

UFB

Handling units Floating floor installation



- Low electrical consumption
- Fully silent operation
- Easy maintenance.



DESCRIPTION

Air handling terminal for installations in floating floor, also called floating or raised floor. Is a unit consisting of a fan unit with brushless inverter motor, enclosed in a metal structure with mixing chamber equipped with motor-driven damper, filter and electronic card. The use of these units is expected within a floating floor, often used in offices or equipment rooms for data centre and similar. In these systems there is often an air handling unit that cools the environment by entering the treated air in the underfloor and the buster units combine to improve the distribution in the rooms and, depending on the version, perform localized after-treatment. Using the two ambient air temperature sensors (return air) and the underfloor air temperature sensors, the electronic regulation through the positioning of the motor-driven damper, performs a mix to reach the temperature setpoint set with the local user interface (type VMF-E4) or by the supervision system.

VERSIONS

UFB20: booster unit for the distribution of the UTA treated air, the mix with room air for the room temperature control.

UFB20W: booster unit for UTA treated air distribution, the mix with the ambient air and any post-treatment using a water coil (heating, cooling, dehumidification) for the control of the room temperature.

UFB20HE: booster unit for UTA treated air distribution, the mix with the ambient air and any post-treatment using electric heating coil (only in heating) for the control of the room temperature.

FEATURES

- Unit is easy to install, as completely compatible with squares 600x600 mm used in these applications. Using the normal support systems of such floating floors allow to fully replace a square, obtaining a perfect joint, in line with the rest of the floor, with no "step".
- Centrifugal fan with Brushless inverter with continuous speed variation, 0-100%, which allows the exact adjustment to the requests of the internal environment without temperature fluctuations. Also allows an electric savings and better acoustic comfort.
- Compact dimensions, thickness 129 mm
- For a better air quality, the UFB are equipped with electro-statically pre-loaded filters.

ACCESSORIES ONLY AVAILABLE FOR UFB20W

USC4UFB: Condensate drainage device for use when natural run-off is not possible.

VCF-U: Kit consisting of motor-driven 3-way valve with insulating shell, insulated copper couplings and pipes. Versions with 230V~50Hz power supply.

VMF-E3: Wall mounted user interface, to be combined with accessories VMF-E19, VMF-E19I, VMF-E0X with grids GLF_N/M and GLL_N, can be controlled with VMF-IR control.

VMF-E4DX: Wall-mounted user interface. Grey front panel PANTONE 425C (METAL).

VMF-E4X: Wall-mounted user interface. Light grey front panel PANTONE COOL GRAY 1C.

For more information about the VMF system, refer to the specific documentation available on the site www.aermec.com

TECHNICAL DATA

2-pipe

Pipe		UFB20W		
		1	2	3
		L	M	H
Heating performance 70 °C / 60 °C (1)				
Heating capacity	kW	1,91	2,53	2,96
Water flow rate system side	l/h	167	222	260
Pressure drop system side	kPa	3	4	6
Heating performance 50 °C (2)				
Heating capacity	kW	1,13	1,51	1,77
Water flow rate system side	l/h	144	210	258
Pressure drop system side	kPa		5	6
Cooling performance 7 °C / 12 °C (3)				
Cooling capacity	kW	0,84	1,22	1,50
Sensible cooling capacity	kW	0,67	1,00	1,24
Water flow rate system side	l/h	144	210	258
Pressure drop system side	kPa	3	5	6
Fan				
Type	type	Centrifugal		
Fan motor	type	Inverter		
Number	no.	1		
Air flow rate	m³/h	140	220	290
Input power	W	5	8	12
Electrical wiring		V1	V2	V3
Diameter hydraulic fittings				
Main coil	Ø	1/2"		
Power supply				
Power supply		230V~50Hz		

(1) Room air temperature 20 °C d.b.; Water (in/out) 70 °C/60 °C

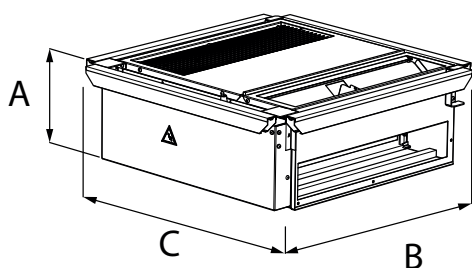
(2) Room air 20 °C d.b.; Water (in) 50 °C; Water flow rate as in cooling mode

(3) Room air temperature 27 °C d.b./19 °C w.b.; Water (in/out) 7 °C/12 °C; EUROVENT

2-pipe

		UFB20HE			UFB20		
		1	2	3	1	2	3
		L	M	H	L	M	H
Fan							
Type	type	Centrifugal			Centrifugal		
Fan motor	type	-			-		
Number	no.	1			1		
Air flow rate	m³/h	140	220	290	140	220	290
Input power	W	5	8	12	5	8	12
Electrical wiring		V1	V2	V3	V1	V2	V3
Diameter hydraulic fittings							
Main coil	Ø	1/2"			1/2"		
Electric heater							
Input power	W	500			-		
Maximum current	A	0,20			-		
Power supply							
Power supply		230V~50Hz			230V~50Hz		

DIMENSIONS AND WEIGHTS



UFB20W			
Dimensions and weights			
A	mm	219	
B	mm	571	
C	mm	572	
Empty weight	kg	17	
		UFB20HE	UFB20
Dimensions and weights			
A	mm	219	219
B	mm	571	571
C	mm	572	572
Empty weight	kg	17	17

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Ventilcassaforma

Template for recessed installation of fancoils in the wall



DESCRIPTION

Ventilcassaforma has been designed to respond to the needs to rationalise spaces to suit modern interior architecture. Ventilcassaforma is a galvanised template that makes it possible to make a space to house fan coils in the wall. The template will make masonry work easier during the construction of a niche where the fan coil will be installed. When the work is finished, the fan coil will be completely hidden from view.

