KEYTER

MEDEA *Pro*



NATURAL R-290 PROPANE

4-22 kW 5-26 kW

Scroll-Inverter · Heat Recovery · HT

Water-to-water Heat Pumps Production up to 77°C

Available in heating-only, cooling-only, reversible, and reversible hydraulic circuit versions, designed for residential or commercial applications.

New PRO Series: Optimized for the use of R290 refrigerant and Full-Inverter Technology.

NATURAL R-290 PROPANE

Pro series

Adaptation and Environment

- Reduced charge of natural R290 refrigerant, class A3, environmentally friendly with low environmental impact (GWP = 3) and high thermodynamic performance.
- Maximum versatility to integrate into new or existing systems: with fan coils, underfloor heating, radiators, or for domestic hot water production.
- Different hydraulic versions available, recirculation pumps on the external and/or internal side.
- With careful insulation, they ensure adequate protection of the equipment and reduce noise levels, achieving ultra-quiet operation.

Energy Efficiency

- Compact Full-Inverter units equipped with a hermetic Scroll inverter compressor, electronic expansion valve, and latest generation plate heat exchangers.
- Excellent power modulation allows achieving very high seasonal energy efficiency.
- Partial heat recovery is available with the possibility to integrate the recirculation pump.

Codification:

KZVB | | **I V S4D**

Series · Size · Power

Operating mode
I - Reversible heat pump
R - Cooling only
Q - Heating only
C - Reversible hydraulic circuit, non-reversible refrigeration circuit (without a 4-way valve)

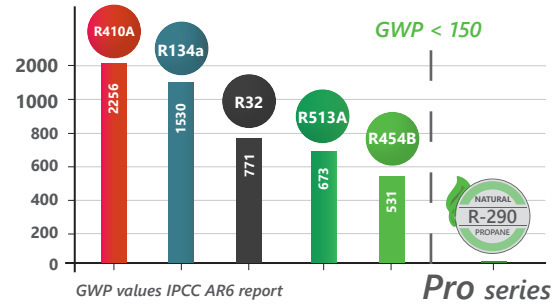
Version - Compressor Type
V - Compressors scroll inverter

Hydraulic version
S - Standard equipment
P - Version with hydraulic group with pump on the internal side
W - Version with hydraulic group with pump on the external side
B - Hydraulic group with pump on the internal and external sides

Power supply
4 - 400V/III/50Hz with neutral (standard)

Refrigerant
D - R290

Refrigerants - GWP



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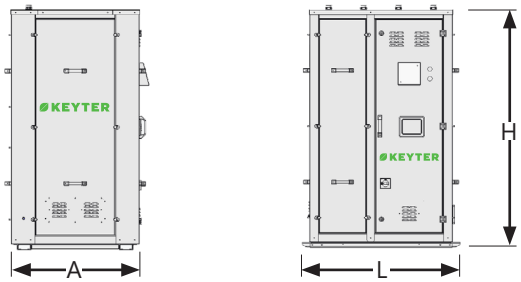
range specification

		KZVB
General characteristics		
Refrigerant	R290	✓
	Leak detector	✓
	ATEX centrifugal fan for refrigerant extraction	✓
	ATEX axial fan for refrigerant extraction	●
	Indicator light in case of leakage	✓
Bodywork	Self-supporting galvanized steel bodywork/cabinet with thermosetting polyester paint treatment, oven-cured, without panels	✓
	Equipment for indoor installation	✓
	Equipment for outdoor installation	●
	Customized color to suit the needs of the installation	●
	Perimeter enclosure of the equipment with panels	✓
	Acoustic insulation of panels (10 mm)	●
	Acoustic insulation of panels (20 mm)	●
	Perimeter enclosure with 50 mm rockwool sandwich panel	●
	Anti-vibration supplements	●
Compressors	Inverter scroll technology	✓
	Compressor anti-vibration mounts	✓
	Acoustic insulation jacket	●
Expansion valves	Electronic expansion valve	✓
	Display for electronic expansion valve	●
Heat exchangers		
Heat exchangers	Stainless steel plate heat exchanger	✓
Hydraulic		
Hydraulic components	Flexible water inlet and outlet connections	●
	VICTAULIC connections	●
	Water filter	●
	Installation of pressure gauges at the inlet and outlet of the equipment	●
Energy		
Energy recovery	Partial condensation energy recovery	●
	Hydraulic pump for the recovery circuit	●
Installation		
Power supply	400 V / III ph / 50 Hz with neutral	✓
	Safe power supply (400 V / III ph / 50 Hz with neutral) independently for ATEX extraction fan in case of leakage	✓
	Other electrical voltages (see different options available)	●
Packaging	Packaging for maritime transport	●

