Series
AOW



Series
AOW1



Air unit with the water heat exchanger for arrangement of cost-saving and efficient air heating and cooling in various premises

Air heating (cooling) advantages:

- quick attaining of the set temperature in the premises;
- low system response time allows applying varying temperature conditions;
- high thermal capacity;
- lower investment costs for air heating (cooling) system as compared to similar water heating (cooling) systems.

Application

Designed for air heating or cooling by water heat medium with subsequent uniform air distribution by the fan and louvre shutters. The AOW1 unit is designed for air heating only. The units provide quick heating or cooling of large premises due to high efficient air heater and powerful fan and are suitable for local air heating or cooling of working areas in hangars or large industrial premises. Further application areas include workshops, garages, car showrooms, stock houses, trade facilities, super- and hypermarkets, shops, sport halls, conference halls, poultry and cattle farms, greenhouses and other similar premises. The unit design enables quick and easy mounting and reduces total investment costs for heating (cooling) system.

Design

AOW / AOW1 unit consists of the axial fan and aluminium-copper ribbed water heating coils located in steel casing with polymeric coating. The water coils are equipped with internally threaded pipes on the casig side for connection and supply of heat medium.

The units are rated for operation at maximum operating pressure 1.6 Mpa (16 bar) and maximim heat medium temperature 100 °C. The AOW1 unit has a simplified design without a drain pipe and a drain pan.

Motor

AC motors with external rotor and built-in thermal overheating protection with automatic restart.

Control and regulation

Both smooth or step speed control with a thyristor or autotransformer controller. Motor speed decrease allows reducing flow and value of heating or cooling energy transfer.

The control unit **UWT-1E** is used for controlling the operation modes of the air heating (cooling) unit (available upon separate order). The control unit has three operation modes, i.e. three modes for speed control of AOW unit.

The unit incorporates a switch with a light indicator, cable entry seals for cable connection, safety fuse for short circuit protection. The automation unit is designed for joint operation either with TST-1-300 series digital thermostats with a sensor display (the thermostat TSTD-1-300 is equipped with a remote control panel) or with RTS-1-400 series thermostats with LCD display (RTSD-1-400 is equipped with a remote control panel). The digital thermostats are available upon separate order. Install the thermostat in the same room where the AOW /AOW1 unit is installed. It is used to measure the indoor temperature and control the unit operation. For correct functioning of the unit install the thermostat in places that are not subjected to temperature fluctuations, i.e. close to windows, doors, hot-water radiators. One thermostat can be used for control of several air heating (cooling) units located in the same room.

Mounting

The unit is suitable for vertical installation on walls or columns or horizontal installation on ceiling (beams). See mounting accessories.

Designation key:

Series	Rated power [kW]
VENTS AOW **VENTS AOW1**	25; 30; 45

Accessories



UWT-1E MK-AOW MKU-AOW MKP-AOW RTS RTSD TST TSTD

Technical data:

	AOW / AOW1 25	AOW / AOW1 30	AOW / AOW1 45
Voltage [V / 50 Hz]	230	230	230
Fan power [W]	136	191	255
Fan current [A]	0.6	0.85	1.12
RPM [min^{-1}]	1350	1440	1360
Noise level at 3m [dBA]	53	55	58
Maximum heat medium temperature [°C]	100	100	100
Protection rating	IP 44	IP 44	IP 44
Insulation class	F	B	F
Air reach distance [m]	9	12	16

Technical data for heating mode:

