Installer manual

CTC EcoAir C100

Modulating air-to-water heat pump
Model C106 / C108 / C112 / C116
400V 3N~ / 230V 1N~

Translation of the original instructions.
Keep for future use.
Read carefully before use.

162 905 70-1 P93786 2026-02-13

Table of Contents

Important information

Safety information

This manual describes installation and service procedures for implementation by specialists.

The manual must be left with the customer.

For the latest version of the product's documentation, see ctc.se.

CAUTION!

Also read the enclosed Safety Manual before starting the installation.

Symbols

Explanation of symbols that may be present in this manual.

CAUTION!

This symbol indicates danger to person or machine.

NOTE!

This symbol indicates important information about what you should consider when installing or servicing the installation.

TIP!

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

Marking

Explanation of symbols that may be present on the product's label(s).


Fire hazard!

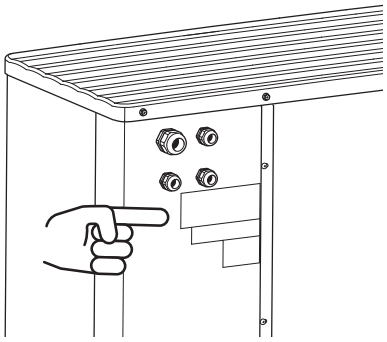

Read the User Manual.


Read the User Manual.


Read the Installer Manual.

Serial number

The serial number can be found at the top left on the rear of CTC EcoAir on the type plate (PZ1).



NOTE!

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

Inspection of the installation

Current regulations require the heating installation to pass an installation inspection before it is commissioned. The inspection must be carried out by a suitably qualified person. In addition, complete the page in the User Manual for information about the installation data.

✔	Description	Notes	Signature	Date
Heating medium (page 22)				
	Water quality			
	System flushed			
	System vented			
	Particle filter			
	Shut-off valve			
	Tapping valve			
	Charge flow set			
	Safety valve (opening pressure)			
Electricity (page 23)				
	Fuses property			
	Safety breaker			
	Earth circuit-breaker			
	Heating cable type/effect			
	Fuse size, heating cable (F3)			
	Communication cable connected			
	CTC EcoAir addressed (only when cascade connection)			
	Cooling permitted			
	Connections			
	Main voltage			
	Phase voltage			
	Update to the latest version of the software in the indoor module/control module.			
Condensation water pipe				
	Insulation for condensation water pipe, thickness (unless KVR is used)			
	Heating cable, if installed (voltage and length)			
Miscellaneous				

Delivery and handling

Transport

CTC EcoAir should be transported and stored vertically in a dry place.

> **CAUTION!**
>
> Ensure that the heat pump cannot fall over during transport.

Check that CTC EcoAir has not been damaged during transport.

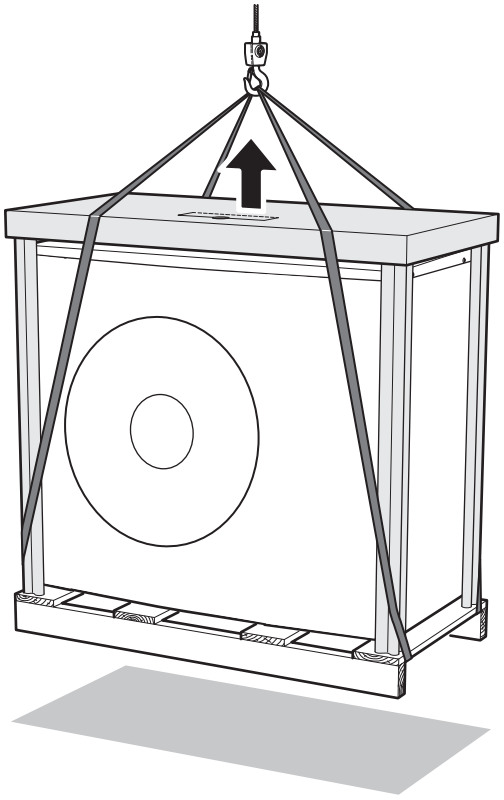
LIFT FROM THE STREET TO THE SET UP LOCATION

If the surface allows, the easiest method is to use a pallet truck to move the heat pump to the installation area.

The centre of gravity is offset to one side (see print on the packaging).

If the heat pump needs to be transported across soft ground, such as a lawn, we recommend using a crane truck that can lift it to the installation location. When the heat pump is lifted with a crane, the packaging must be intact.

If a crane truck cannot be used, the heat pump can be transported on an extended sack truck. The heat pump must be taken hold of from its heaviest side and two people are required to lift it.



LIFT FROM THE PALLET TO FINAL POSITIONING

1. Remove the packaging.
2. Dismantle the load anchor to the pallet.
3. Place lifting straps around each foot. It is recommended that two people perform the lift from the pallet to the base.

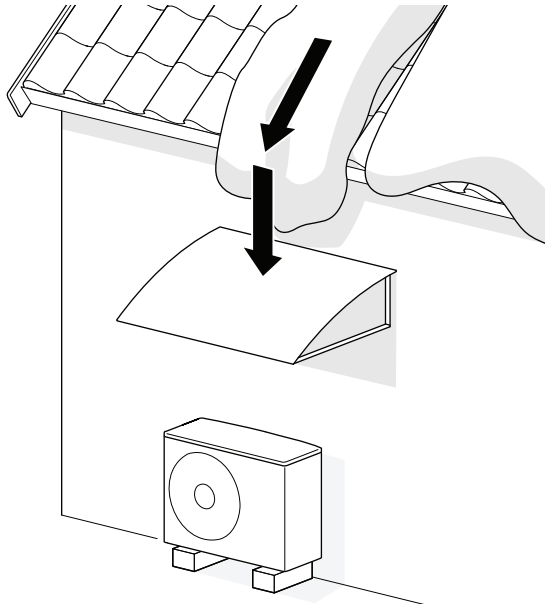
SCRAPPING

When scrapping, remove the heat pump in reverse order. In this case, lift by the base plate rather than the pallet.

Assembly

- Place the heat pump in a suitable location outdoors to prevent any risk of the refrigerant flowing in through ventilation openings, doors or similar openings in the event of a leak. It must also not constitute a hazard to people or property in any other way.
- If the heat pump is placed in a location where any refrigerant leak could accumulate, for example below ground level (in a dip or low-lying recess), the installation must satisfy the same requirements that apply for gas detection and the ventilation of engineering rooms. Requirements regarding sources of ignition must be applied where appropriate.
- Place CTC EcoAir outdoors on a solid level base that can take the weight, preferably a concrete foundation. If concrete slabs are used they must rest on asphalt or shingle.

  Secure the unit to the base with four anchor bolts. Use the four dampers enclosed with the unit to ensure that the unit is securely anchored, which also reduces vibrations and noise.
- CTC EcoAir should not be positioned next to noise sensitive walls, for example, next to a bedroom.
- Also ensure that the placement does not inconvenience the neighbours.
- CTC EcoAir must not be placed so that recirculation of the outdoor air is possible. Recirculation entails reduced power and impaired efficiency.
- The evaporator must be sheltered from direct wind / , which negatively affects the defrosting function. Place CTC EcoAir protected from wind / against the evaporator.
- Do not install CTC EcoAir in locations where there might be substances in the atmosphere that might affect the unit, such as sulphide gas, chlorine, acid or alkaline substances, very salty air.
- Do not install CTC EcoAir in locations where powder may be present in the air, such as carbon fibre, metal powder.
- Large amounts of condensation, as well as melt water from defrosting, may be produced. Condensation must be led off to a drain or similar (see section “Condensation water").
- If there is a risk of snow slip from roof, a protective roof or cover must be erected to protect the heat pump, pipes and wiring.



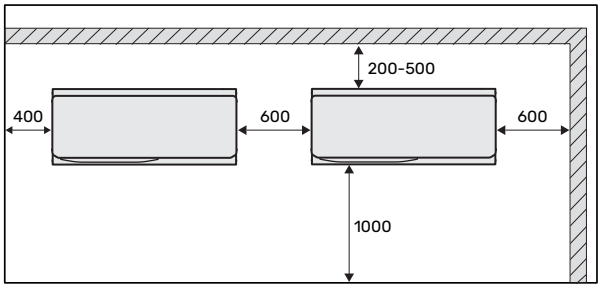
INSTALLATION AREA

Leave a free space of at least 200 mm between CTC EcoAir and the house wall, but not more than 500 mm in windy locations.

Leave a free space of 1,000 mm in front of, and 1,000 mm above, the product.

Approx. 600 mm free space is needed on the right-hand side to allow the front panel to be removed.

The lower edge of the evaporator must not be lower than the level of the average local snow depth, or at least 300 mm above ground level. The base should be at least 70 mm tall.



Condensation

Connect the enclosed condensation outlet (KVA) to the connection (XL40) on the bottom panel to divert the condensation away.

> **CAUTION!**
>
> It is important to the heat pump function that condensation water is led away and that the drain for the condensation water run off is not positioned so that it can cause damage to the house.
>
> Pipe with heating cable (KVR), for draining the condensate drip tray, is not included. To guarantee this function, the accessory KVR should be used.

- The condensation water (up to 50 litres / 24 hrs) must be routed away by a pipe to an appropriate drain, it is recommended that the shortest outdoor length possible is used.
- The section of the pipe that can be affected by frost must be heated by the heating cable to prevent freezing.
- Route the pipe downward from the heat pump.
- The outlet of the condensation water pipe must be at frost free depth.
- Use a water trap for installations where air circulation may occur in the condensation water pipe.
- The insulation must seal against the bottom of the condensation water trough.

CONDENSATE DRIP TRAY HEATER, CONTROL

The condensate drip tray heater starts when the following conditions are met:

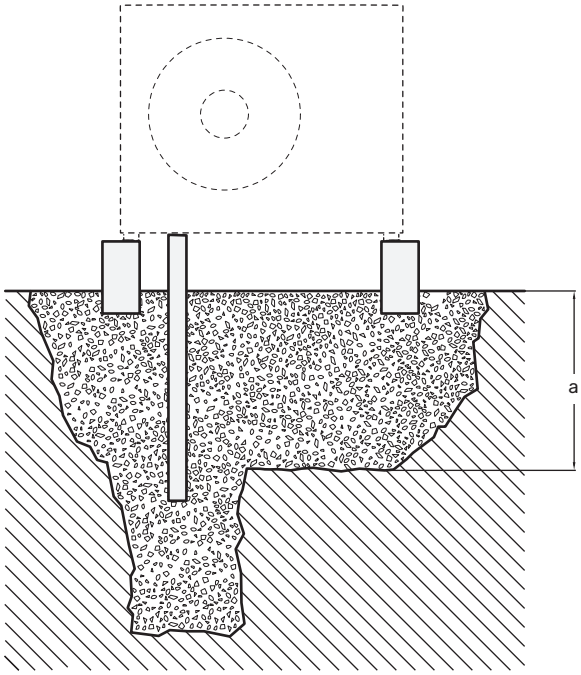
1. The compressor has been in operation for at least 30 minutes after last start.
2. The ambient temperature is lower than 1 °C.

DRAINAGE OF CONDENSATION

> **NOTE!**
>
> If none of the following recommended alternatives is used, good drainage of condensation must be provided.

Stone caisson

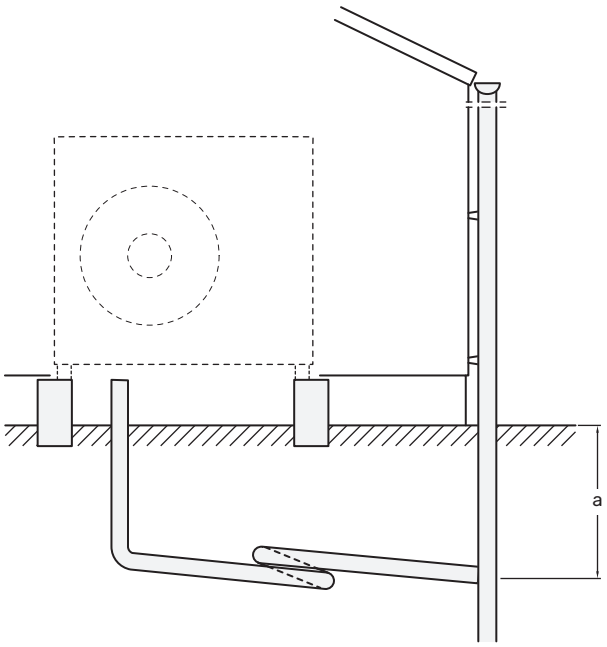
If the house has a cellar the stone caisson must be positioned so that condensation water does not affect the house. Otherwise, the stone caisson can be positioned directly below the heat pump.



a = Frost-free depth

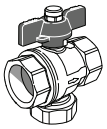
Gutter drainage

Route the pipe sloping down from the heat pump. The condensation water pipe must have a water seal to prevent air circulation in the pipe.

