

TEH 20 T / TEH 30 T

EN

OPERATING MANUAL
ELECTRIC HEATER



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1. Notes on how to use the manual

This operating manual contains all the important information required for the safe commissioning and use of your electric heater.

It provides you with support when operating the device and when remedying possible problems as well as containing information on disposal and customer service.

Please read this manual thoroughly and completely before using the electric heater for the first time.

Please store this operating manual and keep it within reach in order to consult it if necessary.

Please observe all safety instructions and information on use and maintenance contained in this manual.

This manual should be attached to the device if the latter is made available to other persons for use.

Legend



WARNING SYMBOL. This symbol is followed by hazard warning instructions whose non-compliance may cause serious injuries and/or death and/or property damage.

The note is always preceded by a signal word:

Risk: Risk of serious or fatal injury

Warning: Risk of serious permanent injury

Caution: Risk of damage to property



Additional information which might be helpful when using the device.

Typographical conventions

All text references to figures refer to the figures in the respective chapter. Position numbers that are not available in the respective chapter may refer to figures in the chapter "Description of device".

2. Scope of delivery

The scope of delivery of the electric heater includes:

- Electric heater TEH 20 T / TEH 30 T
- User manual

For operating the electric heater, additional accessory parts can be used. Accessory parts can be ordered from the Trotec customer service.

3. Guarantee provisions

The warranty period granted for electric heaters TEH 20 T and TEH 30 T shall be 12 months.

Any damage to the device resulting from non-compliance with the instructions contained in this manual shall be excluded from the guarantee.

The manufacturer shall assume no liability for damages to the device and/or its accessories that are caused by unauthorised modifications.

For any further terms of guarantee, please refer to the General Terms and Conditions (GTC), which are available on our website: www.trotec.de.

4. General safety instructions



Please observe the following safety instructions! Any non-compliance with these instructions may have serious consequences for the health of persons and could result in property damage and damage to the environment.

Risk of explosion!

- Do not operate the device in potentially flammable or explosive environments. Do not install it in such environments, either.
- Do not place the device on a flammable surface.
- Remove any inflammable materials and chemicals from the immediate operating environment.

Functional impairment of and damage to the device!

- Install the device in a stable position.
- Keep the intake and exhaust openings free.
- Do not cover the device during operation.
- Only disconnect the device from the mains once it has cooled down completely.
- Do not use any chemicals when cleaning the device.
- Never place items on the heater or step on it.

Risk of injury and damage to property due to defective devices!

- Before each use of the device, check its accessories and connection parts for possible damages. Do not use any defective devices or device parts.
- Do not use the device if you detect any damage to its plug and cables. Defective power cables represent a serious health threat.

Danger to life through electrical shock!

- Only connect the device to power sources that are in good technical order. Do not use damaged wall outlets!
- Pull the connection cable out of the wall outlet by pulling it at its plug.
- Do not touch electrical connection cables when your hands are wet!
- Protect the electrical connection cables against damage caused by, for example, animals.
- Do not carry out any changes or repairs on the device!
- Do not expose the device to any liquids.
- Do not apply any liquids to the interior of the device. If this does happen nevertheless, pull out the power cord and have the device checked by a specialist workshop.

Risk of injury!

- The device must only be operated by authorised and appropriately trained personnel.
- Do not insert any objects into the intake and exhaust opening of the device.
- Do not reach into the existing openings.
- Do not leave children or animals unattended near the operating device!

5. Function and product characteristics

TEH 20T and 30T devices are mobile, electrically operated air heaters. They are used for air heating to heat rooms and speed up drying or de-icing processes. The device can be used both inside and outside.

Thanks to the high fan power, large rooms can also be heated within a short period of time.

The integrated thermostat enables continuous temperature configuration and ensures constant room temperatures.

The device is designed for operation under difficult conditions and can also be operated at construction sites (heating and construction drying), in greenhouses or other commercial fields e. g. for drying pottery.

The heater is designed for permanent operation.

