressure gauge protection cap
26	300023113	Pin for DN20
27	116552	Pin clip 20
28	300025361	Spacer clip
29	95013063	Fibre gasket, Ø 38 x 27 x 2 mm
30	95023311	21 x 3.5 O-ring
31	95013062	Green gasket 30 x 21 x 2
32	95023308	O-ring, 9.19 x 2.62 EPDM
33	300025285	Spacer, Ø 22 mm
34	300025444	Hose fastener
35	95890434	Serrated thibloc HM8 nut
36	110865	Tank support bracket
37	300024235	Locking pin, Ø 10 mm
38	95013064	Green gasket 44 x 32 x 2
39	95013058	14 x 8 x 2 gasket
40	7681504	Pump insulation
41	300027359	Insulation for T-shaped piece
42	7695163	Screw bag
43	200019610	Plate heat exchanger for the 4 to 8 kW models
44	200019611	Plate heat exchanger for the 11 to 16 kW models
45	200019612	Plate heat exchanger for the 22 to 27 kW models
46	300025290	Spacer, Ø 3/8", for the 4 to 16 kW models
47	300025291	Spacer, Ø 5/8", for the 4 to 16 kW models
48	300025289	Spacer, Ø 3/4", for the 22 to 27 kW models
49	300025288	Spacer, Ø 1/2", for the 22 to 27 kW models
51	300025235	Return pipe, hydraulic backup
52	300025237	Flow pipe, hydraulic backup
53	300025244	Circulating pump pipe, tank
56	300025567	Flare weld adapter fitting for the 22 to 27 kW models
57	95362450	AF60 outdoor temperature sensor

Markers	Reference	Description
58	7687503	Pipe kit with pressure gauge connector, Ø 22 mm
59	95365106	3 bar axial pressure gauge, Ø 40 mm
60	95013069	Green gasket 22 x 30 x 2
61	7665153	Earth connection nut for the 4 to 8 kW models
62	55125	Grommet, Ø 60 31/42 thickness 1 mm
63	94950198	Brass plug G1" female
64	300025231	Preheater pipe, tank
65	300025332	12 kW preheater
66	300025400	Male-female hexagonal spacer
67	7676000	Electrical backup support
69	7679295	Terminal connection block, immersion heater
70	96568001	Finder relay, 220 V 30 A
71	200018815	COTHERM BSDP 0002 thermostat and syringe kit
72	95320950	Cable clamp
73	95770690	Sim cb screw, 3.94 x 9.5
74	7643731	Cable clamp to clip
75	300027995	Preheater pipe insulation 1, tank
76	300027996	Preheater pipe insulation 2, tank
77	300025263	Pipe between circulating pump and preheater
78	300025397	O-ring, Ø 34 x 4 mm
79	300025423	Pin, Ø 35 mm
80	7693269	Electrical backup cover
81	7715766	Gasket
82	7715768	Plastic insert
83	7715769	Magnet + O-ring
84	7706481	Maintenance key
85	7693385	Panel insulation
86	95013060	Green gasket 24 x 17 x 2

15.3 Outdoor unit

15.3.1 AWHP 4.5 MR

Fig.110



MW-1000573-3

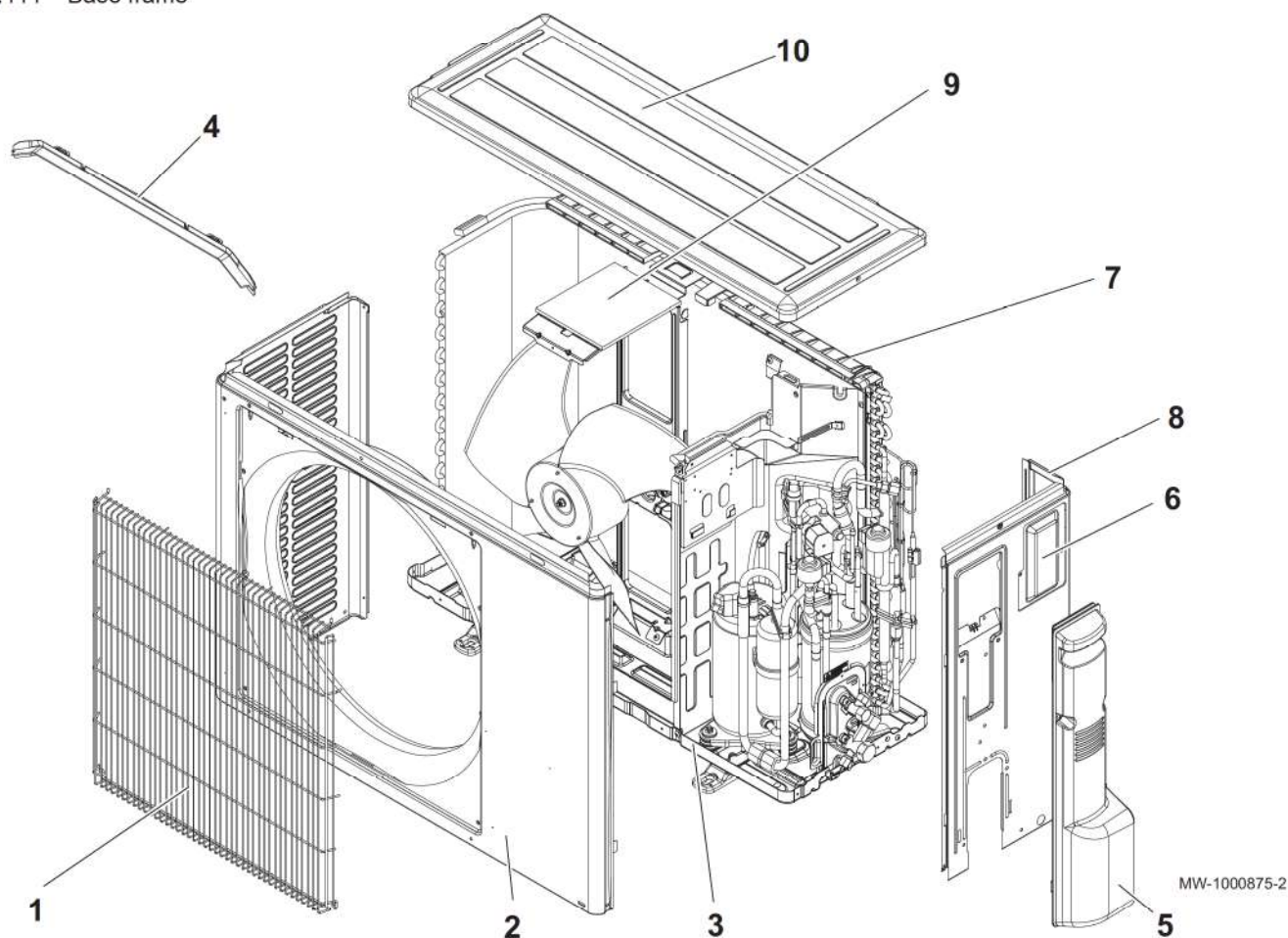
Tab.140

Marker	Reference	Description
1	7652649	Top panel
2	7652667	Coil (evaporator/condenser)
3	7652668	Fan motor
4	7652669	Fan rotor
5	7652670	Grip
6	7652671	Front panel
7	7652672	Fan grate
9	7652673	Base frame
12	7652674	Compressor anti-vibration mount kit
13	7652675	SNB130FGBMT compressor
14	7652676	1/2" stop valve (gas) Ø 12.7 mm
15	7652677	1/4" stop valve (hydraulic) Ø 6.35 mm
16	7652678	Expansion valve
17	7652679	LEV expansion valve coil
18	7652680	21S4 solenoid valve coil
19	7652681	4-way valve
20	7652682	Stop valve access panel
21	7652684	Electrical supply access panel

Marker	Reference	Description
22	7652685	Sensor support
23	7652686	RT65 outdoor temperature sensor
24	7652687	RT68 coil temperature sensor
25	7652688	RT61-RT62 sensor kit
26	7652690	Fuse holder
27	7652691	T20AL / 250 V fuse
28	7652692	Supply terminal
29	7652693	Central unit PCB
30	7652694	Side panel, right
31	7652695	L61 coil
32	7652696	Rear protection grid
33	7652697	Fan motor support
-	7652698	Capillary tubes (100) Ø 4 mm x Ø 2.4 mm
-	7652699	Condensate discharge

15.3.2 AWHP 6 MR-3

Fig.111 Base frame

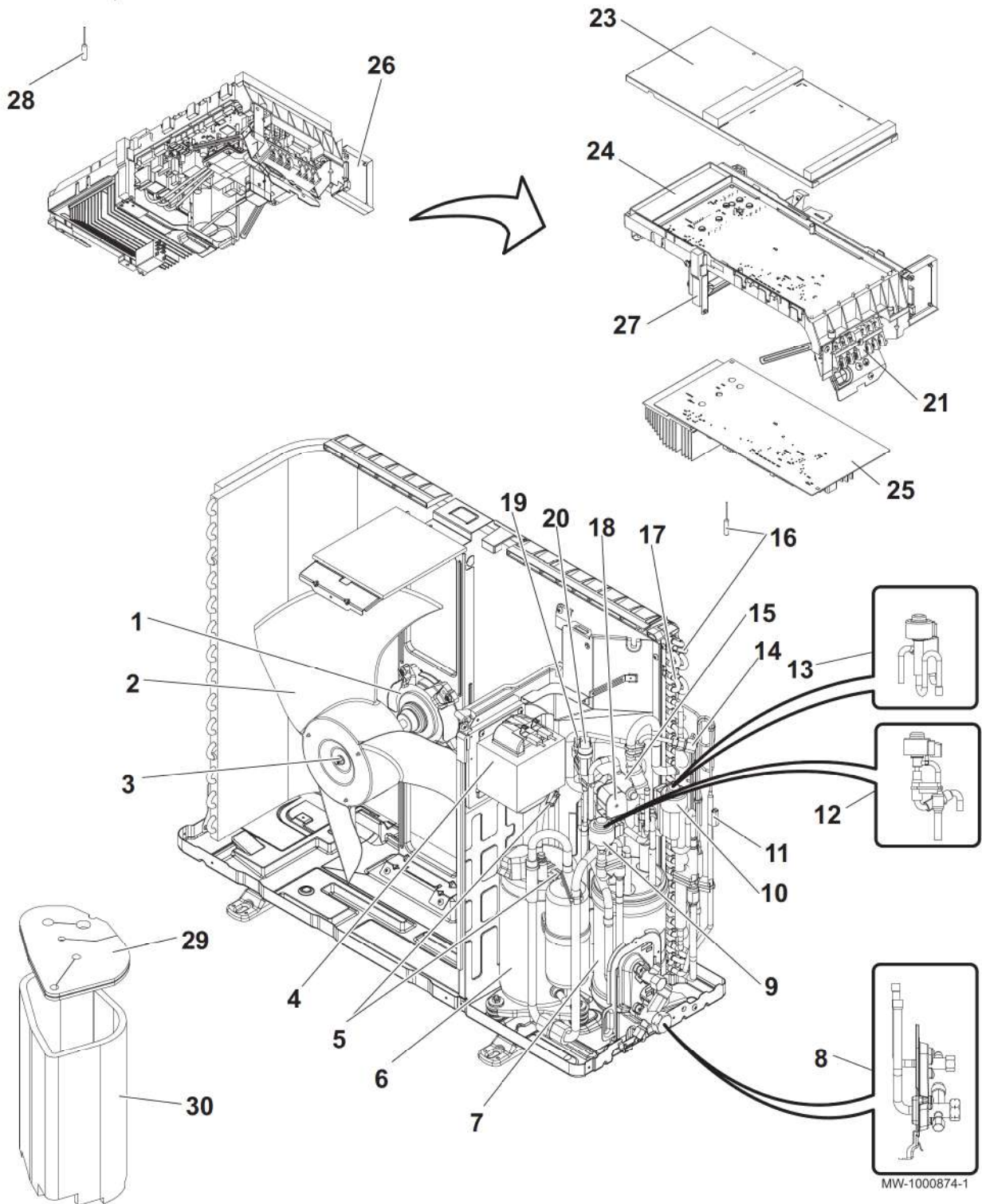


Tab.141

Marker	Reference	Description
1	7673303	Fan grate
2	7673305	Front panel
3	7673306	Base panel
4	7673313	Cable duct
5	7673307	Maintenance access panel