Model	Air flow [m^3/h]	Inlet air temp. [°C]	Temperature difference 90/70 °C				Temperature difference 80/60 °C				Temperature difference 70/50 °C				Temperature difference 60/40 °C			
			Power [kW]	Outlet air temp. [°C]	Water flow [l/s]	Water pressure loss [kPa]	Power [kW]	Outlet air temp. [°C]	Water flow [l/s]	Water pressure loss [kPa]	Power [kW]	Outlet air temp. [°C]	Water flow [l/s]	Water pressure loss [kPa]	Power [kW]	Outlet air temp. [°C]	Water flow [l/s]	Water pressure loss [kPa]
AOW / AOW1 25	2200	-15	34.5	26.0	0.42	7.5	30.4	21.2	0.36	6.0	26.0	16.0	0.33	4.6	22.0	11.0	0.28	3.4
		-10	32.0	29.0	0.39	6.6	28.3	24.3	0.34	5.3	24.0	19.2	0.31	4.0	20.0	14.0	0.25	2.8
		-5	30.0	32.0	0.36	5.8	26.2	27.4	0.33	4.6	22.0	22.0	0.28	3.4	18.0	17.0	0.22	2.3
		0	28.0	35.0	0.33	5.2	24.1	30.4	0.31	4.0	20.0	25.0	0.25	2.8	16.0	20.0	0.19	1.8
		5	26.2	38.5	0.33	4.5	22.1	33.3	0.28	3.3	18.0	28.0	0.22	2.3	14.0	22.0	0.17	1.4
		10	24.2	41.4	0.31	3.9	20.1	36.1	0.26	2.8	15.9	30.6	0.19	1.9	12.0	25.0	0.14	1.0
		15	22.1	44.2	0.28	3.3	18.1	38.8	0.25	2.3	13.8	33.0	0.17	1.4	9.0	27.0	0.11	0.7
AOW / AOW1 30	3000	-15	48.4	27.2	0.58	7.4	42.0	22.0	0.53	6.0	36.6	17.0	0.44	4.7	31.0	11.7	0.36	3.5
		-10	45.4	30.3	0.56	6.6	39.0	25.2	0.47	5.3	33.7	20.0	0.42	4.0	27.6	14.6	0.33	2.9
		-5	42.4	33.4	0.53	5.9	36.7	28.2	0.44	4.6	30.0	22.9	0.39	3.4	24.0	17.4	0.31	2.4
		0	39.5	36.4	0.47	5.2	33.8	31.1	0.42	3.9	28.0	25.7	0.33	2.9	21.0	20.0	0.28	1.9
		5	36.7	39.4	0.44	4.5	30.9	34.0	0.39	3.4	25.0	28.5	0.31	2.4	19.0	22.7	0.22	1.5
		10	33.8	42.1	0.42	3.9	28.1	36.7	0.33	2.8	22.0	31.1	0.28	1.9	16.0	25.2	0.19	1.1
		15	31.0	44.9	0.39	3.3	25.3	40.0	0.31	2.3	19.4	33.7	0.25	1.5	13.0	27.5	0.17	0.7
AOW / AOW1 45	3850	-15	63.0	28.4	0.78	11.9	55.6	23.3	0.67	9.7	48.1	18.1	0.58	7.6	40.4	12.8	0.50	5.7
		-10	59.2	31.5	0.72	10.6	51.8	26.4	0.64	8.5	44.3	21.1	0.53	6.6	36.7	15.7	0.44	4.8
		-5	55.4	34.6	0.67	9.4	48.0	29.3	0.58	7.4	40.6	23.9	0.50	5.6	32.9	18.5	0.39	3.9
		0	51.6	37.5	0.64	8.3	44.3	32.2	0.56	6.4	36.9	26.8	0.44	4.7	29.2	21.3	0.36	3.2
		5	47.9	40.4	0.58	7.3	40.6	35.0	0.50	5.5	33.2	29.5	0.42	3.9	25.6	23.9	0.31	2.5
		10	44.3	43.2	0.56	6.3	37.0	37.8	0.44	4.6	29.6	32.2	0.36	3.2	21.9	26.4	0.28	1.9
		15	40.6	45.9	0.50	5.4	33.4	40.4	0.42	3.8	26.0	34.8	0.31	2.5	18.1	28.8	0.22	1.3

Accessory selection table:

Air heating unit model	Control unit	Digital thermostat		Mounting accessories		
		with sensor display	with LCD display	Mounting angles	Mounting brackets	Multi-angle bracket
						
