



KONVEKTA

Technical leadership starts with ideas.

Instruction manual

for KONVEKTA air-conditioning
units

KL30 / KL30T



With KK2 control

Version:

- 12 or 24 volt DC
- Circulating air
- Circulating air/fresh air
- Circulating air/fresh air/heating

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- Maintenance Schedule Bus [WP07050618](#)

Introduction

These operating instructions have been written for drivers, operators and the maintenance staff of your air conditioning unit.

In this context, we refer implicitly to the compliance with our general installation guidelines. These can be obtained from the KONVEKTA technical after sales service: TKD@konvekta.com.

Please observe our valid safety instructions, available under www.konvekta.de/asv.html. In case of order placement or any other conclusion of contract the safety instructions get integral part of the contract.

These operating instructions have to be read carefully and made use of before the first start-up and after that regularly by each person who is involved in handling the machine:

- Operation including troubleshooting and waste disposal of fuels and auxiliary agents.
- Servicing, inspection, repair
- Transport

This facilitates the handling and avoids trouble caused by improper operation. Working in compliance with these operating instructions increases operation reliability and service life of the air conditioning unit and reduces life cycle costs.

⚠ Please complete these instructions by adding the national provisions for prevention of accidents and environmental protection.

⚠ These instructions are part of the air conditioning unit. Always have a copy at hand in the driver's cabin.

You will certainly understand that we will not recognize any warranty claims due to unproper handling, inadequate maintenance, applications that do not correspond with the determined use, utilization of unadmitted fuels or the non-observance of safety provisions.

KONVEKTA will annul without prenotice all obligations concerning guarantee, service contracts etc. regardless if granted by KONVEKTA or its distributors in case other than original KONVEKTA spare parts or parts bought from KONVEKTA AG have been used for maintenance and repair.

These operating instructions contain all necessary information to operate your air conditioning unit. In case you need more explanations please contact the next KONVEKTA service station^①.

^① On our website www.konvekta.com in category >service< you will find a survey of contact details of all our service partners close to your location

Information on the operating instructions

These operating instructions are valid for the a/c-units type:

- **KL30/12V**
- **KL30T/12V**
- **KL30/24V**
- **KL30T/24V**

☞ We recommend that you supplement the paperwork with the following data when starting up the unit. This will also be helpful for ordering replacement parts.

Air-conditioning unit series no:

Order no:

Year of construction:/ (MM/YY)

Start-up on:// (DD/MM/YY)

The machine is in accordance with the EC machinery directive 2006/42/EC.

The unit contains or needs fluorinated greenhouse gas for operation and is subject to identification requirements in accordance with F-Gas Regulation 517/2014.

Due to the fact that scope of supply depends on the order, equipment of your product may differ in some parts of description.

In case your product is equipped with details not shown or described in the operating instruction, your KONVEKTA -Service-Station will always be at disposal for informing you about correct operation.

In the course of further developments we reserve the right to technical modifications without prenotice. Guarantee and liability conditions of **KONVEKTA AG**'s general business conditions are not enlarged by the above notes.

Indications and photos should neither be copied and circulated nor used for competitor's purposes. All rights according to the copyright remain expressly reserved.

Manufacturer: KONVEKTA AG, Postfach 2280, D-34607 Schwalmstadt



Important!

The heating water/glycol must contain anti-freeze (adjust the mix ratio according to the supplier's instructions) for machines/vehicles which are equipped with a heating/air-conditioning unit. This is necessary so that the heating thermal exchanger does not freeze during air-conditioning functions! (Standard anti-freeze filled by the vehicle manufacturer is up to -40 °C.)

1. Technical data

Type:		KL30	KL30T
Coolant		R134a	
GWP		1.430	
Amount of coolant	[kg] ca.	1.4	1.5
Operating voltage	[Volt DC]	12	12
	or	24	24
Power consumption (3 stage) at 13V:	[Ampere]	44	58
(3 stage) at 26V:		22	29
Cooling power with SD7H15	[W]	10.000	10.000
Heating power Q=80	[Watt]	15.000	15.000
Vaporiser – air volume*, free-blowing	[m ³ /h] 3 stage	2.000	2.000
Dimensions:			
- Length	[mm]	2.192	2.192
- Width	[mm]	886	886
- Height	[mm]	169	169
- Installation height on vehicle roof		160 - 169	160 - 169
Weight of unit, features:			
- Circulation air	[kg] ca.	44	46
- Fresh air	[kg] ca.	45	47
- Heating + fresh air	[kg] ca.	46	48