✓ Included as standard ● Optional - Not applicable

Dimensions

Series 1 S/P/H



Standard equipment dimensions (mm)	
Bodywork	**Series 1 S/P/H**
L	900
A	800
H	1500

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range specification

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		KZVB
Control		
Electronic control and communication	Programmable AQUAMATIX electronic control	✓
	Climatix HMI user terminal for AQUAMATIX control	✓
	RS485 communication interface for ModBus communication	✓
	Modbus TCP/IP and BACnet IP communication	✓
Additional control and safety components	Main switch in electrical panel	✓
	Magneto-thermal protections for compressors	✓
	PREMIUM phase control relay, with phase failure detection and direction of rotation protection	✓
	EXCELLENT phase monitoring relay, adds phase unbalance, overvoltage and undervoltage detection	●
	Triple protection for the plate heat exchanger with a water flow switch and anti-ice protections for both water and refrigerant	✓
	Differential switches	●
	Electric energy meter	●
Electrical panel	Fully wired electrical panel, with IP54 protection	✓
	Design of electrical switchgear for high temperatures	✓
	Forced ventilation of the electrical panel	✓
	Tropicalised electrical panel	●
	Socket for common use	●
	Antifreeze electrical resistor in electrical panel for low outdoor temperatures	●

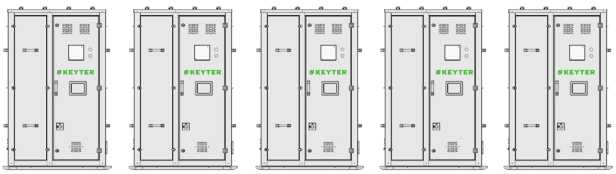
Cascade system

The Medea Pro heat pumps can be installed in a cascade configuration of up to 5 units in parallel, achieving a total modulation capacity in a single installation of:

Total heating capacity up to 5 x 26 kW → up to 130 kW
Total cooling capacity up to 5 x 22 kW → up to 110 kW

This simultaneous operation of the cascade system requires a rotating plate that allows for optimal management of the system.

The control management for cascade installations allows for tracking the operating hours of each unit to extend their lifespan and prioritizes operation at partial load to optimize system performance.



5-110 kW **5-130 kW**

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technical data

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KZVB model				KZVB 1015		
Heat pump reversible		Compressor revolutions	rpm	1100	4350	5500
	Cooling mode	Cooling capacity (1)	kW	4,3	17,0	21,8
			TR	2,0	5,0	7,0
			kBTU/h	24,0	60,0	84,0
		Absorbed power (2)	kW	0,73	3,59	4,93
		EER (3)	W/W	5,73	4,56	4,25
		SEER (4)	kWh/kWh		5,93	
		ηs,c (5)	%		229,1%	
	Heating mode	Heating power (6)	kW	5,0	20,7	26,1
		Absorbed power (2)	kW	0,73	3,66	5,07
		COP (3)	W/W	6,74	5,32	4,77
		SCOP average climate, 30-35ºC (4)	kWh/kWh		6,5	
		ηs,h average climate, 30-35ºC (5)	%		254,1%	
TECHNICAL SPECIFICATIONS						
Power supply					400 V / III / 50 Hz with neutral	
Refrigeration circuit		Refrigerant fluid / GWP	kg CO_2		R290/3	
		Refrigerant charge	kg		0,68	
		Compressor type			Hermetic Scroll Inverter	
		No. of refrig. circuits / compressors			1/1	
		No. power stages			20-100%	
Hydraulic circuit evaporator side	Heat pump equipment Cooling mode	Indoor water flow rate	m^3/h	0,73	2,92	3,75
		Nº and type of exchanger			1 x brazed stainless steel plate heat exchanger	
		Pressure drop	kPa	10,5	22,7	25,9
		Hydraulic connections Ø	inch		1''	
Hydraulic circuit condenser side		Indoor water flow rate	m^3/h	0,86	3,52	4,55
		Type of heat exchanger			1 x brazed stainless steel plate heat exchanger	
		Pressure drop	kPa	9,52	27,92	37,12
		Hydraulic connections Ø	inch		1''	
Hydraulic circuit evaporator side	Heat pump equipment Heat mode	Indoor water flow rate	m^3/h	1,23	4,92	6,10
		Nº and type of exchanger			1 x brazed stainless steel plate heat exchanger	
		Pressure drop	kPa	8,10	49,59	73,17
		Hydraulic connections Ø	inch		1''	
Hydraulic circuit condenser side		Indoor water flow rate	m^3/h	0,86	3,56	4,49
		Type of heat exchanger			1 x brazed stainless steel plate heat exchanger	
		Pressure drop	kPa	6,77	27,87	40,65
		Hydraulic connections Ø	inch		1''	
Equipment sound pressure (Lp 10) (7)			dB (A)	37,8	39,9	40,7
Weight			kg		299	

