



KOMPAKT OTK

Series Air Handling Units Installation and Maintenance Service Manual

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Safety Requirements

- To avoid accidents and/or unit damage, only a trained technician must carry out the connection.
 - The appropriate Personal Protective Equipment (PPE) attire is worn relative to the operation being carried out.
 - Electrical equipment is rated, connected and earthed in accordance with CE regulations.

The air handling unit must be plugged in to an electrical outlet (with earth), which is in good order and corresponds with all requirements of electric safety.

Before starting any operations inside the unit, make sure that the unit is switched off, and the power cable is unplugged.

- Earth must be installed according EN61557, BS 7671 The unit should be installed according to Installation and Maintenance Manual.
 - Before starting the unit, check correct position of air filters.
 - Service maintenance should be carried out only in conformity with the instructions specified herein below.

Transportation

The air handling units are ready for transit and storage (1 picture). The unit is packed to prevent damage of the external and internal parts of the unit, dust and moisture penetration.

Corners of the air handling units are protected against the damage - protective corners are used. The entire unit is wrapped up in protective film. For transit or storage, units are mounted on timber pallets. The unit is fastened to the pallet with polypropylene packing tape over protective corners.

Unit ready for transit and storage

1 Picture

Forklift truck or hand pallet truck can transport air handling unit as it is shown (2a, b pictures).





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Init transportation by forklift truck and hand pallet truck

2 a Unit is transported by forklift truck on a wooden pallet

2 b Unit is transported by hand pallet truck on a wooden pallet.

The unit should be examined upon receipt, to ensure that no visible damage has occurred during transit, and the advice note checked to ensure that all items have been received. If damage or delivery shortages are discovered, the carrier should be immediately informed. AMALVA should be notified within three days of receipt, with a written confirmation sent within seven days. AMALVA can accept no responsibility for damage by unloading from carrier or for subsequent damage on site.

If the unit is not to be installed immediately, it should be stored in a clean, dry area. If stored externally, it should be adequately protected from the weather.

Brief Description of the Unit

- Casings of air handling units are made of galvanized steel sheets, which are powder painted. Mineral wool is used for thermal insulation and sound attenuation. Unit cover panels are 45 mm thick.
- The air handling units are intended for ventilation of medium-sized spaces (eg. single family houses, offices, etc.), having operating ambient temperature and relative humidity. As standard, the unit is designed for indoor placement. The operating temperature range for the unit is -30°C ... 40°C, outdoor air temperature.
- The air handling unit is not to be used to transport solid particles, even not in areas where there is a risk of explosive gases.
- KOMFOVENT KOMPAKT OTK is equipped with air filters, an electric or water heater, fans and automation control system, to ensure safe and efficient operation of the unit.
- Before you open the door, the unit must be switched off and the fans must have been given time to stop (up to 3 minutes).
- The unit contains heating elements that must not be touched when they are hot.
- To maintain a good indoor climate, comply with regulations and, to avoid condensation damage, the unit must never be stopped apart from during service/maintenance or in connection with an accident.
- If the unit is placed in spaces with high humidity, condensation might occur on the surface of the unit when outdoor temperatures are very low.



KOMFOVENT KOMPAKT OTK Air Handling Unit Scheme



Maintenance space requirements

It is recommended to install the air handling unit in a separate room or in the attic on a hard smooth surface insulated with a rubber mat. The place for the unit should be selected with allowance for minimum access to the unit for maintenance and service inspection. The minimum free space in front of the control panel should be not less than 700 mm (picture 4a).

The equipment can be mounted in the suspended ceiling or on the wall, see the mounting scheme (picture 4b, c).



Maintenance space for unit

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Ductwork

The air flows in/out air handling unit through ductwork. We recommend using galvanized steel (Zn 275 gr/m²) ductwork, to ensure easy cleaning and durability. It is necessary to use the ductwork system with low air flow rate and small pressure drop to have necessary air volume and low sound level and save the energy. The appropriate sound attenuators will reduce the noise level of the fans in the premises.

All ductwork should be insulated with 50–100 mm thickness insulation to avoid the condensation.

Note: temperature sensor B1 has to be mounted in the supply air duct under electric heater (see the functional diagram in Control System Installation and Operation Manual). It is necessary to leave space in straight air duct for sensor mounting and guarantee the space for maintenance and service work. Minimal space between the unit and B1 sensor is the space of double air duct diameter.



Ductwork, steelwork and any other services should not be supported off the unit

In duct system, for units with electric air heater, use air closing damper without spring return mechanism.



In case of power failure is necessary to ensure the operation of the fan for 2 minutes.

Final Inspection

After installation of the unit, a thorough inspection should be carried out. This should include inspecting the inside of the unit and removing debris and tools, which may have been left behind by on site contractors. Replace any panels, which may have been removed and close all access doors, ensuring that the door sealing gaskets have not been damaged.

Maintenance

It is recommended to carry out routine maintenance of the air handling unit KOMFOVENT KOMPAKT OTK 3 – 4 times per year. Besides preventive maintenance inspection, the following operations should be performed:



Before performing any inspection work, check whether the unit is switched off from the electric power supply.

1. Fans check (once per year). Polluted fans decrease efficiency.

Fans should be carefully cleaned with textile or soft brush. Do not use water. Do not break balance. Check if fan freely rotates and is not mechanically damaged, if impeller does not touch suction nozzles, fan does not spread noise, the pressure tubes are connected to the nozzle (if it is required), mounting bolts are screwed.

