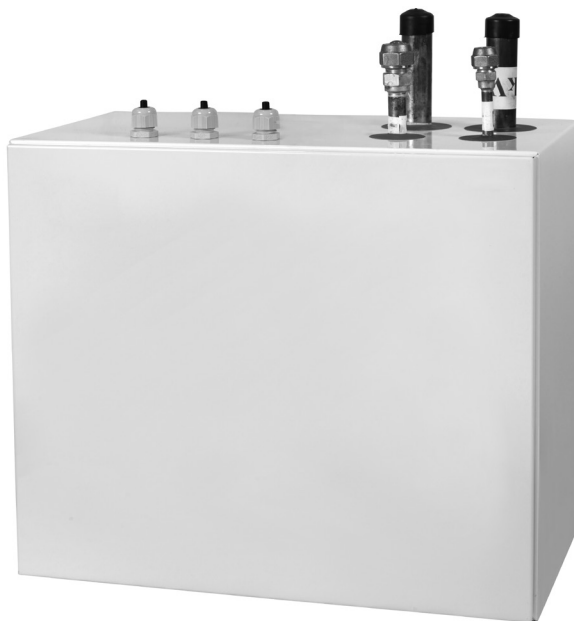


SPLIT BOX FOR AIR-WATER HEATPUMP

08:211-1805



MANUAL
SPLIT BOX 6 kW
SPLIT BOX 8/12 kW
SPLIT BOX 16 kW

TABLE OF CONTENTS

Introduction	3
1. About the product.....	3
2. Transport, Handling and Delivery	8
3. Positioning	9
4. Water Circuit	11
5. Refrigerant Circuit	12
6. Electrical Connections	12
7. Control and Operation.....	13
8. Maintenance	13
9. Disassembly and Decommissioning.....	13
10. Troubleshooting and Repair	13
11. Declaration of Conformity.....	15
12. Product and Installer Information.....	15

INTRODUCTION

The aim of this manual is to give information, instructions and warnings on the split box for air to water heat pumps. The manual is to be used by installers and plumbers as well as by end users, since it contains important safety indications.

The manual is a part of the split box and it is to be conserved with care, since it contains important installation and maintenance instructions that can be useful to assure a long life time and an efficient operation.

1. ABOUT THE PRODUCT

The product is an indoor condenser unit that has been designed according to EU directives. The product is intended for co-operation with an air to water heat pump for space heating and hot water production for domestic use. The unit has been designed to be ready for installation. The unit is intended for refrigerant R410A.

The unit is delivered with the refrigerant circuit charged with nitrogen to avoid contamination and ingress of water.

The unit is equivalent to the HBS 05 in terms of performance.

1.1. Safety precautions

- The product shall be installed, commissioned, repaired only by qualified technicians.
- Incorrect installation can result in damages of properties and injuries to people and animals.
- The unit shall be disconnected from the power supply when the cover is off.
- The unit shall not be used by children or people with limited physical or mental capacity.
- Children should be supervised to ensure that they do not play with the appliance.
- Cleaning and maintenance shall not be made by children without supervision.
- Do not place flammable materials in contact or close to the unit.
- The water system and the refrigerant system should be installed as stated in the manual.
- When in service, the unit should not be placed in sub-zero temperature areas.
- When not in service, the unit can be placed in sub-zero temperature areas, but all the water in the heat exchanger and associated pipe work should be removed.
- The unit should be used only for its specified use. The manufacturer is not liable for any damages due to failure to observe this manual.
- Take all the possible precautions to avoid incidents.
- The product is intended for R410.

1.2. Safety instructions - Cooling circuit

- Only skilled and trained technicians shall carry out repair and service of the heat pump circuit.
- Before opening the cooling circuit, discharge the refrigerant to a level that allows safe working conditions.
- The refrigerant can be toxic if inhaled or if in high concentrations.
- Special attention should be given if the work is carried out with an open flame.

1.3. Serial number

The serial number can be found on the nameplate which is located under the front cover of the split box.

