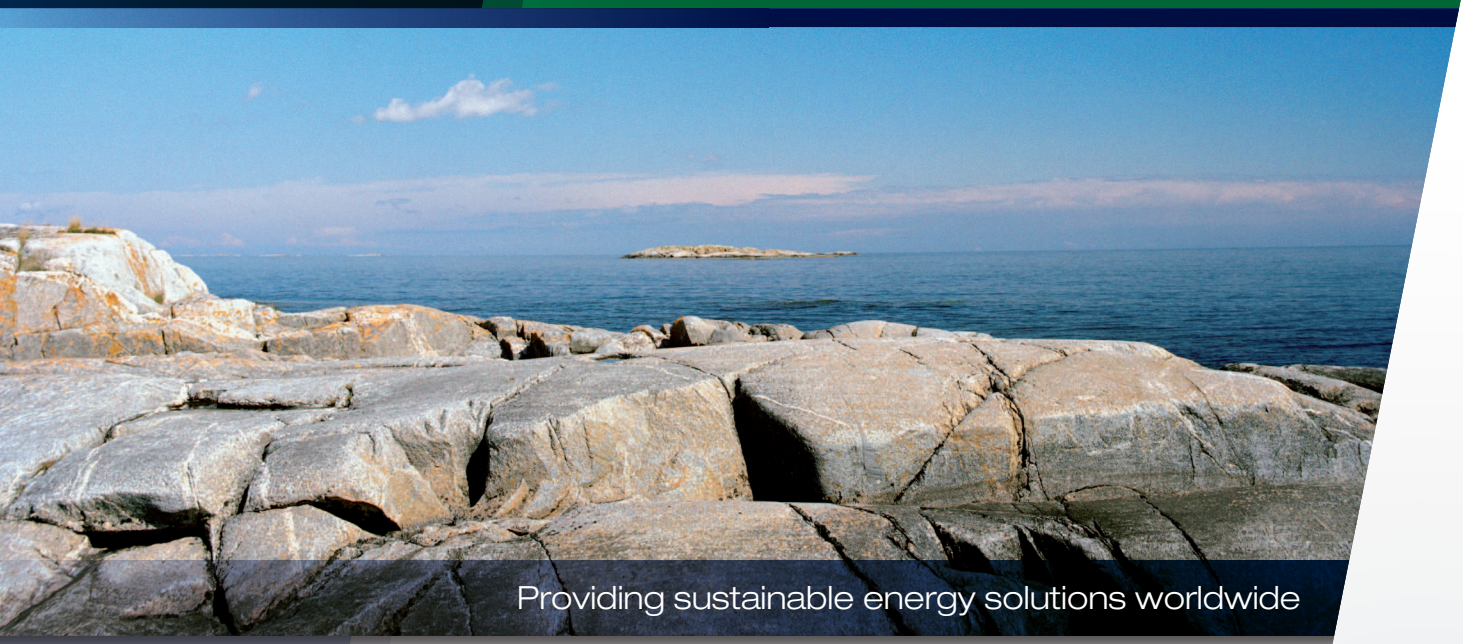
161 505 34-3 2015-09-18



Installation- and Maintenance Manual

CTC EcoMiniEl

External electric boiler

Enertech Group

161 505 34-3 2015-09-18

Installation- and Maintenance Manual

CTC EcoMiniEl

External electric boiler

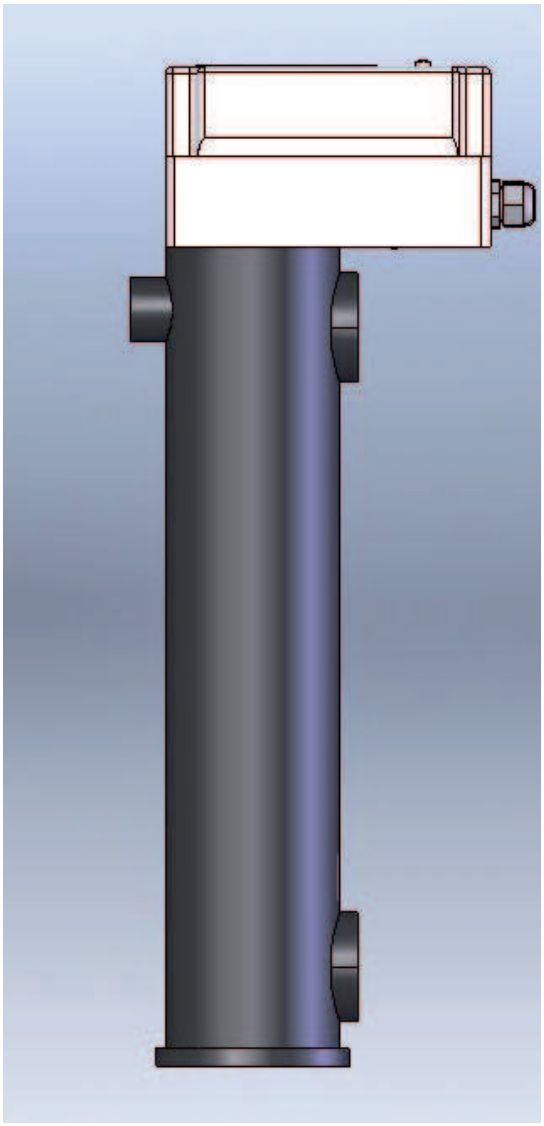


Table of contents

With reservation for misprints. Subject to design alteration.

YOUR SYSTEM

Fill in the information below. It is important to have this information close at hand.

Product	Serial number
Installer	Telephone number
Date of installation	

General

CTC EcoMiniEl is an external electric boiler that provides extra heating output when the heat pump's output is not sufficient. EcoMiniEl consists of an immersion heater, junction box and is controlled from CTC EcoLogic Ext.

CTC EcoMiniEl has an 1" connection for the inlet and outlet. On CTC EcoMiniEl there is a small venting valve to purge any air in the system. The tube is approved for max. 5 bar pressure.