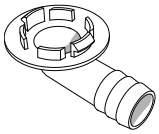


a = Frost-free depth

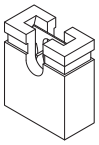
Supplied components



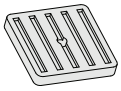
Filterball (G1") (QZ2)



Condensation outlet (KVA) [1]



Jumper (JP1)

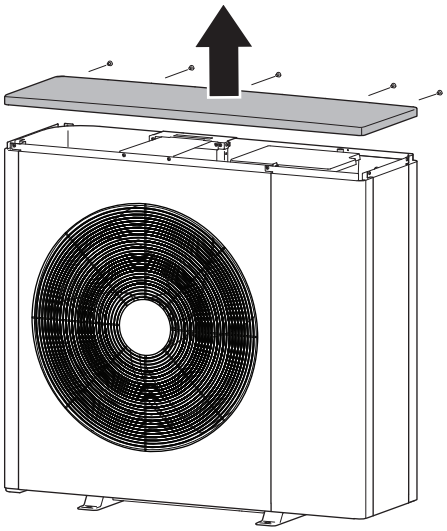


Dampers (4 pcs)

1 Install KVA on "Connection, condensation outlet" (XL40), if KVR is not installed.

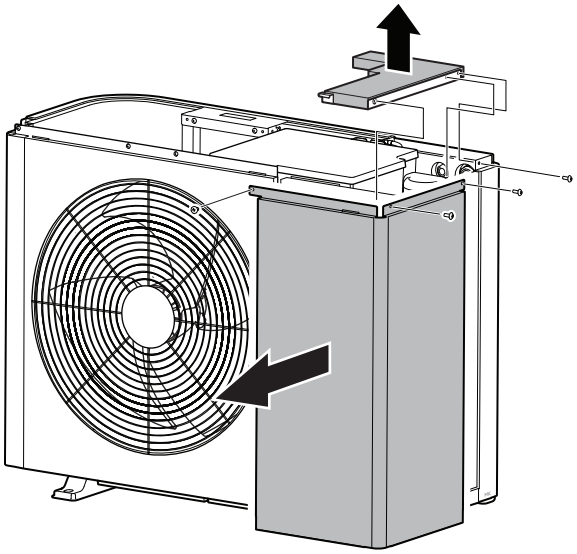
Handling panels

DISMANTLING TOP PANEL

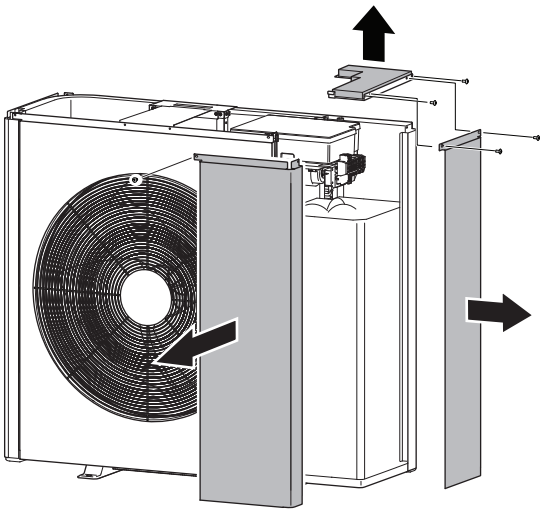


DISMANTLING SIDE PANEL AND FRONT PANEL

CTC EcoAir C106



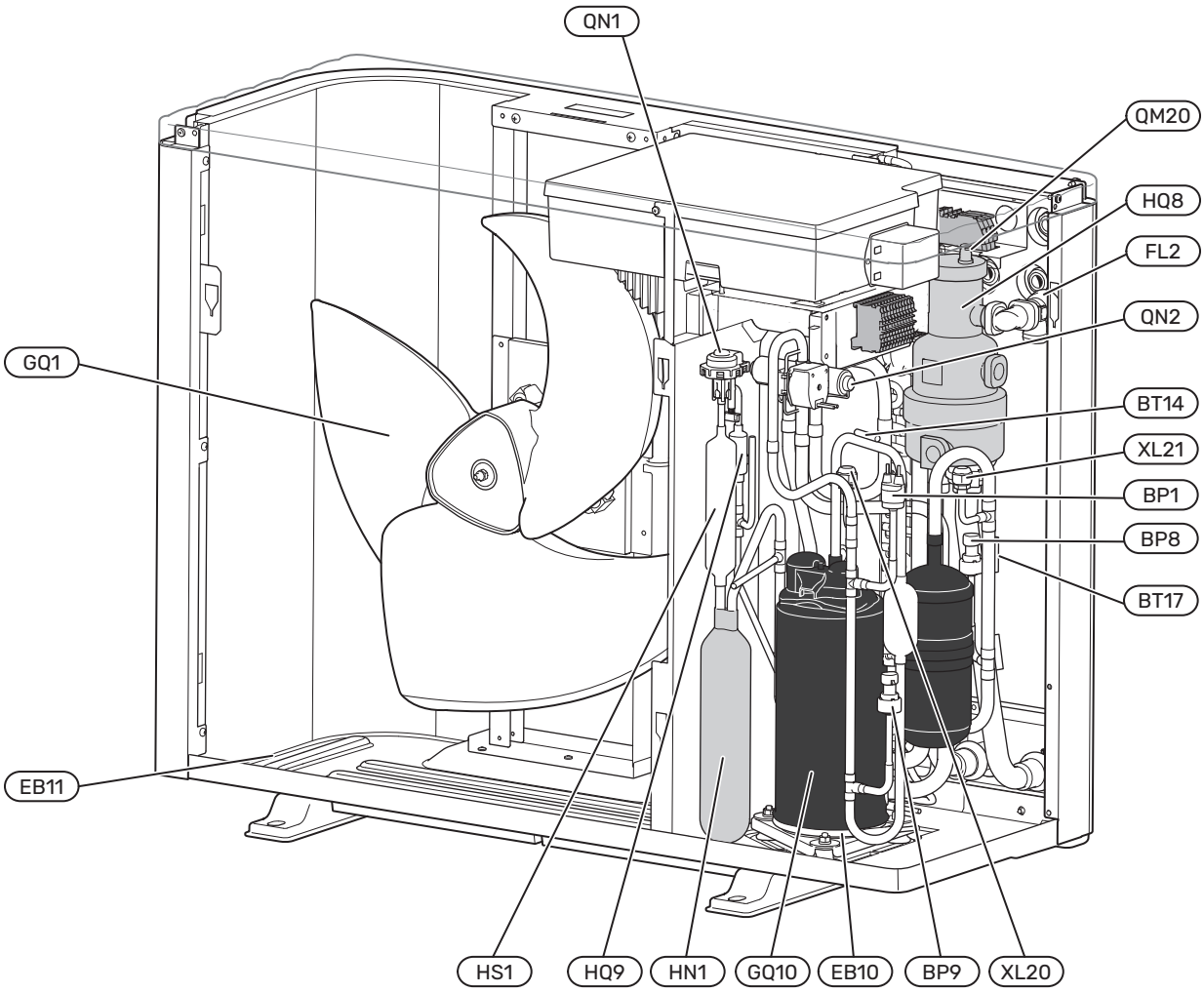
CTC EcoAir C108, C112, C116

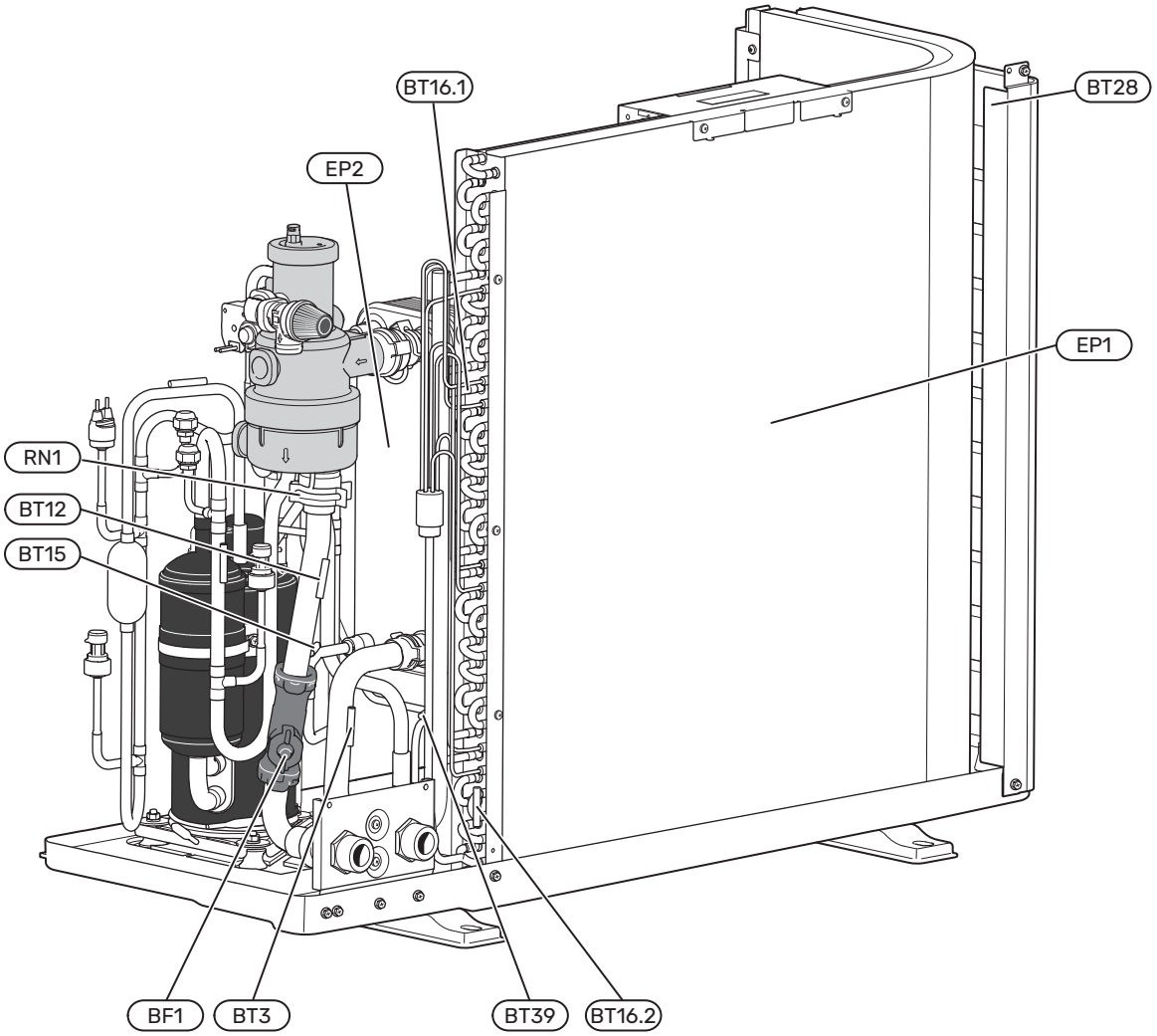


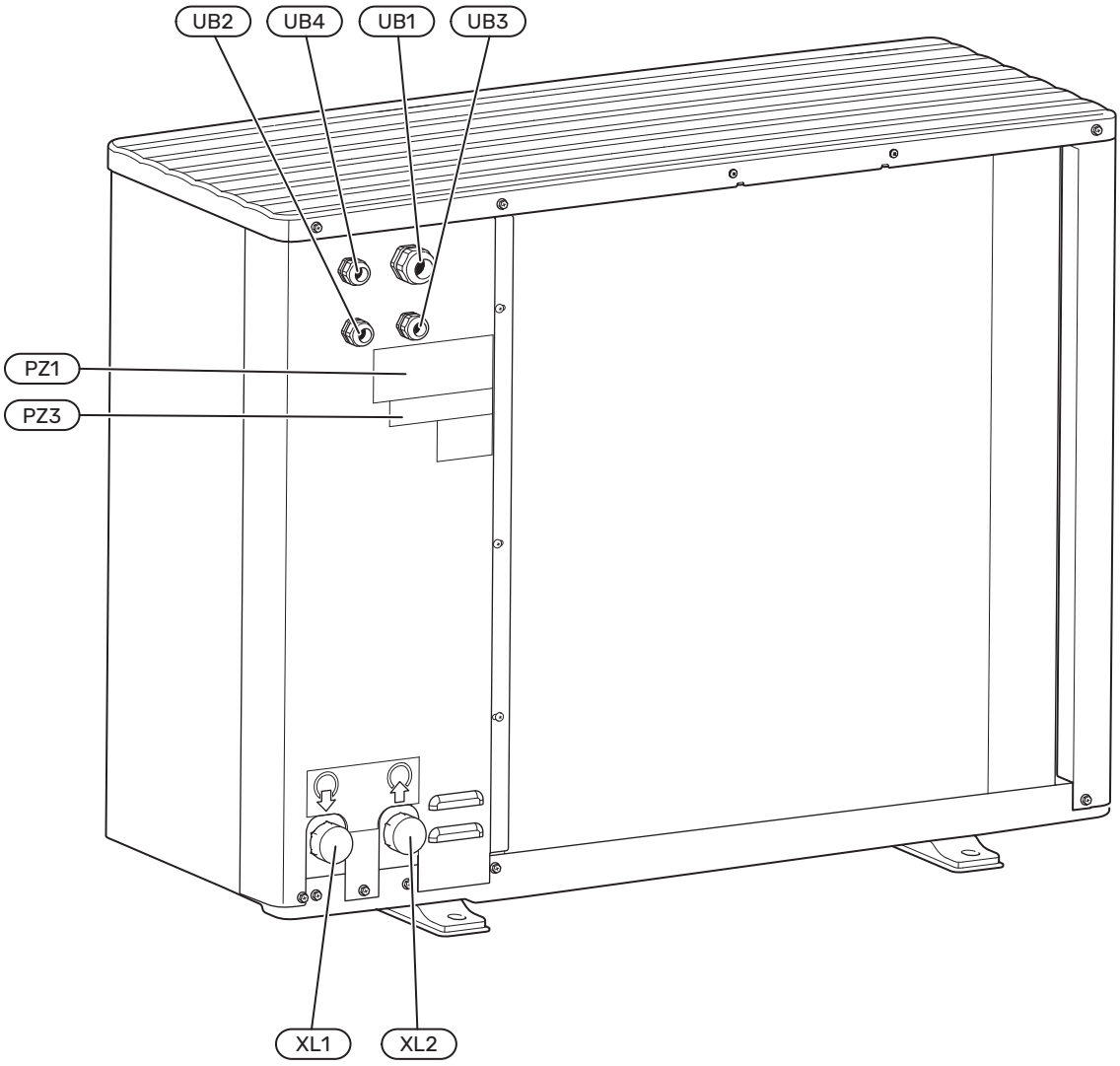
The heat pump design

General

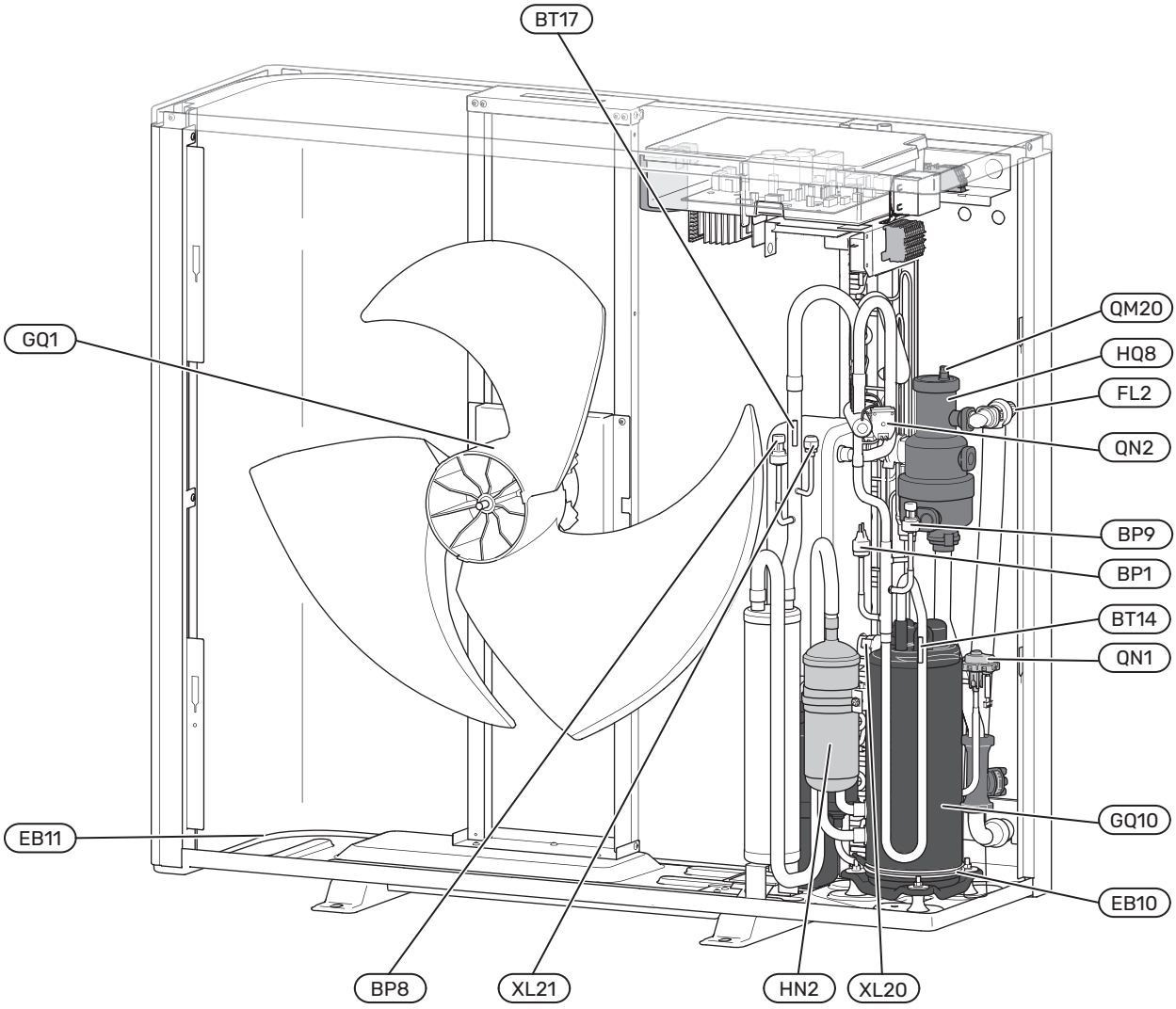
CTC ECOAIR C106

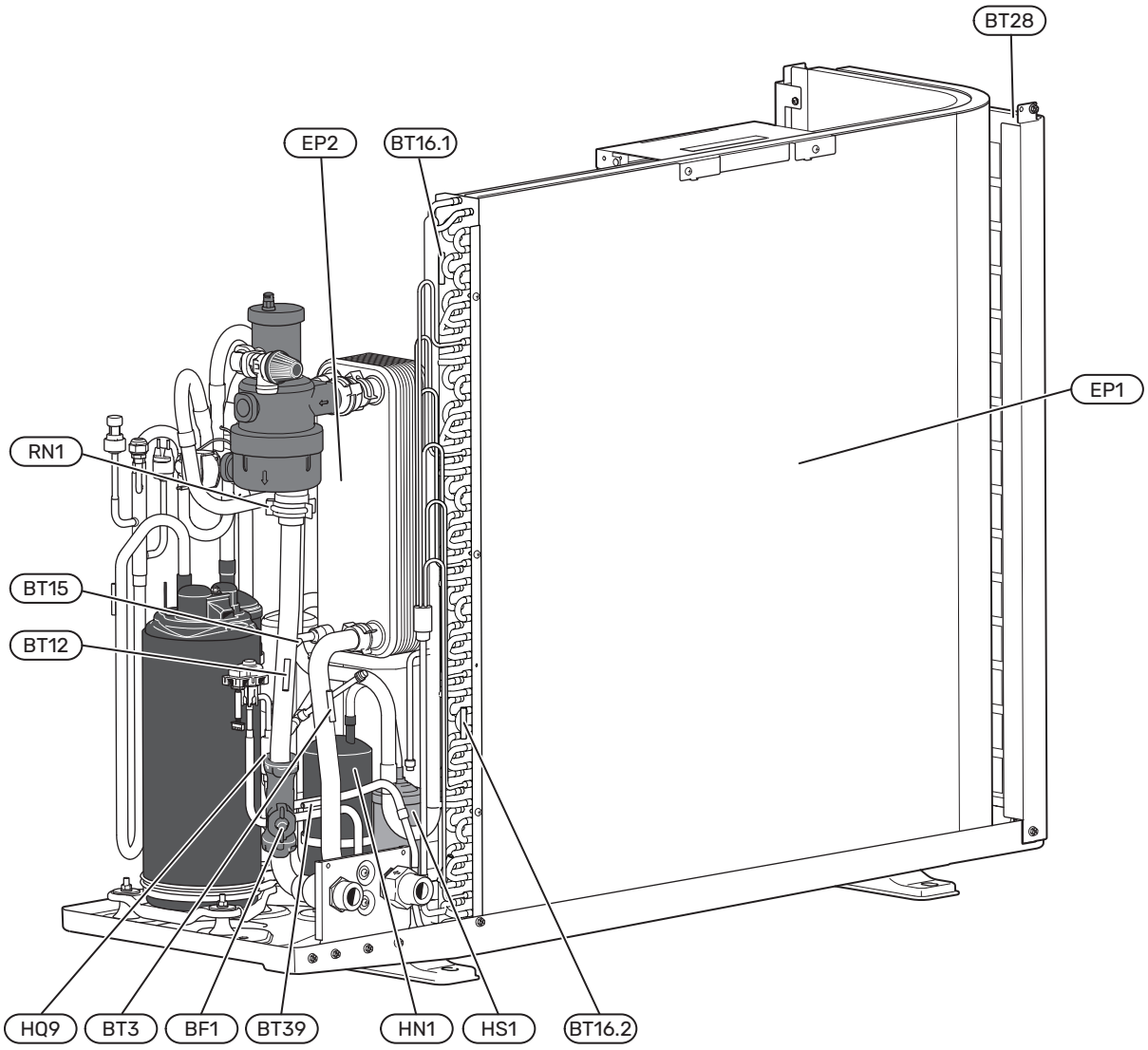



BT16.1
BT28
EP2
EP1
RN1
BT12
BT15
BF1
BT3
BT39
BT16.2

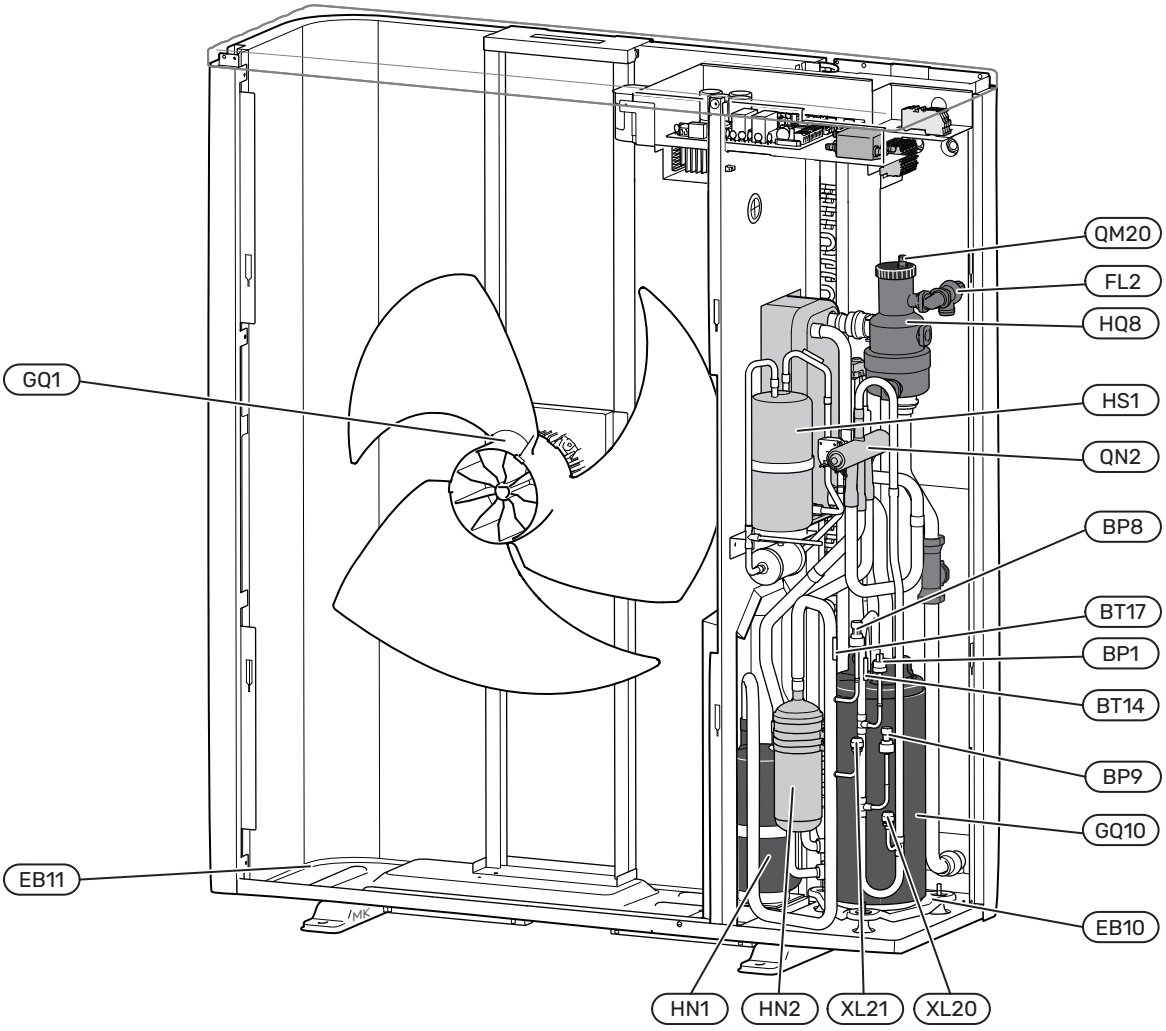

UB2
UB4
UB1
UB3
PZ1
PZ3
XL1
XL2

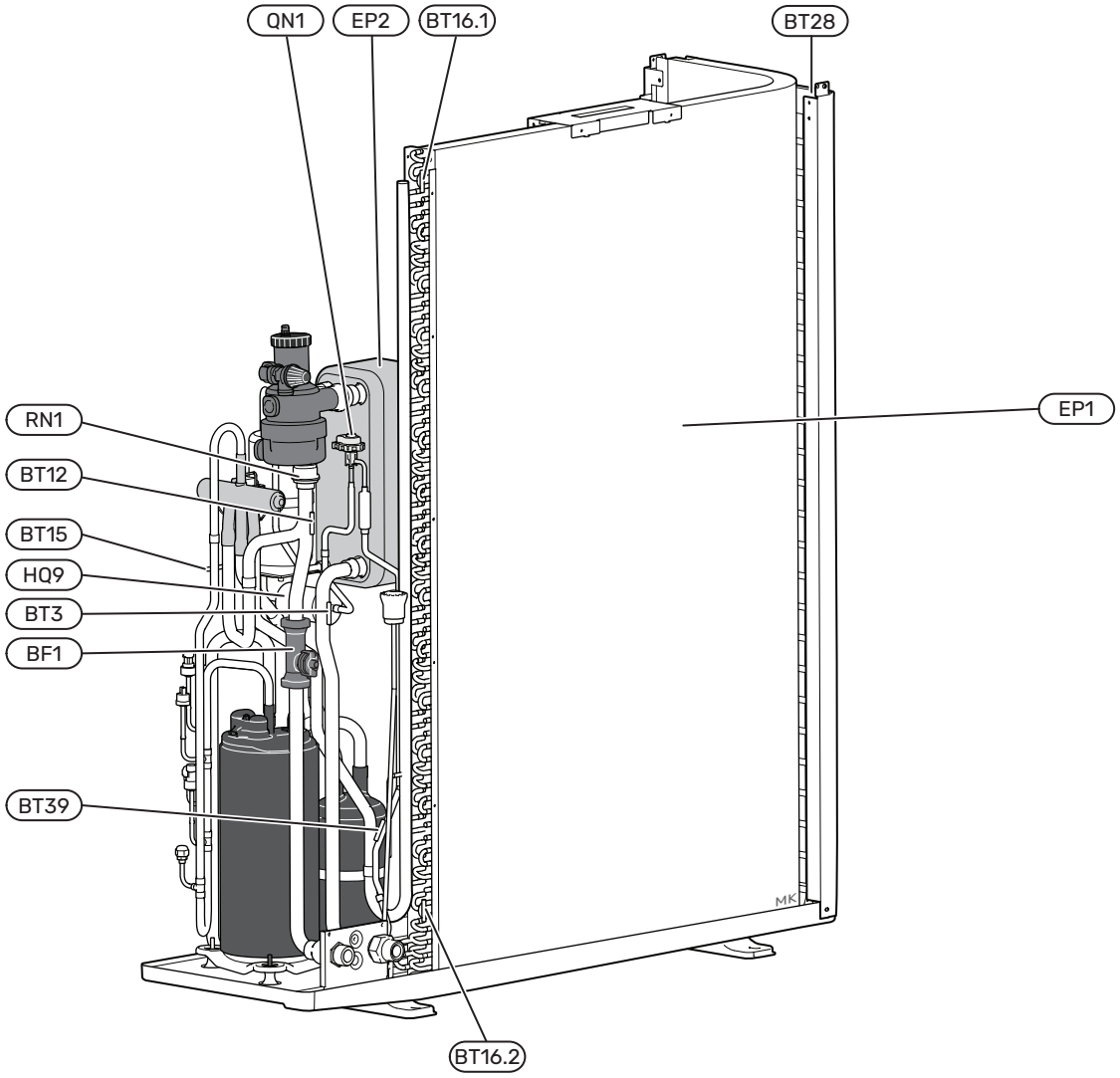
CTC ECOAIR C108, C112

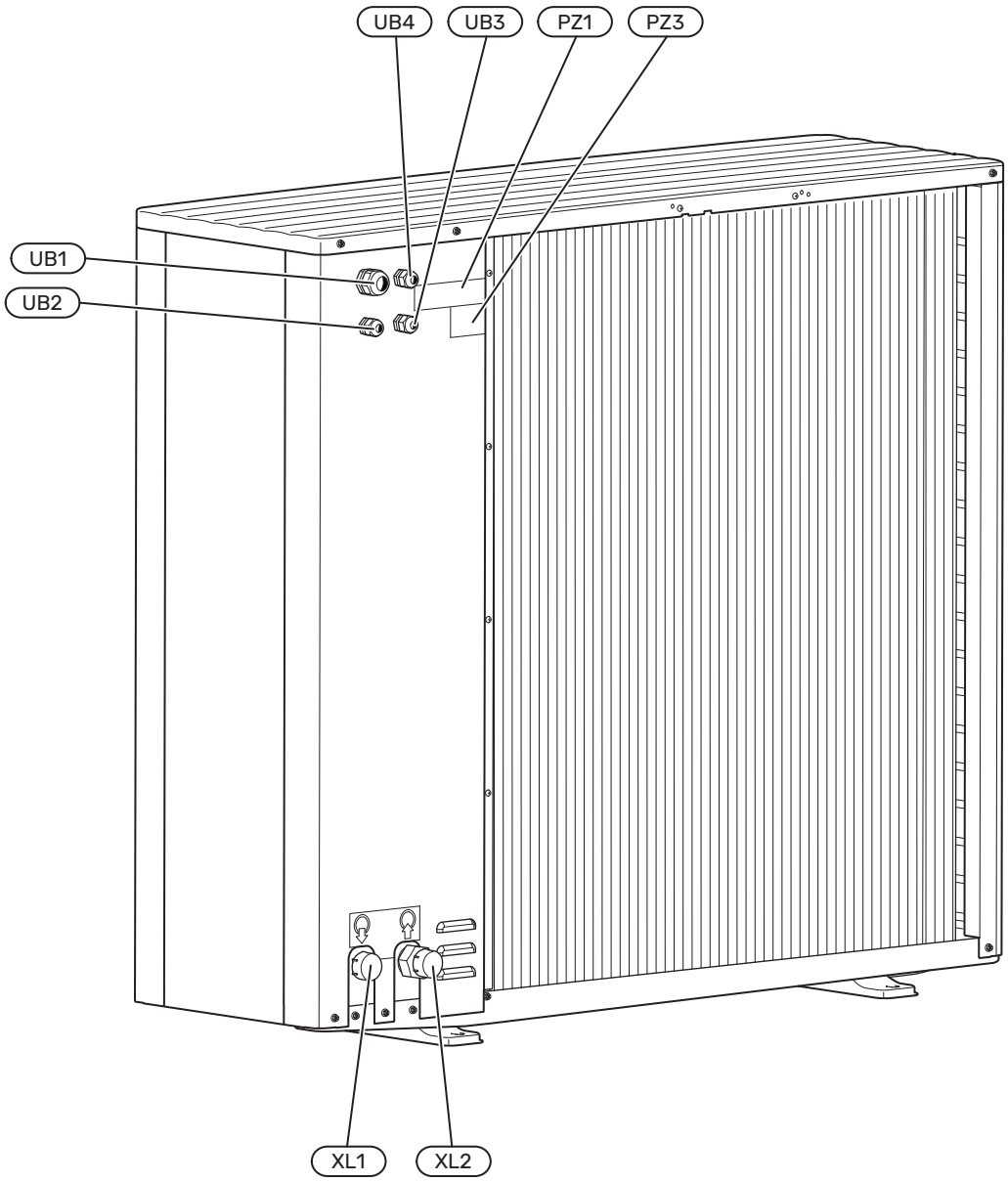


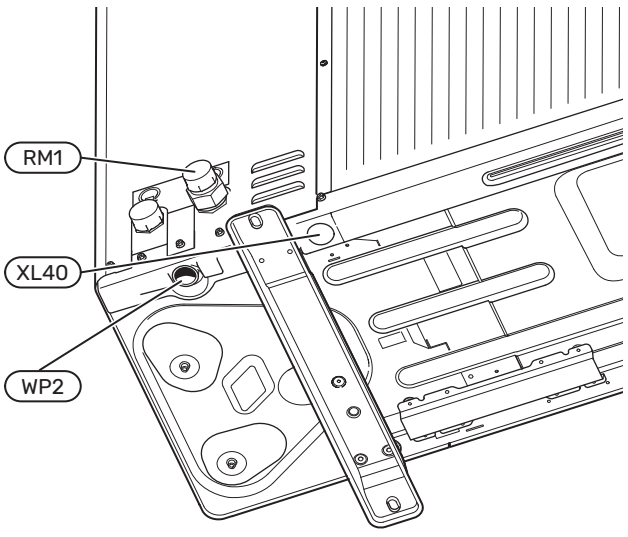

BT28
EP2
BT16.1
EP1
RN1
BT15
BT12
HQ9
BT3
BF1
BT39
HN1
HS1
BT16.2

CTC ECOAIR C116

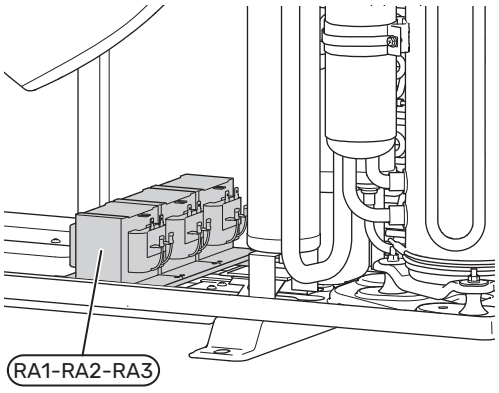



QN1
EP2
BT16.1
BT28
EP1
RN1
BT12
BT15
HQ9
BT3
BF1
BT39
BT16.2





3x400 V



Pipe connections

XL1	Heating medium connection, supply (out from CTC EcoAir)
XL2	Heating medium connection, return (to CTC Eco-Air)
XL20	Service connection, high pressure
XL21	Service connection, low pressure
XL40	Connection, condensation outlet (KVA)

HVAC components

FL2	Safety valve, climate system
HQ8	Automatic gas separator
QM20	Vent valve, heating medium
RM1	Non-return valve
RN1	Trim valve
WP2	Overflow pipe, safety valve climate system

Sensors

BP1	High pressure switch
BP8	Low-pressure sensor
BP9	High pressure sensor
BT3	Return line sensor
BT12	Condenser sensor, supply line
BT14	Hot gas sensor
BT15	Fluid line sensor
BT16.1	Evaporator sensor (upper)
BT16.2	Evaporator sensor (lower)
BT17	Suction gas sensor
BT28	Ambient sensor
BT39	Evaporation sensor

Electrical components

BF1	Flow meter