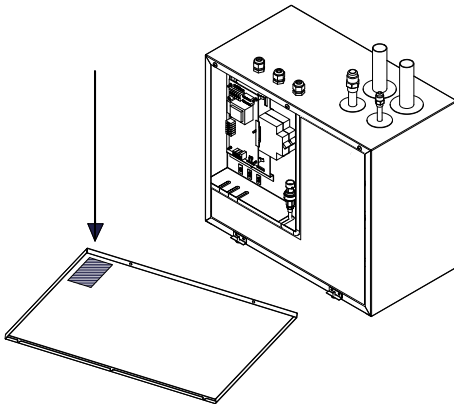


Figure 1. Name plate and serial number.

1.4. Technical data

The split box is composed of a plate heat exchanger which transfer heat from condensing refrigerant to a water circuit. Required temperature sensors, refrigerant filter and pressure transmitter together with control board ensures correct operation of the unit.

1.4.1. Process and Instrumentation Diagram

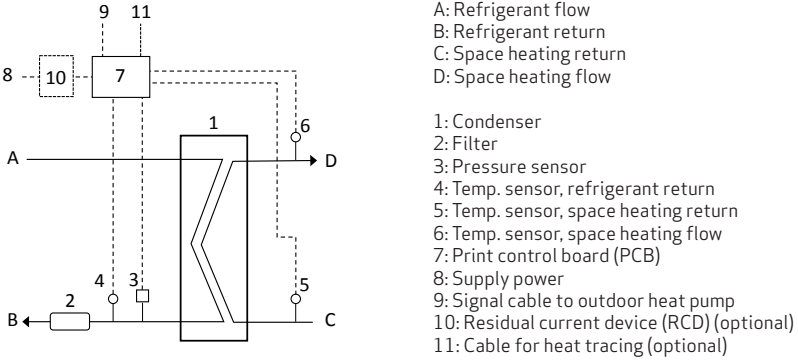


Figure 2. Process and instrumentation diagram.

1.4.2. Component location

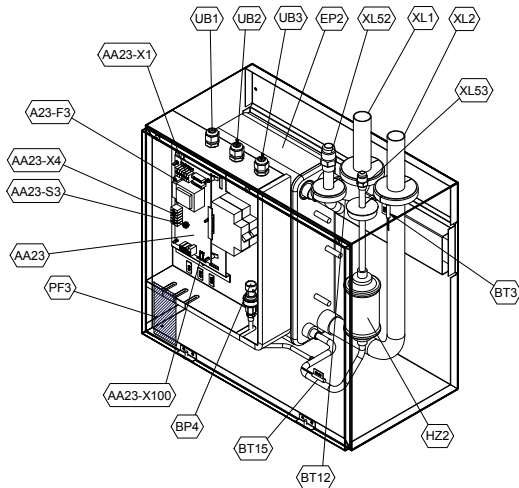


Figure 3. Component location

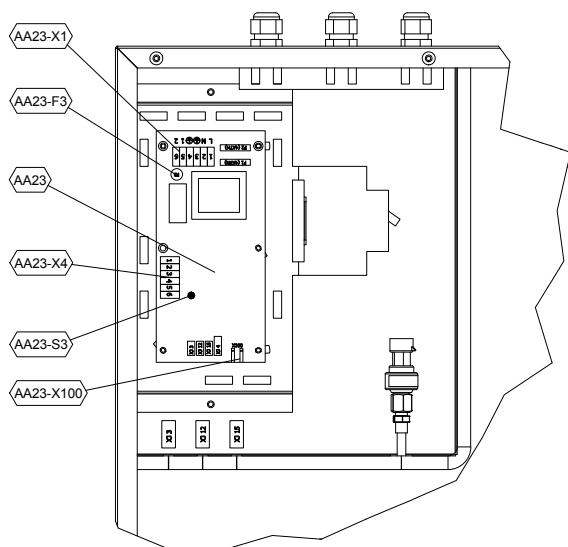


Figure 4. Electrical component location.

