

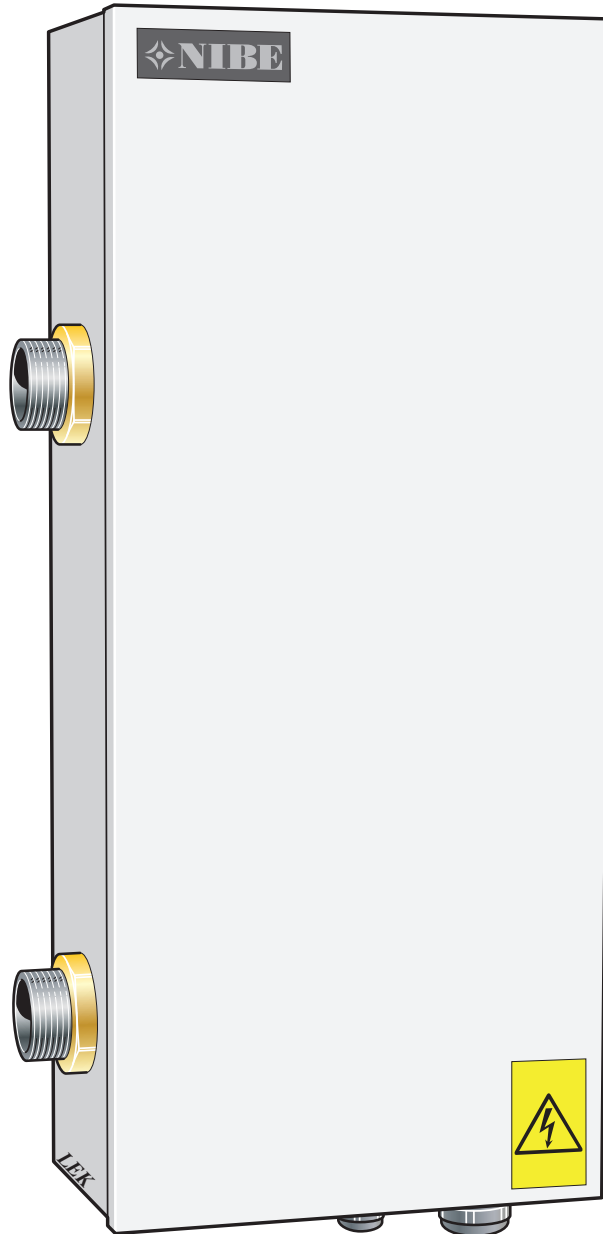


MOS GB 0834-1
ELK 5, ELK 8
031228

INSTALLATION AND MAINTENANCE INSTRUCTIONS

ELK 5, ELK 8

1 x 230V



For Home Owners

General

System description

Principle of operation	3
Abbreviations	3
System diagram	3

Operation and maintenance

General	4
Operation	4
Safety valve	4
Venting	4
Draining	4
Actions in the event of freeze risk	4

For the Installer

General information for the installer

Function	5
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Pipe installation	5
Electrical installation	5
Draining	5

Installation alternative

FIGHTER 20XX with SMO 10	6
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Miscellaneous

Electrical circuit diagram

ELK 5	8
ELK 8	9

Technical specifications

Dimensions	10
Component positions	11
List of components	11
Technical specifications	12

Dealing with malfunctions

Low room temperature	13
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General

In order to get the ultimate benefit from ELK you should read the "For Home Owners" section in this Installation and Maintenance Instruction. ELK is an immersion heater primarily intended for installation together with heat pump for heating houses or smaller apartment blocks.

ELK is a Swedish-made quality product offering long life and reliable operation.

<p>The serial number* (95) must always be stated in all correspondence with NIBE.</p>	
069_-----	
Installation date	
Plumber	
Electrician	
<p>Insert any notes here.</p>	
Datum _____	Sign _____

*Serial number at left corner on the inside of ELK

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

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System description

Principle of operation

ELK is an immersion heater primarily intended for installation together with heat pump for heating houses or smaller apartment blocks.

NIBE ELK contains overheating protection and contactors to externally regulate the two power groups.

The electric module is principally an immersion heater installed in a water container, or an electric boiler without domestic hot water heater.

The stainless electric coils and electric boiler tube are made from acid proof steel (SIS 2333), which gives a very long service life.

Economical

A small water volume and a well insulated cassette mean small heat losses.

