

## AlfaBlue Junior DG

### Dry coolers – commercial range

#### General information & application

AlfaBlue Junior DG is a competitive dry cooler line that offers excellent performance, allowing easy installation on site and an outstanding integration with other components. High efficient fan motors combine excellent sound characteristics and low energy consumption. AlfaBlue Junior dry coolers are often used for cooling down condenser water in air-conditioning and refrigeration installations. In the processing industry, dry coolers are suitable for closed circuit cooling of various process liquids.

#### Finned coil

Innovative coil design manufactured from Cu tubes and aluminium turbo fins. Standard fin spacing 2.1 mm. Liquid connections externally threaded. Each heat exchanger is leak tested with dry air.

#### Construction

Patented coil frame design allowing thermal expansion and offering protection against vibration. Corrosion resistant casing material, powder coated RAL9002. Separated fan sections.

#### Fans

High efficiency AC or EC fans and low power consumption. Available in two fan diameters (500 & 630 mm), different power supplies (230/50-60/1, 400/50/3, 480/60/3) and four noise levels. Protection class IP54 according to DIN 40050. AC motors are fitted with integrated thermo contacts to provide reliable protection against thermal overload (terminals in the box).

#### Packing

All units are packed and shipped in horizontal airflow position. AlfaBlue Junior 501 & 502 units are mounted on a wooden pallet and covered with a sturdy cardboard box. All other models are mounted on a wooden pallet, wrapped with plastic foil and covered with an open crate.



AlfaBlue Junior DG

#### Options

- Switch on/off (SW)
- Connection box for electrical power connection (CB)
- Fan speed control 230/1 and 400/3 (FT)
- Coil options:
  - Epoxy coated fins (EP)
  - Seawater resistant aluminium alloy fins (SWR)
  - Copper fins (CU)
  - F-coat treatment (FC)
  - Industrial fins (IF)
  - Fin spacing 2.5 mm (other fin spacings on request)
- Vibration dampers (VD)
- End covers (CV)
- Mounting feet kit for vertical airflow
- Aluminium flanges (FL)

#### Benefits

- Excellent sound characteristics, suitable for residential applications
- Energy efficient
- Easy installation & maintenance
- Low total cost of ownership
- Two-year product guarantee
- Easy access to on-line product information



AlfaBlue Junior DG

## Dimensions

DG		Dimensions mm*					
type	fans	L1	H1	W1	L2	H2	W2
501	1	1165	890	899	1165	826	512
502	2	2065	890	899	2065	826	512
503	3	2965	890	899	2965	826	512
504	4	3865	890	899	3865	826	512
631	1	1265	1204	1102	1265	1036	760
632	2	2265	1204	1102	2265	1036	760
633	3	3265	1204	1102	3265	1036	760
634	4	4265	1204	1102	4265	1036	760
635	5	5265	1204	1102	5265	1036	760
636	6	6265	1204	1102	6265	1036	760

\* Full dimensional details in instruction manual & website

## Customization (on request features)

Reverse setup (fitted with blow through fans for high air-in temperature applications).

## Design pressure

Design pressure 10 bar. Higher design pressures on request.

