

ALEZIO S V200 R32



Reversible air/water "Split Inverter" heat pump


ALEZIO S V200 R32








MIV-S/E 4-8 V200 R32

MIV-S/H 4-8 V200 R32

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1 Safety instructions and recommendations


1.1 General safety instructions

<p>Operation</p>	 <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>General</p>	<ul style="list-style-type: none"> • Before any work on the appliance, carefully read all documents that are provided with the heat pump. These documents are also available on our website. See the back cover. • Only qualified professionals are authorised to carry out installation, commissioning, maintenance, repair or removal work on the heat pump and the heating installation. They must respect prevailing local and national regulations during fitting, installation and maintenance of the installation. • Compliance with national gas regulations shall be observed. • 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. • This heat pump is not designed to be used at altitudes over 2000 metres above sea level. • This appliance is equipped with a radio antenna. In normal operation of the appliance, everyone must stand more than 20 cm from this antenna to protect themselves from the electromagnetic field. The user can be under this limit only when the device is turned off. • Keep this document close to the place where the appliance is installed.
<p>Precautions</p>	<ul style="list-style-type: none"> • All work on the refrigeration circuit must be carried out by a qualified professional, according to prevailing codes of practice and safety in the profession (recovery of the refrigerant, brazing under nitrogen). • By qualified professional, we mean a person who has the qualifications pertaining to this refrigerant handling and pipework as stipulated by the local laws and regulations, and who has been trained in matters relating to refrigerant handling and pipework on the indoor unit and outdoor unit. • Before any work, switch off the outdoor unit, the indoor unit and the immersion heater or backup boiler depending on the model. Wait for approximately 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. • When making the hydraulic connection, it is imperative that the standards and corresponding local directives be respected. • Commissioning must be performed by a qualified professional. • 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. • Use only original spare parts.


1.2 Water connections

<p>Precautions</p>	<ul style="list-style-type: none"> • Insulate the pipes to reduce heat losses to a minimum. • Fit drainage valves between the indoor unit and the heating circuit. • If radiators are connected directly to the heating circuit, make sure that there is enough volume of heating water available in the installation. For example, install a differential valve and a buffer tank between the indoor unit and the heating circuit. • Make sure that the heating water complies with the specifications given in the chapter Treatment of the heating water. • Respect the minimum and maximum water pressure and temperature (70°C) to ensure the appliance operates correctly. See the Technical Specifications section. • The hydraulic installation must be capable of handling a minimum flow rate at all times.
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1.3 Domestic water safety

General	<ul style="list-style-type: none"> • Heating water and domestic water must not come into contact with each other. Domestic water must not circulate through the exchanger. • Take precautions with the domestic hot water. Depending on the heat pump settings, the domestic hot water temperature may exceed 65 °C. • To limit the risk of burns, install a device limiting the temperature of the hot water, such as a thermostatic mixing valve, for example. • 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. • In accordance with safety rules, a safety pressure relief valve calibrated to 0.7 MPa (7 bar) must be mounted on the tank's domestic cold water inlet. • A domestic expansion vessel (not supplied) of a suitable size may be connected between the domestic cold water input and the combination valve, and prevents the domestic safety pressure relief valve being activated. No cut-off device must be located between these two components. • To drain the domestic hot water circuit, see the Maintenance section. <div style="background-color: #f0f0f0; padding: 5px;">  <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. </div>
Precautions	<ul style="list-style-type: none"> • Use tools and pipe components especially designed for use with R32 refrigerant. • 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.

1.4 Electrical wiring

General	<ul style="list-style-type: none"> • Only a qualified installer or qualified service person are allowed to carry out the electrical work of the indoor and outdoor units. Under no circumstances must this work be done by an unqualified individual since failure to carry out the work properly may result in electric shocks and/or electrical leaks. • The appliance must be installed in accordance with national wiring regulations. Capacity shortages in the power supply circuit or an incomplete installation may cause an electric shock or fire.
Precautions	<div style="background-color: #f0f0f0; padding: 5px;">  <p>Danger</p> <p>Before any wiring work on the electrical circuit, switch off the power supply, check that no voltage is present and secure the circuit breaker with a circuit breaker lock-out.</p> </div> <ul style="list-style-type: none"> • Use wiring that meets the specifications in the Installation Manual and the stipulations in the local regulations and laws. Use of wiring which does not meet the specifications may give rise to electric shocks, electrical leakage, smoking and/or a fire. • Always connect a protective earthing cable (grounding). Earthing must comply with the prevailing installation standards. Earth the appliance before making any electrical connections. Incomplete grounding can cause a malfunction or electric shock. • To avoid electric shock, make sure that the length of the conductors between the strain relief device and the terminal blocks is such that the active conductors are put under tension before the earth conductor. • Install a circuit breaker that meets the specifications in the installation manual and the stipulations in the local regulations and laws. • Install the circuit breaker where it can be easily accessed by the technician. • In order to avoid the danger of an unexpected thermal circuit breaker reset, 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. • 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 avoid danger. • When connecting the appliance to the electricity mains or carrying out any other wiring work, refer to the instructions given in the installation manual and the provided wiring diagrams. • Separate the very low voltage cables from the 230/400 V power supply cables.

1.5 About R32 refrigerant

Precautions	<ul style="list-style-type: none"> • This product contains fluorinated greenhouse gases. • Do not vent gases into the atmosphere. <div style="background-color: #f0f0f0; padding: 5px; margin: 10px 0;">  <p>Warning</p> <ul style="list-style-type: none"> • Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer. • The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater). • Do not pierce or burn. • Be aware that refrigerants may not contain an odour. </div> <ul style="list-style-type: none"> • The refrigerant inside the unit is flammable and toxic. If the refrigerant leaks in the room and comes in contact with fire from a burner, a heater, or a cooker, it may result in fire or the formation of a harmful gas. When a leak is detected, turn off any combustible heating devices, ventilate the room and contact the dealer from which you purchased the unit. • Do not use the unit until a qualified installer confirms that the section from which the refrigerant leaked has been repaired. • When installing, relocating, or servicing the heat pump, only use the specified refrigerant (R32) to charge the refrigerant lines. Do not mix it with any other refrigerant and do not allow air, liquids or other gases to remain in the lines.
General	<ul style="list-style-type: none"> • Maximum refrigerant charge for the system: 1.6 kg

1.6 Installation location

Precautions	<ul style="list-style-type: none"> • If you install the indoor unit in a small room, take appropriate measures (ventilation) to prevent the refrigerant from exceeding the concentration limit even if it leaks. Consult the Installation chapter when you implement the measures. Accumulation of highly concentrated refrigerant may cause an oxygen deficiency accident. • Install the indoor unit and outdoor unit on a solid, stable structure able to bear its weight. • Install the indoor unit in a frost-free location. • Do not install the heat pump in a location that may be subject to a risk of exposure to combustible gas. If there is a combustible gas leak and the gas becomes concentrated around the unit, a fire may occur. • Do not install the heat pump in a place that has an atmosphere with a high salt content or in any corrosive environment. • 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.
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1.7 Refrigerant piping

Precautions	<ul style="list-style-type: none"> • Use tools and pipe components especially designed for use with R32 refrigerant. • Use copper pipes deoxidised with phosphorus to carry the refrigerant. • Store the refrigerant connection pipes away from dust and humidity (risk of damage to the compressor). • Apply refrigerant oil to the beaded parts to facilitate tightening and improve the leak-tightness. • Protect the outdoor unit and indoor unit, including the insulation and structural elements. Do not overheat the pipes as brazed components may cause damage. • Protect pipes from physical damage. • Insulate the pipes to reduce heat losses to a minimum. • Do not touch the refrigeration connection pipes with your bare hands while the heat pump is running. Danger of burn or frost injury.
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1.8 Maintenance and repair work

Precautions	<ul style="list-style-type: none"> • Use only dehydrated nitrogen for detecting leaks or for pressurised tests. • 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.
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1.9 Explanations given to the user

Precautions	<ul style="list-style-type: none"> • Do not power off the heat pump. The frost protection function does not work if the heat pump is switched off. • If you do not need to heat your home for a long period, activate the frost protection mode. • If you do need to switch off the heat pump and if there is a risk that the temperature inside the building will fall below zero, drain the indoor unit and the heating system to prevent the system from freezing. • Keep the indoor unit and outdoor unit 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. • 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.
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1.10 Recommendations

Operation	<ul style="list-style-type: none"> • Keep the indoor unit and outdoor unit accessible at all times. • Regularly check the hydraulic 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 power off the heat pump. The frost protection mode does not work if the heat pump is switched off. • If you do not need to heat your home for a long period, turn off the heating function or activate frost protection mode. See the chapter Selecting the operating mode. • Do not drain the installation, except in cases of absolute necessity, for example at disposal. See the chapter Decommissioning and disposal. • If you need to switch off the heat pump in the event of a prolonged absence, drain the indoor unit and the heating system to prevent the system from freezing. • 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.
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1.11 Liabilities

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 follow the instructions below:</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. • Get 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.

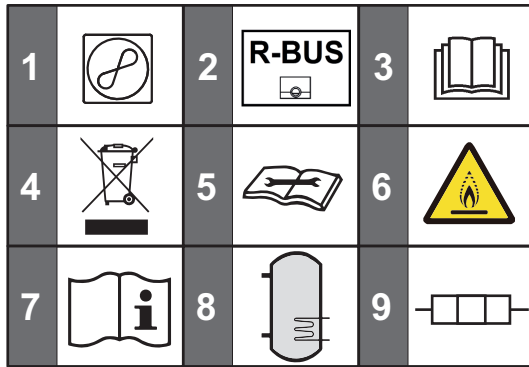


See

Reference to other manuals or pages in this manual.

2.2 Symbols used on the data plate

Fig.1



MW-1001765-1

- 1 Heat pump: type of refrigerant, maximum operating pressure, and power absorbed by the indoor unit.
- 2 Compatibility with the SMART TC° connected thermostat
- 3 Before installing and commissioning the appliance, carefully read the instruction manuals provided
- 4 Dispose of used products in an appropriate recovery and recycling structure
- 5 Read the technical manual
- 6 Appliance contains flammable refrigerant (A2L)
- 7 See operating instructions
- 8 Domestic hot water tank: volume, maximum operating pressure and standby losses from the domestic hot water tank
- 9 Immersion heater: max. output and power supply

2.3 Symbols used on the appliance

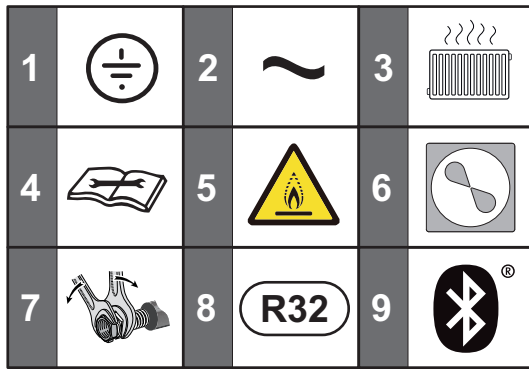
Fig.2



MW-1002004-1

Caution: Danger of electric shock, live parts. Disconnect the mains power (1) prior to carrying out any work (2).

Fig.3

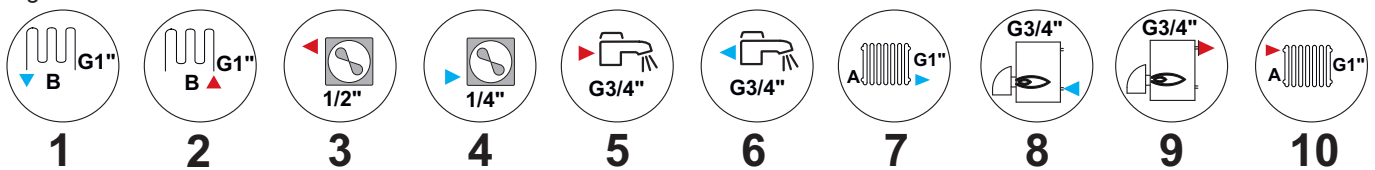


MW-1002004-1

- 1 Protective earthing
- 2 Alternating current
- 3 Heating circuit
- 4 Read technical manual
- 5 Appliance contains flammable refrigerant (A2L)
- 6 Heat pump
- 7 Tighten with a backup wrench
- 8 Type of refrigerant
- 9 Bluetooth®

2.4 Symbols used on the connection plate label

Fig.4



MW-1002025-1

- 1 Second circuit return
- 2 Second circuit flow
- 3 1/2" refrigerant connection
- 4 1/4" refrigerant connection
- 5 Domestic hot water outlet
- 6 Domestic cold water inlet
- 7 Heating circuit return
- 8 Flow to the backup boiler
- 9 Return on the backup boiler
- 10 Heating circuit flow

3 Technical specifications

3.1 Homologations

3.1.1 Directives

De Dietrich hereby declares that the ALEZIO S V200 R32 radio-electrical type equipment is a product principally designed for domestic use and compliant with the following directives and standards. 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.

- Standard DIN 1988 (TWRWI): technical regulations for drinking water installations
- MCS and HARP certifications.

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

For all provisions and directives referred to in these instructions and the EU declaration of conformity, it is agreed that all addenda or subsequent provisions will apply at the time of installation.

3.1.2 Factory test

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

- Leak-tightness of the heating circuit
- Leak-tightness of the domestic hot water circuit
- Leak-tightness of the refrigerant circuit

- Electrical safety

3.1.3 Bluetooth® wireless technology

Fig.5 Logo



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 Thermea Group is under license. Other trademarks and trade names are those of their respective owners.

AD-3001854-01

3.2 Technical data

3.2.1 Compatible heating devices

Tab.1

Outdoor unit	Associated/compatible indoor units	HP KEYMARK Registration Number
AWHPR 4 MR	MIV-S/E 4-8 V200 R32 MIV-S/H 4-8 V200 R32	21HK0009
AWHPR 6 MR	MIV-S/E 4-8 V200 R32 MIV-S/H 4-8 V200 R32	21HK0010
AWHPR 8 MR	MIV-S/E 4-8 V200 R32 MIV-S/H 4-8 V200 R32	21HK0010

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)



Important

The performance data given in the following tables only apply to the following configuration: direct zone. When a mixed heating circuit is used, these data do not apply.

Tab.2 Indoor unit technical specifications

Specifications	MIV-S V200 R32
Operating temperature range	+7 °C to +30 °C
Bluetooth frequency band	2400 – 2483.5 MHz
Bluetooth power	+5 dBm

Tab.3 Outdoor unit conditions of use

Limit operating temperatures	AWHPR 4 MR	AWHPR 6 MR	AWHPR 8 MR
Water (heating mode and domestic hot water)	+18 °C/+60 °C	+18 °C/+60 °C	+18 °C/+60 °C
Outdoor air (heating mode and domestic hot water)	-20 °C/+35 °C	-20 °C/+35 °C	-20 °C/+35 °C
Water (cooling mode)	+7 °C / +25 °C	+7 °C / +25 °C	+7 °C / +25 °C
Outdoor air (cooling mode)	+10 °C/+46 °C	+10 °C/+46 °C	+10 °C/+46 °C

Tab.4 Heating mode: outdoor air temperature +7 °C, water temperature at the outlet +35 °C. Performances in accordance with EN 14511-2.

Measurement type	Unit	AWHPR 4 MR	AWHPR 6 MR	AWHPR 8 MR
Heat output	kW	4.60	6.40	7.67
Coefficient of performance (COP)	-	5.20	5.00	4.73

Measurement type	Unit	AWHPR 4 MR	AWHPR 6 MR	AWHPR 8 MR
Absorbed electrical power	kWe	0.88	1.28	1.62
Nominal water flow rate ($\Delta T = 5 \text{ K}$)	m ³ /h	0.79	1.11	1.31

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

Measurement type	Unit	AWHPR 4 MR	AWHPR 6 MR	AWHPR 8 MR
Heat output	kW	3.71	5.34	6.54
Coefficient of performance (COP)	-	4.11	3.68	3.04
Absorbed electrical power	kWe	0.90	1.03	1.93

Tab.6 Cooling mode: outdoor air temperature +35 °C, water temperature at the outlet +18 °C. Performances in accordance with EN 14511-2.

Measurement type	Unit	AWHPR 4 MR	AWHPR 6 MR	AWHPR 8 MR
Cooling output	kW	6.0	7.0	7.1
Energy efficiency ratio (EER)	-	5.18	4.88	4.88
Absorbed electrical power	kWe	1.16	1.43	1.45

Tab.7 Common specifications

Measurement type	Unit	AWHPR 4 MR	AWHPR 6 MR	AWHPR 8 MR
Total dynamic head at nominal flow rate	kPa	65	55	30
Nominal air flow rate	m ³ /h	2070	2070	2184
Power voltage of the outdoor unit	V	230	230	230
Start-up amperage	A	5	5	5
Maximal amperage	A	13.9	13.9	13.9
Acoustic power - Inside ⁽¹⁾	dB(A)	29	31	32
Acoustic power - Outside	dB(A)	56	57	59
R32 refrigerant load	kg	1.2	1.2	1.2
R32 refrigerant load ⁽²⁾	tCO ₂ e	0.81	0.81	0.81
Refrigerant connection (Liquid - Gas)	inch	3/8 - 1/2	3/8 - 1/2	3/8 - 1/2
Maximum precharged length	m	10	10	10
<p>(1) Noise radiated by the envelope - Test run in accordance with the NF EN 12102 standard, temperature conditions: air 7 °C, water 55 °C (inside and outside)</p> <p>(2) 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 R32 is 675.</p>				

3.2.3 Heat pump weight

Tab.8 Indoor unit

Data	Unit	MIV-S/E 4-8 V200 R32	MIV-S/H 4-8 V200 R32
Weight empty	kg	139	138
Total weight with water	kg	334	333

Tab.9 Outdoor unit

Data	Unit	AWHPR 4 MR	AWHPR 6 MR	AWHPR 8 MR
Weight	kg	54	54	54

3.2.4 Domestic hot water tank

Tab.10 Technical specifications of the primary circuit (heating water)

Specification	Unit	Value
Maximum operating temperature Version with backup boiler	°C	90
Maximum operating temperature Version with immersion heater	°C	75
Minimum operating temperature	°C	7
Maximum operating pressure	MPa (bar)	0.3 (3.0)
Domestic hot water tank exchanger capacity	l	11.3
Exchange surface	m ²	1.7

Tab.11 Technical specifications of the secondary circuit (domestic water)

Specification	Unit	Value
Maximum operating temperature	°C	75
Minimum operating temperature	°C	10
Maximum operating pressure	MPa (bar)	1.0 (10.0)
Water capacity	l	177

Tab.12 Common specifications (in accordance with the EN 16147 standard). Water temperature setpoint: 54 °C – Outside temperature: 7 °C – Inside air temperature: 20 °C

	AWHPR 4 MR (cycle M)	AWHPR 6 MR (cycle L)	AWHPR 8 MR (cycle L)
Charging time ⁽¹⁾	1 hour 37 minutes	1 hour 32 minutes	1 hour 41 minutes
Domestic hot water coefficient of performance (COP _{DHW}) ⁽¹⁾	3.17	3.07	2.99
⁽¹⁾ The DHW performance levels according to standard EN 16147 have been achieved with an offset of 3 °C.			

3.2.5 Combination heaters with medium-temperature heat pump

Tab.13 Technical parameters for heat pump combination heaters (parameters declared for medium-temperature application: 55 °C)

Product name		Unit	AWHPR 4 MR	AWHPR 6 MR	AWHPR 8 MR
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	-	-	Yes	Yes	Yes
Rated heat output under average conditions ⁽¹⁾	<i>Prated</i>	kW	5	6	7
Rated heat output under colder conditions	<i>Prated</i>	kW	4	5	5
Rated heat output under warmer conditions	<i>Prated</i>	kW	5	6	7
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	4.5	5.5	6.2
$T_j = +2$ °C	<i>Pdh</i>	kW	2.7	3.4	3.8
$T_j = +7$ °C	<i>Pdh</i>	kW	1.7	2.1	2.5
$T_j = +12$ °C	<i>Pdh</i>	kW	2.1	2.5	2.5
$T_j =$ bivalent temperature	<i>Pdh</i>	kW	4.5	5.5	6.2
$T_j =$ operation limit temperature	<i>Pdh</i>	kW	4.3	5.3	4.9

Product name		Unit	AWHPR 4 MR	AWHPR 6 MR	AWHPR 8 MR
Bivalent temperature	T_{biv}	°C	-7	-7	-7
Degradation coefficient ⁽²⁾	Cdh	-	1.0	1.0	1.0
Seasonal space heating energy efficiency under average conditions	η_s	%	134	132	125
Seasonal space heating energy efficiency under colder conditions	η_s	%	101	101	102
Seasonal space heating energy efficiency under warmer conditions	η_s	%	163	141	149
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	$COPd$	-	2.15	2.22	1.95
$T_j = +2$ °C	$COPd$	-	3.39	3.37	3.24
$T_j = +7$ °C	$COPd$	-	4.44	4.07	4.10
$T_j = +12$ °C	$COPd$	-	7.29	6.58	6.10
$T_j =$ bivalent temperature	$COPd$	-	2.15	2.22	1.95
$T_j =$ operation limit temperature	$COPd$	-	1.83	1.82	1.66
Operation limit temperature for air-to-water heat pumps	TOL	°C	-10	-10	-10
Heating water operating limit temperature	$WTOL$	°C	60	60	60
Electrical power consumption					
Off mode	P_{OFF}	kW	0.015	0.015	0.015
Thermostat-off mode	P_{TO}	kW	0.015	0.015	0.015
Stand-by	P_{SB}	kW	0.015	0.015	0.015
Crankcase heater mode	P_{CK}	kW	0.000	0.000	0.000
Supplementary heater					
Rated heat output	P_{sup}	kW	0.7	0.7	2.1
Type of energy input	-	-	Electricity	Electricity	Electricity
Other specifications					
Capacity control	-	-	Variable	Variable	Variable
Sound power level, indoors - outdoors	L_{WA}	dB	29 – 56	31 – 57	32 – 59
Annual energy consumption under average conditions	Q_{HE}	kWh	3009	3679	4504
Annual energy consumption under colder conditions	Q_{HE}	kWh	3801	4284	4215
Annual energy consumption under warmer conditions	Q_{HE}	kWh	1607	2222	2315
Rated air flow rate, outdoors for air-to-water heat pumps	-	m ³ /h	2070	2070	2184
Declared load profile	-	-	L	L	L
Daily electricity consumption	Q_{elec}	kWh	3.670	3.790	3.890
Annual electricity consumption	AEC	kWh	773	799	818
Water heating energy efficiency	η_{wh}	%	132.50	128.10	125.00
Daily fuel consumption	Q_{fuel}	kWh	0.000	0.000	0.000
Annual fuel consumption	AFC	GJ	0	0	0
(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 Cdh is not determined by measurement, the default degradation coefficient is $Cdh = 0.9$.					

**See**

The back cover for contact details.

3.2.6 Sensor specifications

■ Outdoor temperature sensor specifications

Tab.14 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.15 NTC 10K 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 condenser flow and return temperature sensors

Tab.16 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

■ Specifications of the outdoor unit flow and return temperature sensors

Tab.17 NTC 5K temperature sensor

Temperature	°C	-10	0	10	20	30	40	50	60	70	80	90	100
Resistor	Ω	23890	15060	9778	6779	4449	3104	2209	1600	1178	880	666	510

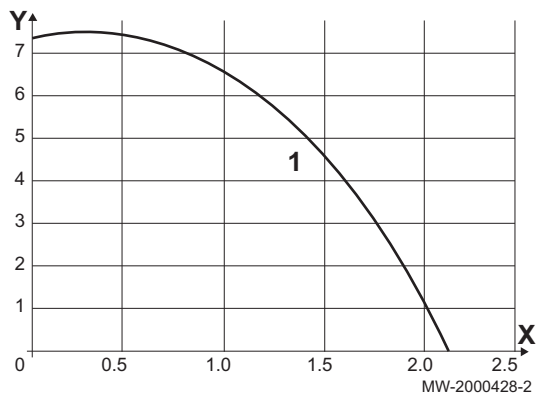
3.2.7 Circulating pump

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

The circulating pump in the indoor unit is a variable speed pump. It adapts its speed to the distribution network.

The speed of the circulating pump is controlled to reach a set point flow rate. This value is automatically configured according to the output of the outdoor unit when the codes CN1 and CN2 are configured when the appliance is first started.

Fig.6 Pressure available



- X Water flow rate (m³/h)
- Y Pressure available (mCE)
- 1 Outdoor units from 4 to 8 kW

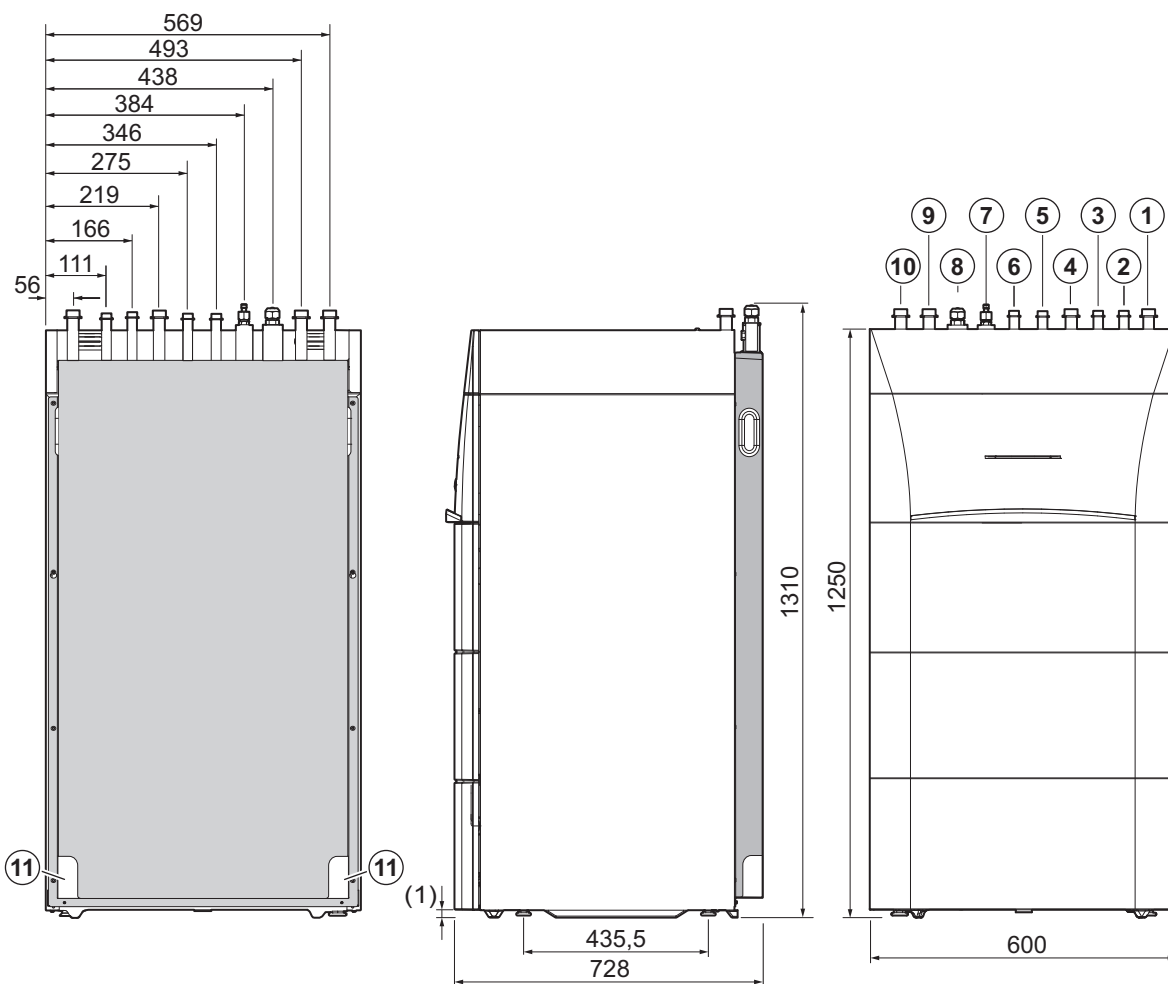


See also
Setting the flow rate of the direct circuit, page 58

3.3 Dimensions and connections

3.3.1 Indoor unit

Fig.7

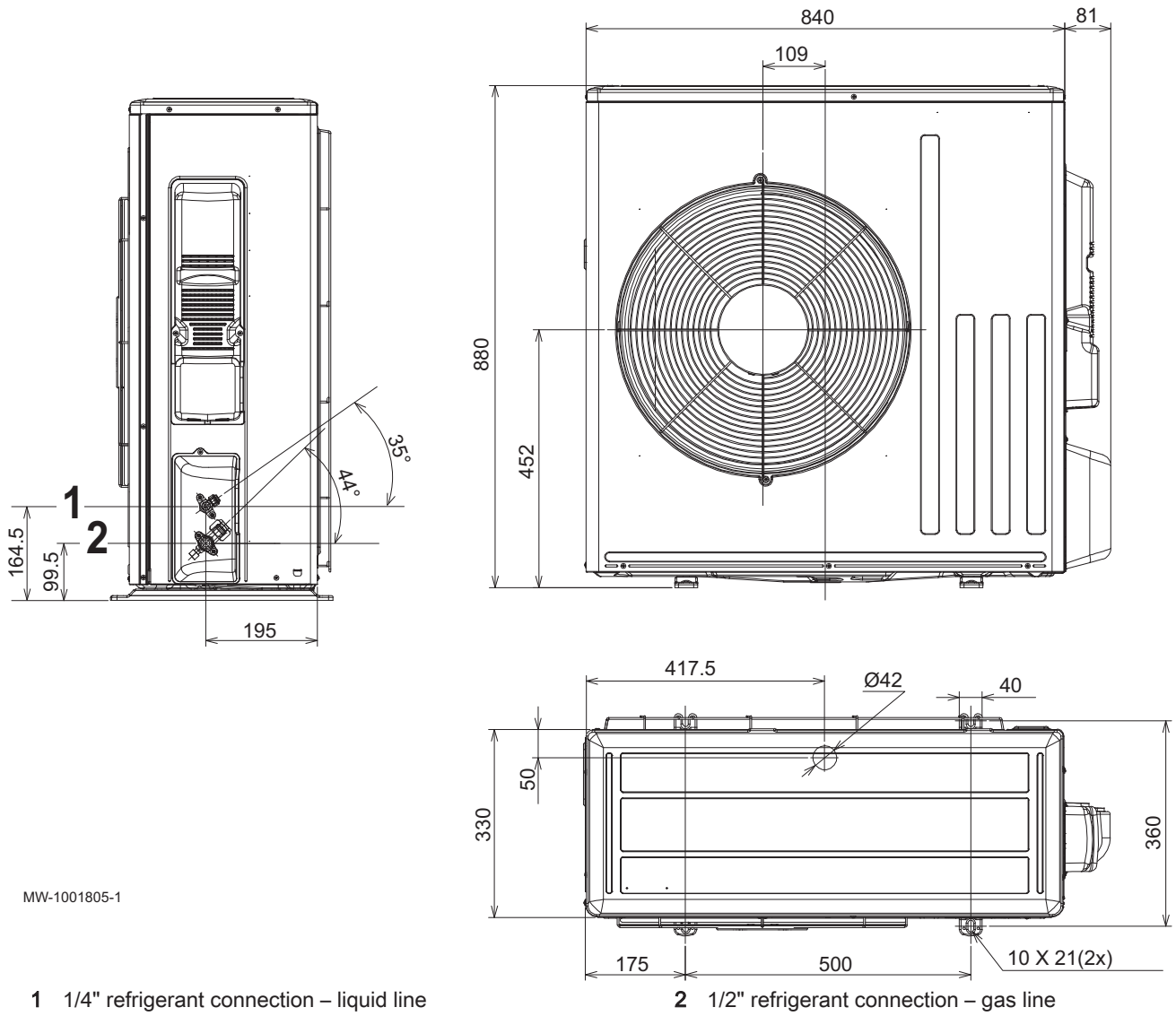


MW-607003-01

- | | |
|---|---|
| 1 Circuit A flow | 6 Domestic hot water flow G3/4" |
| 2 Flow from G3/4" backup boiler (models with hydraulic backup only) | 7 Refrigerant connection 1/4" - liquid line |
| 3 Return to G3/4" backup boiler (models with hydraulic backup only) | 8 Refrigerant connection 1/2" - gas line |
| 4 Circuit B return | 9 Circuit B flow (optional) |
| 5 Domestic cold water inlet G3/4" | 10 Circuit B return (optional) |
| | 11 Condensate discharge |
| | (1) Adjustable feet |