Pipe connections

XL1	Climate system supply
XL2	Climate system return
XL52	Connection, gas line
XL53	Connection, liquid line

Valves etc.

EP2	Heat exchanger
HQ1	Particle filter (supplied)
HZ2	Drying filter

Electrical components

AA23	Communication board
AA23-F3	Fuse for external heating cable
AA23-S3	DIP switch, addressing of outdoor unit
AA23-X1	Terminal block, incoming supply, connection of KVR
AA23-X4	Terminal block, communication with indoor module/control module
AA23-X100	Terminal block, communication with outdoor unit
X1	Terminal block, incoming supply

Sensor, thermostats

BP4	Pressure sensor, high pressure
BT3	Temperature sensor, heating medium, return
BT12	Temperature sensor, condenser, supply
BT15	Temperature sensor, fluid pipe

Miscellaneous

UB1	Cable gland
UB2	Cable gland
UB3	Cable gland

Nomenclature according to standard IEC 81346-1 and 81346-2.

1.4.3. Main technical data

The main technical data are collected in the following figures and table.

		6 kW	8/12 kW	16 kW
Dimensions (LxBxH)	mm	460x250x400		
Weight	kg	16	18	23
Water connections (compression fittings)	mm	ø22	ø28	ø28
Refrigerant hot gas inlet (flow)	"	1/2	5/8	5/8
Refrigerant condensate outlet (return)	"	1/4	3/8	3/8
Maximum allowed water pressure	MPa	1,0		
Maximum allowed water temperature	°C	90		
Maximum allowed refrigerant pressure	MPa	4,15		
Maximum allowed refrigerant temperature	°C	110		
Electrical connections		230V -50Hz		
Recommended fuse rating	A	6		
Ingress protection rating		IP21		
Water quality, climate system		≤EU-directive no. 98/83/EF		

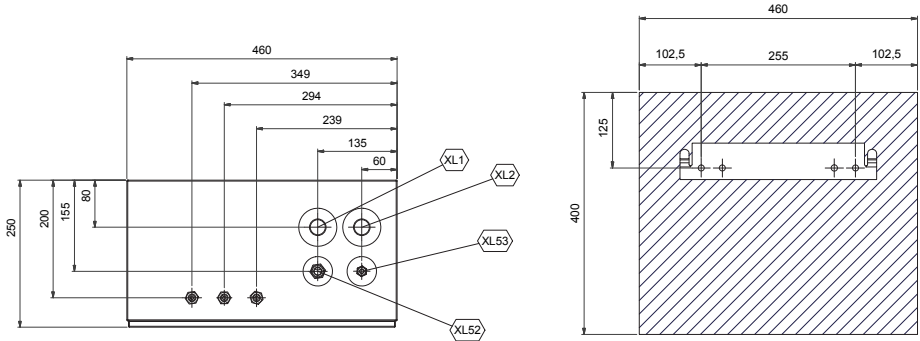


Figure 5. Dimensions.

2. TRANSPORT, HANDLING AND DELIVERY

Immediately upon receipt, the unit must be examined to make sure that it is intact and undamaged. If not, the shipping company must be informed immediately. The recipient has the responsibility for all the shipments unless otherwise agreed.

2.1. Delivery mode

The appliance is delivered with a ball valve with particle filter for the water circuit.

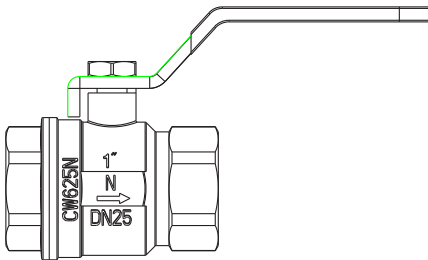


Figure 6. Ball valve with particle filter.

The unit is delivered purged with nitrogen in the refrigerant circuit.