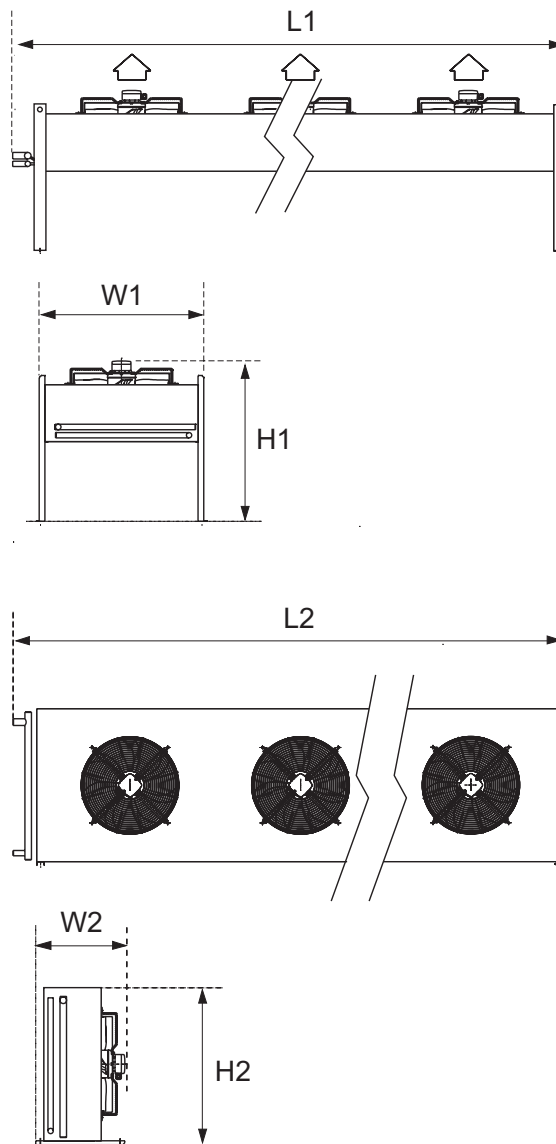
## Selection

Selection and pricing is to be performed with our Alfa LU-VE air heat exchanger selection software. Please contact our sales organization for details and full technical documentation.

## Code description

DG	SE	50	2.1	B	D	12	H/V	BO	*	-	AL	2.1	CU	*
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

- AlfaBlue Junior dry cooler
- Sound level/fan code (S=standard, L=low, Q=quiet, R=residential, E=EC fan motor)
- Fan diameter (50=500, 63=630 mm)
- Number of fans (1 to 6)
- Version number
- Tube rows code (A, B, C)
- No. of phases (S=1 ph, D=3 ph D connection, Y=3 ph Y connection)
- No. of circuits
- Units are suitable for both horizontal and vertical airflow (mounting feet kit required for vertical airflow setup)
- Packing (BO=box, CR=crate)
- Options
- Fin material (AL=aluminium, IF=industrial fins, SWR=AlMg2.5, CU=Copper, EP=epoxy coated aluminium, FC=F-coat)
- Fin spacing (2.1, 2.5 mm)
- Tube material (CU=copper)
- Options



## Certifications

Eurovent certified performance applies to models included in the scope of the programme. The Alfa LU-VE quality system is in accordance with ISO 9001.

All products are manufactured according to PED.



## AlfaBlue BD

### Dry coolers

#### General information & application

The AlfaBlue series is a wide range of heavy-duty dry coolers. Dry coolers are often used for cooling down condenser water in air conditioning and refrigeration installations. In the processing industry, dry coolers are suitable for closed circuit cooling of various process liquids. With a wide range of sound pressure level alternatives, these units are particularly suited to demanding, noise sensitive environments. AlfaBlue dry coolers are available for both horizontal and vertical air direction. Available both in single (M) or dual (D) fan row: separate connections in the dual fan row (D) models provide the opportunity for independent operation of both dry cooler coils. Dedicated series for compressor oil coolers (BDO).

Capacities \* 16 up to 1028 kW

\*water EN1048

#### Finned coil

An innovative coil design provides excellent heat transfer. In standard execution dry coolers are fitted with smooth copper tubing (BD) or stainless steel tubing (BDY). Available with two Alu-fin types:

Turbo fins	maximized capacity
Industrial power fins (IF)	long lasting performance

Available in different fin thicknesses and fin spacings. Coil configuration optimized according to liquid flow.

#### Construction

Frame construction provides high rigidity for protection against vibration and thermal expansion. Casing and frame made of corrosion resistant pre-galvanized sheet steel, epoxy coated white RAL 9002 on both sides. Separated fan sections.

#### Fan motors

High efficiency AC or EC fan motors, available in different fan diameters (800, 910 & 1000 mm) and noise levels, power supply 400/50/3. Motors with external rotor, protection class IP54 according to DIN 40050. Integrated thermo contacts provide reliable protection against thermal overload.