EB10	Compressor heater
EB11	Condensation water trough heater
GQ1	Fan
RA1	Harmonic filter L1
RA2	Harmonic filter L2
RA3	Harmonic filter L3

Cooling components

EP1	Evaporator
EP2	Condenser
GQ10	Compressor
HS1	Drying filter
HN1	Liquid separator
HN2	Liquid receiver
HQ9	Particle filter
QN1	Expansion valve
QN2	Reversing valve

Miscellaneous

PZ1	Rating plate
PZ3	Serial number plate
UB1–UB4	Cable gland

Designations according to standard EN 81346-2.

Distribution boxes

1x230 V

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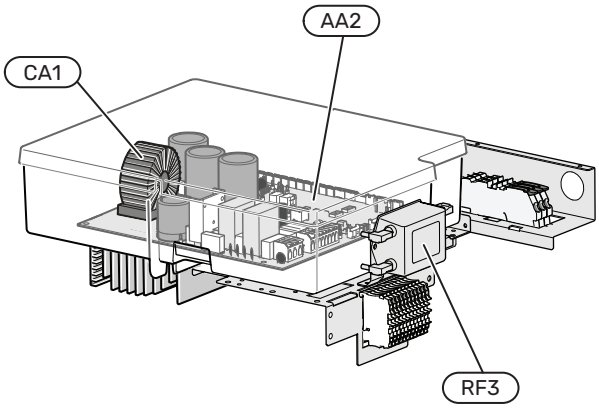
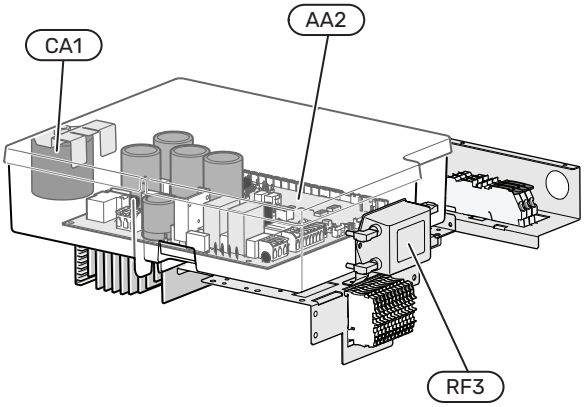
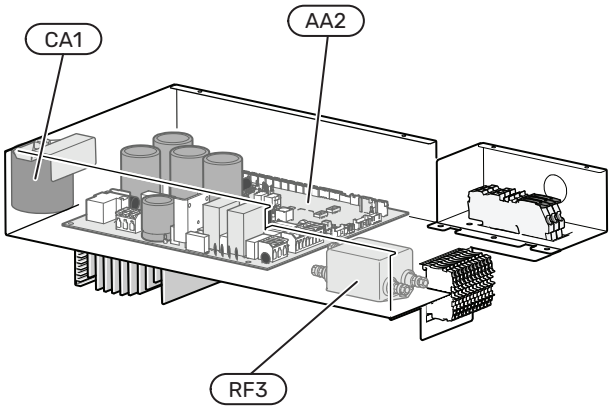


CTC EcoAir C108, C112

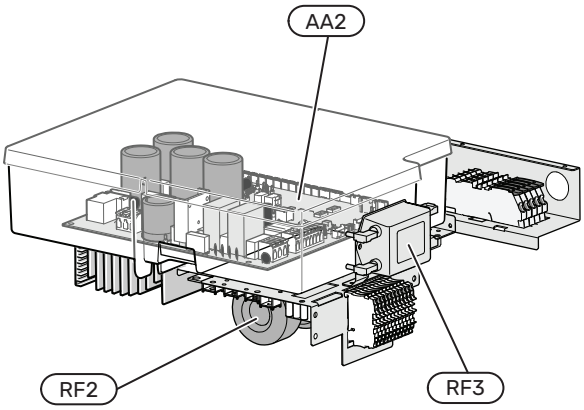


CTC EcoAir C116



3x400 V

CTC EcoAir C108, C112, C116



Electrical components

AA2	Base card
CA1	Capacitor [1]
RF2	EMC filter for inverter [2]
RF3	EMC filter for incoming supply

1 Only for 1x230 V.
2 Only for 3x400 V.

Pipe connections

General

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

CTC EcoAir is not equipped with shut-off valves on the heating medium side, rather these must be installed to facilitate any future servicing.

MINIMUM SYSTEM FLOW DEFROSTING

> **CAUTION!**
> An undersized climate system can result in damage to the product and lead to malfunctions.

The dimensions of the pipes between the indoor module and the heat pump should not be less than the recommended pipe diameter. However, each climate system must be dimensioned individually to provide the recommended system flows.

The installation must be dimensioned to provide the minimum defrosting flow at 100 % circulation pump operation.

WATER VOLUMES

When docking with CTC EcoAir, free flow in the climate system is recommended for correct heat transfer. This can be achieved through the use of a bypass valve. If free flow cannot be ensured, it is recommended that a buffer tank be installed.

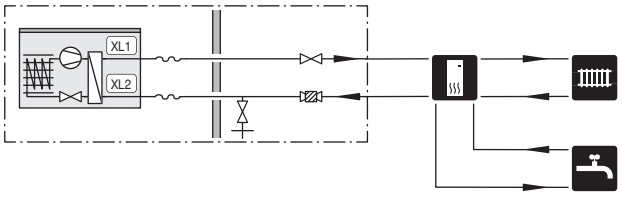
Following water volumes are recommended

CTC EcoAir	C106	C108	C112	C116
Minimum volume, climate system during heating/cooling	50 l	50 l	100 l	100 l
Minimum volume, climate system during under floor cooling	50 l	50 l	100 l	100 l