Abbreviations

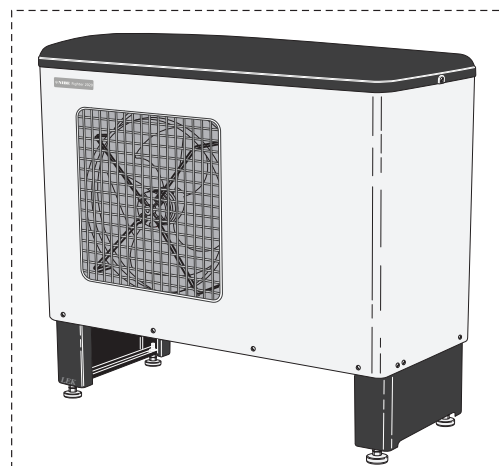
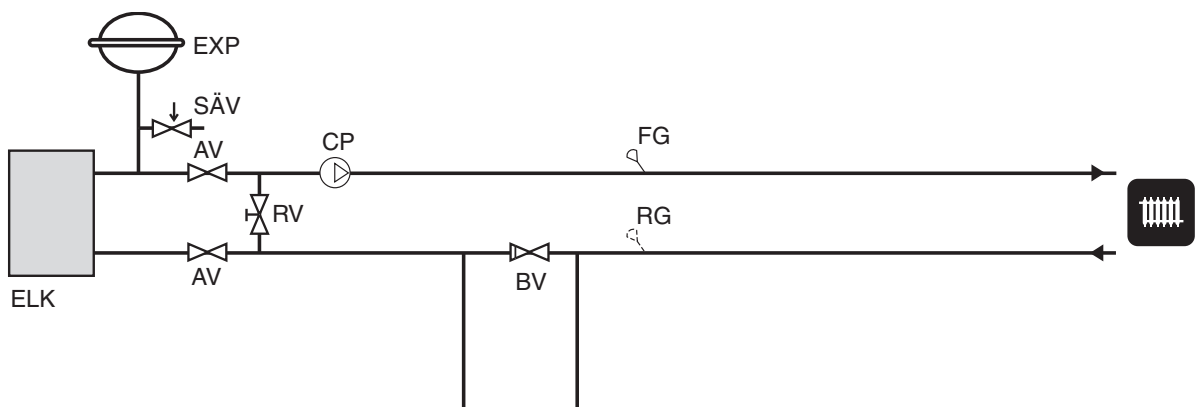
AV	Shut-off valve
BV	Non-return valve
CP	Circulation pump
EXP	Expansion vessel
FG	Flow line sensor
RG	Return line sensor
RV	Control valve
SÄV	Safety valve

NOTE! This is an outline sketch. Actual installations must be planned according to applicable standards.

See the relevant outline diagram for connection to the different heat pumps.

System diagram

Additional heat from ELK controlled by the heat pump or the SMO.



Operation and maintenance

General

After installing, check with the installer that the installation is in good condition. Allow the installer to show controls and functions so that you are fully aware about how to use and maintain the installation.

Check that the water pressure is correct; air may remain in the system after installing. This is why bleeding and pressure checks should be carried out again.

Operation

Electrical output is controlled externally by the heat pump. This means that the electrical output is connected and disconnected by the additional heater.

Safety valve

A safety valve that is installed in the heating system, in connection with the closed expansion system, must be exercised regularly, approximately 4 times per year to maintain the safety function or according to national regulations.

Venting

Regularly check that there is water in the system. Air can remain in the system after installation and the radiators and boiler should be bled again. After bleeding, the pressure must be checked and water topped up if necessary.

Draining

If draining the system of water, the electric module must be switched off to prevent damaging the immersion heater's electric coils.

Actions in the event of freeze risk

In the event of extreme cold, no part of the heating system must be switched off, there is a risk of frost damage.

If a part of the heating system is thought to be frozen, contact the installer.

If the heating system must be switched off for a long period of time, the water should be drained and the immersion heater blocked.

General information for the installer

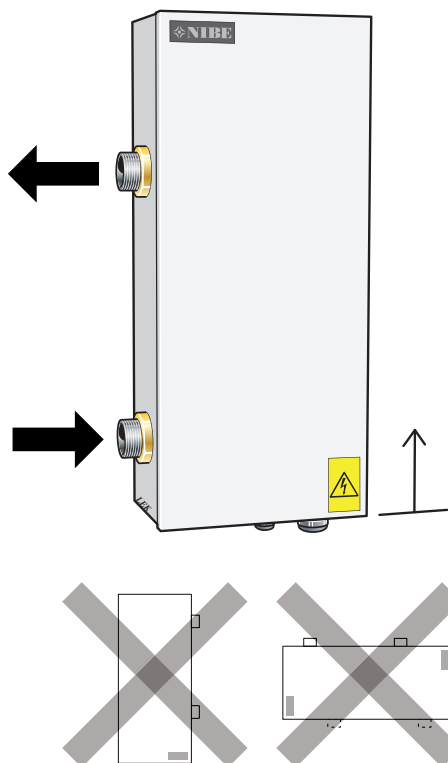
Function

Area of use for NIBE immersion heater is in combination with NIBE ground source heat pumps and air/water heat pumps. When the heating demand is greater than heat pump's capacity, the immersion heater connects automatically as additional heat. The electrical equipment is adapted to the heat pump's function.

ELK contains overheating protection and two contactors to externally regulate the two power steps. For optimum function the outputs should be binary controlled.

Pipe installation

The pipe installation must be carried out in accordance with applicable standards.



The immersion heater must be installed standing (see image above). An area of 500 mm is required in front of the immersion heater for service work. If this is not possible, detachable connections should be used.