2. Air heater check. Recommended to perform periodical inspection and cleaning of heater. Check the plates of water air heater. The air heater is cleaned with hoover from supply air side or with air blast from exhaust air side. If it is very dirty, wash with tepid water, which will not make corrosion of aluminium. Check if position of return water temperature sensor is right.

Check if electric air heater is properly fixed, wires connections are not damaged and heating elements are not bent. They can be damaged or bent due to uneven heat or uneven and turbulent air direction. Check if electric air heater is clear of unnecessary things and heating elements are not clogged, because this can cause unpleasant smell or in the worst case – dust can start burning. Air flow through the air heater should be greater than 1,5 m/s. Heating elements can be cleaned with hoover or wet textile.

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- 3. Air damper check (if it is required). Not fully opened outside air damper rises up the pressure in the system. Water air heater can freeze if outside air damper does not fully close in not working air handling unit. Mounting and running of air damper should be checked and regulated.
- 4. Air filter clogging check. Change air filters when air filter clogging is indicated. We recommend to change filters at least twice per year: before and after heating season, or more*. If air handling unit is working in small speed, the filters must be checked on unit maximum speed. Filters are one time used. We do not recommend cleaning them. Stop the air handling unit before changing filters.
- * Clogged filters unbalance ventilation system, air handling unit uses more power.

Supply **Opera-**Heater Fans input Ducts Filter Filter Filters' Weight Type volting capacity power connection class type dimensions current tage V OTK A kW W bxhxl, mm kg mm 700PE 32,5 1x230 13,8 3 165 200 F5 Panel 345x287x46 700PE 32.5 3x400 9.4 6 165 200 F5 Panel 345x287x46 700PE 32.5 3x400 13,8 9 165 200 F5 Panel 345x287x46 1200PE 3x400 9 F5 45,5 14,3 290 250 Panel 558x287x46 1200PE F5 45.5 3x400 23.0 250 Panel 558x287x46 15 290 2000PE 72,5 3x400 35,1 22,5 2x290 700x250 F5 Panel 858x287x46 2000PE 3x400 2x290 700x250 Panel 858x287x46 72.5 46.0 30 F5 2000PF 72.5 3x400 24.2 15 2x290 700x250 F5 Panel 858x287x46 1200PW 1x230 250 F5 45,5 1,8 15 290 Panel 558x287x46 2000PW 1x230 72.5 3 30 2x290 700x250 F5 Panel 858x287x46 3000PW 120 3x400 2,2 45 990 600x400 F7 Panel 450x480x96(x2) 4000PW 120 3x400 2.3 45 990 600x400 F7 Panel 450x480x96(x2)

Technical Information

OTK Acoustic data

OTK 700	L _w , dB	63	125	250	500	1000	2000	4000	8000	L _p A, dB(A)
Supply air flow	Intake	59	65	66	65	61	53	47	41	65,9
(into air ducts)	Supply	60	67	69	69	64	56	51	47	69,0
Surrounding (3 m dis	stance)	54	58	56	47	43	35	28	23	51,0
OTK 1200	L _w , dB	63	125	250	500	1000	2000	4000	8000	L _p A, dB(A)
Supply air flow	Intake	64	71	72	72	66	58	52	45	71,8
(into air ducts)	Supply	67	74	76	76	71	62	57	52	76,0
Surrounding (3 m dis	Surrounding (3 m distance)		63	62	52	47	39	30	25	56,2
							•			
OTK 2000	L _w , dB	63	125	250	500	1000	2000	4000	8000	L _p A, dB(A)
Supply air flow	Intake	67	74	75	69	60	54	47	74,7	56,2
(into air ducts)	Supply	69	77	79	79	73	64	59	54	78,9
Surrounding (3 m distance)		61	66	65	54	49	40	32	26	58,5

We reserve the right to make changes without prior notice.

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Schemes

OTK 700PE





OTK 1200PE/W





OTK 2000PE/W







OTK 3000PW - 4000PW



OTK Performance



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OTK 3000	L _w , dB	63	125	250	500	1000	2000	4000	8000	L _p A, dB(A)
Supply air flow	Intake	-9	-4	-4	-5	-9	-16	-21	-26	-4,1
(into air ducts)	Supply	-8	-2	-1	-1	-5	-12	-16	-20	0,0
Surrounding (3 m dis	-26	-22	-23	-30	-34	-41	-47	-51	-27,4	



SFP is shown for one fan.

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OTK 4000	L _w , dB	63	125	250	500	1000	2000	4000	8000	L _p A, dB(A)
Supply air flow (into air ducts)	Intake	-9	-4	-4	-5	-9	-16	-21	-26	-4,1
	Supply	-8	-2	-1	-1	-5	-12	-16	-20	0,0
Surrounding (3 m	-26	-22	-23	-30	-34	-41	-47	-51	-27,4	

Ordering Key

отк	700	Ρ	E/W	– CX	
ΟΤΚ	1200	Ρ	E/W	– CX	
ΟΤΚ	2000	Ρ	E/W	– CX	
ΟΤΚ	3000	Ρ	W	– CX	
ΟΤΚ	4000	Ρ	W	– CX	
		1			 Controller type
					Electric / Water air heater
					 Version - flat
					 Unit size (shows nominal air flow)
					 AHU type: OTK - air supply unit

Ordering sample:



aMalva

UAB AMALVA

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