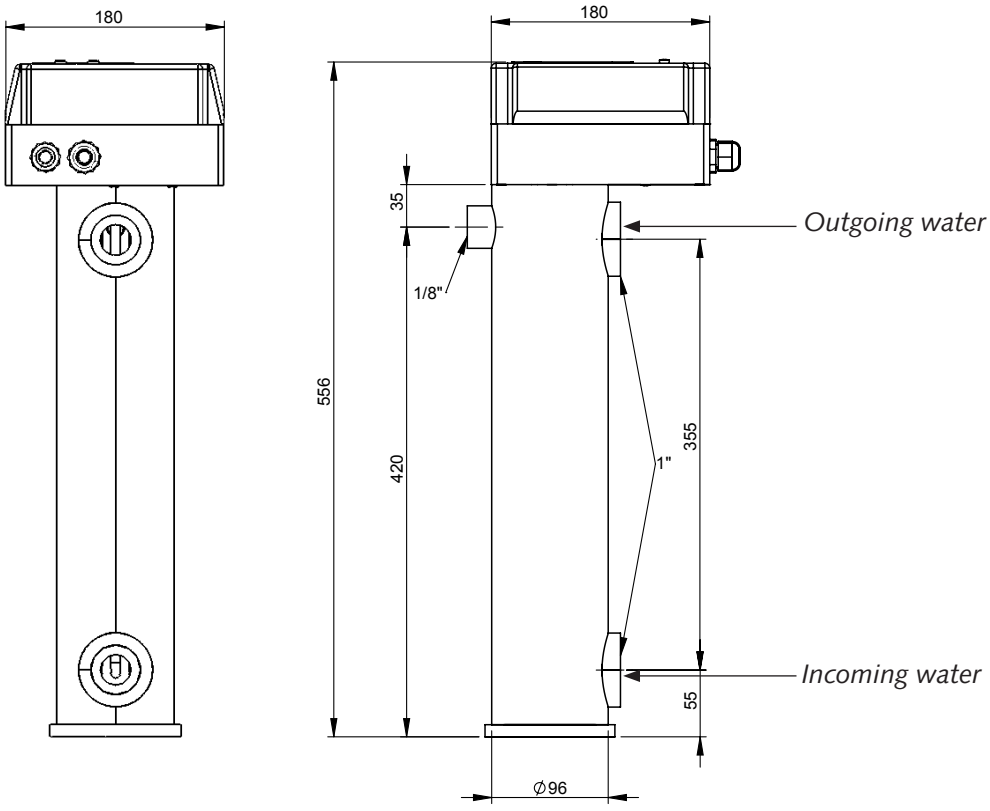
CTC EcoMiniEl is available in following 2 variants:
1. 3x400V
2. 1x230V

NB! CTC EcoMiniEl can be used in CTC EcoLogic Ext, systems 4, 5, 6, 7, 8, 9 and 12.

Technical data

CTC EcoMiniEl	1x230V	3x400V
Output immersion heater (kW)	2, 4, 6	3, 6, 9
Contactor 1 (kW)	2,00	3,00
Contactor 2 (kW)	4,00	6,00
Maximum output (kW)	6	9

The immersion heater has two 1" connections with internal threads and a venting valve on the top of the tube. To get rid of possible air connect incoming water at the bottom and outgoing water at the junction box.



Pipe installation

The immersion heater must be fitted vertically.

The installation must be carried out in accordance with applicable standards, see BBR-99 and the Heating and hot water directives 1993. The product must be connected to an expansion tank in open or closed systems. Do not forget to flush the radiator system before connection.

Pipe connections on the product

Make the connections as set out in the combination examples in the instruction. Also see the Dimension data for the dimensions and placement of connections.

Electrical installation

Installation and reconnection in the heat pump must be done by a qualified electrician. Wiring must be done according to applicable provisions. EcoMiniEl is fully connected internally at the factory. It has an even phase load on all power steps.

Electrical installation is done behind the front cover of the product. Loosen the screws on top (4), open and place the front to one side. The terminal blocks are located behind the cover of the distribution box.
Connection cables are routed through the cable glands.

! The immersion heater must be fitted vertically.

Supply

EcoMiniEl 3-phase must be connected to 400V 50~ and protective earth.
EcoMiniEl 1-phase must be connected to 230V 50~ and protective earth
Fuses sizes are stated under Technical data.

Isolator switch

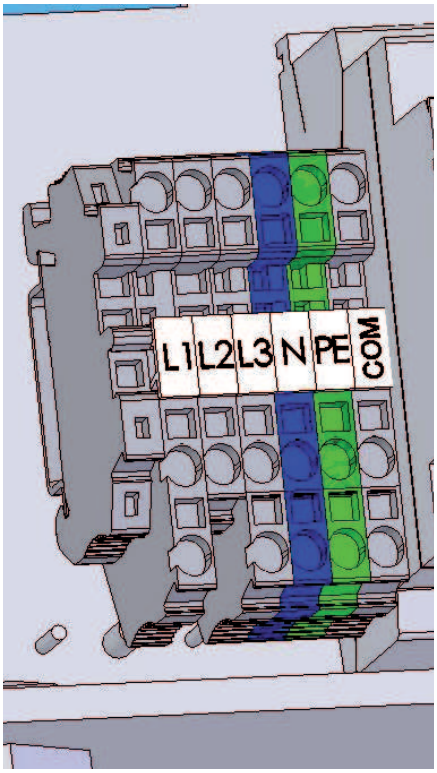
The installation must be preceded by an isolator switch.

Max thermostat

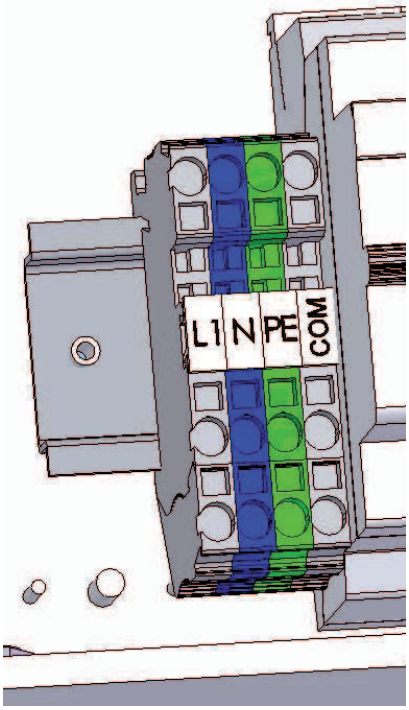
If the EcoMiniEl has been stored in the extreme cold the max. thermostat may have tripped.
Always check during installation that the max thermostat has not tripped.

Electrical connections as illustrated below.

