User manual EN

Manuale d’uso IT

Mode d’emploi FR

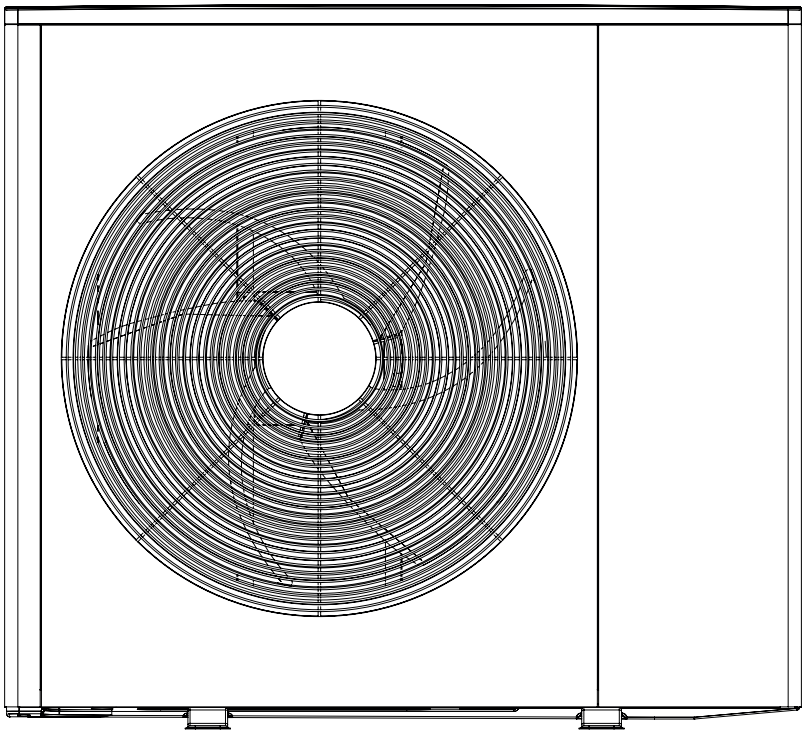
Benutzungsanleitungen DE

Instrucciones de uso ES

Instruções de uso PT

Air/water heat pump
Pompa di calore aria/acqua
Pompe à chaleur air/eau
Luft/Wasser-Wärmepumpe
Bomba de calor aire/agua
Bomba de calor ar/água

GENERA (ANGHP)



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Important information

SAFETY INFORMATION

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.

Do not start the heat pump if there is a risk that the water in the system has frozen.

Electrical installation and wiring must be carried out in accordance with national provisions.

The heat pump must be installed via an isolator switch. The cable area has to be dimensioned based on the fuse rating used.

RECOVERY

Leave the disposal of the packaging to the installer who installed the product or to special waste stations.

Do not dispose of used products with normal household waste. They must be disposed of at a special waste station or dealer who provides this type of service.

Improper disposal of the product by the user results in administrative penalties in accordance with current legislation.

FIXED PIPE CONNECTION

The heat pump is intended for a fixed pipe connection to heating and/or the hot water system.

HANDLING

The heat pump contains highly flammable refrigerant. Special care should be exercised during handling, installation, service, cleaning and scrapping to prevent damage to the refrigerant system and thus reduce the risk of leakage.

NOTE

Work on refrigerant systems must be carried out by personnel who have knowledge and experience of working with flammable refrigerants.

SAFETY PRECAUTIONS

WARNING!

Do not use agents to speed up the defrosting process or for cleaning, other than those recommended by the manufacturer.

The apparatus must be stored in a room with no continuous ignition sources (e.g. naked flame, an active gas installation or an active electric heater).

It must not be punctured or burned.

Be aware that the refrigerant may be odourless

GENERAL

Pipe installation should be kept to a minimum.

AREA CHECKS

Before work is started on systems that contains combustible refrigerants, safety checks must be performed to ensure that the ignition risk is kept to a minimum.

WORKING METHOD

The work must be carried out in a controlled way to minimise the risk of contact with combustible gas or liquid during the work.

GENERAL FOR THE WORKING RANGE

All maintenance staff and those who work in close proximity to the product must be instructed about which type of work is to be carried out. Avoid carrying out work in enclosed spaces. The area surrounding the worksite must be cordoned off. Ensure that the area is made safe by removing combustible material.