VERSIONS

CHU-L for fan coils in the Omnia UL-P series

CHF for fan coils in the FCX-P, FCX-PV and FCXI-P series in 2 pipe systems, 2 pipe systems with resistance and with 4 pipe systems

FEATURES

Ventilcassaforma is made up of the following parts to be assembled:

- Recess box;
- Closure panel;
- Outer frame with deflector;
- Cover bases, cross-members, covers.

All parts are made of galvanised steel and treated with epoxy-polyester resin-based thermo-hardening base paint in grey with rough glazed finish in order to hold the paint. The final colour can be chosen by the client.

Closure Panel

Made of galvanised steel, this is the box housing the fan coil. The box is recessed in the wall during building work making the construction of a niche where the fan coils will be installed much easier. Holes for fitting the fan coil and preparing an electric plant with a socket and GEWISS fuse holder are already present on the back panel. The box can accommodate the hydraulic system pipes and condensation drain pipes thanks to the presence of several easily-removable elements on the sides and base.

Closure Panel

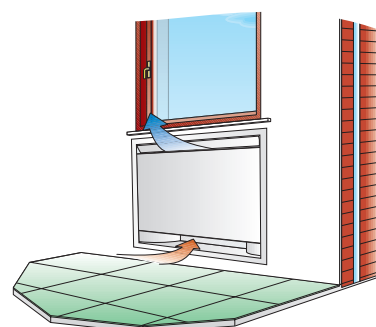
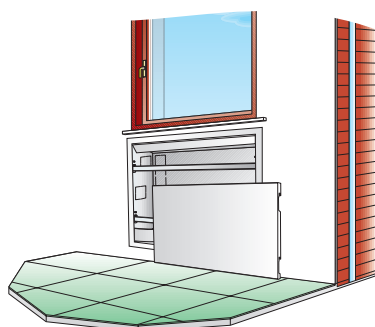
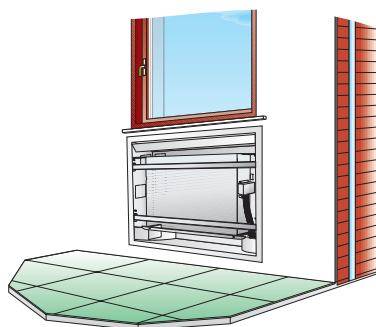
Made of steel pre-treated with base paint and no slots present. Easily removable for servicing and cleaning the air filter.

Outer Frame

The perimeter of the box has an outer frame made of pre-treated steel making it possible to cover the perimeter part of the wall and hide any imperfections that overtime show possible crumbling on the edge of the plaster work.

Deflector

Manual, with which the flow of air can be directed into the room. The deflector is incorporated in the frame.



VENTILCASSAFORMA - COMBINATION

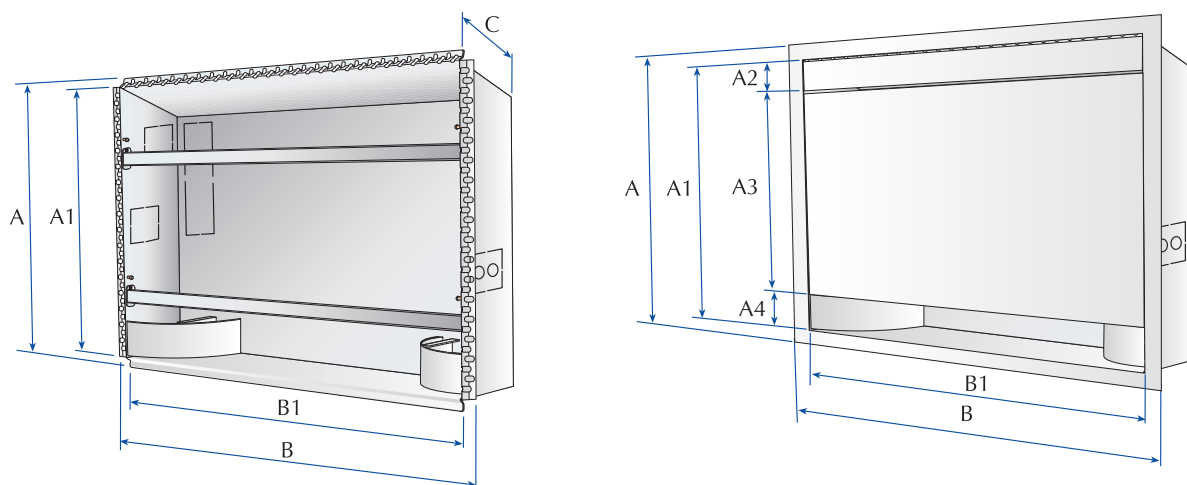
Ventilcassaforma CHU L + Omnia UL combination				
Ventilcassaforma	CHU 12 L	CHU 17 L	CHU 27 L	CHU 37 L
Fan coil	Omnia UL 11 P	Omnia UL 16 P	Omnia UL 26 P	Omnia UL 36 P

