

Operating Manual

Electric Heaters

EL 12 / EL 20



Perfection is our aim.



EC – Declaration of Conformity

in sense of EC machine directive 2006 / 42 / EEC

Type of machine:

Electric Heater EL 12 / EL 20

are designed, constructed and manufactured in accordance with the above-mentioned directive, the directive for low tension 2014 / 35 EEC 26.02.2014 and EMV directive 2014 / 30 EEC 26.02.2014. Furthermore, the directive 2011/65 EEC 08.06.2011 Rohs Directive and 2012/19 04.07.2012 EEC WEEE.

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The following harmonized standards have been used:

- EN 60335-2-30/ 2, 2021-05 Safety of electrical equipment
- EN 60335-1, 2020-08 Safety of electrical equipment
- EN 61000-3-11, 2021-03 Electromagnetic Compatibility
- EN 61000-3-3, 2020-07 Electromagnetic Compatibility
- EN 55014-1, 2018-08 Electromagnetic Compatibility
- EN 55014-2, 2016-01 Electromagnetic Compatibility

Mönchengladbach,
02.07.2021



Managing Director

Place, Date

Signature

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This sign warns of a potential hazard that may occur if the described procedures are not taken into account.

Note that this sign is always preceded by:

Danger: Risk of serious or fatal injury.

Warning: Risk of serious and irreparable injury.

Caution: Risk of material damage and further information that may be useful to users of the heater.

1. SAFETY INFORMATION



DANGER!

Risk of injury due to improper handling.

This appliance may only be put into operation by duly qualified personnel.

Risk of incorrect repair.

Never attempt to alter/modify or repair the heater.

This heater may only be altered/modified or repaired by a specialised technician.

Risk of injury.

Always unplug the appliance from the power outlet before cleaning or performing maintenance.

WARNING!



Take due note of the following safety instructions!

Failure to follow them may result in serious consequences for users, property and damage to the environment.

In order to avoid overheating, do not cover the heater.

Some parts of this appliance may reach high temperatures, and may cause burns to the operator.

Take particular care in the presence of children or vulnerable people.

- This appliance may be used by children over the age of 8 and by persons with physical, sensory or mental limitations or a lack of experience and knowledge if supervised or where they have received instructions regarding the safe use of the appliance and they understand the risks involved.
- Children must never be allowed to play with the appliance.
- Cleaning and maintenance should not be performed by children unless under supervision.
- Children under 3 years should be kept away from the appliance unless under continuous supervision.
- Children between the ages of 3 and 8 may only switch the appliance on and off provided it has been placed or installed in its intended normal operating position and they are under supervision or have been given instructions as to how to use the appliance safely and they understand the dangers involved.
- Children from 3 to 8 years should not connect, adjust or clean the appliance, or perform any kind of maintenance.

Risk of Explosion!

- Do not install the heater in areas where there is a risk of fire and/or explosion.
- Take the environment into consideration at all times.
- Do not install the heater in areas where fuel is present.
- Remove flammable materials and chemicals.

Precautions for preventing possible damage!

- Check whether or not the appliance is switched on.
- Keep the air intake and exhaust outlet unobstructed.
- Do not cover the appliance during operation.
- Only unplug the appliance once the unit is completely idle.
- Do not use chemicals to clean the appliance.
- Never use the heater as a support base.

Injuries that may be caused by the use of defective parts!

- Before each use, check that all the accessories are connected correctly. Check for any defective parts of the appliance.
- Check the power cord for damage. Any damage to the power cord poses a serious health hazard.

Risk of electric shock!

- Only connect the appliance to power sources that correspond to the specifications of the appliance.
- Never use damaged power outlets.
- Connect the appliance to a grounded power outlet.
- Disconnect the power cord from the outlet by carefully removing the plug.
- Do not touch the power cord with wet hands.
- Protect electrical wiring from damage caused by, for example, animals.
- Do not make any changes or repairs to the appliance!
- Do not allow any liquids to come into contact with the appliance.
- Do not allow any liquids to enter the appliance. Should this occur, unplug the power cord and arrange for it to be checked by a qualified technician.
- The heater should not be located immediately below a power outlet.
- Do not use this heater in the immediate vicinity of a bathtub, shower, or pool.

