



# POLYTROPIC

• POOL HEATING SOLUTIONS •



# RAK INVERTER

Commercial and large pools specific



 POLYCONNECT2.0



 4G



Video demo

## REDUCE ENERGY BILLS AND CONTROL NOISE LEVELS

with this full-Inverter technology reversible high-power heat pump specially designed for large sized pools.

The exclusive intelligent system integrated into RAK Inverter heat pumps **regulates the output** in relation to the water temperature but also takes into consideration the outside air temperature. This guarantees **heating performance at the best COP\*** and **lowest noise level!**



Certified noise levels   
Independent testing laboratory



# Technical specifications

3-PHASE MODEL	RAK35 IVT	RAK45 IVT	RAK90 IVT
SCOP according to EN 17645	7,1	7,1	7,2
Classification according to EN 17645	A	A	A
<b>Air 26°C / Water 26°C / Humidity 80%</b>			
Energy Output BOOST mode	41,5 kW	56,8 kW	110,0 kW
COP BOOST mode	6,1	5,6	6,0
Energy Output SMART mode	41,5 ~ 24,1 kW	56,8 ~ 24,4 kW	110,0 ~ 39,1 kW
COP SMART mode	6,1 ~ 10,2	5,6 ~ 10,2	6,0 ~ 10,1
Energy output ECO-Silence mode	24,1 kW	24,4 kW	39,1 kW
COP ECO-Silence mode	10,2	10,2	10,1
<b>Air 15°C / Water 26°C / Humidity 70%*</b>			
Energy Output BOOST mode	35,6 kW	43,7 kW	85,6 kW
COP BOOST mode	4,6	4,4	4,5
Energy Output SMART mode	35,6 ~ 18,0 kW	43,7 ~ 18,2 kW	85,6 ~ 31,9 kW
COP SMART mode	4,6 ~ 7,2	4,4 ~ 7,1	4,5 ~ 6,5
Energy output ECO-Silence mode	18,0 kW	18,2 kW	31,9 kW
COP ECO-Silence mode	7,2	7,1	6,5
<b>Air 7°C / Water 26°C / Humidity 90%</b>			
Energy Output BOOST mode	28,5 kW	32,9 kW	63,7 kW
COP BOOST mode	3,7	3,4	3,2
<b>Air -7°C / Water 26°C / Humidity 0%</b>			
Energy Output BOOST mode	17,8 kW	21,9 kW	40,4 kW
COP BOOST mode	2,8	2,7	2,4
Noise level CTTM mini-maxi (at 10m) according to EN ISO 3741 : 2010 **	46 ~ 49 dB(A)	46 ~ 51 dB(A)	-
Maximum noise level (at 10m) according to EN ISO 3744: 2010	39 dB(A)	44 dB(A)	49 dB(A)
Temperature working range	-15°C -> 43°C		
<b>Installation</b>			
Hydraulic connexions	D. 63 mm		90 mm flanges + counter-flanges
Power	400 V / 3~+N / 50 Hz		
Circuit breaker and cable size (for 20 m)	3P +N C 25 A (5G*4 mm <sup>2</sup> )	3P +N C 32 A (5G*6 mm <sup>2</sup> )	3P +N C 50 A (5G*10 mm <sup>2</sup> )
Power input Max (air 26°C)	6,8 kW	10,1 kW	18,0 kW
Minimum water flow	12 m <sup>3</sup> /h	15 m <sup>3</sup> /h	40 m <sup>3</sup> /h
Dimensions in mm (L x l x h)	1050 x 1050 x 1260		2144 x 1113 x 1260
Weight net (gross)	207 kg (264 kg)		410 kg (450 kg)

\* May to September with cover.

\*\* Tests carried out at an air temperature of 15°C, with a water inlet at 26°C and a water outlet at 28°C to define the water flow rate, heating capacity and consumption, in accordance with FPP recommendations.

\*\*\* Noise levels in BOOST and ECO mode at 10 m, certified by the independent laboratory Centre de Transfert de Technologie du Mans, in accordance with EN ISO 3741: 2010

# Equipment benefits



## SIMPLE AND INTUITIVE OPERATION

Colour digital touch screen

**3 operating modes : heating, cooling and automatic.**



## INSTALLATION

**Several units (up to 16) can be connected** and controlled by a single remote control screen (optional).

## OPTIMAL PERFORMANCES



**Optimal Twist** : a spiral wound PVC/titanium condenser that is impervious to corrosion.



**2D Technology** : an INVERTER compressor with enhanced performance, very high COP thanks to its hertz-by-hertz speed variation.



**DC Brushless** : a fan with variable speed down to the rpm to ensure optimum performance.



## COP IMPROVED

An efficient electronic expansion valve, which adapts the flow of refrigerant gas according to climatic conditions.



## INTELLIGENT OPERATING MODE

**PolySmart Control** : the heat pump regulates its own power to adapt to the needs of your pool, depending on the water temperature and the ambient temperature.



RAK90 IVT



## EXCLUSIVE «LOW TEMPERATURE» SYSTEM

- Reverse-cycle defrosting,
- Preheating of the compressor housing,
- Antifreeze system for the evaporators condensation,
- Automatic piloting of the «low temperature» system.