Circulation pump must be used to ensure the flow over the immersion heater. If the heating system's valves can close the circulation completely, a by-pass must be installed to prevent the flow through the immersion heater from being stopped. When the unit is off, an approved safety valve must be installed as well as a pressure expansion vessel. The safety valves must be checked about four times a year. This is done by quickly opening and closing the valves. The pressure is reset by filling with water.

Electrical installation

ELK must be installed via an isolator switch with a minimum breaking gap of 3 mm.

NOTE

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 the stipulations in force.

Power supply

The immersion heater must be supplied by 6 mm² cables for 5 kW and 10 mm² for 8 kW, 1 x 230 V AC 50Hz, fused according to Technical data (see page 12).

The cable for the operational supply must be 4 x 1,5 mm².

NOTE

Reset the temperature limiter, it may have tripped during transport.

NOTE

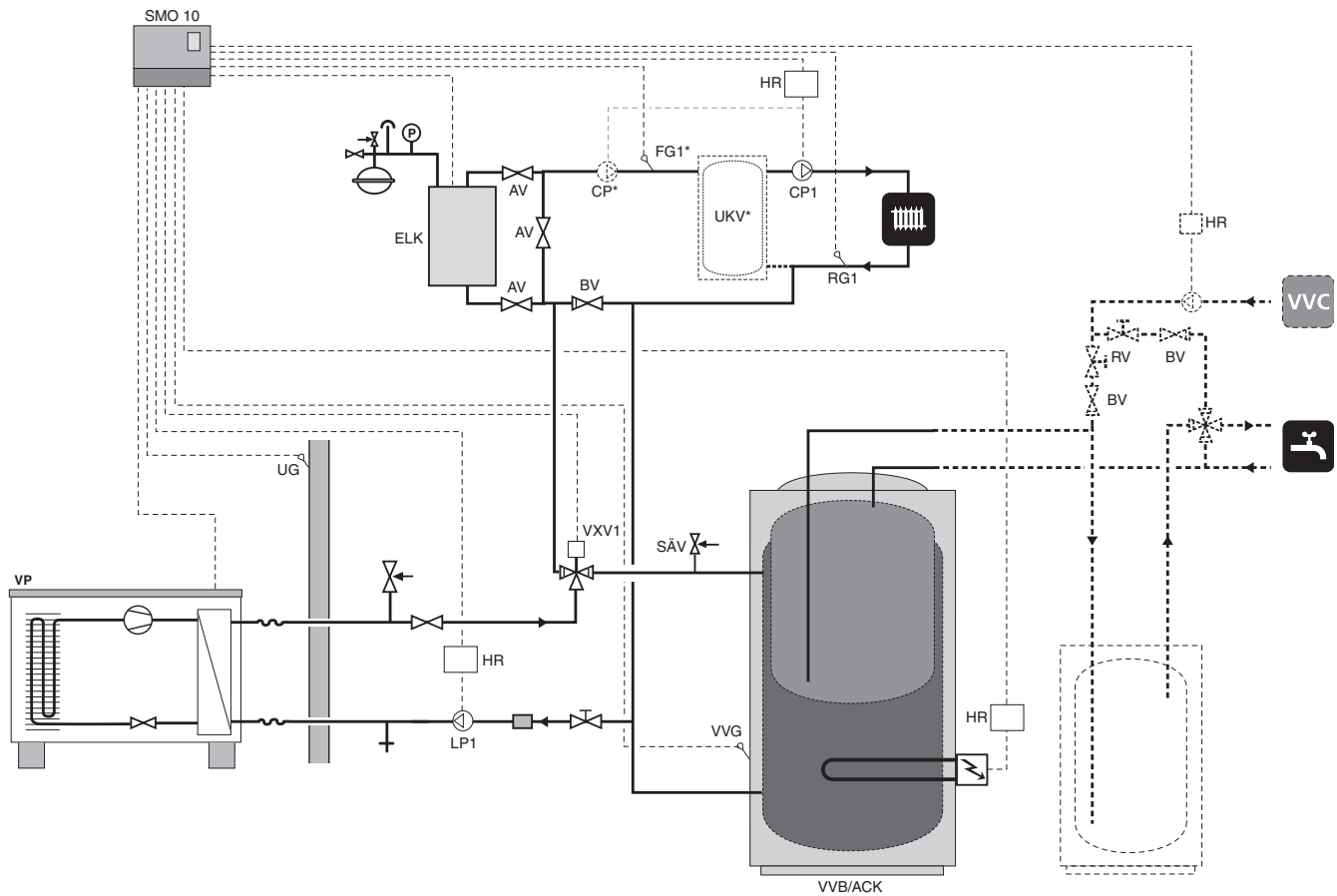
In the event of any servicing all electrical supplies must be checked and disconnected. The immersion heater can be supplied with voltage from connected heat pump.

Draining

The system is most easily drained by installing a drain valve to the lowest point of the piping. Draining via such a valve leaves a small amount of water in the immersion heater, which is therefore drained via drain connection (71). If the unit is normally drained via the immersion heater's drain connection, install a suitable drain valve.

