

ELK 9M
Installer manual
Immersion heater

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Important information



WARNING

This symbol indicates serious danger to person or machine.



NOTE

This symbol indicates danger to machine or person.



CAUTION

This symbol indicates important information about what you should observe when maintaining your installation.



TIP

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

Recovery



Leave the disposal of the packaging to the installer who installed the product or to special waste stations.



Do not dispose of used products with normal household waste. It must be disposed

of at a special waste station or dealer who provides this type of service.

Improper disposal of the product by the user results in administrative penalties in accordance with current legislation.

General

ELK 9M is an electric heater that can be used to supplement the heating capacity of your MHI climate unit. When the heating demand is greater than the climate unit's capacity, the electric heater connects automatically. The electrical equipment is adapted to the climate unit's function.

The electric heater is in principle an immersion heater mounted in a water container or an electric boiler without a water heater. The steel electric coils and electric boiler tube are made of steel which gives a very good service life.

Thanks to a small water volume and a well-insulated electrical heater, ELK 9M has very small heat losses.

Compatible products

Connection is different depending on which product ELK 9M is to be used with.

These products can be connected directly to ELK 9M:

- RC-HY 20
- RC-HY 40

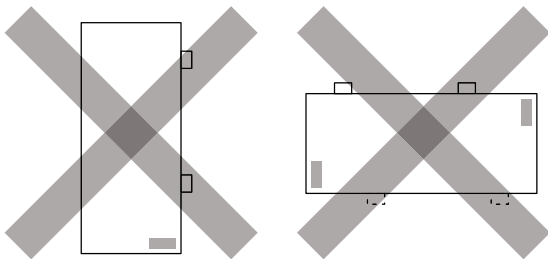
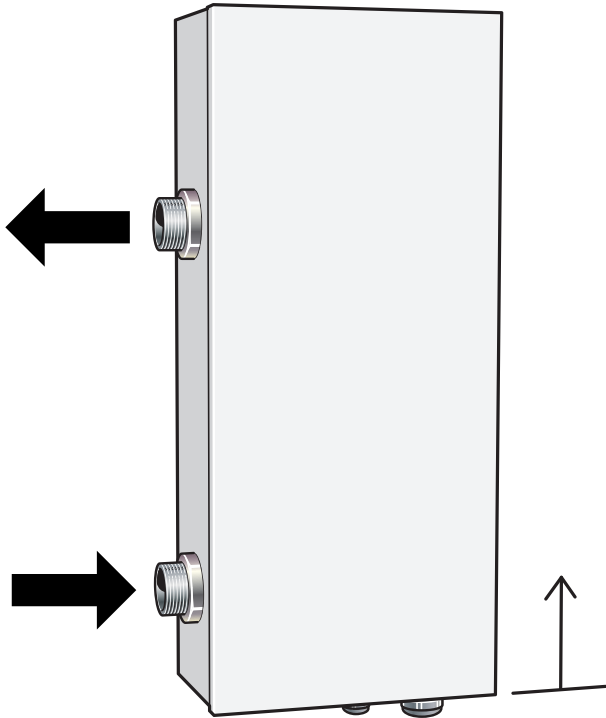
Contents

1 x Immersion heater

Assembly

The electric heater must be installed upright (see image below).