Marker	Reference	Description
6	7673308	Hatch
7	7673309	Rear protection grid
8	7673310	Side panel, right
9	7673311	Motor bracket
10	7673312	Top panel

Fig.112 Electric part

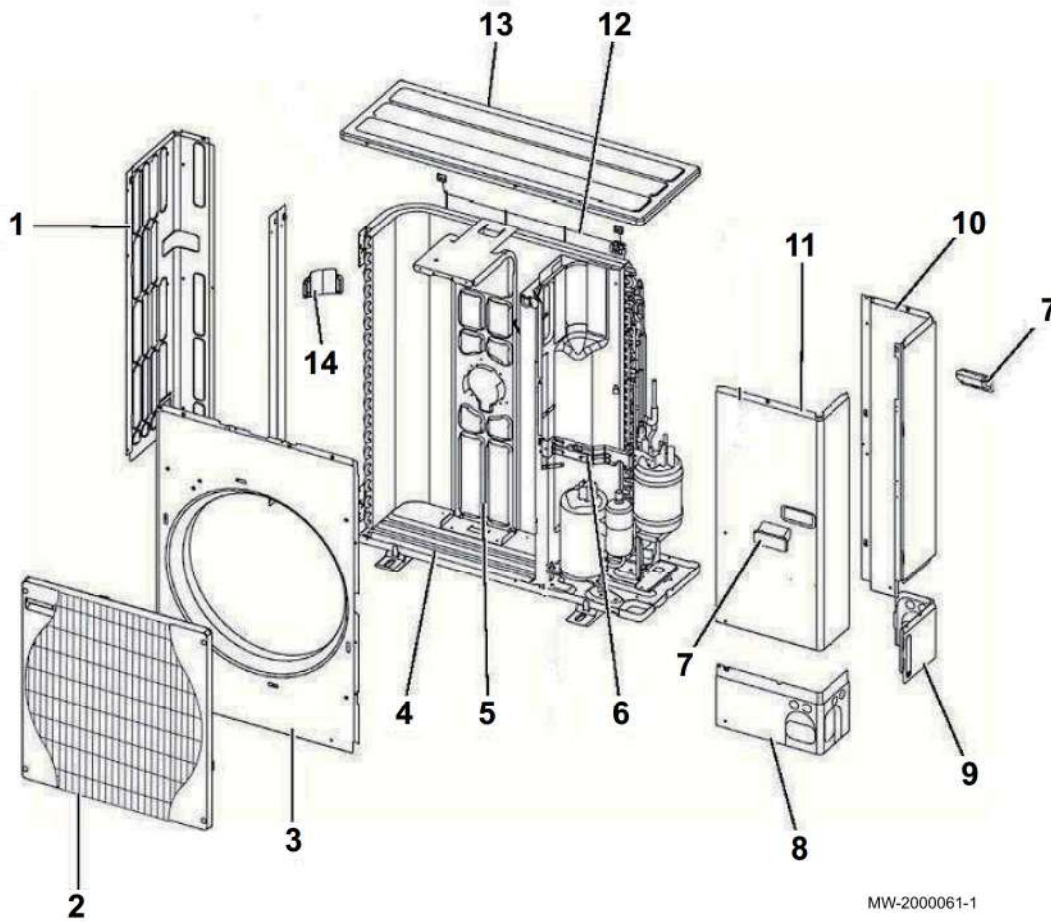


Tab.142

Marker	Reference	Description
1	7673314	Fan motor
2	7673315	Fan rotor
3	7604150	Nut
4	7673316	Self ACL
5	7673317	TH4–TH34 temperature sensor
6	7673318	SNB130FTCM2 compressor
7	7673319	Power receiver
8	7673320	CPLT 1/4 F - 1/2 F stop valves
9	7673321	LEV-B coil
10	7673322	LEV-A coil
11	7673323	TH3 temperature sensor
12	7673324	CPLT LEV-B expansion valve
13	7673325	CPLT LEV-A expansion valve
14	300018092	Load plug
15	300023668	4-way valve
16	7673326	TH6-7 temperature sensor
17	7673327	Coil (evaporator/condenser)
18	7673328	21S4 4-way valve coil
19	7673329	HP pressure switch sensor
20	300018123	41.5-bar HP pressure switch
21	300023673	Connection terminal block
23	7673330	Cover
24	7673331	Support
25	7673332	Central unit PCB
26	7673333	Relay card
27	7673334	Radiator support
28	7673335	TH8 radiator sensor
29	7673336	Compressor top insulation
30	7673337	Compressor insulation
-	7673338	10 A / 250 V fuse
-	7673339	3,15 A / 250 V fuse
-	7673340	Compressor cable harness

15.3.3 AWHP 8 MR-2

Fig.113 Base frame

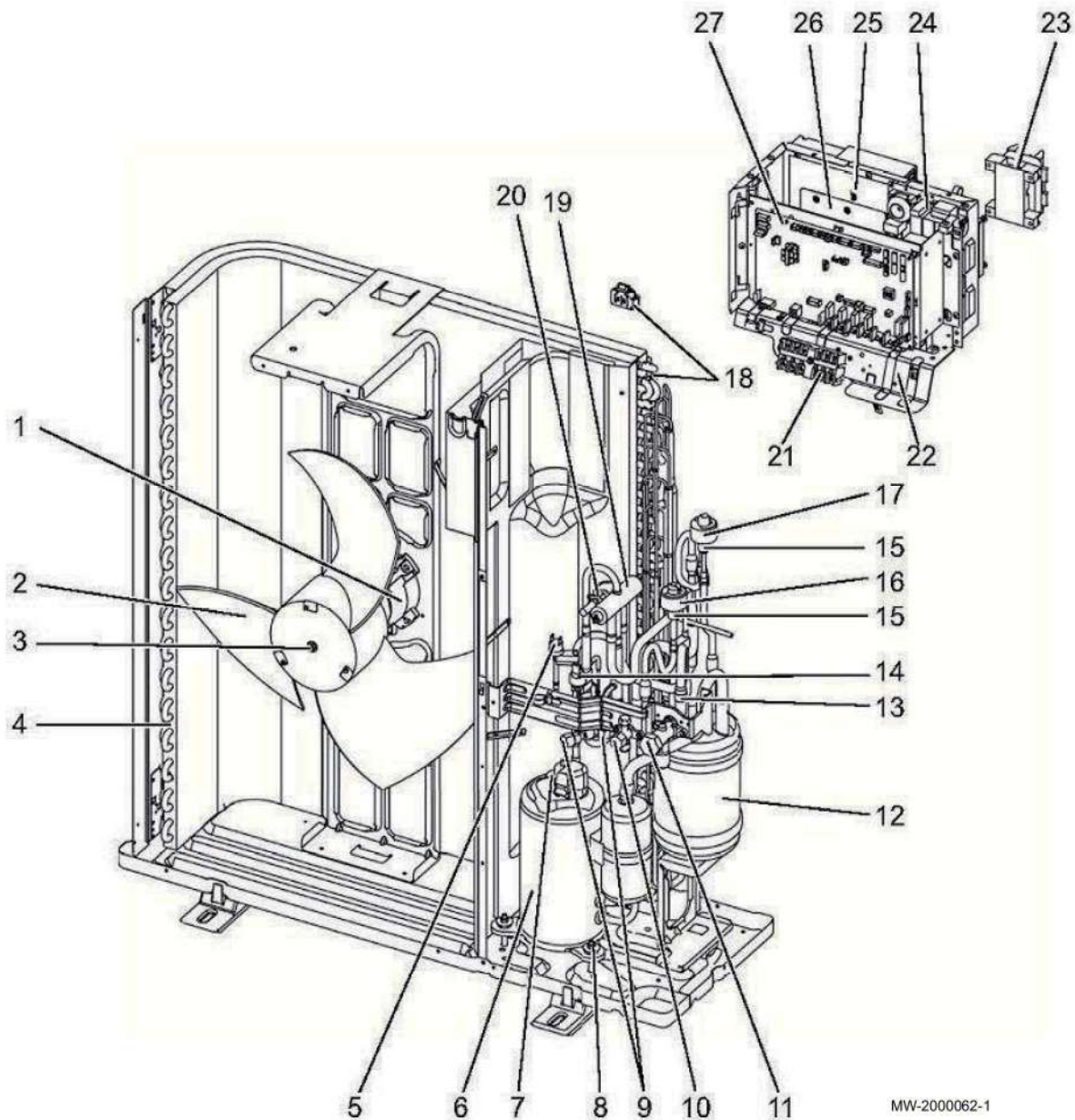


MW-2000061-1

Tab.143

Marker	Reference	Description	Model
1	7614219	Side panel, left	
2	7614220	Fan grid	
3	7614221	Front panel	
4	7614222	Base panel	SERVICE REF. : AWHP 8 MR-2
4	7705552	Base panel	SERVICE REF. : AWHP 8 MR-2 R2.UK
5	7614223	Motor bracket	SERVICE REF. : AWHP 8 MR-2
5	7705553	Motor bracket	SERVICE REF. : AWHP 8 MR-2 R2.UK
6	7614224	Valve bracket	
7	7614225	Grip	
8	7614226	Lower front panel	
9	7614227	Lower rear panel	
10	7614228	Side panel, right	SERVICE REF. : AWHP 8 MR-2
10	7705557	Side panel, right	SERVICE REF. : AWHP 8 MR-2 R2.UK
11	7614230	Maintenance access panel	
12	7614231	Rear protection grate	
13	7614232	Top panel	
14	7614233	Grip	