Installation alternative

FIGHTER 20XX with SMO 10



SMO 10 controls heat pump, immersion heater, circulation pumps, three way valves, etc. The heat pump works with floating condensing against the heating system and prioritises hot water charging via the three way valve (VXV1).

If the heat pump does not manage the heating demand, additional heat from ELK is engaged.

When additional heat is engaged, hot water is heated using the immersion heater in the hot water heater. In combined mode, the three way valve (VXV1) is open towards the heating system.

Menu settings

1. Select "SMO Immersion heater three way valve" in menu 9.2.3 - "Docking type".
2. Select "Binary" in menu 9.2.12. - "Immersion heater type".
3. In menu 8.3.2, check that "Max. electric power permitted el.-steps" is set to "3". If necessary, check the setting on knob (101) in SMO 10.
4. Select "1" in menu 9.2.11 - "Max. step 2h", if a restriction of the electrical power for 5 kW within 2 hours from start-up is required.
5. Select "Auto" operating mode in order for the electrical addition to be permitted to start.

For further information, see appropriate "Installation and Maintenance Instructions" for SMO 10.

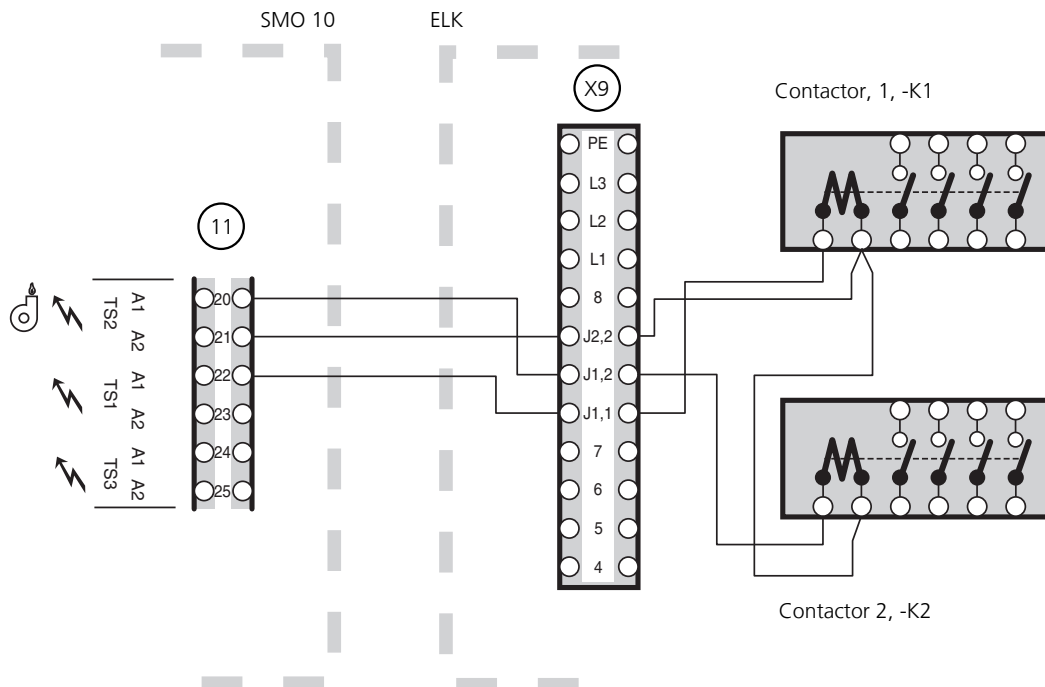
Electrical connection 20XX, SMO 10

SMO 10 produces a control voltage, 230 V for output control. The various stages of the immersion heater are controlled

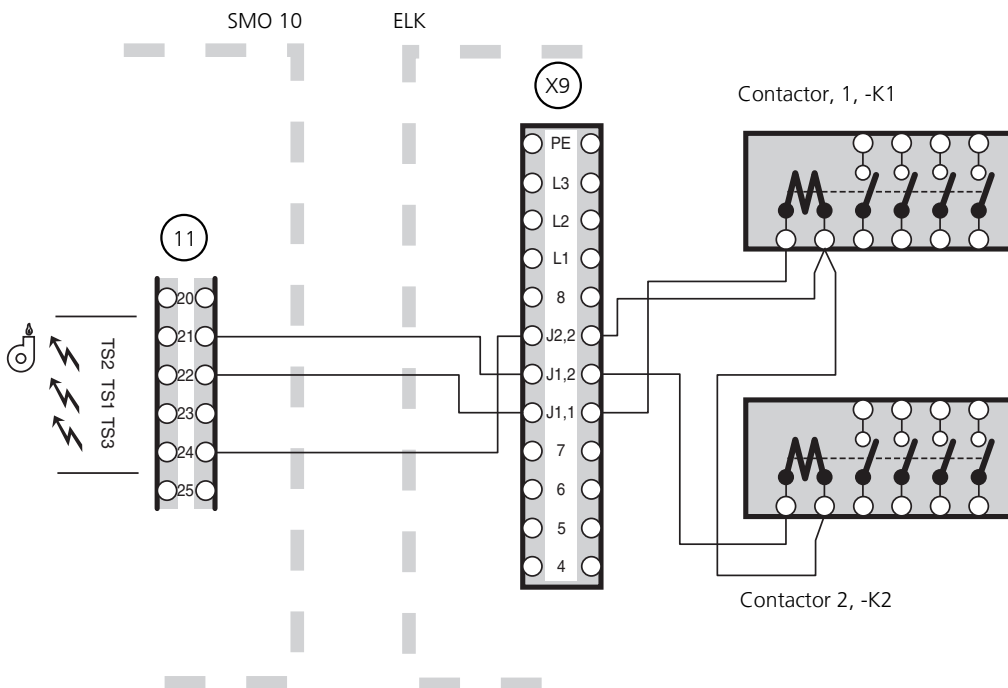
by relays TS1 and TS2.

