

Providing sustainable energy solutions worldwide

Installation and Maintenance Manual

CTC EL

Electric boilers

Models 9 / 15 / 26 / 42

Important!

- Read carefully before use, keep for future reference.
- Translation of the original instructions.



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For your own reference

Fill in the information below. It may come in useful if anything should happen.

Product:	Manufacturing number:
Installer:	Name:
Date:	Tel. no.:

No liability is accepted for any misprints. Subject to design changes.

Checklist

The checklist must always be completed by the installation engineer

- In the event of servicing, this document may need to be provided
- Installation must always be carried out according to the Installation and Maintenance Instructions
- Installation must always be carried out according to professional standards

Following installation, the unit must be inspected and functional checks performed as indicated below:

Pipe installation

- The system filled, positioned and adjusted according to professional standards and the instructions
- Product placed to facilitate service
- Pumps, valves, etc. sized according to required flows
- System tested for leakage and correctly sealed
- Bleeding performed (subsequent bleeding may be necessary)
- Safety equipment fitted and inspected/functionally tested
- Overflow pipes from safety valves routed to floor drain
- Tank system flushed with cold freshwater as per these instructions
- Secondary visit to inspect seals and check that system bleeding performed

Electrical installation

- Safety switch installed
- Cable routing correct according to applicable regulations
- Correct fuse installed (group fuse)

Customer information (adapted to the relevant installation)

- Start-up with customer/installer
- Review of heating unit connected to the tank system
- Installation and Maintenance Manual given to the customer
- Check and filling, heating circuit
- Fine-tuning information, valve settings, etc.
- Information about operational disruptions and appropriate measures
- DHW mixing valve placement and settings
- Safety valve function test
- Warranties and insurance
- Installation verification/warranty filled in and posted
- Information and procedures for reporting faults

Date/Customer

Date/Installer



If these instructions are not followed when installing, operating and maintaining the system, Enertech's obligation under the applicable warranty terms is not binding

Congratulations on your new product!



You have just purchased a CTC EL electric boiler, with which we hope you will be very pleased. Read about how to install and take care of your electric boiler on the following pages.

Save this manual containing the installation and maintenance instructions. If properly maintained, you will be able to enjoy the use of your system for many years. This manual provides all the information you will need.

CTC EL is an electric boiler that, if necessary, provides additional heat for your heating system.

CTC EL is externally controlled by the CTC EcoLogic L/M control system, by allowing, for example, a different number of power groups to be connected via contactors depending on power output.

CTC EL is available in four models, which are named according to the maximum output: 9 kW, 15 kW, 26 kW and 42 kW.

The electric coils in the electric boiler tube are made of acid-resistant steel (SIS 2333) and have a very long service life.

Safety instructions



Turn off the power with an omnipolar switch before doing any work on the product.



The product must be connected to protective earth.



This appliance is not to be used for a potable water supply.



Max. permissible pressure in boiler: 0.7 MPa.



The product's electrical systems should only be installed and serviced by a qualified electrician.



Safety valve check:
-Safety valve for boiler/system to be checked regularly.



This device can be used by children from the age of eight years and above and by people with reduced physical, sensory or mental ability or lack of experience or knowledge if they have been taught, either with supervision or with the instructions provided, how to use the device safely and understand the risks involved. Children should not play with the device. Cleaning and maintenance should not be carried out by children without supervision.



If these instructions are not followed when installing, operating and maintaining the system, Enertech's commitment under the applicable warranty terms is not binding.

1. Important to remember!

Check the following in particular on delivery and installation:

1.1 Transportation

- Transport CTC EL to the installation site before removing the packaging.

1.2 Positioning

- Remove the packaging and check before installation that the product has not been damaged in transit. Report any transport damage to the carrier.
- The product must be installed upright.
- For servicing, a space of at least 500 mm is required in front of the product. If this is not possible, detachable connectors must be used.

1.3 Recycling

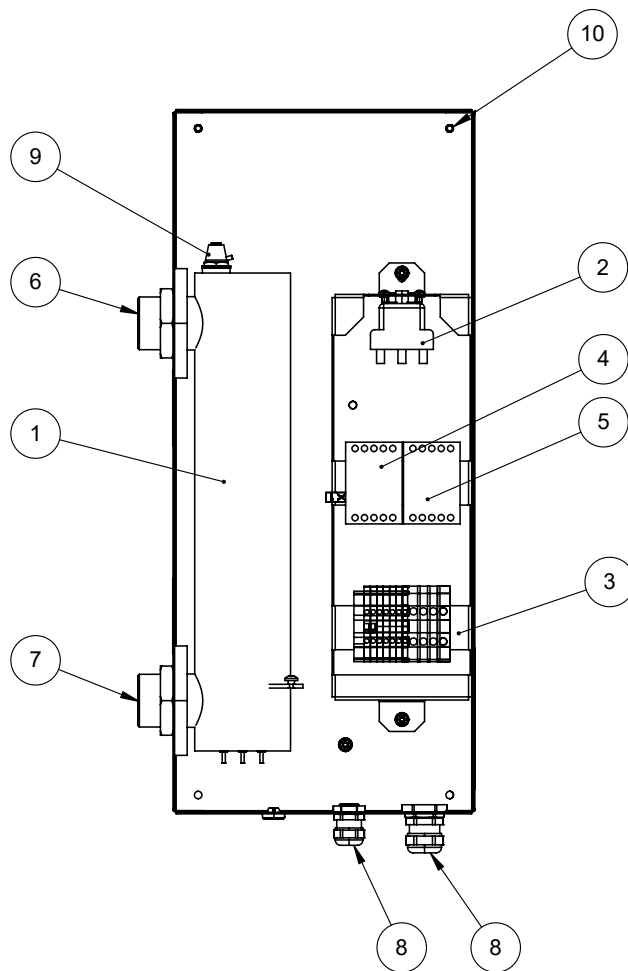
- The packaging must be deposited at a recycling station or with the installation engineer for correct waste management.
- Obsolete products must be disposed of correctly and transported to a waste station or distributor/retailer offering this service. Do not discard the product with household waste.