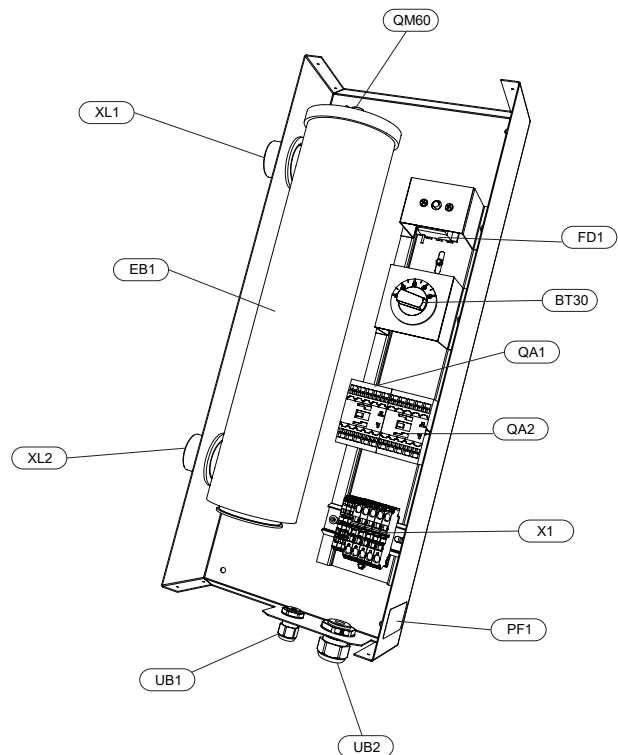
Free space of 500 mm is required in front of the water heater for service. If this is not possible, detachable connections must be used.



Component positions

Component list

EB1	Immersion heater
FD1	Overheat protection
X1	Terminal block
QA1	Contactator 3,0 kW(-K1)
QA2	Contactator 6,0 kW(-K2)
BT30	Emergency mode thermostat
XL1	Connection supply line, G 3/2
XL2	Connection return line, G 3/2
UB1, UB2	Cable gland
QM60	Venting
PF1	Rating plate



Pipe connections

General

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

A circulation pump must be used to ensure the flow over the immersion heater. If the heating system valves can close the circulation completely, the bypass valve must be installed so that the flow through the electric heater does not stop. In closed installations an approved safety valve and pressure expansion vessel must be used.



CAUTION

Also see the installer manual for your heat pump/indoor module.



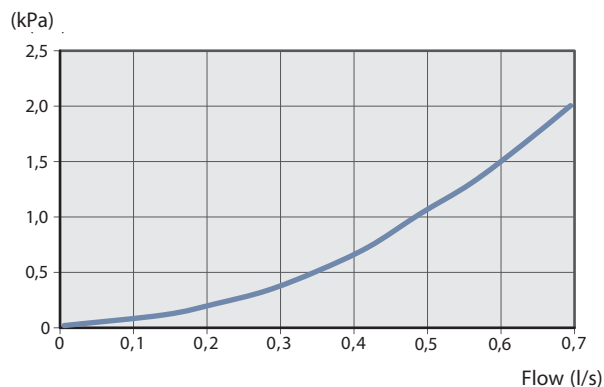
NOTE

The pipe work must be flushed before the electric heater is connected, so that any contaminants do not damage the component parts.

Draining

The system is most easily drained by installing a drainage valve at the lowest point on the pipe installation. The remaining water in ELK 9M is drained through the return line connection (XL2), see “Component location” on page 5. If the return line connection on ELK 9M is normally used for draining the unit, a drain valve can be installed here.