Risk of injury

- Changes and repairs to the heater must be performed by qualified personnel.
- If the power cord is damaged, to avoid hazards, it should be replaced by the manufacturer, after-sales service or by qualified personnel.
- Do not insert any objects into the air intake or outlet of the appliance.

- Do not insert anything into its openings.
- Do not leave children or animals unattended near the appliance when it is in use.



CAUTION!

Overheating of the heater can damage the appliance

- Never unplug the appliance by the power cord as this may cause the appliance to overheat.

2. INSTALLATION

Before operating your heater for the first time, you should carefully read the instructions manual.

After receiving the unit, you should check if your heater has been damaged during transport. In the event of damage, you should inform the sender immediately.

Damage during transport should be reported after unpacking the equipment. The seller or specialised reseller should be contacted immediately.

Keep the packaging of the heater in a safe place in order to be able to dispatch the heater safely should it require servicing. In order to save space, you can simply cut through the adhesive tape using a knife and fold up the cardboard box.

During installation and use, proceed as follows:

- Check the contents of the box of your electric heater. If the appliance is damaged or any of the accessories are missing, contact the point of sale immediately.
- Check the unit for damage.
- Check the appliance before each use and that the conditions are suitable for proper operation.
- Carefully read the “Installation Requirements”, which describe what you need to install your heater.
- Make sure that the characteristics of the electrical system match the characteristics referred to in the “Technical data”;
- Before connecting, make sure that there are no foreign objects in the unit preventing rotation of the fan. If there are, you may try to remove them using compressed air. Where this fails, contact a qualified technician. As described in “Maintenance and cleaning”, the dismantling and repair of the equipment must only be carried out by qualified personnel!
- Plug the power cord into a power outlet (400 V / 50 Hz).
- Place the heater in the desired location.
- Lock the front casters to ensure stability.
- The appliance is ready for use.

3. TRANSPORT AND STORAGE

Transport

- Turn off the power.
- Wait until the unit has cooled down.
- Transport the heater using the handle on the top of the heater.
- Ensure that the unit does not slip and remains stable during transport.

Storage

When the heater is not used for an extended period of time, it must be properly covered and stored in order to avoid damage.

You should therefore:

- Unplug the appliance from the power outlet.
- Choose a dust-free storage location and cover the appliance.
- Store the appliance in a dry place and prevent moisture from entering the appliance.
- Store the appliance at all times protected from lightning and other unpredictable atmospheric conditions.
- Locate the appliance in a safe place to avoid possible falls that may endanger people or damage the appliance.

4. INSTALLATION CONDITIONS

When installing the heater, you should take into account some specific technical conditions. Failure to comply with these conditions could endanger people and property. Operation of the heater and its accessories should be tested. When installing the heater, the following must be observed:

- The heater should be installed on a horizontal surface, safely and in a non-combustible environment.
- The location must be dry and it must be ensured that no moisture enters the appliance. If any fluid gets into the appliance, unplug it immediately from the power outlet and arrange for it to be checked by a qualified service technician.
- The appliance must be connected to a power outlet in accordance with the required technical specifications (see “Technical data”).
- The heater should not be placed in dusty environments.
- The appliance should be placed at least 2 metres away from any obstruction on all sides.
- It must be at least 50 cm from walls.
- The site should not be excessively humid so as not to cause condensation inside.
- The air intake and outlet of the appliance must not be obstructed.

5. OPERATING PRINCIPLES

This electric heater is a mobile appliance used for heating ambient air. For improved heating, thawing or drying of spaces, this area should be closed.

The built-in thermostat allows regulation to a constant ambient temperature.

Operating principles

The air to be heated is drawn through an axial fan and subsequently flows through the interior of the appliance. It is warmed by flowing past a heating element. This air is then expelled by the air outlet panel into the environment (see description).