AOW 25	UWT-1E	TST-1-300 TSTD-1-300	RTS-1-400 RTSD-1-400	MKP-AOW	MK-AOW 25	MKU-AOW 25
AOW1 25					MK-AOW1 25	MKU-AOW1 25
AOW 30					MK-AOW 30	MKU-AOW 30
AOW1 30					MK-AOW 25*	MKU-AOW 25
AOW 45					MK-AOW 45	MKU-AOW 45
AOW1 45					MK-AOW 30*	MKU-AOW 30

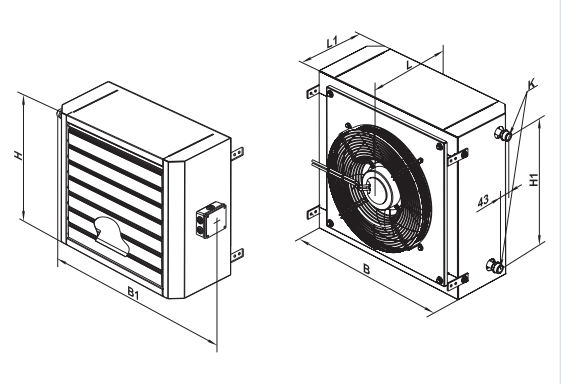
* The cross pieces between the MK-AOW mounting brackets are not applicable in case of AOW1 mounting.

Technical data for cooling mode:

Model	Air flow [m³/h]	Inlet air temp. [°C]	Temperature difference 7/12 °C			
			Power [kW]	Outlet air temp. [°C]	Water flow [l/s]	Water pressure loss [kPa]
AOW 25	2200	35	9.1	26.0	0.44	7.5
		30	5.8	22.5	0.28	6.1
		25	3.2	21.0	0.17	2.1
		20	2.0	18.0	0.08	0.9
AOW 30	3000	35	11.4	27.0	0.56	11.2
		30	7.3	22.9	0.36	5.0
		25	3.9	21.1	0.19	1.6
		20	2.4	17.7	0.11	0.7
AOW 45	3850	35	18.0	24.9	0.86	31.8
		30	10.8	21.7	0.53	12.9
		25	7.3	19.0	0,36	6.3
		20	3.2	17.4	0.14	1.4

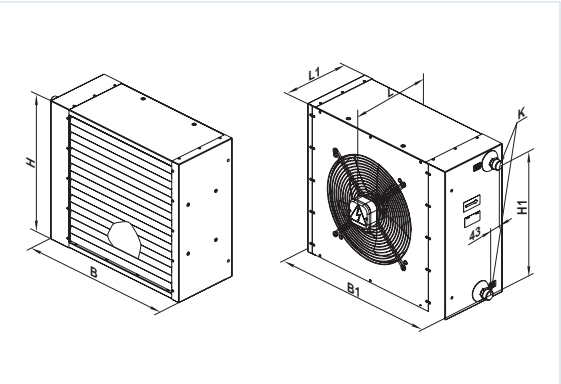
Overall dimensions without control unit:

Type	Dimensions [mm]							Number of water coils	Weight [kg]
	B	B1	H	H1	L	L1	K		
AOW 25	680	785	605	468	360	286	G 3/4"	2	37.0
AOW 30	680	785	655	518	360	286	G 3/4"	2	40.0
AOW 45	780	885	710	570	380	300	G 3/4"	2	50.0



Overall dimensions without control unit:

Type	Dimensions [mm]							Number of water coils	Weight [kg]
	B	B1	H	H1	L	L1	K		
AOW1 25	630	690	555	468	320	262	G 3/4"	2	28.0
AOW1 30	630	690	605	518	355	262	G 3/4"	2	31.0
AOW1 45	730	790	655	570	380	285	G 3/4"	2	41.0