Note! Check the article number on the SMO that is installed and follow the accompanying instructions below.

SMO 10 part no. 089 638

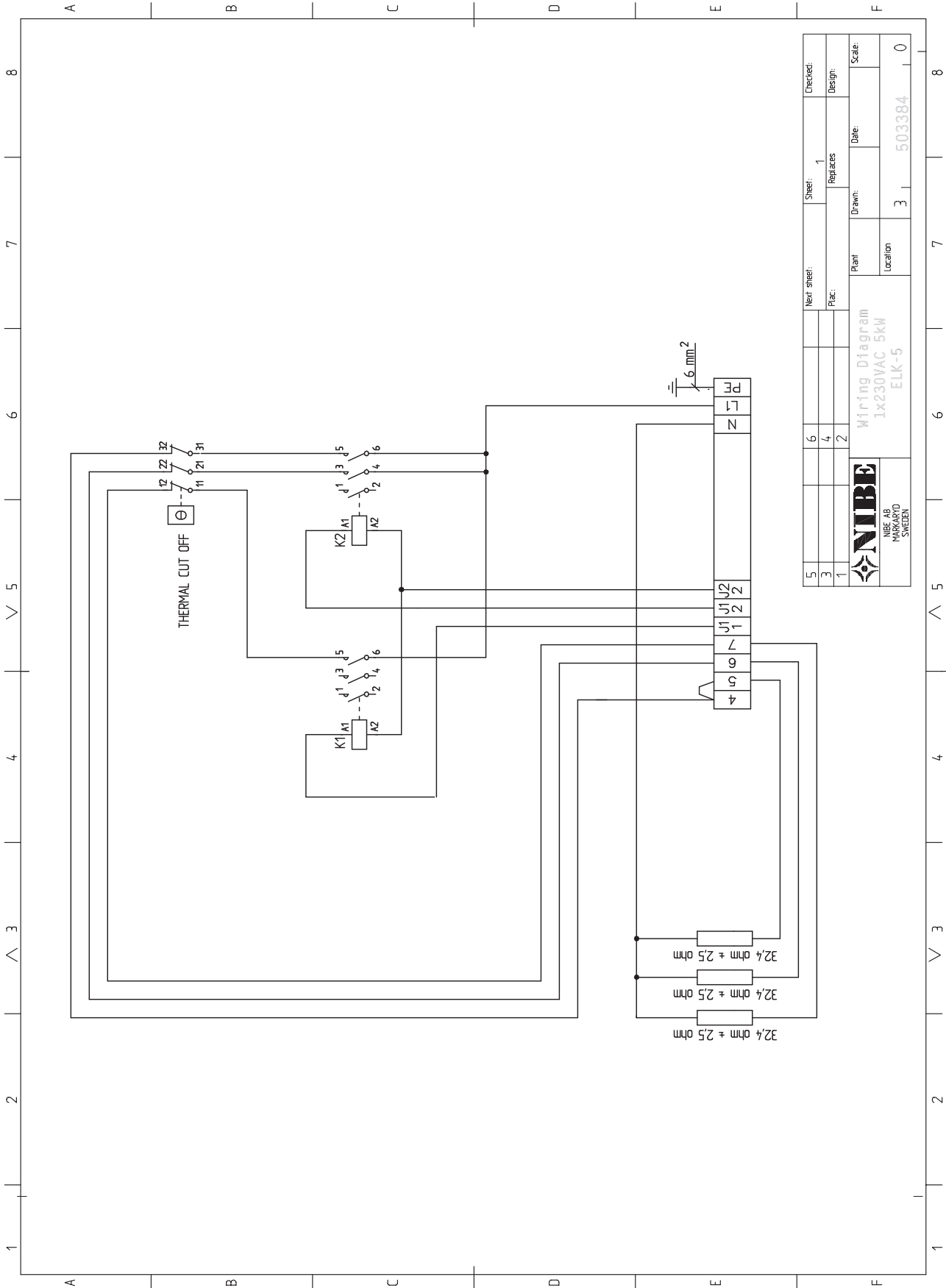