#### Options

- Mounting feet for vertical airflow available in 3 heights: 500, 850 or 1200 mm



AlfaBlue dry cooler

- Spray water kit (KW)
- Vibration dampers (VD)
- Hinged fan panels (HF)
- Upon request fan motor options
  - 400V/3ph/60Hz
  - 480V/3ph/60Hz (IP54)
  - Protection class IP55
  - High-temperature motors
- Coil corrosion protection
  - Fins epoxy coated (EP)
  - Fins seawater resistant (SWR)
  - F-coat treatment (FC)
  - Copper fins (CU)
- Packing options
  - Pallet (P)
  - Protection pallet (PP) for dual fan row models
  - Crate (CR) for single fan row models
  - Container skid (SK)

#### Benefits

- Heavy duty design with high corrosion resistance
- Reduced liquid charge
- Available with easily cleanable industrial power fins
- Excellent sound characteristics
- Reliable performance, Eurovent certified (only for models included in Eurovent scope)
- Easy installation & maintenance
- Energy efficient: low total cost of ownership
- Two-year product guarantee
- Easy access to additional on-line product information (QR code)



AlfaBlue BD

## Dimensions mm (indicative)

Model	L <sub>ss</sub> *	L <sub>os</sub>	W	H
BDM 801s	1880	2130	1450	1270
BDM 802s	3280	3530	1450	1270
BDM 803s	4680	4930	1450	1270
BDM 804s	6080	6330	1450	1270
BDM 805s	7480	7730	1450	1270
BDM 801	2230	2480	1450	1270
BDM 802	3980	4230	1450	1270
BDM 803	5730	5980	1450	1270
BDM 804	7480	7730	1450	1270
BDM 805	9230	9480	1450	1270
BDM 901-1001	2580	2830	1450	1320
BDM 902-1002	4680	4930	1450	1320
BDM 903-1003	6780	7030	1450	1320
BDM 904-1004	8880	9130	1450	1320
BDM 905-1005	10980	11230	1450	1320
BDM 906-1006	13080	13330	1450	1320
BDD 802	3980	2830	2250	1270
BDD 803	5730	4930	2250	1270
BDD 804	7480	7030	2250	1270
BDD 805	9230	9130	2250	1270
BDD 806	10980	11230	2250	1270
BDD 902-1002	4680	4930	2250	1320
BDD 903-1003	6780	7030	2250	1320
BDD 904-1004	8880	9130	2250	1320
BDD 905-1005	10980	11230	2250	1320
BDD 906-1006	13080	13330	2250	1320

\*+ 60 mm for BDDY models

L<sub>ss</sub>: for coolers with same-side connections

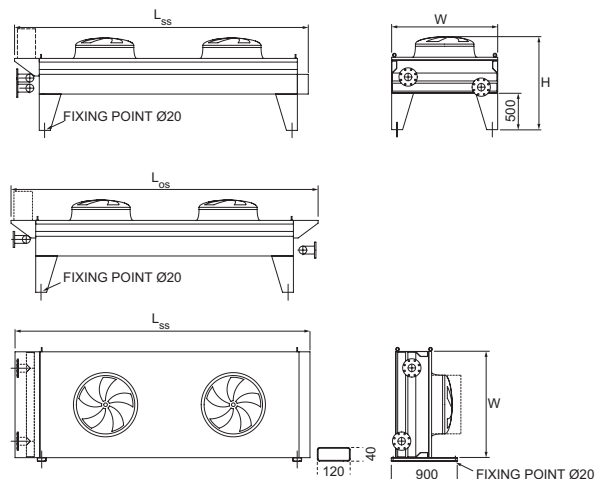
L<sub>os</sub>: for coolers with opposite-side connections.

## Code description

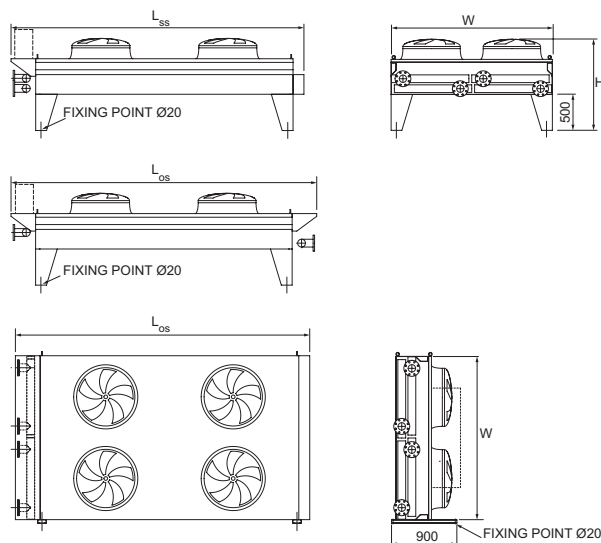
BDM Y S E 80 2 s. 2 A D 6												CR	Feet	*	AL 2.1 SS *			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