2.2. Storage

The unit must be stored and transported free of water and within its packaging. Transport and storage may take place at temperatures between -10°C and $+50^{\circ}\text{C}$. If the unit has been transported or stored at sub-zero temperatures the unit should be left at room temperatures for 24 hours before commissioning.

3. POSITIONING

- It is recommended that the split box is installed in a room with existing floor drainage, most suitably in a utility room or boiler room.
- The bracket for the split box is mounted to the wall by use of appropriate screws.
- Route pipes so they are not fixed to an internal wall that backs on to a bedroom or living room.
- Ensure that there is approx. 800 mm free space in front of and sufficient space above the product for any future service. Ensure that there is sufficient space above the machine for pipework and valves.

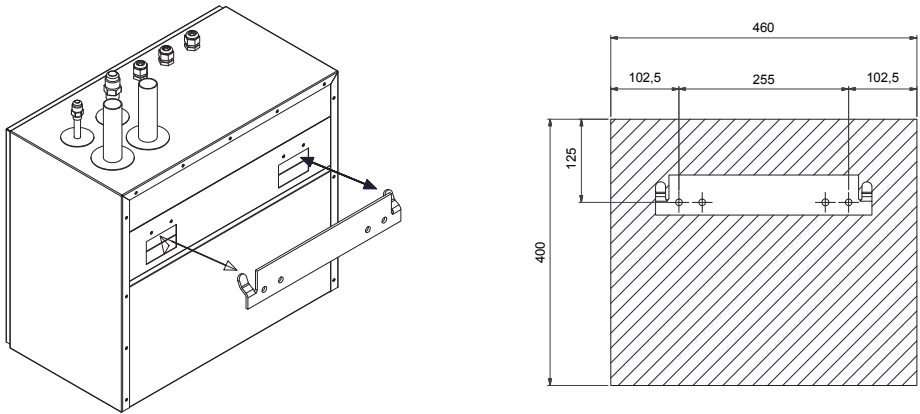
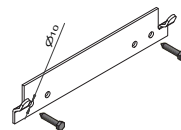


Figure 7. Mounting of the split box.



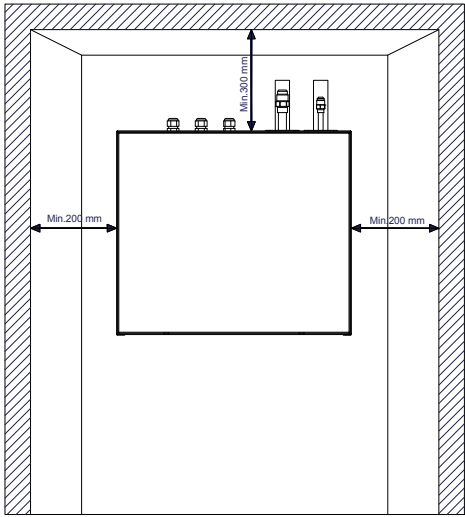


Figure 8. Recommendation for positioning on wall.

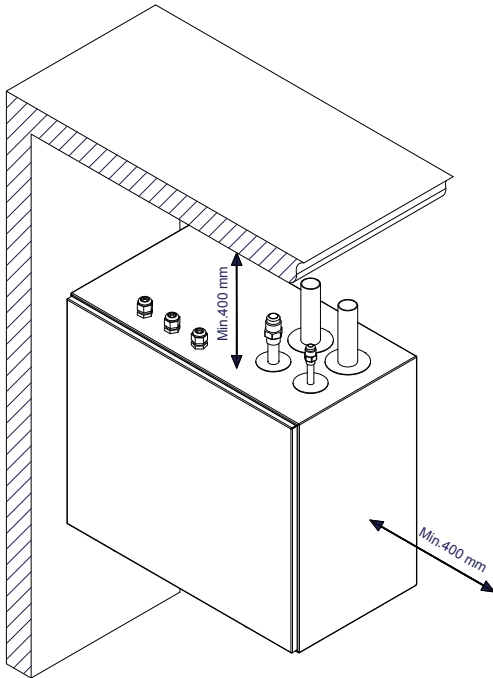


Figure 9. Recommendation for positioning in corner.