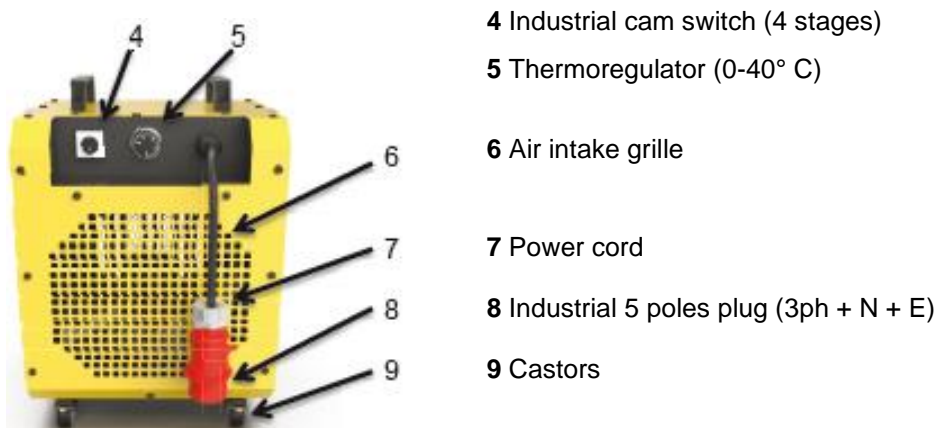
The heater may be used in continuous operation.

6. APPLICATION

This electric heater is designed for heating and air ventilation, and may be used indoors. It is used for drying, thawing, heating or simply for ventilation.

This electric heater has been designed and developed for professional use and is therefore suitable for use in locations that are under construction, construction sites or for heating and drying buildings, greenhouses or other industrial areas, cellars, thaw machinery or pipelines.

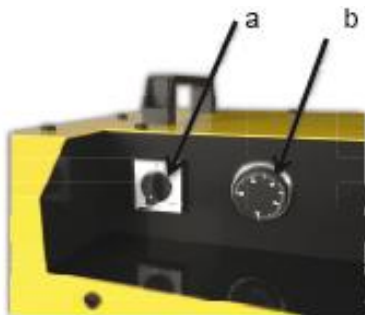
7. DESCRIPTION



8. OPERATING INSTRUCTIONS

Turning on the heater

Make sure that the CAM switch (a) is in position "0" before plugging in the unit to the mains socket.



Turn the knob of the CAM switch (a) to the desired stage (1-4):

Pos. 1 – Fan only;

Pos. 2 – Heating elements turned on at 50% of the rated power;

Pos. 3 – Heating elements turned on at 75% of the rated power;

Pos. 4 – Heating elements turned on at 100% of the rated power;

Rotate the rotary knob of the thermoregulator (b) to the desired setpoint (0-40 °C).

Turning off the heater

To switch the appliance off, turn the CAM switch's knob to position "0" and remove the plug from the mains socket.

Adjusting ambient thermostat

Set the thermostat to the desired operating temperature by turning the thermostat knob (3) - located on the back of the appliance).

- To raise the temperature: Turn the knob counter clockwise.
- To lower the temperature: Turn the knob clockwise.

Temperature setting may be adjusted during operation. When the ambient temperature reaches the setpoint determined on the thermostat, the heating elements will be cut. They will resume their heating function when the ambient temperature drops below the setpoint.