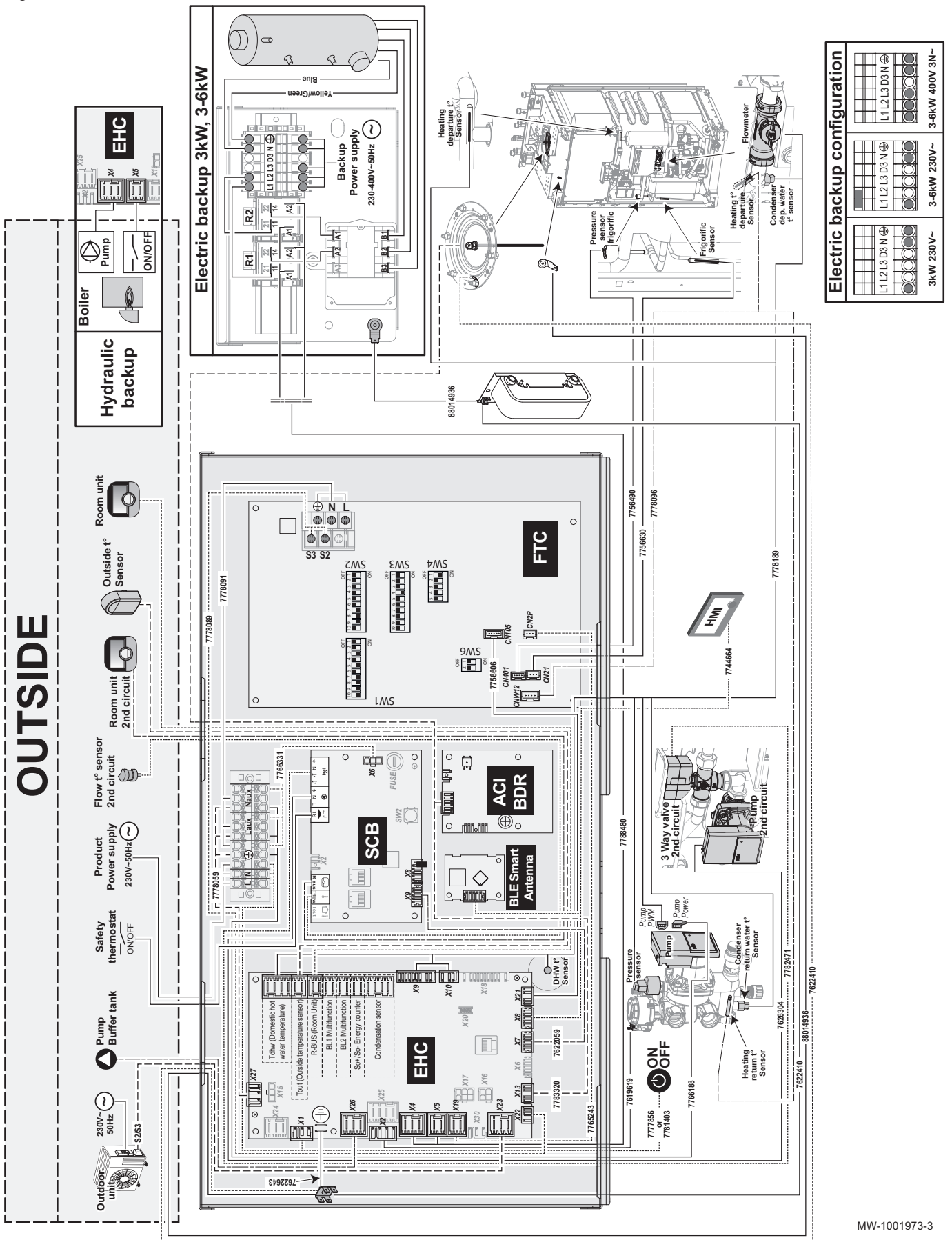
3.3.2 AWHPR 4 MR / AWHPR 6 MR / AWHPR 8 MR outdoor unit

Fig.8



3.4 Electrical diagram

Fig.9



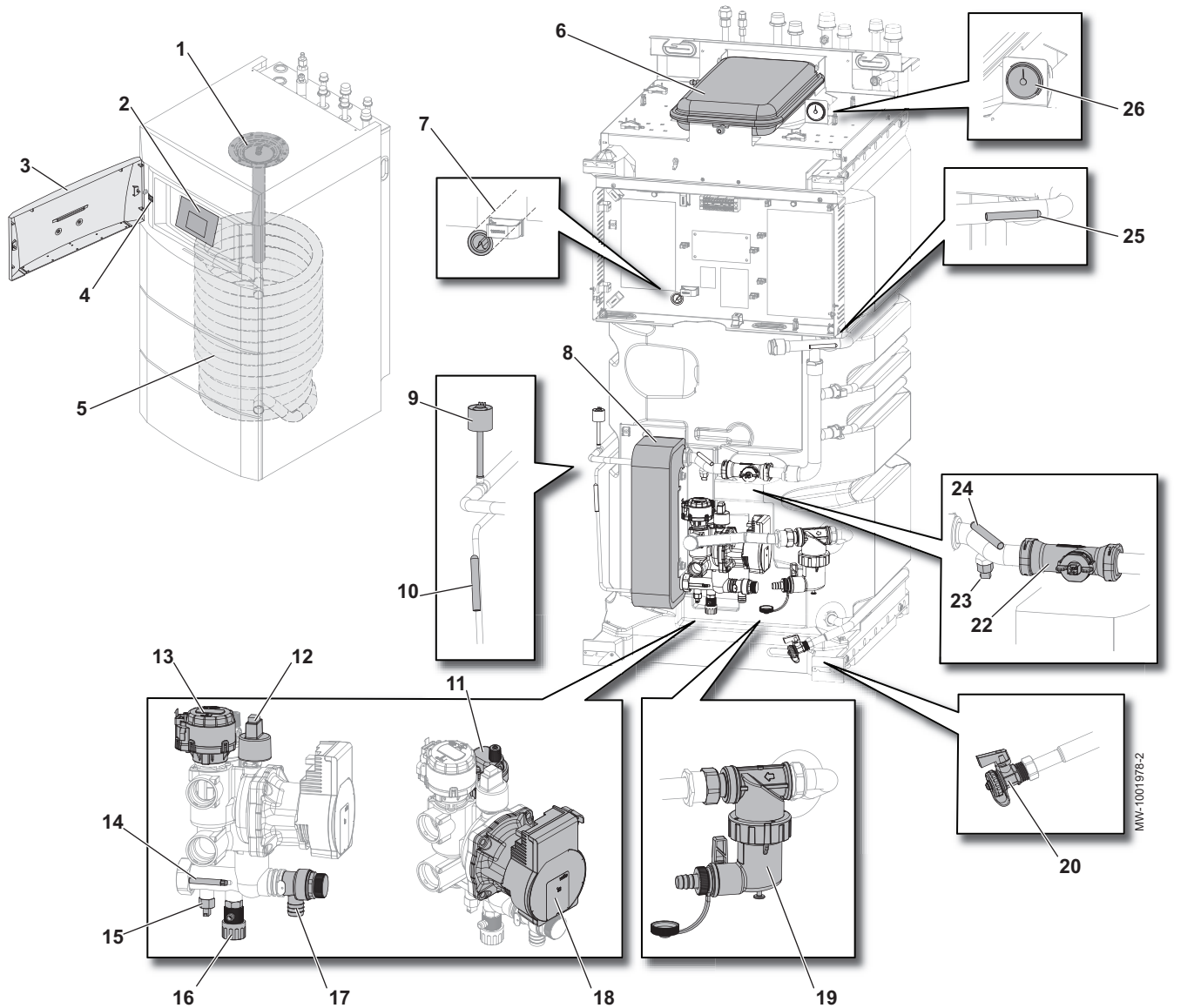
MW-1001973-3

Text on the diagram	Description
ACI BDR	PCB for the titanium anode
BACKUP POWER SUPPLY	Backup power supply
BLE Smart Antenna	PCB for Bluetooth® communication
BLUE	Blue
BOILER	Boiler
BL1 Multifunction	BL1 multifunction input
BL2 Multifunction	BL2 multifunction input
Condensation sensor	Condensation sensor
CONDENSER DEP. WATER T° SENSOR	Condenser water flow temperature sensor
CONDENSER RETURN WATER T° SENSOR	Condenser water return temperature sensor
DHW t° Sensor	Domestic hot water temperature sensor
EHC	Control PCB
ELECTRIC BACKUP CONFIGURATION	Configurations for electrical backup (immersion heater)
ELECTRIC BACKUP 3kW, 3-6kW	3 kW, 3-6 kW electrical backup (immersion heater)
FLOWMETER	Flow meter
FLOW T° SENSOR 2ND CIRCUIT	Second circuit flow temperature sensor
FRIGORIFIC SENSOR	Refrigerant circuit temperature sensor
FUSE	Fuse
FTC	Interface PCB for the outdoor unit
HEATING DEPARTURE T° SENSOR	Heating flow temperature sensor
HEATING RETURN T° SENSOR	Heating return temperature sensor
HEATING T° DEPARTURE SENSOR	Heating flow temperature sensor
HMI	User interface
HYDRAULIC BACKUP	Hydraulic backup (backup boiler)
ON/OFF	On/Off
OUTDOOR UNIT	Outdoor unit
OUTSIDE	Outdoor
OUTSIDE T°SENSOR	Outdoor temperature sensor
PRESSURE SENSOR	Pressure sensor
PRESSURE SENSOR FRIGORIFIC	refrigerant circuit pressure sensor
PRODUCT POWER SUPPLY	Power supply
PUMP	Pump/Circulating pump
PUMP BUFFER TANK	Buffer tank pump
PUMP POWER	Pump power supply
PUMP PWM	Pump control PWM signal
PUMP 2ND CIRCUIT	Second circuit pump
R-BUS (Room Unit)	SMART TC° connected room unit, on/off thermostat or Opentherm thermostat
ROOM UNIT	SMART TC° connected room unit, on/off thermostat or Opentherm thermostat
ROOM UNIT 2ND CIRCUIT	Second circuit ambient thermostat
SAFETY THERMOSTAT	Safety thermostat
SCB	PCB for controlling a second circuit
So+/So- Energy counter	Energy meter
Tdhw (Domestic hot water temperature)	Domestic hot water sensor
Tout (Outside temperature sensor)	Outdoor temperature sensor
YELLOW/GREEN	Yellow/Green
3 WAY VALVE 2ND CIRCUIT	Second circuit three-way valve

4 Description of the product

4.1 Main components

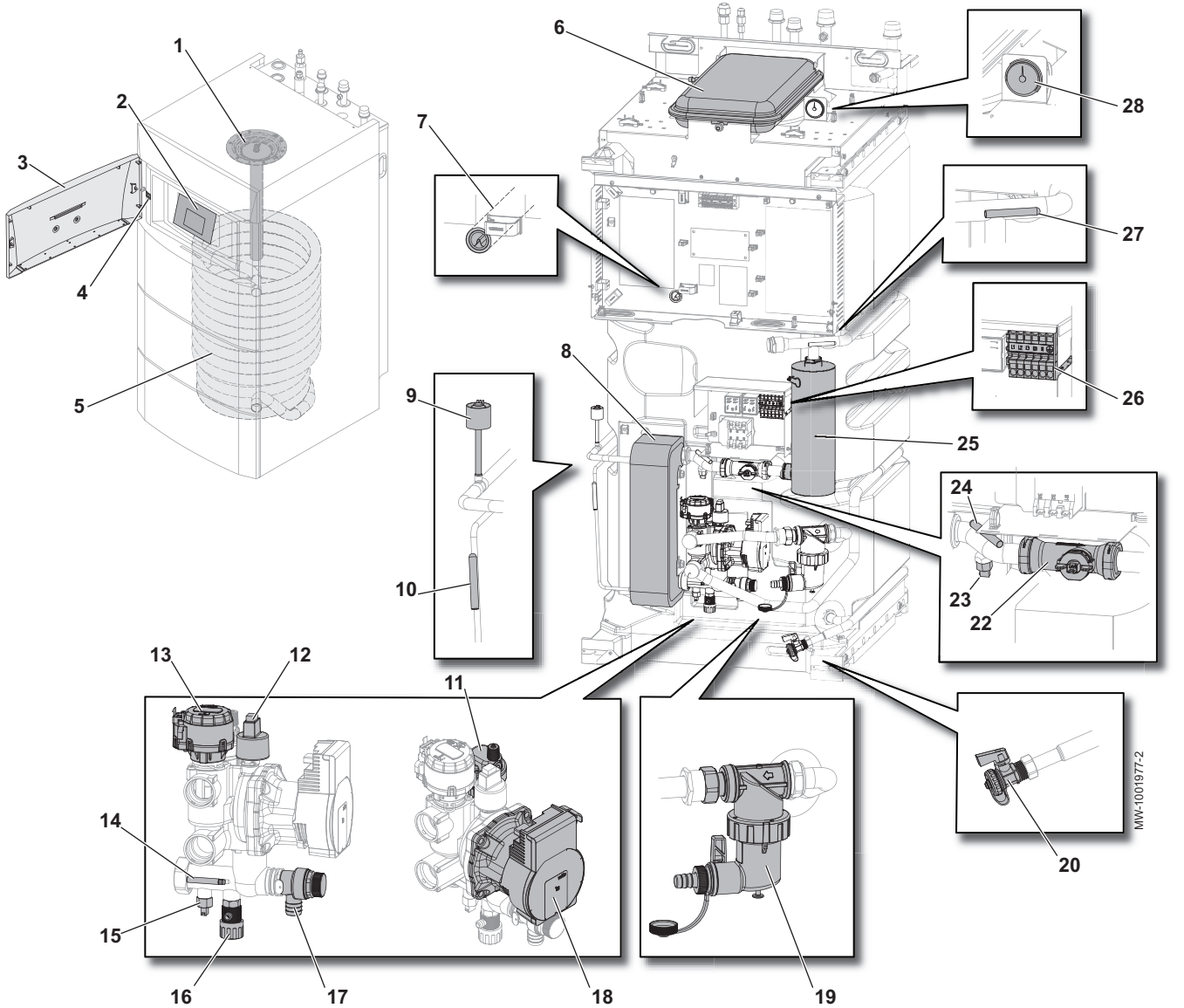
Fig.10 Indoor unit with backup boiler



MW-1001978-2

- | | | | |
|----|--|----|--|
| 1 | TAS titanium anode | 14 | Condenser return temperature sensor (FTC2BR PCB) |
| 2 | User interface | 15 | Condenser return temperature sensor (EHC-08 PCB) |
| 3 | User interface access door | 16 | Venting valve |
| 4 | ON/OFF button | 17 | Safety valve |
| 5 | Heat exchanger for the production of domestic hot water in the tank (coil) | 18 | Main circulating pump |
| 6 | Expansion vessel | 19 | Magnetic sieve filter |
| 7 | Sensor tube for the domestic hot water sensor | 20 | Domestic hot water tank drain valve |
| 8 | Plate heat exchanger (condenser) | 22 | Flow meter |
| 9 | Pressure sensor | 23 | Condenser flow temperature sensor (EHC-08 PCB) |
| 10 | Refrigerant tube sensor | 24 | Condenser flow temperature sensor (FTC2BR PCB) |
| 11 | Air vent | 25 | System temperature sensor |
| 12 | Electronic pressure gauge | 26 | Mechanical pressure gauge |
| 13 | Three-way valve with reversal motor for heating/ domestic hot water | | |

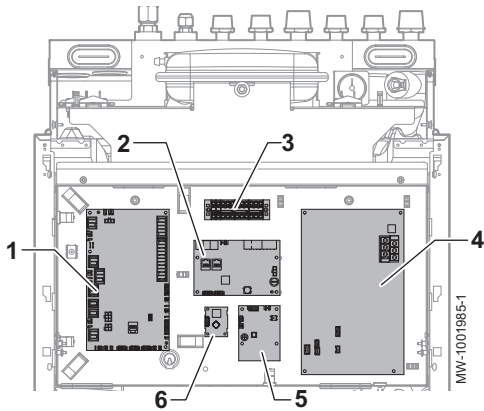
Fig.11 Indoor unit with electrical backup



MW-001977-2

- | | |
|---|--|
| <ul style="list-style-type: none"> 1 TAS titanium anode 2 User interface 3 User interface access door 4 ON/OFF button 5 Heat exchanger for the production of domestic hot water in the tank (coil) 6 Expansion vessel 7 Sensor tube for the domestic hot water sensor 8 Plate heat exchanger (condenser) 9 Pressure sensor 10 Refrigerant tube sensor 11 Air vent 12 Electronic pressure gauge 13 Three-way valve with reversal motor for heating/ domestic hot water 14 Condenser return temperature sensor (FTC2BR PCB) | <ul style="list-style-type: none"> 15 Condenser return temperature sensor (EHC-08 PCB) 16 Venting valve 17 Safety valve 18 Main circulating pump 19 Magnetic sieve filter 20 Domestic hot water tank drain valve 22 Flow meter 23 Condenser flow temperature sensor (EHC-08 PCB) 24 Condenser flow temperature sensor (FTC2BR PCB) 25 Electric heating element 26 Electric heating element terminal block 27 System temperature sensor 28 Mechanical pressure gauge |
|---|--|

Fig.12 Position of the PCBs



- 1 EHC-08 central unit PCB: control system for the heat pump and the first heating circuit (direct circuit)
- 2 SCB-04 second circuit control system PCB: management of a second heating circuit
- 3 Intermediate terminal block
- 4 FTC2BR PCB: interface with the outdoor unit
- 5 ACI-BDR PCB: management of the TAS anode (impressed electrical current titanium anode)
- 6 BLE Smart Antenna PCB: Bluetooth® communication

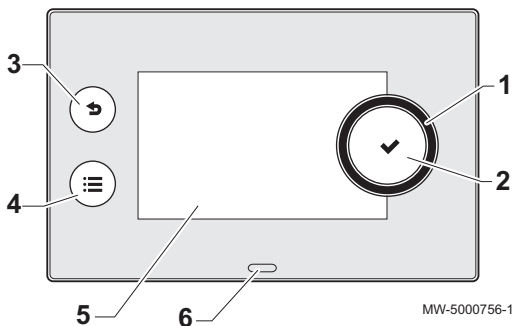
4.2 Description of the user interface



See also
Operation, page 93

4.2.1 Description of the user interface

Fig.13



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

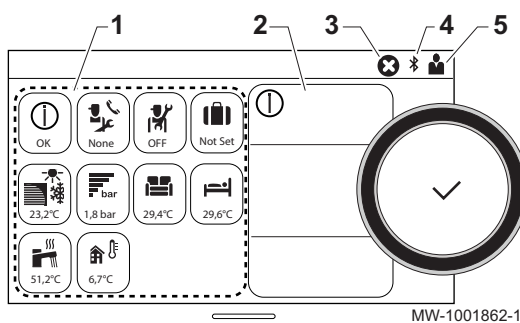
4.2.2 Description of the home screen



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

The screen automatically goes into standby if no button 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.14



- 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.18 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 European Regulation 517/2014, 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).

**Caution**

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

5.2 Standard delivery

Tab.19

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 • A bag containing the product documentation: <ul style="list-style-type: none"> - an installation, user and service manual. - a quick user guide - a list of important points to ensure successful installation - a label indicating the total refrigerant charge - labels relating to fluorinated greenhouse gases in several languages - an energy label - the terms of warranty - a CE certificate • An accessories bag containing: <ul style="list-style-type: none"> - an outdoor temperature sensor - a spanner for maintenance on the magnetic filter - a second Bluetooth® label - a filter to be installed on the heating return - hoses - connectors, - etc.

5.3 Data plates

The data plates must be accessible at all times. They identify the product and provide important information: product type, date of manufacture (year - week), serial number, electrical power supply, operating pressure, electrical output, IP rating, refrigerant type.

**Important**

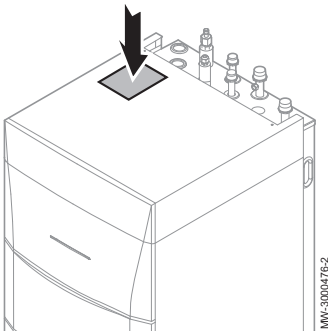
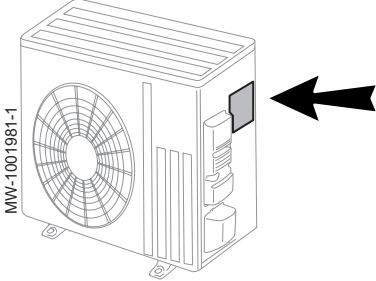
- Never remove or cover the data plates and labels affixed to the heat pump.
- The data plates and labels must be legible throughout the entire lifetime of the heat pump. Immediately replace damaged or illegible instructions and warning labels.

**See also**

Commissioning procedure with smartphone, page 56

5.4 Position of the data plates

Tab.20

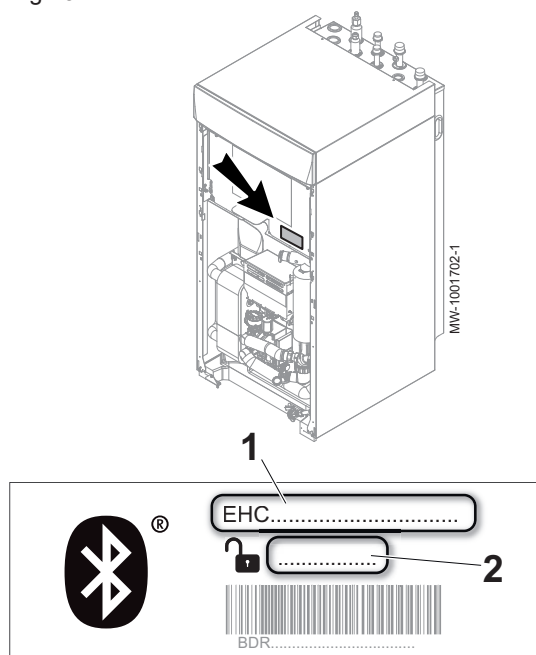
Indoor unit	Outdoor unit
 <p style="text-align: right; font-size: small;">MW-3000476-2</p>	 <p style="text-align: left; font-size: small;">MW-1001981-1</p>

5.5 Bluetooth® label

The information on the Bluetooth® label can be used to establish the Bluetooth® connection between the smartphone and the heat pump when commissioning.

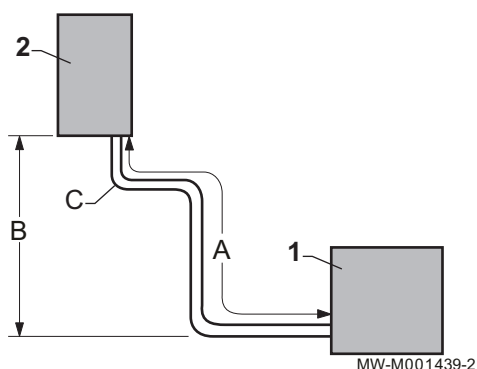
Fig.15

- 1 Name of appliance
- 2 Pairing code



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

Fig.16



To ensure that the heat pump functions correctly, respect the connection requirements between the indoor unit (2) and the outdoor unit (1).

- A Minimum and maximum lengths
- B Maximum height difference
- C Maximum number of elbows

	A (m)	B (m)	C
AWHPR 4 MR	5 to 30 ⁽¹⁾	30	10
AWHPR 6 MR	5 to 30 ⁽¹⁾	30	10
AWHPR 8 MR	5 to 30 ⁽¹⁾	30	10
(1) Important: beyond 10 metres, refrigerant should be added to the circuit.			

If the length allowed for the refrigerant connections is less than 5 metres, disruptions can occur:

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

Make one or two horizontal loops with the refrigerant connections to achieve 5 metres and reduce disruption.



See also

Preparing the refrigerant connections, page 39

5.7 Positioning the indoor unit

5.7.1 Choosing the location of the indoor unit



Caution

The heat pump's indoor unit must be installed in a frost-free location.

1. Decide on the ideal location, bearing in mind the space the indoor unit requires, as well as any legal requirements.
2. Install the indoor unit on a solid, stable structure capable of bearing the weight of the indoor unit when full of water and equipped with its various accessories.



Caution

The indoor unit must be installed at a minimum distance of 1 m from any source of flame or heat source above 80°C (open boiler, kitchen stove, etc.)

3. Install the indoor unit as close as possible to the draw-off points in order to minimise energy losses through the pipes.

5.7.2 Installation room ventilation and surface area

- Respect the regulations in force regarding natural ventilation of the room.



Caution

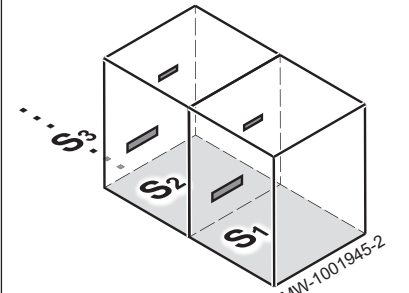
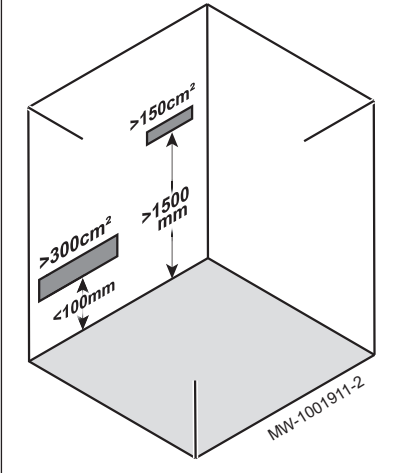
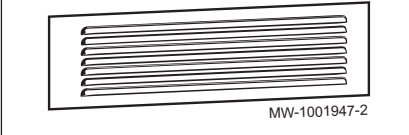
The following rules must be observed when using R32 refrigerant.

- Respect the minimum surface area of the installation site according to the length of the refrigerant pipes used. This surface area corresponds to the unoccupied ground surface area of the room. See table below:

Tab.21

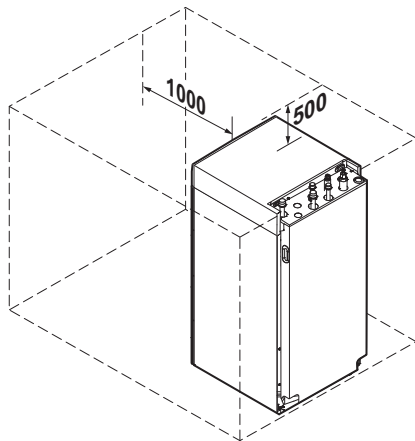
Length of refrigerant pipe	m	≤ 10	11 - 19	≥ 20
Minimum floor area = S	m ²	5	6	7

Tab.22

Description	Regulation
 <p>$S_1+S_2+S_3+... \geq S(m^2)$</p>	<p>If the ground surface area of the installation site is not sufficient, 2 ventilation openings must be added to an inside wall in this installation site, until the minimum ground surface area given in the table above has been met.</p>
	<p>Respect the positions and dimensions for these openings as shown in the illustration opposite.</p> <div style="background-color: #e0e0e0; padding: 5px;"> <p>Caution The ventilation openings must be permanent and unobstructed.</p> </div>
	<p>If ventilation grilles are used on natural ventilation openings, the air passage section of the grille must meet the requirements in terms of opening surface areas given in the previous step.</p>

5.7.3 Allowing sufficient space for the indoor module

Fig.17

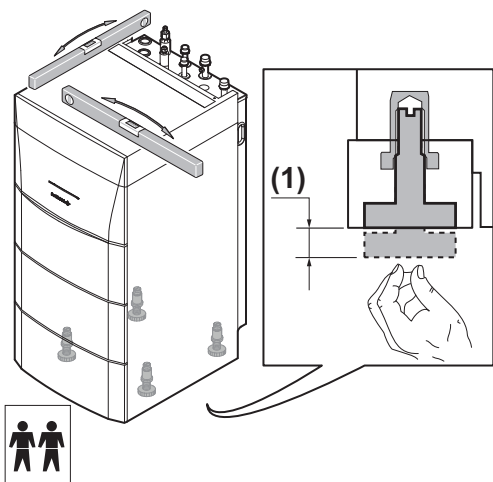


Warning
Do not install the appliance in a cupboard.

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

5.7.4 Levelling the indoor unit

Fig.18



MW-3000464-01

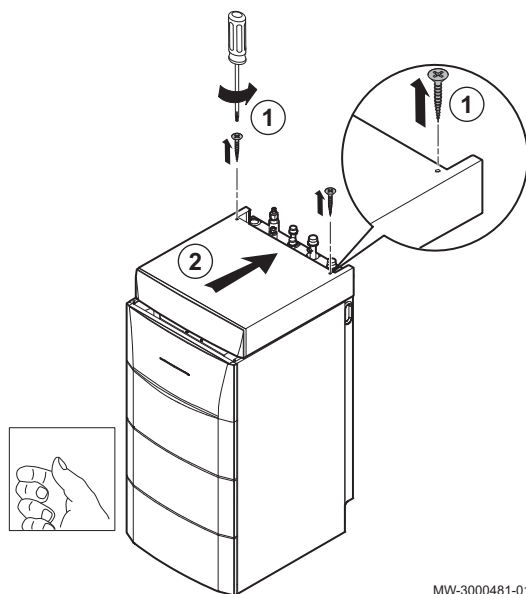
Level the indoor unit using the four adjustable feet.

i Important
Use suitable lifting equipment.

- (1) Adjustment range: 0 to 20 mm
Minimum requirement: extend the foot by at least 10 mm.

5.7.5 Removing the top panel and the front panels

Fig.19



MW-3000481-01

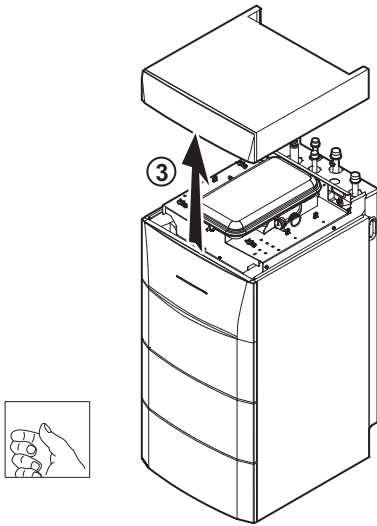
To prepare the installation, open the appliance.

1. Unscrew the two screws from the top panel.

i Important
Retain the 2 toothed washers. During the reinstallation of the top panel, the toothed washers act to ground the unit.

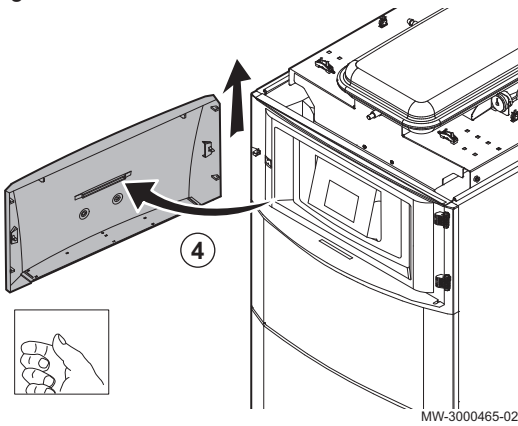
2. Push the top panel towards the back.

Fig.20



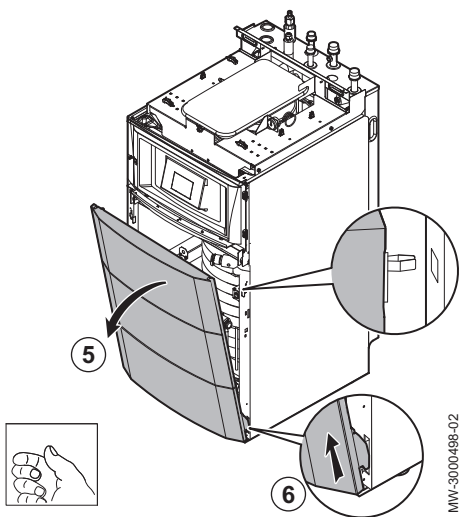
3. Raise the top panel.