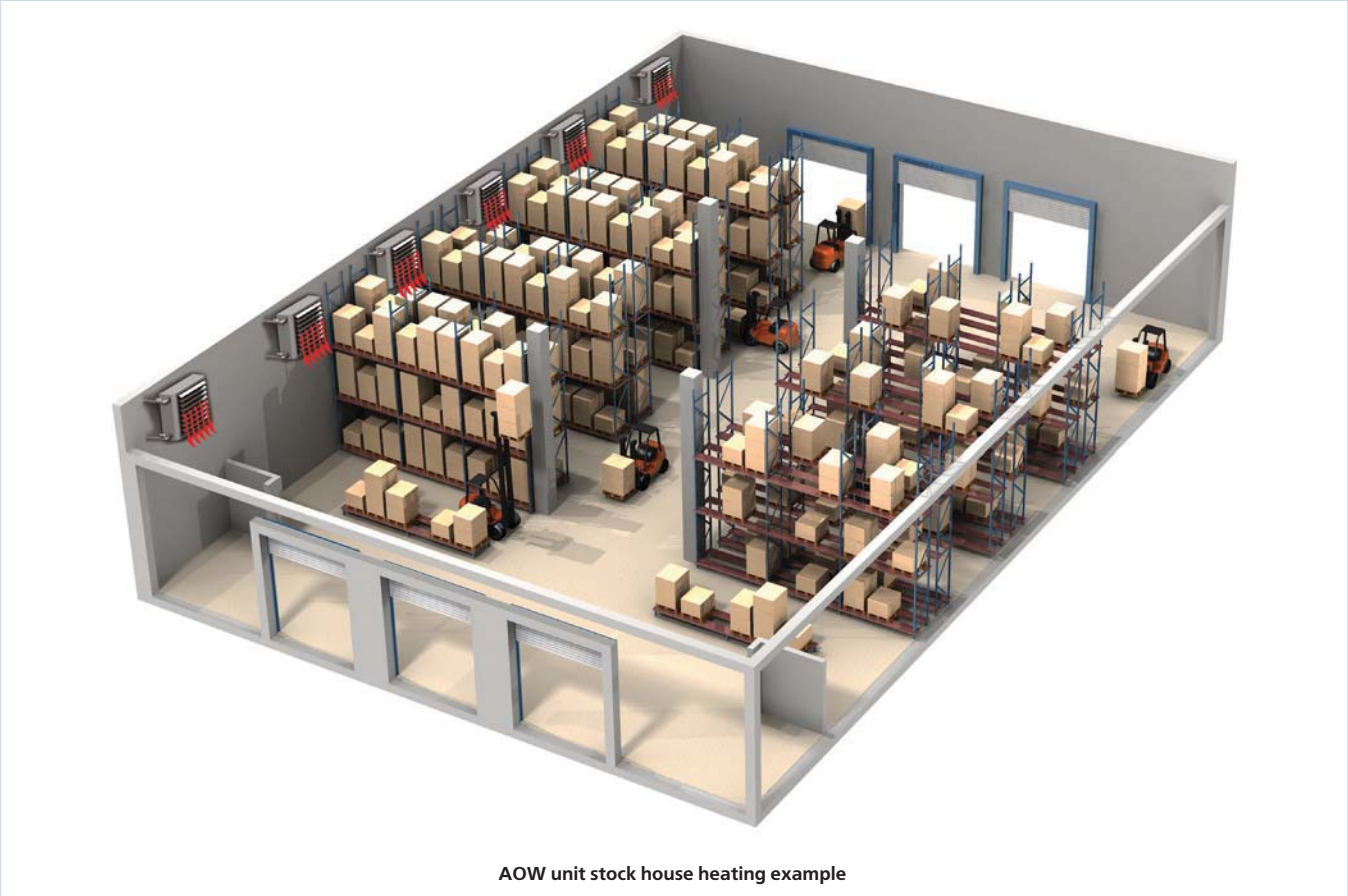




AOW unit greenhouse heating example



AOW unit garage cooling example



AOW unit stock house heating example