SRH

Swimming pool dehumidifiers

Series SRH dehumidifier are expressly designed for use in swimming pools where humidity should be closely controlled in order to guarantee optimal comfort. These units are intended to be installed in a technical room close to the swimming pool. A centrifugal fan with high available static pressure allows unit connection to ductworks, both for air suction and discharge. This series comprises 6 basic models which cover a capacity range from 1150 to 3000 l/24h. All the units are fully assembled and wired at the factory.

VERSIONS

SRH/WZ unit with heat recovery: The unit is designed to have one refrigerant circuit condensed by air, the other one condensed both by water and air. If the unit is supplied with the advanced control panel it is possible to set operation priorities (air or water). In the SRH/WZ versions the heat recovery is designed to reject on the water about 50% of the total thermal load generated by the unit. When the heat recovery is activated, the supply air temperature of the unit is, basically, the same of the return air, so,in this case, the dehumidification is performed without air temperature increase. This operation mode is suitable during intermediate seasons when the humidity in the swimming pool has to be controlled but also the room air temperature overheating has to be avoided.

ACCESSORIES

- **CONT**: Advanced control panel (Humidity+ Temperature control).
- **FARC**: Air filter with frame for ducted installation.
- **HORI**: Horizontal air discharge (Opposite side coils).
- **HOWA**: Hot water coil.
- **KIVA**: On/Off 3 way valve kit installed.
- **KIVA**: Modulating 3 way valve kit installed.
- **LS00**: Low noise version.
- **MAML**: Manometers.
- **PM**: Oversized static pressure 400 Pa.

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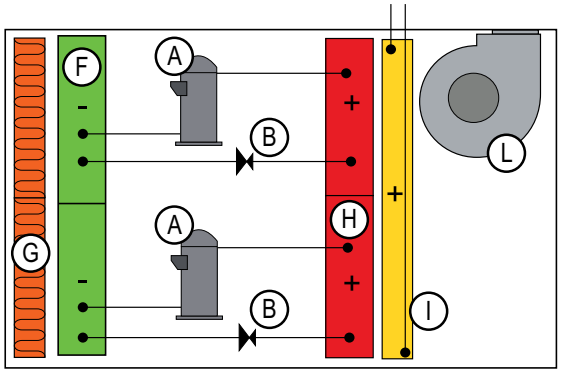
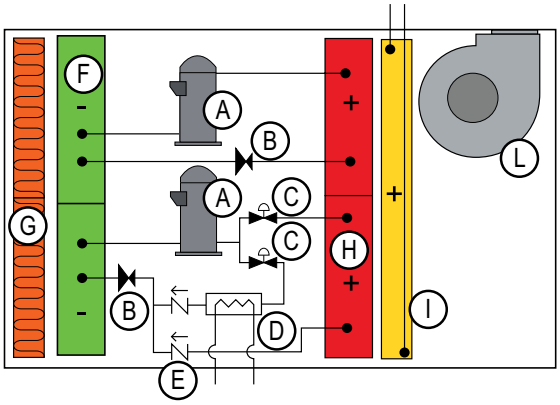
Models SRH		1100	1300	1500	1800	2200	3000
Moisture removed (1)	l/24h	1130	1285	1480	1855	2310	3050
Nominal input power (1)	kW	14,1	16,5	19,3	23,6	27,6	37,2
Maximum input power (2)	kW	19,9	23,6	26,8	36,3	41,8	55,8
Nominal input current (2)	A	41,1	47,1	54,6	64,6	74,6	97,9
Maximum input current	A	123,1	150,1	159,6	204,6	240,6	281,9
Hot water coil (3)	kW	72	88	94	112	125	155
Air flow	m^3/h	9500	10500	13000	15000	17000	25000
Available static pressure	Pa	250	250	250	250	250	250
Refrigerant		R407C	R407C	R407C	R407C	R407C	R407C
Sound pressure (4)	dB(A)	69	70	72	72	73	74
Temperature operating range	°C	15-36	15-36	15-36	15-36	15-36	15-36
Humidity operating range	%	50-99	50-99	50-99	50-99	50-99	50-99
Weight	Kg	580	710	770	830	940	1290
Power supply	V/Ph/Hz	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50

STANDARD VERSION



WZ VERSION



A	Compressor	**F**	Evaporator
B	Expansion valve	**G**	Air filter
C	Solenoid valve	**H**	Condenser
D	Heat recovery	**I**	Hot watercoil (accessory)
E	One way valve	**L**	Fan

Performances refer to the following conditions:
(1) Room temperature 30°C; relative humidity 80%.
(2) Room temperature 35°C; relative humidity 80%
(3) Room temperature 32°C; water temperature 80/70°C.
(4) Sound pressure level measured at 1 mt from the unit in free field conditions according to ISO 9614.