9. TECHNICAL DETAILS

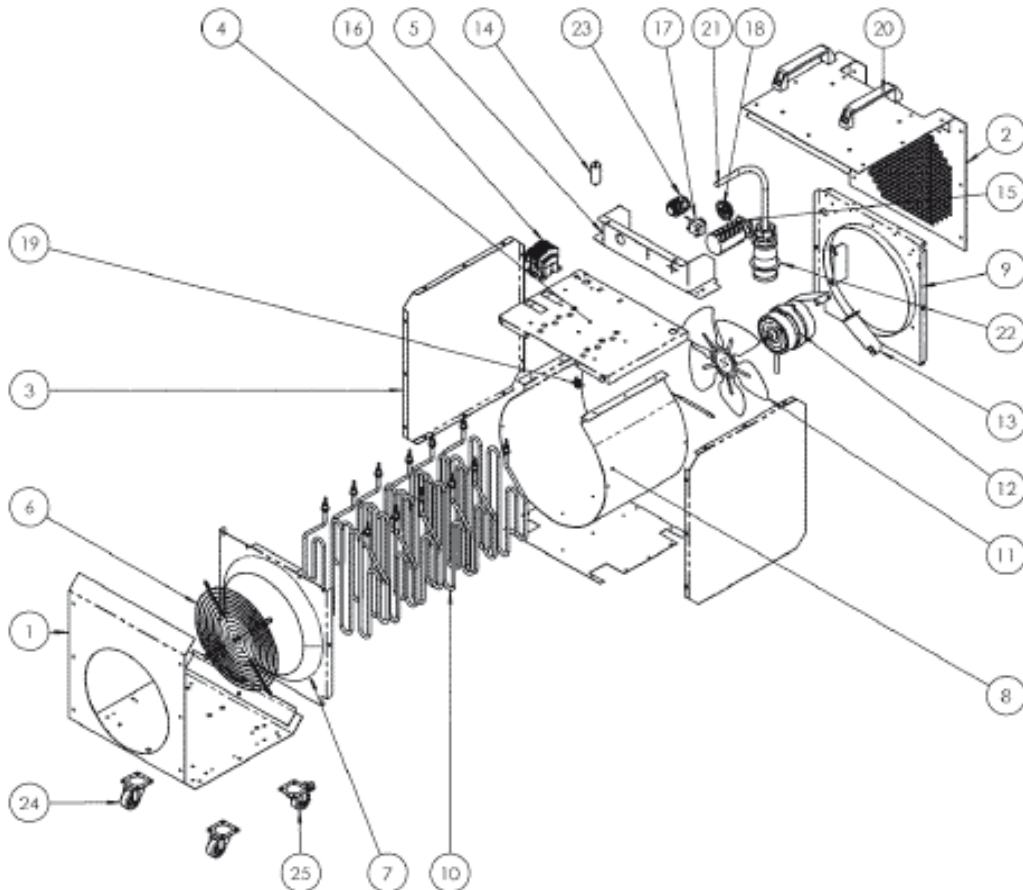
Specifications	EL 12	EL 20
Rated Power	10 kW	18 kW
Nominal Voltage	380 - 415 V~50Hz	380 - 415 V~50Hz
Nominal Current	15 A	26 A
Plug	Industrial plug 16 A (3ph+N+E)	Industrial plug 32 A (3ph+N+E)
Heat stages	5 / 7,5 / 10 kW	9 / 13,5 / 18 kW
Air Flow	600 m ³ /h	850 m ³ /h
Output temperature (ΔT)	27,3 / 40,7 / 52,2 C	36,3 / 53,9 / 70,5° C
Thermoregulator	0 - 40° C	0 - 40° C
Safety thermostat	90° C	90° C
Dimensions (L x W x H)	300 x 275 x 360 mm	300 x 275 x 360 mm
Weight	30 kg	30 kg
Noise level	56,1 dB (A)	54,8 dB (A)