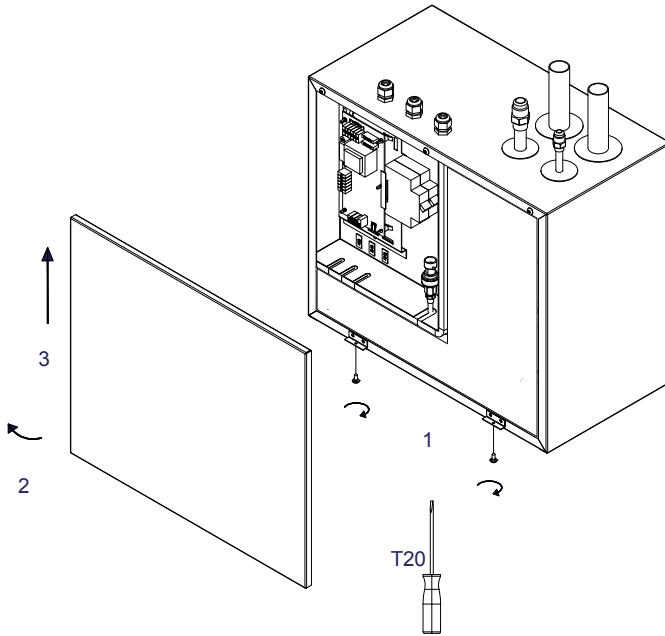


Figure 10. How to remove the front cover.

4. WATER CIRCUIT

Pipe installation must be carried out in accordance with current norms and directives.

The split box is not equipped with shut off valves on the water side (XL1 and XL2), these must be installed to facilitate any future servicing.

When operating the split box free flow in the climate system is recommended for correct heat transfer. This can be achieved by use of a bypass valve. If free flow cannot be ensured, it is recommended that a buffer tank is installed.

Install the supplied ball valve with particle filter on the climate system return pipe, XL2, to protect the heat exchanger in the split box.

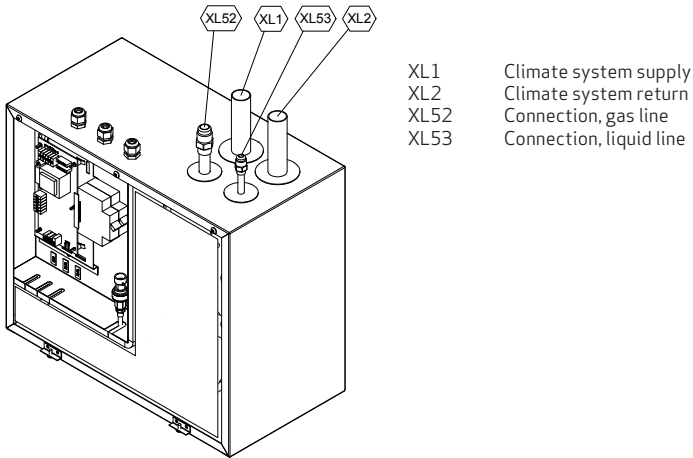


Figure 11. Pipe connections.

NOTE

The pipe work must be flushed before the heat pump is connected, so that any contaminants do not damage the components.

5. REFRIGERANT CIRCUIT

Install the refrigerant pipes (XL52 and XL53) between the outdoor module and the split box.

Installation must be carried out in accordance with current norms and directives. Observe the maximum pipe length, maximum high differences, pipe materials, pipe diameters and other instructions as given in the installation manual for the outdoor unit.

Install, test and commission the pipes between the split box to the outdoor unit according to the guidance and instructions in the outdoor unit installation manual.

6. ELECTRICAL CONNECTIONS

Electrical installation and service must be carried out under the supervision of a qualified electrician. Electrical installation and wiring must be carried out in accordance with local rules and current norms and directives.

Connect the split box to the outdoor unit according to the instructions in the outdoor unit installation manual.

