WWM

Water cooled heat pump reversible water side

Cooling capacity 96 kW
Heating capacity 110 kW

- Compact module
- Single or dual refrigerant circuit
- Reliable and modular
- Max 2 levels of stackable units
- Up to 36 connectable units (see the modularity options)
- Easy installation and maintenance

DESCRIPTION

Water-water offering chilled/hot water, designed to mit air conditioning needs in residential/commercial complexes or industrial applications.
These are indoor units with hermetic scroll compressors, system side heat exchanger and plate source.
The base, the structure and the panels are made of galvanized steel treated with polyester paint RAL 9003.

FEATURES

The precise choice of components, the special configuration, and the possibility to connect several independent modules and manage them as if they were a single unit are all aspects that guarantee maximum output at full load, whilst ensuring continuous adaptation to the real service needs.
Bus Bar, to facilitate the electrical connections.

Modularity

Thanks to its modular construction, the installation can be adapted to suit specific system development needs whilst guaranteeing improved safety and reliability.
As a result, the cooling capacity can be easily increased over time, at a limited cost.
WWM consists of independent 96 kW modules that can be linked together to reach a capacity of 3456 kW.
With WWM, you can combine up to 36 units designed to minimise the overall dimensions.
The modules are easy to install and link together from the hydronic point of view, thanks to the connections with grooved joints.

Refrigerant circuit

The refrigerant circuit can easily be disconnected from the unit, maintaining all the functions of the hydronic circuit to ensure correct system operation.

Hydraulic components

WWM version PN10 has the **switch**; WWM version PN21 mounts the **transmitter**.
Fitted as standard, with **butterfly shut-off valves** on both hydronic lines for disconnecting the circuit when maintenance needs to be carried out.
In the event of a variable flow rate, the **motorised hydronic valves** can intercept one module or more in order to reduce the flow rate when there is a low thermal load level.

Very quiet

The WWM units stand out for their quiet operation.
Accurate unit sound-proofing, using good-quality sound absorbent material, means all the units work at low noise levels.

Units in parallel

The MULTICHILLER_EVO (accessory) allows up to 9 units to be managed in parallel mode.
This accessory allow to maximise the total efficency to the system under to work load, external air temperature conditions and water produced.
Each unit has its own electrical panel, guaranteeing continuity even if one module malfunctions or goes into lockout.

CONTROL

Microprocessor adjustment, with keyboard and LCD display,for easy access on the unit is a menu available in several languages.
— The presence of a programmable timer allows functioning time periods and a possible second set-point to be set.
— The adjustment system includes the complete management of alarms and the alarm log.

ACCESSORIES

AER485P1: RS-485 interface for supervising systems with MODBUS protocol. 1 accessory is provided for each unit control board.
AERBACP: Ethernet communication interface for Bacnet/IP, Modbus TCP/IP, SNMP protocols. 1 accessory is provided for each unit control board.
AERNET: The device allows the control, the management and the remote monitoring of a Chiller with a PC, smartphone or tablet using Cloud connection. AERNET works as Master while every unit connected is configured as Slave (max. 6 control boards). Also, with a simple click is possible to save a log file with all the connected unit datas in the personal terminal for post analysis.
KWWM: Kit containing 4 caps with a diameter of 6" for the water manifolds.
MULTICHILLER-EVO: Control, switch-on and switch-off system of the single chillers where multiple units are installed in parallel (max. no. 9), always ensuring constant flow rate to the evaporators.
PR4: Remote panel with LCD display and touch keyboard that allows carrying out the basic controls, the programming of time ranges and the signalling of the alarms of a single unit.

The accessory PR4 should only be combined with the RS485 communication interface when the serial port is occupied by another device.

FACTORY FITTED ACCESSORIES

CRATE_WWMH-A: Special crate for transport

CRATE_WWM°: Special crate for transport
KITIDRO_WWM: Water filter with connection pipe (diameter 6") with drain tap and additional bulb well (diameter ½") available to the installer.
KREC_WWM: Cable entries box in order to facilitate the electrical installation.

ACCESSORIES COMPATIBILITY

Accessory	WWM05001H	WWM05001°	WWM05002H	WWM05002°
AER485P1	•	•	•	•
AERBACP	•	•	•	•
AERNET	•	•	•	•
KWWM	•	•	•	•
MULTICHILLER-EVO	•	•	•	•

For the control with MULTICHILLER EVO, nr.1 accessory AER485P1 is mandatory for every WWM of the system.