SMO 10 part no. 089 259



Electrical circuit diagram

ELK 5

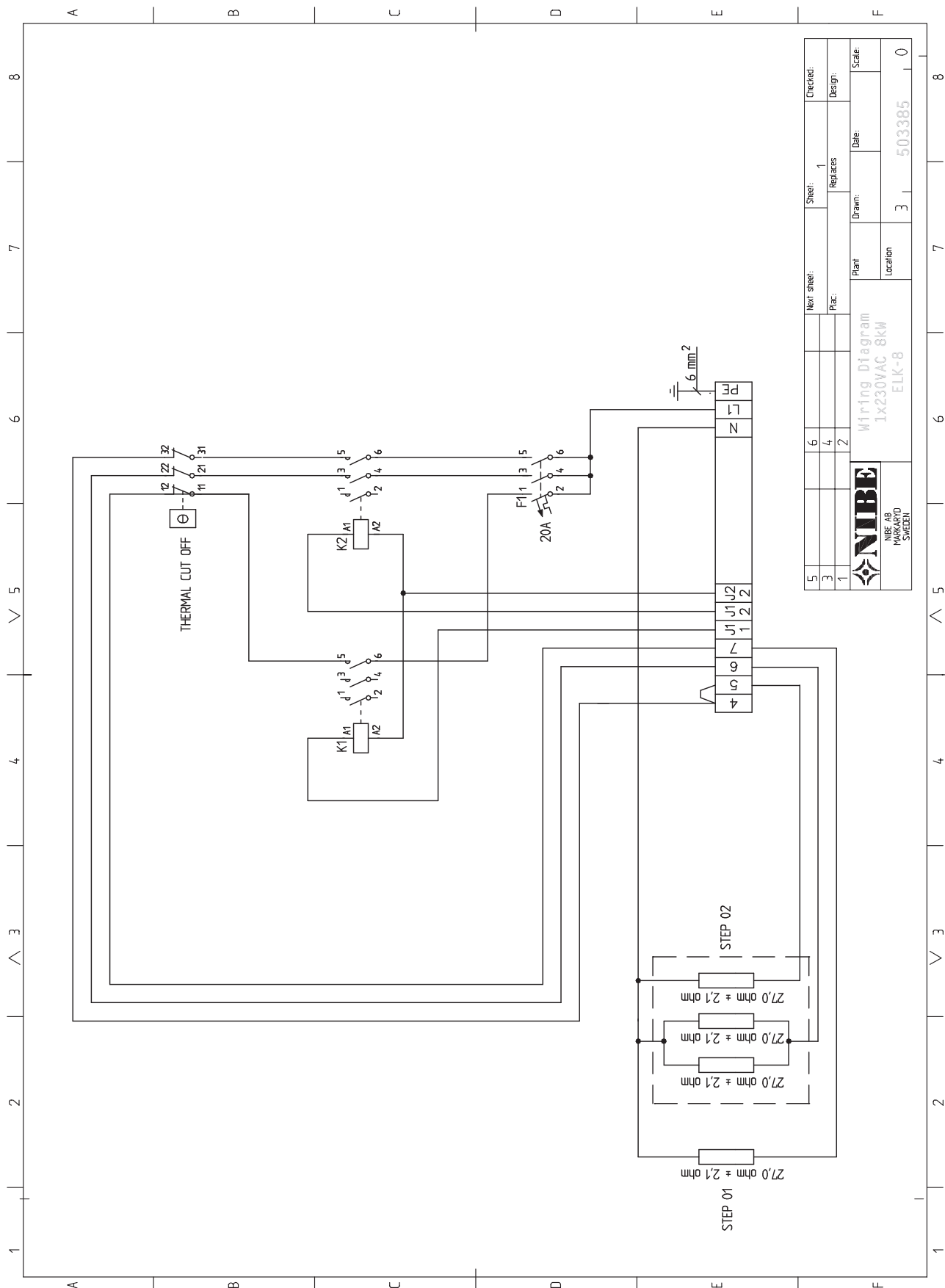


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NIBE
NIBE AB
HÅNÅRD