- AlfaBlue dry cooler
- Number of fan rows (M=1, D=2)
- Dedicated series (blank=default, Y=SS tubes, 6=5/8" Cu tubes, O=compressor oil cooler)
- Sound level (T=turbo S=standard, L=low, Q=quiet, R=residential)
- EC fan (blank=AC fan, E=EC fan motor)
- Fan diameter (80=800 mm, 90=910 mm, 100=1000 mm)
- Number of fans per row (1 to 6)
- Short coil module (blank=default, s=short coil module)
- Version number
- Tube rows code (A, B, C, D)
- Fan motor connection (D=delta, Y=star)
- Number of circuits
- Packing (P=pallet, PP=pallet with protection for headers and coil, CR=crate, SK=container skid)
- Feet=Mounting feet supplied mounted (type of feet according to airflow selected); blank=Mounting feet supplied loose
- Electrical accessories
- Fin material/coating (AL=aluminium, IF=industrial fins, SWR=seawater resistant fins, EP=epoxy coated alu, FC=F-coat)
- Fin spacing (2.1, 2.3, 2.5, 3.0)
- Tube material (CU=copper, SS=stainless steel)
- Options

## Dimensions BDM



## Dimensions BDD



### Electrical accessories

- Switch on/off (SW)
- Connection box: for AC fans (CB), for EC fans (CBP), for EC fans including master controller and temperature probe (CBMT)
- Basic switchboard for AC fans (BS)
- Basic switchboard for AC fans and step controller (BST)
- Basic switchboard for EC fans (ECCB)
- Basic switchboard for EC fans and master controller (ECCBM)
- EC fans full management system (ICM)

## Certifications

The Alfa LU-VE quality system is in accordance with ISO 9001. All products are manufactured according to PED. Eurovent certified performance for models included in the scope of the programme.

## Design pressure

Design pressure 10 bar. Each heat exchanger is leak tested with dry air.

## Selection

Selection and pricing is to be performed with our Alfa LU-VE air heat exchanger selection software. Selection output includes all relevant technical data and dimensional drawings.

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## Alfa-V VDD

### Industrial dry coolers V-type

#### General information & application

The Alfa-V VDD series is a wide range of heavy duty V-type dry coolers for HVAC, refrigeration and various industrial applications such as water/glycol cooling.

For industrial applications, dry coolers are suitable for closed circuit cooling of various process liquids in f.i. food, power, process and general industries. Alfa-V VDD dry coolers provide high capacities at reduced power consumption and a compact footprint.

Capacity range\* 100 up to 1800 kW

\*water, EN1048.

#### Coil

The coil design provides excellent heat transfer. In standard execution dry coolers are fitted with smooth copper tubing  $\varnothing$  12 and 16 mm (VDD) or stainless steel tubing 16 mm (VDDY).

Fins in aluminium or sea water resistant AlMg, plain fin design for easy cleaning and long-lasting performance.

Separate connections provide the opportunity for independent operation of both cooling coils.

#### Casing

Frame construction provides high rigidity for protection against vibration and thermal expansion. Casing, supports and frame made of corrosion resistant galvanized steel (class C4-H).

Separated fan sections and removable fan rings.

#### Fan motors

ErP compliant fan AC & EC motors, available in three fan diameters (800, 910 & 1000 mm) and different noise levels. Motors with external rotor, protection class IP54 according to DIN 40050.

AC power supplies 400/50/3, 400/60/3 and 460/60/3 with integrated thermo contacts to provide reliable protection against thermal overload. EC power supply 380-480/50-60/3.



Alfa-V VDD

#### Design pressure

Design pressure 10 bar. Each heat exchanger is leak tested with dry air.

