

LPH

Swimming pools heat pumps



R407C



TITANIUM

The LPH heat pump series represents the most efficient solution for the heating of the outdoor swimming pools in those periods in which the solar irradiation is not sufficient. The units have been designed to operate down to -5°C ambient temperature.

OTHER VERSION

- LPH Only heating.

ACCESSORIES

- LS low noise version.
- Evaporation/condensation pressure control by pressure transducer and fan speed control (Standard).
- Rubber vibration dampers.
- Spring vibration dampers.
- Refrigerant pressure gauges.
- Condensing coil protection mesh with metallic filter.
- Condensing coil corrosion-proof treatment.
- Electronic soft starter.
- Remote control panel.
- Condensate discharge drip tray with antifreeze heater.

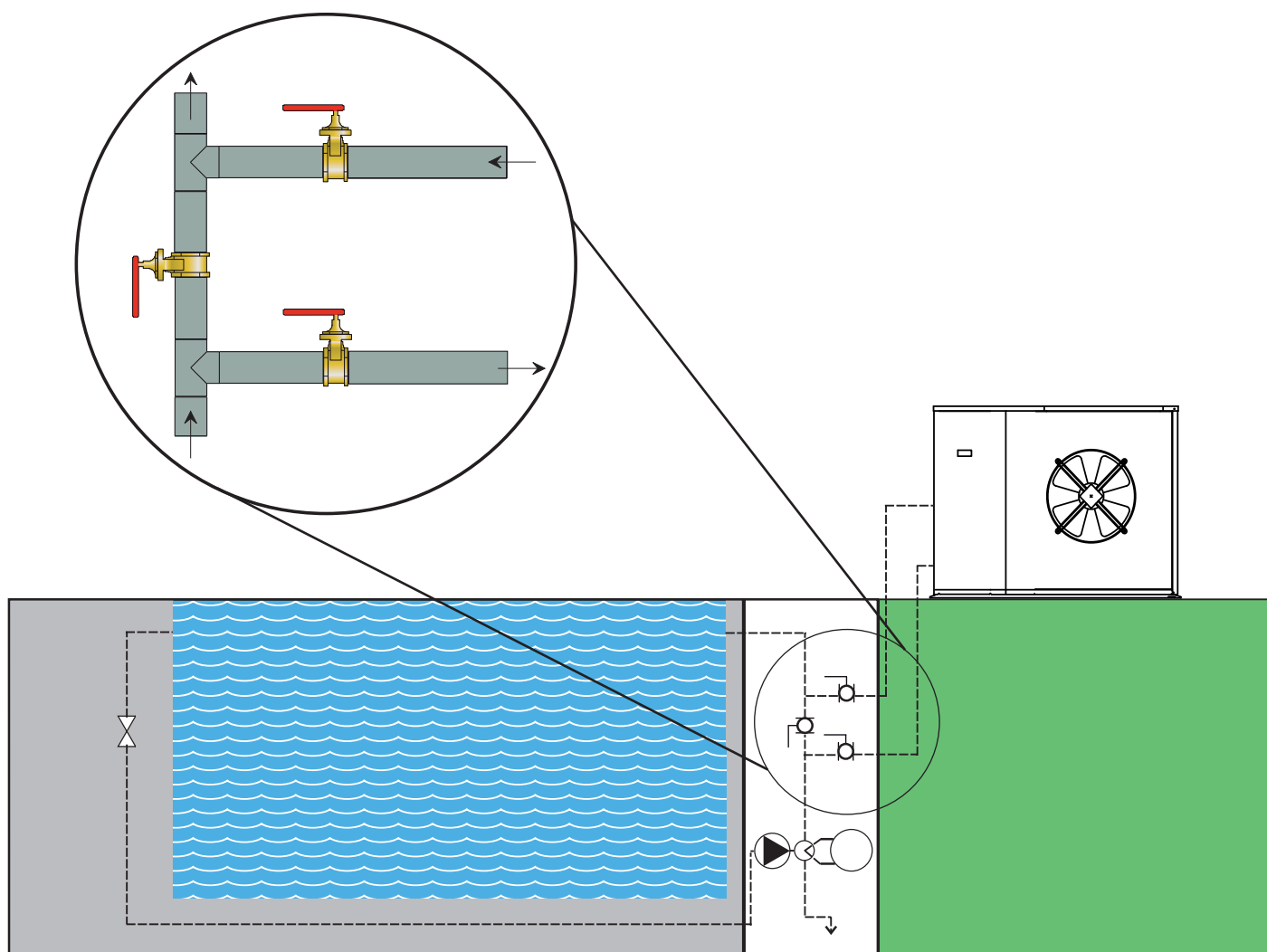
LPH

Model LPH		06	09	13
Heating capacity ⁽¹⁾	kW	8,0	12,0	18,0
Compressor input power ⁽¹⁾	kW	1,5	2,2	3,2
Power supply	V/Ph/Hz	230/1/50		400/3+N/50
Nominal input current	A	9,4	13,0	10,0
Peak current	A	62,0	100,0	67,0
Maximum input current	A	16,0	25,0	15,0
Air flow	m³/h	3000	3000	5000
Fans / input power	n° x Kw	1 x 0,28	1 x 0,28	2 x 0,28
Compressors / n° / circuits	type/n°	Scroll/1	Scroll/1	Scroll/1
Sound power level ⁽²⁾	dB(A)	68	68	69
Sound pressure level ⁽³⁾	dB(A)	40	40	41
Pool maximum water volume	m³	0 ÷ 50	50 ÷ 80	80 ÷ 140

⁽¹⁾ Heating: Ambient temperature 15°C; water temperature 30°C.