SWEDEN

Wiring Diagram
1x230VAC 5kW
ELK-5

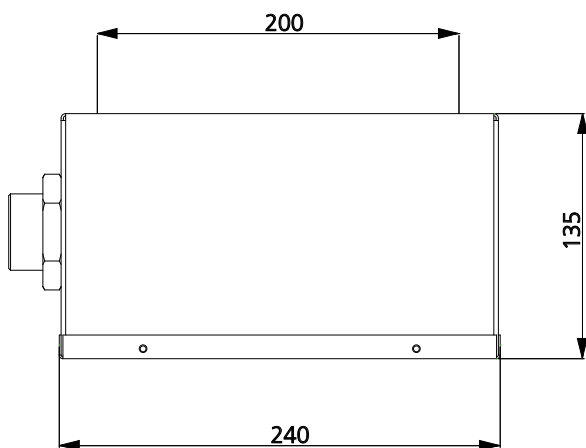
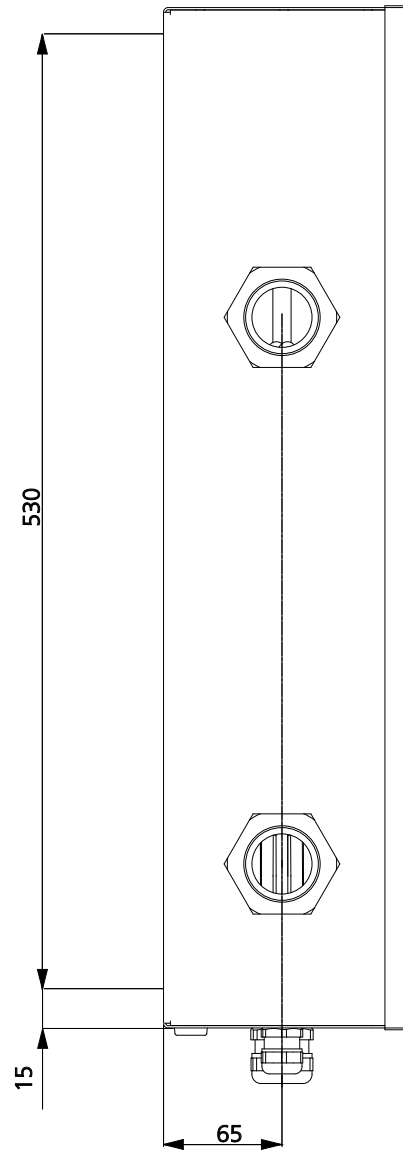
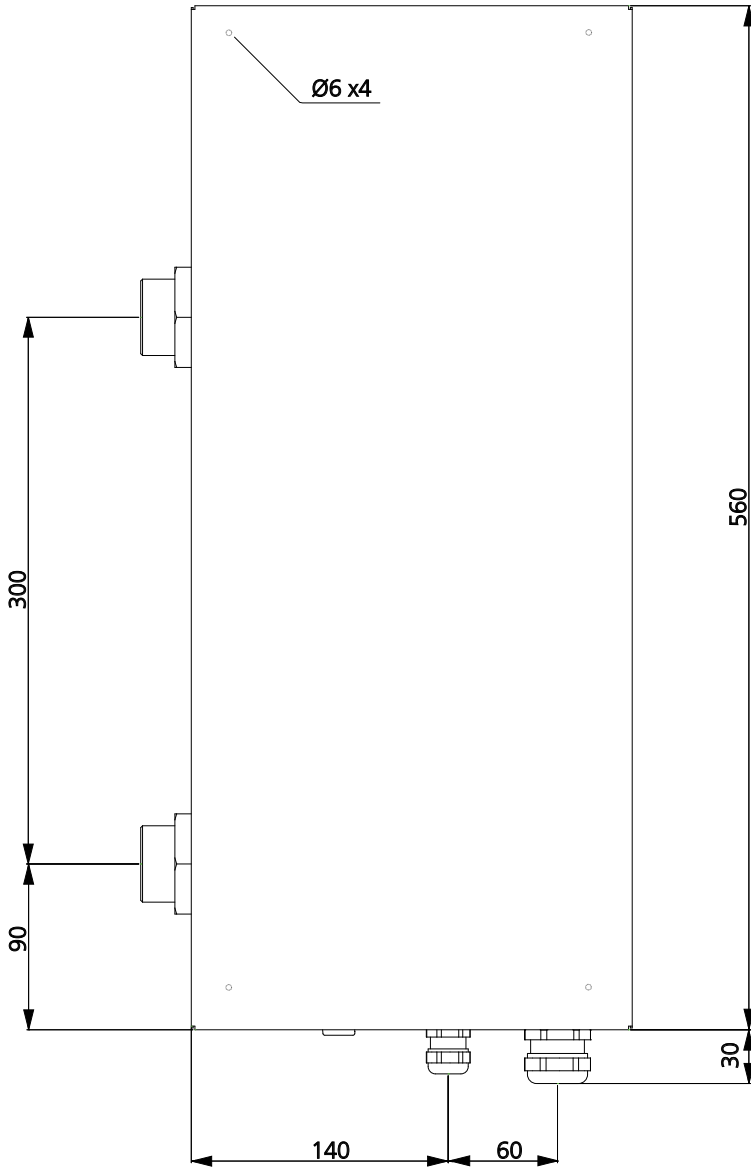
ELK 8