Combination Ventilcassaforma CHF - FCX P / FCX PV / FCXI P / FCZ P / FCZI P					
Ventilcassaforma	CHF 17	CHF 22	CHF 32	CHF 42	CHF 62
Fan coil		FCX 22 P	FCX 32 P - 36 P	FCX 42 P - 50 P - 56 P	FCX 62 P - 82 P - 102 P
		FCX 22 PV	FCX 32 PV - 36 PV	FCX 42 PV - 50 PV - 56 PV	FCX 62 PV - 82 PV - 102 PV
	FCX 17 P	FCX 24 P	FCX 34 P	FCX 44 P - 54 P	FCX 64 P - 84 P
	FCX 17 PV	FCX 24 PV	FCX 34 PV	FCX 44 PV - 54 PV	FCX 64 PV - 84 PV
	FCZ 1 P-PPC *	FCXI 20/24 P	FCXI 30/34/36 P	FCXI 40/44 P - 50/54/56 P	FCXI 80/84 P
		FCZ 2 P-PPC-PO *	FCZ 3 P-PPC-PO *	FCZ 4/5 P-PPC-PO *	FCZ 6/7/8/9/10 P-PPC-PO *
		FCZI 2 P *	FCZI 3 P *	FCZI 4/5 P *	FCZI 7/9 P *

The fan coils FCX-P, FCX-PV and FCXI-P can be inserted into 2 pipe systems, 2 pipe systems with resistance and 4 pipe systems

* For fan coils FCZ and FCZI, with 1, 2, 3, 4 means all sizes available es. with "1" means 100/101/102/150

DIMENSIONS



Size		CHU12 L	CHU17 L	CHU27 L	CHU37 L	CHF17	CHF22	CHF32	CHF42	CHF62
A	mm	691	691	691	691	728	728	728	728	833
A1	mm	648	648	648	648	684	684	684	684	789
B	mm	692	802	1032	1252	732	842	1073	1293	1414
B1	mm	644	754	984	1204	684	794	1025	1245	1366
C	mm	186	186	186	186	240	240	240	240	240

Outer frame and closure panel

Size		CHU12 L	CHU17 L	CHU27 L	CHU37 L	CHF17	CHF22	CHF32	CHF42	CHF62
A	mm	724	724	724	724	760	760	760	760	865
A1	mm	634	634	634	634	680	680	680	680	785
A2	mm	70	70	70	70	93	93	93	93	93
A3	mm	494	494	494	494	493	493	493	493	598
A4	mm	-	-	-	-	94	94	94	94	94
B	mm	713	823	1053	1273	753	863	1094	1314	1435
B1	mm	633	743	973	1193	673	783	1014	1234	1355

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P 10-932

Precision Air Conditioners X: air or water-condensed direct expansion W: chilled water

Cooling capacity 7 ÷ 187 kW

- Strict control of room temperature and humidity.
- A high ratio of cooling power and footprint, which facilitates the design of the rooms to be air-conditioned.
- High energy efficiency values, resulting in lower CO₂ emissions in the environment and in particularly low operating costs.



Down flow



Up flow



Last generation control panel

P series precision air conditioning units have design and operational features suitable for rooms where sensible nature heat loads are prevailing.

CONFIGURATIONS

PXO: upwards flow air conditioners with direct expansion with air or water condensation.

PWO: upwards flow air conditioners with chilled water.

PXU: downwards flow air conditioners with direct expansion with air or water condensation.

PWU: downwards airflow air conditioners with chilled water.

FEATURES

The P series precision air conditioning units are designed for precision air conditioning of technological rooms characterized by elevated thermal loads to be eliminated, such as computing centres and other applications where high performances and maximum reliability are required.

Precision Air Conditioning units can be customized as per necessities, in order to offer a complete control of temperature, of humidity and of air quality through accessories such as humidifier, after-heating and high efficiency filters.

In order to guarantee the maximum reliability and flexibility, there are available both solutions with double circuit and solution with different cooling mediums:

TWO SOURCES: The Twin Sources system ensures cooling continuity in case of unavailability, for whatever reason, of the primary source: overhead, maintenance, night or seasonal stop or stop for any emergency.

This system includes the assembly inside the air conditioner of a second cooling source, complete with its regulation and completely independent

from the primary one. They only share the aluminium finned pack, allowing both a high thermal exchange efficiency.

FREE COOLING: This system employs external air, a renewable energy source, for cooling the Free Cooling water circuit by an external dry cooler. The Free Cooling circuit works in place of, or along, the mechanical cooling with direct expansion.

These coolers are designed and optimized for working with refrigerant R410A, which is not dangerous for the ozone.

STRUCTURE

The structure consists of a steel frame painted with dark grey epoxy powders (RAL7024) guaranteeing a durable finish. Acoustic insulation self-extinguishing panels covered with anti-friction film.

COILS

Large surface batteries, positioned in such a way as to optimise airflow and heat transfer, made of refrigerating quality copper tubes with aluminium louvers mechanically merged, fitted with motorised 3way valve (2way is also available in the selection process).

COMPRESSORS

High efficiency scroll compressor with low power consumption. In dual circuit configuration you can control the power output thanks to electronic adjustment that automatically manages the compressors activation depending on the load request.

FANS

Centrifugal fans with backward curved blades (plug fans) with EC motor directly coupled to the electronic control to minimize power consumption and noise emissions.

FILTERS

Corrugated baffle filters, not regenerable, self-extinguishing, G4 efficiency class (according to EN 779).
Differential pressure switch (STANDARD) for dirty filter alarm.

ELECTRONIC REGULATION

Thanks to the control via Modbus® Master protocol all major components of the units have a continuous supervision, with over 50 different variables that provide real-time monitoring of all operating cycles.