Functional principle

Air to be heated is sucked in by the axial fan and fed through the interior of the device. There, it passes a heating coil, is heated and released into the room through the exhaust opening (refer to "Description of device")

6. Technical data

	TEH 20 T	TEH 30 T
Parameter	Value	Value
Article number	1.410.000.203	1.410.000.205
EAN code	4052138007419	4052138007068
Heating capacity	2.5 kW	3.3 kW
Heating capacity	2150 kcal	2837 kcal
Air volume	185 m ³ /h	185 m ³ /h
Temperature increase ΔT	56 °C	75 °C
Power consumption	10.9 A	13.4 A
Power connection	16 A (Schuko)	16 A (Schuko)
Connection voltage	230 V	230 V
Frequency	50 Hz	50 Hz
Thermostat	yes	yes
Mobility	portable	portable
Noise level	63 dB (A)	63 dB (A)
Depth	325 mm	325 mm
Width	260 mm	260 mm
Height	330 mm	330 mm
Weight	9.7 kg	9.7 kg
Tube connection	155 mm	155 mm

7. Use

Proper use

The electric heaters TEH 20 T and 30 T have been developed for hot air generation and ventilation and can be used inside and outside (under dry conditions). It can be applied for drying, de-icing, heating and ventilation.

The device can be used for heating rooms such as cowsheds, greenhouses or winter construction sites and for de-icing machines or pipelines.

Any application deviating from the above-mentioned use is deemed inadmissible!

8. Installation conditions

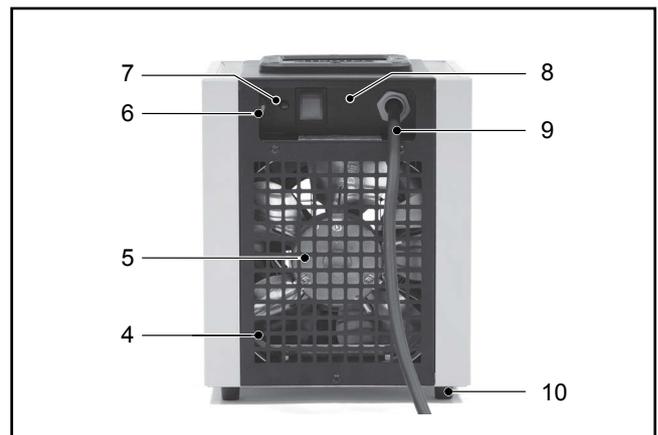
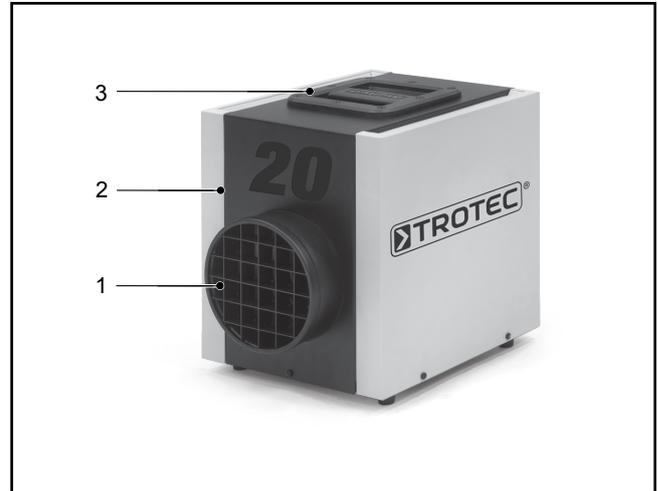
When choosing the installation location of the electric heater, a number of spatial and technical conditions must be taken into account. Any non-compliance may impair the functionality of the device and/or of its accessories or result in hazardous situations for persons and property. The following points are to be observed during installation:

- The device must be installed in a stable position and placed on a fireproof, horizontal, even and vibration-free surface.
- The installation location must be dry. It must be ensured that no humidity (e. g. spray water, rain or snow) can penetrate the device. If humidity gets inside the electric heater nevertheless, disconnect the device from the power supply and have it checked by a certified specialist workshop.
- The device must be connected to a properly protected socket complying with all parameter requirements (refer to "Technical data").
- The electric heater must not be operated in extremely dusty environments.
- The minimum distance of the device to inflammable materials must be at least 2 m.
- The minimum distance to walls must be at least 50 cm.
- Air humidity at the installation location must not condense on the device.
- Intake and exhaust openings must not be covered.