## COMMISSIONING AND WINTERING

The technical start-up and the 1st wintering of the machine can be carried out on request by dedicated POLYTROPIC technicians.



## CONNECTED SOLUTION

**PolyConnect inside** : wifi module and 4G key included for remote control via smartphone and permanent supervision by the Technicenter.

**ACCESSORIES INCLUDED:** hydraulic connection kit, winter cover.

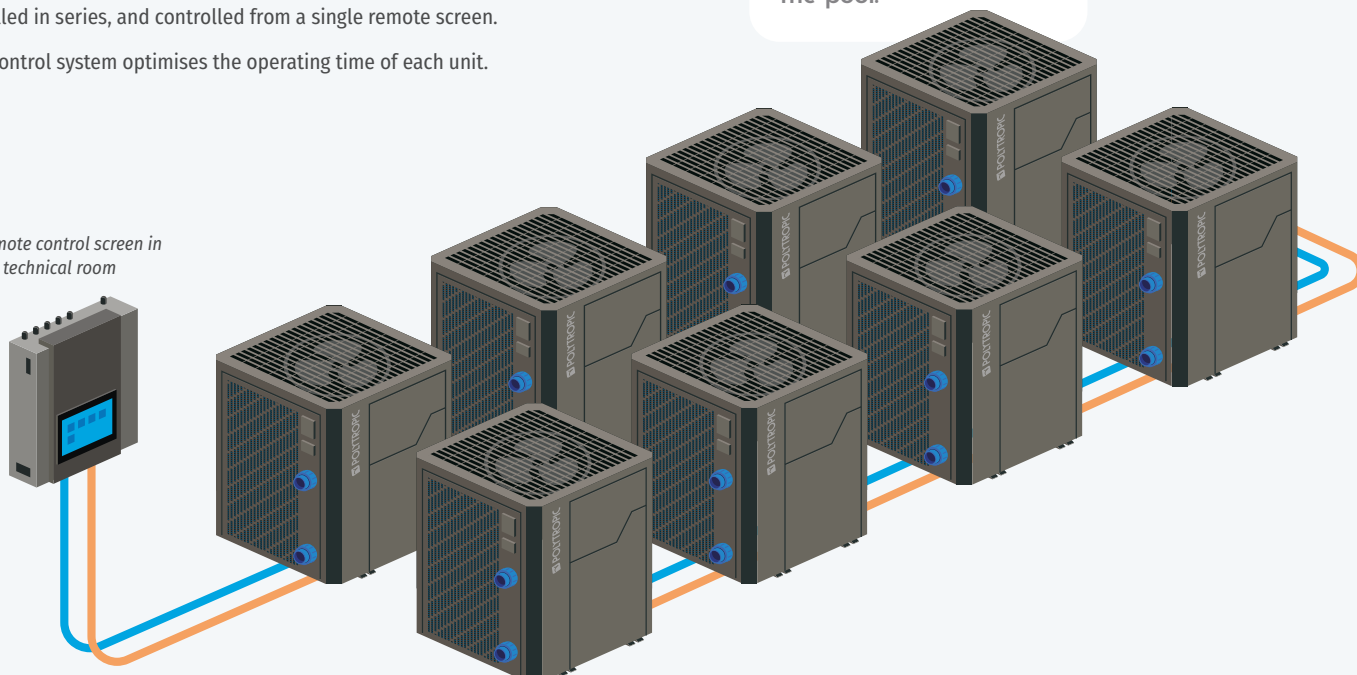
# An exclusive system

## EASY INSTALLATION AND CUSTOMIZED SOLUTION

- Installation is made with this compact pool heat pump and its standard electrical connection.
- Depending on the volume and requirements of the pool, RAK Inverter can be installed in series, and controlled from a single remote screen.
- The control system optimises the operating time of each unit.

Up to 16 units can be connected depending on the needs and volume of the pool.

Remote control screen in the technical room





## Colour touch screen

### A LARGE AND HIGHLY RESPONSIVE COLOUR TOUCH SCREEN

- High capacitive **TFT touch screen** and large size for **good readability**: L 72 x H 68 mm, 4" diagonal (over 10.5 cm) .
- Protected by a **layer of thermal toughened glass** to ensure **maximal resistance**.
- The transparent protective door protects the display from climatic conditions, dust and scratches.

#### NEW !

##### Screen protector - Exclusive development!

- > *Waterproof plastic case with rubber seals and a more robust opaque protective door.*
- > *The reinforced plastic hinge is no longer subject to rust and is less susceptible to breakage.*



Remote control screen in the technical room to control several units (optional)  
Code : AO1500001

## Intuitive user interface

### THE MULTILINGUAL CONTROL INTERFACE

Clear operation and easy navigation, responsive at a glance ...



Alarm display, diagnosis and solution



History of the last 50 events



**NEW !**  
Lockable TFT screen  
to avoid mishandling



## POLYCONNECT 2.0 INSIDE



### CONNECTED SOLUTION

Easily **connect** the heat pump by scanning the QR code, **check** via the free app and **benefit from secure remote supervision** for preventive maintenance and remote diagnosis by Polytronic technicians.

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