Fig.21



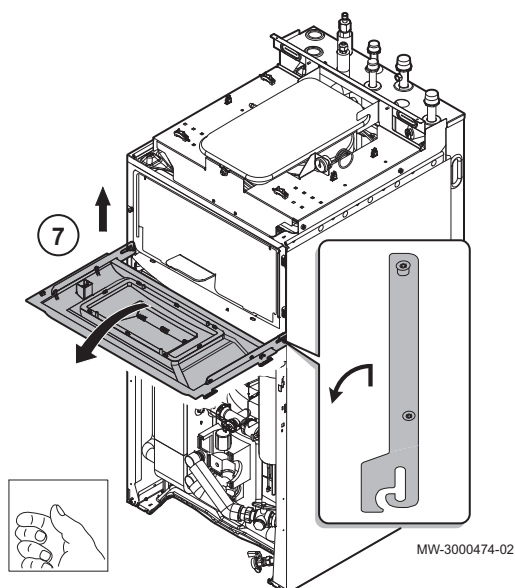
4. Open and remove the user interface access door

Fig.22



5. Pivot the front panel towards you by pulling firmly on both sides.
6. Remove the front panel by pulling firmly upwards.

Fig.23



7. Lift the control system module bracket, tilt it and hang it in a horizontal position.

**Important**

Keep a good hold of the user interface module in order not to pull out or disconnect the electrical connections in the user interface module.

8. To reassemble the appliance, reassemble the pieces in the reverse order.

5.8 Hydraulic connections

5.8.1 Connections

**Important**

Connect the options before the indoor unit is put into its final position.

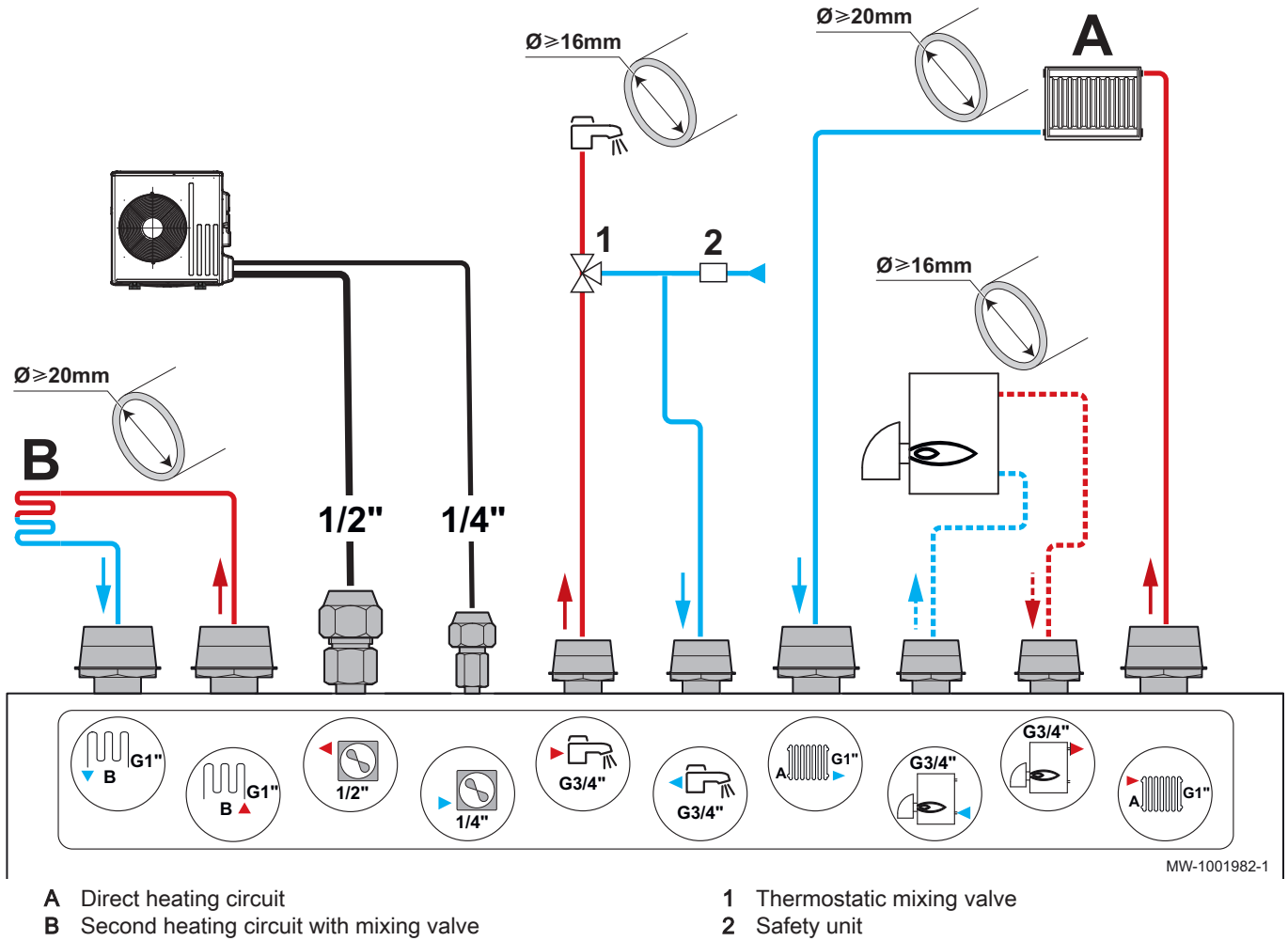
For an installation with 2 heating circuits, fit the EH858 and HK378 kits by connecting the circuit that requires the highest temperature to circuit A, and the circuit that requires the lowest temperature to circuit B.

**Important**

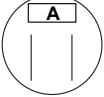
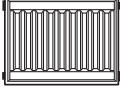

The two circuits must both guarantee the target flow rate independently.

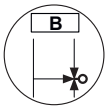
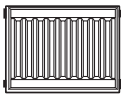

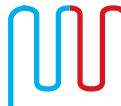
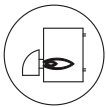


Calculate the volume of water in the heating circuit and check the volume of the appropriate expansion vessel using the NF DTU 65.11. Use the maximum temperature of the circuit in heating mode or a minimum of 55 °C. If the volume of the integrated expansion vessel (8 litres) is not sufficient, add an external vessel to the heating circuit.

Fig.24



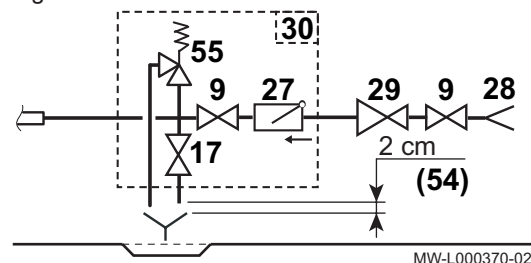
Tab.23

Circuit		Connections to be made
<p>A</p> <p>Direct heating</p> 	 <p>Radiators</p>	<p>Caution</p> <p>In case of a direct circuit with radiators fitted with thermostatic valves, install a differential valve to ensure flow.</p> <ul style="list-style-type: none"> • Install an automatic air vent at the highest point on the heating circuit. • Install two isolation valves. • Install a magnetic filter on the indoor unit heating return (provided in the accessories bag). • Install a differential valve if thermostatic valves are present on the radiator circuit.
	 <p>Underfloor heating</p>	<ul style="list-style-type: none"> • Install an automatic air vent at the highest point on the heating circuit. • Install two isolation valves. • Install a magnetic filter on the indoor unit heating return (provided in the accessories bag). • Connect the safety thermostat on the circulating pump with the cable from the HA255 kit.

Circuit		Connections to be made
B Second mixing zone 	 Radiators	<div style="background-color: #e0e0e0; padding: 5px;">  Caution In case of a circuit with radiators fitted with thermostatic valves, install a differential valve to ensure flow. </div> <ul style="list-style-type: none"> • Install an automatic air vent at the highest point on the heating circuit. • Install two isolation valves. • Install a magnetic filter on the indoor unit heating return. • Install the second circuit control PCB kit HK378. • Install the EH858 second mixing zone kit.
	 Underfloor heating	<ul style="list-style-type: none"> • Install an automatic air vent at the highest point on the heating circuit. • Install two isolation valves. • Install a magnetic filter on the indoor unit heating return. • Connect a safety thermostat to the SCB-04 PCB. • Install the second circuit control PCB kit HK378. • Install the EH858 second mixing zone kit.
 Backup boiler	<ul style="list-style-type: none"> • Install the 3/4" non-return valve and the 3/4" nipple to the boiler return (supplied in the accessories bag). • Install a filter on the boiler outlet. 	
 Outdoor unit	<ul style="list-style-type: none"> • Respect the distance between the indoor unit and the outdoor unit. • Comply with current legislation and standards. 	
 Domestic hot water	<ul style="list-style-type: none"> • Install a temperature limiting device, for example a domestic water thermostatic mixing valve (not supplied) on the domestic hot water outlet. • Fit a safety unit on the domestic hot water inlet. 	

■ Safety unit

Fig.25



- 9 Isolation valve
- 17 Drain valve
- 27 Non-return valve
- 28 Domestic cold water inlet
- 29 Pressure reducer
- 30 Safety unit
- 54 End of the discharge pipe free and visible 2 to 4 cm above the flow funnel
- 55 Safety valve 0.7 MPa (7 bar)

5.8.2 Special precautions for connecting the heating circuit



Caution

Hold the connection at the indoor unit end with a spanner to avoid twisting the pipe inside the appliance.



Caution

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

- If radiators are connected directly to the heating circuit, install a differential valve between the indoor unit and the heating circuit.
 - Otherwise, leave the heating circuit without a thermostatic valve and/or without a solenoid valve.
 - Fit drain valves between the indoor unit and the heating circuit.
- When making the connection, always comply with the applicable local standards and directives.
 - Ensure that the EPDM sealing elements do not come into contact with substances containing mineral oil. Products containing mineral oil will

cause permanent serious damage to the material, causing it to lose its impermeability.

- If components made from composite materials are used (for example, polyethylene connection pipes or flexible hose), we recommend components with an anti-oxygen barrier.

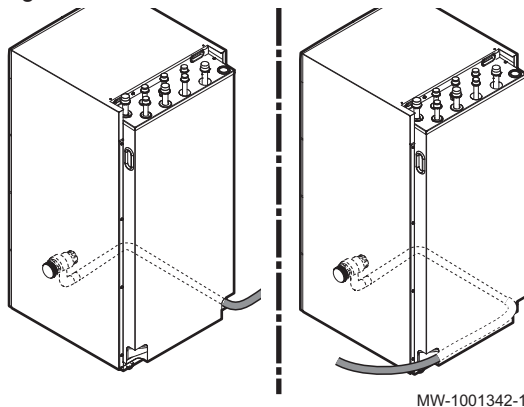
5.8.3 Special precautions for the connection of the domestic hot water circuit

Tab.24

<p>Domestic cold water connection</p>	<ul style="list-style-type: none"> • Install a water drain in the boiler room and a funnel-siphon for the safety unit. • Fit a non-return valve to the domestic cold water circuit. <p>i Important Make the connection to the cold water supply according to the hydraulic installation diagram.</p> <p>i Important The components used for the connection to the cold water supply must comply with the prevailing standards and regulations in the country concerned.</p>
<p>Temperature limit at the draw-off point</p>	<ul style="list-style-type: none"> • 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 must be observed when installing the appliance.
<p>Water operating pressure</p>	<ul style="list-style-type: none"> • The tanks on our domestic hot water heaters can run at a maximum operating pressure of 1.0 MPa (10 bar). The recommended operating pressure is under 0.7 MPa (7 bar).
<p>Safety valve</p>	<ul style="list-style-type: none"> • Integrate the safety valve in the cold water circuit. • Install the safety valve close to the tank in a place with easy access.
<p>Domestic safety unit</p>	<ul style="list-style-type: none"> • The safety unit and its connection to the domestic hot water tank must be of at least the same diameter as the domestic cold water supply pipes on the tank's DHW circuit. • There must be no cut-off devices between the safety valve or unit and the domestic hot water tank. • The discharge pipe from the safety unit must have a continuous and sufficient gradient, and its cross section must be at least equal to the cross section of the opening of the safety unit outlet (to prevent the flow of water being hindered if the pressure is too high). • The outlet pipe in the safety valve or unit must not be blocked. • Fit the safety valve above the domestic hot water tank to avoid draining the tank during servicing. Install a drain valve at the bottom of the domestic hot water tank.
<p>Isolation valves</p>	<ul style="list-style-type: none"> • Hydraulically isolate the primary and domestic circuits with isolation valves to facilitate maintenance on the domestic hot water tank. The valves make it possible to carry out maintenance on the domestic hot water tank and its components without draining the entire installation. • These valves are also used to isolate the domestic hot water tank when conducting a pressurised check on the leak-tightness of the installation if the test pressure is greater than the admissible operating pressure for the domestic hot water tank.

5.8.4 Connecting the safety valve drain pipe

Fig.26



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

Caution
The safety valve drain pipe must not be obstructed.

Caution
The drain pipe can be installed on the right or left.

Caution
If the gradient is not sufficient for the outflow, use an EH860 condensate lift pump.

5.8.5 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 adequate water. If necessary, top up with more water.
4. Check that the water connections are properly sealed.
5. Check that the heating circuit has been correctly purged.
6. Check that the filters are not clogged. Clean them if necessary.
7. Check the level of fouling of the condensate collector box.
8. Check that the water flows correctly through the siphon.
9. Check that the valves and thermostatic radiator valves are open.
10. Check that all settings and safety devices are working correctly.

5.9 Flushing the installation

5.9.1 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).

5.9.2 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).

5.10 Filling the system

5.10.1 Filling the heating circuit

Check that the installation has been cleaned and flushed correctly, then fill up the installation.

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 the pressure reaches between 1.5 and 2 bar inclusive. Read the pressure on the mechanical pressure gauge.

Important

The mechanical pressure gauge, situated under the top panel, close to the expansion vessel, is only used when filling the indoor unit with water. After the heat pump is switched on, the pressure will be shown on the display.

2. Check that there are no leaks.
3. Completely vent the indoor unit and the installation to ensure optimal running.

■ 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.25 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®

5.10.2 Fill the domestic hot water circuit

1. Flush the domestic water circuit with at least 20 times its volume of water.
2. Turn on a hot water tap.
3. Fill the domestic hot water tank via the cold water inlet pipe, leaving a hot water tap open.
4. Turn off the hot water tap when the water flow is regular, and there is no noise in the pipes.
5. Check for any water leaks.
6. Degas all of the domestic hot water pipes by repeating steps 2 to 5 for each hot water tap in the installation.

**Important**

Carefully degas the domestic hot water tank and the distribution network in order to eliminate noises and hammering caused by trapped air moving in the pipes during draw-off.

7. Check the safety devices (particularly the safety valve or safety unit), referring to the instructions provided with those components.

■ Domestic water quality

In regions where the water is very hard (Th > 20 °fH (11 °dH)), we recommend fitting a softener.

The water hardness must always be between 12 °fH (7 °dH) and 20 °fH (11 °dH) to be capable of providing effective protection against corrosion.

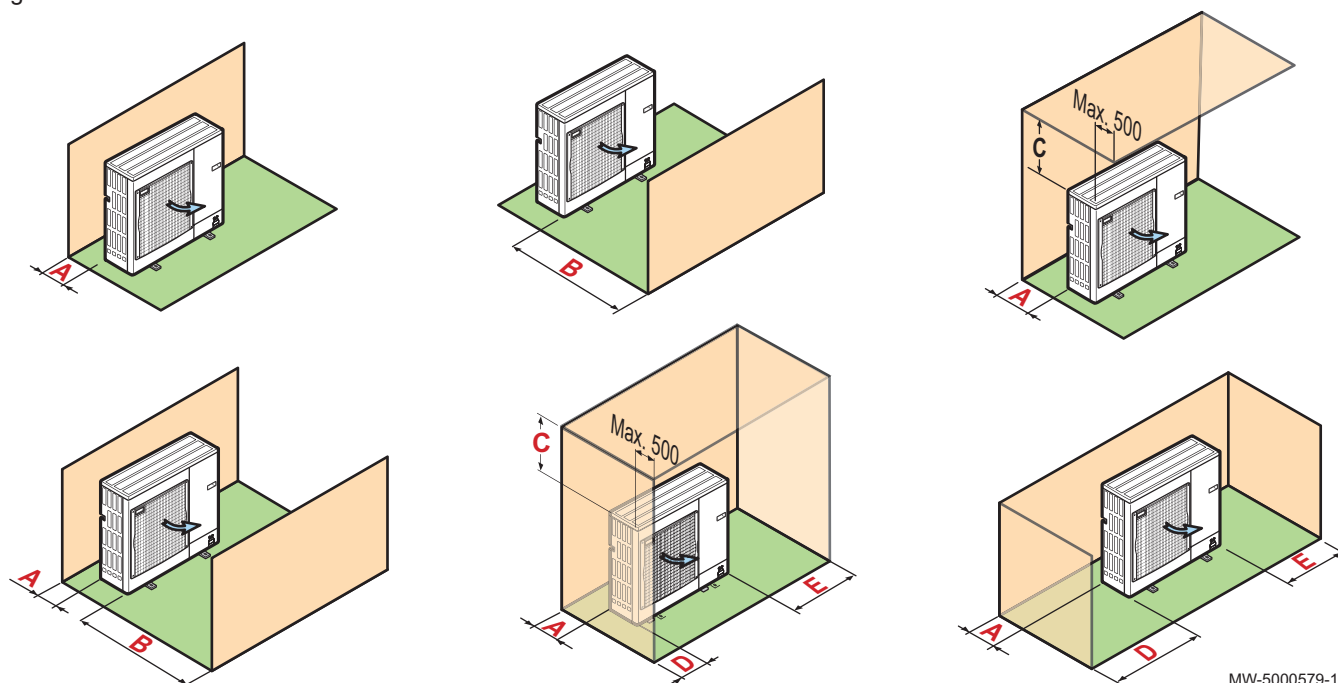
The softener does not bring about a derogation from our warranty provided that it is approved and set in accordance with the codes of practice and the recommendations given in the instructions for the softener, and is regularly inspected and maintained.

5.11 Putting the outdoor unit in place

5.11.1 Allowing sufficient space for the outdoor unit

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

Fig.27



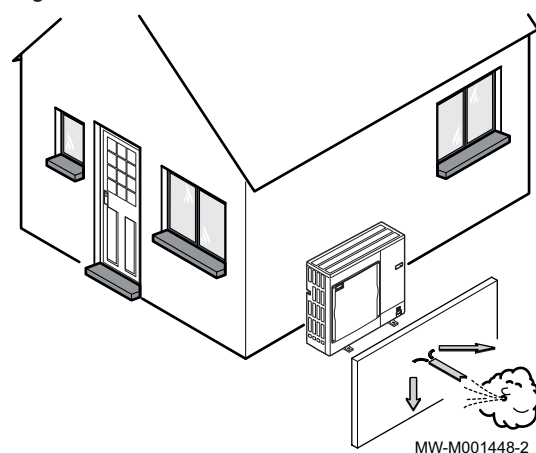
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Tab.26

Outdoor unit	Unit	A	B	C	D	E
AWHPR 4 MR	mm	100	500	500	100	350
AWHPR 6 MR	mm	100	500	500	100	350
AWHPR 8 MR	mm	100	500	500	100	350

5.11.2 Selecting the location of the outdoor unit

Fig.28



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

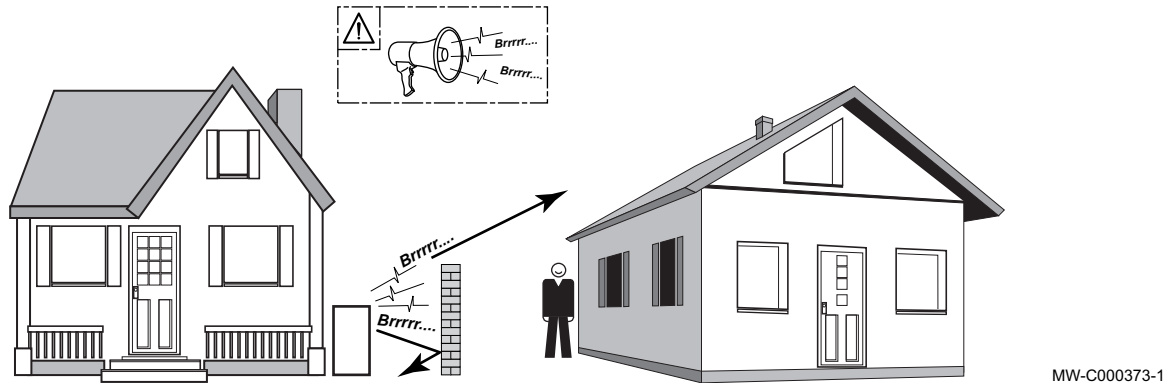
- The width of the base must not exceed the width of the outdoor unit.
- The condensate discharge must be regularly cleaned in order to prevent any blockages.

5.11.3 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.29



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.

5.11.4 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.30



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

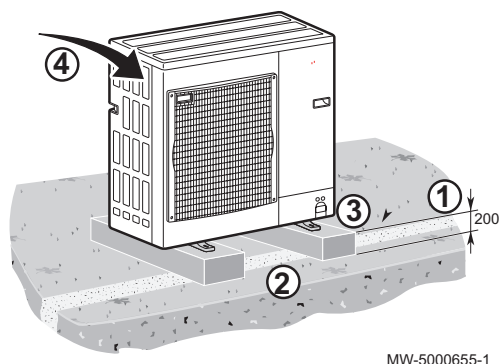
2. Ensure the base meets the following specifications:

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.

5.11.5 Installing the outdoor unit on the ground

Fig.31



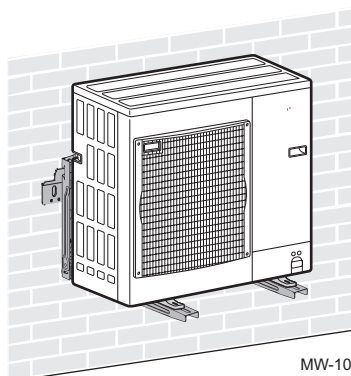
MW-5000655-1

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 floor support (EH879 package).

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 floor support (EH879 package).
4. Install the outdoor unit on the concrete base frame.

5.11.6 Installing the outdoor unit on wall brackets

Fig.32



MW-1002062-1

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.
- 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.

5.12 Refrigeration connections

5.12.1 Preparing the refrigerant connections



Danger

Only a qualified professional may carry out the installation, in compliance with current legislation and standards. Compliance with national regulations shall be observed.

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

Keep the length of the pipes to a minimum.



Important

To avoid noise from pipes vibrating against each other, observe the following:

- Leave a space between the pipes during connection.
- Provide enough slack in the pipes.
- Use sufficient insulated pipe support clamps to prevent direct contact with light surfaces like wooden panels.
- Insulate the pipes with noise-damping rubber or other insulation.

Protect the pipes from physical damage during normal operation, service or maintenance.

Inside the building:

- Install the refrigerant pipe at a minimum of 2 meters from the ground (when possible).
- Fit a mechanical protection onto the pipe sections below 2 meters.

Respect the minimum curve radius of 100 to 150 mm.

Adhere to the minimum and maximum distances between the indoor unit and the outdoor unit.

Do not add additional connecting joints between the indoor and outdoor units.

- Cut the pipes with a pipe cutter and deburr.
- Angle the opening in the pipe downwards to ensure no particles can get inside, while preventing oil traps.
- If the pipes are not connected immediately, plug them to prevent moisture from entering.
- Do not reuse beaded joints, always fabricate a new joint.



See also

Respecting the distance between the indoor unit and the outdoor unit, page 27

5.12.2 Equipment



Caution

Using certain equipment for R32 gas that have been used in the past for other refrigerants can cause damage to the equipment itself or the air conditioner

The table below specifies which equipment can be used for multiple types of refrigerant and which should only be used for R32.

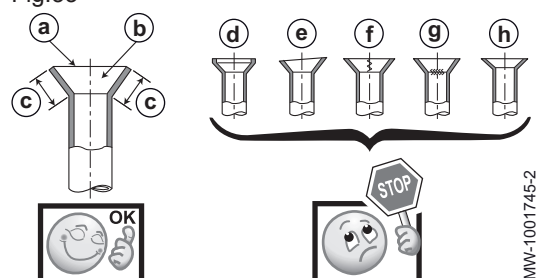
Tab.27 Equipment

Equipment for R32	
To be used exclusively for R32 gas. Do not use these instruments if they have already been used for R22 or R407C.	<ul style="list-style-type: none"> • Manifold • Charging hose • Refrigerant recovery equipment • Refrigerant cylinder • Refrigerant cylinder charging port • Gas leak detector • Vacuum pump without reverse-flow check valve
Allowed to be used for R32 gas, even if they have already been used for R22 or R407C gas.	<ul style="list-style-type: none"> • Vacuum pump with reverse-flow check valve • Pipe bender • Torque wrench • Pipe cutter • Welder and nitrogen cylinder • Refrigerant charging meter • Vacuum gauge

5.12.3 Flaring work

Carry out flaring work using a flaring tool and compare the flared work with the provided figure. If the flare is noted to be defective, cut off the flared section and do flaring work again.

Fig.33



Good example:

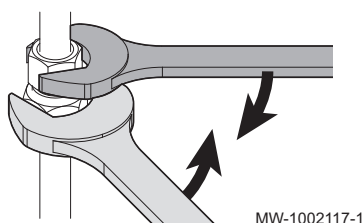
- a Smooth all around
- b Inside is shining without any scratches
- c Even length all around

Bad examples:

- d Too much
- e Tilted
- f Scratch on flared plane
- g Cracked
- h Uneven

5.12.4 Connecting the refrigerant connections to the indoor unit

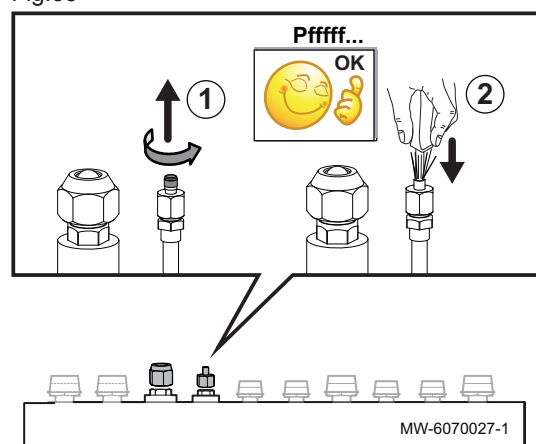
Fig.34



Caution

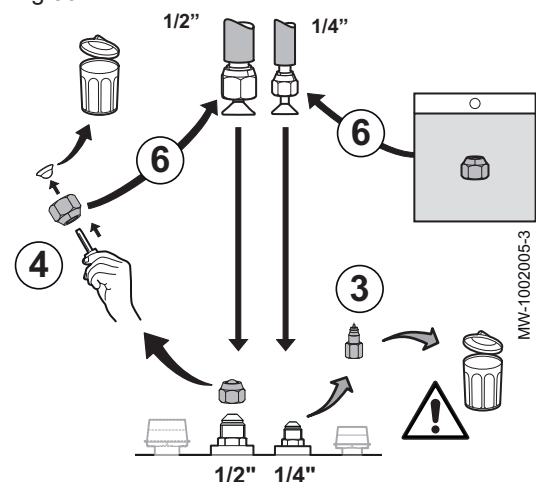
Use a backup wrench to prevent the refrigerant connection from twisting.

Fig.35



1. Remove the Schrader valve plug.
2. Check the tightness of the refrigeration circuit. Gently push a screwdriver into the Schrader valve. A release noise should be heard, which is proof that the refrigeration circuit is watertight.

Fig.36



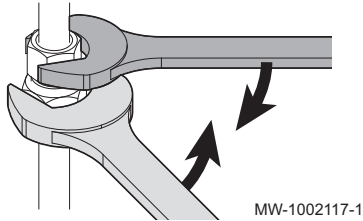
3. Remove the Schrader valve from the 1/4" refrigerant connector, and discard it.
4. Remove the nut from the 1/2" refrigerant connector. Retain the screw but discard the gasket.
5. Cut the refrigerant pipes coming from the outdoor unit with a pipe cutter and deburr.
6. Thread the nuts onto the refrigerant pipes.
 - 1/2" connector: use the original screw after having discarded the gasket.
 - 1/4" connector: use the nut supplied in the documentation bag.
7. Bead the pipes.
8. Apply refrigerant oil to the beaded parts to facilitate tightening and improve the seal.

9. Tighten the connectors using a backup wrench, observing the following tightening torques:

External diameter of the pipe (mm/inch)	External diameter of the cone fitting (mm)	Tightening torque (Nm)
6.35 - 1/4	17	14 - 18
12.7 - 1/2	26	49 - 61

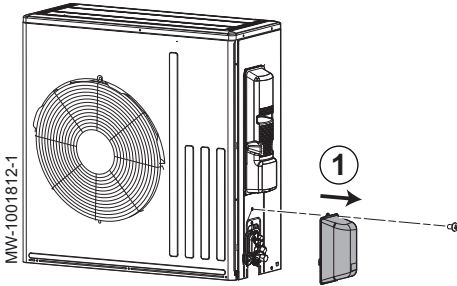
5.12.5 Connecting the refrigerant connections to the outdoor unit

Fig.37



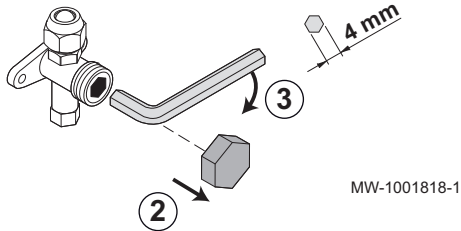
Caution
Use a backup spanner to prevent the refrigerant connection from twisting.

Fig.38



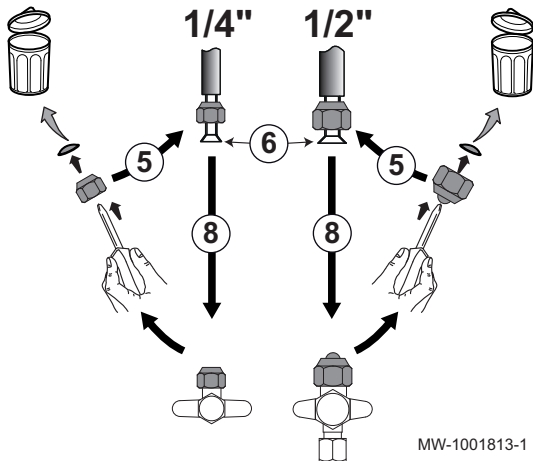
1. Remove the protective side panel from the outdoor unit.

Fig.39



2. Remove the plugs from the stop valves.
3. Check that the stop valves are closed.
4. Cut the refrigerant pipes coming from the indoor unit with a pipe cutter and deburr.

Fig.40



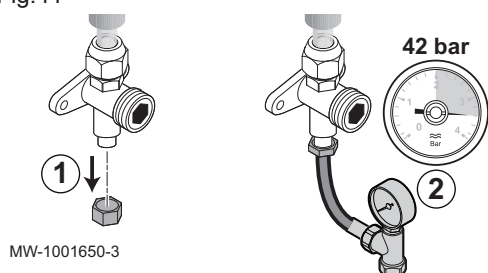
5. Thread the nuts onto the refrigerant pipes. Use the original nuts and discard their seals.
6. Bead the refrigerant pipes.
7. Apply refrigerant oil to the beaded parts to facilitate tightening and improve the seal.
8. Tighten the connections, observing the given tightening torques.

Tab.28

External diameter of the refrigerant connection (mm - inch)	External diameter of the cone fitting (mm)	Torque load (Nm)
6.35 - 1/4	17	14 - 18
12.7 - 1/2	26	49 - 61

5.12.6 Testing the leak-tightness of the refrigerant connections

Fig.41

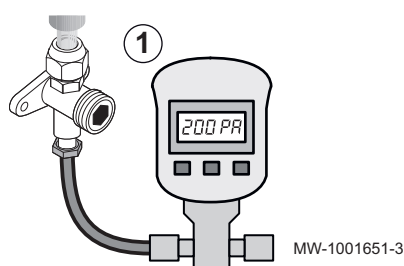


1. Remove the plug from the service connection on the stop valve.
2. Connect the pressure gauge and the nitrogen bottle to the service connection then progressively build up the pressure in the refrigerant connection pipes and the indoor unit to 42 bar, in 5 bar increments.
3. Check the leak-tightness of the fittings on the indoor and outdoor units, using a leak detector spray. If leaks appear, repeat the steps 1 to 3 in order and check the leak-tightness once again.
4. Release the pressure and release the nitrogen.

5.12.7 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.

Fig.42

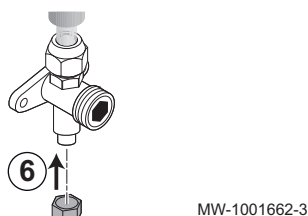


1. Connect the vacuum gauge and the vacuum pump to the service connection.
2. Produce a vacuum in the indoor unit and the refrigerant connection pipes.
3. Check the pressure and the vacuum according to the recommendations table below. Also refer to local legislation.