* With standard ventilators and/or fans

1.1. Pressure switches

	Bar OFF	Bar ON
Low pressure switch (LP)	2 ± 0,2	2,1 ± 0,3
High pressure switch (HP)	25 ± 1,5	18 ± 3,0

1.2. Compressor



Important:

In order to avoid leaks on the shaft seal of the compressor: The compressor must be switched on for approx. 15 minutes every four weeks!

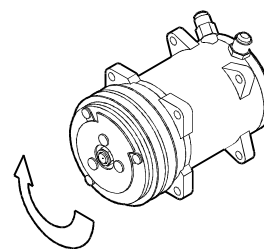
This includes when the vehicle is not used for a longer period of time or is used without using the air-conditioning unit!

Compressor Type	SD7H15
Weight (kg) ca.	7.5
Cooling oil - amount(litre)	PAG/dependi ng on de- sign ³⁾
Magnet clutch ²⁾	24V DC

¹⁾ Weight without magnet clutch (with clutch ca. + 10kg).

²⁾ Ø dependent upon vehicle type

³⁾ The schedule is included with compressor!
(Instruction manual: TD00031A)



Warning:

Rotation direction for **SD7H15:**
clockwise!

2. Intended use

The **KONVEKTA** air conditioner represents an air conditioning system that works with the ozone friendly refrigerant R 134a and which creates a pleasant and individually adjustable room temperature by means of forced convection. The determined use includes also the observance of the Operating instruction and the proof of regular inspections as well.

3. Generally information for a/c unit



Attention in case of roof top a/c units: Never switch on the a/c unit during car-wash!

- The a/c unit is operational with running engine only.
- At cooling operation the humidity inside the vehicle is decreased, which avoids steamed up windows. The a/c unit works most effectively with windows and doors shut. If, however, the interior of the standing vehicle has been heated up severely by exposure to sunlight, short-time opening of windows and doors may accelerate the cooling down process.
- At high outside temperature and humidity condensate might drip off the evaporator and make a puddle under the vehicle. This is quite normal and no sign for a leakage.
- The filter in the return air grid (optional) retains pollution. If the external air is contaminated with gas switch over to return air operation. The filter should be cleaned or replaced respectively on a regular basis so that the capacity of the a/c unit is not affected.
- **If you think that the a/c unit is damaged, switch it off immediately.** To avoid further damage have it check at a KONVEKTA Service Station[®]. Only after that you can take unit into operation.

[®] On our website www.konvekta.com in category >service< you will find a survey of contact details of all our service partners close to your location

3.1. Operating conditions

NOTE: KONVEKTA uses components made of copper and aluminium, which last a whole unit lifetime under normal environmental conditions. Should the units be operated under aggressive environmental conditions, i.e. air containing salt-, phosphate- or ammoniac extremely, a corrosion of the copper- and aluminium components cannot be ruled out. The copper- and aluminium components of the KONVEKTA systems are not suitable for such extreme application conditions. We indicate emphatically, that corrosion is not subject to warranties for defects. KONVEKTA does not take over any warranties for defect, neither for corrosion nor for consequential damage resulting there from, nor for damages caused by cleaning the systems with highly compressed or corrosion advancing substances.

4. Operation

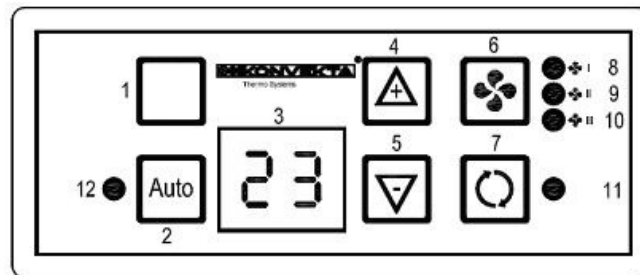


Danger of accidents!