1.4 After commissioning

- The installation engineer advises the property owner on the design and servicing of the system.
- The installer completes a checklist and provides contact information – the customer and installer sign the list, which is kept by the customer.
- Make sure to register for warranty and insurance on the CTC website: <https://www.ctc-heating.com/customer-service#warranty-registration>

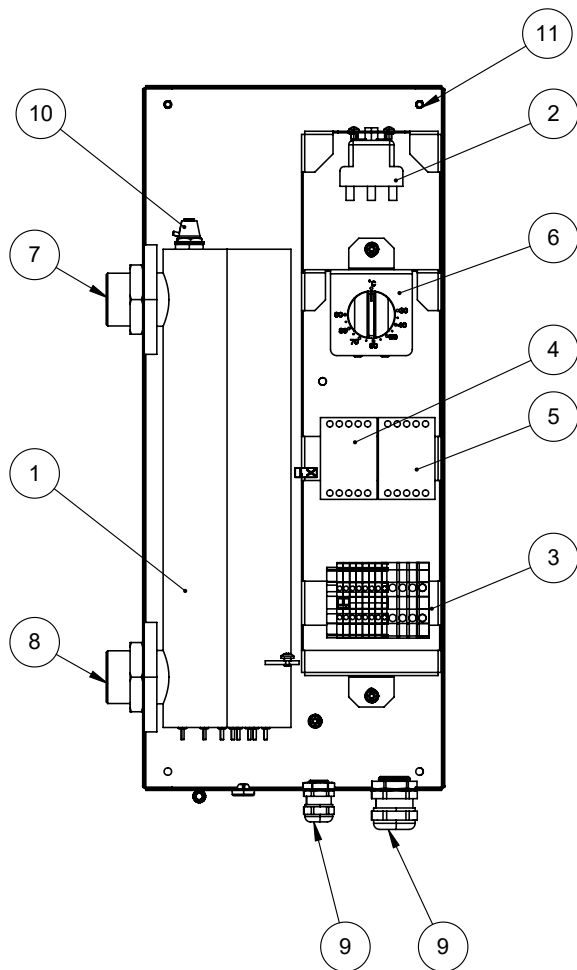
2. Component location

2.1 CTC EL 9



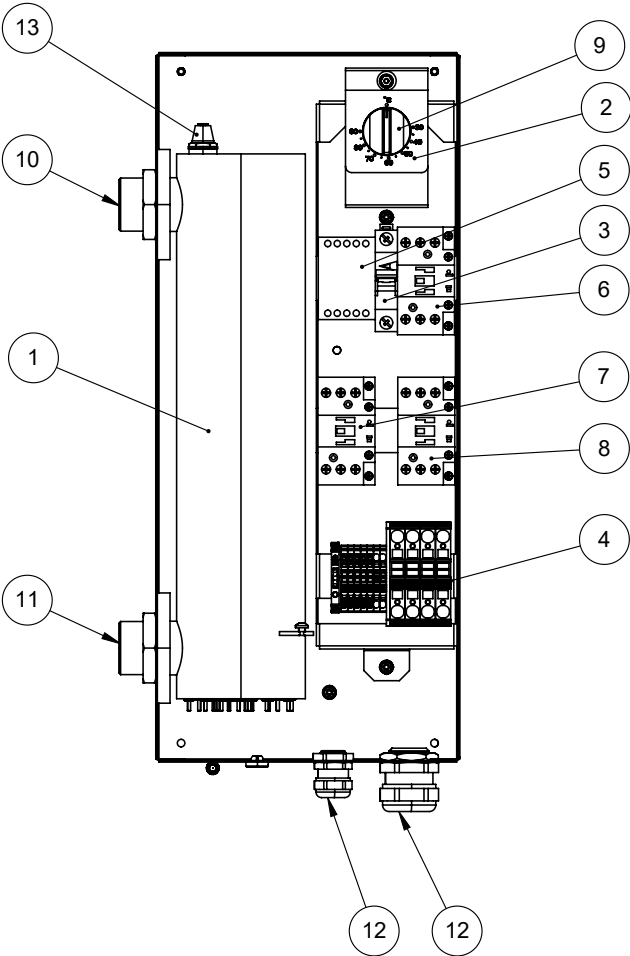
- | | |
|----|------------------------------|
| 1 | Electric heater |
| 2 | Overheating protector |
| 3 | Terminal block |
| 4 | Contactors |
| 5 | Contactors |
| 6 | Connection, primary flow G32 |
| 7 | Connection, return flow G32 |
| 8 | Cable entry |
| 9 | Bleeding |
| 10 | Mounting holes, 4 pcs |

2.2 CTC EL 15



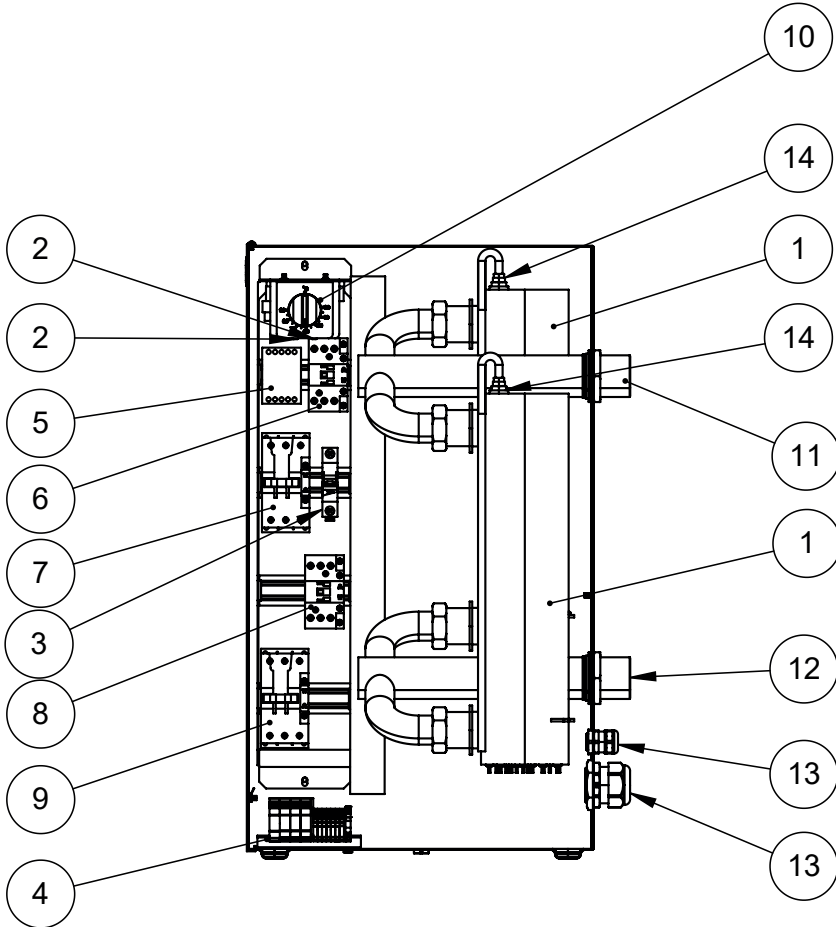
- | | |
|----|------------------------------|
| 1 | Electric heater |
| 2 | Overheating protector |
| 3 | Terminal block |
| 4 | Contactors |
| 5 | Contactors |
| 6 | Backup thermostat |
| 7 | Connection, primary flow G32 |
| 8 | Connection, return flow G32 |
| 9 | Cable entry |
| 10 | Bleeding |
| 11 | Mounting holes, 4 pcs |