9. Description of device

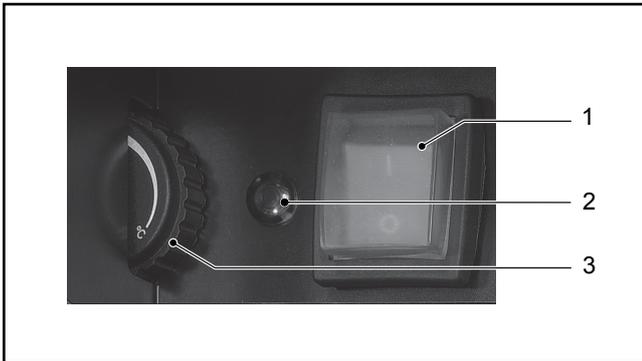
The electric heater TEH 20 T or 30 T includes the following components:

Device overview



- | | |
|-------------------|--------------------|
| 1 Exhaust opening | 6 Turn control |
| 2 Housing | 7 Indicator lamp |
| 3 Handle | 8 Power switch |
| 4 Intake opening | 9 Power connection |
| 5 Fan | 10 Feet |

10. Functions and operation



Switching on the electric heater

Switch the electric heater on by setting the power switch (1) to position "1". The power switch will flash green and the fan is activated.

Switching off the electric heater

Switch the device off by setting the power switch (1) to position "0".



Caution!

Damage to the device due to overheating.

Do not switch off the device by pulling out the power cord. This may cause the device to overheat.

Switch off the device properly. Do not disconnect the power plug before the fan motor has come to a complete standstill.

Setting the temperature

The temperature of the electric heater can be set by turning the turn control (3) of the thermostat (on the back of the device) to the desired position (refer to chapter "Description of device"). The red indicator lamp (2) starts to flash when the heating process begins.

- Increasing the temperature: Turn the turn control upwards.
- Decreasing the temperature: Turn the turn control downwards.

Adjustments can be made during ongoing operation.

The device is deactivated automatically if the set room temperature is reached. The indicator lamp (2) goes out.

If the room temperature falls below the set value, heating operation of the device will be reactivated. The indicator lamp will flash red.

11. Installation and commissioning



Danger!

Risk of injury due to improper operation.

The device may only be used by persons who have been trained how to operate the device.

For installation and commissioning, proceed as follows:

- Check that the scope of delivery of your electric heater is complete. If an accessory part is missing, please contact the Trotec customer service or the specialist dealer from whom you purchased the device.

- Check the device and its connection parts for possible damage. Inspect the device prior to each commissioning and check that it is in proper condition during operation.



Warning!

Risk of injury due to damaged devices.

Do not use any damaged devices or components!

In the case of damage to the electric heater, have it repaired by a certified special workshop before use.

- Observe the requirements described in chapter "Installation conditions".
- Ensure that the properties of the applied power connection comply with the requirements stated on the name plate or in the chapter "technical data".
- Ensure that the fan can move freely each time before turning on the device. Small objects in the rotation range of the fan can be removed with compressed air. In the event of major malfunctions, always contact a certified specialist workshop. Please observe the information stated in the chapter "Maintenance and cleaning". The device must only be disassembled or repaired by authorised technicians!
- Connect the power supply cable to a properly protected mains socket (230 V / 50 Hz / 16 A). On construction sites, a residual current circuit breaker (RCD) must be connected upstream of the mains socket according to VDE 0100/0105.

The electric heater is now ready for operation. Use the device according to the functions described in chapter "Functions and operation".

12. Transport and storage

Transport

- Switch the device off as described in chapter "Functions and operation".
- Wait until the device has cooled down.
- Transport the electric heater by carrying it with the provided handle (3).
- During transport by means of a vehicle, protect the device from vibrations and slipping.

Storage

If the electric heater is not used for a longer period of time, it must be stored appropriately so that it cannot cause personal injury or property damage and the device itself cannot become damaged. The following points are particularly important:

- Always disconnect the device from the power supply.
- The storage location should be as free from dust as possible to avoid excessive dirtying of the device. Cover the device.
- During storage, the TEH 20 T or 30 T and particularly its electrical components must be protected from moisture (e. g. snow, rain).
- During storage, the device must be protected from general climatic conditions (e. g. storm).
- In the case of an elevated storage place, the device must be secured against falling in order to avoid injuries to persons and damage to the device.

13. Maintenance and cleaning

In order to ensure proper operation, the electric heater should be maintained and cleaned regularly.



Danger!
Risk of injury

Always disconnect the device from the power supply before cleaning or carrying out any maintenance.



Danger!
Danger to life due to improper repair

Do not attempt to carry out modifications or repairs on the device. Any unauthorised modification may result in serious injuries or even death. Have repairs carried out by a certified specialist workshop.