10. TROUBLESHOOTING AND REMEDY

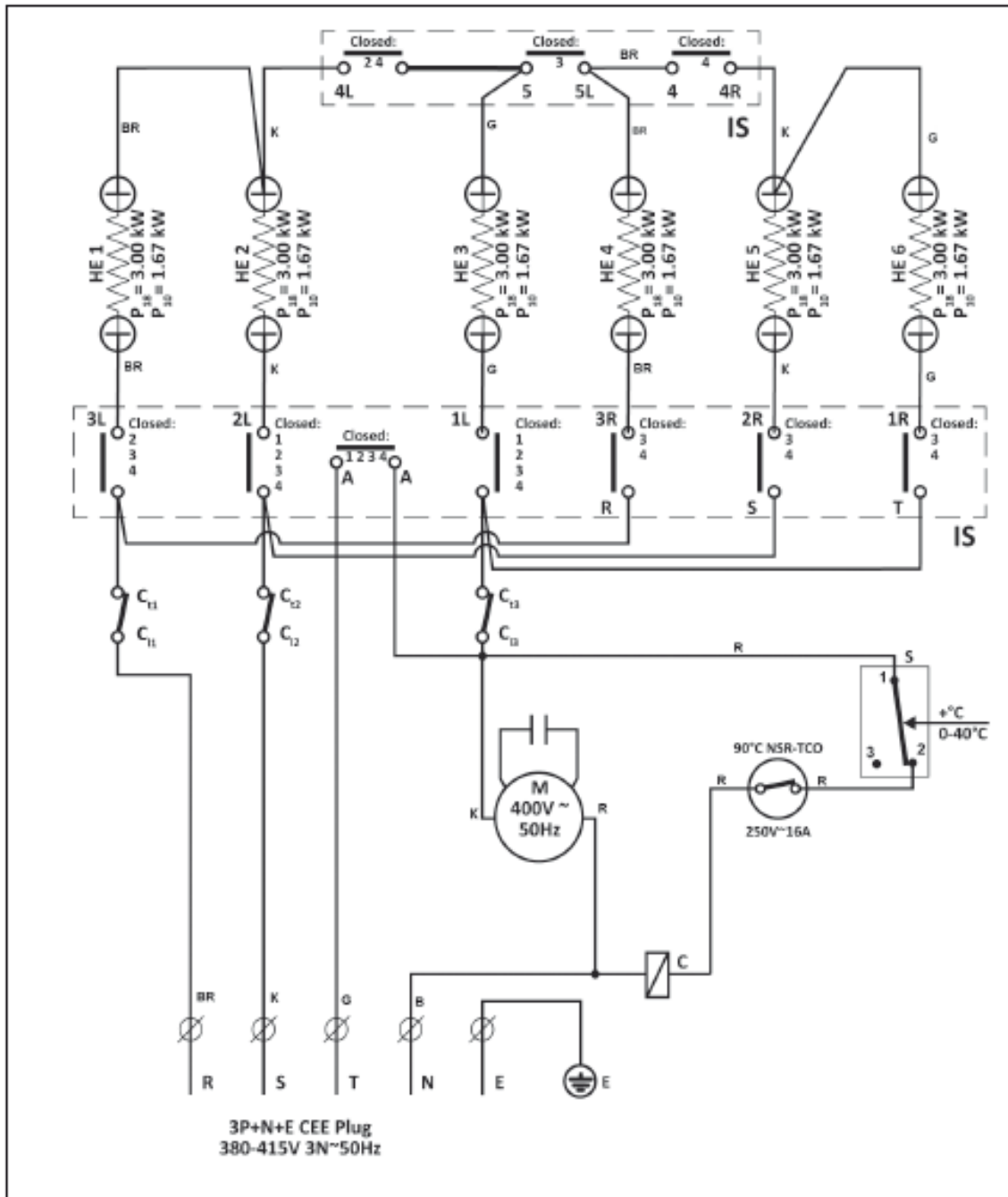
Fault	Cause	Remedy
Fan not working	Plug connections	Connect the heater to the power outlet
	No supply voltage	Connect heater to a compatible outlet Consult technical specifications, as described in the "technical data" section.
	Installation fuse blown	Replace the fuse; Warning! Fuses should not be repaired, but rather replaced with new ones; The circuit breaker may be off. Turn the circuit breaker back on.
	Faulty CAM switch	Replace with a new switch. This operation must be performed by a qualified technician!
	Faulty fan motor	Replace fan motor. This operation must be performed by a qualified technician.
Abnormal noise from the fan motor	Fan dirty	Clean the fan as described in the "cleaning and maintenance" section.
	Damaged fan	Replace the fan. This operation must be performed by a qualified technician!
	Faulty fan motor	Replace the fan motor. This operation must be performed by a qualified technician!
	Dirty fan blades or objects preventing normal rotation of the fan	Clean the fan blades and fan as described in the "cleaning and maintenance" section
	Damaged fan blades	Repair or replace the fan. This operation must be performed by a qualified technician!
Vibrations	The heater is on an uneven surface	Place the heater on a level surface.
	The hood is not adjusted or the bolts are not tightened properly.	Check the hood tightening bolts.
	Air intake and/or outlet blocked	Remove any parts that may be blocking the air intake and exhaust.