2.3 CTC EL 26



- 1 Electric heater
- 2 Overheating protector
- 3 Automatic circuit breaker
- 4 Terminal block
- 5 Contactor
- 6 Contactor
- 7 Contactor
- 8 Contactor
- 9 Backup thermostat
- 10 Connection, primary flow G32
- 11 Connection, return flow G32
- 12 Cable entry
- 13 Bleeding

2.4 CTC EL 42



- 1 Electric heater
- 2 Overheating protector
- 3 Automatic circuit breaker
- 4 Terminal block
- 5 Contactor
- 6 Contactor
- 7 Contactor
- 8 Contactor
- 9 Contactor
- 10 Backup thermostat
- 11 Connection, primary flow G40
- 12 Connection, return flow G40
- 13 Cable entry
- 14 Bleeding

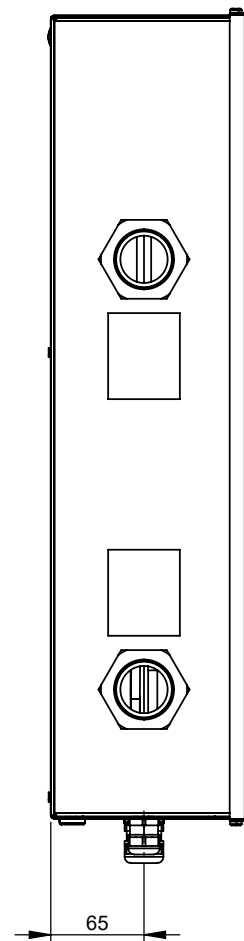
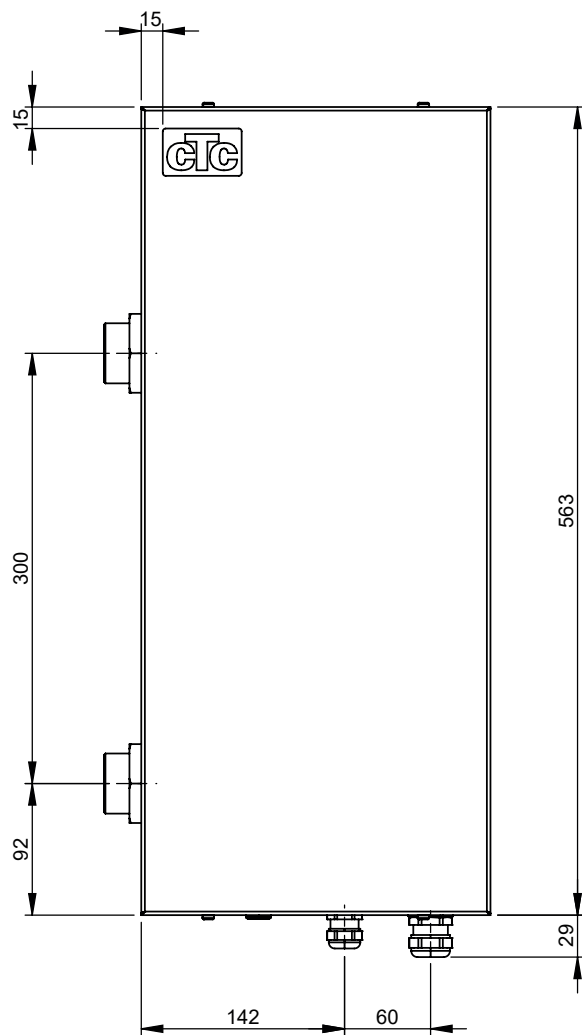
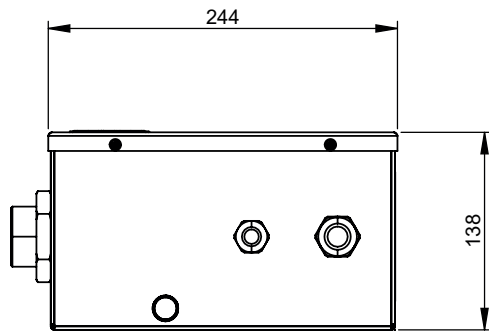
3. Technical data / Energy labelling

Technical data		CTC EL 9 kW	CTC EL 15 kW	CTC EL 26 kW	CTC EL 42 kW
Article number		589840001	589841001	589842001	589843001
EAN		7333077098377	7333077098384	7333077098353	7333077098360
Rated voltage		400 V 3N~ 50Hz			
Electric heater output		9	15	26	42
Fuse, electric heater		16	25	40	63
Enclosure class		IP 44			IP 21
Cable area, power supply	mm ²	4 x 2.5	4 x 6 (21 A/ phase)	4 x 6 (37 A/ phase)	4 x 16 (60 A/ phase)
Cable area, operating current	mm ²	3 x 1.5	5 x 1.5	5 x 1.5	5 x 1.5
Weight	kg	9.3	11	15	33
Dimensions (DxWxH)	mm	138x244x563	138x244x563	138x244x563	402x354x712
Volume	L	1.6	4.5	4.5	10
Max. permissible pressure in boiler	MPa / bar	0.7 / 7			
Min. water flow	m ³ /h	0.45	1.1	1.4	2.1
Max. return temperature	°C	58	68	78	78
Connection, supply/return		G 1/4"	G 1 1/4"	G 1 1/4"	G 1 1/2"
Material, electric heater		SS 2348 EN 1.4404			
Material, tube		SS 2333 EN 1.4301			