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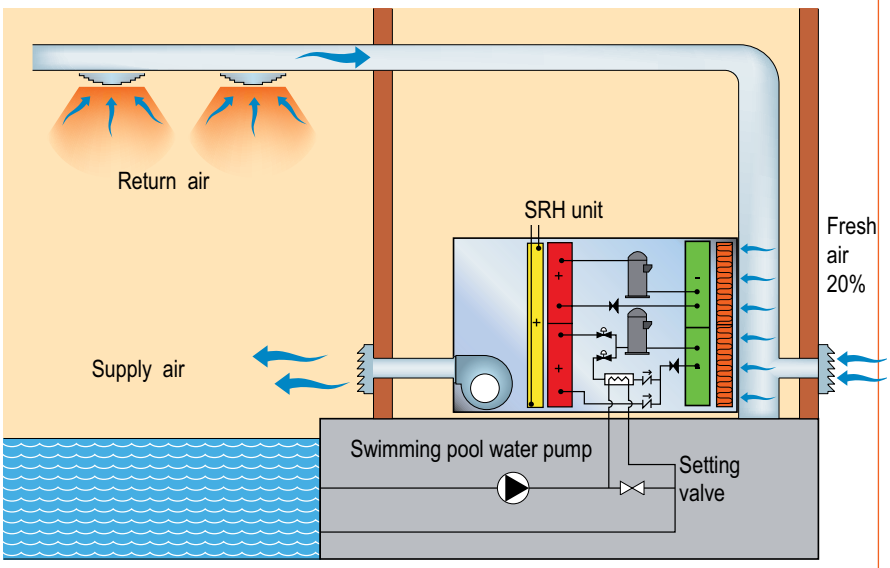
Typical Installation

The picture on the right shows a typical installation of the SRH units;
Normally, the unit is installed in the technical room and ducted on both sides (supply and return). In many installations it is installed a fresh air duct designed for 15-20% airflow. Clearly, in this application also an exhaust fan has to be installed in order to avoid over pressure in the swimming pool. The water valve present in the heat recovery hydraulic circuit has to be set in order to guarantee the nominal water flow in the heat recovery.



FRAME
All SRH units are made from hot-galvanised thick sheet metal, painted with polyurethane powder enamel at 180°C to ensure the best resistance against the atmospheric agents. The frame is self-supporting with removable panels. All screws and rivets are in stainless steel. The colour of the units is RAL 7035.

CIRCUITO FRIGORIFERO
The refrigerant gas used in these units is R407C. The refrigerant circuit is made by using international primary brands components and according to ISO 97/23 concerning welding procedures. All units are supplied with two circuits, each refrigerant circuit is totally independent from the other. Any incorrect operation of one circuit does not influence the other circuit. The refrigerant circuit includes: SRH liquid line manual shut-off valve, sight glass, filter drier, thermal expansion valve with external equalizer, Schrader valves form maintenance and control, pressure safety device (according to PED regulation). SRH/WZ. These versions are supplied with one refrigerant circuit identical to the SRH version, the second circuit includes: one way valves, solenoid valves, liquid receiver, water heat recovery, liquid line shut-off valve, sight glass, filter drier, thermal expansion valve with externalequalizer, Schrader valves for maintenance and control, pressure safety device.

COMPRESSOR
The compressors are scroll type with crankase heater and thermal overload protection by a klixon embedded in the motor winding. The compressors are mounted on rubber vibration dampers and they can be supplied wih sound attenuation jacket to reduce the noise emission (option). The compressor crankcase heater is always powered when the unit is in stand-by. The inspection on the compressors is possible only through the unit front panel.

CONDENSER AND EVAPORATOR
Condensers and evaporators are made of copper pipes and aluminium fins. All evaporators are painted with epoxy powders to prevent corrosion problem due to their use in aggressive environments.The diameter of the copper pipes is 3/8" and the thickness of the aluminium fins is 0,1 mm. The tubes are mechanically expanded into the aluminium fins to improve the heat exchange factor. The geometry of these heat exchangers guarantees a low air side pressure drop and then the use of low rotation (and low noise emission) fans. All units are supplied, standard, with a Stainless steel drip tray and all evaporators are supplied with a temperature sensor used as automatic defrost probe.

FANS
The fans are made of galvanized steel, centrifugal type, double inlet with forward curved blades. They are statically and dynamically balanced and supplied complete of the safety fan guard according to EN 294. They are mounted on the unit frame by interposition of rubber vibration dampers. The electric motors are 4 poles (about 1500 rpm), three-phase power supply. The motors are connected to the fans by pulleys and belts. The protection class of the motors is IP 54.