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

4. Close the valve between the vacuum gauge / vacuum pump and the service connection.
5. Disconnect the vacuum gauge and the vacuum pump after it has shut down.
6. Refit the plug for the service connection. Torque load 14-18 Nm.

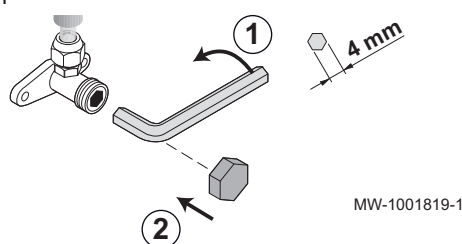
Fig.43



5.12.8 Opening the stop valves

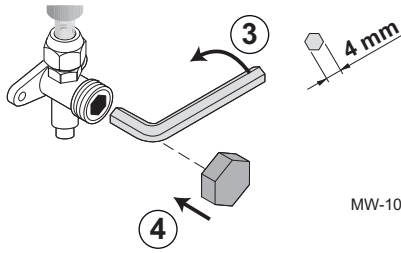
Once the leak-tightness has been checked and the refrigerant circuit evacuated, open the stop valves to allow the refrigerant to circulate.

Fig.44



1. Open the valve on the liquid line with an Allen key by turning counter-clockwise until it stops.
2. Put the cap back in place. Torque load 14-18 Nm.

Fig.45



3. Open the valve on the gas line with an Allen key by turning counter-clockwise until it stops.
4. Put the cap back in place. Torque load 33-42 Nm.
5. Depending on the length of the refrigerant pipes, it may be necessary to add refrigerant.

5.12.9 Add refrigerant if necessary

Caution
 Prevent oil traps.
 If the pipes are not connected immediately, plug them to prevent moisture from entering.

1. Check the length of the refrigerant connection pipes.
2. Depending on their length, add refrigerant via the refrigerant stop valve using a safety loader according to the table below:

Length of refrigerant pipe	m	L	10	15	20	25	30
Quantity of refrigerant to be added ⁽¹⁾	kg	+ X ⁽²⁾	+ 0	+ 0.100	+ 0.200	+ 0.300	+ 0.400
(1) The outdoor unit is precharged with 1.200 kg of refrigerant (2) X = Y x (L - 10) with Y = refrigerant charge (0.020 kg/m)							

Important
 Maximum refrigerant charge for the system: 1.600 kg

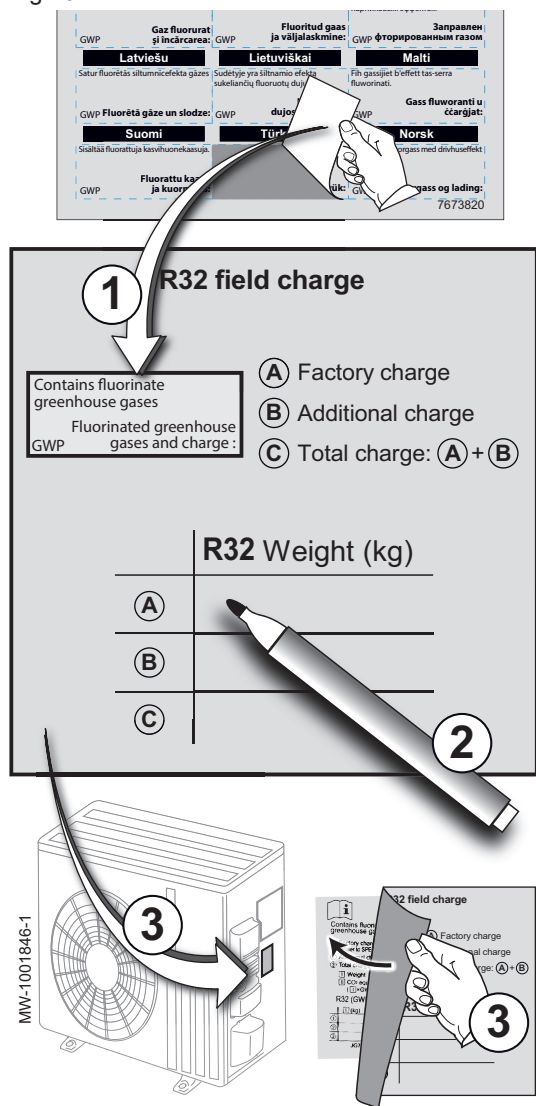
■ Charging procedures

In addition to conventional charging procedures, the following requirements shall be followed.

- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
- Cylinders shall be kept in an appropriate position according to the instructions.
- Ensure that the refrigerating system is earthed prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already).
- Extreme care shall be taken not to overfill the refrigerating system.

Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

Fig.46



■ Labelling the system

Once you have completed the refrigerant charging procedure, you need to label the system with the total refrigerant charge. For this purpose, use the stickers provided with the indoor unit.

1. Stick the label in your language over the English text on the **R32 field charge** sticker.
2. Fill in the **R32 field charge** sticker:

A	Factory charge
B	Additional charge
C	Total charge (A + B)

3. Overlay the label present on the outdoor unit with the sticker **R32 field charge**.

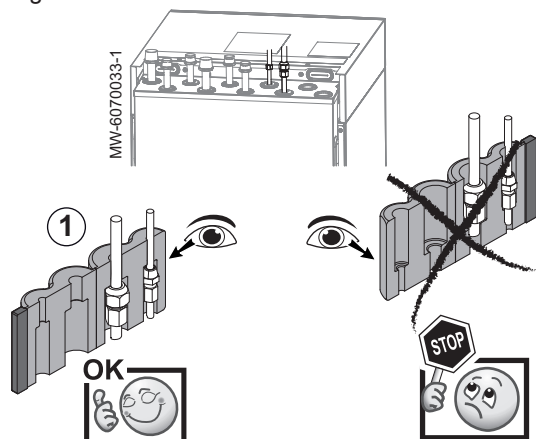
5.12.10 Protecting the refrigerant connections

Caution
 The installer must protect the connection in accordance with prevailing regulations.

The indoor unit is delivered with a protective shell for the refrigeration connections.

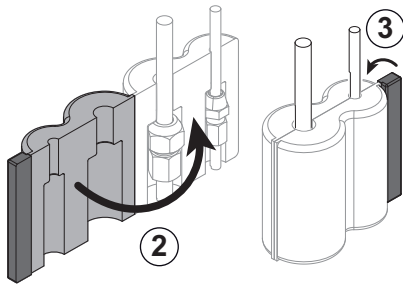
1. Position the protective shell behind the refrigeration connections.

Fig.47



Important
 Pay attention to the mounting direction.

Fig.48



MMW-6070032-1

2. Fold the protection over the pipes.
3. Secure the protective shell with the Velcro strip.

5.12.11 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.

5.13 Electrical connections

5.13.1 Recommendations



Warning

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



Important

The installation must be fitted with a main switch.



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



Warning

Check that wiring will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of ageing or continual vibration from sources such as compressors or fans.

- The installer must provide the power supply cable and connect it.



Caution

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

- Make the electrical connections for the indoor unit and outdoor unit in accordance with the requirements of the applicable standards.
- Make the electrical connections for the indoor unit and outdoor unit, respecting the indications given on the electrical diagrams supplied with the appliance.
- Make the electrical connections for the indoor unit and outdoor unit, respecting the recommendations in this user manual.
- Make the electrical connections for the indoor unit and outdoor unit in accordance with local wiring regulations.

5.13.2 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.29

Appliance	Power supply type	Min. cable cross-section (mm ²)	Circuit breaker curve C (A)	Maximum amperage (A)
Indoor unit	Single phase	3 x 1.5	10	6
Immersion heater set to 3 kW or 6 kW	Single phase	3 x 4	32	-
Immersion heater set to 6 kW	Three phase	5 x 4	32	-
BUS cable ⁽¹⁾	-	2 x 0.75	-	-
AWHPR 4 MR outdoor unit	Single phase	3 x 2.5	16	13.9
AWHPR 6 MR outdoor unit	Single phase	3 x 2.5	16	13.9
AWHPR 8 MR outdoor unit	Single phase	3 x 2.5	16	13.9

(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.

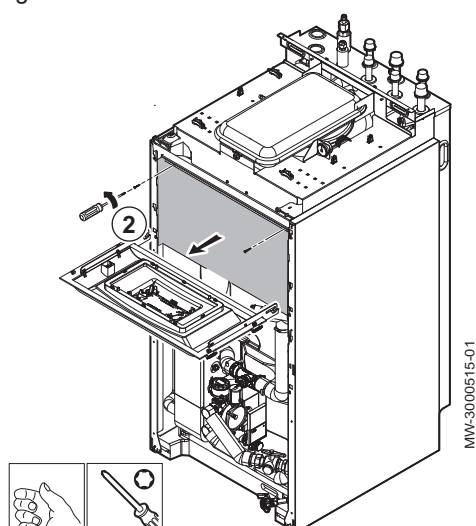


See also

Connecting the outdoor unit to the indoor unit, page 51

5.13.3 Accessing the PCBs

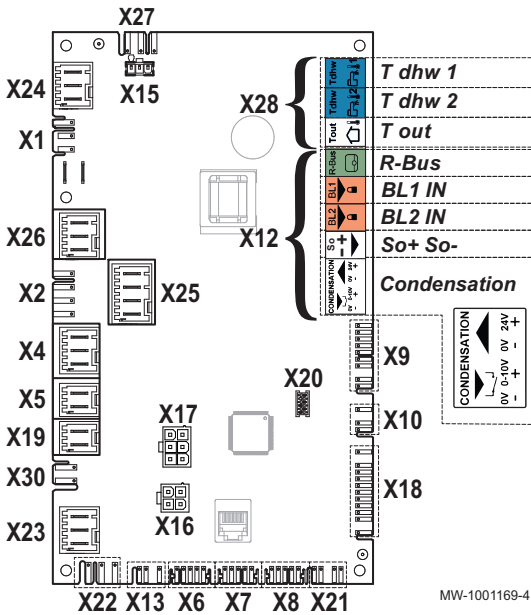
Fig.49



1. Remove the top panel and the front panels.
2. Unscrew the two screws on the protective cover for the PCBs.

5.13.4 Description of the connection terminal blocks

Fig.50

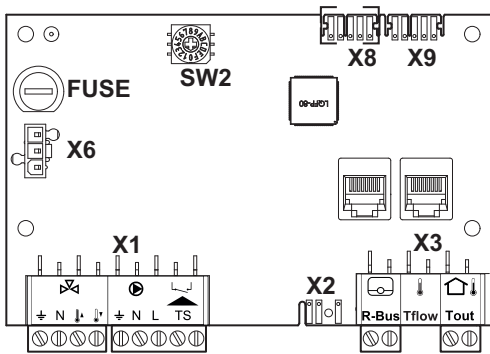


■ EHC-08 PCB terminal block

- X4 - Hydraulic version: Backup boiler pump
- Electric version: Immersion heater - stage 1
- X5 - Hydraulic version: ON/OFF contact for the backup boiler
- Electric version: Immersion heater - stage 2
- X7-X8 L-Bus
- X9 Sensors and probes
- X10 Main circulating pump command signal
- X12 Options
 - Condensation: Condensation sensor
 - So+/So-: electrical energy meter
 - BL1 IN / BL2 IN: multifunction inputs
 - R-Bus: SMART TC° connected room thermostat, on/off thermostat, OpenTherm thermostat
- X19 Outdoor unit safety
- X21 Communication bus with the FTC2BR PCB
- X22 Communication bus with the FTC2BR PCB
- X23 Outdoor unit bus connection
- X24 230 V - 50 Hz power supply
- X27 Power supply for the main circulating pump, FTC2BR PCB and SCB-04 PCB
- X28 - T out: outdoor temperature sensor
- T dhw 1: temperature sensor at the top of the domestic hot water tank
- T dhw 2: temperature sensor at the bottom of the domestic hot water tank

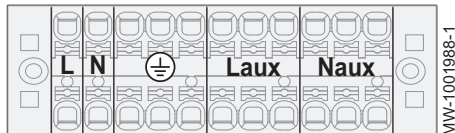
■ SCB-04 PCB terminal block option

Fig.51



- X1 Power supply for the pump/Three-way valve/Safety valve input
- X2 PWM pump
- X3 - R-Bus: SMART TC° connected room thermostat, on/off thermostat, OpenTherm thermostat
- Tflow: flow sensor
- Tout: do not connect anything
- X6 230 V power supply
- X8 L-Bus to the EHC-08 PCB
- X9 L-Bus terminal connector

Fig.52

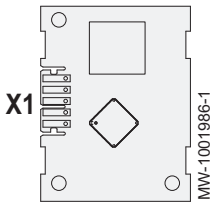


■ Intermediate terminal block

- ⊕ Earth: EHC-08 PCB power supply
- L Live: EHC-08 PCB power supply
- N Neutral: EHC-08 PCB power supply
- Laux Auxiliary live: 6 A max.
- Naux Auxiliary neutral: 6 A max.

■ BLE Smart Antenna PCB terminal block

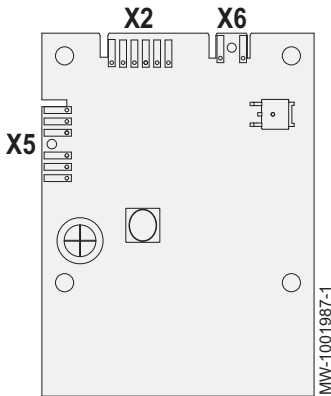
Fig.53



X1 L-BUS between the EHC-08 PCB and the user interface

■ ACI-BDR PCB terminal block

Fig.54



X2 L-BUS between the EHC-08 PCB and the TAS impressed current titanium anode

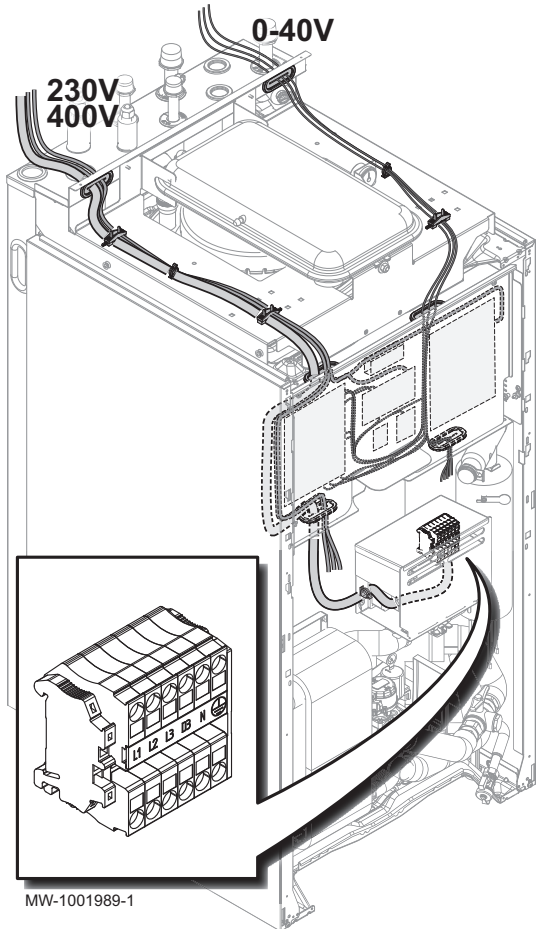
X5 not used

X6 not used

5.13.5 Routing the cables

Fig.55

- 1 230 - 400 V circuit cables
- 2 0 - 40 V sensor cables





Caution

Separate the sensor cables from the 230/400 V circuit cables. Attach all the cables to the upper panel using one of the cable clamps provided in the accessories bag.

5.13.6 Connecting the indoor unit to the power supply

It is possible to use a 230 V phase on a three-phase electric panel, in compliance with the applicable standards.

The power supply for the indoor unit is not prewired in the factory.

1. Feed the power supply cable into the cable duct reserved for the 230 V circuit cables.

Fig.56

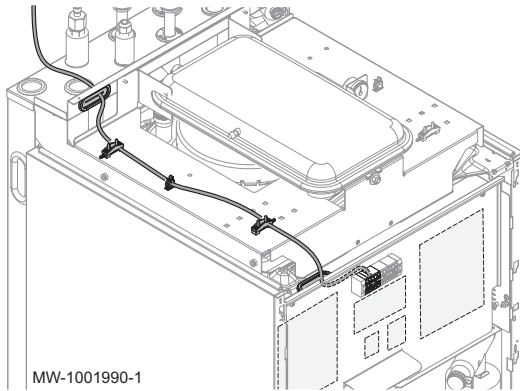
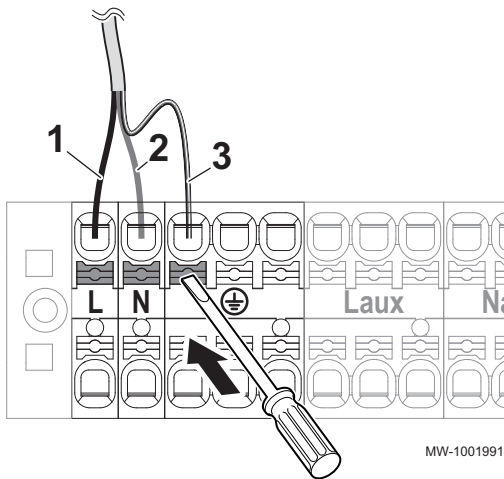


Fig.57



2. Connect the cable to the terminal block as shown in the figure. Press the push-button to allow the wire to be correctly inserted in the connector and locked.

- 1 Live (L)
- 2 Neutral
- 3 Earth



Danger

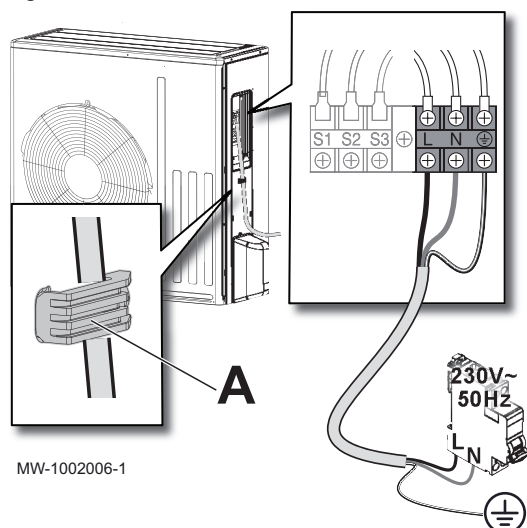
The earth wire must be 10 mm longer than the N and L wires.

5.13.7 Connecting the outdoor unit to the power supply

It is possible to use a 230 V phase on a three-phase electric panel, in compliance with the applicable standards.

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.

Fig.58



MW-1002006-1

A Cable clamps

1. Remove the service panel.
2. Connect the wires to the appropriate terminals.

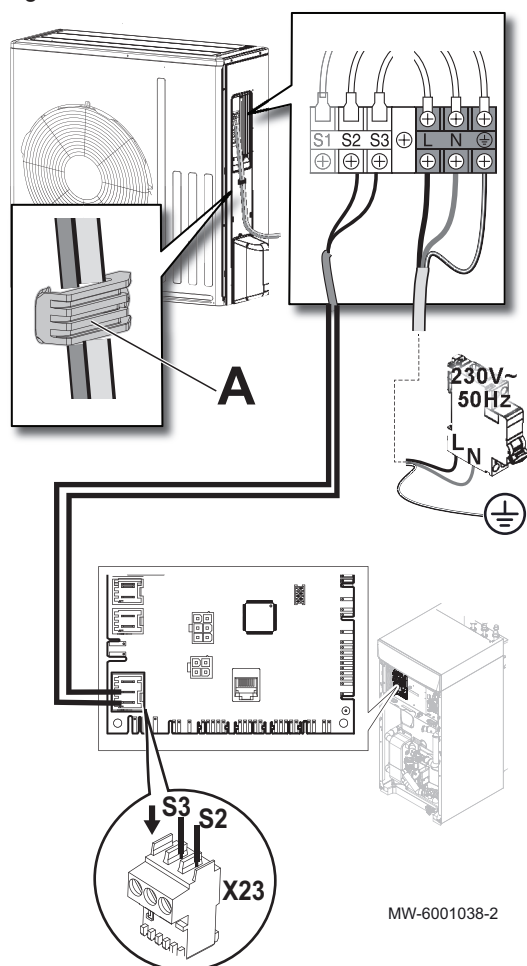
**Danger**

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

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

5.13.8 Connecting the outdoor unit to the indoor unit

Fig.59



MW-6001038-2

A Cable clamp

1. Remove the service panel from the outdoor unit.
2. Connect a BUS cable (minimum diameter: $2 \times 0.75 \text{ mm}^2$) between the S2 and S3 terminal blocks on the outdoor unit to the X23 connector on the EHC-08 central unit PCB for the indoor unit.

**Danger**

Do not connect anything to S1.

**Important**

Correctly screw the cable clamps (A). Adjust the length of the cables accordingly.

3. Put the service panel back in place.

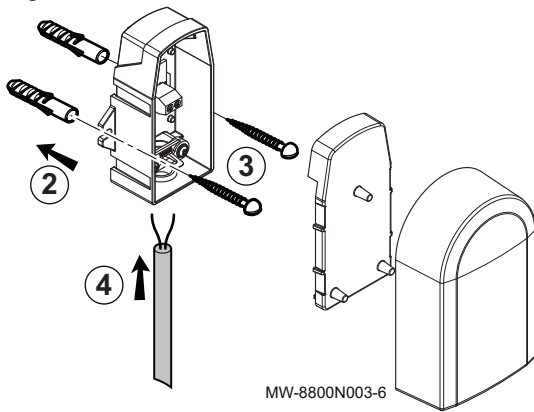
**See also**

Recommended cable cross section, page 46

5.13.9 Connecting the outdoor temperature sensor

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

Fig.60



■ Fitting the outdoor temperature sensor

Plugs diameter 4 mm/drill diameter 6 mm

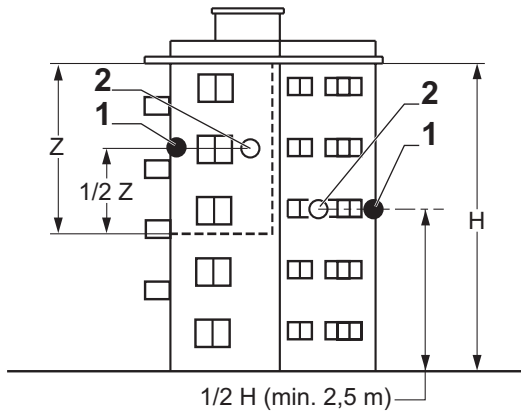
1. Choose a recommended location for the outdoor sensor.
2. Put the 2 plugs in place, delivered with the sensor.
3. Secure the sensor using the screws provided (diameter 4 mm).
4. Connect the cable to the outdoor temperature sensor.

■ Recommended positions

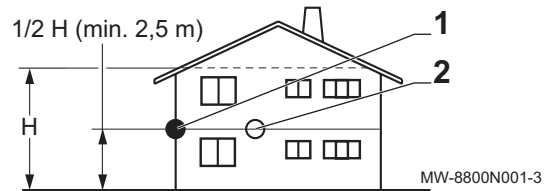
Place the outside sensor in a position that covers the following characteristics:

- 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.61



- 1 Optimum location
- 2 Possible position



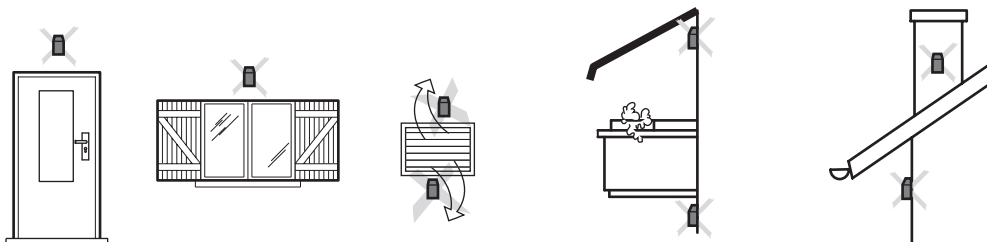
- H Inhabited height controlled by the sensor
- Z Inhabited area controlled by the sensor

■ Positions to be avoided

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

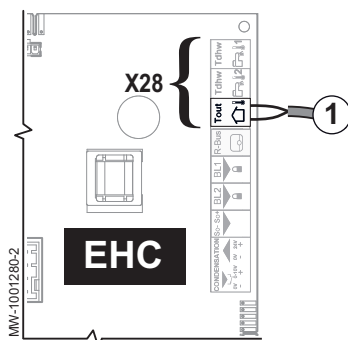
- Masked by a building element (balcony, roof, etc.).
- Close to a disruptive heat source (direct sunlight, chimney, ventilation grid, etc.).

Fig.62



MW-3000014-2

Fig.63



■ Connecting the outdoor sensor

To connect the outdoor sensor, use a cable with a minimum cross-section of $2 \times 0.35 \text{ mm}^2$ and a length $< 30 \text{ m}$.

1. Connect the outside sensor to the **Tout** input on the **X28** connector on the indoor unit **EHC-08** central unit PCB.

5.13.10 Connecting a backup boiler (hydraulic backup)

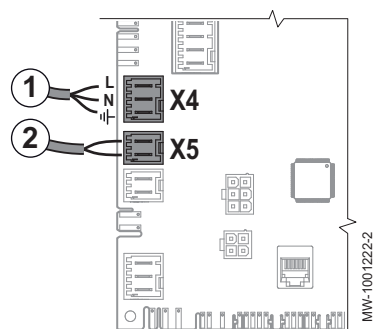


Caution

The connection of a hydraulic backup (backup boiler) or electrical backup (immersion heater) is essential to ensure comfort and the safety of the appliance. If no backup is connected, heating comfort and protection of the appliance against frost cannot be guaranteed.

The hydraulic backup is connected to the central unit **EHC-08** PCB on the indoor module:

Fig.64



1. **X4**: backup boiler pump (live/neutral/earth)
2. **X5**: dry contact **ON/OFF** for the backup boiler

5.13.11 Connecting and configuring the immersion heater (electrical backup)

■ Accessing the indoor unit terminal blocks

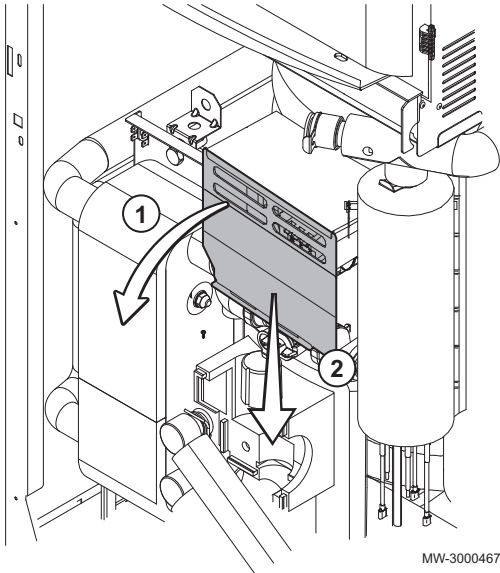


Caution

The connection of a hydraulic backup (backup boiler) or electrical backup (immersion heater) is essential to ensure comfort and the safety of the appliance. If no backup is connected, heating comfort and protection of the appliance against frost cannot be guaranteed.

1. Press down on the protective flap on the immersion heater terminal block.
2. Remove the protective cover.

Fig.65

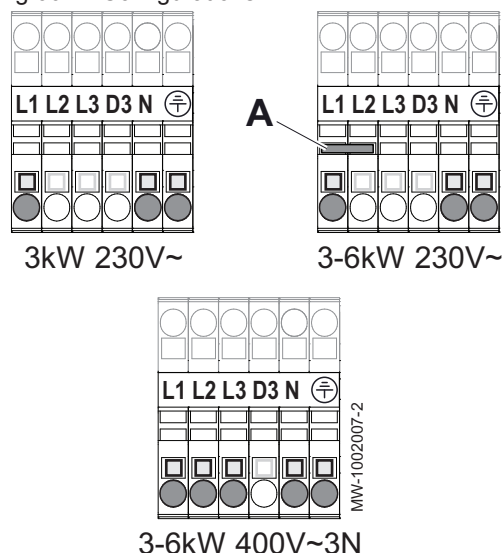


■ Connect the power supply for the immersion heater (electrical backup)

The immersion heater has its own power supply, with a dedicated circuit breaker. The immersion heater can be connected using a single-phase or three-phase power supply. For the single-phase power supply, you can use a 230V phase on a three-phase electric panel, in compliance with the applicable standards.

1. Choose the maximum output of the immersion heater according to the size of the home and its energy performance: 3 kW in single-phase; between 3 or 6 kW in single-phase or three-phase.
2. Feed the immersion heater power supply cable into the cable duct reserved for the 230/400 V circuit cables.

Fig.66 Configurations



3. Connect the power supply and change the bridge if necessary. It is possible to connect the backup to one of the 3 phases of a three-phase installation, if necessary.

**Important**

The bridge can be found in a bag inside the indoor unit.

- L1** Live 1
- L2** Live 2
- L3** Live 3
- N** Neutral
- Earth

Tab.30 Bridging

Maximum output	Power supply	Bridge to be installed
3 kW	Single phase	Do not install a bridge
6 kW	Single phase	Put the bridge A in place
6 kW	Three-phase	Do not install a bridge

There are 2 output stages, as shown in the following table.

- The minimum output is stage 1 on the immersion heater. It is used if a small amount of additional energy is sufficient to increase the temperature of the heating circuit.
- The maximum output uses stage 1 and adds a stage 2 for the immersion heater. Stage 2 only operates in conjunction with stage 1. It is used when stage 1 was not able to bring the heating circuit to a sufficiently high temperature.

Tab.31 Immersion heater output stages

Power supply	Immersion heater output		
	Maximum output = stage 1 + stage 2	Minimum output = stage 1	Stage 2
Single-phase	3 kW = 3 kW + 0 kW	3 kW	0 kW
	6 kW = 3 kW + 3 kW	3 kW	3 kW
Three-phase	6 kW = 3 kW + 3 kW	3 kW	3 kW

5.13.12 Connect the electrical energy meter (option)

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 backup boiler or electric heating element is factored in to provide the full tally of restored thermal energy.

Do not install meters for the electric heating elements.

1. Check that the energy meter respects the following specifications:

Energy meter specifications	Unit	Value
Minimum admissible voltage	V	27
Minimum admissible current	mA	20
Minimum pulse time	ms	25
Maximum frequency	Hz	20

2. Connect the energy meter to the **S0+/S0-** input of the **EHC-08** PCB.

5.13.13 Checking the electrical connections

1. Check the mains electricity connection to the following components:
 - Outdoor unit
 - Indoor unit
 - Immersion heater or backup boiler depending on the appliance model
2. If installing with a backup boiler, check the connection between the backup boiler and the indoor unit: backup boiler pump control and heating demand or burner start-up control.
3. Check the bus cable between the indoor unit and the outdoor unit:
 - Cable with double insulation
 - Cable separated from power supply cables
 - Cable correctly connected on both sides
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
 - Immersion heater or backup boiler circuit breaker depending on the appliance model
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.

A smartphone application is available to help you commission and configure the parameters for the heating installation

1. Download the **De Dietrich START** application on **Google Play** or on the **App Store**.
2. Start the application.
3. Follow the application's instructions on the smartphone for commissioning and configuring the heating installation.

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

Fig.67



MW-1001598-2

**See also**

Activating/deactivating the Bluetooth® for the appliance, page 85
Data plates, page 25

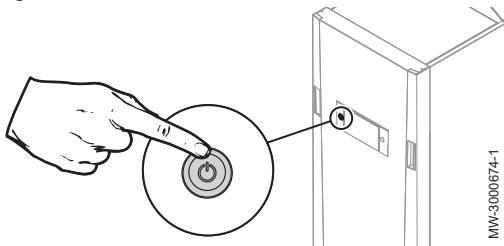
6.3 Commissioning procedure without smartphone

**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
 - Electric heating element circuit breaker
3. Activate the on/off switch on the indoor unit.
⇒ The **Welcome** message is displayed.
4. Select the country and language.
5. Configure the time and date.
6. Set the **CN1** and **CN2** parameters. The values are available on the data plate on 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 the type of backup present on the installation. They can be used to preconfigure the parameters based on the installation configuration.
7. Select **Confirm** to save the settings.
8. The heat pump begins its vent cycle.