3x400V



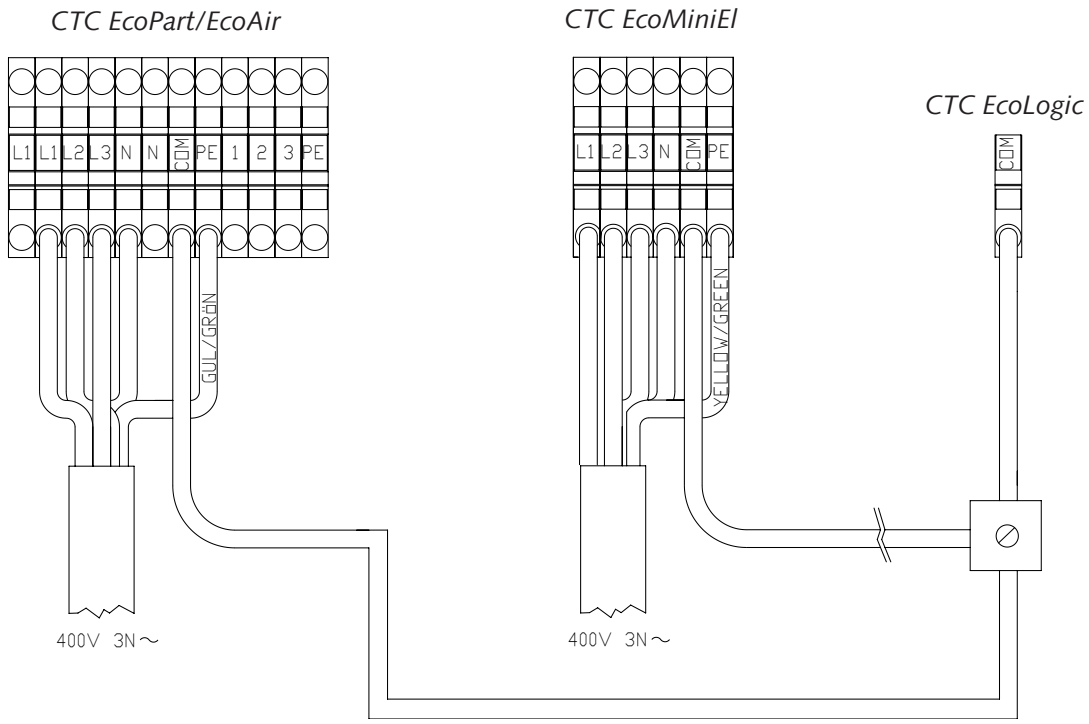
1x230V



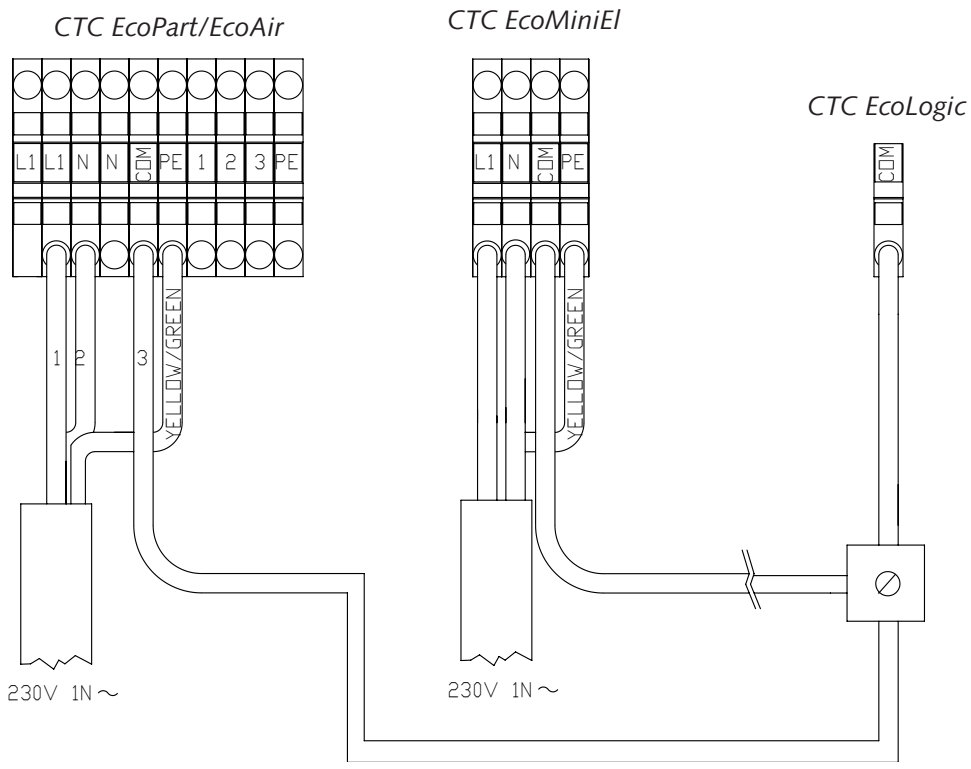
Connection between CTC EcoMiniEl and CTC EcoLogic

NB! CTC EcoMiniEl must be connected to the same electrical distribution box as CTC EcoLogic Ext,

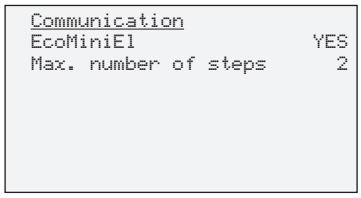
3 x 400 V



1 x 230 V



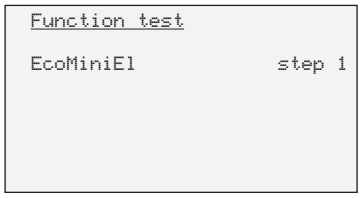
Settings in CTC EcoLogic Ext.



Activation of CTC EcoMiniEl is done from the CTC EcoLogic menu:
Installer->Settings->Communications->EcoMiniEl YES.
The factory setting is No.

The maximum number of steps permitted to be activated is selected from the menu:
Installer->Settings->Communications->Max. number of steps 2.
The factory setting is 2. The number of steps is adjustable between 0 and 3.

Step	Current (A), 3-phase	Output (kW), 3-phase	Current (A), 1-phase	Output (kW), 1-phase
1	4.3	3	8.7	2
2	8.7	6	17.4	4
3	13.0	9	26.1	6



Function test.