- Focussing your attention on the road traffic is of top priority
- Only operate your air conditioning unit when the traffic situation allows it
- Make sure you can clearly recognize and read all operation- and display-elements at any time
- Protect all displays against irritating sun glare and any other optical disturbances
- Please note that the control panel keys have not been designed for heavy stressing
- Excessive or fast pressing of the keys for adjusting the set temperature does not accelerate the cooling down process. It possibly damages the control panel and so affects the general performance of the air conditioning unit.

The operation of the air-conditioning unit takes place by using the KK2 control.

4.1. Front view of the controls



Key	Function
1	No function
2	Key to switch the cooling function on and off
3	2-digit seven-segment display to show the desired room temperature. Alternative: fault display, outside temperature
4	Key to set the desired room temperature higher
5	Key to set the desired room temperature lower
6	Switch key for vaporiser fan speed
7	Key to switch to circulation air function.

4.2. Temperature display



The display shows the current room temperature in the normal status.

4.3. Self-test



If the vehicle's ignition is turned but the engine has not been started up, the control unit tests itself before the switch outputs on the control unit are released. If errors are not present, the room temperature is displayed.



4.4. Setting the required room temperature



LED (12)

Conditioning function is switched on (automatic air-conditioning (heating/cooling) is on).



← **press**
Increase the target room temperature.



← **press**
Reduce the target room temperature.



Display returns to the current room temperature.

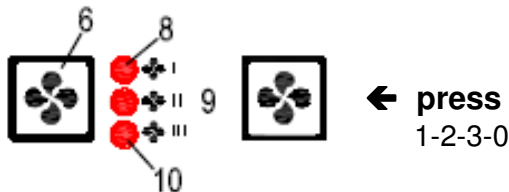
- The conditioning function works with a tolerance range of $\pm 1.5^{\circ}\text{C}$
- Cooling function: vaporiser fan level 1 is running automatically.
- Heating function: vaporiser fan level 1 is not running.
- Condenser fan has 20sec pre/post-run in comparison to the magnet clutch.
- The conditioning output is blocked at an outside temperature of $\leq 5^{\circ}\text{C}$.

4.5. Disturbance display „temperature sensor error“



The disturbance is shown on the display.
The control unit cannot be operated.

4.6. Manual setting of the vaporiser fan speed



LED (8)

Led 8 illuminates – vaporiser fan level 1 is activated.

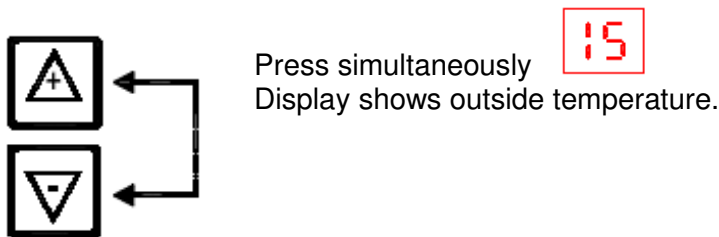
LED (9)

Led 9 illuminates – vaporiser fan level 2 is activated.

LED (10)

Led 10 illuminates – vaporiser fan level 1 + 2 are activated
Level 3 = level 1 + level 2

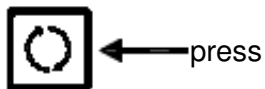
4.7. Outside temperature display



4.8. Switching between circulation air/fresh air function



Light diode illuminates – fresh air function is switched on.



Light diode is not illuminated – fresh air function is not switched on.

4.9. Convactor heating



Press



Convactor heating.

2 decimal points
illuminated

Compressor + condenser + fan level are blocked.

5. Maintenance / Servicing

Please arrange regular dates for maintenance works and services with a KONVEKTA service station, as indicated in maintenance schedule bus no. [WP07050618](#).

- Only qualified staff is allowed to carry out these works! -

For general instructions on repair – and maintenance works please contact via email:

TKD@konvekta.com



Danger of accidents!

Qualified staff in charge of installation and maintenance have to be trained in accordance with EN 378-Part 4 and (EG) No.307 / 2008 and must strictly follow the legal provisions.

Any works or modifications at the air conditioner which are carried out improperly can lead to malfunction and so endanger operational reliability. We recommend having all works and modifications carried out at an authorized KONVEKTA Service Station^①.

Before carrying out any maintenance works at your air conditioning unit, carefully read the KONVEKTA safety provisions (TD00052A^②) in order to avoid any dangers and accidents!