Fig.68

**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.

**See also**

Accessing the Installer level, page 59

6.3.1 CN1 and CN2 parameters

The parameters **CN1** and **CN2** enable the heat pump to be configured according to the output of the outdoor unit and the type of backup (immersion heater or backup boiler) installed.

Tab.32

Outdoor unit	CN1 Immersion heater	CN1 Backup boil- er	CN2
AWHPR 4 MR	13	14	7
AWHPR 6 MR	15	16	7
AWHPR 8 MR	17	18	7

**See also**

Accessing the Installer level, page 59
Resetting the configuration numbers, page 70

6.4 Setting the flow rate of the direct circuit

Heating installations must be able to guarantee a minimum flow rate at all times. If the flow rate is too low, the heat pump may shut itself down for its own protection; the heating, cooling and domestic hot water functions are then no longer ensured.


For installations with underfloor heating, check that the collector valves open. No other adjustment to be made.

For an installation with radiators, set the flow rate as per the procedure below.

1. Where applicable, set the second circuit to frost protection mode to switch off the heating demand.
2. Close the thermostatic valves of all the radiators in circuit A.
3. Check the water flow rate in the circuit during heating operation:



Tab.33

Access path	Signal	Description
 23.5 Air Src Heat Pump > Parameters, counters, signals > Signals	Flow rate AM056	Water flow rate in the system

4. Set the differential pressure valves so as to obtain a flow rate between the threshold flow rate and the target flow rate.

	Unit	AWHPR 4 MR	AWHPR 6 MR	AWHPR 8 MR
Threshold flow rate	l/min	7	8	9
Target flow rate	l/min	12	17	23



Important

If the flow rate drops below the threshold, the **Flow rate warning** warning message appears on the home screen.



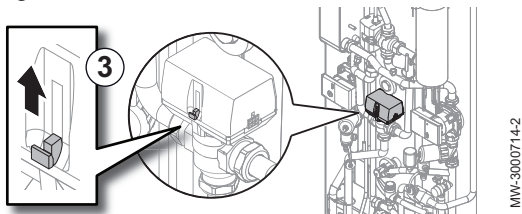
See also

- Circulating pump, page 16
- Accessing the Installer level, page 59
- Flush the magnetic sieve filters (quick annual maintenance), page 103

6.5 Setting the flow rate of the second circuit

Heating installations must be able to guarantee a minimum flow rate at all times. If the flow rate is too low, the heat pump may shut itself down for its own protection; the heating, cooling and domestic hot water functions are then no longer ensured.

Fig.69




MW-300714-2

1. Set circuit A to frost protection mode to shut down the heating demand.
⇒ The circulating pump for circuit A is shut down. If necessary, disconnect the power supply to the pump to ensure it shuts down.
2. Create a heating demand on circuit B.
3. Check that the mixing valve is fully open by pushing the white tab fully upwards.



4. Check the water flow rate of the second circuit. If necessary, open the disconnector valve (position FILL) to adjust the pressure and flow rate.

Access path	Signal	Description
 23.5 Air Src Heat Pump > Parameters, counters, signals > Signals	Flow rate AM056	Water flow rate in the system

5. Set the circulating pump so as to obtain an optimal flow rate.

	Unit	AWHPR 4 MR	AWHPR 6 MR	AWHPR 8 MR
Optimal flow rate	l/min	10-12	11-17	12-23



Important

If the flow rate drops below the threshold, the **Flow rate warning** warning message appears on the home screen.



See also

Accessing the Installer level, page 59

Flush the magnetic sieve filters (quick annual maintenance), page 103

6.6 Final instructions for commissioning

- Check that the following installation components are switched on correctly:
 - Circulating pumps
 - Outdoor unit
 - Immersion heater or backup boiler depending on the type of installation
- Check the flow rate in the installation. It must be above the minimum threshold.
- Check the setting of the thermostatic mixing valve (for domestic hot water production).
- 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).
- Restart the heat pump.
- Explain the operation of the installation to the user.
- Hand over all manuals to the user.

7 Settings


7.1 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:

- Select the  icon.
- Enter the code **0012**.

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

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

If no action is taken for 30 minutes, the system will automatically exit the Installer level.



See also

Setting the flow rate of the direct circuit, page 58

Setting the flow rate of the second circuit, page 58

Commissioning procedure without smartphone, page 57

CN1 and CN2 parameters, page 57

7.2 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.

Access path
> 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.

7.3 Menu tree



Tab.34

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

7.4 Configuring the maintenance message

The heat pump user interface is used to display a message whenever maintenance is necessary.

To configure the maintenance message:



1. Select the **Service Status** icon.
2. Select AP010 **Service notification**.
3. Select the desired type of notification:

Type of notification:	Description
None	No maintenance message
Custom notification	The maintenance message will be displayed once the heat pump operating hours defined by the parameters in the following table have elapsed.

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

Parameter	Description
Service 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

7.5 Configuring the heating circuit

7.5.1 Setting the heating curve

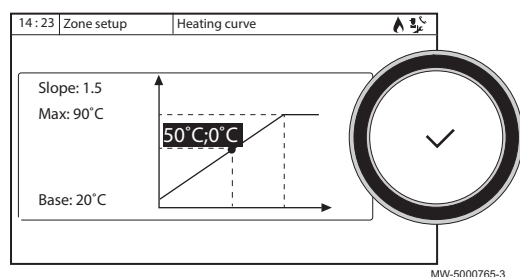
The relationship between the outdoor temperature and the central heating flow temperature is controlled by a heating curve. This can be adjusted according to the requirements of the installation.

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.70



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.

7.5.2 Configuring underfloor cooling or a convection fan

This function is only available when the Zone Function parameter (CP020) is set to **Mixing Circuit** or **Fan Convector** (Installation Setup > CIRCA or CIRCB > Parameters, counters, signals > Parameters menu).



Important

The heating must be activated to enable cooling to operate: check that the **CH function on**(AP016) parameter is ON.



1. Configure the following parameters:

Tab.35


Access path	Parameter	Description	Adjustment required
23.5 > Air Src Heat Pump > Parameters, counters, signals > Advanced	Cooling mode AP028	Configuration of the cooling mode	Active cooling on
24.5 > CIRCA or CIRCB > Parameters, counters, signals > Settings	Floor Cool. setpoint CP270	Cooling flow temperature setpoint for the underfloor cooling	18(default value). Set the temperature according to the type of floor and the level of humidity.
	Fan Cool. setpoint CP280	Cooling set point for the flow temperature on the convection fan circuit	7 °C(default value). Set the temperature according to the convection fans used.
	RevContactOTH cool CP690	Reverse the on/off thermostat contact	<ul style="list-style-type: none"> • No • Yes Check the setting according to the thermostat or room sensor used.
23.5 > Air Src Heat Pump	CH function on AP016	Enable central heating heat demand processing	On Deactivating heating also deactivates cooling.

2. If necessary, force cooling or modify cooling temperatures for circuits CIRCA and CIRCB.

7.5.3 Selecting the conditions for activating Cooling mode

In the **Scheduling** operating mode, the Cooling timer programme is activated automatically when the average outdoor temperature is above 22 °C. To change this temperature, proceed as follows:



1. Select the  icon.
2. Select Summer/Winter.
3. Set the outdoor temperature at which the system should switch to Cooling mode.

7.6 Configuring the backup boiler

7.6.1 Configuring the backup boiler parameters

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.



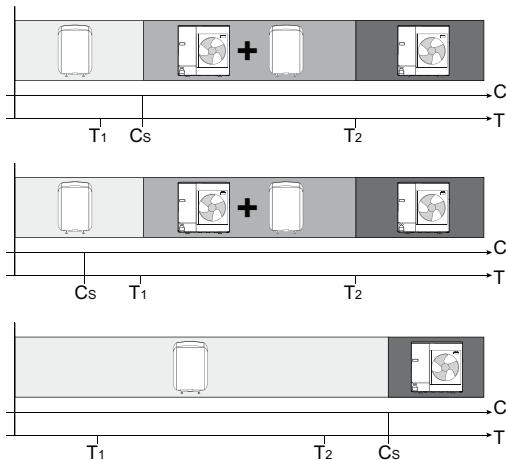
See
Boiler installation manual

7.6.2 Configuring the hybrid operating mode for a backup boiler

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

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

Fig.71 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** (HP000) parameter: Bivalent temperature



1. Configure the heat pump parameters.

Tab.36

Access	Parameter	Description	Adjustment required
Air Src heat pump > Parameters, counters, signals > Settings	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: 13 euro cents
	Off-peak elec. cost HP063	Off-peak electricity cost (in cents)	Enter the price of electricity at off-peak rate. By default: 9 euro cents
	Gas or oil cost HP064	Cost of gas per m ³ or oil per litre (in cents)	Enter the price of fuel. By default: 90 euro cents
	Min. Outdoor T. HP HP051	Minimum outdoor temperature below which the compressor of the Heat Pump is stopped	Keep the default value: -20 °C

2. Choose energy consumption optimisation.

Tab.37

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.

7.7 Drying screed with or without an outdoor unit

The screed drying function is used to force a constant flow temperature or a series of successive temperature levels to accelerate drying of screed for the underfloor heating. You can use this function even if the outdoor unit is not yet connected. In this case, the electric heating element is started up automatically.



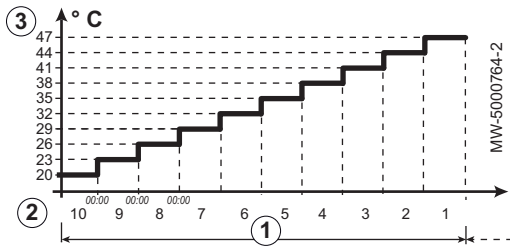
Important

Depending on the climate conditions and losses from the building, the electric heating element alone may not be sufficient to dry the screed.

The screed drying function must be activated for each heating zone. When activated, each day at midnight, the system recalculates the temperature setpoint and decreases the number of days.

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

Fig.72 Example



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



1. Set the parameters of the CIRCA or CIRCB circuit.

Tab.38

Access path	Parameter	Description	Adjustment required
 29.4°C CIRCA or CIRCB > Set Screed Drying	Zone screed drying CP470	Setting of the screed drying program of the zone	① Number of days of drying
	ScreedStartTemp CP480	Setting of the start temperature of the screed drying program of the zone	② Drying start temperature
	ScreedStopTemp CP490	Setting of the stop temperature of the screed drying program of the zone	③ Drying end temperature

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.

7.8 Configuring a room thermostat

7.8.1 Configuring an on/off or modulating thermostat

The on/off or modulating thermostat is connected to the **R-Bus** terminals on the **EHC-08** PCB or the optional **SCB-04** 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 using several types of on/off thermostat or OpenTherm (OT).



1. Configuration of the **R-Bus** input for using an on/off thermostat (dry contact) for CIRCA or CIRCB

Access path	Parameters	Description of the parameters
 24.5 CIRCA or CIRCB > Parameters, counters, signals > Settings	OTH LogicLev contact CP640	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	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

Tab.39 OTH LogicLev contact CP640 and RevContactOTH cool parameter settings CP690

Value of the parameter OTH LogicLev contact CP640	Value of the parameter RevContactOTH cool CP690	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

7.8.2 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-08** PCB.

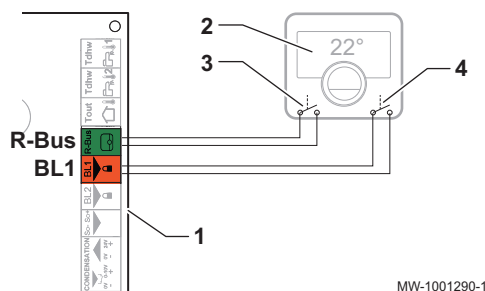
The AC thermostat is not compatible with the SCB-04 PCB, which is used to control a second heating circuit.

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 EHC-08 PCB.

Fig.73





MW-1001290-1



2. Configure the heat pump parameters.

Tab.40

Access path	Parameter	Description	Adjustment required
 Air Src Heat Pump > Parameters, counters, signals > Advanced	BL function AP001	Adjustment of the blocking input (BL1)	Heating Cooling
	BL1 contact config. AP098	BL1 input contact configuration <ul style="list-style-type: none"> • Closed: cooling active when BL contact is closed • Open: cooling active when BL contact is open 	<ul style="list-style-type: none"> • Closed or • Open
 CIRCA or CIRCB > Parameters, counters, signals > Settings	OTH LogicLev contact CP640	Circuit contact logic level Closed: heating demand when contact is closed Open: heating demand when contact is open	<ul style="list-style-type: none"> • Closed or • Open
	RevContactOTH cool CP690	Reverse the contact in cooling mode for the circuit demand No: follows the heating logic Yes: follows the reverse of the heating logic	<ul style="list-style-type: none"> • Yes or • No

3. Select one of the following configurations

Tab.41 Configuration A - by default

Value of the parameter OTH LogicLev contact CP640	Value of the BL1 contact config. parameter AP098	The multifunction input BL1 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.42 Configuration B

Value of the parameter OTH LogicLev contact CP640	Value of the BL1 contact config. pa- rameter AP098	The multifunction input BL1 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.43 Configuration C

Value of the pa- rameter OTH LogicLev contact CP640	Value of the BL1 contact config. pa- rameter AP098	The multifunction input BL1 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.44 Configuration D

Value of the pa- rameter OTH LogicLev contact CP640	Value of the BL1 contact config. pa- rameter AP098	The multifunction input BL1 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


7.9 Improving comfort

7.9.1 Improving domestic hot water or heating comfort


The system does not allow the simultaneous production of heating and domestic hot water. It is possible to alter the parameters to adapt the operation of the product to your needs.

1. The timer programming for domestic hot water production can be altered based on your night-time habits, for example.
2. If modification of the timer programming is not sufficient, go into the domestic hot water setting parameters:

Tab.45 Improving hot water comfort

Access path	Parameter	Description	Adjustment required
 > DHW tank > Parameters, counters, signals > Settings	Max. DHW duration DP047	Maximum duration of the domestic hot water production.	Increase the maximum authorised duration for domestic hot water production. Longer period of hot water production.
	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. The time between two periods of hot water production is decreased.
	Hysteresis DHW DP120	Hysteresis temperature relative to the DHW temperature setpoint	Reduce the setpoint temperature differential triggering the domestic hot water tank load. More frequent period of hot water production.

Tab.46 Improving heating comfort

Access path	Parameter	Description	Adjustment required
 > DHW tank > Parameters, counters, signals > Settings	Max. DHW duration DP047	Maximum duration of the domestic hot water production.	Reduce the maximum authorised duration for domestic hot water production. Shorter period of hot water production.
	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. The time between two periods of hot water production is increased.
	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. Less frequent period of hot water production.

3. Check the improvement in comfort over one week.
4. If the comfort is not improved to your satisfaction, simply readjust the parameters.

**See also**

Activating and configuring a timer programme for heating, page 96
Activating and configuring a timer programme for domestic hot water, page 97


7.9.2 Reducing the noise level of the outdoor unit

Silent mode is used to reduce the noise level on the outdoor unit during programmed hours, particularly at night. This mode gives temporary precedence to silent running rather than temperature control.



1. Activate silent mode.


Tab.47

Access path	Parameter	Description	Adjustment required
 Air Src Heat Pump > Parameters, counters, signals > Settings	Silent mode HP058	Enabling heat pump silent mode	Yes



2. Program the operating range in silent mode.

Tab.48

Access path	Parameter	Description	Adjustment required
 Air Src Heat Pump > Parameters, counters, signals > Settings	Low noise start time HP094	Start time of the heat pump low noise function	22:00
	Low noise end time HP095	End time of the heat pump low noise function	06:00

7.10 Configuring sources of energy

7.10.1 Configuring the estimated electrical energy consumption function

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 backup boiler or electric heating element is factored in to provide the full tally of restored thermal energy.

1. Connect the energy meter to the **S0+/S0-** input on the **EHC-08** PCB.
2. Configure the following parameters:



Tab.49

Access path	Parameter	Description	Adjustment required
 23.5 > Air Src Heat Pump > Parameters, counters, signals > Settings	Elec. Pulse value HP033	Pulse value from the electricity meter	The adjustment depends on the type of energy meter installed. Adjustment range: 0 (no metering) to 1000 Wh. Default value: 1 Wh

Tab.50 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

**See also**

Connect the electrical energy meter (option), page 55

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. Switch off the power supply to the indoor unit.
2. Connect a dry contact to the **BL1 IN** or **BL2 IN** multifunction input.
3. Switch the indoor unit back on.



- Configure the heat pump parameters.
The BL function (AP001) corresponds to the BL1 input.

Tab.51

Access path	Parameter	Description	Adjustment required
Air Src Heat Pump > Parameters, counters, signals > Settings > Advanced	BL function AP001	BL input function selection	Photovoltaic HP Only
	BL2 function AP100	BL2 input function selection	PV HP And backup



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

Tab.52 Voluntary overheating parameters

Access path	Parameter	Description	Adjustment required
Air Src Heat Pump > Parameters, counters, signals > Settings > Advanced	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 setpoint temperature from 0 to 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 depending on the electricity tariff.

Tab.53 Operation of the heat pump in a Smart Grid

BL1 IN input	BL2 IN input	Operating
Inactive	Inactive	Normal: the heat pump and the electric heating element operate normally
Active	Inactive	Off: the heat pump and the electric heating element are switched off
Inactive	Active	Economy tariff: the heat pump voluntarily overheats the system without the electric heating element
Active	Active	Super economy tariff: the heat pump voluntarily overheats the system with the electric heating element

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.


- Switch off the power supply to the indoor unit.
- Connect the **Smart Grid** signal inputs to the **BL1 IN** and **BL2 IN** inputs on the EHC-08 PCB. **Smart Grid** signals come from dry contacts.
- Turn on the electricity supply and switch on the heat pump.
- Configure the heat pump input parameters.
The BL function (AP001) parameter corresponds to the **BL1** input.




Access path	Parameter	Adjustment required
Air Src Heat Pump > Parameters, counters, signals > Settings > Advanced	BL function AP001	Smart Grid ready
	BL2 function AP100	Smart Grid ready

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

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

Access path	Parameter	Adjustment required
 Air Src Heat Pump > Parameters, counters, signals > Settings > Advanced	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


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

Access path	Parameter	Adjustment required
 Air Src Heat Pump> Parameters, counters, signals > Settings > Advanced	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.

1. Press the  button.
2. Select **System Settings > Installer Details**.
3. 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 PCB.



1. Press the  button.
2. Select **Advanced Service Menu > Save Commissioning Settings**.
3. Select **Confirm changes** to save the settings.

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


7.11.3 Resetting or re-establishing the parameters

■ Resetting the configuration numbers

If you have replaced the PCB or made an error during setting, you must reset the configuration numbers CN1 and CN2. Thanks to these numbers, the system recognises the type of outdoor unit and type of backup present on the installation.

To reset the configuration numbers:



1. Press the  button.
2. Select **Advanced Service Menu > Set Configuration Numbers > EHC-08**.
3. Set the **CN1** and **CN2** parameters. The values are available on the data plate of the indoor unit.
4. Select **Confirm** to save the settings.



See also
CN1 and CN2 parameters, page 57

■ 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 button.
2. Select **Advanced Service Menu > Auto Detect**.
3. Select **Confirm** to carry out the auto-detect.

■ 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:



1. Press the button.
2. Select **Advanced Service Menu > Resetting to commissioning settings**.
3. Select **Confirm** to revert to the commissioning settings.

■ Reverting to the factory settings

To revert to the factory settings for the heat pump:



1. Press the button.
2. Select **Advanced Service Menu > Resetting to factory settings**.
3. Select **Confirm** to revert to the factory settings.

7.12 List of parameters

The appliance parameters are described directly in the user interface. The following chapters include additional information on some of these parameters as well as their default values (factory settings).

7.12.1 > Air Src Heat Pump > Parameters, counters, signals

In this sub-menu, you will find the parameters related to the behaviour of the heat pump.

Tab.54 > Settings

Parameters	Description of the parameters	Factory setting EHC-08
BL function AP001	BL input function selection <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 	Partial blocking
Manual Heat Demand AP002	Activating the manual heating demand <ul style="list-style-type: none"> • Off • With setpoint: In this mode, the temperature setpoint used will be that for the Setpoint manual HD (AP026) parameter. 	Off
Min. water pressure AP006	Appliance will report low water pressure below this value Can be set from 0 bar to 6 bar	0.4 bar (cannot be modified)
Service hours AP009	Number of heat generator operating hours for raising a service notification Can be set from 0 Hours to 65534 Hours	4000 Hours

Parameters	Description of the parameters	Factory setting EHC-08
Service notification AP010	Select the type of service notification <ul style="list-style-type: none"> • None • Custom notification 	None
Service hours mains AP011	Hours powered to raise a service notification Can be set from 0 Hours to 65534 Hours	8700 Hours
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
Setpoint manual HD AP026	Flow temperature setpoint for manual heat demand Can be set from 7 °C to 70 °C Setpoint used when manual mode is active (Manual Heat Demand (AP002) = With setpoint)	40 °C
Cooling mode AP028	Configuration of the cooling mode <ul style="list-style-type: none"> • Off • On 	Off
Cooling permission AP029	Grant permission for the heat pump to be able to deliver cooling Not adjustable <ul style="list-style-type: none"> • Not allowed • Allowed 	Not allowed
MessMinWaterPressure AP058	Warning message indicating that pressure is low Can be set from 0 bar to 2 bar	0.8 bar
Max CH flow setpoint AP063	Maximum central heating flow temperature setpoint Can be set from 20 °C to 75 °C	Backup boiler: 75 °C Electric heating element: 75 °C
Humidity sensor AP072	Humidity sensor configuration <ul style="list-style-type: none"> • No • OnOff • 0-10V 	No
BL1 contact config. AP098	BL1 input contact configuration <ul style="list-style-type: none"> • Open • Closed 	Open
BL2 contact config. AP099	BL2 input contact configuration <ul style="list-style-type: none"> • Open • Closed 	Open
BL2 function AP100	BL2 input function selection <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 	Partial blocking

Parameters	Description of the parameters	Factory setting EHC-08
Deaeration program AP101	Deaeration program settings <ul style="list-style-type: none"> No deair at power up Always deair at pwr 	Always deair at pwr
Boiler Pump function AP102	Configuration of the boiler pump as zone pump or system pump (feed lowloss header) <ul style="list-style-type: none"> No Yes 	Yes
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 °C
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 °C
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	7 l/min for 4 kW 7 l/min for 6 kW 9 l/min for 8 kW
Backup type HP029	Type of backup used in the heat pump <ul style="list-style-type: none"> 1 Electrical Stage 2 Electrical Stages Boiler Backup 	Backup boiler: Boiler Backup Electric heating element: 2 Electrical Stages
Delay StartBackup CH HP030	Delay time for starting the backup energy source for the heating circuits Can be set from 0 Min to 600 Min	20 Min
Delay stop backup CH HP031	Delay time for stopping the backup energy source for the heating circuits Can be set from 2 Min to 600 Min	4 Min
Elec. Pulse value HP033	Value of the pulse coming from the electrical counter Can be set from 0 Wh to 1000 Wh	1 Wh
Backup 1 capacity HP034	Declaration of the capacity of the 1st stage of the electrical backup used for the energy counter Can be set from 0 kW to 10 kW	0 kW
Backup 2 capacity HP035	Declaration of the capacity of the 2nd stage of the electrical backup used for the energy counter Can be set from 0 kW to 10 kW	0 kW
Delay Min.Outdoor T. HP047	Delay for starting the backup when the outdoor temp. is equal to the parameter Min.Outdoor T.backup Can be set from 0 Min to 60 Min	8 Min
Delay Max.Outdoor T HP048	Delay for starting the backup when the outdoor temp. is equal to the parameter Max.Outdoor T. backup Can be set from 0 Min to 60 Min	30 Min
Min.Outdoor T.backup HP049	Minimum outdoor temperature related to the parameter Delay Min.Outdoor T. Can be set from -30 °C to 0 °C	-10 °C
Max.Outdoor T.backup HP050	Maximum outdoor temperature related to the parameter Delay Max.Outdoor T. Can be set from -30 °C to 20 °C	15 °C
Min. Outdoor T. HP HP051	Minimum outdoor temperature below which the compressor of the Heat Pump is stopped Can be set from -20 °C to 5 °C	-20 °C
COP Threshold HP054	COP threshold above which the heat pump is authorised to operate Can be set from 1 to 5	2.5
Silent mode HP058	Enabling heat pump silent mode <ul style="list-style-type: none"> No Yes 	No

Parameters	Description of the parameters	Factory setting EHC-08
Hybrid mode HP061	Hybrid mode selection to choose on what basis the hybrid system will optimise <ul style="list-style-type: none"> • No Hybrid • Hybrid Cost • Primary Energy • Hybrid CO2 	No Hybrid
Peak elec. cost HP062	Peak rate electricity cost (in cents) Can be set from 1 to 250 cents	13 cents
Off-peak elec. cost HP063	Off-peak electricity cost (in cents) Can be set from 1 to 250 cents	9 cents
Gas or oil cost HP064	Cost of gas per m3 or oil per litre (in cents) Can be set from 1 to 250 cents	90 cents
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 °C
Buffer tank HP086	Activation of hydraulic management mode for the configuration with a low-loss header, or for a buffer tank connected as a low-loss header <ul style="list-style-type: none"> • No • Yes 	No
Buffer tank Hyst. HP087	Temperature hysteresis to start or stop heating the buffer tank Can be set from 0 °C to 30 °C	3 °C
Offset heating - PV HP091	Heating setpoint temperature offset when photovoltaic energy is available Can be set from 0 °C to 30 °C	0 °C
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 °C
Low noise start time HP094	Start time of the heat pump low noise function Can be set from 0 Hours-Minutes to 143 HoursMinutes	132 Hours-Minutes
Low noise end time HP095	End time of the heat pump low noise function Can be set from 0 Hours-Minutes to 143 HoursMinutes	36 Hours-Minutes
CH Pump postrun time PP015	Central heating pump post run time (in minutes)	3 Min
Max. CH pump speed PP016	Maximum central heating pump speed (%) Maximum pump speed in heating mode Can be set from 20 to 100%	100%
Min CH pump speed PP018	Minimum central heating pump speed (%) Minimum pump speed in heating mode Can be set from 20 to 100%	50 %

Tab.55 > Signals

Signals	Description of the signals
Pump running? AM015	Is the pump running? <ul style="list-style-type: none"> • Inactive • Active
Pump speed AM010	The current pump speed in %
Dhw Temperature BM000	Dhw Temperature depending on loadtype this is TankTemperature or DhwOutTemperature in °C
Low noise AM002	Low noise function activated <ul style="list-style-type: none"> • No • Yes
Service required? AM011	Is service currently required? <ul style="list-style-type: none"> • No • Yes

Signals	Description of the signals
Status Appliance AM012	Current main status of the appliance.
Sub status Appliance AM014	Current sub status of the appliance.
System Flow Temp AM016	Flow temperature of appliance. in °C
Water pressure AM019	Water pressure of the primary circuit. in bar
3 way valve AM037	Status of the three way valve <ul style="list-style-type: none"> • CH • DHW
Flow rate AM056	Water flow rate in the system in l/min
Internal setpoint AM101	Internal system flow temperature setpoint in °C
HP flow T. HM001	Heat pump flow temperature in °C
HP return T. HM002	Heat pump return temperature in °C
HP flow T. setpoint HM003	Heat pump flow temperature setpoint in °C
BL1 contact position HM004	BL1 contact position <ul style="list-style-type: none"> • Open • Closed • Off
BL2 contact position HM005	BL2 contact position <ul style="list-style-type: none"> • Open • Closed • Off
Relative humidity HM006	Relative humidity measured by the humidity sensor in %
Compressor HM008	Compressor operation <ul style="list-style-type: none"> • Off • On
Heat pump defrost HM009	Heat pump defrost function in progress <ul style="list-style-type: none"> • No • Yes
Backup1 HM012	First stage of backup operation <ul style="list-style-type: none"> • Off • On
Backup2 HM013	Second stage of backup operation <ul style="list-style-type: none"> • Off • On
HP flow T. average HM020	Heat pump flow temperature average in °C
Start compressor HM030	Request to start compressor <ul style="list-style-type: none"> • No • Yes
HP cooling setpoint HM033	Heat pump flow temperature setpoint in cooling mode in °C
Delay StartBackup CH HM056	Delay time for starting the backup energy source for central heating in min

Tab.56 > Counters

Meters	Description of the meters
Service run hours AC002	Number of hours that the appliance has been producing energy since last service
Hours since service AC003	Number of hours since the previous servicing of the appliance
Starts since service AC004	Number of heat generator starts since the previous servicing.
CH Energy Consumed AC005	Energy consumed for central heating in kWh
DHW energy consumed AC006	Energy consumed for domestic hot water in kWh
Cool Energy consumed AC007	Energy consumed for cooling in kWh
CH Energy delivered AC008	Thermal energy delivered for central heating in kWh
DHW Energy delivered AC009	Thermal energy delivered for domestic hot water in kWh
Cool Energy deliver. AC010	Thermal energy delivered for cooling in kWh
Backup used energy AC018	Energy consumed by backup in kWh
Energy from backup AC019	Energy delivered by electrical or hydraulic backup in kWh
Pump running hours AC026	Counter that shows the number of pump running hours
Pump starts AC027	Counter that shows the number of pump starts
Backup 1 hours AC028	Number of operating hours of the first electrical backup stage
Backup 1 starts AC030	Number of starts of the first electrical backup stage
Standby used energy AC032	Energy consumed by the appliance in standby mode in kWh
Heating producer hrs PC000	Number of producer operating hours in central heating
Total starts PC002	Total number of heat generator starts. For heating and domestic hot water
Heat gen run hrs PC003	Number of compressor operating hours
Cooling producer hrs PC005	Number of producer operating hours in cooling
DHW run hours DC005	Number of compressor start-ups

7.12.2 > CIRCA or CIRCB > Parameters, counters, signals

This menu contains the parameters related to the heating of the CIRCA and CIRCB circuits.

