

# ■ Operating and installation instructions

**REMKO ELT series**  
**Electric heaters**

ELT 2-1



This product is suitable only for well-insulated rooms or for occasional use.



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Carefully read this operating manual prior to commissioning / using the unit!

This operating manual is a translation of the German original.

These instructions are an integral part of the unit and must always be kept in the vicinity of the installation location or on the unit itself.

*Subject to modifications; no liability accepted for errors or misprints!*

# REMKO ELT series

## Safety notes

Always observe the respective local building code and fire prevention guidelines as well as the guidelines of the accident prevention and insurance associations when using the units.

The units have been subjected to extensive material, functional and quality inspections prior to delivery. However, dangers can arise from the units if they are used improperly or not as intended by untrained personnel!

### Please observe the following notes

- Only qualified personnel may set up and install the units.
- Repairs and maintenance of the equipment and components may only be used by qualified personnel follow.
- The personnel tasked with operating the units must check the units for visible defects on the operating and safety devices as well as the presence and function of the protective devices prior to starting work **Inform the supervisor if defects are discovered!**
- In the event of defects that endanger the operational safety of the unit, operation must be discontinued immediately
- Observe the respective local regulations and the relevant electrical safety measures when using the units
- Maintain safety distances to combustible materials
- An unobstructed air inlet and air outlet must be guaranteed at all times
- The air outlet must not be constricted or equipped with pipe or hose lines
- Never insert foreign objects into the units
- The units must not be covered during operation
- Safety devices must not be bypassed or disabled
- The units must not be operated in the vicinity of bathtubs, showers, swimming pools etc.
- The units must not be operated directly below a wall socket
- The units must not be exposed to direct jets of water e.g. **pressure washers etc.**
- Never allow water to enter the units
- The units must not be installed or operated in potentially flammable or explosive environments
- The units must not be installed or operated in atmospheres containing oil, sulphur or salt
- All electrical cables for the units must be protected against damage, even damage caused by animals
- The units must be set up in a stable, horizontal position



### CAUTION

*Safety devices must not be bypassed or disabled.*

## Unit description

The units are portable electric heating units for industrial applications.

The units are operated exclusively with electric power and have been designed in such a way that they can be used fully automatically, universally and in a straightforward manner.

The units are equipped with specially enclosed electric heating resistors, low noise and low-maintenance axial fans, a safety and aftercooler thermostat, an integrated room thermostat and a power cable with protective contact plug.

The units conform to the fundamental health and safety requirements of the appropriate EU stipulations.

The units are dependable and offer ease of operation.

### The units may be used among other things for the following:

- Drying newly completed buildings
- Spot heating outdoor workspaces or fire-proof manufacturing facilities and halls
- Continuous or temporary room heating
- De-icing machines, vehicles and non-combustible warehoused goods while adhering to the relevant safety distances

## Operating sequence

The units can be used in the respective modes for air heating and air circulation purposes.

The units can be operated on *one* heating and *one* fan setting. They have a 3-stage operating switch with the functions: Heat (I) / Off (0) / Fan (II).

In setting I (Heat), the heating resistor and air circulating fan are switched on and warm air is blown out.

The unit is equipped with an integrated thermostat to ensure that the room temperature is constant.

Once the selected temperature has been reached, the thermostat stops the heating operation. If the room temperature falls below the selected temperature, the thermostat starts up the heating operation again.

The integrated temperature limiter switches off the unit if the temperature is excessively high and switches it on again automatically after it has cooled down.

In setting II (Fan), only the air circulating fan is switched on and the unit can only be used for air circulation.

After switching off the units via the operating switch or the room thermostats, the supply air fan runs to cool the heating resistors for a certain time and then switches off automatically.

## Commissioning

One person, who has been adequately trained in the handling of the units, should be tasked with the operation and monitoring of the units.

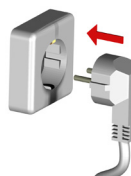
The units must be in the intended horizontal position on their supports at all times during operation.

1. Check that the mains power supply matches the operating voltage of the unit 230V/1~/50 Hz

2. Move the operating switch to the "0" position.



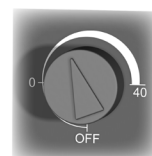
3. Connect the unit's power plug to a properly installed mains socket.