PR4

Accessory	WWM05001H	WWM05001°	WWM05002H	WWM05002°
PR4	•	•	•	•

Special crate for transport

Accessory	WWM05001H	WWM05001°	WWM05002H	WWM05002°
CRATE_WWMH-A	•	•	•	
CRATE_WWM°		•		•

CRATE_WWM°: 100 kg, CRATE_WWMH-A: 130 kg

Cable entries box

Accessory	WWM05001H	WWM05001°	WWM05002H	WWM05002°
KREC_WWM	•	•	•	•

Water filter

Accessory	WWM05001H	WWM05001°	WWM05002H	WWM05002°
KITIDRO_WWM	•	•	•	•

CONFIGURATOR

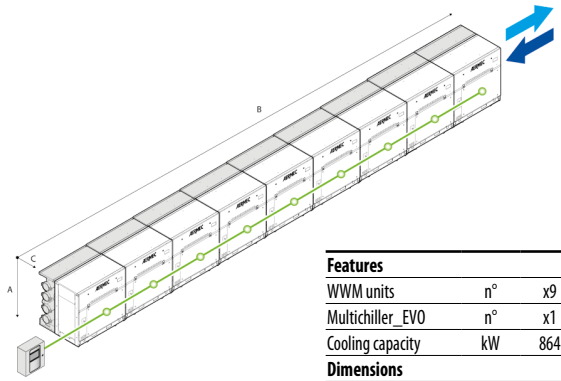
Field		Description
1,2,3		**WWM**
4,5,6,7		**Size** 0500
8		**Operating field (1)**
	°	Standard mechanic thermostatic valve
9		**Model**
	1	Single refrigerant circuit
	2	Double refrigerant circuit
10		**Hydraulic pressure rating**
	1	145 psi (PN10)
	3	300 psi (PN21)
11		**Hydraulic headers kit**
	H	6" Headers kit - PN21 standard carbon steel pipes declared in accordance with EN 10255
	°	No headers provided

Field		Description
12		**Power connection**
	B	With bus bars
	°	Without bus bars
13		**Power supply**
	°	400V ~ 3 50Hz with magnet circuit breakers
14		**Electrical panel SCCR**
	°	10 kA control panel
15		**Peak current reduction**
	R	With power factor device (2)
	°	Without power factor device
16		**Field for future development**
	°	-

(1) Water produced up to +4 °C
(2) Factory installed

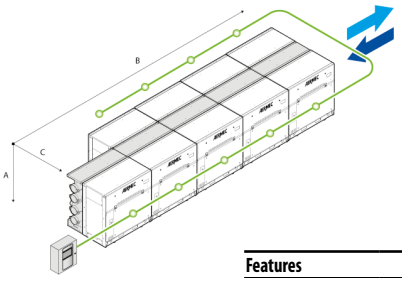
MODULARITY OPTIONS

CONFIGURATION 1: IN LINE



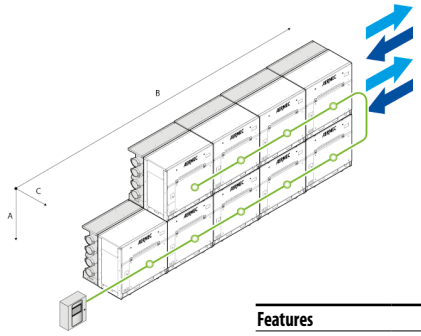
Features		
WWM units	n°	x9
Multichiller_EVO	n°	x1
Cooling capacity	kW	864
Dimensions		
A	mm	1300
B	mm	11970
C	mm	1150

CONFIGURATION 2: BACK TO BACK



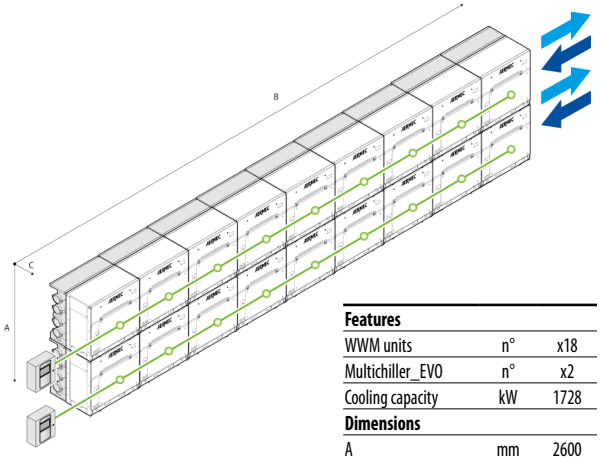
Features		
WWM units	n°	x9
Multichiller_EVO	n°	x1
Cooling capacity	kW	864
Dimensions		
A	mm	1300
B	mm	6650
C	mm	1850