Pressure drop diagram ELK 9M



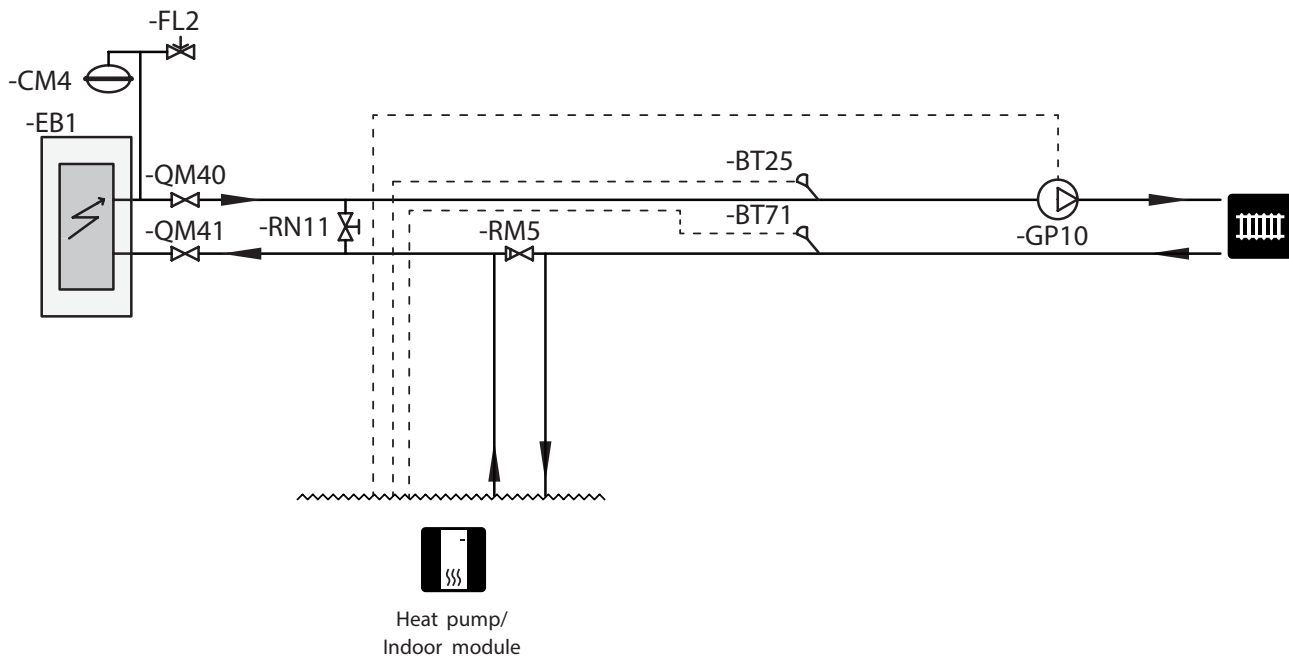
System diagram

Explanation

EB1	Electric heater ELK 9M
CM4	Expansion vessel
FL2	Safety valve
QM40 - QM41	Shut off valves
RN11	Control valve
GP10	Circulation pump
RM5	Non-return valve
BT25	Flow line sensor
BT71	Return line sensor

Designations in component locations according to standard IEC 81346-1 and 81346-2.

System diagram



NOTE

This is an outline diagram. Actual installations must be planned according to applicable standards.

Electrical connection



NOTE

All electrical connections must be carried out by an authorised electrician.

Electrical installation and wiring must be carried out in accordance with the stipulations in force.

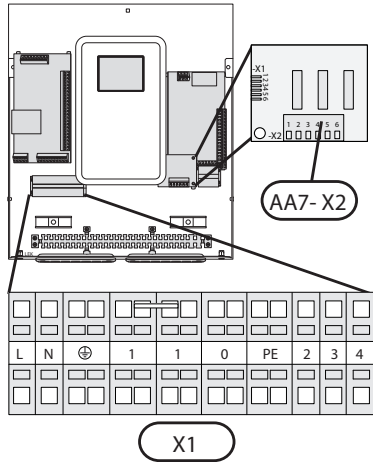
The climate unit must not be powered when installing ELK 9M.

ELK 9M must be installed via a circuit breaker with a minimum breaking gap of 3mm.

ELK 9M contains overheat protection and two contactors to control the two power steps 3 kW and 6 kW respectively. For best function the power should be binary controlled, that is to say 3, 6 and 9 kW.

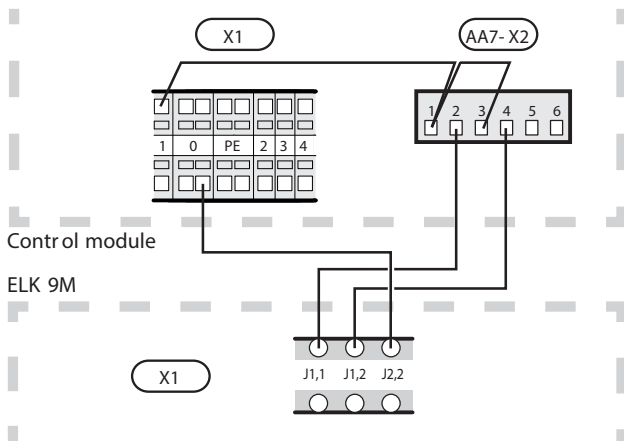
RC-HY 20 and RC-HY 40

Terminal block X1 in ELK 9M connects to the terminal blocks X1 and AA7-X2 in the control module as illustrated.