## Heating

The unit operates in a fully automatic manner subject to the temperature that is set on the thermostat.

1. Set the desired room temperature on the thermostat.



2. Move the operating switch to the "I" (Heating) position.



### NOTE

*For optimum operation the units should not be operated above an ambient temperature of 25 °C.*

### NOTE

*The electrical connection for the units must be made at a separate feed point with a residual current device in accordance with VDE 0100, Section 55.*

### CAUTION

*Extensions to the connection cable must only be conducted by authorised specialist electricians, taking into consideration the unit capacity, cable length and local use.*

### CAUTION

*All cable extensions must only be used in fully un-reeled or reeled off condition.*

## Fan

Only the supply air fan operates in this setting. Thermostatic regulation and heating operation are not possible in this operating mode.

1. Move the operating switch to the "II" (Fan) position.



# REMKO ELT series

## Shutdown

1. Move the operating switch to the "0" (Off) position.



The supply air fan runs on to cool the units and only switches off after the cooling down phase is complete.

The fan can switch on and run several times before the final shutdown.

2. If the units are inactive for long periods, disconnect them from the mains power supply.



### CAUTION

*Never interrupt the power supply prior to the completion of the follow-up cooling phase. There is no warranty claim for damage to the units from overheating.*

## Care and maintenance

Regular care and observation of some basic requirements will ensure trouble-free operation and a long service life of the units.

### CAUTION

*Before undertaking any work on the units, the power plug must be removed from the mains socket.*

- Observe the regular care and maintenance intervals
- In accordance with the operating conditions, the units must, if necessary, be checked at least yearly by a specialist to ensure that they are in a condition that is safe to use
- Keep the units free of dust and other debris
- Only clean the units with a dry or moistened cloth
- Never subject to direct jets of water.  
**e.g. pressure washers etc.**
- Never use abrasive or solvent-based cleaners
- Check the inlet and outlet grille for contamination on a regular basis
- Check the safety equipment and protective devices on a regular basis
- Be careful not to damage the thermostat's probe or capillary tube when removing or mounting the rear panel of the unit

### CAUTION

*After completing any work on the unit, an electrical inspection must be carried out according to VDE 0701.*

## Troubleshooting

### The unit (fan) does not start.

1. Check the mains fuses on site.
2. Check the power plug.
3. Check the operating switch.
4. Check that the fan can move freely.

### The unit does not heat up

1. Set the thermostat to a value that is higher than the room temperature.
2. Check that the thermostat is functioning correctly.
3. Check the operating switch.
4. Check that the contactor is functioning correctly.
5. Check that the temperature limiter is functioning correctly and check it for damage.

If all of the functional checks have been carried out without any findings, please contact an authorised service station.



### NOTE

*Repair work may only be carried out by authorised qualified electricians.*

## Intended use

The units are designed exclusively for heating and ventilation purposes on the basis of their structural design and equipment. The units must not be used for any other purpose.

The units are only permitted to be operated by people with the relevant training and understanding of how to handle them.

With non-observance of the manufacturer's specifications, the respective local legal requirements or after arbitrary alterations to the units, the manufacturer shall not be liable for resulting damages.



### NOTE

*Operation other than the types listed in this operating manual is prohibited. With non-observance, any manufacturer liability or guarantee claims are voided.*

## Customer service and guarantee

As a prerequisite for any guarantee claims to be considered, it is essential that the ordering party or its representative complete and return the **"certificate of guarantee"** to REMKO GmbH & Co. KG at the time when the units are purchased and commissioned.

The units have been tested several times to verify that they are functioning correctly. However, if malfunctions should arise that cannot be remedied by the operator with the assistance of the troubleshooting section, please contact your specialist dealer or contractual partner.



### NOTE

*Adjustment and maintenance work may only be carried out by authorised and qualified technicians.*



## Environmental protection and recycling

### Disposing of packaging

When disposing of packaging material, please consider our environment.

Our units are carefully packed and delivered in sturdy transport packaging made from cardboard and polystyrene.

The packaging materials are environmentally-friendly and can be recycled.

By recycling packaging materials, you make a valuable contribution to the reduction of waste and conservation of raw materials.

***Therefore, only dispose of packaging material at appropriate collection points.***

### Disposal of the old unit

The manufacturing process for the units is subject to continuous quality control.