Fig.114 Electric part



MW-2000062-1

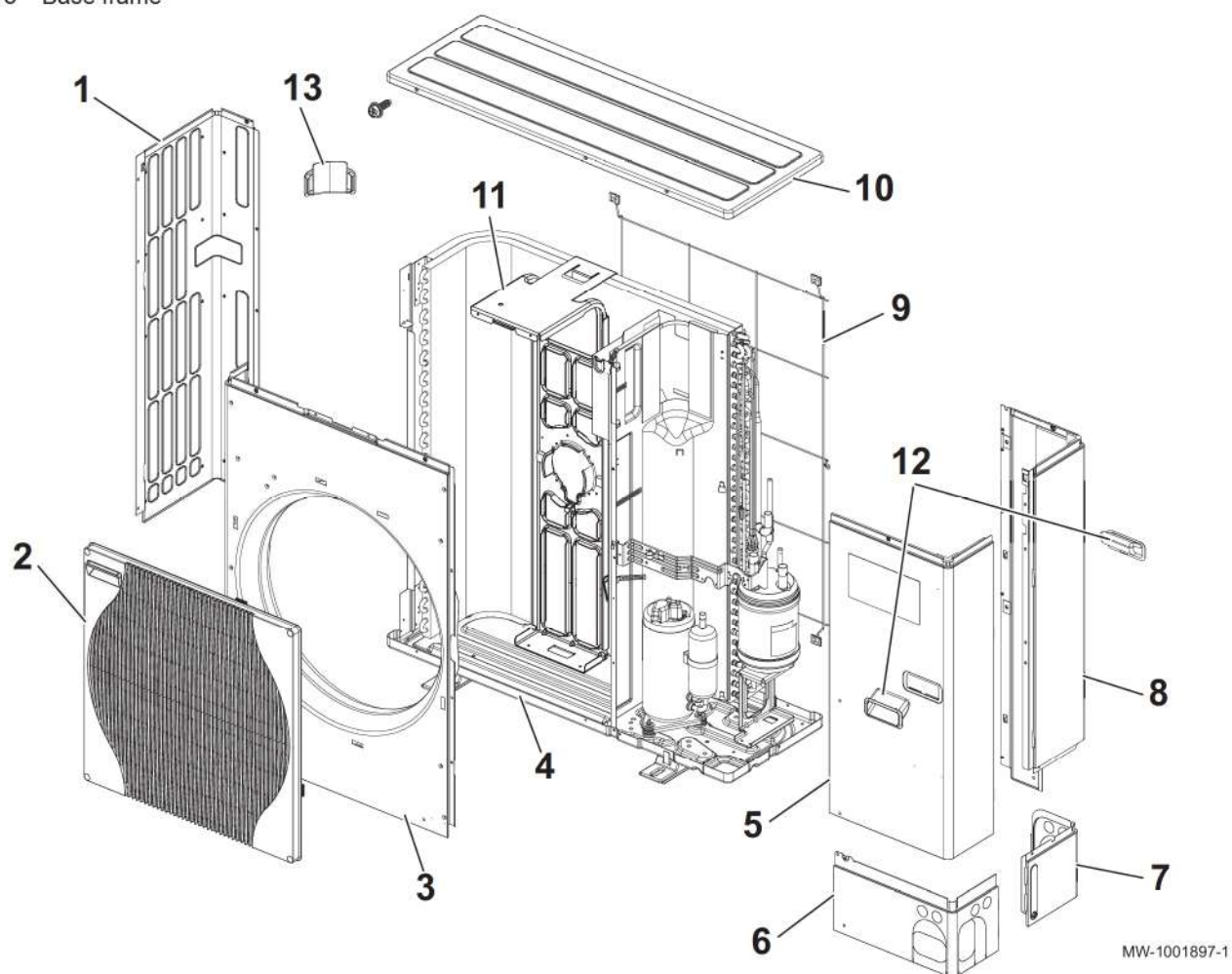
Tab.144

Marker	Reference	Description	Model
1	7614234	Fan motor	SERVICE REF. : AWHP 8 MR-2
1	7705558	Fan motor	SERVICE REF. : AWHP 8 MR-2 R2.UK
2	7614236	Fan	
3	7614237	Nut	
4	7614238	Coil (evaporator/condenser)	
5	7614239	High pressure pressure switch	
6	7614240	Compressor TNB220FLHMT	SERVICE REF. : AWHP 8 MR-2
6	7652256	Compressor SNB220FAGMC L1	SERVICE REF. : AWHP 8 MR-2 R1.UK + SERVICE REF. : AWHP 8 MR-2 R2.UK
7	7614241	TH34 compressor discharge temperature sensor	
8	7614242	Anti-vibration stud	SERVICE REF. : AWHP 8 MR-2
8	7705559	Anti-vibration stud	SERVICE REF. : AWHP 8 MR-2 R2.UK
9	7614243	Load plug	
10	7614244	Stop valve 3/8"	

Marker	Reference	Description	Model
11	7614245	Stop valve 5/8"	
12	7614246	Output reserve header	
13	7614247	Filter	
14	7614248	High pressure sensor	
15	7614250	Expansion valve	
16	7614251	Linear expansion valve coil	
17	7614252	Linear expansion valve coil	
18	7614253	Outside sensor battery TH6/7	
19	7614254	4-way valve	
20	7614255	Coil	SERVICE REF. : AWHP 8 MR-2
20	7705561	Coil 21S4	SERVICE REF. : AWHP 8 MR-2 R2.UK
21	7614278	Terminal block	SERVICE REF. : AWHP 8 MR-2
21	7705562	Terminal block	SERVICE REF. : AWHP 8 MR-2 R2.UK
22	7614279	Control panel	
23	7614280	Self (DCL)	SERVICE REF. : AWHP 8 MR-2
23	7705563	Self 18 MH	SERVICE REF. : AWHP 8 MR-2 R2.UK
24	7614282	EMI-suppressor filter	
25	7614283	Dissipator sensor TH8	SERVICE REF. : AWHP 8 MR-2
25	7705564	Dissipator sensor TH8	SERVICE REF. : AWHP 8 MR-2 R2.UK
26	7614284	Output PCB	SERVICE REF. : AWHP 8 MR-2
26	7652259	Output PCB	SERVICE REF. : AWHP 8 MR-2 R1.UK + SERVICE REF. : AWHP 8 MR-2 R2.UK
27	7614285	Central unit PCB	SERVICE REF. : AWHP 8 MR-2
27	7652258	Central unit PCB	SERVICE REF. : AWHP 8 MR-2 R1.UK + SERVICE REF. : AWHP 8 MR-2 R2.UK
-	7614286	Gas sensor TH4	
-	7614288	Liquid sensor TH3	
-	7705560	Silencer	SERVICE REF. : AWHP 8 MR-2 R2.UK

15.3.4 AWHP 8 MR-2 R3

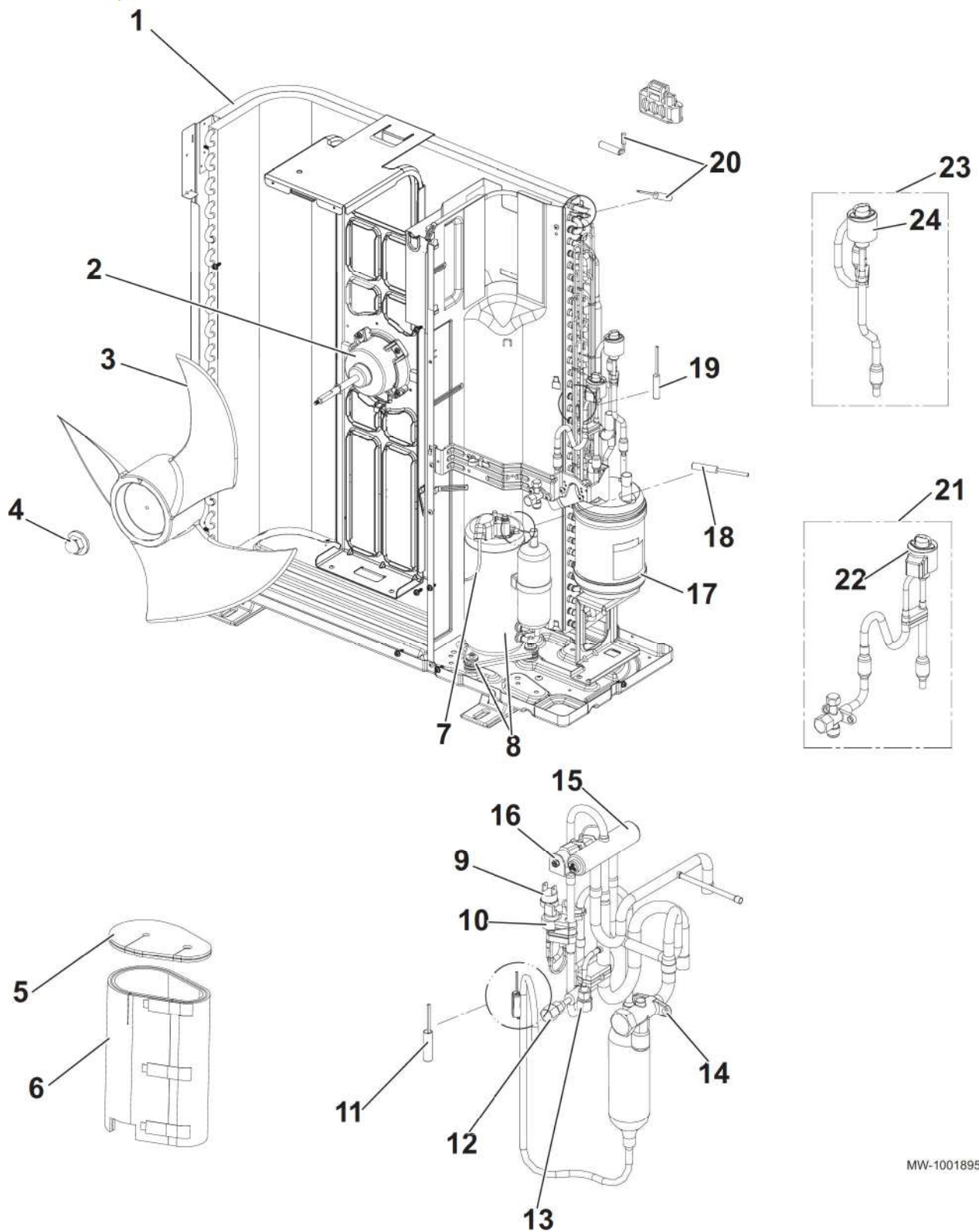
Fig.115 Base frame



Tab.145

Marker	Reference	Description
1	300018159	Side panel, left
2	7621343	Fan grid
3	7776742	Front panel
4	7776743	Base frame
5	300018156	Maintenance access panel
6	300018111	Lower front panel
7	300018112	Lower rear panel
8	7776744	Side panel, right
9	300018150	Rear protection grille
10	7776745	Top panel
11	7776746	Motor bracket
12	300018119	Grip
13	300018120	Grip