⁽²⁾ Power sound level to according ISO 3746.

⁽³⁾ Sound pressure level at 10 mt from the unit in free field conditions direction factor Q=2, according to ISO 3746.



LPH

FRAME

All LPH 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.

REFRIGERANT CIRCUIT

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. The refrigerant circuit includes:

sight glass, filter drier, thermal expansion valve with external equalizer, reverse cycle valve, one-way valves, liquid receiver, Schrader valves for maintenance and control, pressure safety device (according to PED regulation).

COMPRESSORS

The compressors are scroll type with crankcase 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 with 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.

SOURCE EXCHANGER

The source exchangers are made of copper pipes and aluminium fins. 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. The evaporators can be protected by a washable metallic filter to be installed on request.

FAN

The fans are in aluminium, axial type. They are statically and dynamically balanced and supplied complete of the safety fan guard according to EN 60335. They are mounted on the unit frame by interposition of rubber vibration dampers. The electric motors are 6 poles (about 900 rpm). The motors are connected to the fans by pulleys and belts. The protection class of the motors is IP 54.

USER EXCHANGER

The user exchangers are shell-in-tube type with Titanium heat exchanger and external shell in PVC. These heat exchangers have been designed to have a very low difference between inlet and outlet temperature; this allows to treat high waterflows and reduce the setup time of the system.

MICROPROCESSOR

All LPH units are supplied standard with microprocessor controls. The microprocessor controls the following functions: regulation of the water temperature, antifreeze protection, compressor timing, compressor automatic starting sequence, alarm reset, alarms and operation leds. The microprocessor is set to allow the defrost operation automatically.

ELECTRIC BOX

The electric box is made according to electromagnetic compatibility norms CEE 73/23 and 89/336. The accessibility to the board is possible after removing the frontal panel of the unit. The protection degree is IP55. In all LPH units are installed, standard, the compressors sequence relay which 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 of pumps and fans), compressors fuses, control circuit automatic breakers, compressor contactors, fan contactors. The terminal board is supplied with voltage free contacts for remote ON-OFF, Summer / winter change over (heat pumps only) and general alarm.

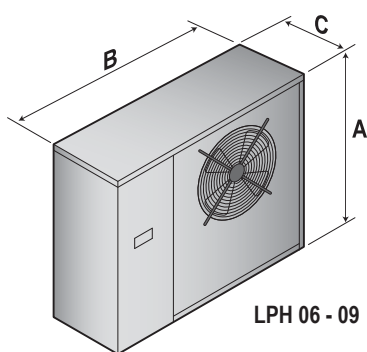
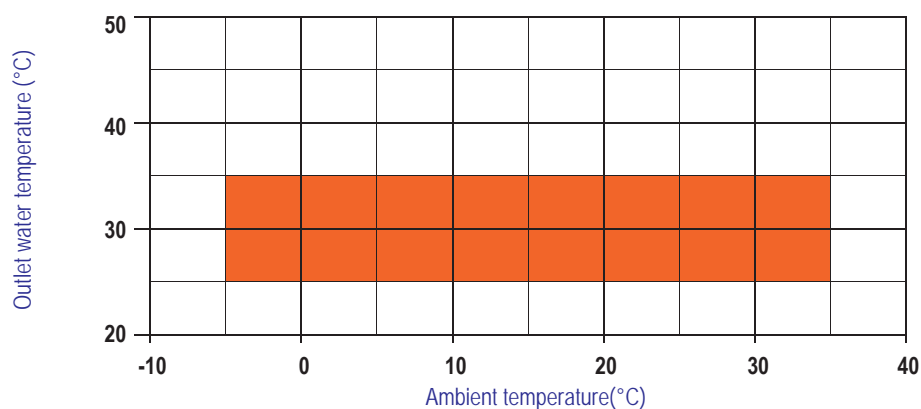
CONTROL AND PROTECTION DEVICES

All units are supplied with the following control and protection devices: Return water temperature sensor, installed on the return water line from the plant, high pressure switch with manual reset, low pressure switch with automatic reset, high pressure safety valve, compressor thermal overload protection, fans thermal overload protection, pressure transducer.

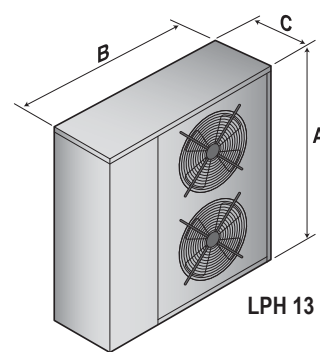
LPH

Model LPH	Codice	06	09	13
Main switch		●	●	●
Microprocessor control		●	●	●
Remote ON/OFF digital input		●	●	●
Evaporation/condensation pressure control by pressure transducer and fan speed control		●	●	●
LS low noise version	LS00	○	○	○
Rubber vibration dampers	KAVG	○	○	○
Spring vibration dampers	KAVM	○	○	○
Refrigerant pressure gauges	MAML	○	○	○
Condensing coil protection mesh with metallic filter	FAMM	○	○	○
Electronic soft starter	DSSE	○	○	○
Remote control panel	PCRL	○	○	○
Condensate discharge drip tray with antifreeze heater	BRCA	○	○	○
Condensing coil corrosion-proof treatment		Contact the Company		

OPERATION LIMITS



LPH 06 - 09



LPH 13

Mod.	A (mm)	B (mm)	C (mm)	Kg
06	989	1145	380	97
09	989	1145	380	120
13	1324	1245	423	135