Only high-grade materials are processed, the majority of which are recyclable.

You also contribute to environmental protection by ensuring that your old equipment is only disposed of in an environment friendly manner.

***Therefore, only bring the old unit to an authorised recycling business or to an appropriate collection point.***



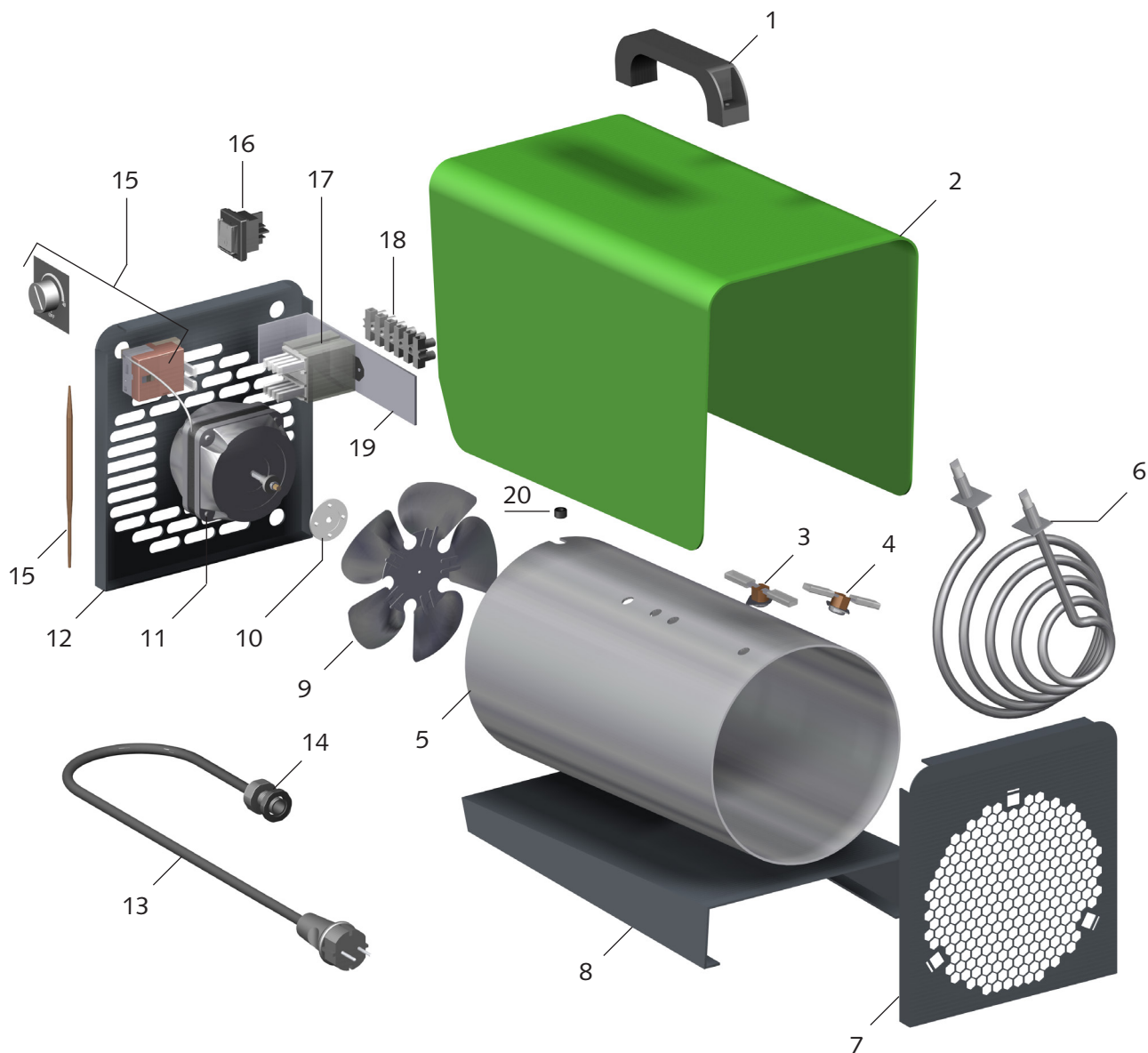
### CAUTION

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# REMKO ELT series

## Exploded view of the unit



We reserve the right to modify the dimensions and design as part of the ongoing technical development process.