CHECK FOR THE PRESENCE OF REFRIGERANT

Check whether there is refrigerant in the area using a suitable refrigerant detector prior to and during work, to notify the service technician whether there is a possible flammable atmosphere or not. Ensure that the refrigerant detector is suitable for combustible refrigerant, i.e. does not generate sparks or cause ignition in any other way.

PRESENCE OF FIRE EXTINGUISHERS

If hot work is carried out on the heat pump, a powder or carbon dioxide fire extinguisher must be to hand.

ABSENCE OF IGNITION SOURCES

Pipes connected to the unit must not contain potential sources of ignition.

Those who carry out work with refrigerant system connections, including exposing pipes that contain or have contained combustible refrigerant, may not use potential ignition sources in such a way that can lead to risks of fire or explosions.

All potential ignition sources, including cigarette smoking, should be kept at a safe distance from the service work area where combustible refrigerant can leak out. Before carrying out work, the area surrounding the equipment must be checked to ensure that there are no ignition risks. “No smoking” signs must be displayed.

VENTILATED AREA

Ensure that the work is carried out outdoors or that the work area is ventilated before the system is opened and before any hot work is carried out. The area must be ventilated whilst the work is being carried out.
There must be ventilation around any refrigerant that comes out, which should be routed outdoors.

CHECKING COOLING EQUIPMENT

If electrical components are replaced, the replacement parts must be fit for purpose and have the correct technical specifications.
Always follow the manufacturer’s guidelines regarding maintenance and servicing. Contact the manufacturer’s technical department in the event of any doubts.
The following checks must be carried out for installations that use combustible refrigerants.

- The actual filling quantity is appropriate for the magnitude of the space where the parts containing refrigerant are installed.
- Ventilation equipment and outlet work correctly and without obstructions.
- If an indirect refrigerant circuit is used, check whether the secondary circuit contains refrigerant.
- All markings of equipment are visible and clear. Markings, signs and similar that are not clear must be replaced.
- Refrigerant pipes and components are positioned in such a way that it is not likely that they be subjected to substances that can corrode components containing refrigerant, if these components are not made of material that is resistant against corrosion, or not appropriately protected against such corrosion.

CHECKING ELECTRICAL EQUIPMENT

Repair and maintenance of electrical components must include initial safety checks and procedures for component inspection.
In the event of a fault, which can cause a safety risk, do not supply any power to the circuit until the fault has been rectified. If the fault cannot be rectified immediately and operation must continue, an adequate temporary solution must be implemented.
This must be reported to the equipment owner, so that all parties have been informed.

The following checks must be carried out at the initial safety checks.

- That the capacitors are discharged. Discharging must be done safely, to prevent the risk of sparking.
- That no powered electrical components or live cables are exposed when filling or collecting refrigerant or when the system is flushed.
- That the system is continually earthed.

REPAIRING SEALED COMPONENTS

When repairing sealed components, all electrical supply must be disconnected from the equipment that is being repaired before any sealed covers or similar are removed. If it is absolutely necessary to have an electricity supply to the equipment during the service, continuously activated leak tracing must be performed at the most critical points in order to warn of any dangerous situations.

Pay particular attention to the following so that the sheath is not changed in a way that affects the protection level when working with electrical components. This means damage to cables, unnecessary amounts of connections, terminals that do not follow the original specifications, damaged gaskets, incorrect grommets etc.

Ensure that the apparatus is secured properly.

Check that seals or sealing materials have not deteriorated to a degree that they can no longer prevent combustible gases from entering. Replacement parts must meet the manufacturer’s specifications.

NOTE

Use of silicone seals can hamper the efficiency of certain types of leak tracing equipment. Components with built in safety do not need to be isolated before starting work

WIRING

Check that cabling 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 aging or continual vibration from sources such as compressors or fans.

LEAK TESTING

The following leak detection methods are deemed acceptable for systems containing flammable refrigerants.

Electronic leak tracers must be used to detect combustible refrigerant; but the leak tracer may not be sufficiently sensitive or may need to be recalibrated (the leak tracing equipment must be calibrated in an area completely free from refrigerant). The leak tracer must not be a potential source of ignition and must be suitable for the relevant refrigerant. The leak tracing equipment must be set and calibrated for the relevant refrigerant, to ensure that the gas concentration is a maximum of 25% of the lowest combustible concentration (Lower Flammability Limit, LFL) of the relevant refrigerant.

Leak detection fluids are suitable for use with most refrigerants, but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.