CONFIGURATION 3.1: STACK IN LINE



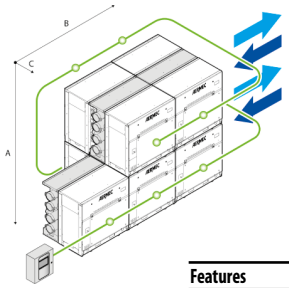
Features		
WWM units	n°	x9
Multichiller_EVO	n°	x1
Cooling capacity	kW	864
Dimensions		
A	mm	2600
B	mm	6650
C	mm	1150

CONFIGURATION 3.2: STACK IN LINE



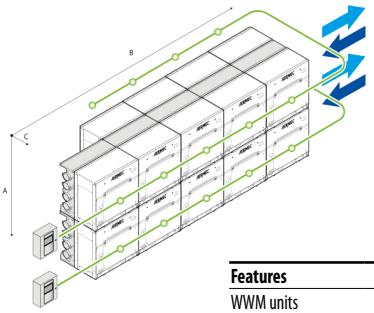
Features		
WWM units	n°	x18
Multichiller_EVO	n°	x2
Cooling capacity	kW	1728
Dimensions		
A	mm	2600
B	mm	11970
C	mm	1150

CONFIGURATION4.1: STACK IN LINE BACK TO BACK



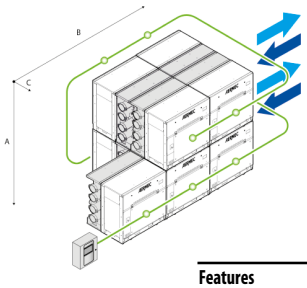
Features		
WWM units	n°	x9
Multichiller_EVO	n°	x1
Cooling capacity	kW	864
Dimensions		
A	mm	2600
B	mm	3990
C	mm	1850

CONFIGURATION 4.2: STACK IN LINE BACK TO BACK



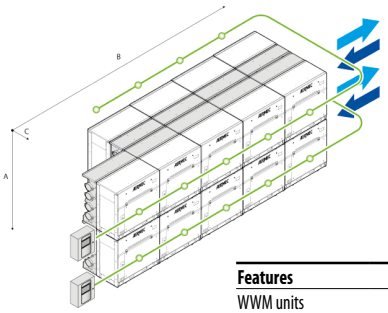
Features		
WWM units	n°	x18
Multichiller_EVO	n°	x2
Cooling capacity	kW	1728
Dimensions		
A	mm	2600
B	mm	6650
C	mm	1850

CONFIGURATION 5.1:
STACK IN LINE BACK TO BACK DOUBLE



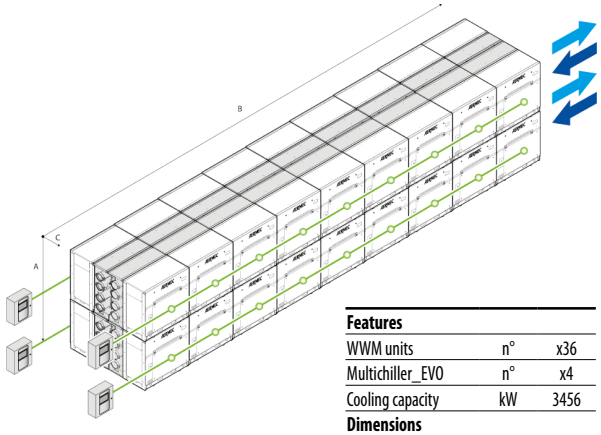
Features		
WWM units	n°	x9
Multichiller_EVO	n°	x1
Cooling capacity	kW	864
Dimensions		
A	mm	2600
B	mm	3990
C	mm	2300

CONFIGURATION 5.2:
STACK IN LINE BACK TO BACK DOUBLE



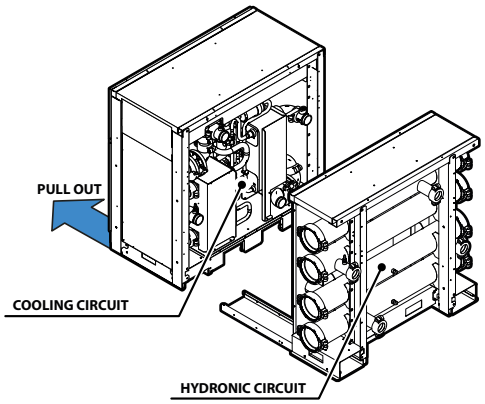
Features		
WWM units	n°	x18
Multichiller_EVO	n°	x2
Cooling capacity	kW	1728
Dimensions		
A	mm	2600
B	mm	6650
C	mm	2300

CONFIGURATION 5.3:
STACK IN LINE BACK TO BACK DOUBLE



Features		
WWM units	n°	x36
Multichiller_EVO	n°	x4
Cooling capacity	kW	3456
Dimensions		
A	mm	2600
B	mm	11970
C	mm	2300