Fig.116 Electric part



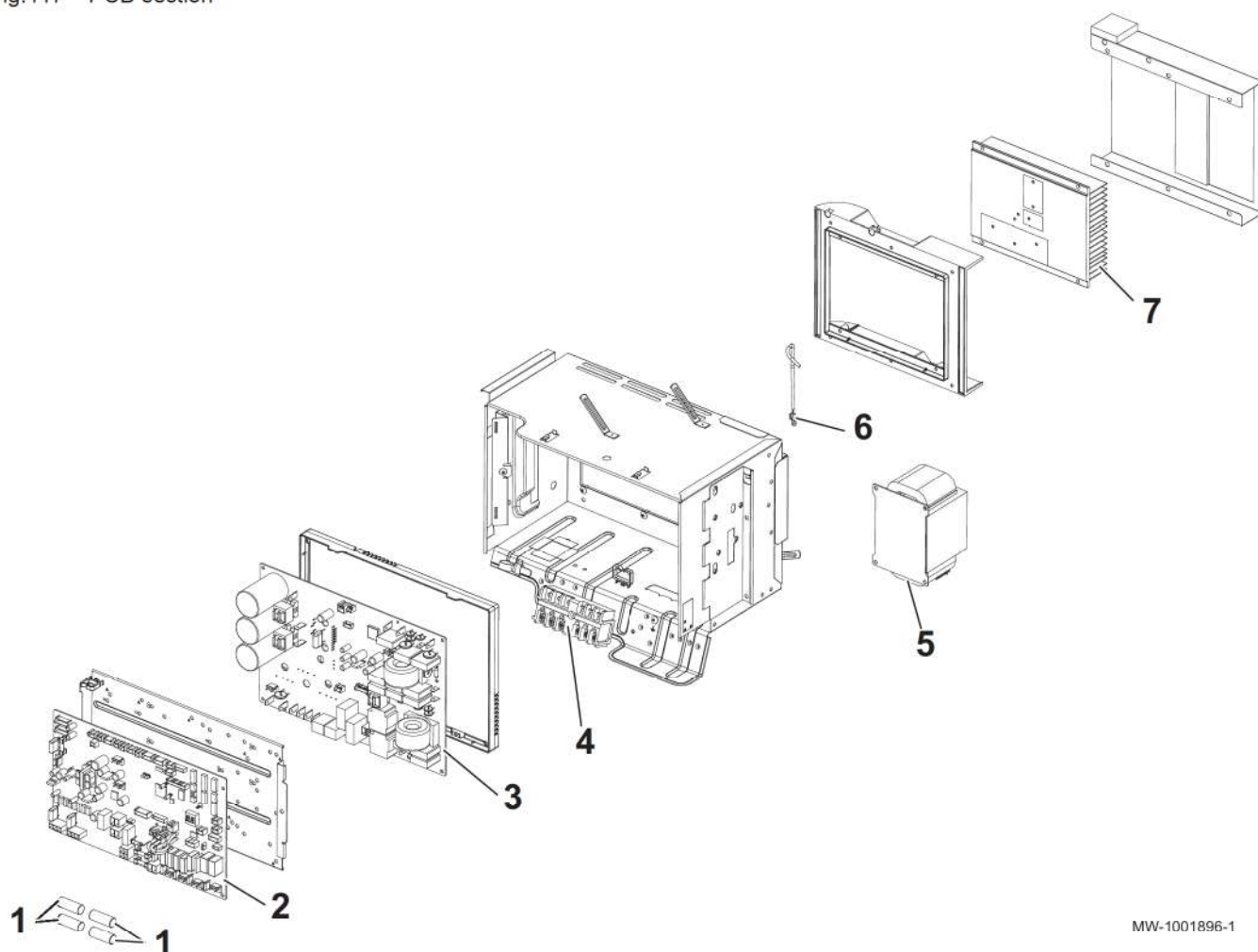
MW-1001895-1

Tab.146

Marker	Reference	Description
1	7776706	Fin tube coil
2	7776707	Fan motor
3	300018144	Fan
4	7776708	MEC M6 rotor holding nut
5	7776709	Compressor top insulation
6	7776711	Compressor insulation

Marker	Reference	Description
7	7776715	Compressor cable harness
8	7776716	SNB220FAGMCL compressor
9	7776717	63H high pressure switch
10	7673329	63HS high pressure switch sensor
11	7776718	TH4 gas sensor
12	7776720	ST load plug
13	7776722	LB90 load plug
14	7776723	5/8" stop valve and filter
15	7776724	21S4 4-way valve
16	7776725	21S4 solenoid valve coil
17	7776726	Output reserve header
18	7776727	TH34 temperature sensor
19	7776728	TH3 temperature sensor
20	300018219	W TH6-7 coil outside sensor
21	7776731	CPLT /LEV-B expansion valve
22	7776732	Red XAP-5P /LEV-B coil
23	7776733	CPLT /LEV-A expansion valve
24	7776734	White XAP-5P /LEV-A coil

Fig.117 PCB section



MW-1001896-1

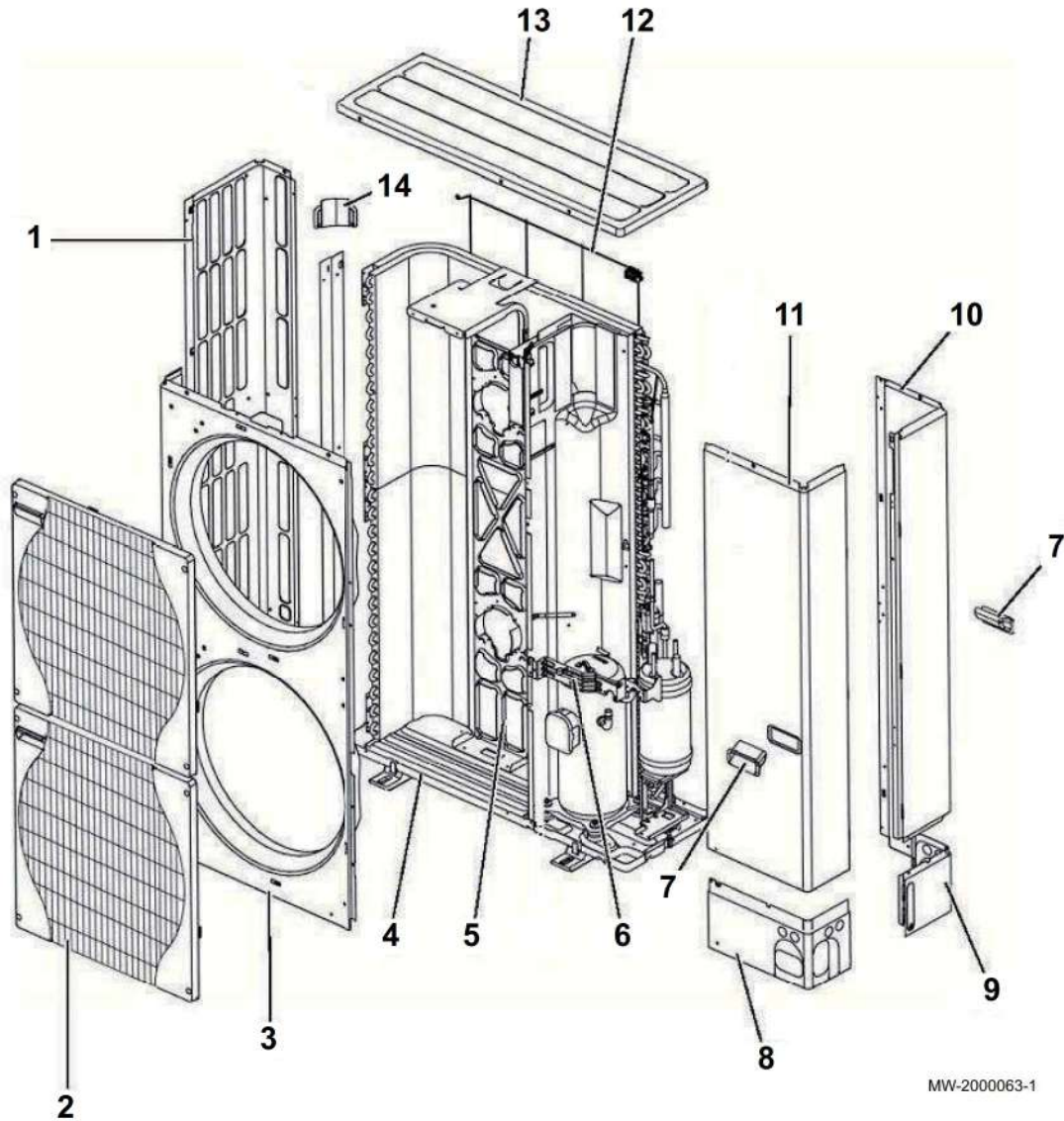
Tab.147

Marker	Reference	Description
1	7604148	6.3 A / 250 V fuse
2	7776736	Central unit PCB

Marker	Reference	Description
3	7776737	Output PCB
4	7776738	LNE S1 S2 S3 /TB1 connection terminal block
5	7776739	ACL choke
6	7776740	TH8 sink sensor
7	7776741	Heat sink