If a leak is suspected, all naked flames shall be removed/ extinguished.

If a leak that requires brazing is detected, all refrigerant must be removed from the system and stored in a separate container.
Alternatively, the refrigerant can be stored separated from the brazing area in a part of the system at a safe distance from the leak, if this part of the system can be disconnected safely with shut-off valves. The system must be emptied in accordance with the section “Removal and draining”.

REMOVAL AND DRAINING

When a cooling circuit is opened for repairs – or for another reason– work must be carried out in a conventional manner. Due to the risk of fire it is important that best practice is applied. Follow the procedure below.

1. Remove the refrigerant.
2. Flush the circuit with inert gas.
3. Drain the circuit.
4. Flush through with inert gas.
5. Open the circuit by cutting or brazing.

Collect the refrigerant in the intended cylinders.
Clean the system with oxygen-free nitrogen to make the unit safe. This process may need to be repeated several times. Compressed air and oxygen must not be used.

Clean the system by breaking the vacuum with oxygen-free nitrogen and filling the system to working pressure, relieving the pressure to atmospheric pressure and finally pumping to vacuum. Repeat the process until no refrigerant remains in the system. After the final filling with oxygen free nitrogen, relieve the pressure in the system to atmospheric pressure, so that work can be carried out. This type of flushing must always be carried out if hot work is to be performed on the pipe system.

Ensure that the vacuum pump’s outlet is not near to any potential ignition sources and that there is satisfactory ventilation by the outlet.

FILLING

In addition to the conventional filling procedures, the following actions must be taken.

- Ensure that different refrigerants are not mixed when filling equipment is used.
  Hoses and lines must be as short as possible to minimise the enclosed refrigerant volume.
- Containers must be stored in a suitable position in accordance with the instructions.
- Ensure that the cooling system is grounded before the system is filled with refrigerant.
- Mark the system once filling is complete (if not already marked). If the amount differs from the pre-installed amount, the marking must include the pre-installed amount, the added extra amount and the total amount.
- Take extra care not to overfill the cooling system.

Before refilling the system, pressure test it with oxygen free nitrogen. Leak test the system after filling, but before using the system. Perform an additional leak test before leaving the installation.

DECOMMISSIONING

Before the device is taken out of operation, the technician must, without exception, be very familiar with the equipment and all its component parts. Good practice prescribes that all refrigerant is collected safely. Before the collected refrigerant can be reused, oil and refrigerant samples must be taken, if analysis is required. There must be a power supply when this task is started.

1. Familiarise yourself with the equipment and its use.
2. Isolate the system electrically.
3. Before starting the procedure, ensure that:

- necessary equipment for mechanical handling of the refrigerant container is available
- all necessary personal safety equipment is available and used correctly
- the collection process is continuously supervised by an authorised person
- the collection equipment and containers meet appropriate standards.

4. Pump the refrigerant system to vacuum, if possible.
5. If it is not possible to pump to vacuum, manufacture a branch, so that the refrigerant can be retrieved from different parts of the system.
6. Check that the refrigerant container is on the scales before starting to collect.
7. Start the collection device and collect according to the manufacturer’s instructions.
8. Do not overfill the containers (max. 80 % (volume) liquid content).
9. Do not exceed the containers’ maximum permitted working pressure – not even temporarily.
10. When the containers have been filled correctly and the process is complete close all shut-off valves in the equipment and remove the containers and equipment from the installation immediately.
11. The collected refrigerant must not be filled in any other system before being cleaned and checked.

Marking

The equipment must be marked stating that it has been taken out of operation and drained of refrigerant. The marking must be dated and signed. Check that the equipment is marked indicating that it contains combustible refrigerant.

Collection

Best practice prescribes that all refrigerant is collected safely when the refrigerant is drained from a system, either for servicing or for decommissioning.

The refrigerant must only be collected in suitable refrigerant containers. Ensure that the required number of containers, which can hold the entire volume of the system, are available. All containers that are to be used must be intended for the collection of the refrigerant and marked for this refrigerant (specifically designed for the collection of refrigerant).

The containers have to be equipped with correctly functioning pressure relief valves and shut-off valves.
Empty collection containers must be drained and, if possible, chilled before collection.

The collection equipment must function correctly and instructions for the equipment must be to hand. The equipment must be suitable for the collection of combustible refrigerant.

Fully functioning and calibrated scales must also be to hand.