EASY MAINTENANCE



PERFORMANCE SPECIFICATIONS

WWM - Single refrigerant circuit "1" - Double refrigerant circuit "2"

		WWM05001°	WWM05002°
Cooling performance 12 °C / 7 °C (1)			
Cooling capacity	kW	96,0	95,2
Input power	kW	20,3	20,0
Cooling total input current	A	40,0	40,0
EER	W/W	4,74	4,76
Water flow rate source side	l/h	20046	19895
Pressure drop source side	kPa	34	23
Water flow rate system side	l/h	16528	16384
Pressure drop system side	kPa	24	17
Heating performance 40 °C / 45 °C (2)			
Heating capacity	kW	109,2	110,0
Input power	kW	24,8	24,1
Heating total input current	A	48,0	48,0
COP	W/W	4,41	4,57
Water flow rate system side	l/h	18943	19092
Pressure drop system side	kPa	30	21
Water flow rate source side	l/h	24430	24809
Pressure drop source side	kPa	52	39

(1) Date 14511:2022; Water user side 12 °C / 7 °C; Water source side 30 °C / 35 °C
(2) Date 14511:2022; Water user side 40 °C / 45 °C; Water source side 10 °C / 7 °C

ENERGY DATA

		WWM05001°	WWM05002°
SEER - 12/7 (EN14825:2018) with standard fans (1)			
SEER	W/W	6,12	5,37
Seasonal efficiency	%	241,8%	211,8%
UE 813/2013 performance in average ambient conditions (average) - 55 °C - Pdesignh ≤ 400 kW (2)			
Pdesignh	kW	138	140
SCOP	W/W	4,83	4,68
ηsh	%	185.0%	179.0%

(1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.
(2) Efficiencies for average temperature applications (55 °C)

ELECTRIC DATA

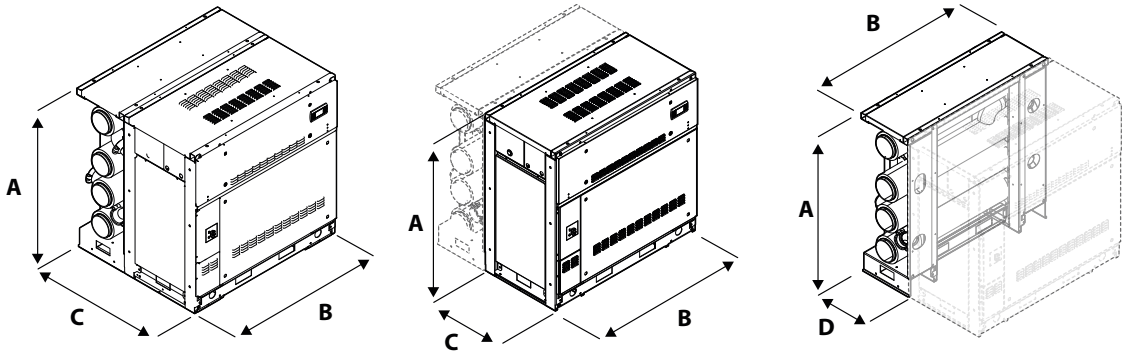
		WWM05001°	WWM05002°
Electric data			
Maximum current (FLA)	A	62,0	62,0
Peak current (LRA)	A	148,9	148,9

GENERAL TECHNICAL DATA

		WWM05001°	WWM05002°
Compressor			
Type	type	Scroll	Scroll
Number	no.	2	2
Circuits	no.	1	2
Refrigerant	type	R410A	R410A
Source side heat exchanger			
Type	type	Brazed plate	Brazed plate
Number	no.	1	1
Connections (in/out)	Type	Grooved joints	Grooved joints
Sizes (in/out)	Ø	6"	6"
System side heat exchanger			
Type	type	Brazed plate	Brazed plate
Number	no.	1	1
Connections (in/out)	Type	Grooved joints	Grooved joints
Sizes (in/out)	Ø	6"	6"
Sound data calculated in cooling mode (1)			
Sound power level	dB(A)	81,0	81,0
Sound pressure level (10 m)	dB(A)	49,5	49,5

(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

DIMENSIONS



		WWM05001°	WWM05001H	WWM05002°	WWM05002H
Dimensions and weights					
A	mm	1300	1300	1300	1300
B	mm	1330	1330	1330	1330
C	mm	775	1150	775	1150
D	mm	-	452	-	452
Weights					
Weight empty + packaging	kg	700	930	700	930
Weight functioning	kg	711	1042	711	1042
Empty weight + packaging (with bus bars)	kg	736	966	736	966
Weight functioning (with bus bars)	kg	747	1078	747	1078
Hydraulic headers kit					
Weight empty + packaging	kg	-	230	-	230
Weight functioning	kg	-	330	-	330

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