## Spare parts list

| No. | Designation               | EDP no. |
|-----|---------------------------|---------|
| 1   | Transport handle          | 1103903 |
| 2   | Outer casing              | 1103928 |
| 3   | Aftercooler thermostat    | 1104065 |
| 4   | Temperature limiter       | 1101161 |
| 5   | Inner casing              | 1103931 |
| 6   | Heating resistor          | 1103909 |
| 7   | Front panel               | 1101063 |
| 8   | Floor panel               | 1103932 |
| 9   | Fan blade                 | 1103819 |
| 10  | Drive clutch              | 1103912 |
| 11  | Fan motor                 | 1103820 |
| 12  | Back wall                 | 1103915 |
| 13  | Power cable with plug     | 1101320 |
| 14  | Strain relief             | 1103904 |
| 15  | Thermostat assembly       | 1101066 |
| 16  | Operating switch assembly | 1101188 |
| 17  | Auxiliary relay           | 1108038 |
| 18  | Terminal block 6er        | 1101366 |
| 19  | Mounting plate            | 1101067 |
| 20  | Grommet                   | 1101304 |

When ordering spare parts, please state the EDP no., unit number and type (see name plate)!

# REMKO ELT series

## Maintenance protocol



Unit type: ..... Unit number: .....

Unit cleaned - outside -  
Unit cleaned - inside -  
Fan blade cleaned  
Protection grid cleaned  
Safety equipment checked  
Safety devices checked  
Unit checked for damage  
All fastening screws checked  
Electrical safety check  
Test run

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|
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Comments: .....

.....

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|                                       |                                       |                                       |                                       |                                       |
|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| 1. Date: .....<br>.....<br>Signature  | 2. Date: .....<br>.....<br>Signature  | 3. Date: .....<br>.....<br>Signature  | 4. Date: .....<br>.....<br>Signature  | 5. Date: .....<br>.....<br>Signature  |
| 6. Date: .....<br>.....<br>Signature  | 7. Date: .....<br>.....<br>Signature  | 8. Date: .....<br>.....<br>Signature  | 9. Date: .....<br>.....<br>Signature  | 10. Date: .....<br>.....<br>Signature |
| 11. Date: .....<br>.....<br>Signature | 12. Date: .....<br>.....<br>Signature | 13. Date: .....<br>.....<br>Signature | 14. Date: .....<br>.....<br>Signature | 15. Date: .....<br>.....<br>Signature |
| 16. Date: .....<br>.....<br>Signature | 17. Date: .....<br>.....<br>Signature | 18. Date: .....<br>.....<br>Signature | 19. Date: .....<br>.....<br>Signature | 20. Date: .....<br>.....<br>Signature |

Unit to be maintained only by authorised specialists in accordance with the statutory regulations.