> **CAUTION!**
> The pipe installation must be flushed out before the heat pump is connected so debris cannot damage component parts.

SYSTEM DIAGRAM

Principle of operation with indoor module, hot water and climate system.



XL1 Heating medium connection, supply (out from CTC EcoAir)
XL2 Heating medium connection, return (to CTC EcoAir)

Symbol key

Symbol	Meaning
	Shut-off valve
	Tapping valve
	Circulation pump
	Expansion vessel
	Filterball
	Compressor
	Pressure gauge
	Safety valve
	Diverter valve/shunt
	Heat exchanger
	Indoor module
	Air/water heat pump
	Control module
	Domestic hot water
	Water heater
	Heating system

Pipe coupling heating medium circuit

> **CAUTION!**
> Do not add any antifreeze, such as glycol, to the hydraulic system as this will affect the operation of the internal safety devices. Instead, install antifreeze valves in the system, close to the heat pump.

> **NOTE!**
> There is a difference between connection to a control module compared with connection to an indoor module.
>
> See the Installer Manual for the indoor module/control module.

Install as follows:

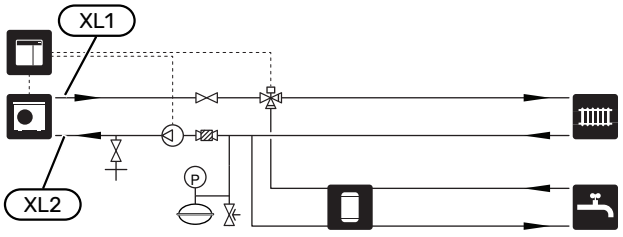
- expansion vessel
- pressure gauge
- pressure relief valve
- drain valve

  For draining the heat pump during prolonged power failures.
- charge pump
- shut-off valve

  To facilitate any future servicing.
- enclosed filterball (QZ2)

  The filterball must be installed indoors, before connection "heating medium return" (XL2) (the lower connection) on the heat pump.
- diverter valve.

  When connecting to the control module, and if the system is to be able to work with both the climate system and the hot water heater.

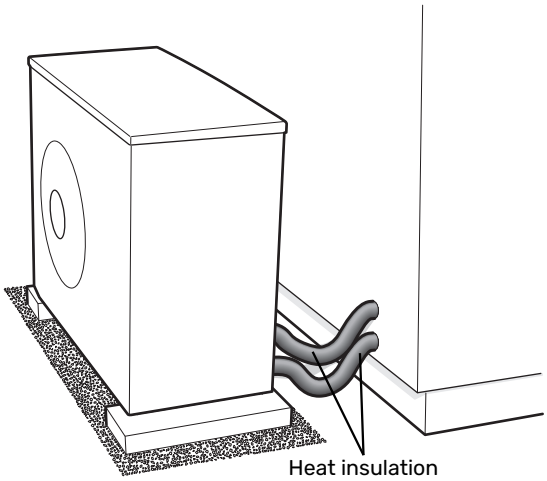


The image shows connection to the control module.

PIPE CONNECTIONS FLEX HOSE

All outdoor pipes must be insulated with at least 19 mm thick pipe insulation. [1]

Use flexible hoses (accessories). The flexible hoses act as vibration dampers. The flexible hoses are fitted so a bend is created, thus acting as vibration damping.



[1] Alternatively in accordance with country-specific requirements.