15.3.5 AWHP 11 MR-2 – AWHP 16 MR-2 – AWHP 11 TR-2 – AWHP 16 TR-2

Fig.118 Base frame



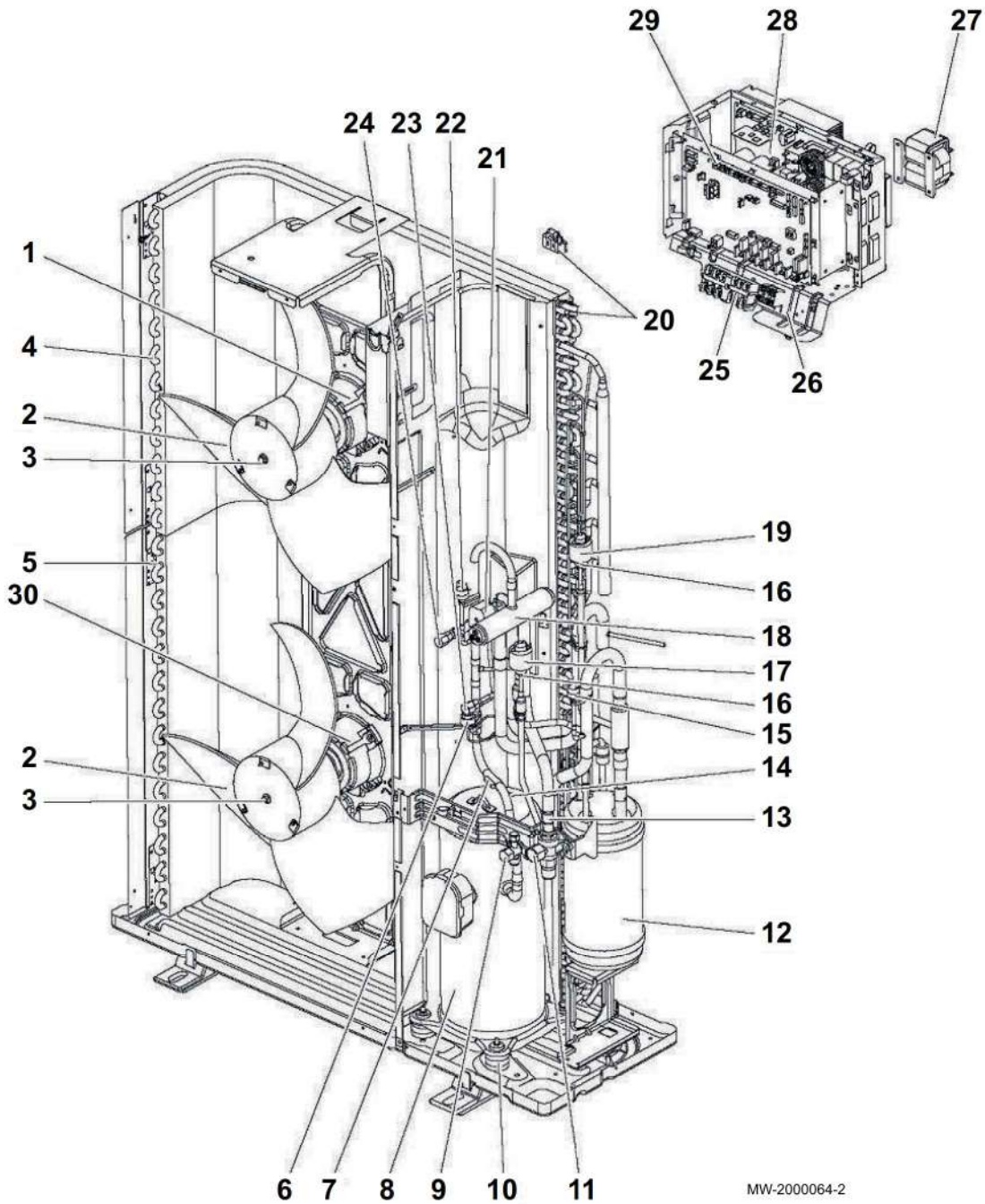
MW-2000063-1

Tab.148

Marker	Reference	Description	Model
1	7614289	Side panel, left	
2	7614220	Fan grid	
3	7614290	Front panel	
4	7614292	Base panel	
5	7614293	Motor bracket	

Marker	Reference	Description	Model
5	7717095	Motor bracket	SERVICE REF. : AWHP 11 MR-2 R2.UK SERVICE REF. : AWHP 16 MR-2 R2.UK SERVICE REF. : AWHP 11 TR-2 R2.UK SERVICE REF. : AWHP 16 TR-2 R2.UK
6	7614224	Valve bracket	
7	7614225	Grip	
8	7614226	Lower front panel	
9	7614227	Lower rear panel	
10	7614294	Side panel, right	
11	7614295	Maintenance access panel	
12	7614296	Rear protection grid	
13	7614232	Top panel	
14	7614233	Grip	

Fig.119 AWHP 11 MR-2 – AWHP 16 MR-2: electric part



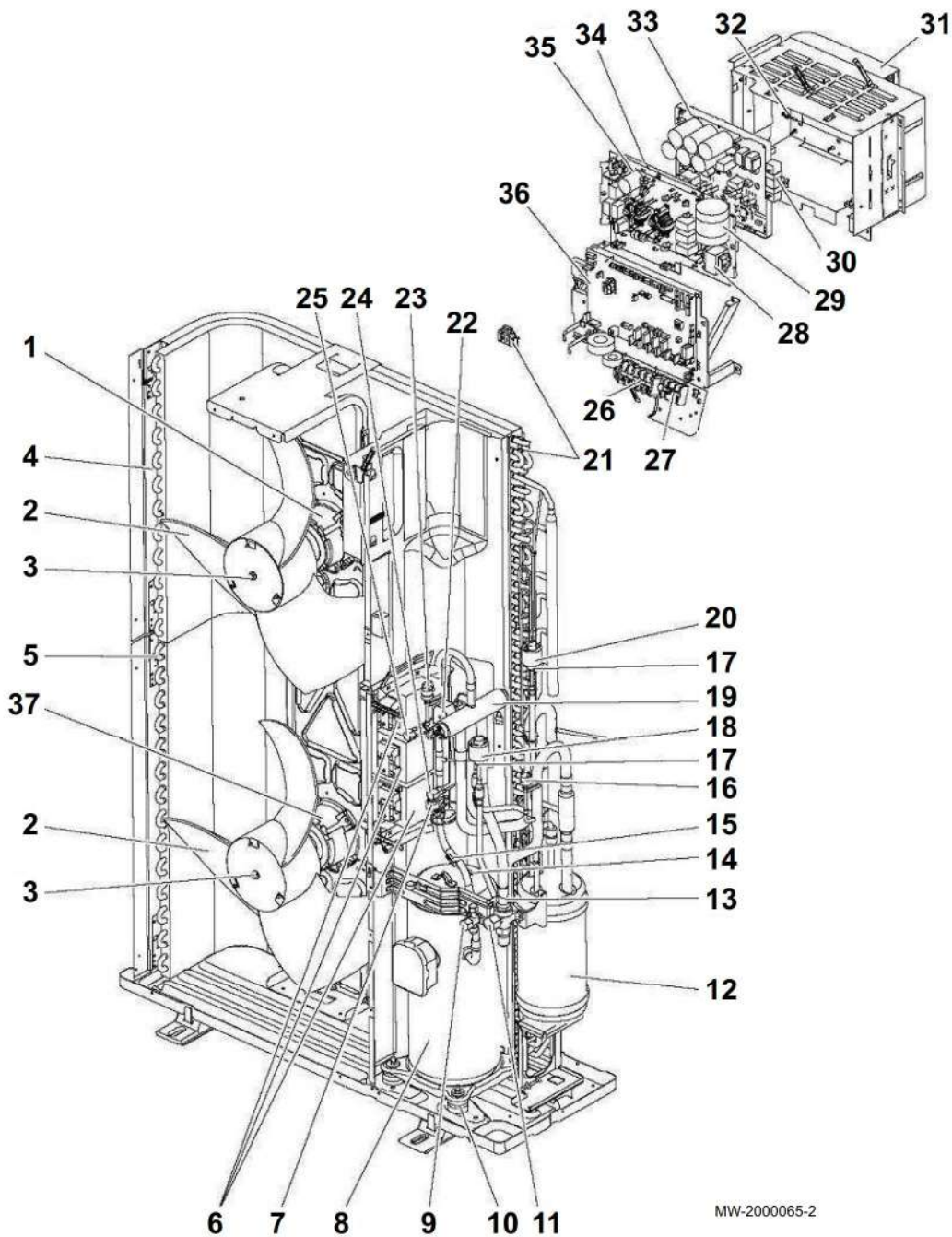
MW-2000064-2

Tab.149

Marker	Reference	Description	Models
1	7614234	Fan motor	SERVICE REF. : AWHP 11-16 MR-2 SERVICE REF. : AWHP 11 MR-2 R1.UK SERVICE REF. : AWHP 16 MR-2 R1.UK
1	7717096	Fan motor	SERVICE REF. : AWHP 11 MR-2 R2.UK SERVICE REF. : AWHP 16 MR-2 R2.UK
2	7614236	Fan	
3	7614237	Nut	
4	7614297	Top battery (evaporator / condenser)	
5	7614298	Bottom battery (evaporator / condenser)	
6	7614248	High pressure sensor	
7	7614299	Gas sensor TH4	

Marker	Reference	Description	Models
7	7717098	Gas sensor TH4	SERVICE REF. : AWHP 11 MR-2 R2.UK SERVICE REF. : AWHP 16 MR-2 R2.UK
8	7614300	Compressor ANB33FNEMT	SERVICE REF. : AWHP 11 MR-2
8	7614301	Compressor ANB42FNEMT	SERVICE REF. : AWHP 16 MR-2
9	7614244	Stop valve 3/8"	
10	7614302	Anti-vibration stud	
11	7614304	Stop valve 5/8"	
12	7614305	Power receiver	
13	7614247	Filter	
14	7614306	TH34 sensor	
15	7614307	Low pressure pressure switch	
16	7614308	Expansion valve	
17	7614251	Linear expansion valve coil	
18	7614309	4-way valve	
19	7614252	Linear expansion valve coil	
20	7614253	Outside sensor battery TH6/7	
21	7614310	Coil	
21	7717099	Coil	SERVICE REF. : AWHP 11 MR-2 R2.UK SERVICE REF. : AWHP 16 MR-2 R2.UK
22	7614239	High pressure pressure switch	
23	7614243	Load plug	
24	7614312	Load plug	
25	7614278	Connection terminal block	
26	7614313	Complete control panel	SERVICE REF. : AWHP 11 MR-2
26	7614314	Complete control panel	SERVICE REF. : AWHP 16 MR-2
27	7614316	Self	
28	7614317	Output PCB	SERVICE REF. : AWHP 11 MR-2 SERVICE REF. : AWHP 16 MR-2
28	7652253	Output PCB	SERVICE REF. : AWHP 11 MR-2 R1.UK SERVICE REF. : AWHP 16 MR-2 R1.UK SERVICE REF. : AWHP 11 MR-2 R2.UK SERVICE REF. : AWHP 16 MR-2 R2.UK
29	7614319	Central unit PCB	SERVICE REF. : AWHP 11 MR-2 SERVICE REF. : AWHP 16 MR-2
29	7652250	Central unit PCB	SERVICE REF. : AWHP 11 MR-2 R1.UK SERVICE REF. : AWHP 16 MR-2 R1.UK SERVICE REF. : AWHP 11 MR-2 R2.UK SERVICE REF. : AWHP 16 MR-2 R2.UK
30	7614234	Fan motor	SERVICE REF. : AWHP 11-16 MR-2 SERVICE REF. : AWHP 11 MR-2 R1.UK SERVICE REF. : AWHP 16 MR-2 R1.UK
30	7717097	Fan motor	SERVICE REF. : AWHP 11 MR-2 R2.UK SERVICE REF. : AWHP 16 MR-2 R2.UK
-	7614321	Liquid sensor TH3	
-	7614322	Capacitor	