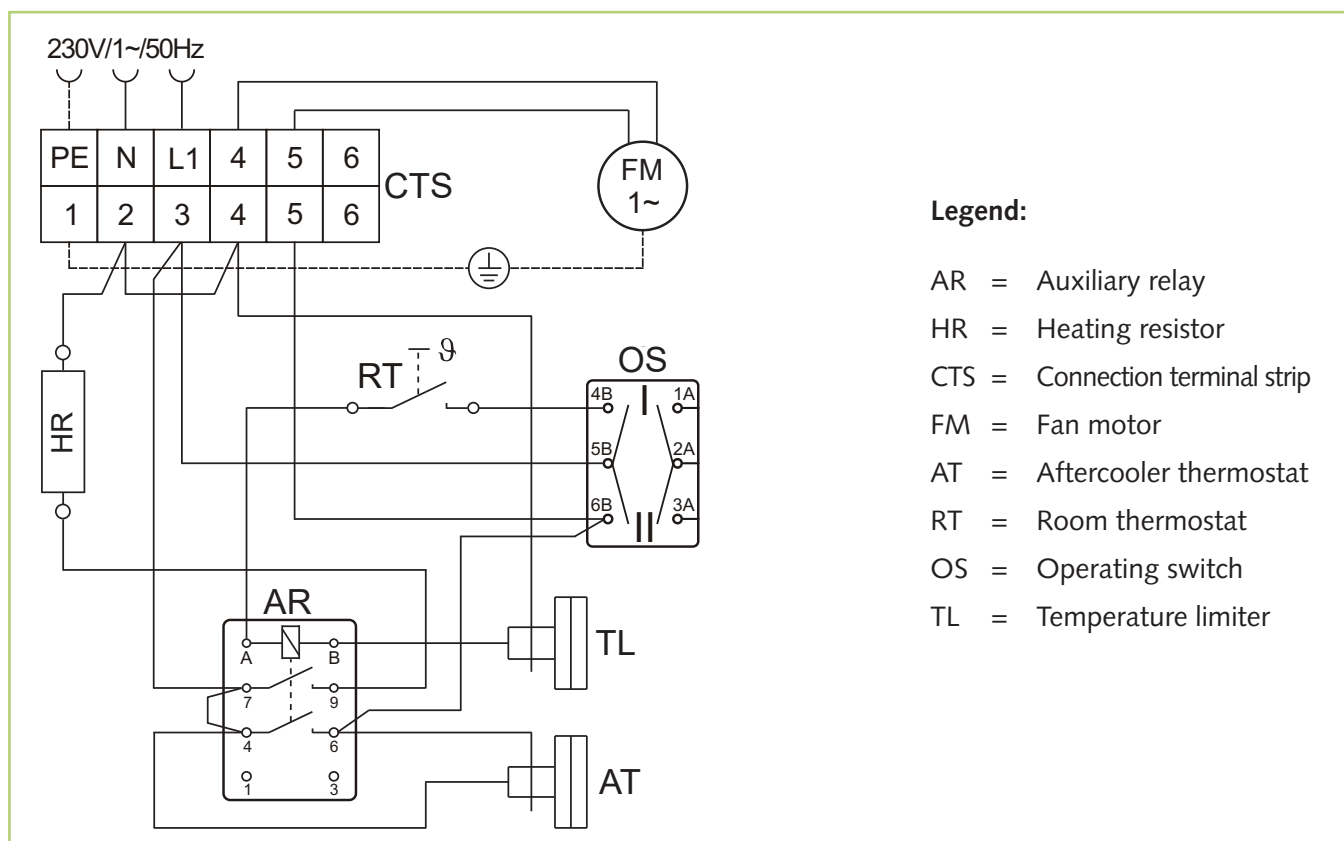
## Technical data

| Series                                                 | Symbol      | Unit              | ELT 2-1                                             |
|--------------------------------------------------------|-------------|-------------------|-----------------------------------------------------|
| Nominal heat capacity                                  | $P_{nom}$   | kW                | 2,2                                                 |
| Minimum heating power                                  | $P_{min}$   | kW                | 2,2                                                 |
| Maximum continuous heating power                       | $P_{max,c}$ | kW                | 2,2                                                 |
| Switchable heating capacity                            |             | kW                | 2,2                                                 |
| Air volume                                             |             | m <sup>3</sup> /h | 250                                                 |
| Air outlet temperature <sup>1)</sup>                   |             | °C                | 82                                                  |
| Power supply                                           |             | V/Hz              | 230/1~/50                                           |
| Max. rated current                                     |             | A                 | 9,5                                                 |
| Max. power consumption                                 |             | kW                | 2,25                                                |
| Auxiliary current consumption at nominal heating power | $el_{max}$  | kW                | 0,2                                                 |
| Auxiliary current consumption at minimum heating power | $el_{min}$  | kW                | 0,2                                                 |
| Auxiliary current consumption in standby condition     | $el_{SB}$   | kW                | 0,0                                                 |
| Electrical protection (provided by the customer)       |             | A (slow)          | 16                                                  |
| Sound pressure level LpA 1m <sup>2)</sup>              |             | dB (A)            | 46                                                  |
| Dimensions: L/W/H                                      |             | mm                | 300/200/315                                         |
| Type of room temperature control                       |             |                   | Room temperature control with mechanical thermostat |
| Weight                                                 |             | kg                | 6,0                                                 |

<sup>1)</sup> at 20 °C intake air temperature

<sup>2)</sup> Noise level measurement DIN 45635 - 01 - KL3

## Electrical wiring diagram



We reserve the right to modify the dimensions and design as part of the ongoing technical development process.

# REMKO QUALITY WITH SYSTEMS

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