11. SPARE-PARTS-LIST from manufacturer year 49

<u>Pos.</u>	<u>Part.-No.</u> <u>EL 12</u>	<u>Part.-No.</u> <u>EL 20</u>	<u>Description</u>	<u>Qty.</u>
01	6163300	6163300	Air outlet panel	1
02	6163301	6163301	Air inlet panel	1
03	6163302	6163302	Side panel	2
04	6163330	6163330	Heating elements base plate	1
05	6163304	6163304	Control panel	1
06	6163305	6163305	Air outlet grille	1
07	6163306	6163306	Air outlet shield	1
08	6163307	6163307	Air duct	1
09	6163308	6163308	Fan ring plate	1
10	6163309	6163327	Heating element	6
11	6163310	6163328	Fan blade	1
12	6163311	6163311	Fan motor	1
13	6163331	6163331	Fan motor bracket	3
14	6163313	6163313	Capacitor	1
15	6163314	6163314	Industrial CAM switch	1
16	6163332	6163332	Contactora	1
17	6163316	6163316	Room thermostat	1
18	6163317	6163317	Knob for room thermostat	1
19	6163318	6163318	Safety thermostat	1
20	6163319	6163319	Handle	2
21	6163320	6163333	Supply cable	1
22	6555005	6163202	CEE-plug	1
23	6163321	6163321	Cable gland	1
24	6163322	6163322	Spinning castor without brake	2
25	6163323	6163323	Spinning castor with brake	2



12. WIRING DIAGRAM



HE 1 - Heating element 1
 HE 2 - Heating element 2
 HE 3 - Heating element 3
 HE 4 - Heating element 4
 HE 5 - Heating element 5
 HE 6 - Heating element 6

IS - Industrial CAM switch
 S - Room thermostat
 C - Industrial contactor
 M - Fan motor
 NSR-TCO - Non-self-resetting thermal cut-out

13. CLEANING AND MAINTENANCE

Cleaning

• Clean the exterior of the appliance with a damp cloth. Paint and plastic surfaces should not be rubbed. Wait until it is completely dry before starting the appliance. Do not use solvent cleaners.

Make sure that the appliance has no moisture inside.

• To clean the inside, compressed air must be used. The inside may be cleaned through the air intake or outlet openings.

Maintenance

- Check for any damage to the power cord or any damaged components before operating the appliance.
- Check the entire structure of the appliance.
- Make sure it is working properly.
- If you hear any unusual noises, stop the heater immediately. Damage may be caused to the ventilation propeller.
- In the event of malfunction, contact a qualified technician.
- Check before each use of the appliance that there are no objects that may prevent normal rotation of the fan. Should you find any object, try to remove it with the aid of compressed air. If you cannot remove it, you should contact a qualified technician.

14. END-OF-LIFE OF THE APPLIANCE



This appliance is marked with the symbol for compliance with European Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE), which means that this appliance should not be disposed off as household waste at the end of its life cycle.

The end user is responsible for complying with local law when recycling this product.

This equipment should be disposed off at a used electrical and electronic equipment collection centre near you.

You may request further information regarding national recycling options from any local authority.

Separate collection of used electrical and electronic equipment enables re-use, recycling or the reduction of adverse impacts from the production and management of such waste, reducing the overall impact of resource use, improving the efficiency of such use and contributing towards sustainable development.