Fig.120 AWHP 11 TR-2 – AWHP 16 TR-2: electric part



MW-2000065-2

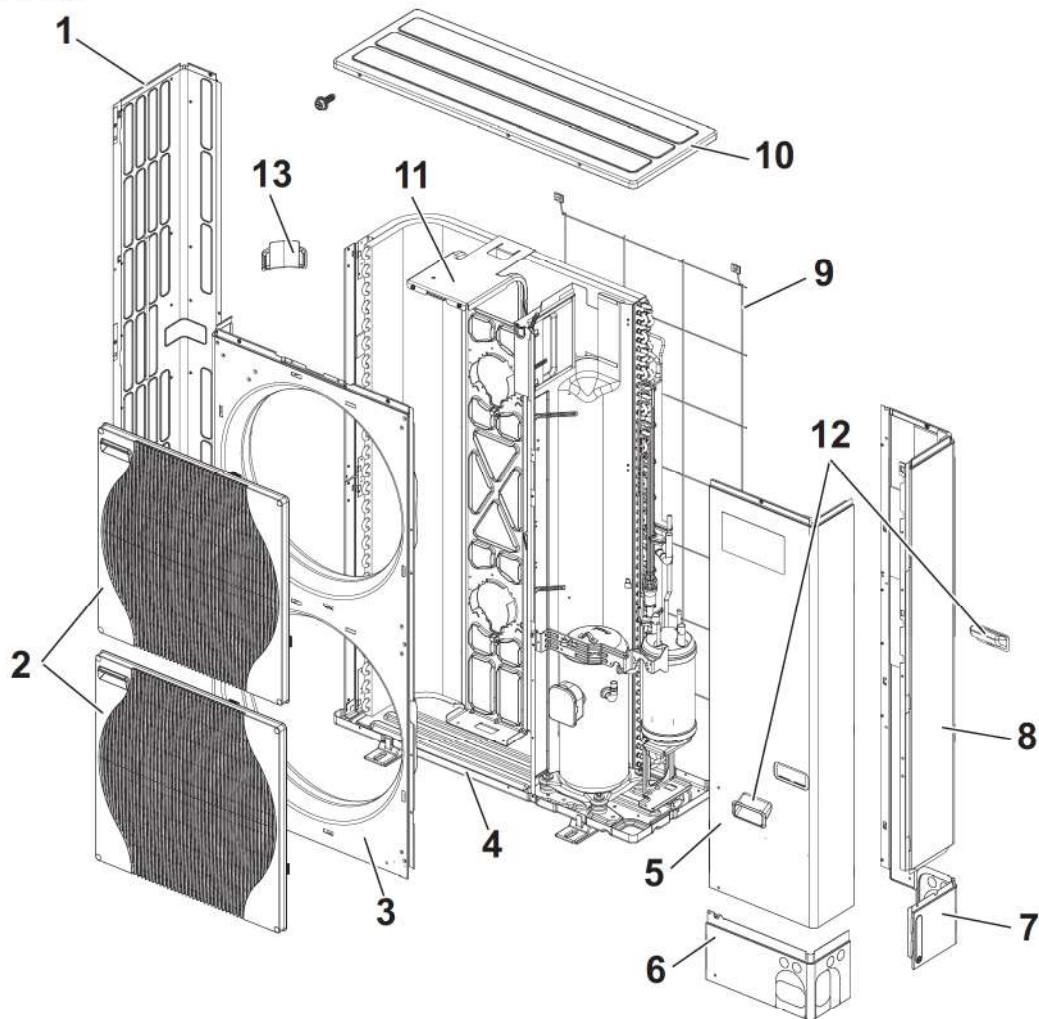
Tab.150

Marker	Reference	Description	Models
1	7614234	Fan motor	SERVICE REF. : AWHP 11-16 TR-2 SERVICE REF. : AWHP 11 TR-2 R1.UK SERVICE REF. : AWHP 16 TR-2 R1.UK
1	7717096	Fan motor	SERVICE REF. : AWHP 11 TR-2 R2.UK SERVICE REF. : AWHP 16 TR-2 R2.UK
2	7614236	Fan	
3	7614237	Nut	
4	7614297	Top battery (evaporator / condenser)	
5	7614298	Bottom battery (evaporator / condenser)	
6	7614323	Self	
7	7614248	High pressure sensor	
8	7614330	Compressor ANB33FNDMT	SERVICE REF. : AWHP 11 TR-2

Marker	Reference	Description	Models
8	7614332	Compressor ANB42FNDMT	SERVICE REF. : AWHP 16 TR-2
9	7614244	Stop valve 3/8"	
10	7614302	Anti-vibration stud	
11	7614304	Stop valve 5/8"	
12	7614305	Power receiver	
13	7614247	Filter	
14	7614333	TH34 1 compressor discharge sensor	
15	7614286	Gas sensor TH4	
15	7717100	Gas sensor TH4	SERVICE REF. : AWHP 11 TR-2 R2.UK SERVICE REF. : AWHP 16 TR-2 R2.UK
16	7614307	Low pressure pressure switch	
17	7614308	Expansion valve	
18	7614251	Linear expansion valve coil	
19	7614309	4-way valve	
20	7614252	Linear expansion valve coil	
21	7614335	Outside sensor battery TH6/7	
22	7614255	Coil	
23	7614239	High pressure pressure switch	
24	7614243	Load plug	
25	7614312	Load plug	
26	7614337	Connection terminal block L	
27	7614338	Connection terminal block S	
28	7614339	Self	
29	7614340	Capacitor	
30	7614342	Resistor	
31	7614343	Complete control panel	SERVICE REF. : AWHP 11 TR-2
31	7614344	Complete control panel	SERVICE REF. : AWHP 16 TR-2
32	7614346	Dissipator sensor TH8	
33	7614347	Output PCB	SERVICE REF. : AWHP 11 TR-2 SERVICE REF. : AWHP 16 TR-2
33	7652254	Output PCB	SERVICE REF. : AWHP 11 TR-2 R1.UK SERVICE REF. : AWHP 16 TR-2 R1.UK SERVICE REF. : AWHP 11 TR-2 R2.UK SERVICE REF. : AWHP 16 TR-2 R2.UK
34	7614348	Converter board	SERVICE REF. : AWHP 11 TR-2 SERVICE REF. : AWHP 16 TR-2
34	7652562	Converter board	SERVICE REF. : AWHP 11 TR-2 R1.UK SERVICE REF. : AWHP 16 TR-2 R1.UK SERVICE REF. : AWHP 11 TR-2 R2.UK SERVICE REF. : AWHP 16 TR-2 R2.UK
35	7614349	Electronic filter board	
36	7614285	Central unit PCB	SERVICE REF. : AWHP 11 TR-2 SERVICE REF. : AWHP 16 TR-2
36	7652250	Central unit PCB	SERVICE REF. : AWHP 11 TR-2 R1.UK SERVICE REF. : AWHP 16 TR-2 R1.UK SERVICE REF. : AWHP 11 TR-2 R2.UK SERVICE REF. : AWHP 16 TR-2 R2.UK
37	7614234	Fan motor	SERVICE REF. : AWHP 11 TR-2 SERVICE REF. : AWHP 16 TR-2 SERVICE REF. : AWHP 11 TR-2 R1.UK SERVICE REF. : AWHP 16 TR-2 R1.UK
37	7717097	Fan motor	SERVICE REF. : AWHP 11 TR-2 R2.UK SERVICE REF. : AWHP 16 TR-2 R2.UK
-	7614350	Liquid sensor TH3	

15.3.6 AWHP 11 MR-2 R3 – AWHP 16 MR-2 R3 – AWHP 11 TR-2 R3 – AWHP 16 TR-2 R3

Fig.121 Base frame

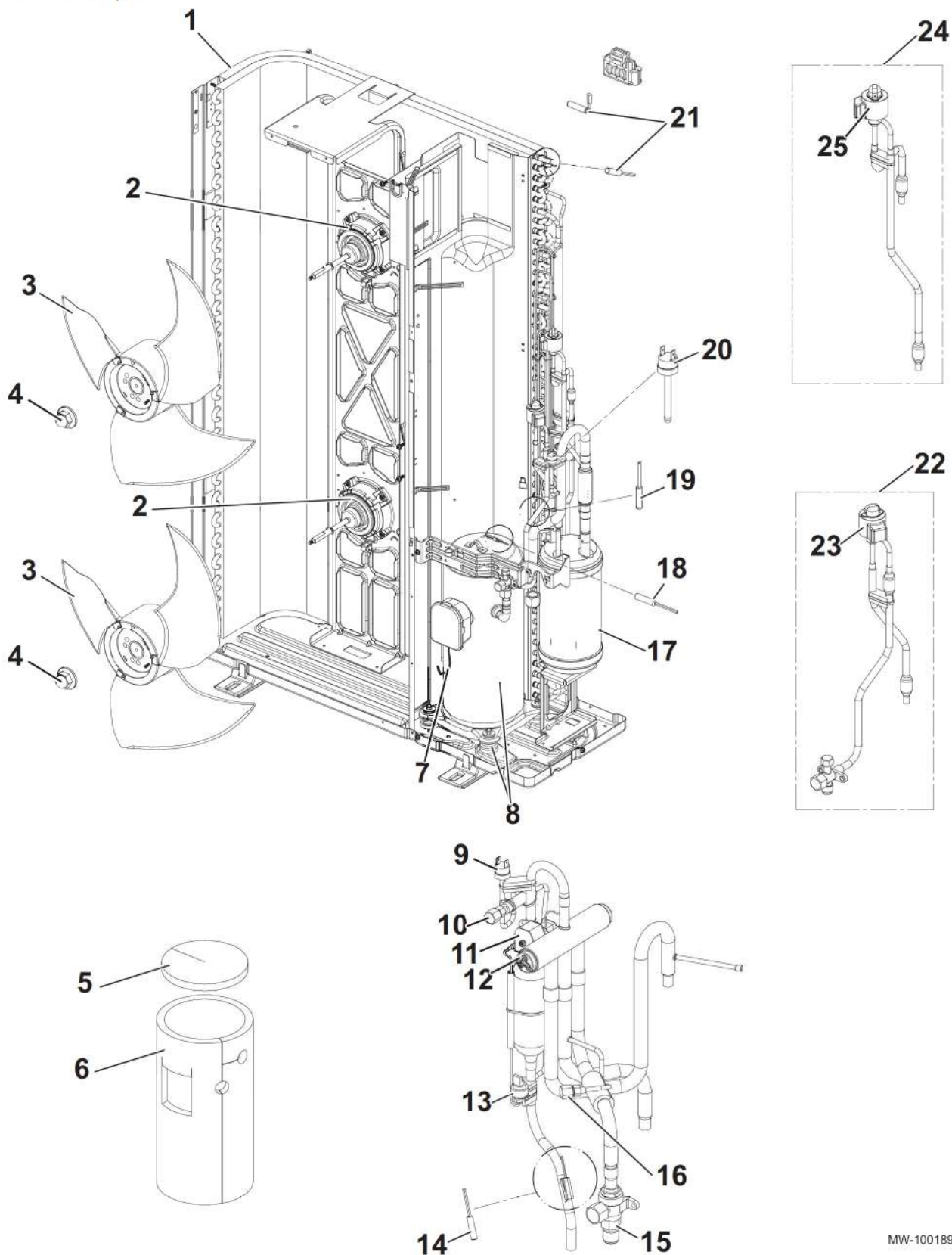


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Tab.151

Marker	Reference	Description
1	300018160	Side panel, left
2	7621343	Fan grid
3	7776781	Front panel
4	300018087	Base frame
5	7776782	Service panel
6	7776783	Lower front panel
7	300018112	Lower rear panel
8	7776784	Side panel, right
9	300018151	Rear protection grille
10	7776745	Top panel
11	7776785	Motor bracket
12	300018119	Grip
13	300018120	Grip