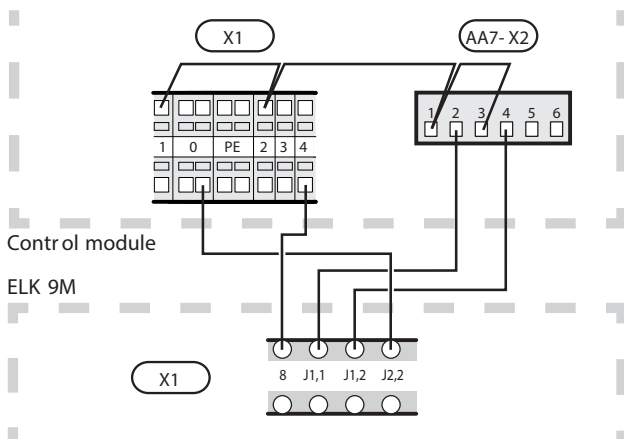
Without thermostat, two active power steps

9 kW electric heater step active.



With thermostat, two active power steps

9 kW electric heater step active.
6 kW electric heater step active in emergency mode.



Activating ELK 9M

The menu setting of ELK 9M can be performed via the start guide or directly in the menu system.



CAUTION

Also see the Installer manual for the product that ELK 9M will be connected to.

Start guide

The start guide appears upon first start-up after heat pump installation, but is also found in menu 5.7.

Menu system

RC-HY 20 and RC-HY40

Menu 4.9.3 - degree minute setting

Here you select when the additional heat is to start and the degree minute intervals.

Menu 5.1.12 - addition

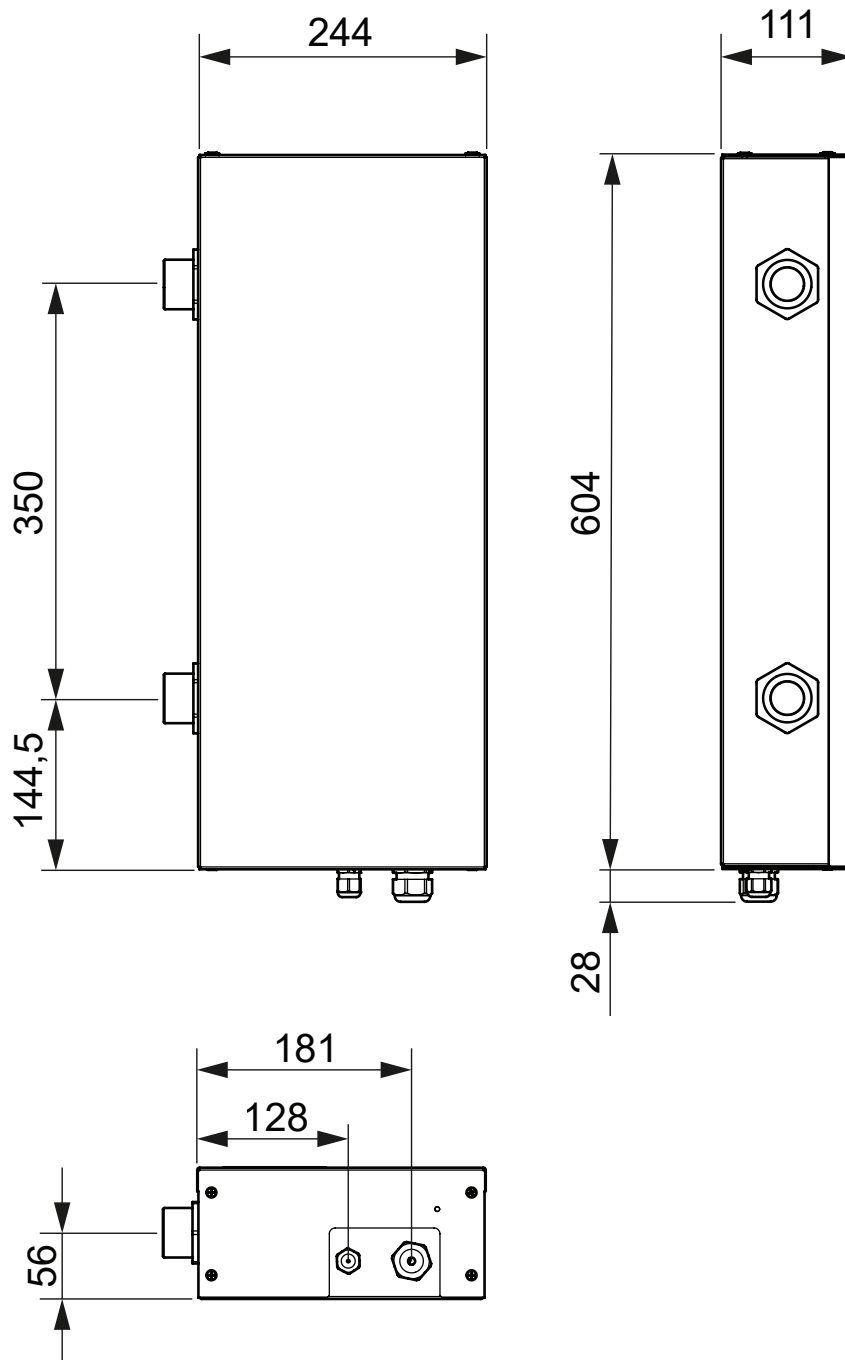
Setting:

- Max. number of permitted additional steps
- If binary stepping is to be used.

Technical data

Dimensions

All dimensions in mm.



Technical specifications



ELK 9M		
Electrical data		
Rated voltage	V	3 x 400 V ~ 50 Hz
Output immersion heater	kW	9
Immersion heater fuse	A	13
Enclosure class		IP21
Heating medium circuit		
Max permitted pressure in the boiler	MPa/bar	0,7/7
Min flow	l/h	650
Max flow	l/h	2600
Dimensions and weight		
Width	mm	244
Depth	mm	111
Height	mm	604
Weight	kg	10,5
Volume	litre	1,5
Miscellaneous		
Material immersion heater		SIS 2333 EN 1.4301
Material tube		P235GH PN-EN 10216-2
Part No.		MCD291A015

Energy labelling

Information sheet

Supplier		MHI
Model		ELK 9M
Energy efficiency class for space heating		D
Rated heat output (P _{designh})	kW	9
Annual energy consumption space heating	kWh	33 850
Seasonal space heating energy efficiency	%	36,7
Sound power level L _{WA} indoors	dB	35

Technical documentation

Model		ELK 9M					
Condensing boiler		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
Low-temperature boiler		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
B11 boiler		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
Cogeneration space heater		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
Combination heater		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
Rated heat output	Prated	15	kW	Seasonal space heating energy efficiency	η_s	36,7	%
<i>For boiler space heaters and boiler combination heaters: Useful heat output</i>				<i>For boiler space heaters and boiler combination heaters: Useful efficiency</i>			
At rated heat output and high-temperature regime	P ₄	15	kW	At rated heat output and high-temperature regime	η_4	40	%
At 30%of rated heat output and low-temperature regime	P ₁		kW	At 30%of rated heat output and low-temperature regime	η_1		%
<i>Auxiliary electricity consumption</i>				<i>Other items</i>			
At full load	e _{lmax}		kW	Standby heat loss	P _{stby}	0,2	kW
At part load	e _{lmin}		kW	Ignition burner power consumption	P _{ign}		kW
Standby mode	P _{SB}		kW	Annual energy consumption	Q _{HE}	33 850	kWh
				Sound power level, indoors	L _{WA}	35	dB
<i>For combination heaters</i>							
Declared load profile for water heating			Water heating energy efficiency				
Daily energy consumption	Q _{elec}		kWh	Daily fuel consumption	Q _{fuel}		kWh
Annual energy consumption	AEC		kWh	Annual fuel consumption	AFC		GJ

Electrical circuit diagram