In order to test the function of CTC EcoMiniEl set the menu:
EcoMiniEl to YES in CTC EcoLogic Ext.

The function test is performed from the menu:
Installer->Service->Function test->EcoMiniEl Off.

Function

Priority of the heat pump

Operation with the heat pump is given priority above EcoMiniEl. If EcoMiniEl is in operation (the display shows C1, C2 or C3), and the compressor starts up, EcoMiniEl is switched off for 15 minutes to give the heat pump the opportunity to increase the temperature. If the heat pump has not succeded in increasing the temperature, EcoMiniEl is reactivated.

Status.

The status of EcoLogic Ext is displayed at the top of the ”Current operating info” menu EcoMiniEl is activated in status: HP + auxiliary heat and in status auxiliary heat.
NB! EcoLogic Ext operates EcoMiniEl in the conditions: Off, stage 1, stage 2 and stage 3. This means that EcoMiniEl is not always switched on, even if the status is showing HP + auxilary heat.

Steps

The output increases in steps every 10 minutes.
The power is reduced in stages as the temperature approaches its stop value. Step 3 changes into step 2 at the stop temperature -2. Step 2 changes into step 1 at the stop temperature -1. Step 1 switches off at the stop temperature. Once EcoMiniEl has been switched off, step 1 can only be activated after 5 minutes.

Systems 4 and 7.

Start temperature	Stop temperature stage
When the temperature is 5 degrees below its reference value.	When the supply temperature has reached its reference value.

System 5.

Start temperature	Stop temperature
When the upper tank temperature is 6 degrees (set difference + 1) below its reference value.	When the lower tank temperature is 3 degrees below its reference value (if the compressor is not running).

System 6.

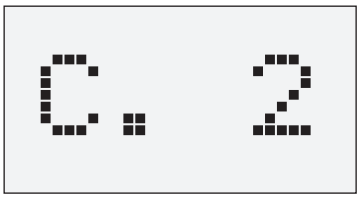
Start temperature	Stop temperature
When the upper tank temperature is 1 degree below its reference value.	When the lower tank temperature is 2 degrees (5 if the compressor is not running) above its reference value.

Systems 8, 9 and 12.

Start temperature	Stop temperature
When the upper tank temperature is 1 degree below its reference value.	When the lower tank temperature is 3 degrees below its reference value (if the compressor is not running when the returntemperature reaches its reference value).

Startup

Once EcoLogic Ext has started up, step 3 in EcoMiniEl is blocked for the first 2 hours.

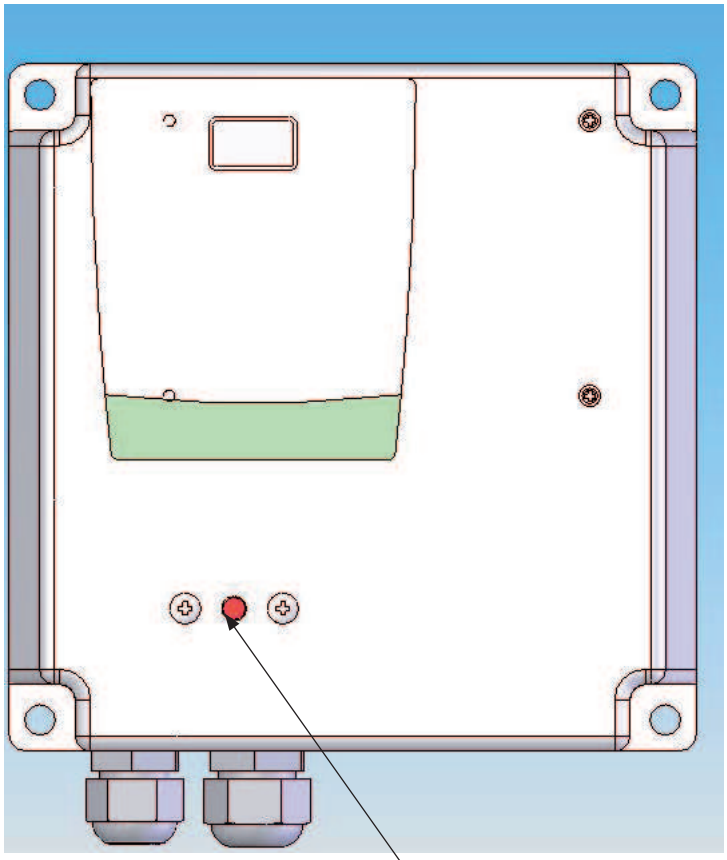


Display on CTC EcoMiniEl.

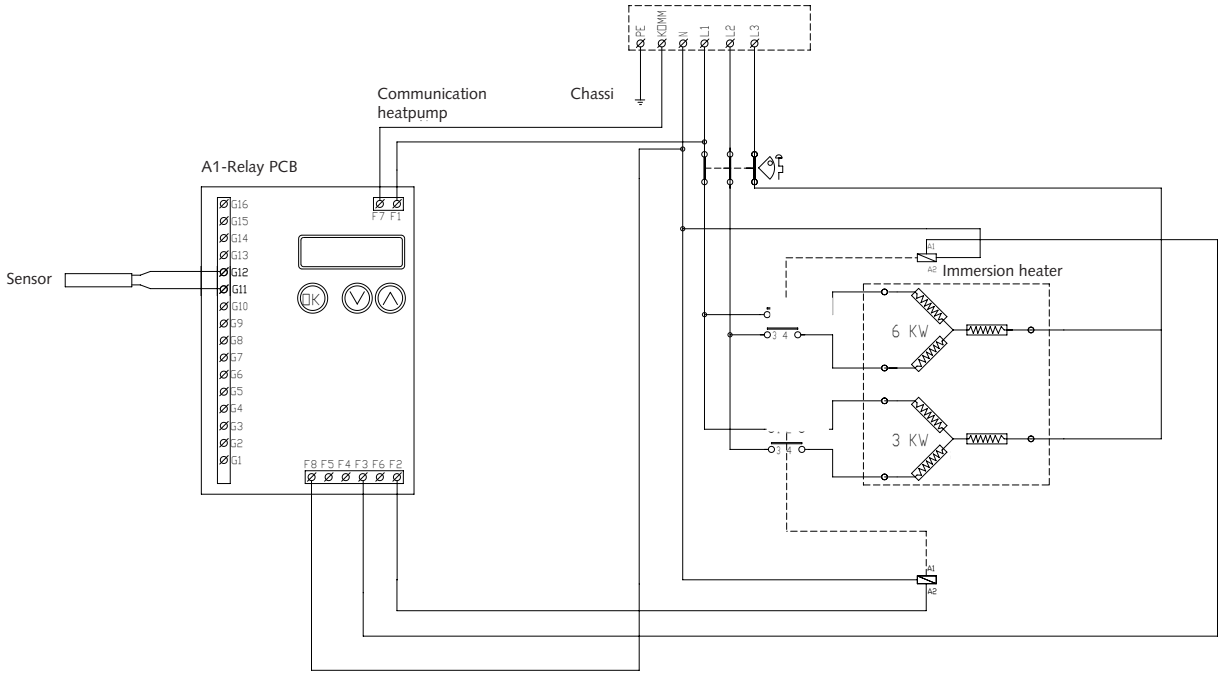
The digits to the right indicate the number of steps that are activated. The number of activated steps varies between 0 and the maximum number of steps selected in EcoLogic, menu `Max. number of steps`.
The display always shows a `C` on the left of the display.