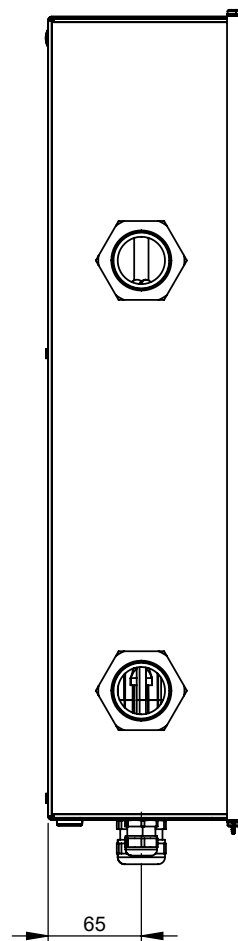
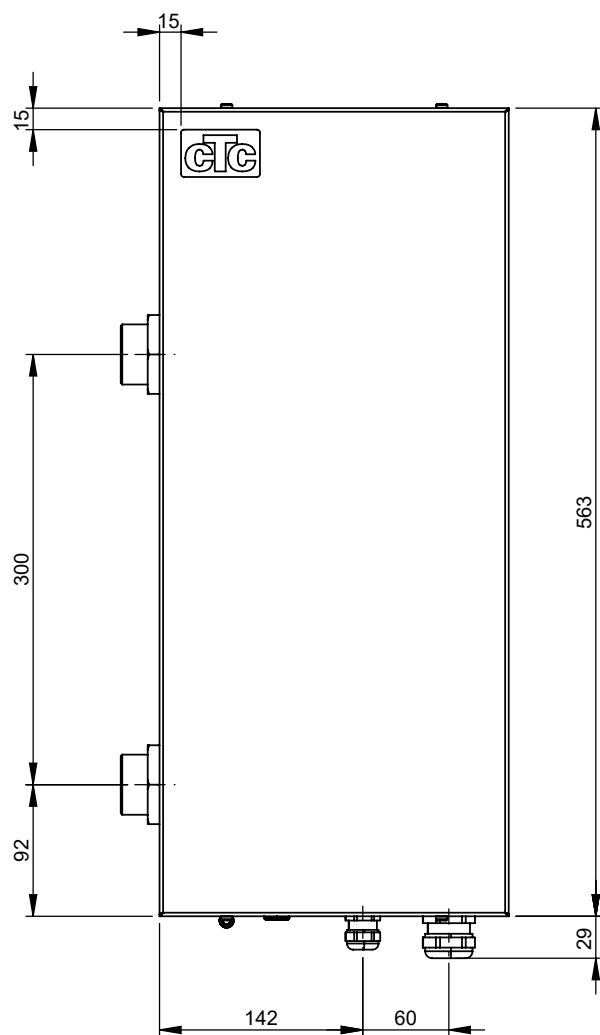
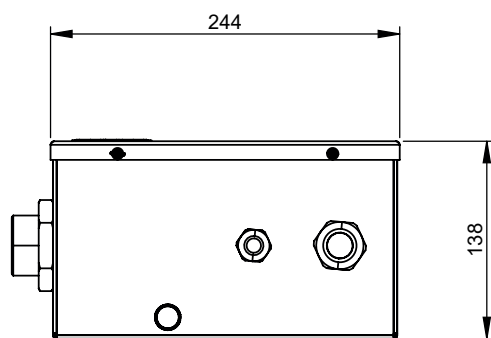
Energy label		CTC EL 9 kW	CTC EL 15 kW	CTC EL 26 kW	CTC EL 42 kW
Energy efficiency class		D	D	D	D
Nominal heat output (P _{design})	kW	9	15	26	42
Annual energy consumption, room heating	kWh	20310	33850	58674	94781
Seasonal average efficiency, room heating	%	37	37	37	37
Sound power L _{WA} indoors	dB	35	35	35	35