Maintenance of the electric heater

- Check all electrical connections for damage. Always have damaged components repaired before using the device once again!
- Check the housing, covers and all connections that they are in proper condition.
- During operation, always listen for unusual noises. Noises might be an indication of damage to the fan unit. In this case, have the device checked by a certified specialist workshop.
- Ensure before each use of the device that no objects are in the rotation range of the fan. Remove small objects with compressed air. If the defect cannot be completely eliminated by this, please contact a certified specialist workshop.

Cleaning the electric heater

- Wipe the exterior of the device using a damp cloth. The painted and plastic surfaces may not be scoured. Do not take the device into operation before it has completely dried! Do not use any solvent-based cleaning agents. Make sure that no humidity can penetrate the heating unit.
- The interior of the device can be cleaned with compressed air. Cleaning can be carried out through the air inlet and exhaust openings.

14. Disposal

Electric heater

Electronic equipment may not be disposed of together with domestic waste but must be correctly disposed of in accordance with EUROPEAN PARLIAMENT Directive 2002/96/EC of 27th January 2003 regarding used electrical and electronic equipment. Please dispose of this device according to applicable legal regulations after its final decommissioning.

Packaging

The packaging of the electric heater consists of cardboard/paper and plastic. The materials must be disposed of in the designated containers according to local regulations or at a recycling depot.

15. Service and repair

Before contacting our customer service in order to solve an existing technical problem, please try removing the error by following the instructions described in the chapter "Troubleshooting".

If you have any further questions regarding function and operation of the electric heater or if you wish to receive further information in the event of a claim or with regard to guarantee aspects, please do not hesitate to contact us at any time.

Please contact:

Trotec GmbH Co KG

Grebberer Straße 7

D-52525 Heinsberg

Tel.: 49 (0) 2452 / 962 - 400

Fax.: 49 (0) 2452 / 962 - 200

Email: info@trotec.de

www.trotec.de.

16. Troubleshooting



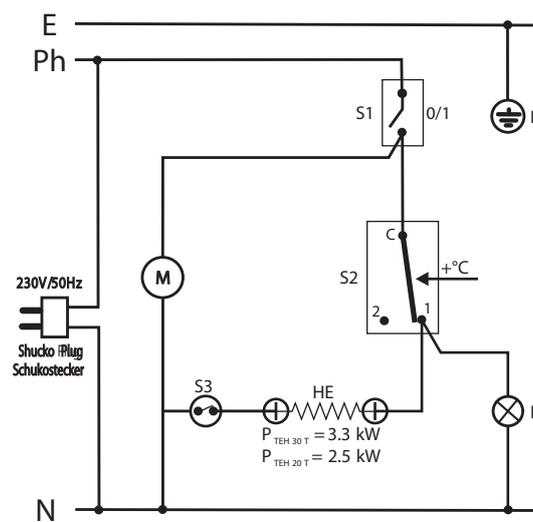
Danger!
Danger to life due to improper repair