#### Benefits

- Heavy duty design with high corrosion resistance.
- Favorable capacity/footprint ratio.
- Available with easily cleanable industrial fins.
- Excellent sound characteristics.
- Reliable performance, Eurovent certified.
- Easy installation & maintenance.
- Energy efficient - low total cost of ownership.
- Two-year product guarantee.
- Easy access to additional on-line product information (QR code).



Alfa-V VDD

## Options

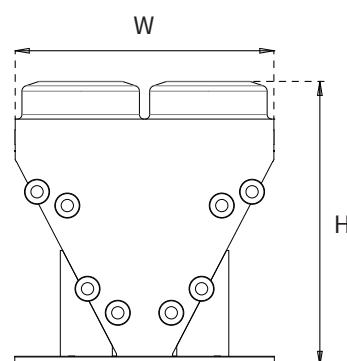
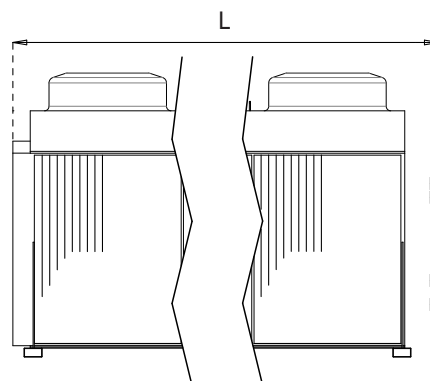
- Fin spacing up to 3.0 mm
- Coil corrosion protection
  - Epoxy coated aluminium fin (EP)
  - F-coat (FC)
  - Seawater resistant aluminium AlMg (SWR)
  - Industrial R-fin (RIF)
  - Epoxy coated aluminium R-fin (REP)
  - Seawater resistant aluminium AlMg R-fin (RSWR)
- Coil protection grid (GR)
- Spray Water kit (KW)
- Water Spray system including pumping station (SWS)
- Casing coated RAL 9002 (other colors on special request)
- Container skid (SK)
- Ladder and railings
- Vibration dampers (VD)
- Expansion tank (ET)
- Special fan motors
  - Protection class IP55
  - High-temperature motors
  - IEC standard motors
- Electrical accessories
  - Isolating switch (SW)
  - EC Motors wired to a common terminal box (CBP=connection box, CBMT=connection box and master controller+temperature signal)
  - Switchboard IP54 (BS)
  - AC fan speed control cabinet (BST)
  - EC fan speed control cabinet (ICM)
  - Basic EC switchboard panel (ECCB)

## Code description

VDD	SE	90	4	.1	B	D	72	SK	C4	*	-	AL	2.1	CU	*
1	2	3	4	5	6	7	8	9	10	11		12	13	14	15

- Alfa-V dry cooler (VDD = standard Cu tube, VDD6 = 5/8" Cu, VDDY = 5/8" SS304)
- Sound level/fan code (T=turbo, S=standard, L=low, Q=quiet, R=residential, E=EC fan motor)
- Fan diameter (80=800, 90=910, 100=1000 mm)
- Number of fan pairs (2 to 9)
- Alfa-V series II
- Tube rows code (A, B, C, D)
- Fan motor connection (D=delta, Y=star)
- No of circuits
- Packing (SK=container skid)
- Case material
- Electrical accessories
- Fin material/coating (AL=aluminium, IF=industrial fins, SWR=AlMg, EP=epoxy coated aluminium, FC=F-coat, RIF=industrial R-fin, REP=epoxy coated aluminium R-fin, RSWR=AlMg R-fin)
- Fin spacing (2.0, 2.1, 2.3, 2.5, 3.0 mm)
- Tube material (CU=copper, SS=stainless steel)
- Options

Nr. of fan pairs	Dimensions mm		
	L	H	W
2	2940	2500	2230
3	4250	2500	2230
4	5560	2500	2230
5	6870	2500	2230
6	8190	2500	2230
7	9490	2500	2230
8	10800	2500	2230
9	12100	2500	2230



## Selection

Selection and pricing is to be performed with our Alfa LU-VE air heat exchanger selection software. Selection output includes all relevant technical data and dimensional drawings.

## Certifications

All VDD dry cooler models are "Eurovent Certify All" certified. The Alfa LU-VE quality system is in accordance with ISO 9001 and ISO 14001. All products are manufactured according to PED regulations.



