KEYTER



nemesis

Modular air-to-water chillers

101-1664 kW (up to 8 modules)

Multi-Scroll · EC · 50 Hz 60 Hz · heat recovery

modular

Version designed for modular installation with Victaulic pipe connections for easy and quick interconnection.

Up to 8 modules ->101-1664 kW



Adaptation and Environment

- Modular chillers to facilitate installation adaptation, allowing module access through doors and elevators.
- Series condensing pressure control for year-round operation.
- Adaptability to the installation with a wide range of models.
- Maximum accessibility and easy maintenance through removable panels.

Energy Efficiency

- High energy efficiency at partial and full load, reducing operating costs.
- Tandem multiscroll for improved seasonal energy efficiency.
- Electronic fans and electronic expansion valve for minimal energy consumption.
- Units with a hydraulic group can incorporate high-performance electronic pumps.

Codification:

KWS | | **M N S3C**

Series · Size · Power

Operating mode
M - Version Modular
U - Version Single

Version - Compressor Type
N - Standard scroll compressor

Hydraulic version
S - Standard equipment
P - Version with hydraulic group
H - Version with hydraulic group and buffer tank (Only U version)

Power supply
3 - 400V/ III /50Hz without neutral (standard)

Refrigerant
C - R454B / **W** - R410A

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range specification

General characteristics

			SINGLE	MODULAR
Refrigerant	R454B		✓	✓
	Equipment with refrigerant charge		✓	✓
	R452B or R410A refrigerants		●	●
	Leak detection		●	●
Bodywork	Self-supporting bodywork/cabinet made of galvanised steel with oven cured polyester paint treatment		✓	✓
	Customized color to suit the needs of the installation		●	●
	Non-paneled enclosure		✓	✓
	Perimeter fencing (1)		●	●
	Anti-vibration supplements		●	●
Compressors	Multiscroll technology in tandem		✓	✓
	Compressor anti-vibration mounts		✓	✓
	Soft starter		●	●
	Acoustic insulation jacket		●	●
	Original high-performance acoustic insulation jacket from the manufacturer		●	●
Expansion valves	Electronic expansion valves		✓	✓
	Thermostatic expansion valves		●	●

Fans

Outdoor fans	Axial fans with AC technology and inverter (only available for 11xx models)		✓	✓
	Condensation pressure control		✓	✓
	Axial fans with EC technology (only available for 11xx models)		●	●
	High-capacity EC axial fans	Models 11xx	●	●
		Model 1240	✓	✓
	Curved external nozzles (only available with high-capacity EC fans)	Models 11xx	●	●
		Model 1240	✓	✓
	Axitop diffusers for axial fans (only available with EC fans)		●	●
	EC plug-fan radial fans		●	●

Heat exchangers

Coils	Cu tube and Al fin coils		✓	✓
	Al / Al microchannel batteries		●	●
	Cu tube bundle / polyurethane pre-lacquered Al fins		●	●
	ALUCOAST: high-strength Cu tubes / Al fins		●	●
	BLYGOLD: Cu tubes / Al fins with Blygold coating		●	●
	COPPERFIN: Cu tubes / Cu fins		●	●
Heat exchangers	Refrigerant-water heat exchanger, AISI 316L stainless steel plates, copper-welded, and thermally insulated		✓	✓
	Stainless steel heat exchanger SS AISI 304 / SS AISI 316 / Sealix		●	●

Energy (2)

Energy recovery	Partial or total recovery of condensation energy for DHW (domestic hot water)		●	-
	Pump in the condensation heat recovery circuit		●	-
	Electric anti-icing heater in the plate heat exchanger for domestic hot water (DHW) recovery		●	-

✓ Included as standard
● Optional
- Not applicable

(1) Option also available with insulation.
(2) Some options may require changes to the equipment dimensions; please consult us.

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range specification

KEYTER

Hydraulic (2)

		SINGLE	MODULAR
Pumps (version P/H)	Single pump, normal available pressure (7-12 mH_2O)	✓	-
	Single pump with high pressure available (15-20 mH_2O)	●	-
	Single pump, very high available pressure (25-30 mH_2O)	●	-
	Pump with variable speed drive	●	-
	Backup pump (standard pressure, high pressure, and very high pressure available)	●	-
	Electronic pump	●	-
Hydraulic components	Low temperature kit for operation with water outlet temperature < 0 ºC	●	●
	Low outdoor temperature kit	●	●
	Victaulic union adapter for hydraulic interconnection of modules	-	●
	Water filter	●	●
	Installation of pressure gauges at the inlet and outlet of the equipment for S version	●	●
	Independent module with 200 liters / 375 liters / 725 liters + buffer tank available Electrical resistances	●	-