Fig.122 Electric part

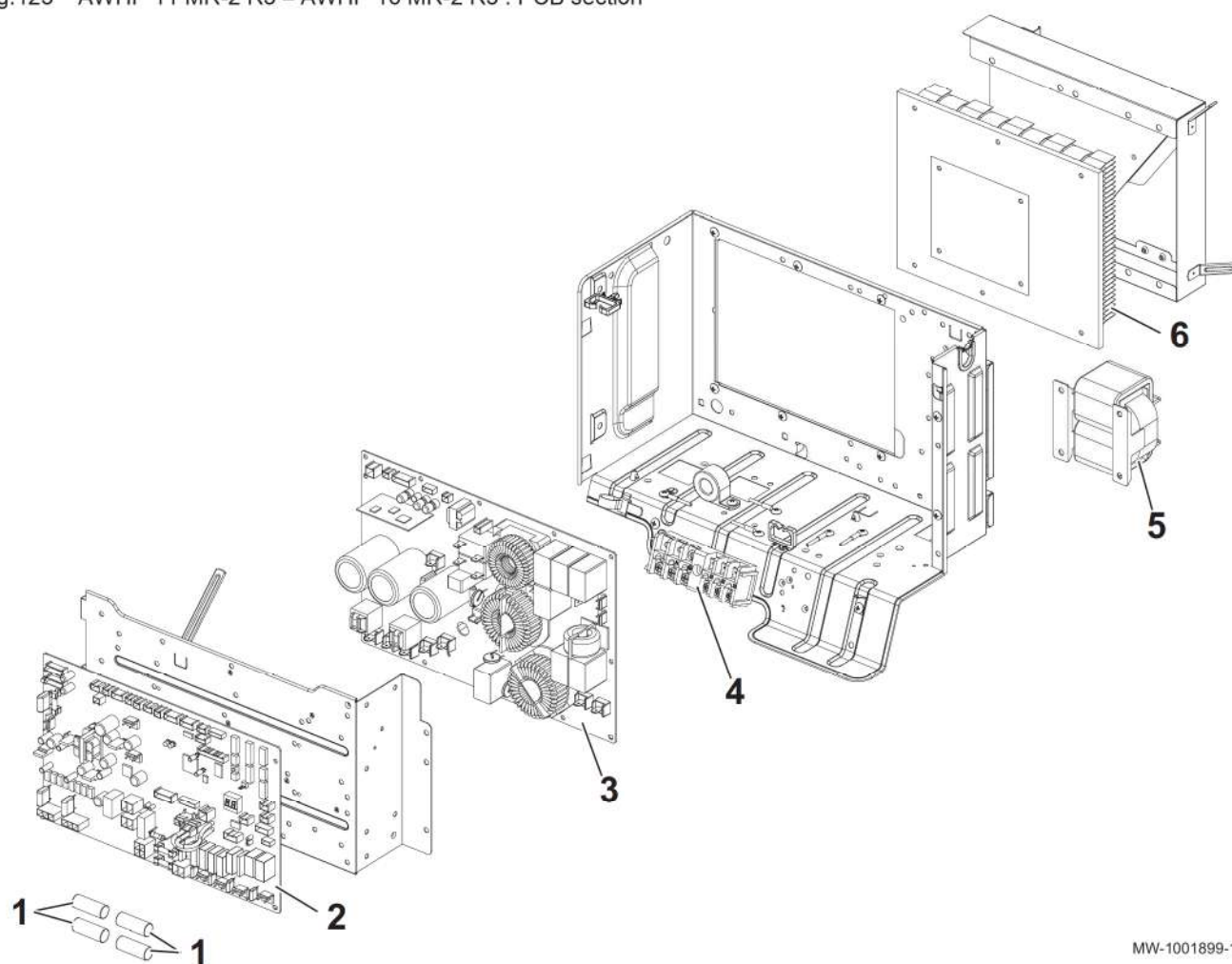


Tab.152

Marker	Reference	Description	Models
1	7776749	Coil (evaporator/condenser)	
2	7776750	Fan motor	
3	300018144	Fan rotor	
4	7776708	MEC M6 rotor holding nut	

Marker	Reference	Description	Models
5	7776751	Compressor top insulation	
6	7776753	Compressor insulation	
7	7776755	Compressor cable harness	SERVICE REF. : AWHP 11 MR-2 R3 SERVICE REF. : AWHP 16 MR-2 R3
7	7776756	Compressor cable harness	SERVICE REF. : AWHP 11 TR-2 R3 SERVICE REF. : AWHP 16 TR-2 R3
8	7776758	Compressor ANB33FNEMT	SERVICE REF. : AWHP 11 MR-2 R3
8	7776759	ANB42FNEMT compressor	SERVICE REF. : AWHP 16 MR-2 R3
8	7776760	Compressor ANB33FNEMT	SERVICE REF. : AWHP 11 TR-2 R3
8	7776761	Compressor ANB42FNEMT	SERVICE REF. : AWHP 16 TR-2 R3
9	7776717	63H high pressure switch	
10	7776720	Load plug /ST	
11	7776762	21S4 solenoid valve coil	SERVICE REF. : AWHP 11 MR-2 R3 SERVICE REF. : AWHP 16 MR-2 R3
11	7776725	21S4 solenoid valve coil	SERVICE REF. : AWHP 11 TR-2 R3 SERVICE REF. : AWHP 16 TR-2 R3
12	7776763	21S4 4-way valve	
13	7673329	63HS high pressure switch sensor	
14	7776764	TH4 gas sensor	SERVICE REF. : AWHP 11 MR-2 R3 SERVICE REF. : AWHP 16 MR-2 R3
14	7776718	TH4 gas sensor	SERVICE REF. : AWHP 11 TR-2 R3 SERVICE REF. : AWHP 16 TR-2 R3
15	300018085	5/8" stop valve and filter	
16	7776722	Load plug /LB90	
17	7776765	Resistor reserve header	
18	7776727	TH34 temperature sensor	
19	7776766	TH3 temperature sensor	
20	7776768	63L low pressure switch	
21	300018213	W TH6-7 coil outside sensor	SERVICE REF. : AWHP 11 MR-2 R3 SERVICE REF. : AWHP 16 MR-2 R3
21	300018219	TH6-7 temperature sensor	SERVICE REF. : AWHP 11 TR-2 R3 SERVICE REF. : AWHP 16 TR-2 R3
22	7776769	CPLT /LEV-B expansion valve	
23	7776732	Red XAP-5P /LEV-B coil	
24	7776770	CPLT /LEV-A expansion valve	
25	7776734	White XAP-5P /LEV-A coil	

Fig.123 AWHP 11 MR-2 R3 – AWHP 16 MR-2 R3 : PCB section

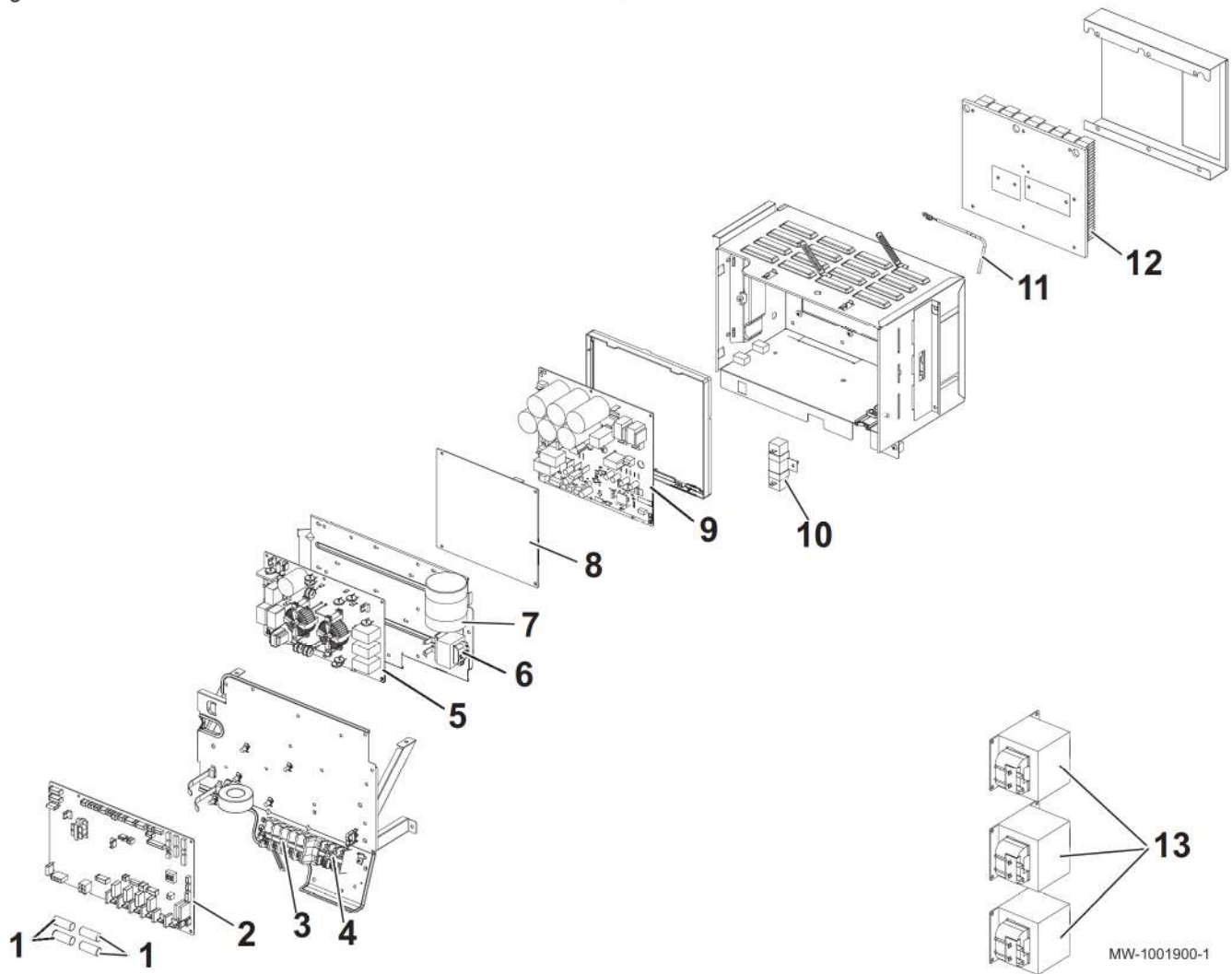


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Tab.153

Marker	Reference	Description
1	7604148	6.3 A / 250 V fuse
2	7776771	Central unit PCB
3	7776772	Output PCB
4	7776738	LNE S1 S2 S3 /TB1 connection terminal block
5	7776773	ACL choke
6	7776774	Heat sink