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## Vibration dampers

For Alfa LU-VE air cooled condensers, gas coolers & liquid coolers

### General information & application

For active and passive isolation of fan vibrations and to reduce noise transmission, Alfa LU-VE strictly recommends the installation of vibration dampers on all outdoor air heat exchanger equipment like air cooled condensers and air cooled liquid coolers.

Vibration dampers can be mounted on all AlfaBlue Junior, AlfaBlue, and Alfa-V heat exchanger models. Vibration dampers are also available as spare parts.

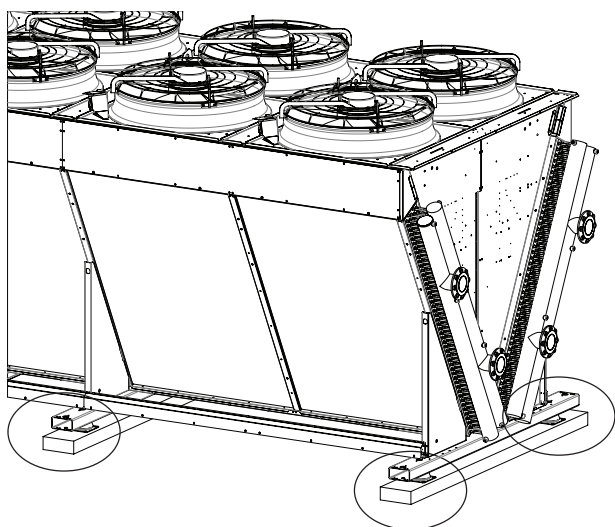
Metal parts	Galvanized steel, yellow zinc plated
Isolator	Natural rubber, hardness 60° Sha

### Mounting instructions

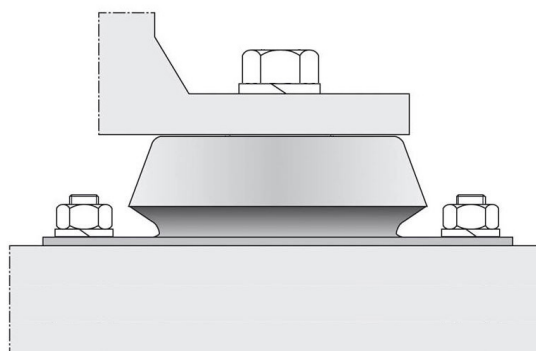
Vibration dampers are to be mounted between the mounting feet and the base construction, preferably before positioning the unit. The vibration dampers are to be fixed on the construction base using anchor bolts (2 or 4 for each damper). After having mounted the vibration dampers, the heat exchanger unit can be positioned and fixed.