CP : Circuits Parameters = Heating circuit parameters

Tab.57 > Settings

Parameters	Description of the parameters	Factory setting CIRCA	Factory setting CIRCB
MaxZoneTFlowSetpoint CP000	Maximum Flow Temperature setpoint zone <ul style="list-style-type: none"> For CIRCA: can be set from 7 °C to 75 °C For CIRCB: can be set from 7 °C to 100 °C 	75 °C	50 °C
Tflow setpoint zone CP010	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint. <ul style="list-style-type: none"> For CIRCA: can be set from 7 °C to 75 °C For CIRCB: can be set from 7 °C to 100 °C 	75 °C	50 °C
Zone Function CP020	Functionality of the zone <ul style="list-style-type: none"> Disable Direct Mixing Circuit Swimming pool High Temperature Fan Convector 	Direct	Mixing Circuit
Bandwidth Mix. Valve CP030	Bandwidth of mixing valve zone where modulation takes place. Can be set from 4 °C to 16 °C	-	12 °C
Postrun zone pump CP040	Pump post runtime of the zone Can be set from 0 Min to 20 Min	3 Min	4 Min
Mixing Valve shift CP050	Shift between calculated setpoint and mixing valve circuit setpoint Can be set from 0 °C to 16 °C	-	4 °C
RoomT. Holiday CP060	Wished room zone temperature on holiday period Can be set from 5 °C to 20 °C	6 °C	6 °C
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 °C	16 °C
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 temperature setpoint in the timer programme is below the threshold set in CP070 <ul style="list-style-type: none"> Continue heat demand 	Continue heat demand	Stop heat demand
User T.Room Activity CP080	Desired room temperature setpoint for standby mode Can be set from 5 °C to 30 °C	16 °C	16 °C
User T.Room Activity CP081	Desired room temperature setpoint for Welcome mode Can be set from 5 °C to 30 °C	20 °C	20 °C
User T.Room Activity CP082	Desired room temperature setpoint for Absence mode Can be set from 5 °C to 30 °C	6 °C	6 °C
User T.Room Activity CP083	Desired room temperature setpoint for Morning mode Can be set from 5 °C to 30 °C	21 °C	21 °C
User T.Room Activity CP084	Desired room temperature setpoint for Evening mode Can be set from 5 °C to 30 °C	22 °C	22 °C
User T.Room Activity CP085	Desired room temperature setpoint for Custom mode Can be set from 5 °C to 30 °C	23 °C	20 °C
Manu ZoneRoomTempSet CP200	Manually setting the room temperature setpoint of the zone Can be set from 5 °C to 30 °C	30 °C	20 °C

Parameters	Description of the parameters	Factory setting CIRCA	Factory setting CIRCB
CP210 Zone HCZP Comfort	Comfort footpoint of the temperature of heat curve of the circuit Can be set from 15 °C to 90 °C	15 °C	15 °C
Zone HCZP Reduced CP220	Reduced footpoint of the temperature of heat curve of the circuit Can be set from 15 °C to 90 °C	15 °C	15 °C
Zone Heating Curve CP230	Heating curve temperature gradient of the zone Can be set from 0 to 4	1.5	0.7
ZoneRoomUnitInfl CP240	Adjustment of the influence of the zone room unit Can be set from 0 to 10	3	3
Floor Cool. setpoint CP270	Cooling flow temperature setpoint for the underfloor cooling 11 °C 23 °C	18 °C	18 °C
OperatingZoneMode CP320	Operating mode of the zone <ul style="list-style-type: none"> • Scheduling • Manual • Off 	Scheduling	Scheduling
Opening Valve Time CP330	The time needed by the valve to be fully opened Can be set from 0 Sec to 240 Sec	-	60 Sec
Zone screed drying CP470	Setting of the screed drying program of the zone Can be set from 0 Days to 30 Days	0 Days	0 Days
ScreedStartTemp CP480	Setting of the start temperature of the screed drying program of the zone Can be set from 20 °C to 50 °C	20 °C	20 °C
ScreedStopTemp CP490	Setting of the stop temperature of the screed drying program of the zone Can be set from 20 °C to 50 °C	20 °C	20 °C
Tflow Sensor Enable CP500	Enable/Disable Flow temperature sensor of the zone <ul style="list-style-type: none"> • Off • On 	-	Off
Temporary Room Setp CP510	Temporary room setpoint per zone Can be set from 5 °C to 30 °C	20 °C	20 °C
Zone Power setpoint CP520	Power setpoint per zone Can be set from 0 % to 100 %	-	100%
Zone PWM Pump speed CP530	Pulse Width Modulation pump speed per zone Can be set from 20 % to 100 %	-	100%
Zone, fire place CP550	Fire Place mode is active <ul style="list-style-type: none"> • Off • On 	Off	Off
ZoneTimeProg Select CP570	Time Program of the zone selected by the user <ul style="list-style-type: none"> • Schedule 1 • Schedule 2 • Schedule 3 	Schedule 1	Schedule 1
OTH LogicLev contact CP640	Opentherm Logic level contact of the zone <ul style="list-style-type: none"> • Open • Closed • 	Open	Open
Cool stop Room T. CP650	The cooling is stopped when the room temperature setpoint is above this value Can be set from 20 °C to 30 °C	29 °C	29 °C

Parameters	Description of the parameters	Factory setting CIRCA	Factory setting CIRCB
Icon display zone CP660	Choice icon to display this zone <ul style="list-style-type: none"> • None • All • Bedroom • Livingroom • Study • Outdoor • Kitchen • Basement • Swimming Pool • DHW Tank • DHW Electrical Tank • DHW Layered Tank • Internal Boiler Tank • Time Program 	None	Livingroom
ConfPairing RU Zone CP680	Select the Bus channel of the room unit for this zone Can be set from 0 to 255	0	0
RevContactOTH cool CP690	Reversed OpenTherm contact in cooling mode for heat demand per zone <ul style="list-style-type: none"> • No • Yes 	No	No
Zone Heat up speed CP730	Selection of heat up speed of the zone <ul style="list-style-type: none"> • Extra Slow • Slowest • Slower • Normal • Faster • Fastest 	Extra Slow	Slower
Zone cool down speed CP740	Selection of cool down speed of the zone <ul style="list-style-type: none"> • Slowest • Slower • Normal • Faster • Fastest 	Slowest	Normal
MaxZone Preheat time CP750	Maximum zone preheat time Can be set from 0 Min to 240 Min	0 Min	0 Min
Zone Buffered CP770	The zone is after a Buffer tank <ul style="list-style-type: none"> • No • Yes 	-	Yes
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	Automatic

Tab.58 > Signals

Signals	Description of the signals
DHW tank temp bottom DM001	Domestic Hot Water tank temperature (bottom sensor) in °C
DhwFlowTempSetpoint DM004	Flow temperature setpoint Domestic Hot Water in °C
Error TAS DHW DM007	Error status of the anti-corrosion protection system of the domestic hot water tank <ul style="list-style-type: none"> • Off • On

Signals	Description of the signals
Auto/Derog DHWstatus DM009	Automatic/derogation status of Domestic Hot Water mode <ul style="list-style-type: none"> • Scheduling • Manual • Off • Temporary
DHW activity DM019	Domestic Hot Water current activity <ul style="list-style-type: none"> • Off • Reduced • Comfort • Anti legionella
DHW setpoint DM029	Domestic Hot Water temperature setpoint in °C
DHW active AM001	Is the appliance currently in domestic hot water production mode? <ul style="list-style-type: none"> • Off • On

Tab.59 > Counters

Meters	Description of the meters
DHW valve cycles DC002	Numbers of Domestic Hot Water diverting valve cycles
Number of hours during which the diverting valve is in DHW position DC003	Number of hours during which the diverting valve is in DHW position
DHW starts DC004	Number of compressor start-ups during domestic hot water production

7.12.3 > DHW tank > Parameters, counters, signals

The DHW tank circuit is on the EHC-08 PCB. A domestic hot water sensor must be connected to the EHC-08 PCB to display these parameters in the DHW sub-menu.

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

Tab.60 > Settings

Parameters	Description of the parameters	Factory setting
Legionella calor. DP004	Legionella mode protection calorifier <ul style="list-style-type: none"> • Disabled • Weekly 	Disabled
DhwPumpSpeedMin DP037	Minimum Domestic Hot Water pump speed Can be set from 0 % to 100 %	30%
DhwPumpSpeedMax DP038	Maximum Domestic Hot Water pump speed Can be set from 0 % to 100 %	100%
DhwMaxTemp DP046	Maximum temperature of the water circulating in the exchanger of the domestic hot water tank Can be set from 10 °C to 75 °C	70 °C
Max. DHW duration DP047	Maximum duration of the domestic hot water production Can be set from 1 to 10 hours	3 hours
Min. CH before DHW DP048	Minimum heating duration between two periods of domestic hot water production 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) • Comfort (heat pump and electrical backup) 	ECO (Only HP)

Parameters	Description of the parameters	Factory setting
DHW timeprog. select DP060	Time program selected for DHW. <ul style="list-style-type: none"> • Schedule 1 • Schedule 2 • Schedule 3 	Schedule 1
DHW comfort setpoint DP070	Comfort temperature setpoint for the Domestic Hot Water tank Can be set from 40 °C to 65 °C	54 °C
DHW reduced setpoint DP080	Reduced temperature setpoint from the Domestic Hot Water tank Can be set from 10 °C to 60 °C	10 °C
Delay StartBackupDHW DP090	Start-up time delay for the electrical backup when the DP051 parameter is set to ECO. Can be set from 0 Min to 120 Min	20 Min
Hysteresis DHW DP120	Setpoint temperature differential triggering the DHW tank to be charged Can be set from 0 °C to 40 °C	14 °C
DHW AntiLeg Setpoint DP160	Setpoint for DHW anti legionella Can be set from 60 °C to 75 °C	65 °C
Start time holiday DP170	Start time of holiday Time stamp	-
End time holiday DP180	End time of holiday Timestamp	-
End change mode DP190	End change mode Time TimeStamp	-
DHW mode DP200	DHW primary mode current working setting <ul style="list-style-type: none"> • Scheduling • Manual • Off 	Scheduling
Postrun DHW pump/3wv DP213	Post run time of the DHW pump/3 way valve after DHW production Can be set from 0 Min to 99 Min	3 Min
DHW holiday setpoint DP337	Holiday temperature setpoint from the Domestic Hot Water tank Can be set from 10 °C to 60 °C	10°C

Tab.61 > Signals

Signals	Description of the signals
DHW tank temp bottom DM001	Domestic Hot Water tank temperature (bottom sensor) in °C
DhwFlowTempSetpoint DM004	Flow temperature setpoint Domestic Hot Water in °C
DHW tank temp top DM006	Domestic Hot Water tank temperature (top sensor) in °C
Error TAS DHW DM007	Error status of the anti-corrosion protection system of the domestic hot water tank <ul style="list-style-type: none"> • Off • On
Auto/Derog DHWstatus DM009	Automatic/derogation status of Domestic Hot Water mode <ul style="list-style-type: none"> • Scheduling • Manual • Off • Temporary
DHW activity DM019	Domestic Hot Water current activity <ul style="list-style-type: none"> • Off • Reduced • Comfort • Anti legionella

Signals	Description of the signals
DHW setpoint DM029	Domestic Hot Water temperature setpoint in °C
DHW active AM001	Is the appliance currently in domestic hot water production mode? <ul style="list-style-type: none"> • Off • On

Tab.62 > Counters

Meters	Description of the meters
DHW valve cycles DC002	Numbers of Domestic Hot Water diverting valve cycles
Number of hours during which the diverting valve is in DHW position DC003	Number of hours during which the diverting valve is in DHW position
DHW starts DC004	Number of compressor start-ups during domestic hot water production
DHW run hours DC005	Number of compressor start-ups

7.12.4 > Outdoor sensor setup > Parameters, counters, signals

Tab.63 > Settings

Parameters	Description of the parameters	Factory setting CIRCA	Factory setting CIRCB
Outdoor sensor AP056	Enable outdoor sensor <ul style="list-style-type: none"> • No outside sensor • AF60 • QAC34 	AF60	AF60
Summer Winter AP073	Outdoor temperature: upper limit for heating <ul style="list-style-type: none"> • For Circuit A, can be set from 10 °C to 30.5 °C • For Circuit B, can be set from 15 °C to 30.5 °C 	22 °C	22 °C
Force summer mode AP074	The heating is stopped. Hot water is maintained. Force Summer Mode <ul style="list-style-type: none"> • Off • On 	Off	Off
Season cross-over AP075	Temperature variance from set outdoor upper temp. limit in which the generator will not heat or cool <ul style="list-style-type: none"> • For Circuit A, can be set from 0 °C to 20 °C • For Circuit B, can be set from 0 °C to 10 °C 	4 °C	4 °C
Building Inertia AP079	Inertia of the building used for heat up speed Can be set from 0 to 10 <ul style="list-style-type: none"> • 0 = 10 hours for a building with low thermal inertia, • 3 = 22 hours for a building with normal thermal inertia, • 10 = 50 hours for a building with high thermal inertia. <p>Modification of the factory setting is only useful in exceptional cases.</p>	3	3

Parameters	Description of the parameters	Factory setting CIRCA	Factory setting CIRCB
Frost min out temp AP080	Outside temperature below which the antifreeze protection is activated: <ul style="list-style-type: none"> • Can be set from -30 to 20°C • set to -30 °C = function deactivated 	3 °C	3 °C
Outside Sens. Source AP091	Type of outside sensor connection to be used <ul style="list-style-type: none"> • Auto • Wired sensor • Wireless sensor • Internet measured • None 	Auto	Auto

Tab.64 > Signals

Signals	Description of the signals
Outside temperature AM027	Instantaneous outside temperature in °C
Internet T.Outside AM046	Outside temperature received from an internet source in °C
SeasonMode AM091	Outside temperature below which the antifreeze protection is activated: <ul style="list-style-type: none"> • Can be set from -30 to 20°C • set to -30 °C = function deactivated
Out sensor detected AP078	Outside sensor detected in the application <ul style="list-style-type: none"> • No • Yes

7.12.5  Installation Setup > SCB-01

Tab.65 > Settings

Parameters	Description of the parameters	Factory setting SCB-01
Status relay func. 1 EP018	Status relay function 1 <ul style="list-style-type: none"> • No Action • Alarm • Alarm Inverted • Generator on • Generator off • Reserved • Reserved • Service request • Generator on CH • Generator on DHW • CH pump on • Locking or Blocking • Cooling mode 	No Action
Status relay func. 2 EP019	Status relay function 2 <ul style="list-style-type: none"> • No Action • Alarm • Alarm Inverted • Generator on • Generator off • Reserved • Reserved • 6 Reserved • Service request • Generator on CH • Generator on DHW • CH pump on • Locking or Blocking • Cooling mode 	No Action
Function 10V-PWM EP028	Selects the function of the 0-10 Volt output <ul style="list-style-type: none"> • 0-10V 1 (Wilo) • 0-10V 2 (Gr. GENI) • PWM signal (Solar) • 0-10V 1 limited • 0-10V 2 limited • PWM signal limited • PWM signal (UPMXL) 	0-10V 1 (Wilo)
Source 10V-PWM EP029	Selects the source signal for the 0-10 Volt output <ul style="list-style-type: none"> • PWM • Requested power • Actual power 	PWM

Tab.66 > Signals

Signals	Description of the signals
Power setpoint GM011	Power setpoint in % of maximum
Pump running? AM015	Is the pump running? <ul style="list-style-type: none"> • Inactive • Active
Pump speed AM010	The current pump speed in %

7.12.6 > Bluetooth®

This menu contains the parameters relating to the Bluetooth® connection.

Tab.67

Parameters	Description of the parameters	Factory setting
Bluetooth enabled AP129	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.	-



See also

Activating/deactivating the Bluetooth® for the appliance, page 85

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  button.
2. Select **Bluetooth**.
3. Modify the value of the Bluetooth enabled parameter:

On	Bluetooth® activated
Off	Bluetooth® deactivated



See also

Commissioning procedure with smartphone, page 56
> Bluetooth®, page 85

7.14 Description of the parameters

7.14.1 Running the back-up in heating mode

■ Start-up conditions for the backup

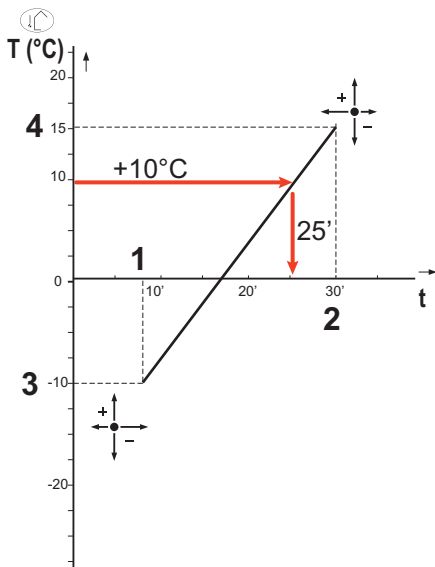
The backups are authorised to start up normally except in cases of power cut-off or limitation linked to bivalency (**Bivalent temperature** - HP000).

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

In heating mode, the backup is managed by the parameters: **Bivalent temperature** (HP000) and **Delay StartBackup CH** (HP030).

If **Delay StartBackup CH** (HP030) is set to 0, the time delay for start-up of the backup is set depending on the outdoor temperature: the lower the outdoor temperature, the quicker the backup will be activated.

Fig.74 Time delay curve for starting the backup



MW-6000377-7

- t Time (minutes)
- T Outdoor temperature (°C)
- 1 Delay Min.Outdoor T. (HP047) = 8 minutes
- 2 Delay Max.Outdoor T (HP048) = 30 minutes
- 3 Min.Outdoor T.backup (HP049) = -10 °C
- 4 Max.Outdoor T.backup (HP050) = 15 °C

In this example of a time delay to starting the backup when **Delay StartBackup CH** HP030 is set to 0, with the factory-set parameters, if the outdoor temperature is 10 °C, the backup will start 25 minutes after the heat pump's outdoor unit.

■ Backup operation if an error occurs on the outdoor unit

If an error occurs on the outdoor unit during a system heating demand, the backup boiler or the electric heating element 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.

■ Operating principle 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 boiler or the electric heating element starts up immediately to guarantee heating comfort.

7.14.2 Running the back-up in domestic hot water mode

■ Start-up conditions for the backup

The start-up conditions for the backup for domestic hot water production depend on the **BL function** (AP001) and **BL2 function** (AP100) parameters for the blocking inputs **BL1** and **BL2** respectively.

■ Operating description

The behaviour of the backup boiler or the electric heating element in domestic hot water mode depends on the configuration of the **DHW management**(DP051) parameter.

If **DHW management** (DP051) is set to **ECO (Only HP)** the system gives priority to the heat pump during domestic hot water production. The backup boiler or the electric heating element is used only if the start-up time delay for the backup during domestic hot water production **Delay StartBackupDHW** (DP090) has elapsed in domestic hot water mode, unless the hybrid mode is activated. In this case, hybrid logic takes over.

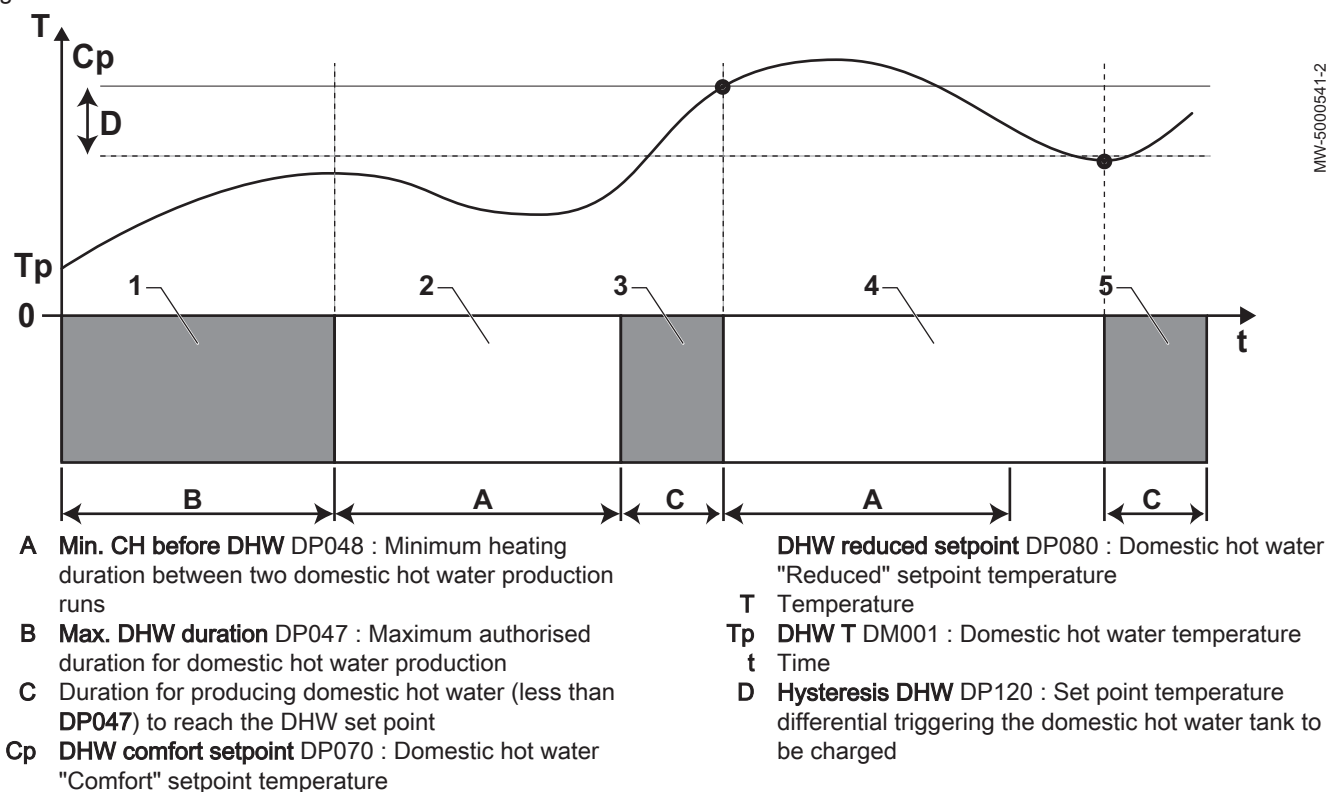
If **DHW management** (DP051) is set to **Comfort (HP+Boiler)** the domestic hot water production mode gives priority to comfort by accelerating domestic hot water production by simultaneously using the heat pump and the backup boiler or the electric heating element. In this mode, there is no maximum time for domestic hot water production as the use of the backups helps to ensure domestic hot water comfort more quickly.

7.14.3 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.75



Tab.68

Phase	Description of the phase	Operating description
1	Domestic hot water production only	When the system is switched on, if domestic hot water production is authorised and the parameter DHW management (DP051) is configured to ECO (Only HP), a domestic hot water production cycle is started up for a maximum duration that can be set 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 set and defined with the Min. CH before DHW (DP048) parameter. 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.

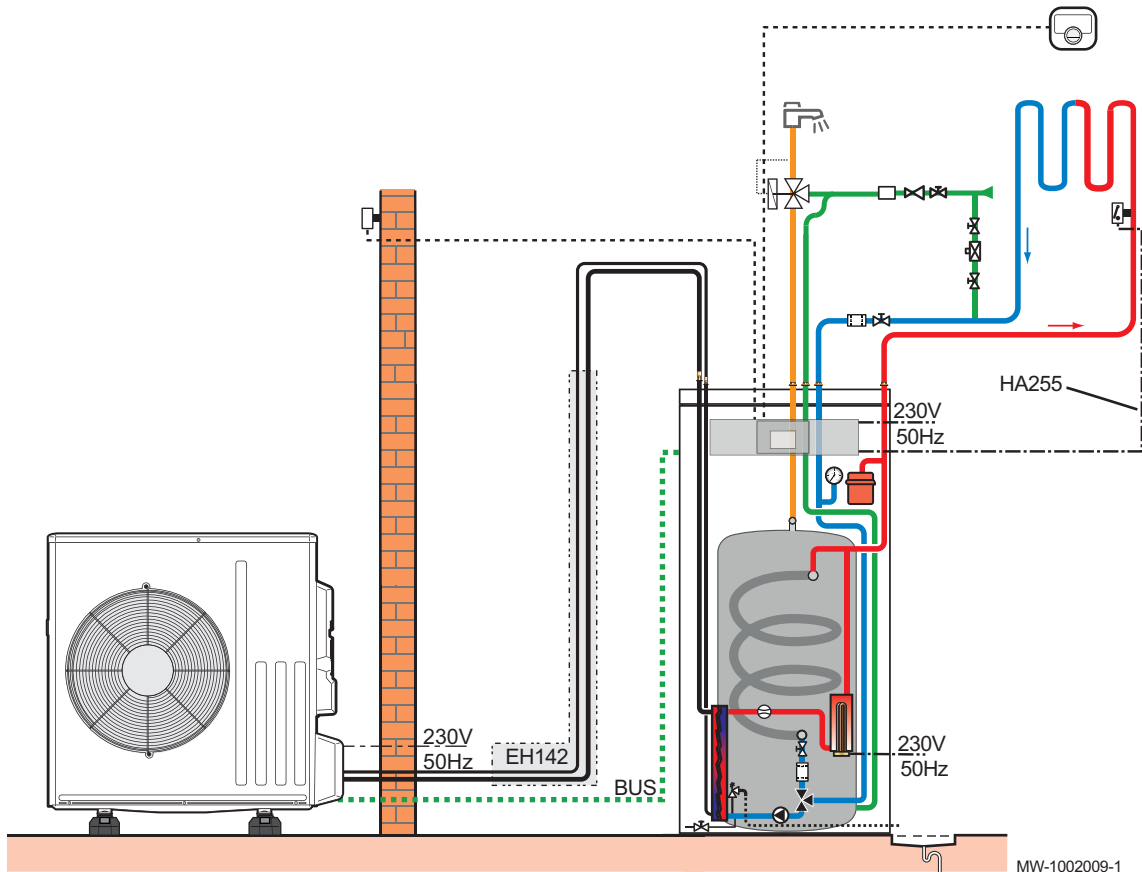
Phase	Description of the phase	Operating description
4	Heating only	When the Hysteresis DHW (DP120) differential is reached, domestic hot water production is triggered. If there is not enough domestic hot water (e.g. if the domestic hot water does not heat up quickly enough): reduce the trip differential (hysteresis) by modifying the value of the Hysteresis DHW (DP120) parameter. The DHW tank will then heat up the water more quickly.
5	Domestic hot water production only	When the domestic hot water set point is reached, a period in heating mode begins.

8 Connection and installation examples

8.1 Installation with one immersion heater and one direct circuit

8.1.1 Hydraulic diagram

Fig.76

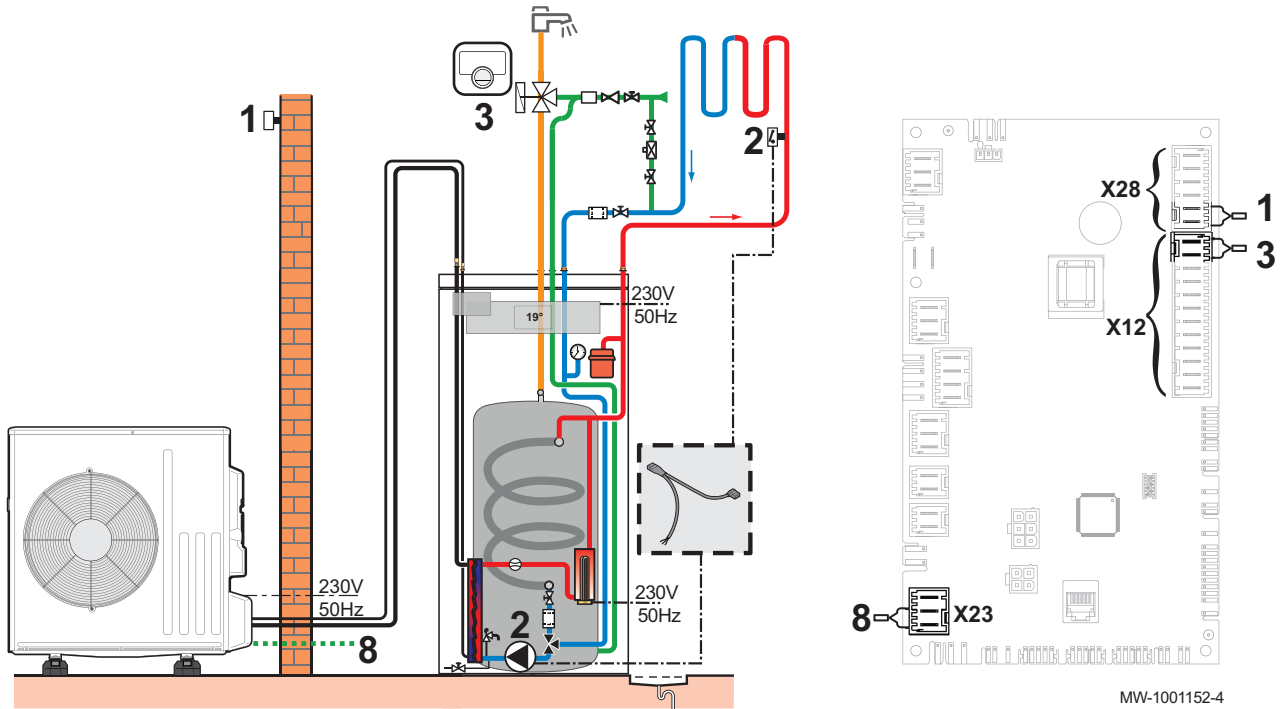


EH142: refrigerant connection kit 1/2" - 1/4"
AD324: SMART TC° connected thermostat

HA255: wiring kit for direct underfloor heating

8.1.2 Connecting and configuring the heat pump

Fig.77



- 1 Outdoor temperature sensor
- 2 Wiring kit for direct underfloor heating
- 3 Thermostat
- 8 Outdoor unit bus connection


1. Connect the accessories and options to the **EHC-08** PCB, respecting the 230-400 V and 0-40 V cable feed-throughs.
2. Connect the HA255 wiring kit for direct underfloor heating,
3. On initial start-up, or after a reset of the factory parameters, set the CN1 and CN2 parameters according to the output of the outdoor unit.
4. Set the main heating parameters:



Tab.69

Access path	Parameter	Description	Adjustment required
CIRCA > Parameters, counters, signals > Settings	MaxZoneTFlowSetpoint CP000	Maximum Flow Temperature setpoint zone	Factory setting: 75 °C Adjust the temperature as required.
	Zone Function CP020	Functionality of the zone	Factory setting: Circuit direct Set the parameter depending on your installation: <ul style="list-style-type: none"> • Mixing Circuit • Fan Convector Only these 2 settings are used for cooling.
CIRCA > Heating Curve	Slope: CP230	Value of the heating curve gradient.	Between 0.4 and 0.7 (for an under-floor heating circuit). Adapt the values of the heating curve in order to obtain optimum comfort.