Installation

Protection grilles	Coil protection grille	●	●
Insulation	Thermal insulation in all cold metal lines (refrigerant or water)	●	●
Power supply	400 V / III ph / 50 Hz without neutral	✓	✓
	400 V / III ph / 60 Hz	●	●
	Other electrical voltages (see different options available)	●	●
Packaging	Packaging for maritime transport	●	●

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	✓	✓
Defrosting	Defrosting by cycle reversal using a 4-way valve	✓	✓
Additional control and safety components	Main switch in electrical panel	✓	✓
	Magneto-thermal protections for compressors, fans and pumps	✓	✓
	Differential switches	●	●
	Low pressure switch for pump protection	●	●
	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-freeze protections for both water and refrigerant	✓	✓
	Energy meter	●	●
Electrical panel	Fully wired electrical panel, with IP54 protection	✓	✓
	Forced ventilation of the electrical panel	✓	✓
	Design of electrical switchgear for high temperatures	✓	✓
	Tropicalised electrical panel	●	●
	Socket for common use	●	●
	Antifreeze electrical resistor in electrical panel for low outdoor temperatures	●	●

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R454B technical data

R454B

KWS model			1100	1120	1150	1190	1240
COOLING-ONLY VERSION (R)							
Cooling	Nominal cooling capacity (1)	kW	98,2	107,9	131,6	164,6	201,6
		TR	28,0	31,0	37,5	47,0	57,5
		kBTU/h	336	372	450	564	690
	Absorbed power (2)	kW	30,6	34,3	45,0	52,7	70,6
	EER (3)	kW/kW	3,21	3,15	2,92	3,12	2,86
		BTU/(h*W)	10,94	10,73	9,98	10,67	9,75
	SEER (4)	kWh/kWh	4,4	4,4	4,4	4,4	4,4
	ηs,c (5)	%	175,0%	172,9%	172,9%	171,8%	171,7%
TECHNICAL SPECIFICATIONS							
Power supply			400V / III / 50Hz without neutral				
Refrigeration circuit	Refrigerant fluid / GWP	kg CO_2	R454B / 466				
	No. of refrig. circuits / compressors		1/2	1/2	1/2	1/2	1/2
	No. power stages		2	2	2	2	2
Hydraulic circuit	Indoor water flow rate	m^3/h	16,9	18,6	22,7	28,3	34,7
	Type of heat exchanger		Stainless steel plate heat exchanger				
	Ø MODULAR hydraulic connections (6)		VICTAULIC 5"	VICTAULIC 5"	VICTAULIC 5"	VICTAULIC 6"	VICTAULIC 6"
	Ø SINGLE hydraulic connections		VICTAULIC 2 1/2"	VICTAULIC 2 1/2"	VICTAULIC 3"	VICTAULIC 3"	VICTAULIC 4"
Outdoor fan	Outdoor air flow rate	m^3/h	40500	40500	40500	40500	49000
	Number of fans		2	2	2	2	2
	Ø and Type of fan	mm	800-6 AC VFD				800 Axial EC HP
Sound pressure level of the equipment (Lp10) (7)		dB(A)	52	54	54	60	59
Weights (S version)	Empty weight	kg	1134	1181	1240	1347	1376
	In-service weight	kg	1160	1207	1267	1373	1432

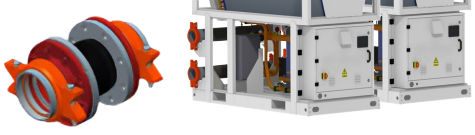
(1) Nominal cooling capacity for entering/leaving water temperature of 12/7ºC and outdoor air temperature of 35ºC. Capacities calculated with a fouling factor in the plate heat exchanger of 0.43·10E-4 ($m^2 \cdot K / W$).
(2) Nominal power input absorbed by compressors and outdoor fans.
(3) EER and COP calculated in accordance with EN 14511:2018.
(4) Seasonal efficiencies calculated in accordance with EN 14825:2018. In heating mode, seasonal coefficient of performance (SCOP) and seasonal space heating energy efficiency (ηs,h) calculated for low-temperature applications and average climate.
(5) ηs,c values in compliance with Ecodesign Regulation (EU) 2016/2281 for Comfort applications. ηs,h values compliant with Ecodesign Regulation (EU) 813/2013 for heat pump applications.
(6) The header diameter may vary depending on the number of units supplied.
(7) Sound pressure level in dB(A) in free field conditions, at 10 m distance from the source and directivity factor 1.

modular version

Modular assembly with easy and quick interconnection via Victaulic coupling, making it an effective and straightforward solution for installations requiring compact, lightweight, easily transportable equipment with high power.