Hoses must be in good condition and be equipped with leak-proof quick couplings.
Before using the collecting machine, check that it is working correctly and has been properly maintained. Associated electrical components must be sealed, to prevent ignition if any refrigerant should leak out.
Contact the manufacturer if you are in any doubt.

Return the collected refrigerant to the refrigerant supplier in the correct collection container and with the relevant Waste Transfer Note. Do not mix refrigerants in collection devices or containers.

If compressors/compressor oil are/is to be removed ensure that the affected device is drained to an acceptable level to ensure that no combustible refrigerant remains in the lubricant. Compressors must be drained before being returned to the supplier. Only electrical heating of the compressor housing may be used to quicken draining. Drain oil from the system in a safe manner.

MISCELLANEOUS

Maximum amount of refrigerant: See Technical Specifications in the Installer Manual.

- Everyone who works with or opens a refrigerant circuit must have a current, valid certificate from an accredited industry issuing body, which states that, according to the industry's recognised assessment standard, they have the authority to safely handle refrigerants.
- Servicing must only be performed according to the equipment manufacturer's recommendations.

Maintenance and repairs that require the assistance of another trained person must be carried out under the supervision of person with the authority to handle combustible refrigerants.
Maintenance and repair that requires the skill of another person must be carried out under the supervision of someone with the above expertise.

Contents

EN

1 - Important information

Installation data

Product	
Serial number	
Installation date	
Installer	

Accessories	

Serial number must always be given.
Certification that the installation is carried out according to instructions in the accompanying installer manual and applicable regulations.

Date:_____ Signed: _____

Symbols

Explanation of symbols that may be present in this manual.

NOTE

This symbol indicates danger to person or product.

CAUTION

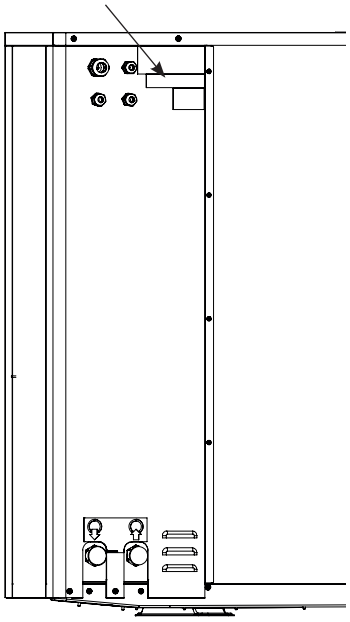
This symbol indicates important information about what you should observe when maintaining your installation.

TIP

This symbol indicates tips on how to facilitate using the product.

Serial number

The serial number can be found on the rear panel.