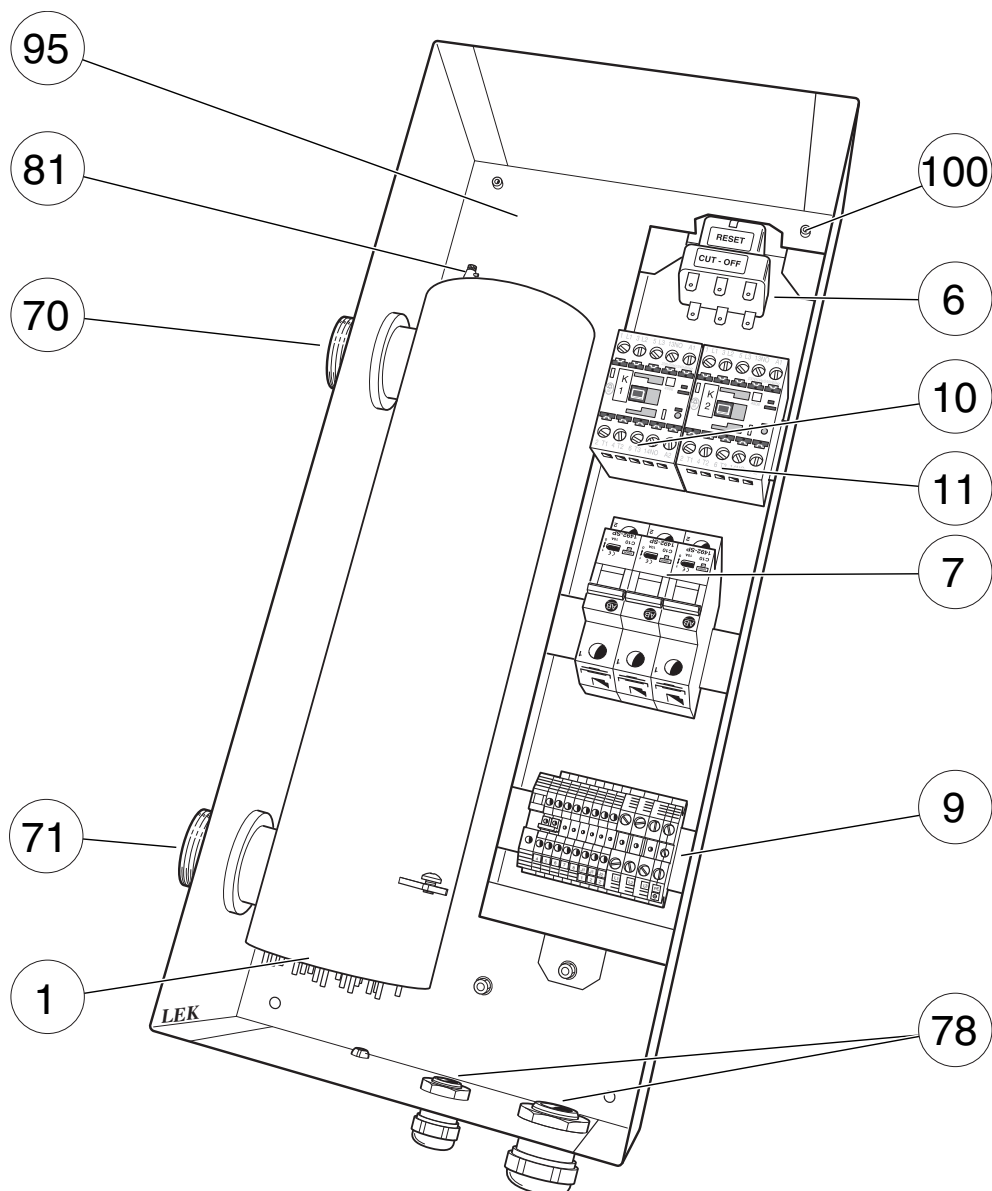
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 NIBE AB MASKARVD SWEDEN				
Wiring Diagram 1x230VAC 8kW ELK-8				
Scale: 0				

Technical specifications

Dimensions



Component positions



List of components

- | | |
|-----|-------------------------------|
| 1 | Immersion heater (-R1) |
| 6 | Overheating protection (-B1) |
| 7 | Miniature circuit-breaker |
| 9 | Terminal block (-X9) |
| 10 | Contactors (-K1) |
| 11 | Contactors (-K2) |
| 70 | Connection, flow line, G 40 |
| 71 | Connection, return line, G 40 |
| 78 | Cable grommet |
| 81 | Venting |
| 95 | Sign, serial number |
| 100 | Mounting hole 4 x (Ø 6mm) |

Technical specifications


	ELK 5	ELK 8
Height	560 mm	
Width	240 mm	
Depth	135 mm	
Weight	8.1 kg	9.3 kg
Volume, tube	1.6 litres	
Supply voltage	1 x 230 V AC 50Hz	
Output immersion heater	5 kW	8 kW
Fuse immersion heater	25 A	40 A
Enclosure class	IP 44	
Max permitted pressure in the boiler	0.25 MPa (25 bar)	
Material immersion heater	SIS 2333 EN 1.4301	
Material tube	SIS 2333 EN 1.4301	
Part No.	069 025	069 026

Dealing with malfunctions

In the event of a malfunction or disruption to normal operation, first check the points below:

Low room temperature

- Circuit or main MCB tripped.
- Possible earth circuit-breaker tripped.
- The overheating protection has tripped. If the overheating protection has tripped, the function of the system's circulation pumps and valves must be checked. Reset by pressing in the button on the overheating protection, when the temperature has dropped below 80 °C.
- Circulation pump stopped.
- Air in boiler or system.
- The pressure is too low in the expansion vessel.
- The load monitor or some external control unit may have blocked the power output.

NOTE

Work behind panels secured by screws may only be carried out by a qualified installation engineer.







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