ACCESSORIES

DIRECT EXPANSION

- DC brushless compressors with inverter control
- Electric power supply line for remote condenser
- Electric power supply line with speed adjustment for remote condenser
- Condenser adjustment with 0-10V signal for remote condenser with EC fans
- "LT Kit" for external air low temperature functioning with remote condenser
- Increased liquid receiver
- Non-return valves on the flow and liquid lines
- Water condenser
- Water condenser with valve for adjusting the condensation temperature
- "HT Kit" for functioning with high condensation temperatures

CHILLED WATER

- Two ways modulating valves
- Inlet and outlet water temperature probes
- "Power Valve" Kit

HEATING

- Low thermal inertia electric batteries with differentiated stages regulation
- Low thermal inertia electric batteries with modulating regulation (available on request on some models only)
- Water heating batteries with 2 or 3 ways modulating valve (available on request on some models only)

HUMIDIFICATION

- Room humidity probe
- Flow humidity probe

■ For further information, refer to the selection program.

Thanks to specific functions dedicated to energy saving and optimized management of all unit operating cycles, both with direct expansion and with chilled water.

Thanks to the integrated RS485 Modbus® board, and to an interface gateway BACnet, LonWorks and SNMP, a simple and fast interface to supervision systems and BMS (Building Management System) is possible.

View of all operating parameters in 8 languages.

MECHANICALS AND STRUCTURAL

- Immersed electrode humidifier
- Condensation drain pump
- Condensation and humidifier drain pump
- Flow overpressure dampers
- M5 (EU5) efficiency air filter on air supply
- Soundproofed duct piece on flow
- Flow plenum with adjustable grills.
- Height adjustable support for raised floor installation
- Grilled panels for front flow
- Closed panels for downwards air intake
- Panels with "sandwich" counter-panels (available on request on some models only)
- Panels with increased soundproof upholstery (available on request on some models only)

ELECTRICAL

- Alternative available voltages: 460V/3ph/60Hz - 380V/3ph/60Hz - 230V/3ph/60Hz
- Electric power supply line without neutral
- "Basic" version automatic transfer switch (ATS)
- "Advanced" version automatic transfer switch (ATS)

ADJUSTMENT

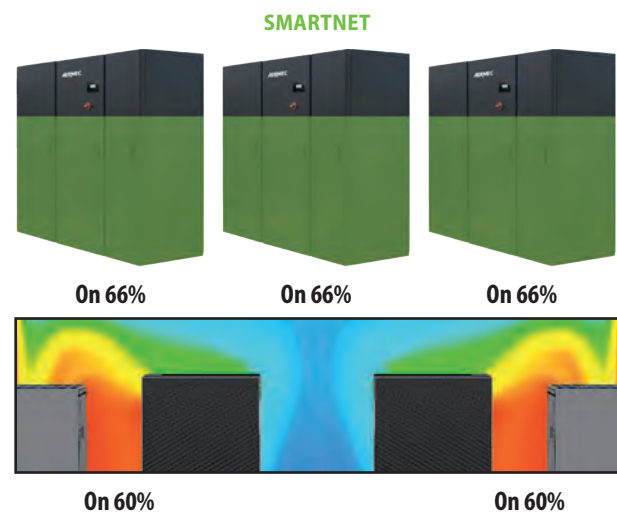
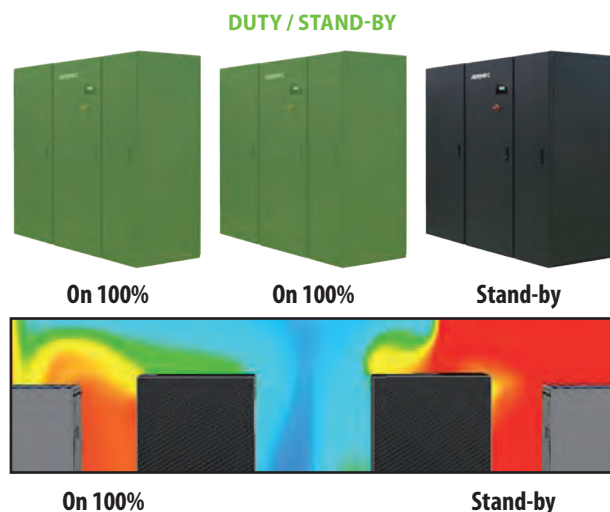
- Constant flow rate ventilation adjustment
- Constant pressure ventilation adjustment
- Local area network configuration and cable
- User terminal for remote installation
- Flooding detection system

SMARTNET

The innovative **SMARTNET** system revolutionises the local area network concept.

This system, using the modulation capabilities of its components, allows dividing the workload across all units in the local area network.

Compared to Duty Stand-by latent redundancy system (n+1 or n+n) where backup units were still waiting for the emergence of a problem, the **SMARTNET system allows maintaining the units connected on the network always active.**



TECHNICAL DATA

PXO: upwards airflow - direct expansion with air or water condensation

Sizes			71	141	211	251	301	302	361	422	461	512	662	852	932
Total cooling capacity	(1)	kW	7,8	14,9	21,3	26,8	33,6	30,9	37,8	43,7	48,1	54,2	67,3	90,1	93,3
Sensitive cooling capacity	(1)	kW	7,6	13,4	21,3	25,6	31,7	30,6	37,8	43,7	47,9	52,8	64,8	77,0	85,0
EER	(2)		3,71	3,37	3,15	3,18	3,08	3,2	3,30	3,27	3,43	3,25	3,13	3,33	3,53
Centrifugal		type	Plug fan EC												
Air flow rate		m ³ /h	2200	3200	7000	7000	8700	8700	14500	14500	14500	14500	17900	17900	20700
Sound data															
Sound Pressure	(3)	dB(A)	51	57	62	62	60	60	65	65	65	65	62	62	60
Possible configurations															
Free Cooling							•	•					•	•	
Two Sources					•		•	•					•	•	