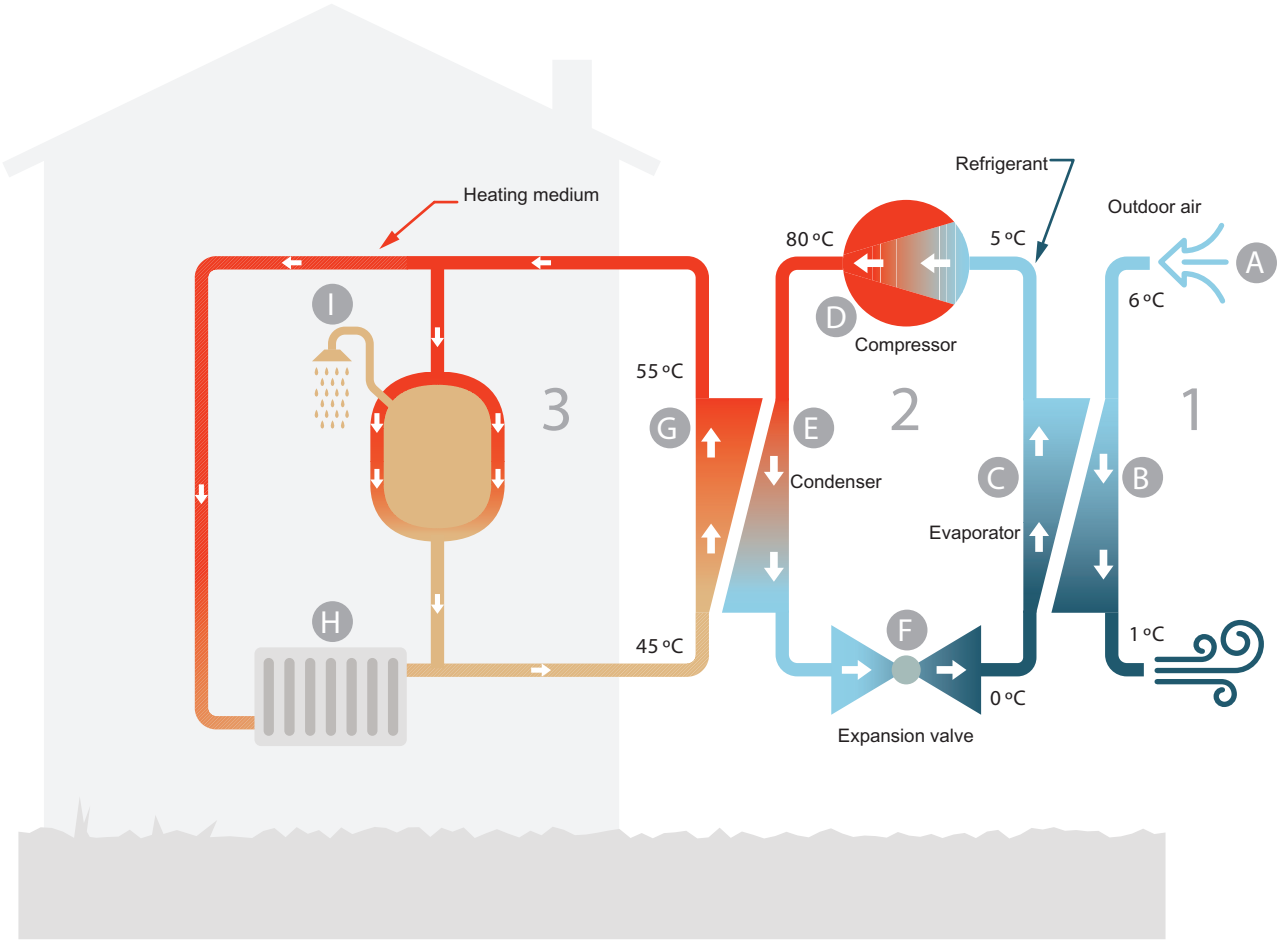


CAUTION

You need the product's serial number for servicing and support.

2 - Installation function

An air/water heat pump installation uses the outdoor air to heat up a home. The conversion of the outdoor air's energy into residential heating occurs in three different circuits.
From the outdoor air (1) free heat energy is retrieved and transported to the heat pump. The heat pump increases the retrieved heat's low temperature to a high temperature in the refrigerant circuit (2). The heat is distributed around the building in the heating medium circuit (3).



The temperatures are only examples and may vary between different installations and time of year.

Outdoor air

A The outdoor air is sucked into the heat pump.

B The fan then routes the air to the heat pump's evaporator. Here, the air releases the heating energy to the refrigerant and the air's temperature drops. The cold air is then blown out of the heat pump.

Refrigerant circuit

C A gas circulates in a closed system in the heat pump, a refrigerant, which also passes the evaporator. The refrigerant has a very low boiling point. In the evaporator the refrigerant receives the heat energy from the outdoor air and starts to boil.

D The gas that is produced during boiling is routed into an electrically powered compressor. When the gas is compressed, the pressure increases and the gas's temperature increases considerably, from 0°C to approx. 80°C.

E From the compressor, gas is forced into a heat exchanger, condenser, where it releases heat energy to the indoor module, whereupon the gas is cooled and condenses to a liquid form again.

F As the pressure is still high, the refrigerant can pass an expansion valve, where the pressure drops so that the refrigerant returns to its original temperature. The refrigerant has now completed a full cycle. It is routed to the evaporator again and the process is repeated.

Heat medium circuit

G The heat energy that the refrigerant produces in the condenser is retrieved by the indoor module's water, the heating medium, which is heated to 55°C (supply temperature).

H The heating medium circulates in a closed system and transports the heated water's heat energy to the house radiators/heating coils.

I The indoor module's integrated charge coil is placed in the boiler section. The water in the coil heats up the surrounding domestic hot water.

3 - Control of the heat pump

You control the heat pump via your control module (GENERA Controller).
See the Installer Manual of the control module.
During installation, the installation engineer adjusts the necessary settings for the heat pump in the control module, so that the heat pump works optimally in your system.