AIR FILTER
Supplied as standard with the unit, it is made of G3 class sysnthetic fibre filtering media (efficiency 85% by weight), 48 mm thickness.

MICROPROCESSOR
All SRH units can be supplied with 2 kind of controls:
Basic control
it manages the following features: antifreeze protection, compressor timing, compressor automatic starting sequence, defrost cycle, alarm reset, potential free contact for remote general alarm.
Advanced control
in addition to the basic control it manages a wider range of features as: setting the priority operation mode (SRH/WZ only), managing of the main and the secondary set points, display of the alarms with historical list, time band operation, integration with hot water coil and modulating valve. Upon request the advanced control can be

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connected to a BMS system for the remote control and management. The technical department is available to study, together with the customer, different solutions using MODBUS; LONWORKS; BACNET or TREND protocols.

ELECTRONIC PROBE TEMPERATURE-HUMIDITY

This sensor is supplied standard on the SRH/WZ versions supplied with advanced control.

It can be installed either in the room or in the return duct (to be specified before order) and allow the operation of the unit in the following modes:

Dehumidification

Heating (by hot water coil)

Dehumidification + heating

Dehumidification + heat recovery

ELECTRIC BOX

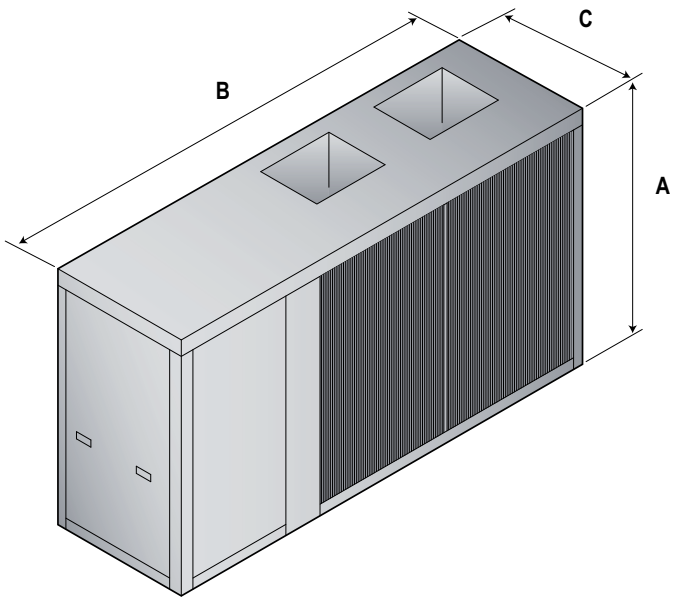
The electric switch board is made according to electromagnetic compatibility norms CEE 73/23 and 89/336. The accessibility to the board is possible after removing the front panel of the unit and the OFF positioning of the main switch. In all SRH units are installed, standard, the compressors sequence relay who disables the operation of the compressor in case the power supply phase sequence is not the correct one (scroll compressors in fact, can be damaged if they rotate reverse wise). The following components are also standard installed: main switch, magnetic-thermal switches (as a protection fans and compressors), control circuit automatic breakers, compressor contactors, fan contactors. The terminal board is supplied with voltage free contacts for remote ON-OFF and general alarm.

CONTROL AND PROTECTION DEVICES

All units are supplied with the following control and protection devices: antifreeze protection sensor, high pressure switch with manual reset, low pressure switch with automatic reset, high pressure safety valve, compressor thermal overload protection, fans thermal overload protection.

Versions SRH	Code	1100	1300	1500	1800	2200	300
Advanced control panel (Humidity + temperature control)	CONT	●	●	●	●	●	●
Low noise version (LS)	LS00	O	O	O	O	O	O
Hot water coil	HOWA	O	O	O	O	O	O
On/Off 3 way valve kit installed	KIVA	O	O	O	O	O	O
Modulating 3 way valve kit installed	KIVA	O	O	O	O	O	O
Available static pressure 400 Pa	PM	O	O	O	O	O	O
Horizontal air discharge (opposite side coils)	HORI	O	O	O	O	O	O
Manometers	MAML	O	O	O	O	O	O
Air filter with frame for ducted installation	FARC	O	O	O	O	O	O

● Standard, O Optional, – Not Available.



Mod.	A (mm)	B (mm)	C (mm)
1100	1250	1870	850
1300	1250	1870	850
1500	1566	2608	1105
1800	1566	2608	1105
2200	1566	2608	1105
3000	1566	3608	1105