^① On our website www.konvekta.com in category >service< you will find a survey of contact details of all our service partners close to your location

^② Source of supply: **KONVEKTA AG**, P.O. Box 2280, D-34607 Schwalmstadt

5.1. Compressor

Regard the oil amounts for each type of compressor (refer to „technical data on the compressor“)

5.2. Circulation air grid

See service plan bus no: WP 07 05 06 18 / point WK13:

The circulation air grid in the passenger area should be cleaned every month; or weekly if major amounts of dirt are present.

5.3. Condenser battery

See service plan bus no: WP 07 05 06 18 / point WK03:

Regular cleaning (blowing with compressed air) should be undertaken **annually**; more often if major amounts of dirt are present.



Note:

Attention should be paid to the cleanliness of the blades on the condenser. If these are very dirty, the result is high pressure in the conditioning system and the air-conditioning unit switches itself off.

5.4. Troubleshooting



- Only qualified staff is allowed to carry out these works! -

Trouble	Cause	Repair only by refrigeration expert ^①
a/c is not running	The thermostat is open	– Check inside temperature ^① – Reset the thermostat ^①
	electric connections disconnected	– check electric connections at switchboard
	Relay is defective	– Check relay
	Defrost thermostat is switched off	– Check vaporiser fan, if not in operation it may need to be replaced
	Outside temperature is too low (vaporiser may be iced over)	– Switch on the ventilation only ^①
	evaporator coil dirty	– clean evaporator coil with compressed air
	Magnetic clutch	– Check the magnet clutch connections
	Compressor does not compress	– Check pressure on the suction and pressure points, the compressor may need to be replaced
	excess pressure (pressure too high)	– Check if the ring fans are running – Check the safety automatic on the panel and press in – Clean the condenser blades
	High pressure due to high outside temperature	– Let the unit run until the pressure is stabilised ^①
	Leak in the unit, lack of coolant	– Check unit for leaks – Refill coolant
	Drier is blocked – low pressure	– Replace drier
	Thermo - exp valve filter is blocked	– Clean filter and renew drier
Loud noise at compressor	defective bearing at compressor	– Replace bearings or compressor
	slack V-belt	– check V-belt at compressor drive

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^② By operator

6. Warranty

The current version of the „General Warranty Conditions“ from KONVEKTA AG is valid. The conditions can be requested from our GWL department: GWL@konvekta.com.

7. Waste disposal in accordance with legal provisions

After the phase of use the last proprietor is responsible for the adequate waste management. The environmental regulations in the exporting country must be observed.

The following list contains the most important regulating literature, valid for the *Federal Rep. of Germany*:

- Resolution for dangerous substances
- Law for waste circulation (KRW/AfgG))
- Resolution for the proofs of utilization and removal
- Criminal Code (StGB) 28th section „criminal acts against the environment“ §326 - Environment jeopardizing waste management
- Law of chemicals § 27 - penal prescriptions
- Resolution for used oil
- Law of water balance
- Resolution for the waste management of old cars and the adaptation of road prescriptions
- Resolution (EC) No. 2037/2000 of the European Parliament and of the Council for materials that affect the ozone layer
- Resolution to prohibit certain ozone destroying halogen hydrocarbons.

The used refrigerant endangers the environment. When dealing with refrigerants the existing prescriptions and regulations are to be followed. **Only qualified staff is allowed to carry out these works!**

Water endangering substances - acc. to §§19g-19l - are solid, liquid, and gaseous substances. e.g.: mineral and tar oils (cooling oils), halogen containing organic combinations (refrigerants).

- © Source of supply:
- Bundesanzeiger
 - Beuth Verlag
 - dtv (Deutscher Taschenbuch Verlag)

8. History of modification

Version	Date	Name	Comment	Document
A00	03.11.2008	B. Keßler	Original document	BAKL30T12AC
A01	03.03.2010	B. Keßler	File number corrected; Handbook Konvekta Service Stations is not applicable; service/inspection corrected.	BAKL30T12AC
A02	15.12.2015	B. Keßler	File complete revised	BAKL30T12AC
A03	02.03.2107	B. Keßler	Information on the operating instructions and technical data expanded with F-gas-regulation	BAKL30T12AC