PWO: upwards airflow - with chilled water

Sizes			10	20	30	50	80	110	160	220
Total cooling capacity	(1)	kW	10,0	18,0	32,4	43,6	66,8	80,2	121,9	160,3
Sensitive cooling capacity	(1)	kW	9,2	15,4	29,8	38,1	62,1	72,0	109,7	144,0
EER	(2)		34,42	28,52	22,83	21,48	23,95	24,29	23,62	24,29
Centrifugal		type	Plug fan EC							
Air flow rate		m ³ /h	2200	3200	7400	8200	15400	17000	26000	34000
Sound data										
Sound Pressure	(3)	dB(A)	51	57	63	59	66	62	64	65
Possible configurations										
Free Cooling						•		•	•	
Two Sources						•		•	•	

PXU: downwards airflow - direct expansion with air or water condensation

Sizes			71	141	211	251	301	302	361	422	461	512	662	852	932
Total cooling capacity	(1)	kW	7,7	14,5	20,8	25,3	31,2	30,6	36,6	42,7	46,9	51,6	67,7	87,3	94,2
Sensitive cooling capacity	(1)	kW	7,4	12,8	20,8	22,7	30,3	30,1	36,6	42,7	45,3	47,4	64,5	73,2	85,4
EER	(2)		3,69	3,36	3,12	3,06	3,13	3,2	3,24	3,22	3,37	3,14	3,25	3,29	3,59
Centrifugal		type	Plug fan EC												
Air flow rate		m ³ /h	2200	3200	7000	7000	8700	8700	14500	14500	14500	14500	17900	17900	20700
Sound data															
Sound Pressure	(3)	dB(A)	51	57	62	62	60	60	65	65	65	65	62	62	60
Possible configurations															
Free Cooling							•	•					•	•	
Two Sources					•		•	•					•	•	

PWU: downwards airflow - with chilled water

Sizes			10	20	30	50	80	110	160	220
Total cooling capacity	(1)	kW	10,2	18,1	32,4	43,6	67,4	93,4	142,1	186,9
Sensitive cooling capacity	(1)	kW	9,2	15,5	29,8	38,1	62,5	80,7	122,9	161,3
EER	(2)		34,42	29,24	22,83	21,48	24,16	24,02	23,33	24,02
Centrifugal		type	Plug fan EC							
Air flow rate		m ³ /h	2200	3200	7400	8200	15400	17000	26000	34000
Sound data										
Sound Pressure	(3)	dB(A)	51	57	63	59	66	62	64	65
Possible configurations										
Free Cooling						•		•	•	
Two Sources						•		•	•	

(1) Cooling: condensation temperature 45°C; input air 24°C-45%; water 7/12°C; external static pressure: 30Pa. Stated performances do not take into account the heat generated by the fans which must be added to the heat load of the system.

(2) EER: Energy Efficiency Ratio; total cooling capacity / input power to the compressors + the power of fans (excluding air condensers) Pressione sonora: dati dichiarati a 2m di distanza, in campo libero secondo UNI EN ISO 3744:2010

(3) Sound pressure: stated data 2m away, in free field according to UNI EN ISO 3744:2010

UPWARDS FLOW CONFIGURATIONS



Standard version with frontal air intake and upwards flow.



Version with front air intake and frontal air flow with distribution plenum with grid.

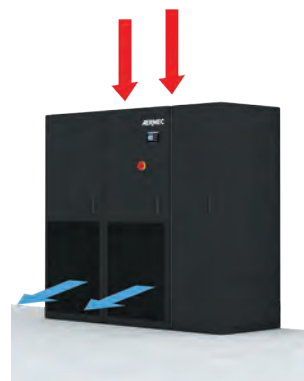
DOWNWARDS FLOW CONFIGURATIONS



Standard version with upwards suction and downwards airflow, with sub-base for raised flooring.



Version with upwards suction with frontal air flow with grilled plenum distribution.



Version with upwards suction with frontal air flow with grilled front panel.

DIMENSIONS

Mod. PX0 - PXU		71	141	211	251	301	302	361	422	461	512	662	852	932
Height	mm	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990
Width	mm	750	750	860	860	1410	1410	1750	1750	1750	1750	2300	2300	2640
Depth	mm	600	600	880	880	880	880	880	880	880	880	880	880	880
Weight	kg	180	210	270	270	320	340	440	450	450	500	640	660	860

Mod. PWO - PWU		10	20	30	50	80	110	160	220
Height	mm	1990	1990	1990	1990	1990	1990	1990	1990
Width	mm	750	750	860	860	1750	1750	2640	3495
Depth	mm	600	600	880	880	880	880	880	880
Weight	kg	155	160	220	240	340	360	540	700

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G 070-932

Precision air conditioners X: direct air or water condensate expansion

W: cooled water

Cooling capacity 43 ÷ 183 kW

- Increase TA the front section of the coil by about 40-50% thereby reducing its air-side pressure drops and consequently the power consumption of the fans.
- Increase ATA the dimension of the air filters installed up-line of the cold coil, that brings about a reduction of pressure drops and less maintenance.
- Increase ATA the efficiency of the fans installed in the sub-base expel treated air horizontally.



Down ow



Latest generation control panel

The precision air conditioners in the G Series have build and operating features that meet latest generation Data Center design criteria.

CONFIGURATIONS

GXU: air conditioners with delivery downwards and direct expansion with air or water condensation.

GWU: air conditioners with delivery downwards with cooled water.