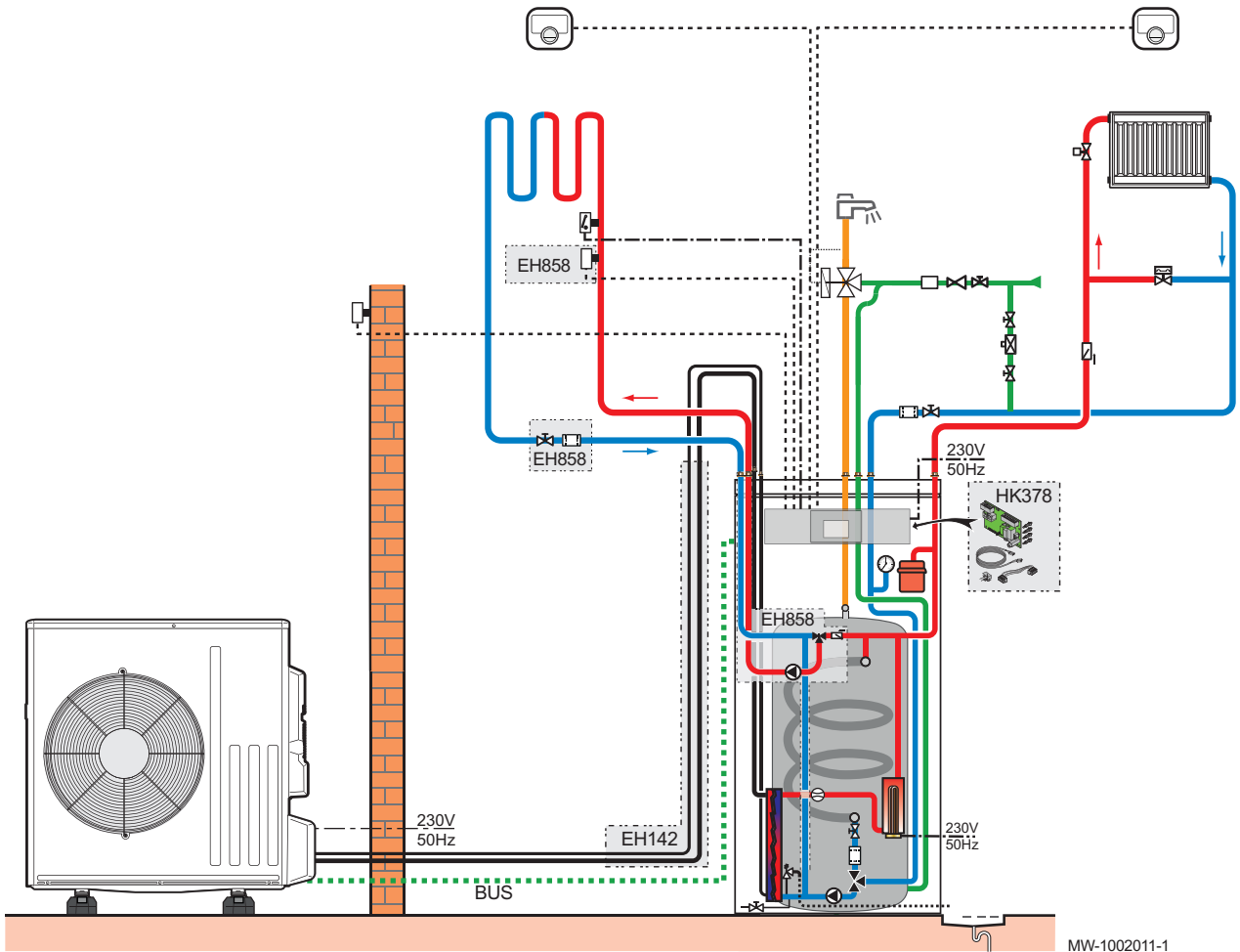
5. Set the authorisation for cooling:

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

8.2 Installation with one immersion heater and two circuits

8.2.1 Hydraulic diagram

Fig.78

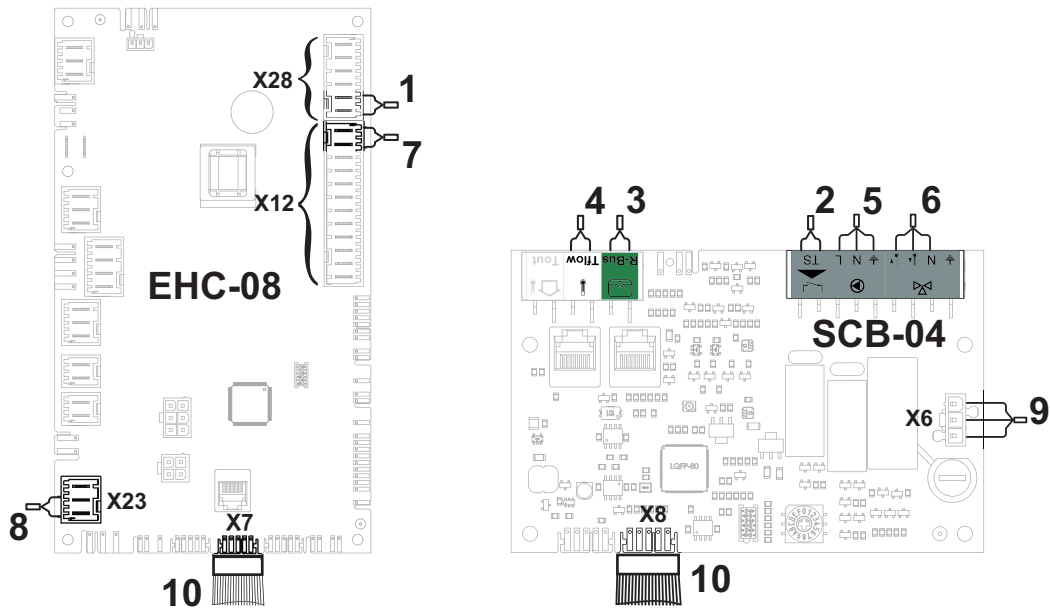
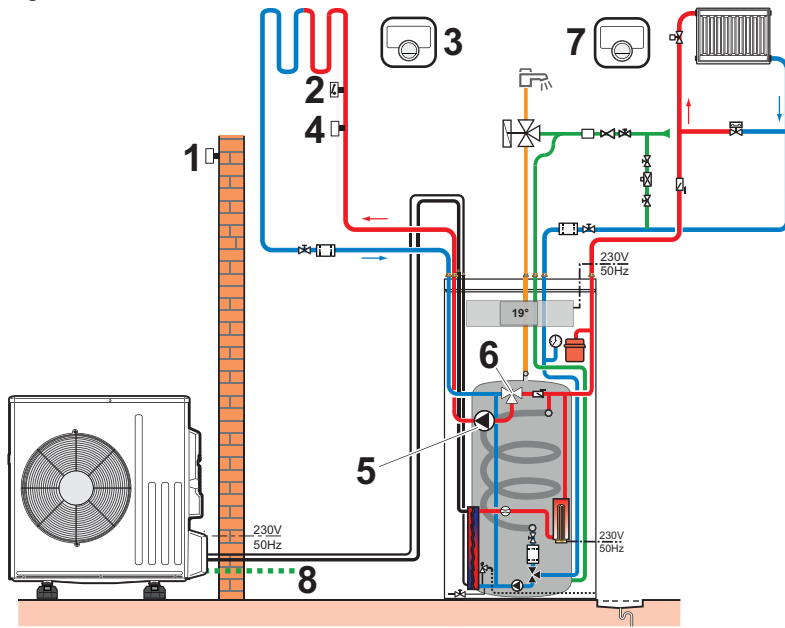


EH858: second circuit mixing valve kit
 AD324: SMART TC° connected thermostat

EH142: refrigerant connection kit 1/2" - 1/4"
 HK378: second circuit control system PCB kit

8.2.2 Connecting and configuring the heat pump

Fig.79



MW-1002013-1

- 1 Outdoor temperature sensor
- 2 Safety thermostat for underfloor heating flow
- 3 Underfloor heating circuit thermostat
- 4 Flow sensor for the second circuit kit
- 5 Pump power supply for the second circuit kit
- 6 3-way valve for the second circuit kit

- 7 Radiator circuit thermostat
- 8 Outdoor unit bus connection
- 9 230 V power supply connection between the FTC2BR and SCB-04 PCBs
- 10 BUS connection linking the EHC-08 and SCB-04 PCBs

1. Connect the accessories and options to the **EHC-08** PCB, respecting the 230-400 V and 0-40 V cable feed-throughs.
2. Connect the accessories and options to the **SCB-04** PCB, respecting the 230-400 V and 0-40 V cable feed-throughs.
3. On initial start-up, or after a reset of the factory parameters, set the CN1 and CN2 parameters according to the output of the outdoor unit.



4. Configure the parameters for circuit A:

Tab.70

Access path	Parameter	Description	Adjustment required
21.7 CIRCA > Parameters, counters, signals > Settings	MaxZoneTFlowSetpoint CP000	Maximum Flow Temperature setpoint zone	75 °C (factory setting) Adjust the temperature as required.
	Zone Function CP020	Functionality of the zone	Direct (factory setting) This setting does not enable cooling.
21.7 CIRCA > Heating Curve	Slope: CP230	Value of the heating curve gradient.	1.5 (for a radiator circuit) Adapt the values of the heating curve in order to obtain optimum comfort.

5. Configure the parameters for circuit B:

Access path	Parameter	Description	Adjustment required
24.5 CIRCA > Parameters, counters, signals > Settings	MaxZoneTFlowSetpoint CP000	Maximum Flow Temperature setpoint zone	40 °C Adjust the temperature as required.
	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.
21.7 CIRCB > Heating Curve	Slope: CP230	Value of the heating curve gradient.	between 0.4 and 0.7 (for an underfloor heating circuit) Adapt the values of the heating curve in order to obtain optimum comfort.

6. Set the authorisation for cooling:

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

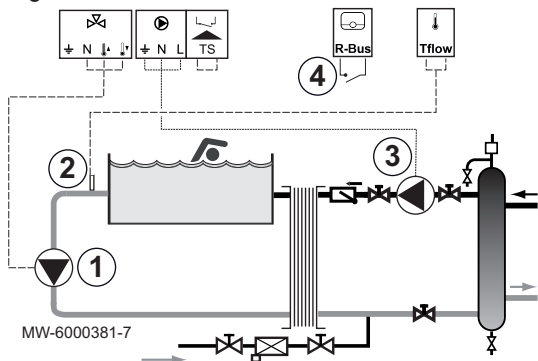
8.3 Installation with a swimming pool

8.3.1 Connecting a swimming pool

To control swimming pool heating, you will need the **SCB-04** 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 SCB-04 optional PCB.

Fig.80



1. Connect the swimming pool secondary pump to the terminal block.
2. Connect the swimming pool thermostat to the TFlow terminal block.
3. Connect the swimming pool primary pump to the terminal block.
4. 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.

8.3.2 Configuring swimming pool heating

1. Configure the parameters on circuit B.

Access path	Parameter	Description	Adjustment required
CIRCB 24.5	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

See also
Description of the user interface, page 23

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 user interface.



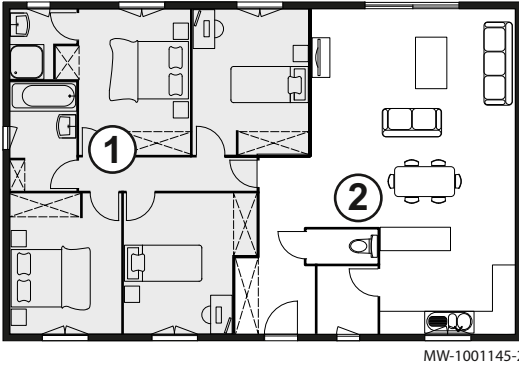
1. Press the button.
2. Select **System Settings**.
3. Carry out one of the following operations:

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
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
License Information	Display the creation licenses for the internal software

9.2 Personalising the zones

9.2.1 Definition of the term "zone"

Fig.81




Zone: term given to the different hydraulic circuits. It indicates several rooms served by the same circuit.



Tab.71 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 names and symbols of the various zones are factory-configured. If required, you can customise the name and symbol used for 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. Modify the name of the zone (20 characters max.).
4. Select **Icon display zone**
5. Select the symbol to be associated with the zone.
6. Insert the chosen name and symbol in the table below:

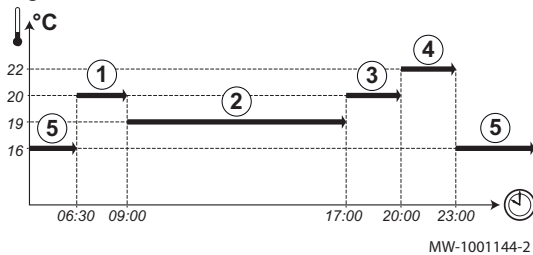
Factory-set name	Factory-set symbol	Name defined by the customer	Symbol defined by the customer
CIRCA			
CIRCB			

9.3 Personalising the activities

9.3.1 Definition of the term "Activity"

Activity: this term is used when programming hours. 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.

Fig.82




Tab.72 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
00:00	Custom ⑥	15 °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  button.
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 of the various activities are factory-configured. 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 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.




See also

Activating and configuring a timer programme for heating, page 96
Activating and configuring a timer programme for cooling, page 95






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.73

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 cooling

If your installation is configured to allow cooling, the corresponding timer programme can be modified in **Cooling** mode.

i Important
Your appliance will automatically switch to cooling mode when the outdoor temperature exceeds 22 °C (factory setting).


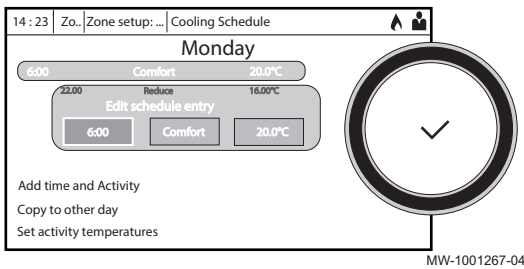
1. Select the icon for the zone to be programmed, , for example.
⇒ Information on the current operating mode is given in the upper part of the screen.
2. To activate the timer programming or to change the timer programme, select **Time programs cooling**.
3. Select the timer programme to be activated.
⇒ Information on the active timer programme is given in the upper part of the screen.
4. To modify the timer programme for the **Cooling** mode, select **Time programs cooling**.
⇒ The programmed activities for Monday are displayed.
The last activity of the day remains active until the first activity of the following day.
5. Select the day to be modified.
6. 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.

Fig.83



See also
Changing the temperature of an activity, page 95

9.4.3 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.


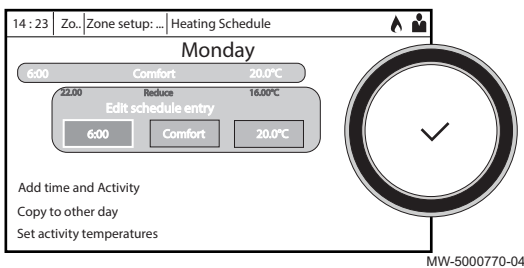
1. Select the icon for the zone to be programmed, , for example.
⇒ Information on the current operating mode is given in the upper part of the screen.
2. To activate the timer programming or to change the timer programme, select **Time programs heating**.
3. Select the timer programme to be activated.
⇒ Information on the active timer programme is given in the upper part of the screen.
4. To modify the timer programme, select > **Time programs heating**.
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 time range.
 - **Delete** a programmed activity (choose the "Delete" activity).
 - **Copy** programmed daily activities to other days.
 - **Modify temperatures** linked to an activity.


Fig.84



See also
Changing the temperature of an activity, page 95
Improving domestic hot water or heating comfort, page 66

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 **Zone setup > 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.74

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.


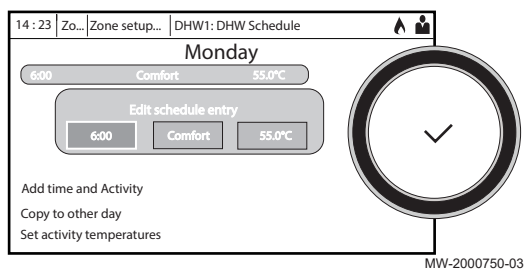
1. Select the  **DHW tank** icon.
 - ⇒ Information on the current operating mode is given in the upper part of the screen.
2. To activate the timer programming or to change the timer programme, select **Time programs**.
3. Select the timer programme to be activated.
 - ⇒ Information on the active timer programme is given in the upper part of the screen.
4. To change the timer programming, select the programme you wish to change.
 - ⇒ The programmed activities for Monday are displayed.
The last activity of the day remains active until the first activity of the following day.
5. Select the day to be modified.
6. Carry out the following actions according to your needs:
 - **Modify** the timings for programmed activities.
 - **Add** a timer and an activity.
 - **Delete** a programmed activity (choose the "Delete" activity).
 - **Copy** to another day.
 - **Set** the activity temperatures.

Fig.85



See also

Improving domestic hot water or heating comfort, page 66

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** DP070 parameter) for a defined period.



1. Select the **DHW tank** icon.
2. Select **Zone configuration > 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** DP070 : used in the Scheduling, Manual and Hot water boost modes
- **DHW reduced setpoint** DP080 : used in the Scheduling, Holiday and Antifrost modes

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



1. Select the **DHW tank** icon.
2. Select **Domestic Hot Water Setpoints > DHW comfort setpoint** to change this setpoint.
3. Select **Domestic Hot Water Setpoints > DHW reduced setpoint** to change this setpoint.

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 average outdoor 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

- Cooling mode is not authorised by default.
- 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/cooling function.
 - **On** to switch the heating/cooling 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 **Force summer mode** 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.75

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.76

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 Réinitialiser la consommation énergétique.

9.8 Starting and stopping the heat pump

9.8.1 Starting the heat pump

1. Switch on the outdoor unit, the indoor unit and the backup (immersion heater or backup boiler depending on the model) simultaneously.



Important

- The outdoor unit is powered via its circuit breaker.
- The indoor unit is powered via the circuit breaker and the ON/OFF button.
- The immersion heater is powered via its circuit breaker.
- The backup boiler must be powered on according to its user guide.

⇒ The heat pump will begin an automatic vent cycle (which lasts approx. three minutes), run each time the power is switched on. If there is a problem, an error message is displayed on the home screen.

2. If an error message is displayed on the home screen, contact the installer.

3. Check the hydraulic pressure in the installation indicated on the user interface.



Important

Recommended hydraulic pressure between 1.5 and 2.0 bar.



Important

The pressure measurement may differ slightly between the pressure gauge and the user interface when the circulating pump is running.

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 indoor unit by pressing the on/off switch.
2. Cut the power to the indoor unit, outdoor unit and backup circuit breakers.

10 Maintenance

10.1 Information for service personnel

Tab.77

Subject	Details
Safety checks	Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised.
Work procedure	Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.
General work area	All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.
Potential leak of refrigerant	The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. If a refrigerant leak is detected, all naked flames shall be removed/extinguished. If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system prior to brazing activities.
Presence of fire extinguisher	If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO ₂ fire extinguisher adjacent to the charging area.
No ignition sources	Do not smoke on the premises during maintenance operations.
Ventilated area	Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

Subject	Details
Spare parts	Only genuine spare parts may be used.
Electrical devices	<p>Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.</p> <p>Initial safety checks shall include:</p> <ul style="list-style-type: none"> • that capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking; • that no live electrical components and wiring are exposed while charging, recovering or purging the system; • that there is continuity of earth bonding.

10.2 Precautions to be taken during maintenance operations

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.



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.



Danger of electric shock

Before any work, switch off the outdoor unit, the indoor unit and the backup (immersion heater or backup boiler depending on the model).



Danger of electric shock

Check the discharge from the capacitors of the outdoor unit. Do not perform work when the red LED is lit. The LED remains lit for a minute after having switched off the circuit breaker.



Important

- Maintenance shall be performed only as recommended by the manufacturer.
- Replace any damaged component.
- If the refrigeration circuit must be opened, collect the fluid in suitable containers.

10.3 List of inspection and maintenance operations

Tab.78 Checking the operation of the installation

Check
Heat pump and backup in heating mode
Heat pump in cooling mode
Heat pump in convection fan mode

Check
User interface
Fault history
Operating time and number of start-ups for backups
Operating time and number of start-ups for compressor
Backup safety thermostat activated


Tab.79 Tightness tests

Check
Leak-tightness of the heating circuit
Leak-tightness of the domestic hot water circuit
Leak-tightness of the refrigerant circuit (use a sniffer leak detector)

Tab.80 Inspecting the safety devices

Check	Operations to be carried out
Heating circuit safety valve	Actuate the safety valve to check that it is operating correctly.
Domestic hot water circuit safety valve	Actuate the safety valve to check that it is operating correctly.
Expansion vessel	Check and adjust the inflation pressure.

Tab.81 Other inspection and maintenance operations

Check	Operations to be carried out
Electrical connections	Replace any faulty parts and cables.
Screws and nuts	Check all screws and nuts (cover, support, etc.).
Insulation	Replace damaged sections of lagging.
Filters	Clean the filters.
Flow rate in heating mode	Check the flow rate on the various heating circuits. Target flow rate: <ul style="list-style-type: none"> • AWHPR 4 MR: 12 l/min • AWHPR 6 MR: 17 l/min • AWHPR 8 MR: 23 l/min
Flow rate in domestic hot water mode	Check the flow rate in domestic hot water mode. Target flow rate: 16 l/min
Hydraulic pressure	Recommended hydraulic pressure 0.15 to 0.2 MPa (1.5 to 2 bar).  Important The pressure measurement may differ slightly between the pressure gauge and the user interface when the circulating pump is running.
(TAS) titanium anode	No maintenance operations are required.
Outdoor unit evaporator	Clean the outdoor unit's evaporator.
Condensate collector box	Check the water level in the box. In case of stagnation, clear the siphon or check the lift pump is operational.
Casing	Clean the outside of the appliance using a damp cloth and a mild detergent.
Fan	Visually check the swing and balance. Check the external appearance and that the dust does not stick.
Drain pan	Check that the dust and dirt do not prevent the drain water from flowing.

**See also**

Cleaning the magnetic sieve filters, page 103

10.4 Impressed current anode

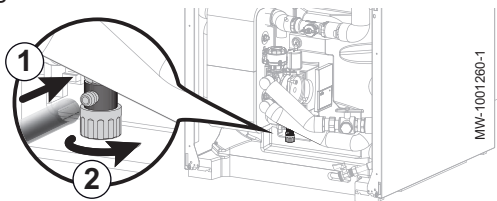
No maintenance operations are required on an impressed current anode.

**Important**

The appliance's user interface must remain switched on to ensure that the impressed current anode can operate. Failure to comply with this instruction may cause deterioration to the water heater tank and void its warranty.

10.5 Draining the heating circuit

Fig.86



1. Connect a suitable hose (internal diameter: 8 mm) to the drain cock on the heating circuit.

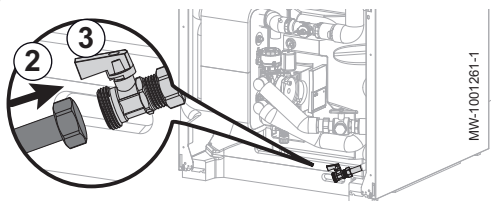
**Important**

A hose can be found in the accessories bag.

2. Open the drain valve.
3. Await the complete drainage of the heating circuit.

10.6 Draining the domestic hot water circuit

Fig.87



1. Close the system's water inlet valve.
2. Connect a suitable hose fitted with a 3/4" female connection to the drain valve on the domestic hot water circuit.
3. Open the drain valve on the domestic hot water circuit.
4. Open a hot water tap to completely drain the indoor module.

10.7 Cleaning the magnetic sieve filters

**See also**

List of inspection and maintenance operations, page 101

10.7.1 Flush the magnetic sieve filters (quick annual maintenance)

The magnetic filters on the heating circuit return prevent the plate heat exchanger from becoming clogged. These must be cleaned every year to ensure that water is able to flow correctly within the installation.

1. Switch the appliance off and hydraulically isolate the magnetic filter using the stop valves for the heating circuits.
2. Remove the magnet from the filter.
⇒ The magnetic particles will drop to the bottom of the filter.
3. Connect the pipe (supplied in the documentation bag) onto the filter tap. Place a container at the end of the pipe.

Fig.88

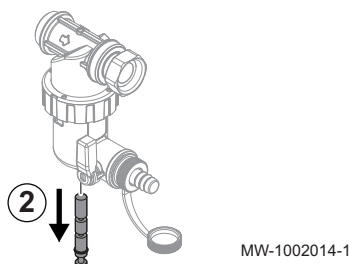
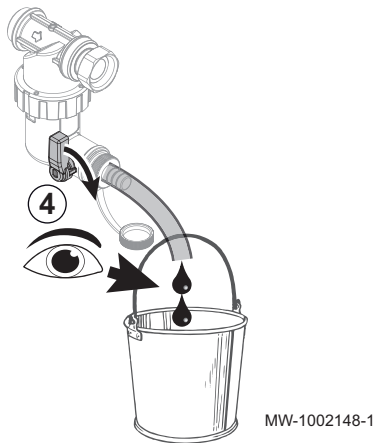


Fig.89



4. Gradually open the tap, and let the water drain out until the sludge is removed or until it is fully drained: the water should run clean and clear. Close the tap again. If necessary, open and close the valve several times to create surges, and clean the filter better.
5. Refit the magnet. Pushing it in fully.
6. Open the stop valves on the heating circuits.
7. Power the appliance back on.
8. Check the pressure in the installation. If the pressure is less than 1.5 bar, top up the water.
9. Check the flow rate after activating a heating demand.

i Important
If the flow rate of the installation is below the target flow rate, proceed to remove and fully clean the filter.

See also
Setting the flow rate of the second circuit, page 58
Setting the flow rate of the direct circuit, page 58

10.7.2 Full cleaning of the magnetic sieve filters

If the flow rate of the installation is below the target flow rate after the simple annual cleaning of the filter, proceed to remove and fully clean it.

1. Switch the appliance off and hydraulically isolate the magnetic filter using the stop valves for the heating circuits.
2. Connect the pipe supplied with the documentation on the filter tap. Place a container at the end of the pipe.
3. Gradually open the tap and let the water drain out.
4. Unscrew the magnetic filter using the maintenance tool provided in the accessories bag and remove all the filter parts.
5. Carefully clean the various filter parts with clean water until all the impurities are removed. The screen mesh must not be clogged.

Fig.90

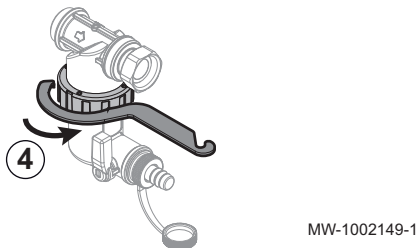
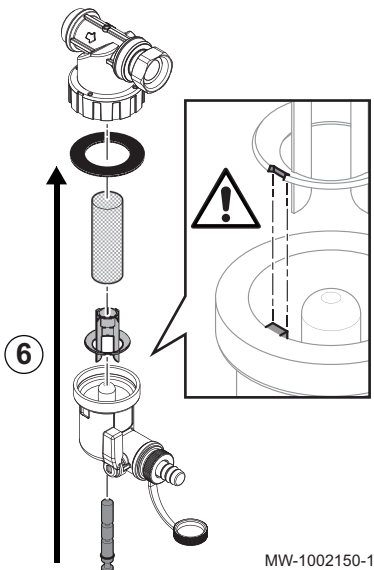


Fig.91



6. Refit the filter observing the keyway of the plastic part.

! Caution
Risk of breakage: align the notch with the pin.

7. Check that the gasket is correctly positioned before tightening with the key.
8. Re-commission the appliance and check the pressure and the flow rate.

i Important
If the flow rate of the installation remains below the target flow rate, proceed to drain the appliance and clean it fully.

10.8 Check the hydraulic pressure

If the hydraulic pressure of your heating system installation is too low or too high, malfunctions and faults may appear.


Recommended hydraulic pressure: from 1.5 bar to 2 bar when cold.

1. Check the hydraulic pressure displayed on the user interface.
2. If the hydraulic pressure is too low, top up the water.
3. If topping up is needed more than twice per year, check that the heating system is leak-tight.

10.9 Checking operation of the appliance

You can force the heating or cooling mode for the heat pump and backup in order to check that they are working correctly.



1. Press the  button.
2. Select **Commissioning Menu**.
3. Select **Load Test**.
4. Select the operating mode for which you would like to see the information. **Off**, **Load test CH max** or **Control unit Cooling**.

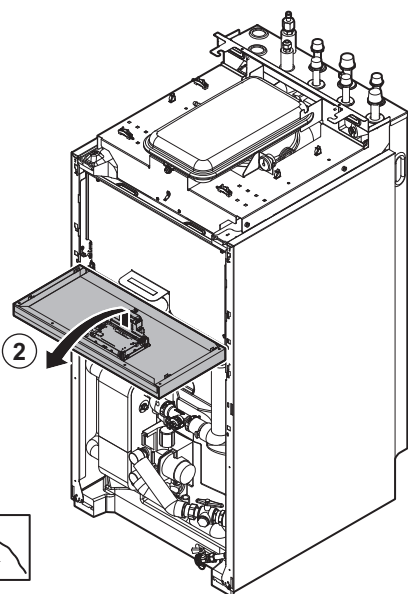
10.10 Replacing the user interface battery

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

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

1. Open and remove the user interface door.
2. Remove the front panel by pulling firmly at both sides.
3. Tilt the user interface module bracket forwards and hang it in a horizontal position.

Fig.92



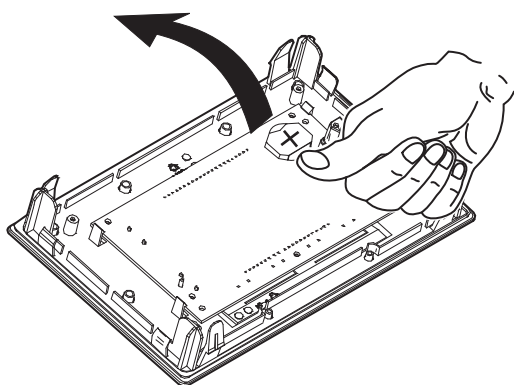
MW-3000516-02



Important

Keep a good hold of the user interface module in order not to pull out or disconnect the electrical connections.

Fig.93



MW-3000475-01

4. Remove the battery located in back plate of the user interface by pushing it gently forwards.
5. Insert a new battery.



Important

- Battery type: CR2032, 3V
- Do not use rechargeable batteries
- Dispose of used batteries at a suitable collection point

6. Re-assemble everything.

11 Troubleshooting

11.1 Resetting the safety thermostat



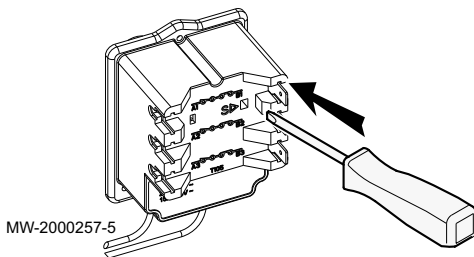
Danger

Before any work, switch off the power supply to the indoor unit and the immersion heater.

If you suspect that the safety thermostat was triggered:

1. Cut off the power supply to the indoor unit and the electric heating element 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 electric heating element having been cut.
5. Refit the front panel on the indoor unit and the protective cover.
6. Switch the indoor unit and the electric heating element back on.

Fig.94



11.2 Resolving operating errors

When your appliance malfunctions, the LED and display switch from their initial colour to red and may flash. A message is displayed with an error code on the home screen.

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 user interface can display three types of error code:

Tab.82

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

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.

Tab.83

Code	Message	Description
A02.06	Water Press Warning	Water Pressure Warning active
A02.22	System flow warning	System water flow warning active
A02.55	Inval or miss SerNR	Invalid or missing device serial number

11.2.3 Blocking codes

A blocking code signals an anomaly affecting the heating system.

Several possibilities:

- 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, then the immersion heater or the backup boiler is started up).
- The system is shut down but automatically switches on again when the error disappears.

Tab.84

Code	Message	Description
H00.00	TFlow Open	Flow temperature sensor is either removed or measures a temperature below range <ul style="list-style-type: none"> • Check the wiring between the main PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.01	TFlow Closed	Flow temperature sensor is either shorted or measures a temperature above range <ul style="list-style-type: none"> • Check the wiring between the main PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.16	DHW sensor Open	Domestic Hot Water tank 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.
H00.17	DHW sensor Closed	Domestic Hot Water tank 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.
H00.32	TOutside Open	Outside 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.
H00.33	TOutside Closed	Outside 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.

Code	Message	Description
H00.34	TOutside Missing	<p>Outside temperature sensor was expected but not detected</p> <p>Wired sensor:</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. • Reset the values CN1 and CN2. <p>This solution also resets all the other parameters.</p> <p>Radio-controlled outdoor temperature sensor:</p> <ul style="list-style-type: none"> • Check the wiring between the radio receiver and the central unit PCB (R-Bus line). • Check that the radio gateway is supplied with power. • Perform a pairing sequence. • If necessary, perform a new pairing sequence and reduce the distance between the outdoor radio sensor and the radio receiver. • Replace the sensor if necessary. • Replace the radio receiver if necessary.
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 main PCB and the sensor. • Check that the sensor has been fitted correctly. • 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.
H00.52	THp Return Closed	<p>Heat pump return 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.
H00.79	TSwimming Pool Open	<p>Swimming Pool Flow temperature sensor is either removed or measures a temperature below range</p> <ul style="list-style-type: none"> • Check the wiring between the main PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.80	TSwimmingPool Closed	<p>Swimming Pool Flow temperature sensor is either shorted or measures a temperature above range</p> <ul style="list-style-type: none"> • Check the wiring between the main 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
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 the AP001 and AP100. parameters.
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 the AP001 and AP100. parameters.
H02.23	System flow error	System water flow error active The circuit is clogged: <ul style="list-style-type: none"> • Make sure that the thermostatic valves or flow valves on the circuit concerned are fully open. • 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 and clean them if necessary. • Check that the circulating pump is working. • Clean and flush the installation if necessary. • Check the condition of the wiring and that the electrical connections are correctly positioned. • Check the pump supply: if the pump does not work, replace it. Too much air: completely vent the indoor unit and the installation for optimum running. 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.
H02.25	ACI error	Titan Active System short-circuited or on an open circuit <ul style="list-style-type: none"> • Check the connection cable. • Check that the anode has not short-circuited and is not broken.

Code	Message	Description
H02.36	Funct device lost	Functional device has been disconnected No communication between the central unit PCB and the additional circuit PCB <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	Uncritical device has been disconnected No communication between the central unit PCB and the additional circuit PCB <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
H06.06	BL CompHighPressure	A high pressure anomaly has stopped the compressor
H06.07	BL CompLowPressure	A low pressure anomaly has stopped the compressor
H06.21	Tret heat pump	Heat pump Tret sensor error <ul style="list-style-type: none"> • Check the wiring between the FTC2BR PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H06.22	Heating error	Heating operation error
H06.23	Refr. pressure	Refrigerant pressure sensor error <ul style="list-style-type: none"> • Check the wiring between the FTC2BR PCB and the sensor. • Check that the sensor has been fitted correctly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H06.24	Refr. High pressure	Refrigerant high pressure protection
H06.25	Tflow heat pump	Heat pump Tflow sensor error <ul style="list-style-type: none"> • Check the wiring between the FTC2BR PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H06.26	HP liquid temp	HP liquid temperature sensor error <ul style="list-style-type: none"> • Check the wiring between the FTC2BR PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H06.27	Frost protection	Heat pump frost protection is activated
H06.28	Comm. IDU - ODU	Communication indoor and outdoor unit
H06.29	ODU-interface	Mismatch outdoor unit-interface
H06.30	ODU temperature	Outdoor unit temperature is anomalous
H06.31	ODU temp sensor	Outdoor unit temperature sensor error <ul style="list-style-type: none"> • Check the wiring between the main PCB and the sensors. • Check that the sensors have been fitted correctly. • Check the Ohmic value of the sensors. • Replace the sensors if necessary.
H06.32	ODU temp sensor	Outdoor unit temperature sensor error <ul style="list-style-type: none"> • Check the wiring between the main PCB and the sensors. • Check that the sensors have been fitted correctly. • Check the Ohmic value of the sensors. • Replace the sensors if necessary.
H06.33	ODU heatsink temp	ODU heatsink temperature anomaly Heat sink = radiator
H06.34	ODU power module	Outdoor unit power module anomaly
H06.35	ODU superheat	Outdoor unit superheat anomaly
H06.36	Fan motor	Outdoor unit fan motor anomaly
H06.37	Overheat protection	ODU overheat protection activated
H06.38	ODU pressure	Outdoor unit pressure anomaly

Code	Message	Description
H06.39	ODU overcurrent	Outdoor unit compressor overcurrent
H06.40	ODU current sensor	Outdoor unit current sensor error
H06.41	ODU Tinl water	Outdoor unit current sensor error <ul style="list-style-type: none"> • Check the wiring between the main PCB and the sensor. • Check that the sensor has been fitted correctly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H06.42	ODU refrigerant	Outdoor unit refrigerant is anomalous
H06.43	DIP switch	The DIP switch on the interface board has a configuration error interface cabinet = FTC2BR PCB

11.2.4 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 user interface.