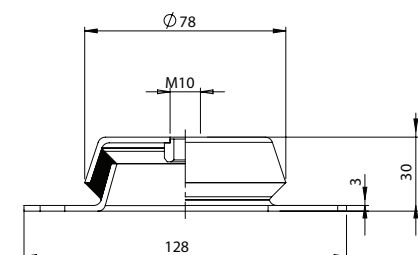
Vibration dampers



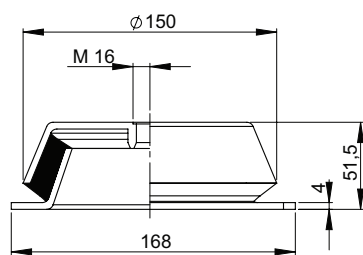
Positioning of vibration dampers



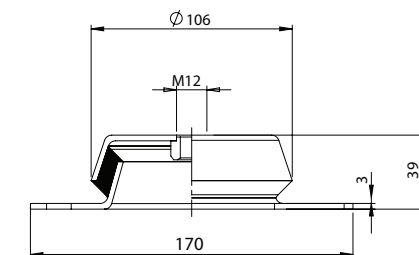
item 60626227



item 60626030



item 60626031



Model	Total nr. of vibration dampers	Item code	Spare part kit code
<b>AlfaBlue Junior</b>			
351, 352, 353, 356 / 501, 502, 503 / 631, 632, 633	4	60626227	10999345SP
358 / 504 / 634	6	60626227	10999346SP
635, 636	8	60626227	10999347SP
<b>AlfaBlue B*M</b>			
631, 632, 633 / 801, 802, 803 / 901, 902 / 1001, 1002	4	60626227	10999345SP
634 / 804 / 904 / 1004	6	60626227	10999346SP
805	8	60626227	10999347SP
903 / 1003	4	60626031	11360111SP
<b>AlfaBlue B*D</b>			
802, 803 / 902 / 1002	4	60626031	11360111SP
804 / 904 / 1004	6	60626031	10999079SP
805, 806 / 905 / 1005	8	60626031	10999080SP
903 / 1003	4	60626030	10999078SP
<b>Alfa-V series II</b>			
802, 803 / 902, 903 / 1002, 1003	4	60626030	10999078SP
804 / 904 / 1004	6	60626030	10999073SP
805, 806, 807 / 905, 906, 907 / 1005, 1006, 1007	8	60626030	10999074SP
808 / 908 / 1008	10	60626030	10999075SP
809 / 909 / 1009	12	60626030	11360051SP

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## SWS

### Water Spray System

#### General information & application

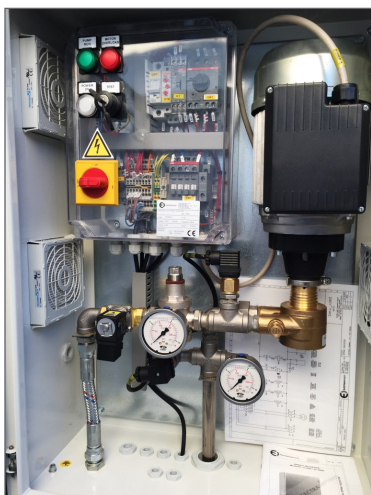
SWS is a full Water Spray System, including pump and electrical cabinet, for air cooled condensers, liquid coolers and gas coolers. Air heat exchangers are normally selected to accomplish performance requirements in the hot season peaks. As a consequence, units are often oversized and thus more expensive. In such cases a Water Spray System can help in selecting correctly sized units. Benefits of increased global energy efficiency, sound reduction etc are now combined in a simple Alfa LU-VE solution.

#### Features

- Available in three sizes: 500 l/h, 1000 l/h, 2000 l/h to cover all air heat exchanger range needs
- Power supply 230 V/1 ph/50 Hz
- 6 bar pump
- Draining valve for complete water discharge
- Stainless steel piping with spray nozzles
- Application temperatures from +4 °C to +40 °C
- Protection Class IP55
- Switchboard with pump protection and signals (remote ON/OFF and fault alarm)
- Metal casing in painted galvanized steel (RAL9002) or stainless steel (optional).



SWS - Water Spray System



#### Benefits

- Optimized heat exchanger selection
- Reduced footprint
- Reduced transport costs
- VDI 2047 Part 2 compliant
- Fully integrated with Alfa LU-VE control systems
- Energy saving

### Integration with control systems

SWS is perfectly integrated with Alfa LU-VE control solutions. ICM and master controller (PTec), can easily manage the complete Water Spray System. According to various parameters (such as pressure or temperature) the spray system is activated to increase capacity and face peak loads.

### Selection

SWS Water Spray Systems can be selected with Alfa LU-VE air heat exchanger selection software. A calculation sheet for detailed water flow calculation is available via the Alfa LU-VE sales organization.

### Application

With standard aluminum fins, operating time of the Water Spray System is limited to 200 h/year. For longer usage periods and optimal corrosion resistance fin coating is advised. For details, contact your local Alfa LU-VE representative.

### Water quality

Tap water (according to EC Directive 98/93) normally complies with the requirements for water quality as listed below.

- $6 < \text{pH} < 8$
- Conductivity  $< 500 \mu\text{S/cm}$
- Chlorides  $< 50 \text{ ppm}$
- Sulphates  $< 50 \text{ ppm}$
- Hardness  $2 \div 4 ^\circ\text{f}$
- Total bacterial count  $< 1,000 \text{ cfu/ml}$

### Certification

The Alfa LU-VE quality system is in accordance with ISO 9001 and ISO 14001. All SWS Water Spray Systems are manufactured according to CE regulations and VDI 2047 Part 2.



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