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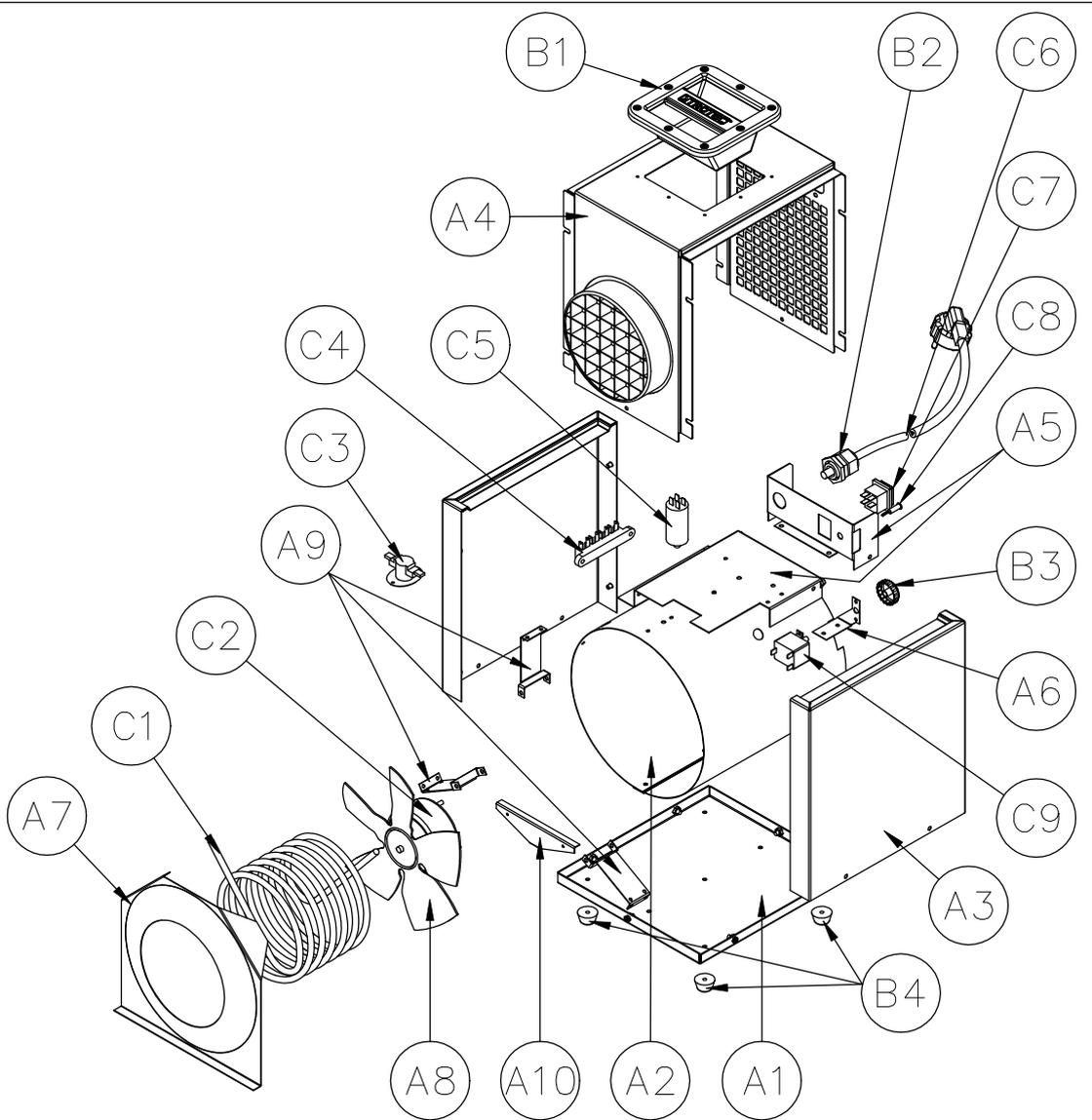
Problem	Cause	Error correction
Fan does not start running	Power supply is not connected.	Connect electric heater to power supply.
	Wrong connection parameters (power supply)	Connect the device to a power supply with the required parameters (refer to chapter "Technical Data").
	Fuse has tripped	Replace defective fuse. Attention! Fuses may not be repaired but must always be replaced. In most cases, fuses are triggered due to a serious technical fault. Have each fuse replaced by an authorised service electrician!
	Defective switch	Have the device checked by a certified specialist workshop.
	Motor of fan unit defective	Have the device checked by a certified specialist workshop.
Motor or fan runs loudly or unevenly.	Dirt on the fan.	Clean the fan as described in chapter "Cleaning and maintenance".
	Fan or fan unit is damaged	Have defective components repaired or replaced. Attention! Repairs must only be performed by qualified technicians.
	Damaged motor bearing	Have the motor checked by a qualified technician.
Frictional noises can be heard	Dirt on the fan blades or objects in the rotation range of the fan	Clean fan blades or fan unit (refer to "Cleaning and maintenance").
	Fan blades are damaged	Have defective components repaired or replaced by a specialist workshop. Attention! Repairs must only be performed by qualified technicians.
Vibrations occur	The electric heater stands on an uneven, unstable surface	Check the surface on which the device is standing. Position the heater on a even and stable surface.
	Connections between components are defective or not properly tightened.	Check the screw connections.
	Air intake and/or exhaust air openings are blocked.	Remove all objects in front of intake or exhaust openings.