Tab.85

Code	Message	Description
E00.00	TFlow Open	Flow temperature sensor is either removed or measures a temperature below range <ul style="list-style-type: none"> • Check the wiring between the main PCB and the sensor • Check that the sensor has been correctly fitted • Check the Ohmic value of the sensor • Replace the sensor if necessary
E00.01	Flow temp sensor shorted or above range	Flow temperature sensor is either shorted or measures a temperature above range <ul style="list-style-type: none"> • Check the wiring between the main PCB and the sensor • Check that the sensor has been correctly fitted • Check the Ohmic value of the sensor • Replace the sensor if necessary



Code	Message	Description
E02.13	Blocking Input	<p>Blocking Input of the Control Unit from device external environment Input BL open.</p> <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 contact
E02.24	System flow locking active	<p>System water flow locking active Insufficient flow rate:</p> <ul style="list-style-type: none"> • Open a thermostatic radiator valve or the flow valve on the circuit concerned • Check that the error code disappears • Otherwise, follow one of the instructions below <p>The circuit is clogged:</p> <ul style="list-style-type: none"> • Make sure that the thermostatic valves or flow valves on the circuit concerned are fully open • Check that the filters are not obstructed and clean them if necessary • Clean and flush the installation if necessary <p>No circulation:</p> <ul style="list-style-type: none"> • Check that the valves and thermostatic valves are open. • Check that the filters are not obstructed and clean them if necessary • Check that the circulating pump is working correctly • Clean and flush the installation if necessary • Check the condition of the wiring and that the electrical connections are correctly positioned • Check the pump supply: if the pump does not work, replace it <p>Too much air:</p> <ul style="list-style-type: none"> • Completely vent the indoor unit and the installation for optimum running • Check that the automatic air vents are properly open (also check the hydroblock) <p>Incorrect wiring:</p> <ul style="list-style-type: none"> • Check that the electrical connections are correctly positioned <p>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

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  button.
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  button.
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-08	Information on the main EHC-08 PCB for the heat pump
MK3	Information on the user interface
SCB-04	Information on the SCB-04 PCB for the heat pump
GTW-Bluetooth	Information on the PCB for Bluetooth® communication

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 unit.
3. Switch off the power supply to the electric heating element, if present.
4. Switch off the power supply to the backup boiler, if present.
5. Drain the central heating system.

12.2 Disposal and recycling

Fig.95



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.

12.3 Recover refrigerants

When decommissioning the heat pump, all refrigerants need to be recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task is commenced.

Before attempting the procedure, ensure that:

- mechanical handling equipment is available, if required, for handling refrigerant cylinders;
- all personal protective equipment is available and being used correctly;
- the recovery process is supervised at all times by a competent person;
- recovery equipment and cylinders conform to the appropriate standards.

1. Become familiar with the equipment and its operation.
2. Isolate system electrically.
3. Pump down refrigerant system, if possible.
4. If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.

5. Make sure that cylinder is situated on the scales before recovery takes place.
6. Start the recovery machine and operate in accordance with instructions.

**Important**

- Do not overfill cylinders (no more than 80 % volume liquid charge).
- Do not exceed the maximum working pressure of the cylinder, even temporarily.

7. When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.

**Important**

Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked.

12.4 Labelling

Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed.

12.5 Recovery equipment

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriate refrigerants including, when applicable, flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.

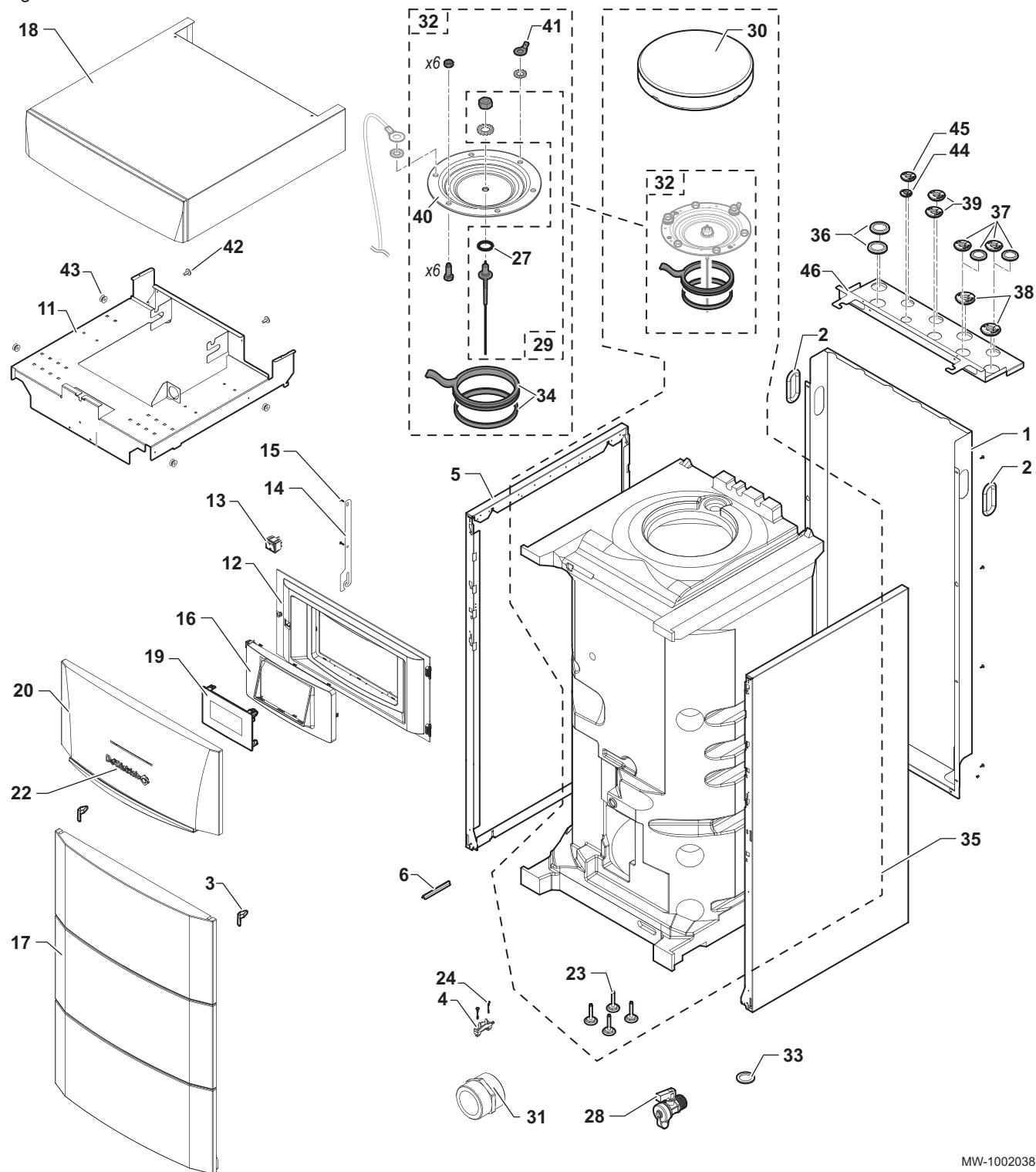
The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

13 Spare parts

13.1 Indoor unit

Fig.96 Base frame



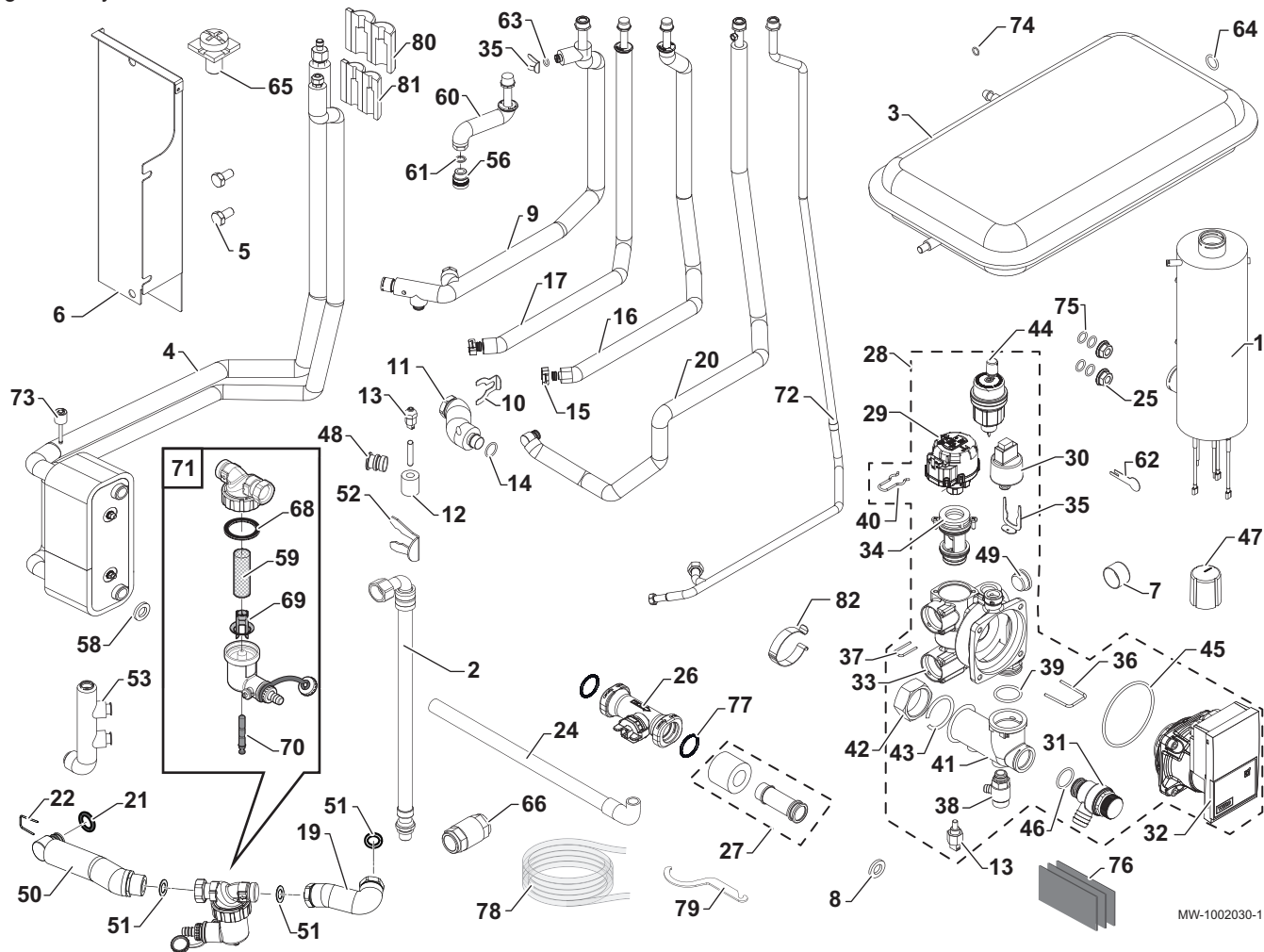
MW-1002038-1

Tab.86 List of spare parts for the base frame

Marker	Reference	Description
1	7657368	Rear panel
2	BRO303892	112 x 56 grommet
3	200019786	Door spring kit

Marker	Reference	Description
4	7618888	Strain relief
5	300024463	Side panel
6	95365613	Contact spring for sensor pocket
11	7780543	Expansion vessel bracket
12	7615287	User interface bracket
13	300024488	White bipolar switch
14	7619159	User interface hook
15	7684459	EJOT KB 35 x 12 screws
16	7616612	User interface bracket
17	200019243	Complete front panel
18	7675087	Top panel
19	7695390	User interface
20	300026529	Complete door and handle
22	97525389	Logo – length 125 mm
23	7657308	M8 x 35 x 60 adjustable foot (x4)
24	7610590	EJOT WN 5451 25 x 15 screws
27	300014305	14 x 4 EDPM O-ring
28	94902073	1/2" drain valve
29	200011817	Impressed current titanium anode
30	300024943	Inspection hatch insulation
31	94950132	G3/4" nipple Model with immersion heater: not available
32	200000092	Complete hatch TAS D112
33	95013062	Green gasket 30 x 21 x 2
34	89705511	Gasket kit, Ø 112 (7 mm) + Retainer ring, 5 mm
35	7787560	Complete tank
36	7685542	Ø 42 blanking plate
37	7617171 300001936	Ø 18 pipe feed-through for model with backup boiler Blanking plate for model with immersion heater
38	7617311	D22 pipe duct
39	7617171	Pipe grommet, Ø 18
40	89490548	Enamelled hatch
41	99100577	Ground ring with lug
42	7609710	RLX ST3 9 x 9,5 F ZN screw
43	94972158	Collar bushing Zn D12
44	7766801	1/4" pipe feed-through
45	7766802	1/2" pipe feed-through
46	7681889	Pipe support

Fig.97 Hydraulic circuit



MW-1002030-1

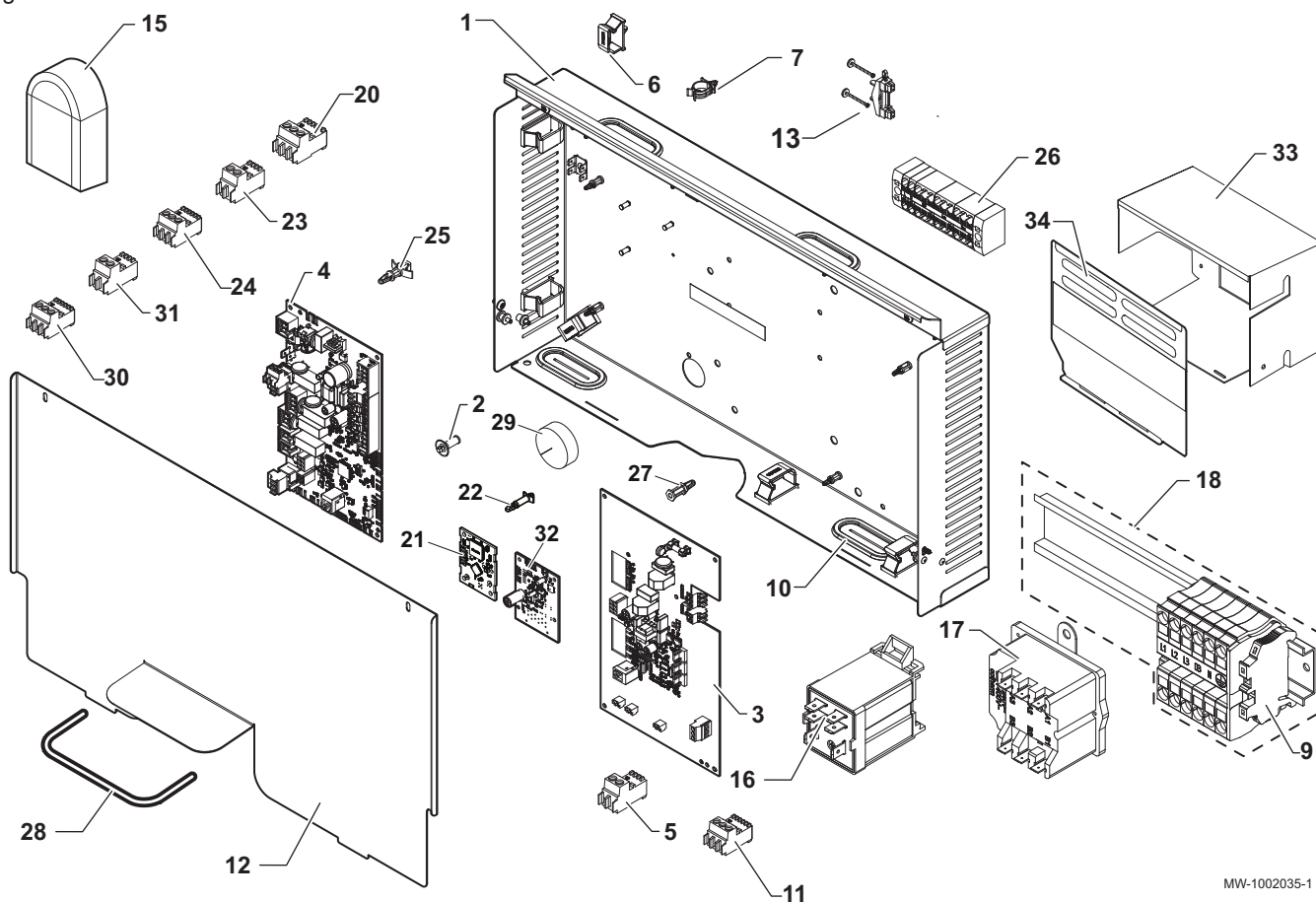
Tab.87 List of spare parts for the hydraulic circuit

Marker	Reference	Description
1	7618852	3-6 kW preheater for models with immersion heater Model with backup boiler: not available
2	300025392	DN8 3/8" - 1/2" straight hose
3	S62753	Expansion vessel RP 250 - capacity 8 litres
4	7791951	Condenser
5	95610593	H M 10 x 20 6.8 ZN8 screws Model with backup boiler: not available
6	7682394	Condenser assembly support
7	S62733	Pressure gauge
8	95013059	Ø 18.5 x 12 x 2 green gasket
9	7657028	Heating flow pipe
10	300023113	Pin for DN20
11	7780619	Flow meter exchanger pipe
12	7623411	Temperature sensor insulation PT100
13	7609871	Temperature sensor PT1000
14	300023277	O-ring - Ø 21.89 x 2.62
15	96350203	Clips for Ø 25 quick connection for models with backup boiler Model with immersion heater: not available
16	7658147	Hydraulic return pipe for models with backup boiler Model with immersion heater: not available
17	7658138	Hydraulic flow pipe for models with backup boiler Model with immersion heater: not available
19	7705515	Filter tank pipe

Marker	Reference	Description
20	7676850	Heating return pipe
21	95023311	21 x 3.5 EPDM O-ring
22	7611475	25 x 2.5 pin
24	7682224	Safety valve pipe
25	95890434	Serrated base nut H M8 Model with backup boiler: not available
26	300022989	Flow meter, HUBA DN20
27	7622042	Collector flow meter pipe
28	7675590	Complete hydroblock
29	7675593	Three-way valve motor
30	7611586	HUBA pressure switch
31	7611577	3-bar safety valve
32	7606561	YONOS circulating pump motor
33	7607701	Hydroblock body
34	7675592	Three-way valve cartridge
35	7611607	Safety valve pin
36	7607673	28.5 x 3 retaining pin
37	7611606	Pressure switch clip
38	7606586	Drain valve
39	7607684	25.07 x 2.62 EPDM O-ring
40	7611585	Three-way valve pin
41	7616569	Collector
42	7622530	Removable nut 1"
43	7622531	Ring nut 1"
44	7606593	Air ventOTMA
45	7606572	O-ring Ø 68 x 4
46	7101096	O-ring gasket 17.86 x 2.62
47	0303384	Protective cap for pressure gauge
48	300025325	T for quick connection plug
49	7611590	Plug
50	7705513	Hydroblock filter pipe
51	95013062	Ø 30 x 21 x 2 gasket
52	300024235	Blocking pin
53	7618992	Collector Model with immersion heater: not available
56	7605675	MF 3/4" dielectric union
58	95013062	Ø 30 x 21 x 2 gasket
59	7715767	Filter
60	7787158	Domestic hot water flow pipe
61	95013060	Ø 24 x 17 x 2 gasket
62	300023286	Bulb blocking pin Model with backup boiler: not available
63	95023308	EPDM 9.19 X 2.62 O-ring
64	95013058	Ø 14 x 8 x 2 gasket
65	7665153	Earth connection screw
66	94914285	Non-return valve 3/4" Model with immersion heater: not available
68	7715766	Gasket
69	7715768	Plastic insert
70	7715769	Magnet + O-ring
71	7777450	Complete magnetic filter
72	7657485	Domestic cold water pipe
73	7777342	Pressure sensor

Marker	Reference	Description
74	BRO349558	5 x 11 x 2 gasket
75	7622178	M8 x 1 plastic washer Model with backup boiler: not available
76	300024783	Insulation for connections
77	7775597	EPDM 21.89 x 2.62 O-ring, white
78	94994711	Drain valve drain pipe
79	7706481	Maintenance key
80	7781874	1/2" refrigerant connection insulation
81	7781876	1/4" refrigerant connection insulation
82	7776273	Sensor spring

Fig.98 User interface



MW-1002035-1

Tab.88 Spare parts list for the user interface

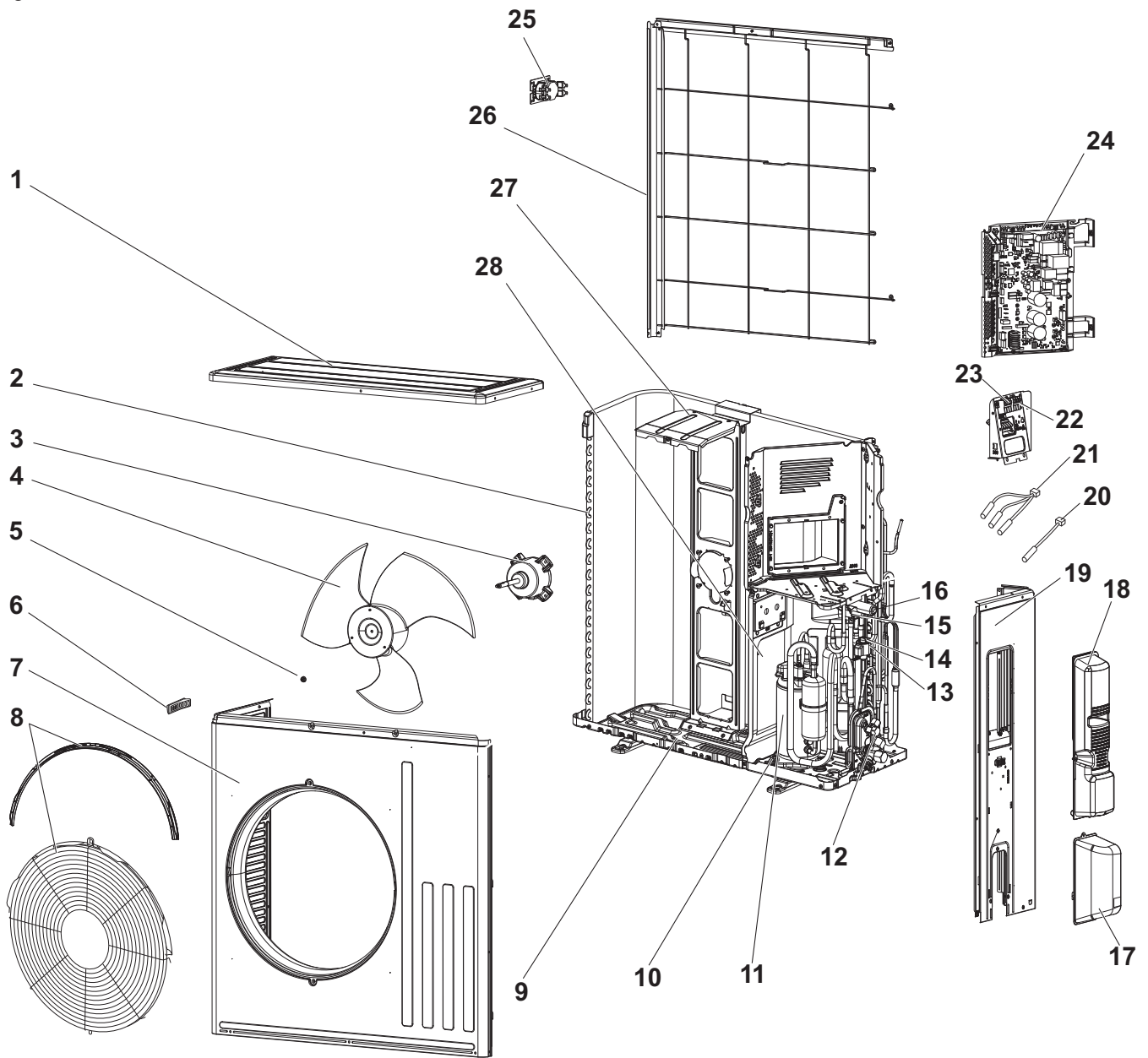
Marker	Reference	Description
1	7777668	User interface bracket
2	7626821	RICHCO spacer LCBS
3	7773429	FTC2BR interface PCB
4	7766891	EHC-08 central unit PCB
5	7632095	RAST5 connector, green
5	7632096	RAST5 3611connector
6	7643731	Cable way
7	95320950	Cable clamp Model with backup boiler: not available
9	7608561	WAGO connection terminal for models with immersion heater Model with backup boiler: not available
10	7681470	Oblong grommet
11	7674749	RAST5 connector, white

Tab.89 Spare parts list for the harnesses

Marker	Reference	Description
1	7622643	PCB earthing cable (complete)
2	7619619	Cable harness for three-way valve internal power supply
3	7622410	Earthing cable (complete)
4	7744664	L-Bus cable
5	7788480	Preheater cable harness for models with immersion heater Model with backup boiler: not available
6	88014936	VM earth wire Model with backup boiler: not available
8	7756630	Refrigerant sensor wire harness
9	7778096	Condenser sensor wire harness
10	7766188	Pump power supply cable
11	7778189	Sensor wire harness
12	7778089	S2-S3cable
13	7778059	Terminal block EHC PCB wire harness
14	7765243	FTC2BR EHC PCB wire harness
15	7756606	FTC2BR EHC bus wire harness
16	7778091	FTC2BR power supply wire harness
17	7777856	Main harness + ON/OFF button
18	7783320	ACI power supply cable

13.2 AWHPR 4 MR / AWHPR 6 MR / AWHPR 8 MR outdoor unit

Fig.100



MW-1001863-2

Tab.90







Marker	Reference	Description
1	7776135	Top panel
2	7776136	Coil (evaporator/condenser)
3	7776137	Fan motor
4	7776138	Fan rotor
5	7776139	Nut
6	7776140	Grip
7	7776141	Front panel

Marker	Reference	Description
8	7776142	Fan grill
9	7776153	Base frame
10	7776154	Compressor anti-vibration mount kit
11	7776155	Compressor SVB130FBBMT (models with AWHPR 4 MR)
11	7776156	Compressor SVB172FCKMT (models with AWHPR 6 MR or AWHPR 8 MR)
12	7776157	Stop valve kit
13	7776158	Expansion valve
14	7776159	Expansion valve coil
15	7776200	21S4 solenoid valve coil
16	7776201	4-way valve
17	7776202	Stop valve access panel
18	7776203	Power supply access panel
19	7776204	Right-hand side panel
20	7776205	RT65 outdoor temperature sensor
21	7776206	RT61-RT62-RT68 sensor kit
22	7776207	Terminal block TB1
23	7776208	Terminal block TB2
24	7776209	PC INVERTER 40 PCB (models with AWHPR 4 MR)
24	7776210	PC INVERTER 60 PCB (models with AWHPR 6 MR)
24	7776211	PC INVERTER 80 PCB (models with AWHPR 8 MR)
25	7776212	Sensor L
26	7776213	Rear protection grille
27	7776214	Motor bracket
28	7776215	Intermediate panel
-	7652699	Condensate discharge
-	7776134	Screw bag

14 Product fiche and package fiche

14.1 Product fiche

Tab.91 Product fiche for heat pump combination heaters

		AWHPR 4 MR	AWHPR 6 MR	AWHPR 8 MR
Space heating - Temperature application		Medium	Medium	Medium
Water heating - Declared load profile		L	L	L
Seasonal space heating energy efficiency class under average climate conditions				
Water heating energy efficiency class under average climate conditions				
Rated heat output under average climate conditions (<i>Prated or Psup</i>)	kW	5	6	7
Space heating - Annual energy consumption under average climate conditions	kWh	3009	3679	4504
Water heating - Annual energy consumption under average climate conditions	kWh	773	799	818
Seasonal space heating energy efficiency under average climate conditions	%	134	132	125
Water heating energy efficiency under average climate conditions	%	132.50	128.10	125.00
Sound power level L_{WA} indoors ⁽¹⁾	dB	29	31	32
Ability to off-peak hours functioning ⁽¹⁾		No	No	No

		AWHPR 4 MR	AWHPR 6 MR	AWHPR 8 MR
Rated heat output, under colder - warmer climate conditions	kW	4 – 5	5 - 6	5 – 7
Space heating - Annual energy consumption, under colder - warmer climate conditions	kWh ⁽²⁾	3801 – 1607	4284 – 2222	4215 – 2315
Water heating - Annual energy consumption, under colder - warmer climate conditions	kWh ⁽²⁾	1052 – 652	1217 – 700	1217 – 700
Seasonal space heating energy efficiency, under colder - warmer climate conditions	%	101 – 163	101 – 141	102 – 149
Water heating energy efficiency, under colder - warmer climate conditions	%	97.24 – 156.99	84.10 – 146.22	84.12 – 146.24
Sound power level L _{WA} outdoors	dB	56	57	59
(1) If applicable. (2) Electricity				

**See**

For specific precautions on assembly, installation and maintenance: see the "Safety Instructions" chapter

14.2 Product fiche – Temperature controller

Tab.92 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.101 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
 %

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 = + %

④

(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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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: $294/(11 \cdot \text{Prated})$, whereby "Prated" is related to the preferential space heater.
- IV The value of the mathematical expression $115/(11 \cdot \text{Prated})$, 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.93 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.94 Package efficiency

		AWHPR 4 MR	AWHPR 6 MR	AWHPR 8 MR
Seasonal space heating energy efficiency	%	134	132	125
Temperature control	%	+ 2	+ 2	+ 2
Seasonal space heating energy efficiency of package	%	136	134	127

14.4 Package fiche - Combination heaters (boilers or heat pumps)

Fig.102 Package fiche for combination heaters (boilers or heat pumps) indicating the water heating energy efficiency of the package

Water heating energy efficiency of combination heater ①

%

Declared load profile:

Solar contribution ②

from fiche of solar device

Auxiliary electricity

$(1.1 \times 'I' - 10\%) \times 'II' - 'III' - 'I' = +$ %

Water heating energy efficiency of package under average climate ③

%

Water heating energy efficiency class of package under average climate

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	G	F	E	D	C	B	A	A⁺	A⁺⁺	A⁺⁺⁺
<input type="checkbox"/> M	<27%	≥27%	≥30%	≥33%	≥36%	≥39%	≥65%	≥100%	≥130%	≥163%
<input type="checkbox"/> L	<27%	≥27%	≥30%	≥34%	≥37%	≥50%	≥75%	≥115%	≥150%	≥188%
<input type="checkbox"/> XL	<27%	≥27%	≥30%	≥35%	≥38%	≥55%	≥80%	≥123%	≥160%	≥200%
<input type="checkbox"/> XXL	<28%	≥28%	≥32%	≥36%	≥40%	≥60%	≥85%	≥131%	≥170%	≥213%

Water heating energy efficiency under colder and warmer climate conditions

Colder: $\text{③} - 0.2 \times \text{②} = \text{ } \%$

Warmer: $\text{③} + 0.4 \times \text{②} = \text{ } \%$

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-3000747-01

- I The value of the water heating energy efficiency of the combination heater, expressed in %.
- II The value of the mathematical expression $(220 \cdot Q_{ref})/Q_{nonsol}$, where Q_{ref} is taken from Regulation EU 811/2013, Annex VII Table 15 and Q_{nonsol} from the product fiche of the solar device for the declared load profile M, L, XL or XXL of the combination heater.
- III The value of the mathematical expression $(Q_{aux} \cdot 2,5)/(220 \cdot Q_{ref})$, expressed in %, where Q_{aux} is taken from the product fiche of the solar device and Q_{ref} from Regulation EU 811/2013, Annex VII Table 15 for the declared load profile M, L, XL or XXL.

15 Appendix

15.1 Name and symbol of the zones

Tab.95

Factory-set name	Factory-set symbol	Customer-set name and symbol	
CIRCA			
CIRCB			

15.2 Name and temperature of the activities

Tab.96 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.97 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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