Resetting the max. thermostat

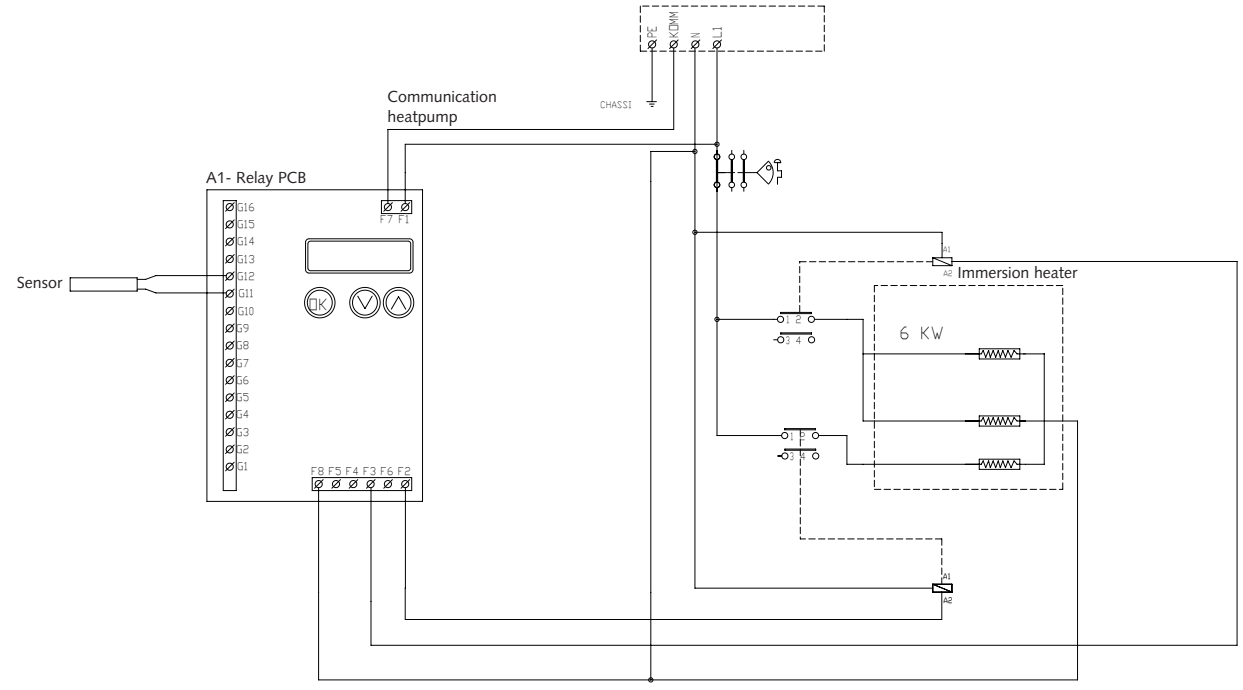
The max. thermostat is reset by pressing the red button on the junction box. Always check during installation that the max thermostat has not tripped.
See the figure below how to reset the max. thermostat.