17. Appendix: Circuit diagram

Electric Diagram TEH 20 T / 30 T



- E - Earthing / Erdung
- Ph - Electric Phase / Electric Phase
- N - Common Line / Gemeinsame
- S1 - On-Offswitch / Geräteschalter 0/1
- S2 - Room Thermostat / Raumtemperaturregler
- S3 - Bimetallic Thermostat / Bimetallthermostat
- M - Fan motor / Lüftermotor
- HE - Heating Element / Heizelementes
- L - Red lamp (Heating Element ON) / Signalleuchte " rot " (Heizelementes AUF)



REV.	DATA	DESCRIÇÃO	DESENHADO	VISTO	ENG.º PROJECTO	APROVAÇÃO DO CLIENTE
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		Cliente			Rev
		DES. Nº	09.038.04_PG2	Folha	

DES.	2012/10/29	David Almeida	TEH20T/30T Heater Exploded View
PROJ.			
VERIF.			
ESCALA	1/7.5		

		POS.	OUR REF.	PARTS	QTY.
METALLIC PARTS	A1	CHSERV73		Baseplate	1
	A2	CHSERV74		Air Flow Tunnel	1
	A3	MP146		Yellow (RAL1021) Painted Side panel	2
	A4	MP147		Black Painted Hood (Ø150mm Hose Connection)	1
	A5	MP148		Black Painted Command baseplate + Control Panel	1
	A6	CHSERV75		Room Thermostat Support	1
	A7	CHSERV76		Air Outlet Protection Shield	1
	A8	FM017		Ø230 Aluminium Fan Blade	1
	A9	CHSERV77		Motor Fan Brackets	3
	A10	CHSERV78		Bulb Thermostat Protection	1
PLASTICS	B1	PL155		ABS Grip + Back Cover	1
	B2	EL282		Cable Gland PG16	1
	B3	PL147		Room Thermostat Knob	1
	B4	AC589		Rubber Feet	4
ELECTRIC COMPONENTS	C1	EL295		3.3kW Heating Element (TEH30T)	1
		EL299		2.5kW Heating Element (TEH20T)	1
	C2	EL278		230V ~50Hz; 12W Motor Fan	1
	C3	EL303		60 °C Bi-Metallic Thermostat - 20A	1
	C4	EL285		Terminal Block	1
	C5	EL305		1.5µF Starting Capacitor	1
	C6	CA54		2,75m. H07RNF3G2,5 Supply Cable With Injected Schuko Plug (TEH30T)	1
		CA57		2,75m. H07RNF3G1,5 Supply Cable + Fused UK Plug (TEH20T)	1
	C7	EL307		I/O Switch (Green Fluor)	1
C8	EL302		Heating Element Lamp (Red)	1	
C9	EL286		TY95 Room Thermostat	1	
ASSEMBLIES	n/a			Housing - M4 x 10 Screws; Black Passivated; ISO 7380	6
	n/a	PA343		Housing - M5 Safety Nuts; Zinc plated; DIN 982	8
	n/a	PA214		Housing - M5 Washers; Zinc plated; DIN 9021	8
	n/a	PA334		Handle - M4 x 16; Black Passivated; DIN 7500	8
	n/a			Feet - M4 Safety Nuts; Zinc plated; DIN 982	4
	n/a	AC222		General - Ø4 x 8 Aluminium Blind Rivet;	27



EC Declaration of Conformity (Translation of the original)

The manufacturer: **TROTEC® GmbH & Co. KG**
Grebbener Straße 7
D-52525 Heinsberg

herewith declares, that due to their design and construction, and in the versions introduced by us, the following electric heaters conform with the relevant fundamental requirements of the listed EC directives.

Important note:

In case of improper use, installation, maintenance etc. or unauthorized changes of the factory-supplied device version, this declaration loses its legal validity.

Device version: Electric heaters

Series: **TEH 20 T, TEH 30 T, TEH 70, TEH 100**

Applicable regulations: 2006/95/EC Low Voltage Directive
2004/108 EC EMC Directive

Applied harmonised standards: EN 60335-1:2012
EN 60335-2-30:2009
EN 61000-3-2:2006/A1:2009 + A2:2009
EN 61000-3-3:2008
EN 55014-1:2006/A1:2009 +A2:2011

Heinsberg, 18 April 2012

Managing Director: Detlef von der Lieck

TROTEC® GmbH & Co. KG

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E-mail: info@trotec.de • www.trotec.de

Managing Director: Detlef von der Lieck • General Partner: von der Lieck Verwaltungs GmbH • Amtsgericht Aachen HRA 5232
(Commercial Register, Section A, no. 5232 at the Local Court Aachen)

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