Electrical connections

General

- Electrical installation and wiring must be carried out in accordance with national provisions.
- Prior to insulation testing the house wiring, disconnect the air/water heat pump installation.
- If a miniature circuit breaker is used, this must have at least triggering characteristic "C". See section "Technical specifications" for fuse size.
- CTC EcoAir must be installed via an isolator switch. The cable area has to be dimensioned based on the fuse rating used.
- CTC EcoAir must be fitted with a RCD (residual current device). A separate residual current device is recommended.
- The residual current device must have a nominal tripping current not exceeding 30 mA and must be of the type F or B.
- The communication cable must be a screened cable with three conductors.

  (Size 0.5 mm^2)
- To prevent interference, communication cables to external connections must not be laid in the vicinity of high voltage cables.
- Connect the charge pump to the control module. See where the charge pump is to be connected in the Installer Manual for your control module.
- When routing a cable into CTC EcoAir, the cable grommets (UB1) and (UB2) must be used.

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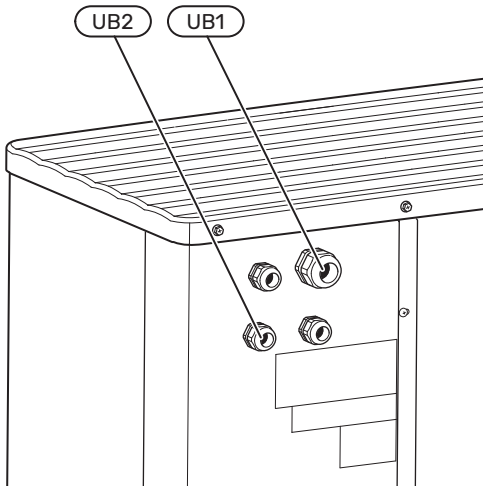
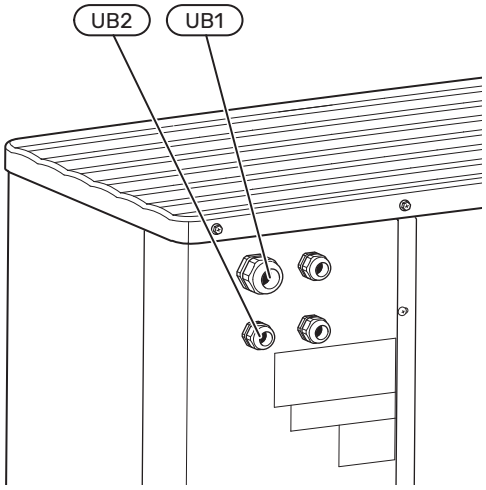


CTC EcoAir C108



> **CAUTION!**
>
> Electrical installation and any servicing must be carried out under the supervision of a qualified electrician. Turn off the power with the circuit breaker before servicing.

> **CAUTION!**
>
> Check the connections, main voltage and phase voltage before the product is started, to prevent damage to the heat pump electronics.

> **CAUTION!**
>
> The live external control must be taken into consideration when connecting.

> **CAUTION!**
>
> If the supply cable is damaged, only CTC, its service representative or similar authorised person may replace it to prevent any danger and damage.

> **CAUTION!**
>
> Do not start the system before filling up with water. Components in the system could be damaged.

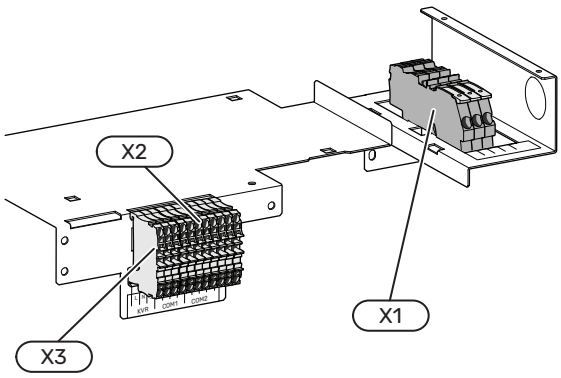
Accessibility, electrical connection

See section "Handling panels".

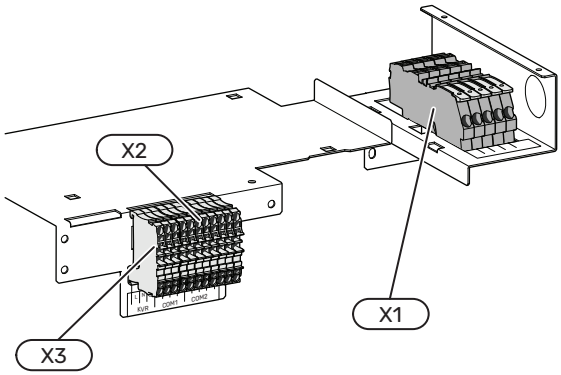
Connections

TERMINAL BLOCKS

1x230 V



3x400 V



The following components are used.

X1	Terminal block, power supply
X2	Terminal block, communications
X3	Terminal block, connection KVR

POWER CONNECTION

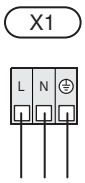
Supply voltage

Cable for incoming supply electricity is connected to terminal block X1.

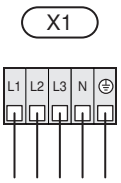
Outside the heat pump, approx. 1.8 m of cable is available.

Connection

Connection 1x230 V



Connection 3x400 V



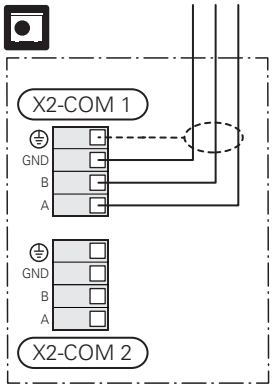
Air/water heat pump	Cable dimension (mm²)
CTC EcoAir C106 (1x230 V)	2.5
CTC EcoAir C108/ C112 (1x230 V)	2.5
CTC EcoAir C116 (1x230 V)	4.0
CTC EcoAir C108/ C112/ C116 (3x400 V)	2.5

COMMUNICATION

For more information, see the manual for the controlling product.

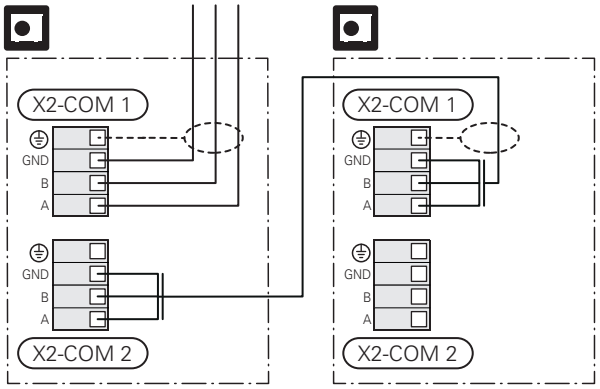
Cable routing, communication

1. Connect the communication cable to the terminal block for communication (X2:COM 1:A, B, GND) in CTC EcoAir.
2. Connect the cable's screen to the terminal block for communication (X2:COM 1:jord) in CTC EcoAir.
3. Activate the termination resistor by fitting the jumper (JP1) on the base board (AA2) in the heat pump.



Cascade connection

1. Connect terminal block X2:COM 2 with the next heat pump's terminal block X2:COM 1 for cascade connection.
2. Connect the cable's screen in each CTC EcoAir.
3. Activate the termination resistor by fitting the jumper (JP1) on the base board (AA2) in the last heat pump in the cascade.



DIP switch

CTC EcoAir is equipped with a DIP switch (SW1) on the base board (AA2).

> **CAUTION!**
>
> Only change the DIP switch when CTC EcoAir is not powered up.

Cascade connection

In installations with multiple heat pumps, each heat pump must have a unique address, which is set with the DIP switch.

Heat pump	Position (1 / 2 / 3 / 4)
1 (EB101)	off / off / off / off
2 (EB102)	on / off / off/ off
3 (EB103)	off / on / off / off
4 (EB104)	on / on / off / off
5 (EB105)	off / off / on / off
6 (EB106)	on / off / on / off
7 (EB107)	off / on / on / off
8 (EB108)	on / on / on / off
9 (EB109)	off / off / off / on
10 (EB110)	on / off / off / on

Cooling

CTC EcoAir can supply cooling with cooling supply down to +7°C.

To enable cooling operation, the DIP switch (SW2) must be set.

Function	Position (1)	Default setting
Permits cooling	on	off

Commissioning and adjusting

Preparations

COMPRESSOR HEATER

CTC EcoAir is equipped with a compressor heater that heats the compressor before start-up and when the compressor is cold.

Filling

Fill the heating system with water to the required pressure. The heat pump is equipped with an automatic vent valve for heating medium (QM20), which closes when the heat pump is filled with liquid.

Venting

1. The heat pump is vented automatically using the vent valve for heating medium (QM20), which is located on the gas separator (HQ8). The vent valve closes automatically when the valve housing has been vented and filled with liquid.
2. Vent the circulation pump, if present.
3. Keep topping up and venting until all air has been removed and the pressure is correct.

Commissioning

> **CAUTION!**
> Do not start CTC EcoAir if there is a risk that the water in the system has frozen.

> **CAUTION!**
> Do not start any electrical work until at least two minutes after cutting the power.

1. Check that the communication cable between CTC EcoAir and the indoor module/control module is connected.
2. Set the DIP switch (SW2), as described in section "Cooling", if cooling operation is desired.
3. Power-up CTC EcoAir and the indoor module/control module.
4. Adjust the charge flow according to size. See also section "Adjustment, charge flow".
5. Follow the instructions in the start guide in the indoor module's/control module's display.
6. Fill in "Inspection of the installation", in section "Important information".

The live external control must be taken into consideration when connecting.

Adjustment, charge flow

For correct function of the heat pump over the entire year, the charge flow must be correctly adjusted.

If an CTC indoor module or accessory-controlled charge pump is used for the control module, the control tries to maintain an optimal flow across the heat pump.

Adjustment may be required, especially for charging a separate water heater. It is therefore recommended to have the option of adjusting the flow across the water heater using a trim valve.

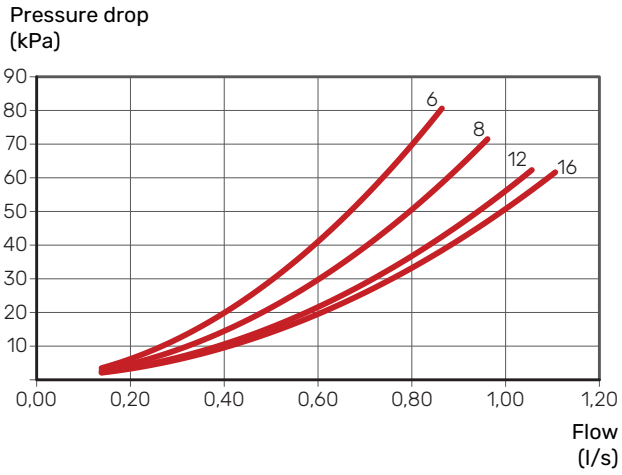
1. Recommendation if there is insufficient hot water and information message "high condenser out" during hot water charging: increase the flow
2. Recommendation if there is insufficient hot water and information message "high condenser in" during hot water charging: reduce the flow

Charge pump

The charge pump (not included in the product) is powered and controlled from the indoor module/control module. It has a built-in frost protection function and, for this reason, must not be switched off when there is a risk of freezing.

Pressure drop, heating medium side

The diagram shows the pressure drop on the heating medium side, including the gas separator.



Control

General

CTC EcoAir is equipped with an internal electronic controller that handles all functions necessary for operation of the heat pump, e. g. defrosting, stop at max/min temperature, connection of the compressor heater, and protective functions during operation.

The integrated control shows information via status-LEDs and can be used during servicing.

Under normal operating conditions the home owner does not need to have access to the controller.

CTC EcoAir communicates with the CTC indoor module/control module, which means that all settings and measurement values from CTC EcoAir are adjusted and read off on the indoor module/control module.

NOTE!

The main product's software must be the latest version.

Control

For information about display settings, see the manual for the controlling product.

Service

Service actions

> **CAUTION!**
> Servicing should only be carried out by persons with the necessary expertise.
>
> When replacing components on CTC EcoAir only replacement parts from CTC AB may be used.

DRAINING THE CONDENSER

In the event of a prolonged power failure or similar, for example, the condenser in CTC EcoAir may need to be drained of water.

> **CAUTION!**
> There may be some hot water, risk of scalding.

1. Close the shut-off valves.
2. Disconnect the two heating medium connection pipes, the heating medium connection, supply (XL1) and heating medium connection, return (XL2).
3. Empty out the water, drain via the non-return valve (RM1).

TEMPERATURE SENSOR DATA

Data for ambient sensors (BT28)

Temperature (°C)	Resistance (kOhm)
-40	349.10
-30	181.60
-20	98.86
-10	56.05
0	32.97
10	20.00
20	12.51
30	8.04
40	5.31
50	3.59
60	2.48

Data for return line sensors (BT3), condenser sensors supply (BT12), discharge sensors (BT14), liquid line sensors (BT15), evaporator sensors (BT16.1/BT16.2), suction gas sensors (BT17) and evaporation sensors (BT39)

Temperature (°C)	Resistance (kOhm)	Voltage (VDC)
-10	56.20	3.047
0	33.02	2.889
10	20.02	2.673
20	12.51	2.399
30	8.045	2.083
40	5.306	1.752
50	3.583	1.426
60	2.467	1.136
70	1.739	0.891
80	1.246	0.691

Disturbances in comfort

In most cases, the indoor module / control module notes a malfunction and indicates this with alarms and presents action instructions in the display.

Troubleshooting

> **CAUTION!**
> In the event of action to rectify malfunctions that require work within screwed hatches, the incoming supply electricity must be isolated at the safety switch by or under the supervision of a qualified electrician.

> **NOTE!**
> Alarms are acknowledged on the indoor module / control module.

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 RCD.
- The heat pump's fuse / automatic protection. (FC1 / FB1, FB1 only if KVR is installed.)
- The indoor module's/control module's fuses.
- The indoor module's temperature limiter.
- That the air flow to CTC EcoAir is not blocked by foreign objects.
- That CTC EcoAir does not have any external damage.

CTC ECOAIR DOES NOT START

- There is no demand.
  - The indoor module/control module does not call on heating, cooling or hot water.
- Compressor blocked due to the temperature conditions.
  - Wait until the temperature is within the product's working range.
- Minimum time between compressor starts has not been reached.
  - Wait for at least 30 minutes and then check if the compressor has started.
- Alarm tripped.
  - Follow the display instructions.

CTC ECOAIR NOT COMMUNICATING

- Check that the addressing of CTC EcoAir is correct.
- Check that the communication cable is correctly connected and working.

LOW HOT WATER TEMPERATURE OR A LACK OF HOT WATER

This part of the troubleshooting chapter only applies if the heat pump is docked to the hot water heater or indoor module.

- Large hot water consumption.
  - Wait until the hot water has heated up.
- Incorrect hot water settings in indoor module/control module.
  - See the Installer Manual for the indoor module/control module.
- Clogged filterball.
  - Switch off the system. Check and clean the filterball.