Additionally, they provide a significant solution for continuous operation without interruption, thanks to their independent electrical connections. If one of the modules fails, it can be easily repaired without halting the operation of the entire modular installation.

Wide range of capacities due to its modulation, with each module reaching a cooling capacity of 200 kW and the possibility of up to 8 modules. For 2 or more NEMESIS modules, an optional electronic board is required for unit rotation, allowing operation with up to 8 modules.

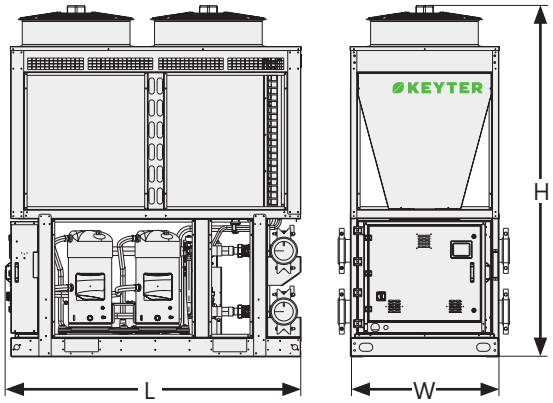


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dimensions

MODULAR VERSION:

Models KWS 1xxx

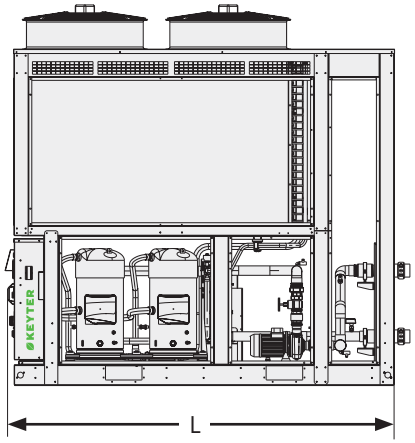


Dimensions KWS MODULAR (S version) (mm)		
	Models 1100-1190	**Models 1240**
L	2190	2190
A	1100	1100
H	2600	2650

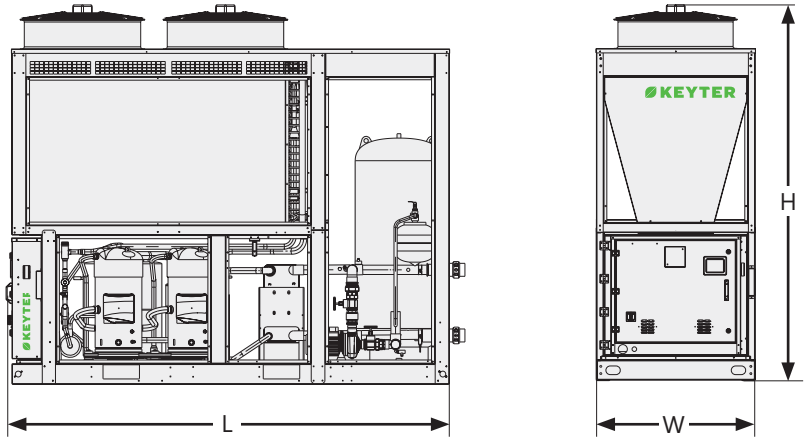
In the modular version, if a hydraulic group is required, a separate hydraulic module is necessary.

UNITARY VERSION (SINGLE):

Version S / P (modelos 1100-1240) / Version B (modelos 1100-1150)



Version H (models 1100-1240)



Dimensions KWS SINGLE (mm)									
	Models 1100-1150			**Models 1190**			**Models 1240**		
	Versions S/P (*)	**Versions B (**)**	**Versions H**	**Versions S**	**Versions P (***)**	**Versions H**	**Versions S**	**Versions P (***)**	**Versions H**
L	2190	2640	3830	2190	2640	3830	2190	2640	3830
A	1100	1100	1100	1100	1100	1100	1100	1100	1100
H	2600	2600	2600	2600	2600	2600	2650	2650	2650

(*) Version P with standard pressure pump

(**) Version P with high-pressure and optional pumps

(***) Version P with all pumps

Some options require changes to the equipment dimensions. To know the dimensions of each model with the different available options, please contact us.