4. Measurements

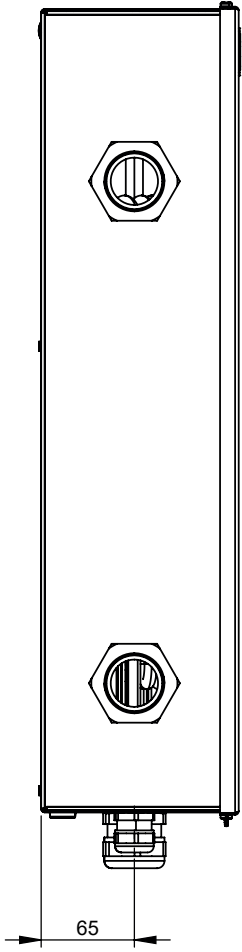
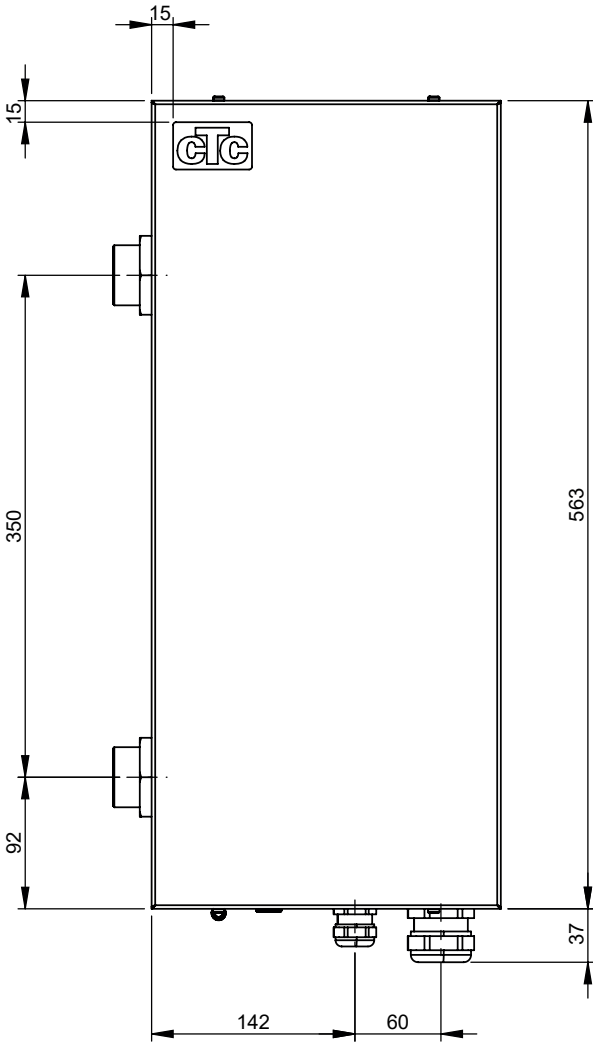
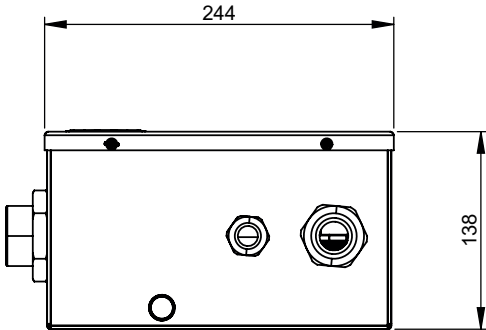
4.1 CTC EL 9



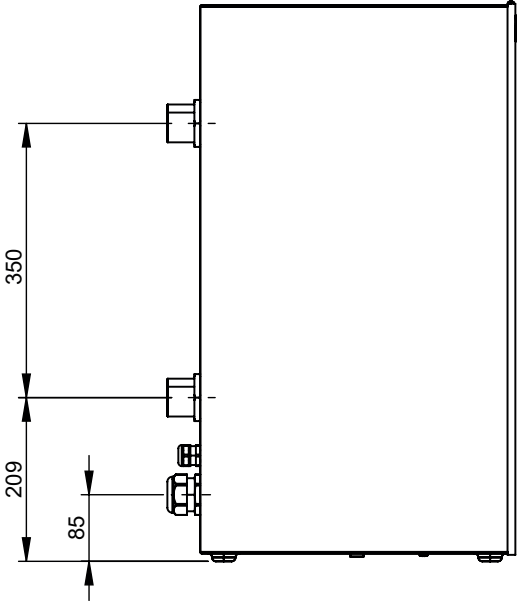
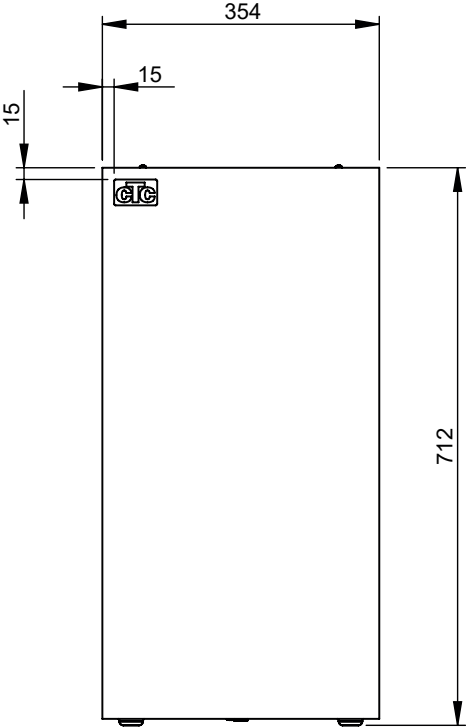
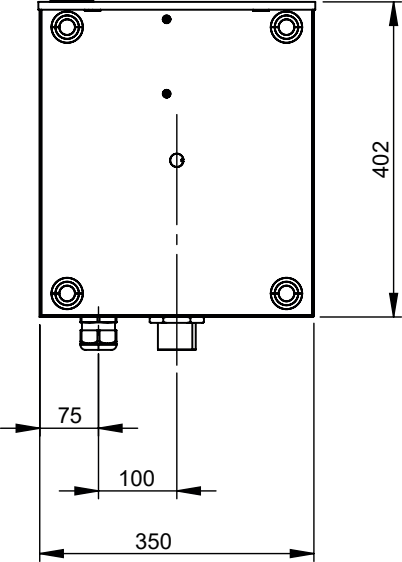
4.2 CTC EL 15