LOW ROOM TEMPERATURE

- Closed thermostats in several rooms.
  - Set the thermostats to max in as many rooms as possible.
- Incorrect settings in the indoor module/control module.
  - See the Installer Manual for the indoor module/control module.
- Air-filled radiators/underfloor heating coils.
  - Bleed the system.

HIGH ROOM TEMPERATURE

- Incorrect settings in the indoor module/control module.
  - See the Installer Manual for the indoor module/control module.

ICE BUILD-UP IN THE FAN, GRILLE AND/OR FAN CONE

Check that the air flow across the evaporator is correct.

LARGE AMOUNT OF WATER BELOW CTC ECOAIR

- The accessory KVR is required.
- If KVR is installed, check that the water drainage can flow freely.

Alarm list

See alarm list in the manual for the controlling product.

Accessories

CTC Installation kit C100

For frost-protected installation outdoors and communication with the control unit.

Part no. 591870301

CTC Condensation outlet EcoAir 1 m

Insulated condensation outlet hose with heating cable 1 meter.
Part no. 590955301

CTC Condensation outlet EcoAir 3 m

Insulated condensation outlet hose with heating cable 3 meter.
Part no. 590955302

CTC Condensation outlet EcoAir 6 m

Insulated condensation outlet hose with heating cable 6 meter.
Part no. 590955303

CTC Heating cable condensation outlet 5 m

Heating cable set for condensation pipes, 5 metres.

Part no. 586685401

CTC Charge pump 25/70-130

6–8 kW

Part no. 587477303

CTC Charge pump 25/75-130

10–12 kW

Part no. 587477302

CTC Charge pump 25/85-130

14–22 kW

Part no. 587477301

CTC Ground stand C100

Robust stand for outdoor unit.

Part no. 591753301

CTC Wall bracket C100

Wall mounting kit for outdoor unit.

Part no. 591752301

CTC Safety valve 2.5 bar

Part no. 591871301

CTC Safety valve 3.0 bar

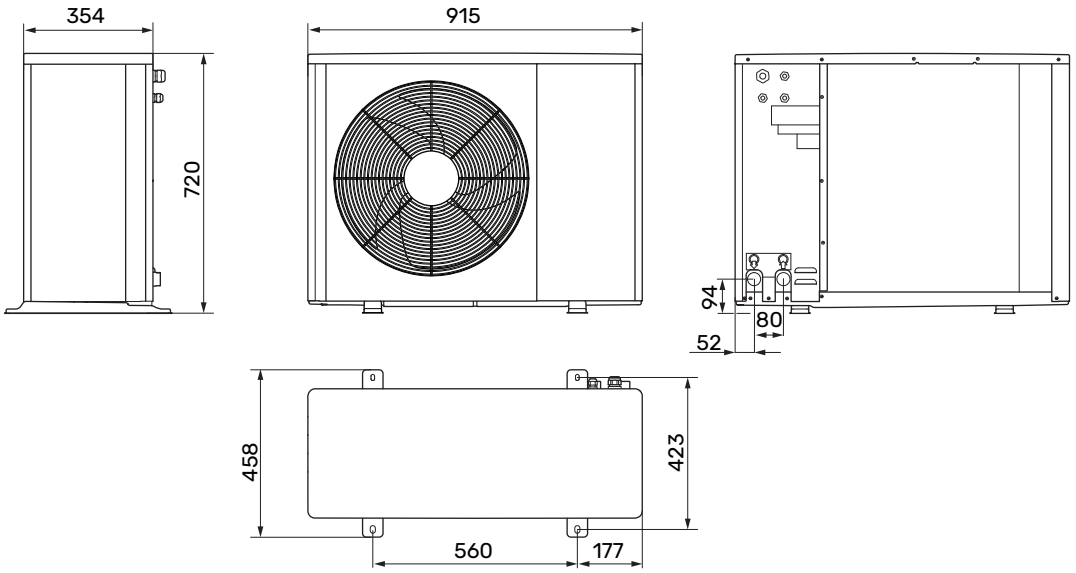
Part no. 591872301

For more information, see
https://ctc-heating.com/products/air-to-water-heat-pumps

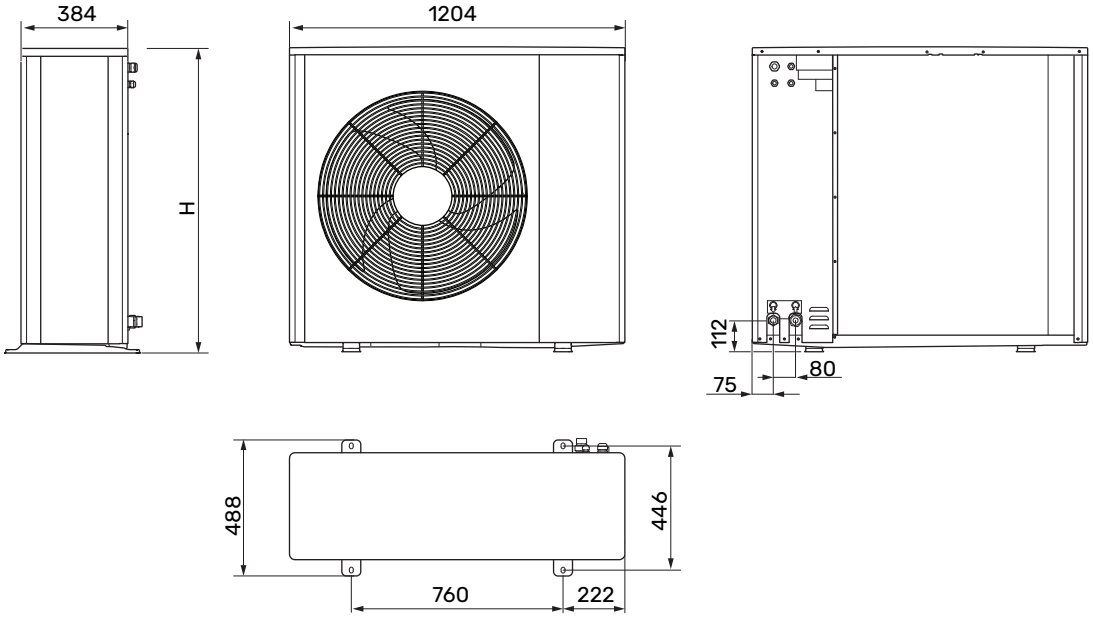
Technical data

Dimensions

CTC EcoAir C106

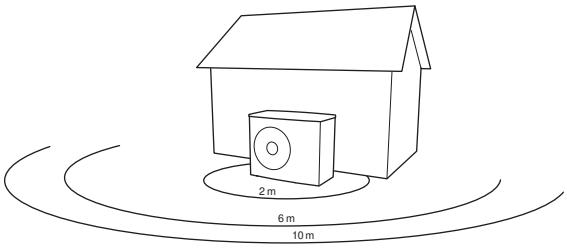


CTC EcoAir C108, C112, C116



Air/water heat pump	Height
CTC EcoAir C108	892 mm
CTC EcoAir C112	1,103 mm
CTC EcoAir C116	1,397 mm

Sound levels



CTC EcoAir is usually placed next to a house wall, which gives a directed sound distribution that has to be taken into consideration. Accordingly, when setting up, you should always attempt to select the side that faces the least sound-sensitive neighbouring area.

The sound pressure levels are further affected by walls, bricks, differences in ground level, etc and should therefore only be seen as guide values.

CTC EcoAir adjusts the fan speed depending on the ambient temperature and evaporation temperature.

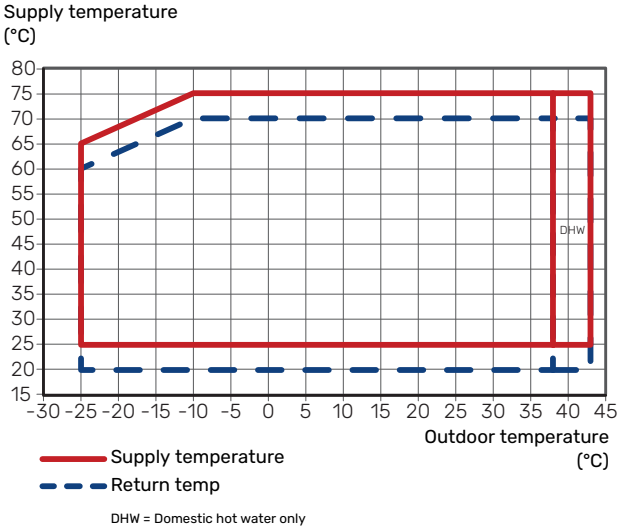
		Sound power [1]	Sound pressure at distance (m) [2]									
			1	2	3	4	5	6	7	8	9	10
CTC EcoAir C106	Nominal sound value	49	44	38	35	32	30	29	28	26	25	24
	Max. sound value	58	53	47	44	41	39	38	37	35	34	33
	Max. sound value, silent mode	51	46	40	37	34	32	31	29	28	27	26
CTC EcoAir C108	Nominal sound value	53	48	42	39	36	34	33	31	30	29	28
	Max. sound value	64	59	53	50	47	45	44	42	41	40	39
	Max. sound value, silent mode	50	45	39	35	33	31	29	28	27	26	25
CTC EcoAir C112	Nominal sound value	53	48	42	38	36	34	32	31	30	29	28
	Max. sound value	64	59	53	50	47	45	44	42	41	40	39
	Max. sound value, silent mode	55	50	44	40	38	36	34	33	32	31	30
CTC EcoAir C116	Nominal sound value	51	46	40	37	34	32	31	29	28	27	26
	Max. sound value	65	60	54	51	48	46	45	43	42	41	40
	Max. sound value, silent mode	54	49	43	39	37	35	33	32	31	30	29

1 Sound power level, $L_W(A)$, according to EN12102

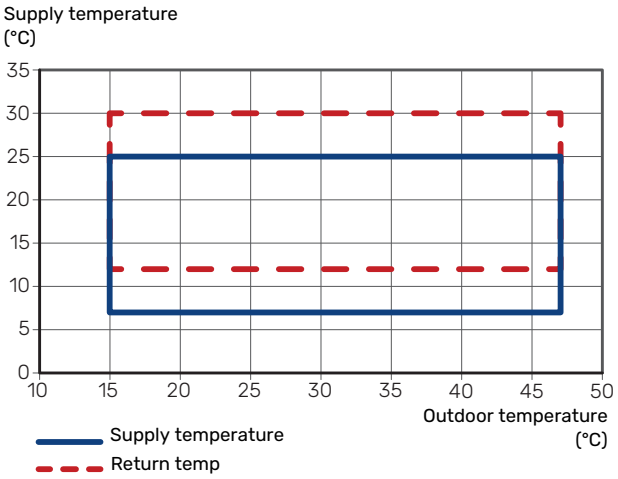
2 Sound pressure calculated according to directivity factor Q=4

Technical specifications

WORKING RANGE, HEATING



WORKING RANGE, COOLING

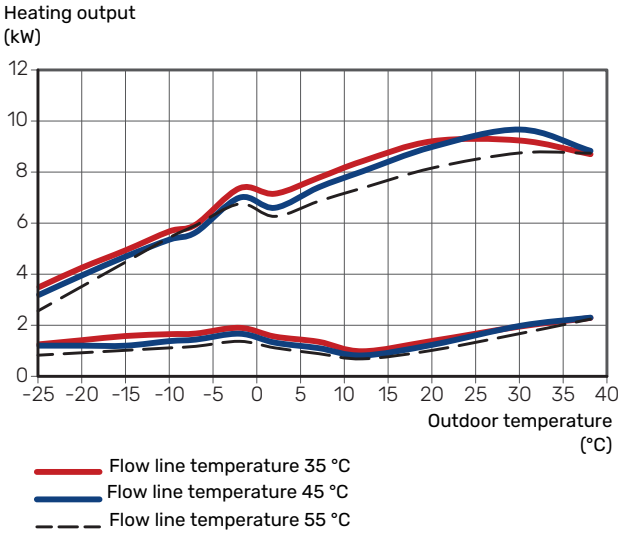


During shorter time it is allowed to have lower working temperatures on the water side, e.g. during start up.

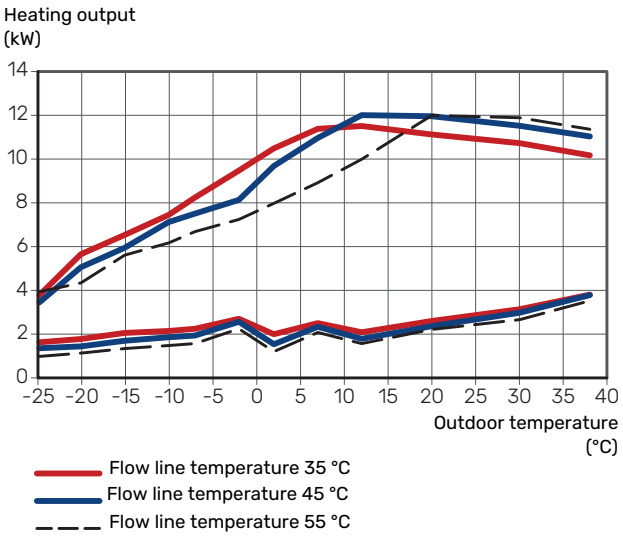
POWER DURING HEATING OPERATION

Maximum and minimum capacity during continuous operation. Defrosting is not included.