7. CONTROL AND OPERATION

Control and Operation shall be in accordance with the instructions for the outdoor unit.

8. MAINTENANCE

The particle filter in the supplied ball valve shall be cleaned after installation. Turn the handle to off-position and undo the filter cap. Clean the filter cartridge, reassemble and turn the handle to on-position.

9. DISASSEMBLY AND DECOMMISSIONING

The unit has to be decommissioned in the most environmentally proper manner. When the product is discarded, please observe the local municipal waste removal regulations.

10. TROUBLESHOOTING AND REPAIR

The condenser and associated pipes and pipe components is fully casted into high efficient poly-urethane foam to ensure excellent insulation and heat preservation properties. Therefore, component replacement is limited to the electrical control board, pressure transmitter and temperature sensors.

10.1. Replacing temperature sensors BT3 and BT12 for the water pipes

- Leave the existing sensor in place.
- Install new sensor on the relevant pipe, BT3 on XL2 (Climate system return) and BT12 on XL1 (Climate system supply) right above the spit box.
- Ensure good contact between sensor and pipe and good insulation.
- Guide the sensor cable to the control board by use of a spare cable gland (UB1, UB2 or UB3).

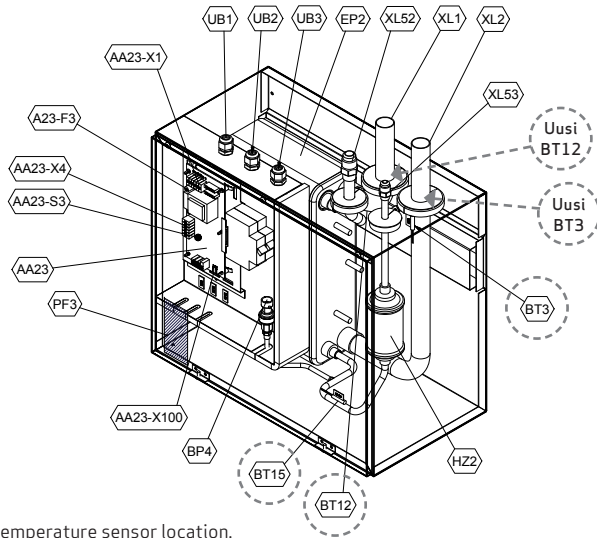


Figure 12. General temperature sensor location.

10.2. Replacing temperature sensor BT15 for the condensate return pipe (XL53)

- Carefully cut away insulation material in the indicated squared box in front of the temperature sensor.
- Remove the old sensor, clean the pipe and make space to the replacement sensor.
- Install the sensor. The sensor shall be located ABOVE the pipe.
- Insure good contact between sensor and pipe and good insulation.
- Guide the sensor cable to the control board behind the front cover.

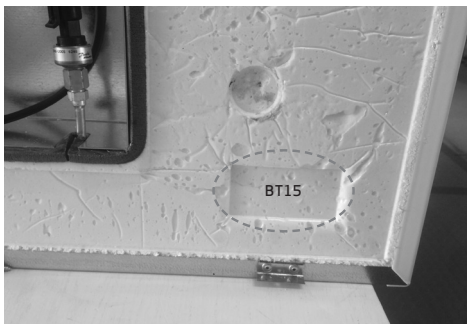


Figure 13. Temperature sensor BT15 location.

11. DECLARATION OF CONFORMITY

The Declaration of Conformity can be downloaded at www.METROTHERM.dk

12. PRODUCT AND INSTALLER INFORMATION

Installed model: _____

Serial number: _____

Accessories: _____

Installers

Pipe installation

Date: _____

Company: _____

Name: _____

Phone number: _____

Electrical installation

Date: _____

Company: _____

Name: _____

Phone number: _____

Commissioning

Date: _____

Company: _____

Name: _____

Phone number: _____



METRO THERM A/S
RUNDINSVEJ 55
3200 HELSINGE

INFO@METROTHERM.DK
WWW.METROTHERM.DK