Fig.124 AWHP 11 TR-2 R3 – AWHP 16 TR-2 R3 : PCB section

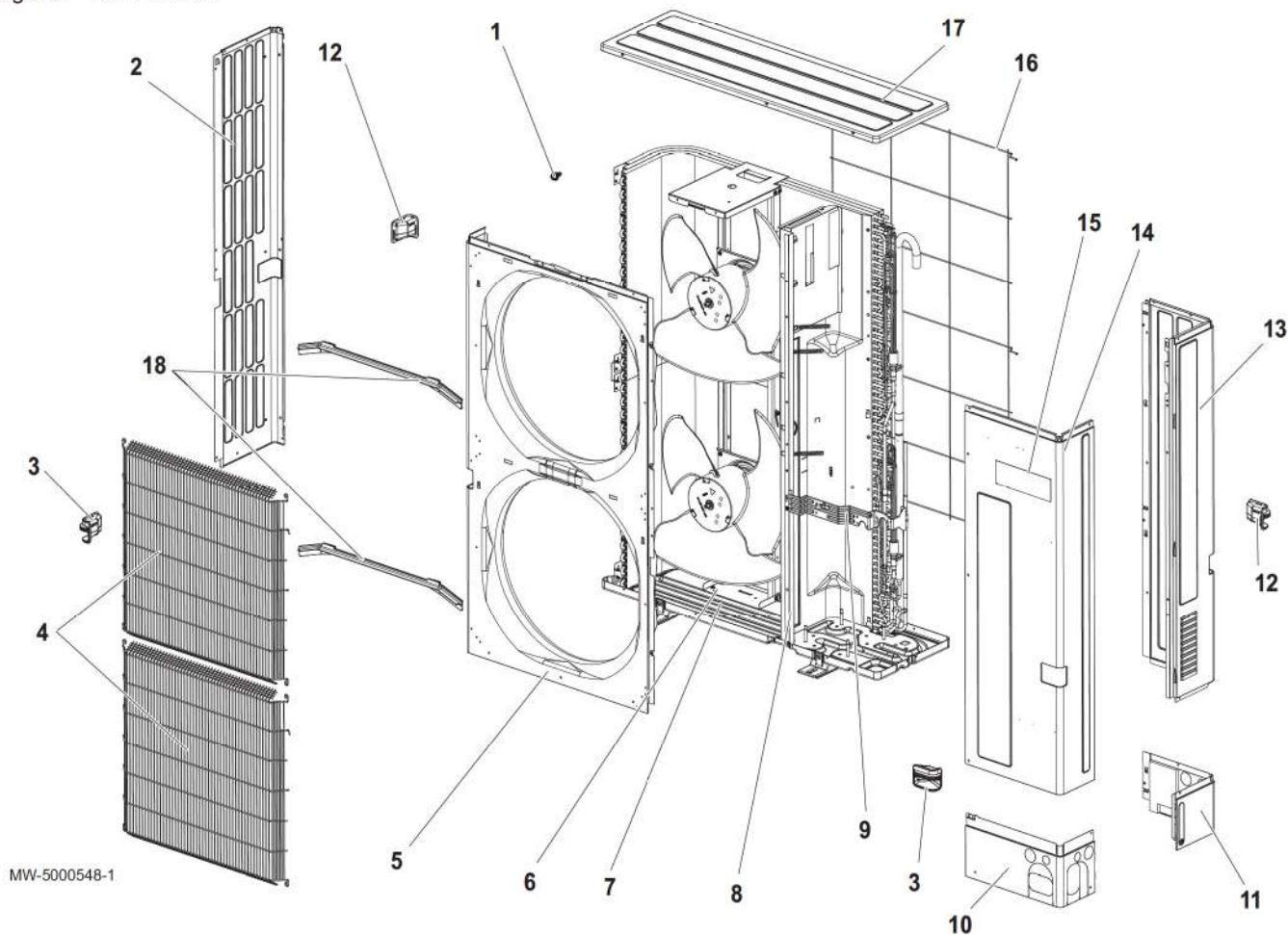


Tab.154

Marker	Reference	Description
1	7604148	6.3 A / 250 V fuse
2	7776771	Central unit PCB
3	300018199	TR L1 L2 L3 N.E /TB1 connection terminal block
4	300027087	TR S1 S2 S3 /TB2 connection terminal block
5	7776775	Interference filter PCB
6	300018149	ACL4 choke
7	300018090	CK capacitor
8	7776776	Converter PCB
9	7776777	Output PCB
10	300018154	Resistor
11	7776778	TH8 sink sensor
12	7776779	Heat sink
13	300018148	ACL 1, 2, 3 choke

15.3.7 AWHP 22 TR-2 R1.UK-AWHP 27 TR-2 R1.UK

Fig.125 Base frame

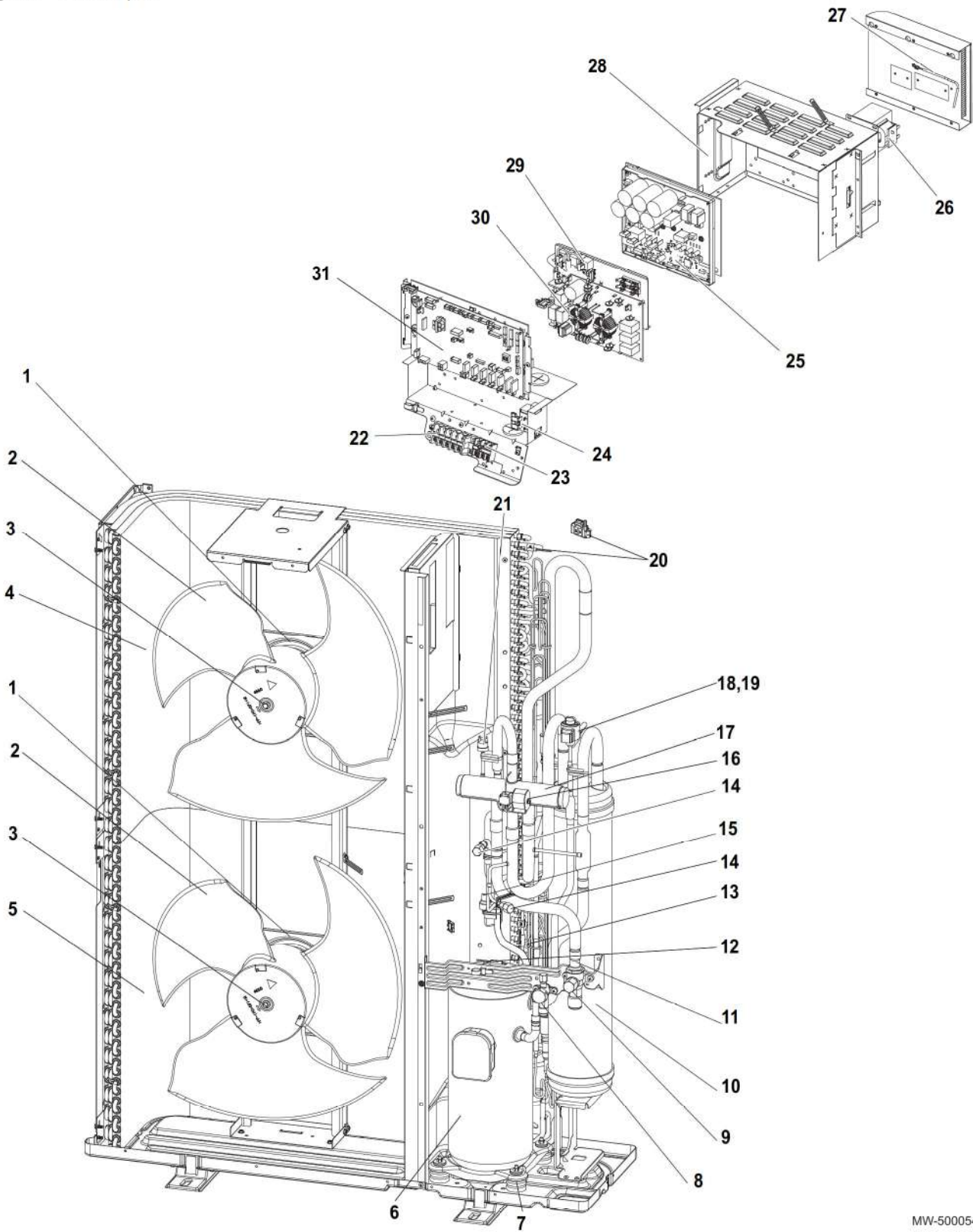


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Tab.155

Markers	Reference	Description
2	7655221	Side panel, left
3	7655222	Grip
4	7655226	Protective grid
5	7655227	Front panel
6	7655228	Fan motor bracket
7	7655229	Base panel
10	7655230	Lower front panel
11	7655231	Lower rear panel
12	7655232	Grip
13	7655233	Back right side panel
14	7655234	Front right side panel
16	7655235	Rear protection grid
17	7655236	Top panel
18	7655238	Cable duct

Fig.126 Electric part



MW-5000549-2

Tab.156




Markers	Reference	Description
1	7655239	Fan motor
2	7655240	Fan rotor
3	7614237	Rotor holding nut
4	7655253	Higher absorption/condenser coil
5	7655254	Lower absorption/condenser coil
6	7655255	Compressor

Markers	Reference	Description
7	7614302	Anti-vibration mounts
8	7614244	3/8" stop valve for the 22 kW models
8	7655256	1/2" stop valve for the 27 kW models
9	7655257	3/4" stop valve
10	7655258	Power receiver
11	7655259	Filter
12	7655260	TH32 sensor
13	7614321	TH3 liquid sensor
14	7614243	Load plug
15	7614248	High pressure sensor
16	7655261	Coil – 4-way valve
17	7655262	4-way valve
18	7655263	Expansion valve
19	7655264	UKV-A277 coil
20	7614253	Coil outside sensor
21	7614239	HP pressure switch
22	7614337	5P terminal block
23	7614338	3P terminal block
24	7655265	Resistor
25	7655266	Output board
26	7655267	DCL inductor
27	7614346	Dissipator sensor
29	7614342	Resistor
30	7655268	Electronic filter board
31	7655270	Central unit PCB

16 Appendix

16.1 Name and symbol of the zones

Tab.157

Factory-set name	Factory-set symbol	Name and symbol defined by the customer	
CIRCA0			
CIRCA1			
CIRCB1			
CIRCC1			
CIRCAUX1			

16.2 Name and temperature of the activities

Tab.158 Name and temperature of the activities for heating

Activities	Factory-set name	Factory-set temperature	Name and temperature defined by the customer	
Activity 1	Sleep	16 °C		
Activity 2	Home	20 °C		
Activity 3	Away	6 °C		
Activity 4	Morning	21 °C		
Activity 5	Evening	22 °C		
Activity 6	Custom	20 °C		

Tab.159 Name and temperature of the activities for cooling

Activities	Factory-set name	Factory-set temperature	Name and temperature defined by the customer	
Activity 1	Sleep	30 °C		
Activity 2	Home	25 °C		
Activity 3	Away	25 °C		
Activity 4	Morning	25 °C		
Activity 5	Evening	25 °C		
Activity 6	Custom	25 °C		

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