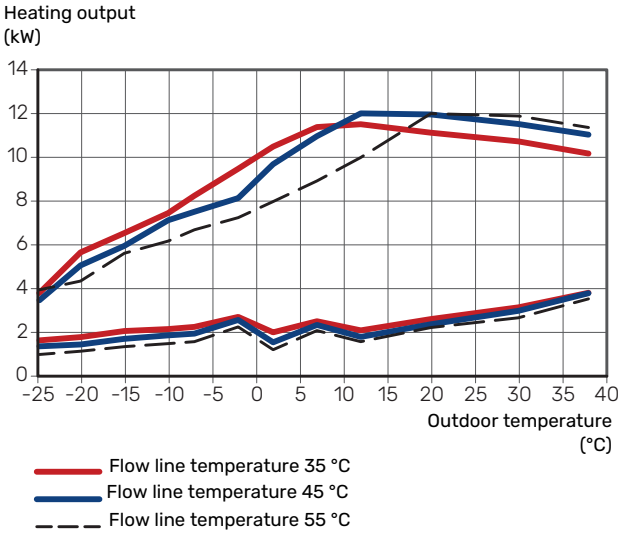
CTC EcoAir C106



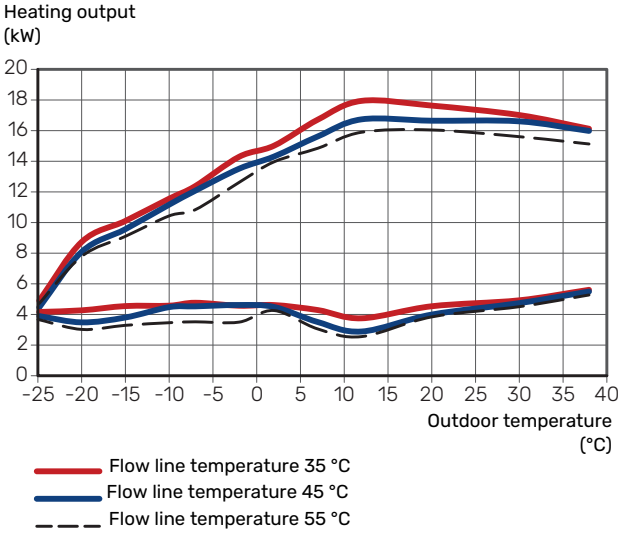
CTC EcoAir C108



CTC EcoAir C112



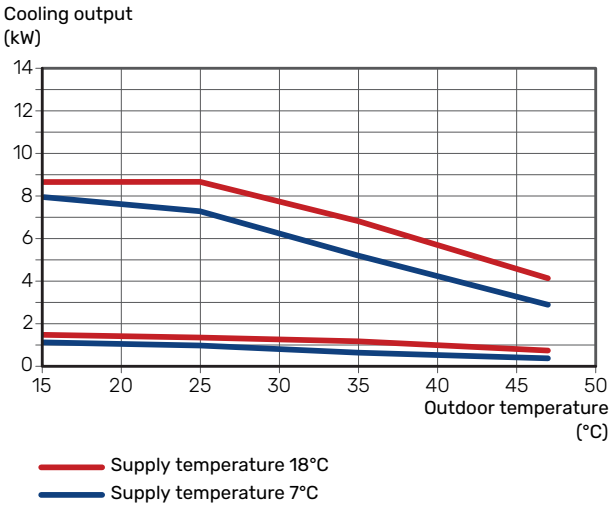
CTC EcoAir C116



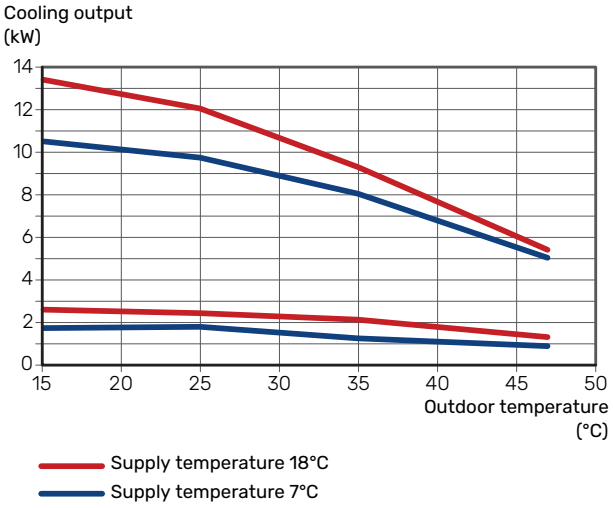
POWER DURING COOLING OPERATION

Maximum and minimum capacity during continuous operation.

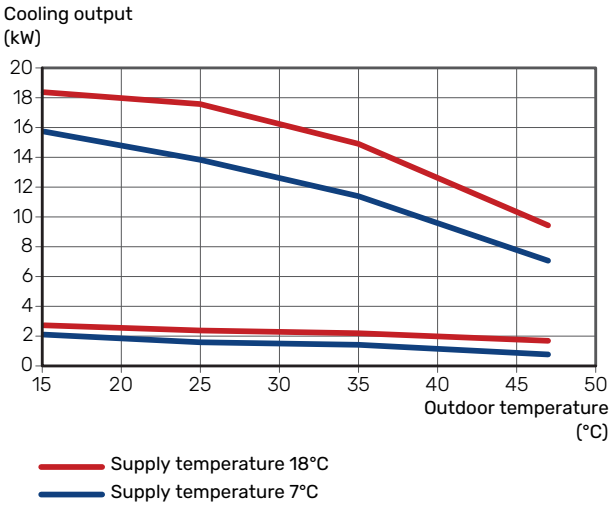
CTC EcoAir C106



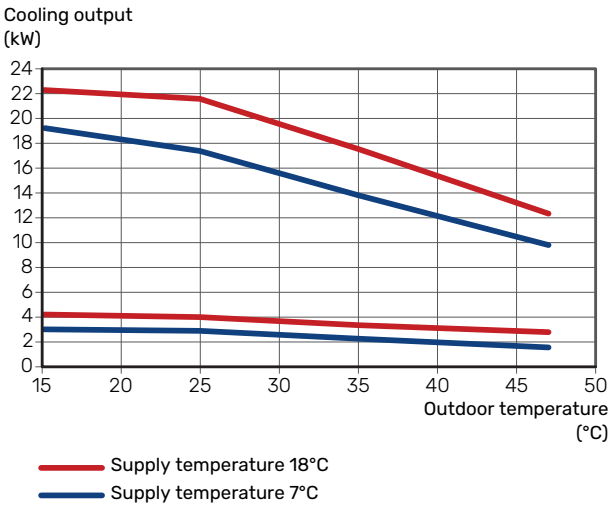
CTC EcoAir C108



CTC EcoAir C112



CTC EcoAir C116



CTC EcoAir		C106	C108	C112	C116
Voltage		**1 x 230 V**	**1 x 230 V**	**1 x 230 V**	**1 x 230 V**
Output data according to EN 14 511, partial load [1]					
Heating Capacity / power input / COP (kW/kW/-) at nominal flow Outdoor temp: / Supply temp.	-7 / 35 °C	4.29 / 1.70 / 2.53	7.48 / 2.91 / 2.57	9.19 / 3.22 / 2.85	11.40 / 4.19 / 2.72
	2 / 35 °C	3.55 / 0.91 / 3.91	5.97 / 1.61 / 3.70	7.08 / 1.74 / 4.06	9.52 / 2.40 / 3.96
	2 / 45 °C	3.41 / 1.03 / 3.31	5.65 / 1.81 / 3.12	6.75 / 2.05 / 3.29	8.63 / 2.78 / 3.10
	7 / 35 °C	3.91 / 0.76 / 5.12	7.17 / 1.48 / 4.86	7.55 / 1.55 / 4.86	10.46 / 2.09 / 5.00
	7 / 45 °C	3.65 / 0.93 / 3.91	6.59 / 1.73 / 3.82	7.14 / 1.87 / 3.83	10.03 / 2.47 / 4.05
Cooling Capacity / power input / EER (kW/kW/-) at maximum flow Outdoor temp: / Supply temp.	35 / 7 °C	4.06 / 1.30 / 3.12	6.92 / 2.24 / 3.09	9.57 / 2.99 / 3.20	13.02 / 4.05 / 3.22
	35 / 18 °C	5.28 / 1.26 / 4.19	8.39 / 2.21 / 3.80	11.88 / 2.93 / 4.05	15.30 / 3.55 / 4.31
Maximum capacity					
Maximum capacity, heating, at A7W35 with / without defrosting	kW	6.50 / 6.50	9.47 / 11.39	12.46 / 12.46	16.74 / 16.74
Maximum capacity, heating, at A2W55 with / without defrosting	kW	4.75 / 5.24	7.99 / 7.01	9.46 / 9.46	13.97 / 12.38
Maximum capacity, heating, at A-7W35 with / without defrosting	kW	4.29 / 4.97	7.48 / 8.26	9.19 / 9.19	11.40 / 12.38
SCOP according to EN 14825					
Nominal heat output ($P_{designh}$) average climate 35 °C / 55 °C (Europe)	kW	5.10 / 4.60	7.50 / 6.50	10.50 / 9.00	13.50 / 12.50
Nominal heat output ($P_{designh}$) cold climate 35 °C / 55 °C	kW	4.80 / 4.60	8.10 / 7.50	9.70 / 9.20	12.80 / 12.50
Nominal heat output ($P_{designh}$) warm climate 35 °C / 55 °C	kW	5.50 / 4.70	7.70 / 7.10	10.50 / 8.50	12.80 / 12.00
SCOP average climate, 35 °C / 55 °C (Europe)		4.75 / 3.37	4.78 / 3.78	4.78 / 3.82	5.15 / 3.97
SCOP cold climate, 35 °C / 55 °C		4.14 / 3.31	4.45 / 3.49	4.29 / 3.42	4.49 / 3.55
SCOP warm climate, 35 °C / 55 °C		6.22 / 3.92	6.60 / 4.75	6.79 / 4.96	6.67 / 5.00
Energy rating, average climate [2]					
The product's room heating efficiency class 35 °C / 55 °C [3]		A+++ / A++	A+++ / A++	A+++ / A+++	A+++ / A+++
The system's room heating efficiency class 35 °C / 55 °C [4]		A+++ / A++	A+++ / A+++	A+++ / A+++	A+++ / A+++
Electrical data					
Rated voltage		230 V ~ 50 Hz	230 V ~ 50 Hz	230 V ~ 50 Hz	230 V ~ 50 Hz
Rated current, heat pump	A_{rms}	10	12.5	16	22
Max. power, fan	W	42	46	121	195
Fuse	A_{rms}	13	16	20	25
Enclosure class		IP24			
Refrigerant circuit					
Type of refrigerant		R290			
GWP refrigerant		0.02			
Filling amount	kg	0.50	0.80	1.10	1.60
Type of compressor		Rotary compressor			
CO_2-equivalent (The cooling circuit is hermetically sealed.)	kg	0.010	0.016	0.022	0.032
Cut-out value pressure switch HP (BP1)	MPa (bar)	3.0 (30.0)			
Difference pressostat HP	MPa (bar)	0.7 (7)			
Airflow					
Max airflow	m^3/h	2,500	3,350	5,600	6,150
Working area					
Min./max. air temperature, heating	°C	-25 / 38			
Min./max. air temperature, cooling	°C	15 / 47			
Defrosting system		Reverse cycle			
Heating medium circuit					
Max system pressure heating medium	MPa (bar)	0.30 (3.0)			
Cut-off pressure, heating medium	MPa (bar)	0.20 (2.0)			
Recommended flow interval, heating operation	l/s	0.18 – 0.31	0.24 – 0.39	0.36 – 0.60	0.46 – 0.76
Recommended flow interval, cooling operation	l/s	0.20 – 0.25	0.33 – 0.41	0.45 – 0.57	0.62 – 0.69
Min. design flow, defrosting (100% pump speed)	l/s	0.17			
Min./max. HM temp, continuous operation	°C	25 / 75			
Min./max. HM temp, continuous operation, cooling	°C	7 / 25			
Connection heating medium CTC EcoAir		G1" external thread			
Connection heating medium flex pipe		G1" external thread			
Min. recommended pipe dimension (system)	DN (mm)	25 (28)			
Dimensions and weight					
Width	mm	915	1,204	1,204	1,204
Depth	mm	458	488	488	488
Height	mm	720	892	1,103	1,397

CTC EcoAir		C106	C108	C112	C116
Weight	kg	68	96	113	140
Miscellaneous					
Part no.		591000001	591001001	591003001	591005001
EPREL		2570138	2570160	2570165	2570166

1 Power statements including defrosting according to EN 14511 at heating medium supply corresponding to DT=5 K at 7 / 45.

2 The reported efficiency of the package also takes the controller into account. If an external supplementary boiler or solar heating is added to the package, the overall efficiency of the package should be recalculated.

3 Scale for the product's efficiency class room heating: A+++ to D. Control module model CTC EcoLogic.

4 Scale for the system's efficiency class room heating: A+++ to G. Reported efficiency for the system takes the product's temperature regulator into account. Control module model CTC EcoLogic.

CTC EcoAir		C108	C112	C116
Voltage		**3 x 400 V**	**3 x 400 V**	**3 x 400 V**
Output data according to EN 14 511, partial load [1]				
Heating Capacity / power input / COP (kW/kW/-) at nominal flow Outdoor temp: / Supply temp.	-7 / 35 °C	7.48 / 2.91 / 2.57	9.19 / 3.22 / 2.85	11.40 / 4.19 / 2.72
	2 / 35 °C	5.97 / 1.61 / 3.70	7.08 / 1.74 / 4.06	9.52 / 2.40 / 3.96
	2 / 45 °C	5.65 / 1.81 / 3.12	6.75 / 2.05 / 3.29	8.63 / 2.78 / 3.10
	7 / 35 °C	8.36 / 1.73 / 4.83	12.61 / 2.68 / 4.71	15.90 / 3.53 / 4.50
	7 / 45 °C	/ /	/ /	/ /
Cooling Capacity / power input / EER (kW/kW/-) at maximum flow Outdoor temp: / Supply temp.	35 / 7 °C	6.92 / 2.24 / 3.09	9.42 / 3.01 / 3.13	13.02 / 4.05 / 3.22
	35 / 18 °C	8.39 / 2.21 / 3.80	11.88 / 2.93 / 4.05	15.30 / 3.55 / 4.31
SCOP according to EN 14825				
Nominal heat output ($P_{designh}$) average climate 35 °C / 55 °C (Europe)	kW	7.50 / 6.50	10.50 / 9.00	13.50 / 12.50
Nominal heat output ($P_{designh}$) cold climate 35 °C / 55 °C	kW	8.10 / 7.50	9.70 / 9.20	12.80 / 12.50
Nominal heat output ($P_{designh}$) warm climate 35 °C / 55 °C	kW	7.70 / 7.10	10.50 / 8.50	12.80 / 12.00
SCOP average climate, 35 °C / 55 °C (Europe)		4.78 / 3.78	4.78 / 3.82	5.15 / 3.97
SCOP cold climate, 35 °C / 55 °C		4.45 / 3.49	4.29 / 3.42	4.49 / 3.55
SCOP warm climate, 35 °C / 55 °C		6.60 / 4.75	6.79 / 4.96	6.67 / 5.00
Maximum capacity				
Maximum capacity, heating, at A7W35 with / without defrosting	kW	9.47 / 11.39	12.46 / 12.46	16.74 / 16.74
Maximum capacity, heating, at A2W55 with / without defrosting	kW	7.99 / 7.01	9.46 / 9.46	13.97 / 12.38
Maximum capacity, heating, at A-7W35 with / without defrosting	kW	7.48 / 8.26	9.19 / 9.19	11.40 / 12.38
Energy rating, average climate [2]				
The product's room heating efficiency class 35 °C / 55 °C [3]		A+++ / A++	A+++ / A+++	A+++ / A+++
The system's room heating efficiency class 35 °C / 55 °C [4]		A+++ / A+++	A+++ / A+++	A+++ / A+++
Electrical data				
Rated voltage		400 V 3N ~ 50 Hz	400 V 3N ~ 50 Hz	400 V 3N ~ 50 Hz
Rated current, heat pump	A_{rms}	5	6	9
Max. power, fan	W	46	121	195
Fuse	A_{rms}	10	10	13
Enclosure class		IP24		
Refrigerant circuit				
Type of refrigerant		R290		
GWP refrigerant		0.02		
Filling amount	kg	0.80	1.10	1.60
Type of compressor		Rotary compressor		
CO_2-equivalent (The cooling circuit is hermetically sealed.)	kg	0.016	0.022	0.032
Cut-out value pressure switch HP (BP1)	MPa (bar)	3.0 (30.0)		
Difference pressostat HP	MPa (bar)	0.7 (7)		
Airflow				
Max airflow	m^3/h	3,350	5,600	6,150
Working area				
Min./max. air temperature, heating	°C	-25 / 38		
Min./max. air temperature, cooling	°C	15 / 47		
Defrosting system		Reverse cycle		
Heating medium circuit				
Max system pressure heating medium	MPa (bar)	0.30 (3.0)		
Cut-off pressure, heating medium	MPa (bar)	0.20 (2.0)		
Recommended flow interval, heating operation	l/s	0.24 – 0.39	0.36 – 0.60	0.46 – 0.76
Recommended flow interval, cooling operation	l/s	0.33 – 0.41	0.45 – 0.57	0.62 – 0.69
Min. design flow, defrosting (100% pump speed)	l/s	0.17		
Min./max. HM temp, continuous operation	°C	25 / 75		
Min./max. HM temp, continuous operation, cooling	°C	7 / 25		
Connection heating medium CTC EcoAir		G1" external thread		
Connection heating medium flex pipe		G1" external thread		
Min. recommended pipe dimension (system)	DN (mm)	25 (28)		
Dimensions and weight				
Width	mm	1,204	1,204	1,204
Depth	mm	488	488	488
Height	mm	892	1,103	1,397

CTC EcoAir		C108	C112	C116
Weight	kg	104	121	148
Miscellaneous				
Part no.		591002001	591004001	591006001
EPREL		2570160	2570165	2570166

1 Power statements including defrosting according to EN 14511 at heating medium supply corresponding to DT=5 K at 7 / 45.