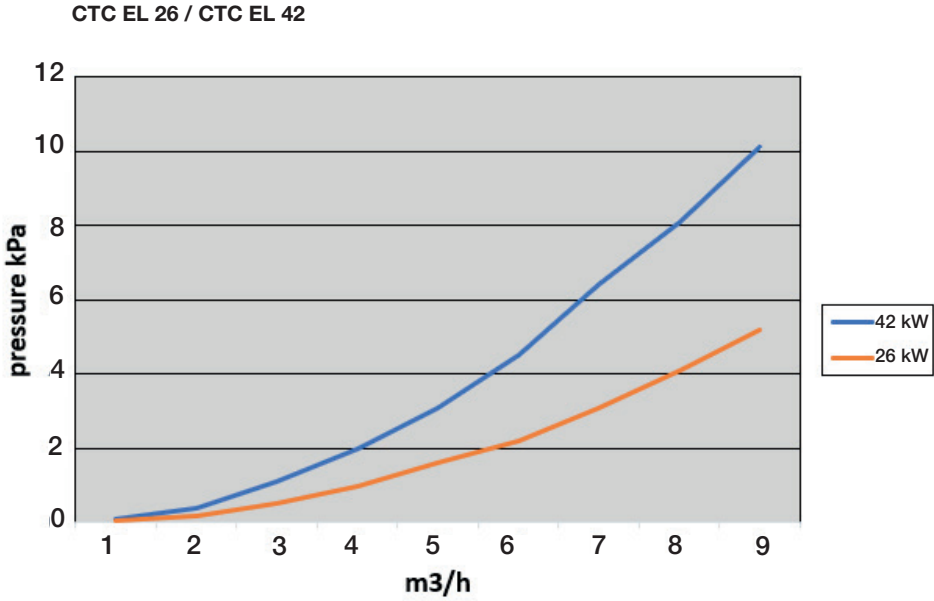
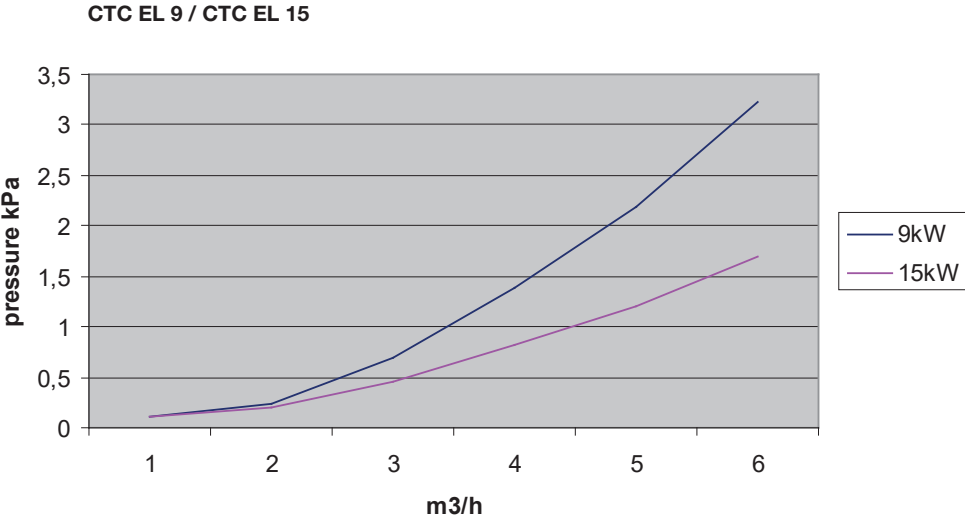
4.3 CTC EL 26



4.4 CTC EL 42



5. Pressure differential diagram



6. Pipe installation

Pipe installation must be carried out in accordance with the applicable standards. The electric cassette must be installed upright.

Safety valve

The electric cassette must be equipped with an approved safety valve. Check the operation of the valve at least four times a year by briefly opening and closing the valve to make sure that water is flowing through it. Reset the pressurise by refilling the water.

Drainage valve

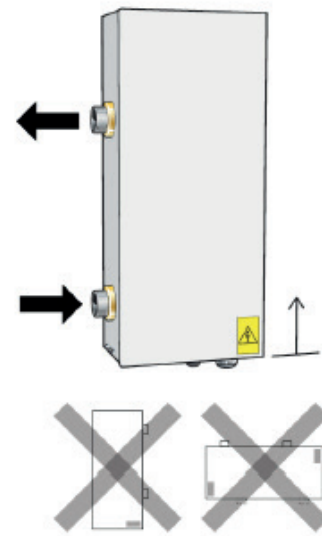
Always shut off power to the electric cassette when draining to avoid damaging the electric heater's electrical coils.

Drain the system of water using a drainage valve at the bottom of the pipe installation. The remaining water in the electric cassette must be emptied through the drainage connection. If drainage of the system is normally performed through the electric cassette's drainage connection, a drainage valve can be fitted there.

Drain the water when the heating circuit will be switched off for an extended period of time.

Circulation pump

A circulation pump must be used to ensure the least possible water flow over the electric heater. A bypass valve and a pressure expansion vessel must be installed if the system has valves to completely shut down circulation in the heating circuit.



The electric cassette must be installed upright

7. Electrical installation

Safety information

- Installation and connections in the electric cassette must be performed by a licenced electrician.
- All wiring shall be installed according to applicable requirements.

Also refer to the "Safety Instructions" chapter.

Power supply

The product must be connected to 400 V 3N~, 50 Hz. For fuse ratings and dimensions for the supply cable and operating current, refer to the "Technical Data" chapter.

Omnipolar safety switch

The installation must be preceded by an omnipolar safety switch according to overvoltage category III, which ensures disconnection from all electric power sources.

Backup thermostat

The electric cassette is controlled externally by CTC EcoLogic L/M, but can be forced to run via thermostat if there is no control voltage.

Carefully check the primary flow temperature and thermostat setting when forcing. A too high a primary flow temperature may damage the system!

! Installation must be carried out by a qualified professional in accordance with applicable regulations.

! Reset the temperature limiter if it has tripped during transport.

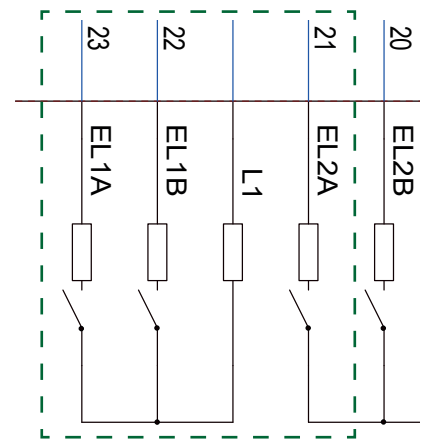
7.1 Connection to CTC EcoLogic control system

CTC EL must be connected to the following terminal blocks on the EcoLogic relay card:

Additional heat source CTC EL (E2), 0-3 step / 0-7 step*

Relay output, Step 1	EL1A
Relay output, Step 2	EL1B
Relay output, Step 3	EL1A+EL1B
Relay output, Step 4	EL2A
Relay output, Step 5	EL1A+EL2A
Relay output, Step 6	EL1B+EL2A
Relay output, Step 7	EL1A+EL1B+EL2A

Also refer to the wiring diagram and the chapter titled "Electrical Installation" in the EcoLogic L/M Installation and Maintenance Manual.



From CTC EcoLogic wiring diagram

7.2 Connection to CTC EL

For connection to the electrical cassette's terminal block, refer to the attached electrical diagram for CTC EL.