CHARACTERISTICS

The precision air conditioners in the G Series are designed to condition technological premises for applications with high power density. In such applications, installations are characterised by technical flooring of heights up to 800mm, thereby creating ample space underneath for housing delivery fans. The fans are fitted inside with a separate sub-base, without increasing the dimensions of the unit, thereby optimising available space with significant advantages:

- Thanks to the over-sized coils with a large heat-exchange surface area, high yields are achieved with less energy consumption.
- Larger filtering surface area that allows reduced pressure drops and maintenance work thanks to cleaner operation.
- Horizontal fan delivery in the sub-base with lower pressure drops.

The range has been designed and optimised for operation with ozone benign refrigerant R410A.

STRUCTURE

The set-up comprises a dark grey (RAL7024) epoxy powder painted steel frame ensuring a long-lasting finish. Self-extinguishing thermal-acoustic

insulation panels finished with anti-friction film. The ventilation sub-base is supplied separately and must be connected electrically on site or in loco.

COILS

Coils with large surface area installed in ideal positions to optimise air flow and heat transfer; in refrigeration-quality copper piping with mechanically mounted aluminium fins. Cooled water machines are fitted as standard with motor-driven 2-way valves (a 3-way version is also available in the selection stage).

COMPRESSORS

Scroll compressor with high capacity and low electrical power consumption. The two-circuit configuration can divide output yield thanks to electronic adjustment that automatically manages compressor activation depending on the pressure required.

FANS

Centrifugal fans with backwards curved blades (plug-fan) and EC motor directly coupled to the electronic control to minimise electricity consumption and noise levels.

FILTERS

Undulated filters, single-use, self-extinguishing, efficiency class G4 (according to EN 779).

differential pressure switch (AS STANDARD) to signal 'filter dirty' status.

ELECTRONIC ADJUSTMENT

Thanks to control through the Modbus® Master protocol, all the main components in the unit are constantly supervised, with more than 50 different variables to ensure real-time monitoring of all operating cycles. Thanks to specific functions dedicated to energy saving and optimised management of all the unit's operating cycles, with direct expansion and cooled water alike.

ACCESSORIES

DIRECT EXPANSION

- Brushless DC compressors with inverter adjustment
- Power supply line for remote condenser
- Power supply line for remote condenser speed adjuster
- Condenser adjustment with 0-10V signal remote condenser with EC fans
- "Kit LT" for operating with low outside air temperature with the remote condenser
- Oversized liquid receiver tank
- Non-return valves on the delivery and liquid lines
- Water condenser
- Water condenser with condensing temperature adjustment valve
- "Kit HT" for operating with high condensation temperatures

COOLED WATER

- Modulating 3-way valves
- Water temperature probes on inlet & outlet
- "Power valve" kit

HEATING

- Electrical coils with low thermal inertia and adjustment over differential stages
- Electrical coils with low thermal inertia and modulating adjustment (available on request only for certain models)
- Water-based heating coils with 2 or 3 way modulating (available on request only for certain models)

HUMIDIFICATION

- Ambient humidity probe

■ For further information refer to the selection program.

Thanks to the built-in RS485 Modbus® card and the BACnet, LonWorks and SNMP interface gateway, fast and easy interfacing is possible with monitoring devices and BMS (Building Management System). Display of all operating parameters in 8 languages.

- Delivery humidity probe

- Immersed electrode humidifier

MECHANICAL AND STRUCTURAL

- Condensate discharge pump
- Condensate discharge and humidifier pump
- Overpressure gate valves on delivery
- Air filter on intake, efficiency M5 (EU5)
- Intake plenum
- Ventilated plenum with panelling for front or rear delivery
- Ventilated plenum with panelling for bottom delivery (installation above raised flooring)
- Panels with counter-panelling, "sandwich" type
- Panels with over-sized acoustic finishing

ELECTRICAL

- Alternative voltages available: 460V/3ph/60Hz - 380V/3ph/60Hz - 230V/3ph/60Hz
- Power supply line without neutral
- Automatic line selector switch (ATS) - "Basic" version
- Automatic line selector switch (ATS) - "Advanced" version

REGULATION

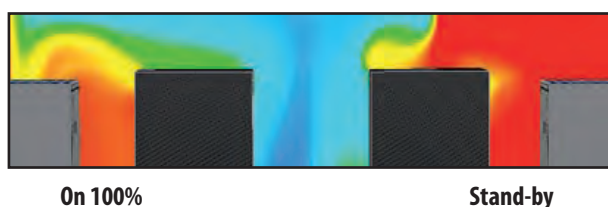
- Ventilation adjustment at constant capacity
- Ventilation adjustment at constant pressure
- Setting and cable for local network connection
- User terminal for remote installation
- Flooding detection system

SMARTNET

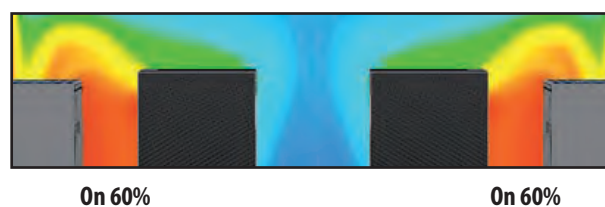
The innovative **SMARTNET** system revolutionises the local network concept. This system exploits the modulating capacities of the components to actively divide the work load between all units present in the local network.