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3 Scale for the product's efficiency class room heating: A+++ to D. Control module model CTC EcoLogic.

4 Scale for the system's efficiency class room heating: A+++ to G. Reported efficiency for the system takes the product's temperature regulator into account. Control module model CTC EcoLogic.

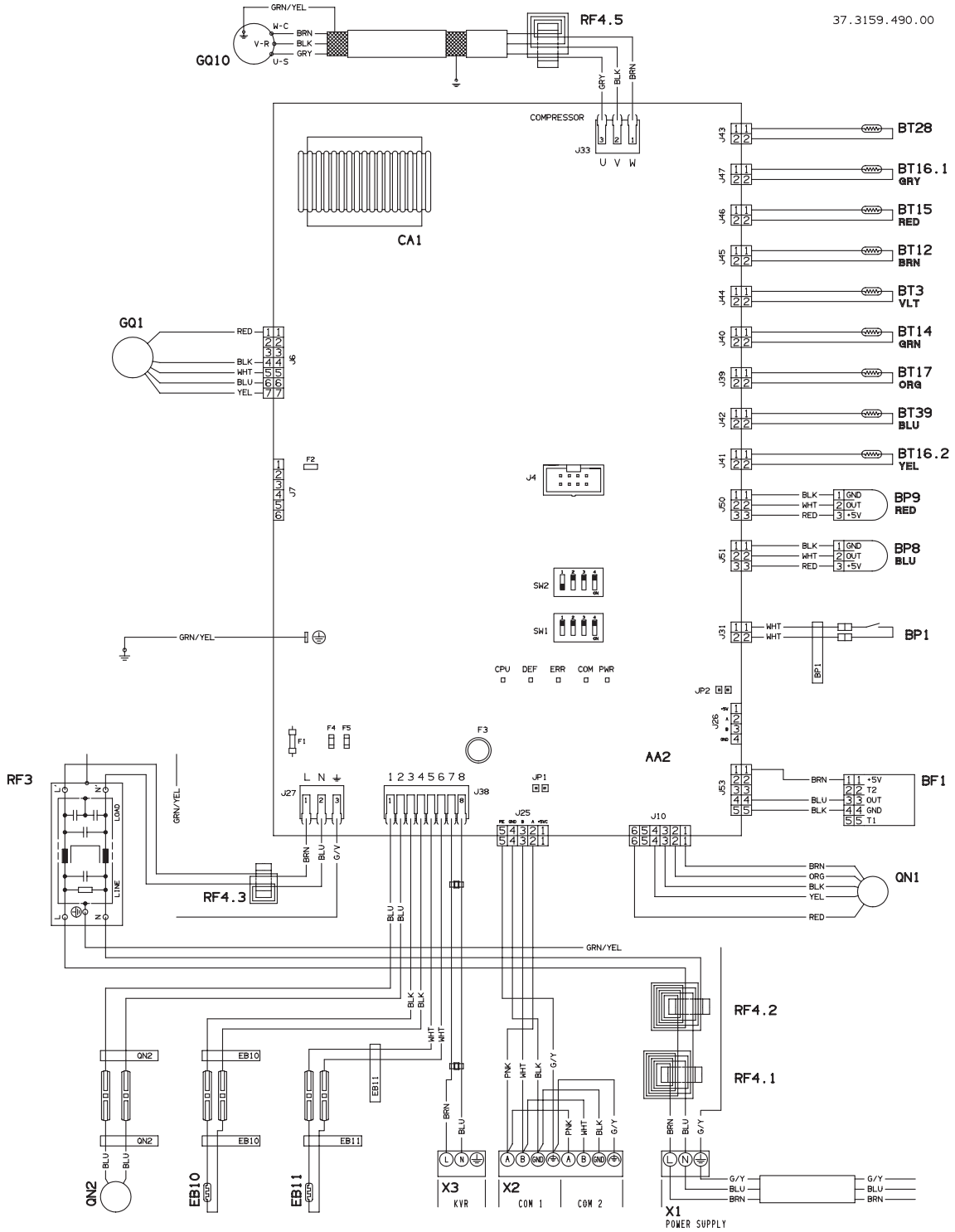
Energy labelling

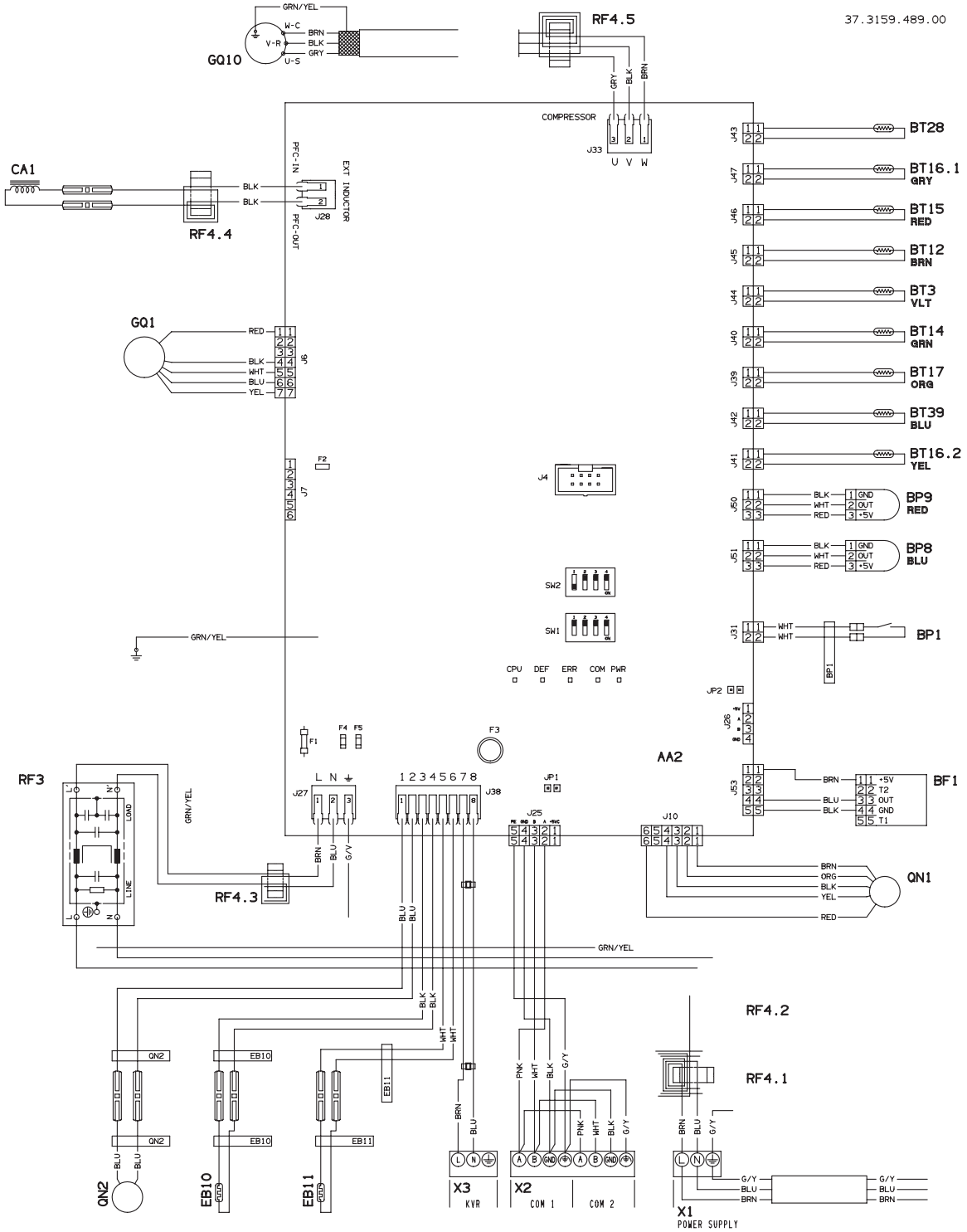
More information on https://ctc-heating.com/ecodesign

Electrical circuit diagram

1X230 V

CTC EcoAir C106

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V-R
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BRN
BLK
GRY
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COMPRESSOR
U V W
CA1
RF4.4
PFC-IN
PFC-OUT
EXT INDUCTOR
J28
GQ1
RED
BLK
WHT
BLU
YEL
J6
J7
F2
J4
SW2
SW1
CPU DEF ERR COM PWR
GRN/YEL
F1
F4 F5
F3
AA2
RF3
LOAD
LINE
L N
1 2 3 4 5 6 7 8
J27
J38
JP1
J25
J10
RF4.3
BRN
BLU
G/Y
GRN/YEL
QN1
ORG
RF4.2
RF4.1
QN2
EB10
EB11
WHT
PNK
X3
KVR
X2
COM 1
COM 2
X1
POWER SUPPLY
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J47
J46
J45
J44
J40
J39
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J31
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BT39
BLU
BT16.2
YEL
BP9
RED
BP8
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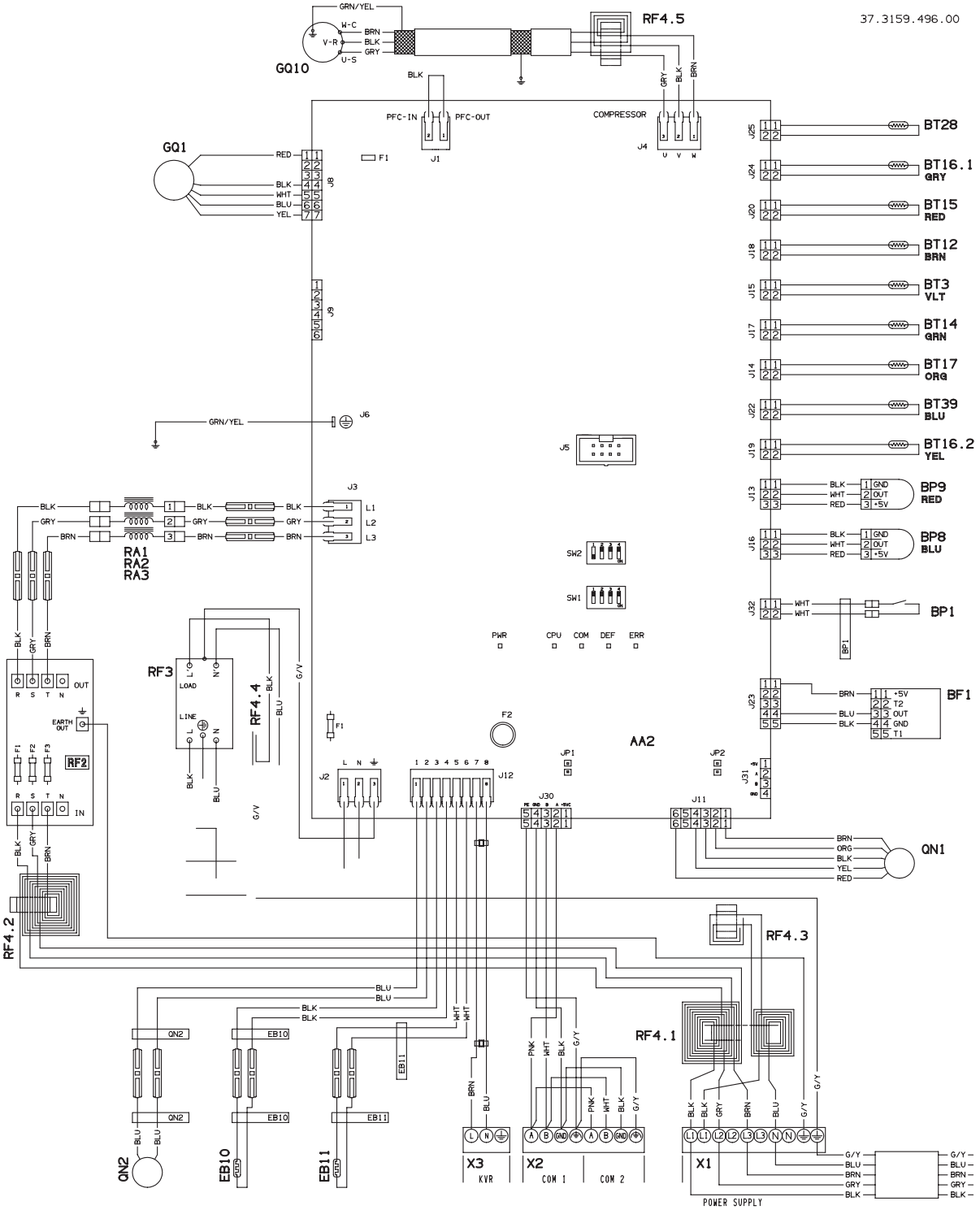
3X400 V

CTC EcoAir C108, C112, C116



Item register

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