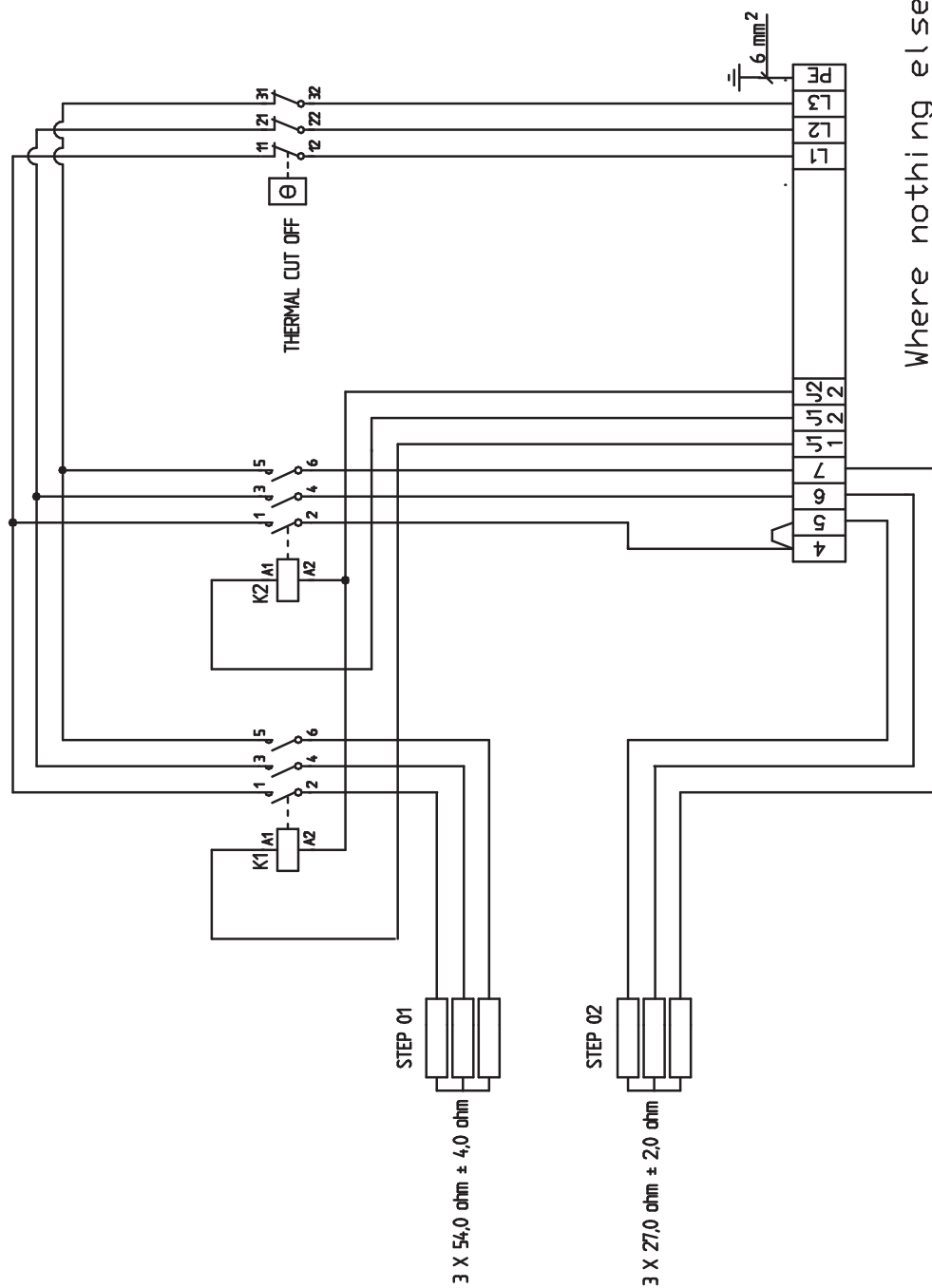
7.3 CTC EcoLogic menu system

In the EcoLogic menu system, CTC EL (additional heat source E2) must first be defined (connected to the system). Choose between 0-3 steps and 0-7 steps.

All relevant menus are presented in the EcoLogic L/M Installation and Maintenance Manual.

*Connect max. 13 A per relay. For higher current, connect via contactor.