(1) Nominal cooling capacity for an evaporator inlet/outlet temperature of 12/7ºC and a condenser inlet/outlet temperature of 30/35ºC. Capacities calculated with a fouling factor in the plate heat exchanger of 0.43·10E-4 ($m^2 \cdot K / W$).
(2) Total power absorbed by compressors.
(3) EER and COP calculated according to EN 14511:2022 standard.
(4) Seasonal efficiencies calculated in accordance with EN 14825:2022. For heating, the seasonal coefficient of performance (SCOP) and seasonal space heating energy efficiency (ηs,h) are calculated for low-temperature applications and a medium climate.
(5) ηs,c values in compliance with the Ecodesign Regulation EU 2016/2281 for Comfort applications. ηs,h values conform to ecodesign according to Regulation EU 813/2013 for heat pump applications.
(6) Nominal heating capacity for a condenser inlet/outlet temperature of 30/35ºC and an evaporator inlet/outlet temperature of 10/7ºC. Capacities calculated with a fouling factor in the plate heat exchanger of 0.43·10E-4 ($m^2 \cdot K / W$).
(7) Sound pressure level in dB(A) in free field, at 10 m distance from the source, and directivity 1.

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energy efficiency and decarbonization

Energy Efficiency

Compact Full-Inverter units equipped with hermetic Scroll inverter compressors and high efficiency heat exchangers that ensure very high seasonal performance (SEER/SCOP).

Robust and reliable design for indoor installation integrates leak detection and ATEX centrifugal extraction fan for maximum safety in technical rooms.

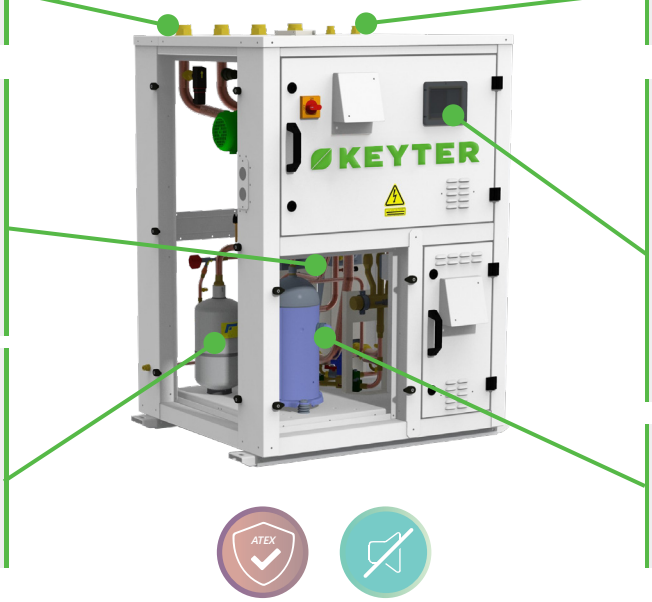
Inverter

Hydraulic connections for main circuits.

Welded stainless steel AISI 316L plate heat exchangers.

Optimized to:
- maximize energy efficiency.
- minimize pressure losses.

Fully panelized equipment as standard. Optional 50 mm thick rock wool sandwich panel available.



Partial recovery hydraulic connections.

- Electrical panel in a sealed compartment separate from the refrigeration circuit.
- Variable frequency drive panel.
- SIEMENS electronic control programmable AQUAMATIX and CLIMATIX HMI terminal.

Refrigeration circuit with inverter scroll compressor and electronic expansion valve.

Decarbonization

Production of high-temperature water year-round for boiler replacement and reduction of carbon footprint.

HT

Equipment at 4350 RPM

Heating mode:

KZVB 1015 at 4350 rpm