Wiring diagram CTC EcoMiniEl 3x400V



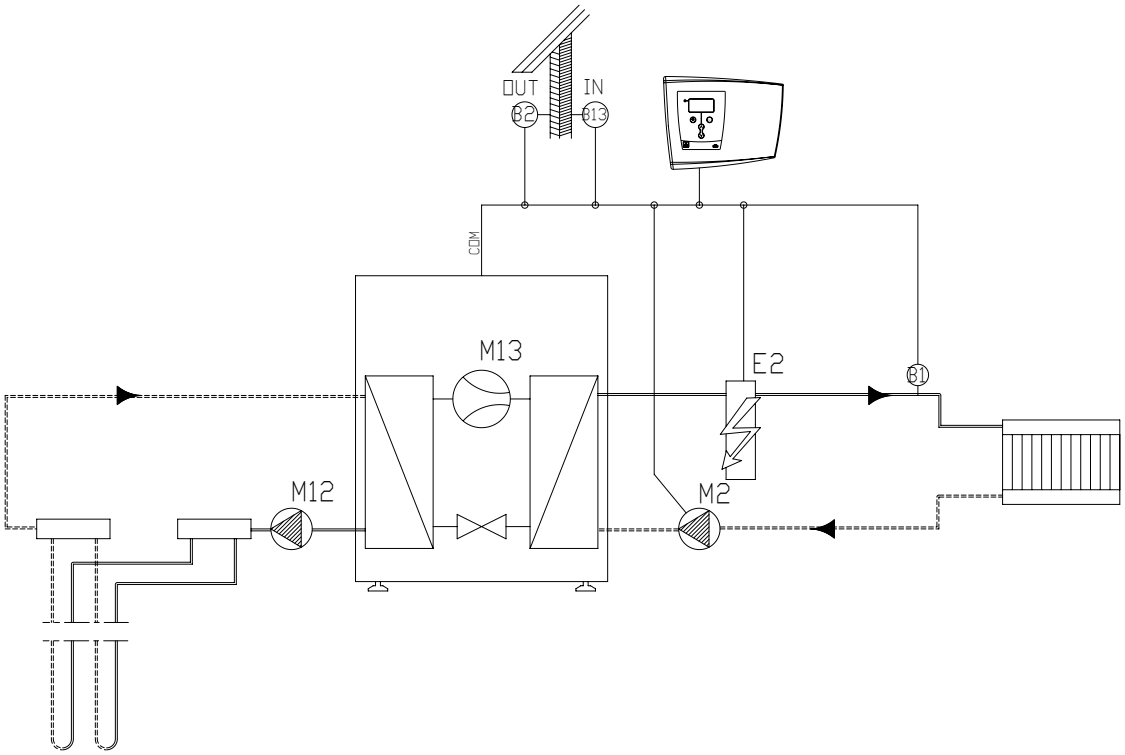
Wiring diagram CTC EcoMiniEl 1x230V



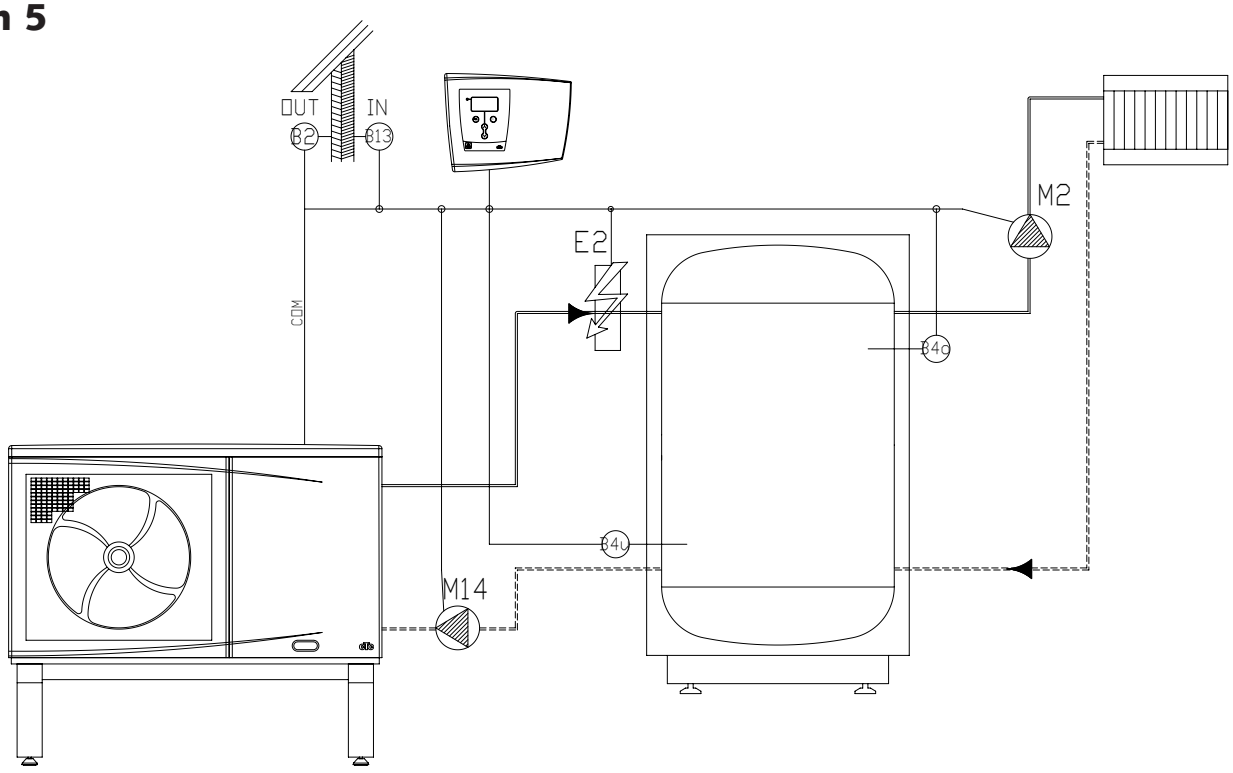
Combination examples

CTC EcoMiniEl (E2) will provide peak heating in the following five different combinations.