Compared to the Duty Stand-by latent redundancy system (n+1 or n+n), where the backup units were on hold waiting for a problem to arise, the **SMARTNET** system means that **the units connected in the network are always active.**

DUTY / STAND-BY



SMARTNET



TECHNICAL DATA

GXU: downwards air delivery - direct expansion with air or water condensation

Sizes			461	612	932
Total cooling capacity	(1)	kW	43,0	54,9	91,7
Sensible cooling capacity	(1)	kW	35,9	42,1	79,4
EER	(3)		3,39	2,86	3,60
Total cooling capacity	(2)	kW	46,6	58,8	99,6
Sensible cooling capacity	(2)	kW	46,6	53,1	99,6
EER	(3)		3,67	3,06	3,92
Fans		type	Plug fan EC		
Air flow rate		m ³ /h	9500	10000	19000
Sound data					
Sound pressure	(4)	dB(A)	57	58	59

GWU: downwards air delivery - cooled water

Sizes			70	150	230	300
Total cooling capacity	(1)	kW	47,7	91,7	128,3	183,5
Sensible cooling capacity	(1)	kW	42,1	82,6	119,9	165,3
EER	(3)		32,89	33,97	35,15	40,8
Total cooling capacity	(2)	kW	38,5	74,9	106,7	149,8
Sensible cooling capacity	(2)	kW	38,5	74,9	106,7	149,8
EER	(3)		27,7	26,98	29,81	34,51
Fans		type	Plug fan EC			
Air flow rate		m ³ /h	9500	19000	28500	38000
Sound data						
Sound pressure	(4)	dB(A)	57	59	61	60

(1) Cooling: condensing temperature 45°C incoming air 24°C-45%; incoming air 24°C-45%; water 7/12°C; static external pressure: 30Pa; plenum ventilated, height 1000 mm. The stated performance levels do not take into account the heat generated by the fans, that should be added to the thermal impact of the installation.

(2) Cooling: condensing temperature 45°C incoming air 30°C-30%; incoming air 12°C-40%; water 14/20°C; static external pressure: 30Pa; plenum ventilated, height 1000 mm. The stated performance levels do not take into account the heat generated by the fans, that should be added to the thermal impact of the installation.

(3) EER: Energy Efficiency Ratio; total cooling capacity / input power from compressors + fans (air condensers excluded).

(4) Sound pressure declared data at a distance of 2m in a free field in accordance with UNI EN ISO 3744:2010

CONFIGURATIONS - DOWNWARDS DELIVERY



Standard execution for perimeter installation inside Data Centres: the height of the raised flooring must be minimum 550 mm.



Execution for perimeter installation inside Data Centre with height of raised flooring less than 550 mm. In this case, the sub-base having a fixed height of 550 mm c/w side closure panels must be installed above the flooring. It is in any case essential to make sure that the height of the ceiling allows good air intake.



Execution for installation outside Data Centre, without raised flooring and rear delivery. In this case, the sub-base having a fixed height of 550 mm c/w side closure panels and rear delivery grilles. Installation of the plenum with the rear return system is optional, if there is no channelling system.

DIMENSIONS

GXU models		461	612	932
Length	mm	1490	1490	2390
Depth	mm	921	921	921
Height	mm	1990	1990	1990
Net weight	kq	630	680	870

GWU models		70	150	230	300
Length	mm	1320	2220	3120	4020
Depth	mm	921	921	921	921
Height	mm	1990	1990	1990	1990
Net weight	kq	610	750	930	1250

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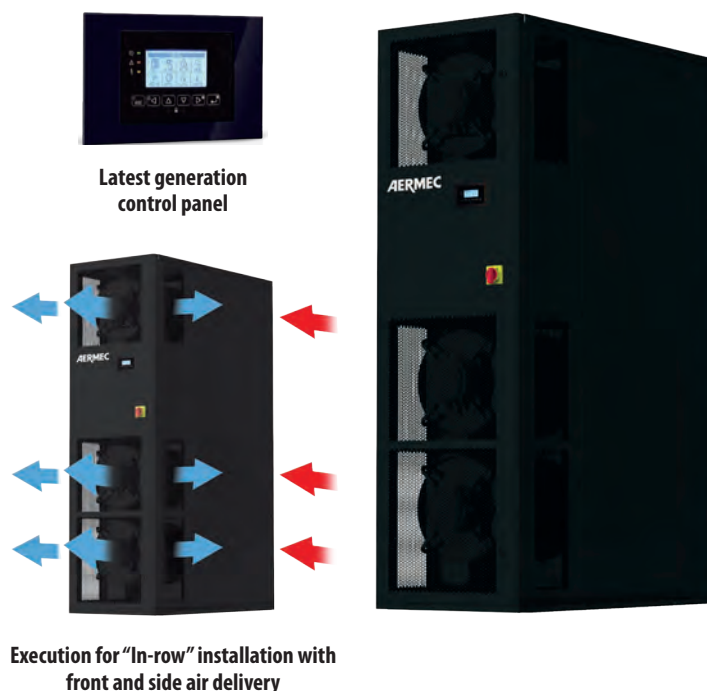
R 40-361

Precision air conditioners installation type In Rack A: direct air or water condensate expansion

U: cooled water

Cooling capacity 20 ÷ 35 kW

- Exploit the empty spaces left by the racks to ensure better cooling for the server.
- Rear intake from warm corridor
- Front delivery towards cold corridor with horizontal flow; this reduces internal pressure drops, with consequent reduction of the power absorbed by the fans.
- Easy front and rear access for simplified maintenance.
- Cooling, hydraulic and electrical connections from top or bottom.



Precision air conditioners in the R Series have build features and dimensions suitable for installation next to data centre racks.

CONFIGURATIONS

RXA: air conditioners with delivery downwards and direct expansion with air or water condensation.

RXU: air conditioners with air delivery horizontal with cooled water.

CHARACTERISTICS

Precision air conditioners in the **R** series are designed and built to have the same dimensions as the racks, rear intake from the warm corridor and front delivery towards the cold corridor.

The range has been designed and optimised for operation with ozone benign refrigerant R410A.