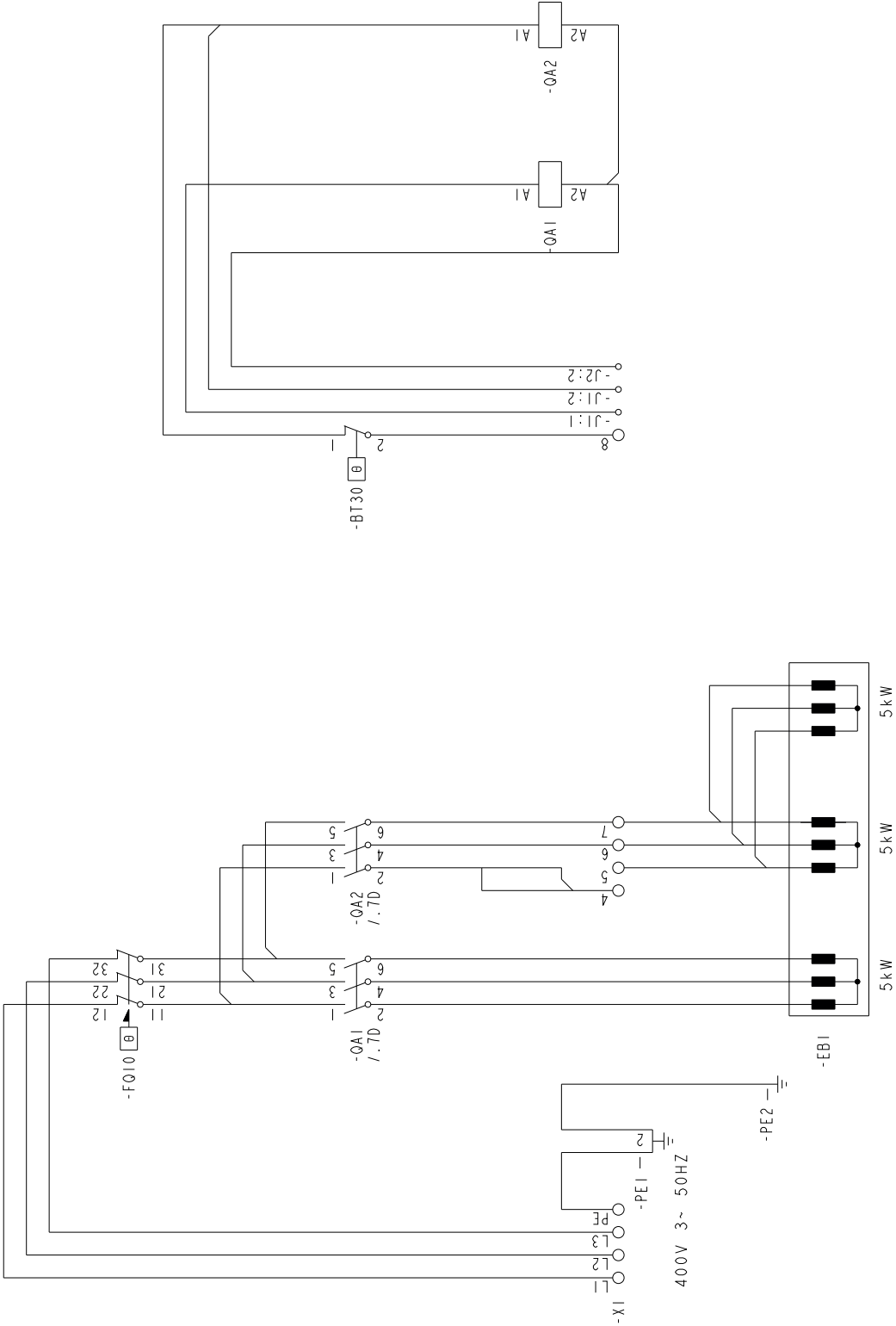
8. Wiring diagram CTC EL 9



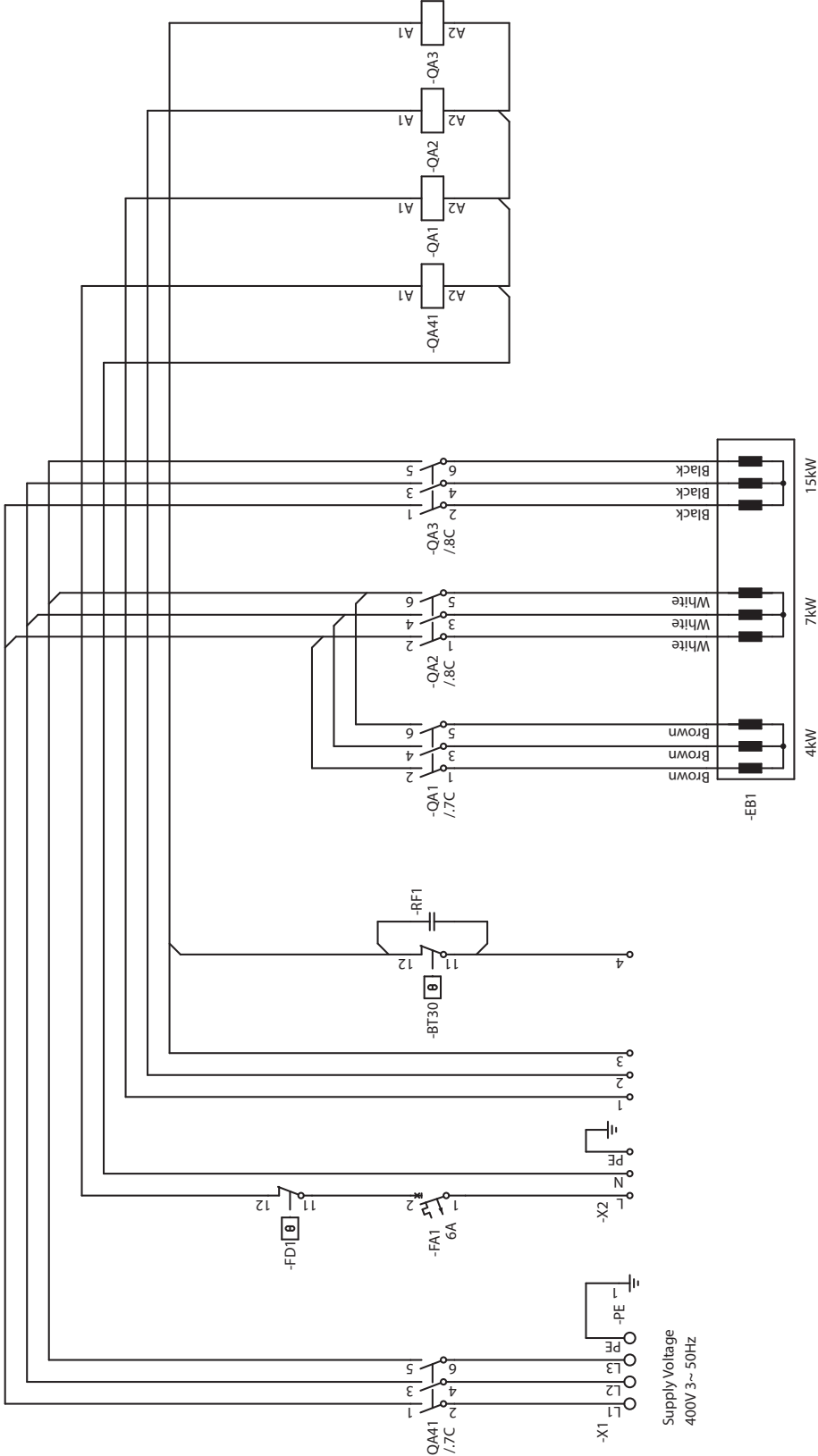
Where nothing else stated:
 Cable section 2.5mm²
 Power: 9kW/400V
 Artno: 1150338601

Manufacturer: Backer BHV AB, Sweden

9. Wiring diagram CTC EL 15



10. Wiring diagram CTC EL 26



11. Wiring diagram CTC EL 42