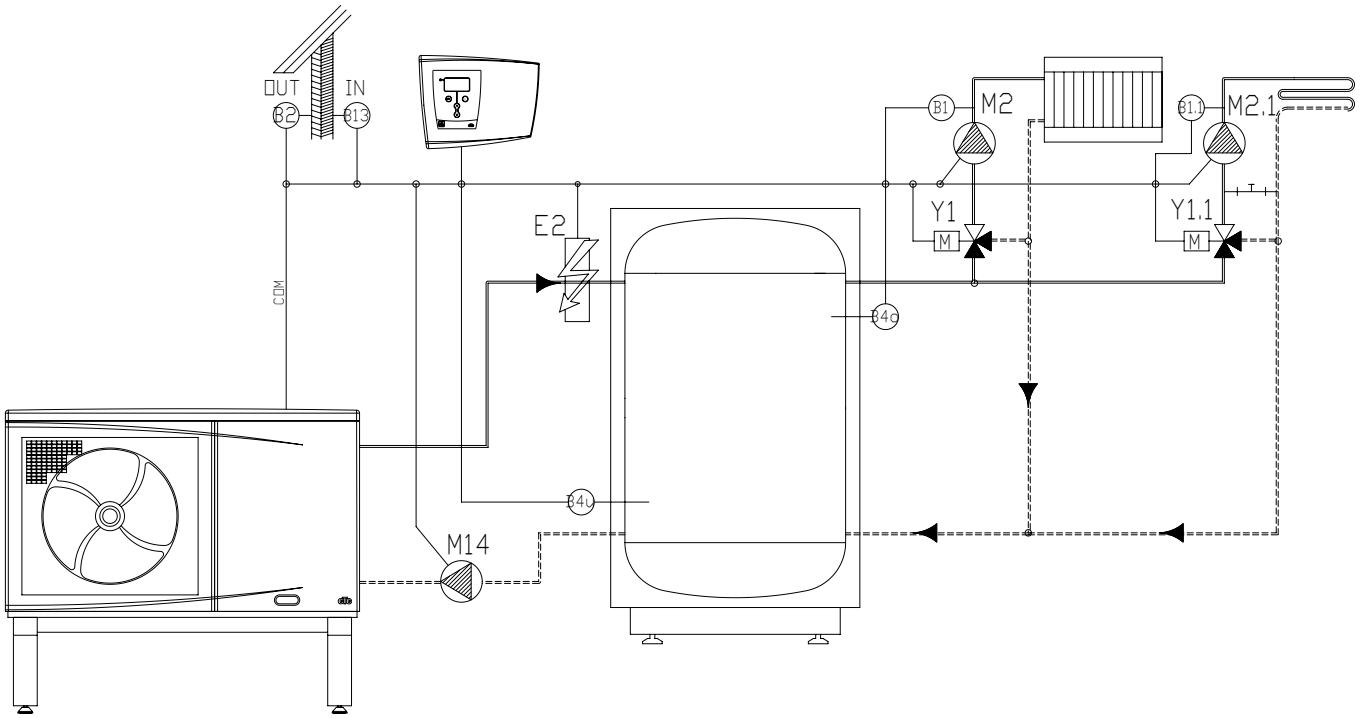
System 4



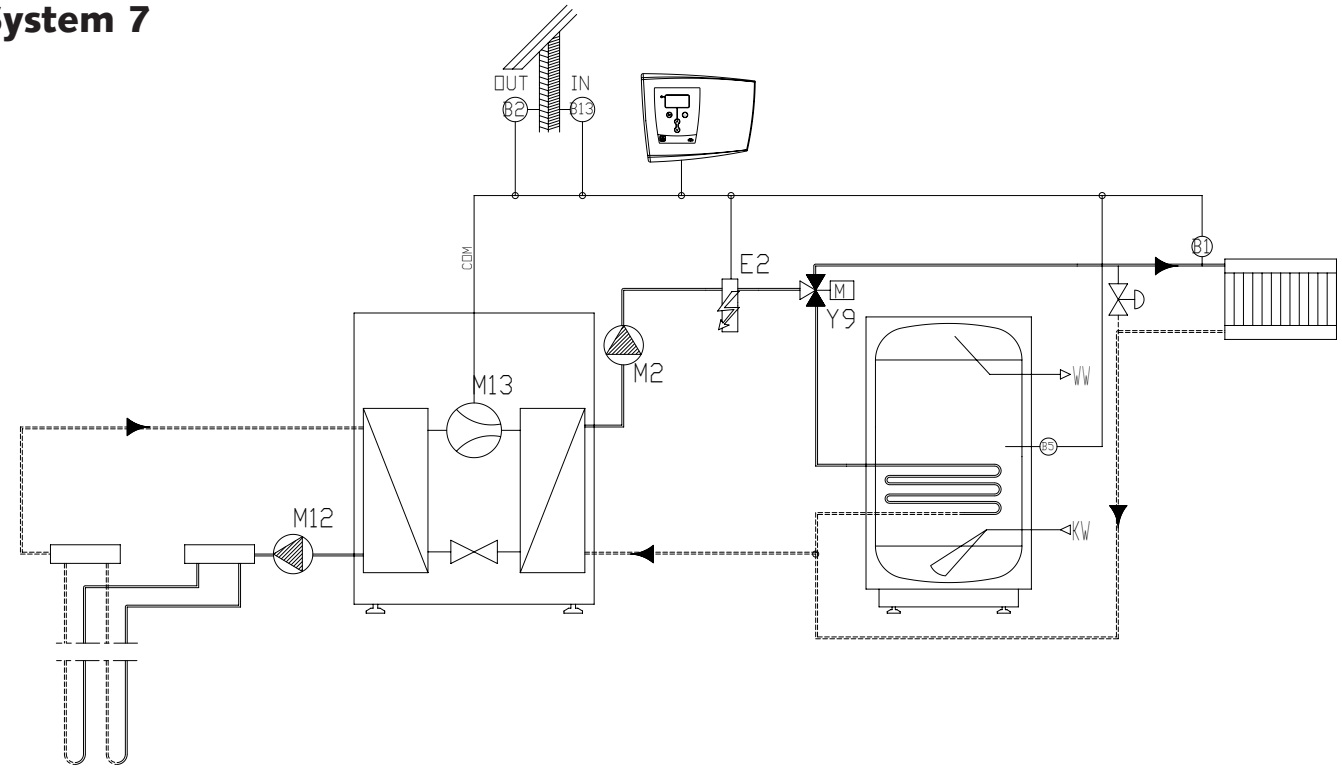
System 5



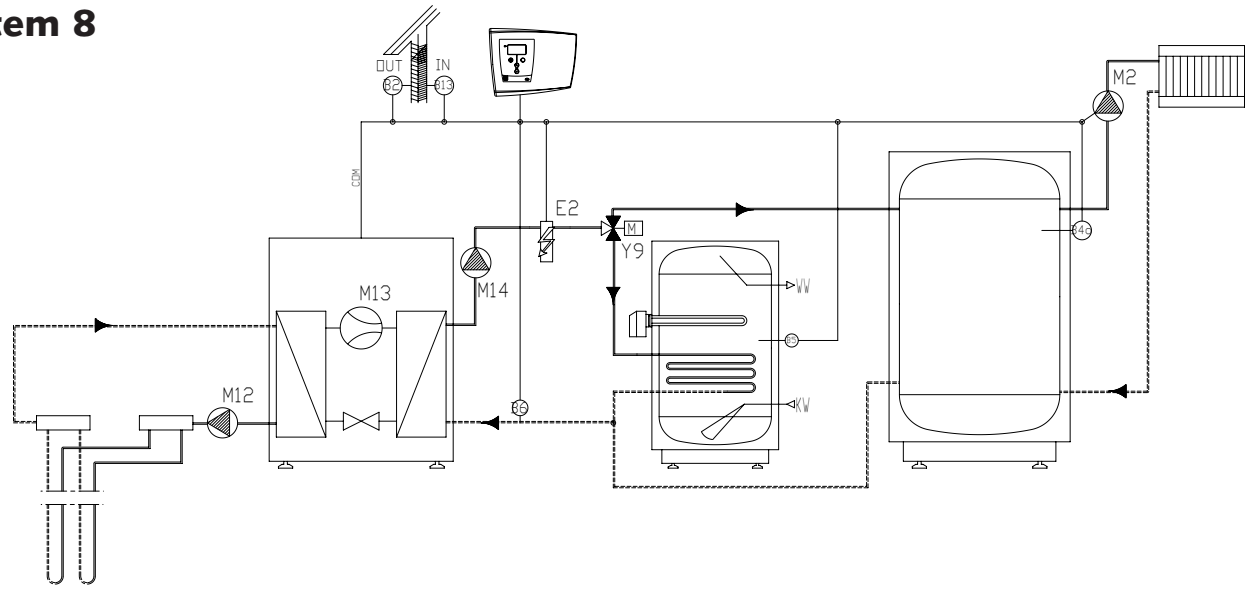
System 6



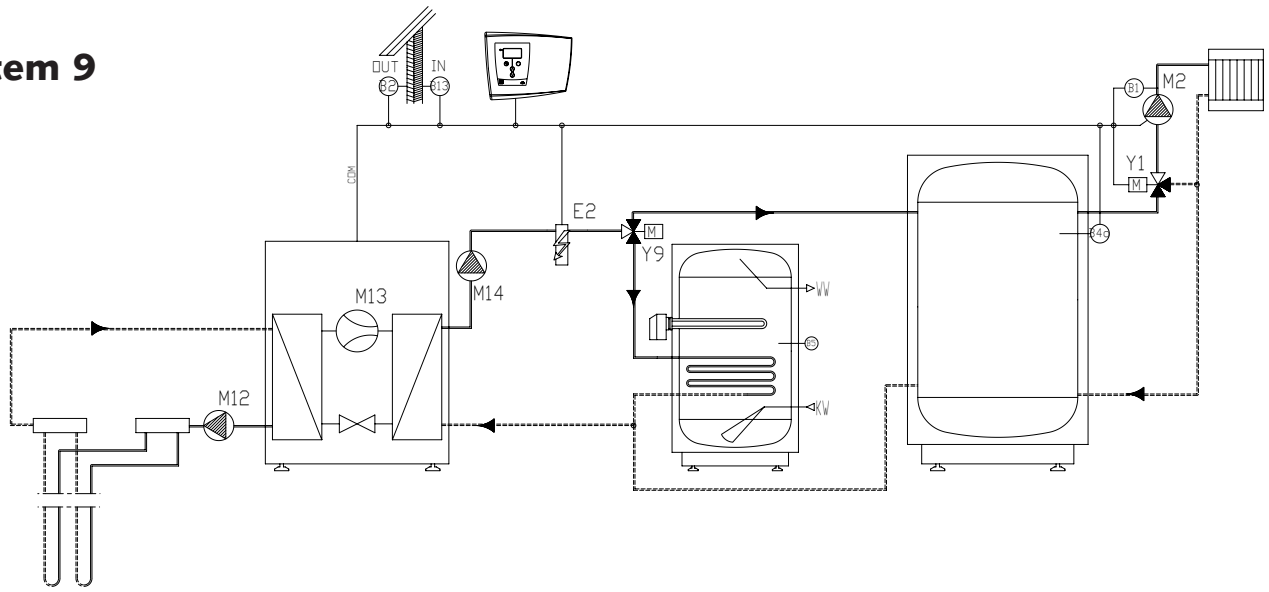
System 7



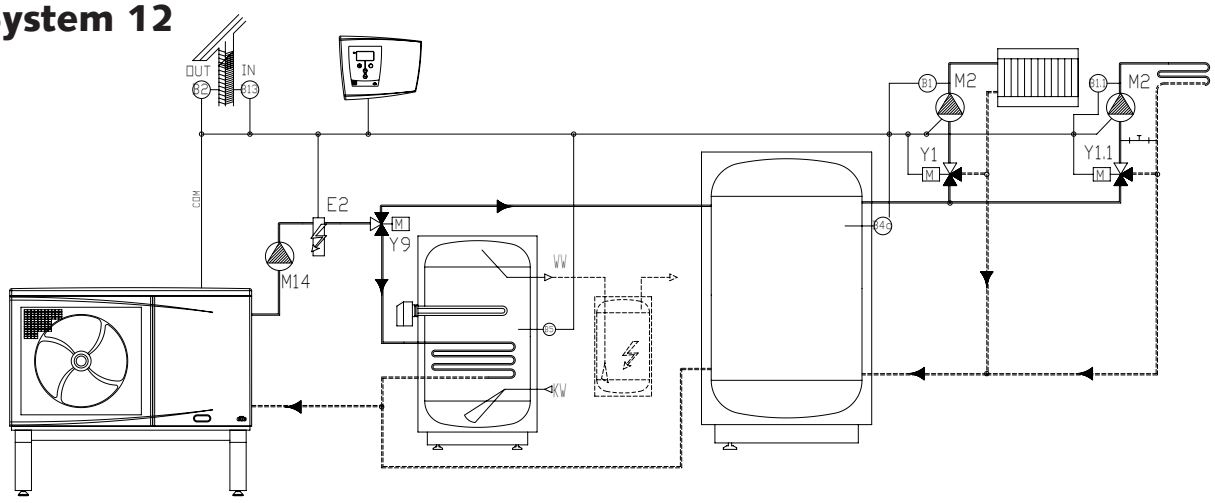
System 8



System 9



System 12



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CE

Försäkran om överensstämmelse
Déclaration de conformité
Declaration of conformity
Konformitätserklärung

försäkrar under eget ansvar att produkten,
confirme sous sa responsabilité exclusive que le produit,
declare under our sole responsibility that the product,
erklären in alleiniger Verantwortung, dass das Produkt,

CTC EcoMiniEl

som omfattas av denna försäkran är i överensstämmelse med följande direktiv,
auquel cette déclaration se rapporte est en conformité avec les exigences des normes suivantes,
to which this declaration relates is in conformity with requirements of the following directive,
auf das sich diese Erklärung bezieht, konform ist mit den Anforderungen der Richtlinie,

EC directive on:

Electromagnetic Compatibility (EMC) 89/336/EEC

Ecodesign Directive 2009/125/EC
(regulations (EU) 811/2013, 812/2013, 813/2013, 814/2013 where applicable)

Överensstämmelsen är kontrollerad i enlighet med följande EN-standarder,
La conformité a été contrôlée conformément aux normes EN,
The conformity was checked in accordance with the following EN-standards,
Die Konformität wurde überprüft nach den EN-normen,

EN 55014-1 /-2

EN 55104

EN 61 000-3-2

EN 60335-1

EN 50165

Detailed ecodesign information can be downloaded at: www.ctc.se/ecodesign

Ljungby 2015-09-02

Joachim Carlsson

Technical Manager

161 421 50 10-01

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