STRUCTURE

The set-up comprises a dark grey (RAL7024) epoxy powder painted steel frame ensuring a long-lasting finish. Self-extinguishing thermal-acoustic insulation panels finished with anti-friction film. The ventilation sub-base is supplied separately and must be connected electrically on site or in loco.

COILS

Coils with large surface area installed in ideal positions to optimise air flow and heat transfer; in refrigeration-quality copper piping with mechanically mounted aluminium fins, equipped as standard with 3-way motor-driven valves (also available as 2-way version in the selection stage).

COMPRESSORS

Brushless DC compressors with inverter adjustment, high yield and low electrical power consumption. FANS

Centrifugal fans with backwards curved blades (plug-fan) and EC motor directly coupled to the electronic control to minimise electricity consumption and noise levels.

FILTERS

Undulated filters, single-use, self-extinguishing, efficiency class G4 (according to EN 779).

differential pressure switch (AS STANDARD) to signal 'filter dirty' status.

ELECTRONIC ADJUSTMENT

Thanks to control through the Modbus® Master protocol, all the main components in the unit are constantly supervised, with more than 50 different variables to ensure real-time monitoring of all operating cycles.

Thanks to specific functions dedicated to energy saving and optimised management of all the unit's operating cycles, with direct expansion and cooled water alike.

Thanks to the built-in RS485 Modbus® card and the BACnet, LonWorks and SNMP interface gateway, hadst and easy interfacing is possible with monitoring devices and BMS (Building Management System).

Display of all operating parameters in 8 languages.

ACCESSORIES

DIRECT EXPANSION

- Power supply line for remote condenser
- Power supply line for remote condenser speed adjuster
- Condenser adjustment with 0-10V signal remote condenser with EC fans
- "Kit LT" for operating with low outside air temperature with the remote condenser
- Oversized liquid receiver tank
- Non-return valves on the delivery and liquid lines
- Water condenser
- Water condenser with condensing temperature adjustment valve

COOLED WATER

- Modulating 2-way valves
- Water temperature probes on inlet & outlet
- "Power valve" kit

HEATING

- Electrical coils with low thermal inertia and adjustment over differential stages

HUMIDIFICATION

- Ambient humidity probe
- Delivery humidity probe
- Immersed electrode humidifier

■ For further information refer to the selection program.

MECHANICAL AND STRUCTURAL

- Condensate discharge pump
- Air filter on intake, efficiency M5 (EU5)
- Closed front panel for side delivery
- Closed side panels for front delivery
- Handling wheels

ELECTRICAL

- Alternative voltages available: 460V/3ph/60Hz - 380V/3ph/60Hz - 230V/3ph/60Hz
- Power supply line without neutral
- Automatic line selector switch (ATS) - "Basic" version
- Automatic line selector switch (ATS) - "Advanced" version

REGULATION

- Ventilation adjustment at constant capacity
- Ventilation adjustment at constant pressure
- Setting and cable for local network connection
- User terminal for remote installation
- Flooding detection system

SMARTNET

The innovative **SMARTNET** system revolutionises the local network concept.

This system exploits the modulating capacities of the components to actively divide the work load between all units present in the local network.

Compared to the Duty Stand-by latent redundancy system (n+1 or n+n), where the backup units were on hold waiting for a problem to arise, the **SMARTNET** system means that **the units connected in the network are always active.**

DUTY / STAND-BY



On 100%

On 100%

Stand-by



On 100%

Stand-by

SMARTNET



On 66%

On 66%

On 66%



On 60%

On 60%

TECHNICAL DATA

RXA: horizontal air delivery - direct expansion with air or water condensation

Sizes			231	361
Total cooling capacity	(1)	kW	20,4	28,2
Sensible cooling capacity	(1)	kW	19,7	21,7
EER	(2)		3,29	2,95
Fans		type	Plug fan EC	
Air flow rate		m³/h	6000	7500
Sound data				
Sound pressure	(3)	dB(A)	56	56
Possible configurations				
Free Cooling			•	
Two Sources			•	

RXU: horizontal air delivery - cooled water

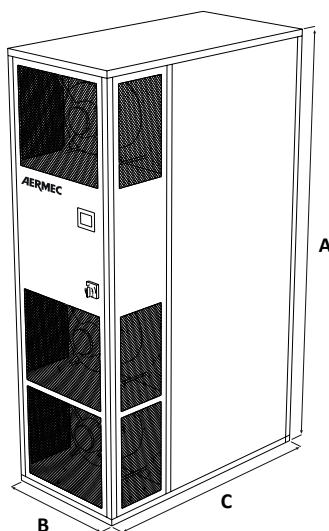
Sizes			40
Total cooling capacity	(1)	kW	35,4
Sensible cooling capacity	(1)	kW	33,5
EER	(2)		27,65
Fans		type	Plug fan EC
Air flow rate		m³/h	9000
Sound data			
Sound pressure	(3)	dB(A)	61
Possible configurations			
Two Sources			•

(1) Cooling: condensing temperature 45°C incoming air 24°C-45%; incoming air 24°C-45%; water 7/12°C; static external pressure: 30Pa. The stated performance levels do not take into account the heat generated by the fans, that should be added to the thermal impact of the installation.

(2) EER: Energy Efficiency Ratio; total cooling capacity / input power from compressors + fans (air condensers excluded).

(3) Sound pressure declared data at a distance of 2m in a free field in accordance with UNI EN ISO 3744:2010

DIMENSIONS



Dimensional data RXA			231	361
Height	A	mm	2000	2000
Width	B	mm	600	600
Depth	C	mm	1180	1180
Weight		kg	215	215

Dimensional data RXU			40
Height	A	mm	2000
Width	B	mm	600
Depth	C	mm	1180
Weight		kg	190

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