4 - Maintenance of the heat pump

Regular checks

When your heat pump is located outdoors some external maintenance is required.

NOTE

Insufficient maintenance can cause serious damage to the heat pump, which is not covered by the guarantee.

CHECKING GRILLES AND BOTTOM PANEL

Check regularly throughout the year that the grille is not clogged by leaves, snow or anything else.

You should be particularly vigilant during windy conditions and/or in the event of snow, as the grille can become blocked.

Also check that the drain holes in the bottom panel are free from dirt and leaves.

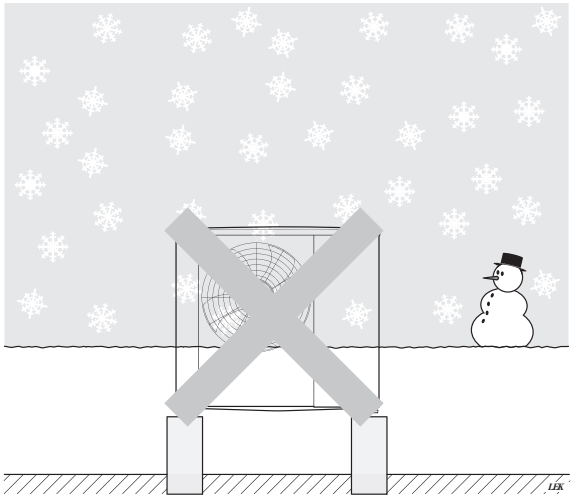
Regularly check that condensation is routed away correctly through the condensation pipe. Ask your installer for assistance if required.

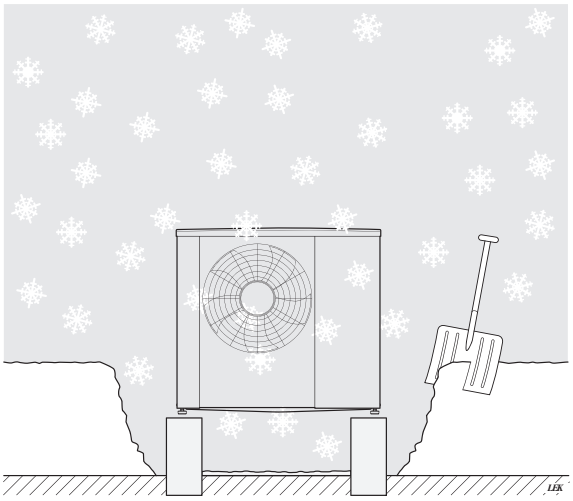
CLEANING THE OUTER CASING

If necessary the outer casing can be cleaned using a damp cloth.

Care must be exercised so that the heat pump is not scratched when cleaning. Avoid spraying water into the grilles or the sides so that water penetrates into the unit. Prevent the unit coming into contact with alkaline cleaning agents.

Keep free of snow and ice





In the event of long power cuts
In the event of prolonged power failures it is recommended that the part of the heating system located outdoors is drained. Your installer has installed a shut off and drain valve to facilitate this. Call and ask your installer if you are unsure.

Silent mode
The heat pump can be set to “Silent mode”, which reduces the heat pump’s noise level. This function is useful when the unit must be placed in noise-sensitive areas. The function should only be used for limited periods, because the heat pump might not reach its dimensioned power.

Updating the software
Information about updating software can be found in the Installer Manual of your control module.

5 - Disturbances in comfort

In most cases, control module notes a malfunction (a malfunction can lead to disturbance in comfort) and indicates this with alarms and action instructions in the display.

NOTE

Work behind covers secured by screws may only be carried out by, or under the supervision of, a qualified installation engineer.

Troubleshooting
If the operational interference is not shown in the display the following tips can be used:

BASIC ACTIONS
Start by checking the following:

- All supply cables to the heat pump are connected.
- Group and main fuses of the accommodation.
- The property’s earth circuit breaker.
- The heat pump’s fuse / automatic protection.
- The control module’s fuses.
- The control module’s temperature limiters.
- That the heat pump does not have any external damage.

WATER BELOW THE UNIT (LARGER AMOUNT)

- Fit an accessory KVR to divert condensation from the air/water heat pump.
- Check that the water drainage via the condensation pipe (KVR) is working.

argoclima S.p.A.
Via Alfeno Varo, 35 - 25020 Alfianello - BS - Italy
Tel. +39 030 7285700
www.argoclima.com