



Product Guide 2025

The company

Giordano Riello, founder of Aermec, assisted by his son Alessandro and daughter Raffaella, has solidly associated the Company name with precise values:

Respect for the environment

By using new eco-friendly refrigerants as well as innovative installations using water as the carrier fluid.

Energy saving

The great challenge of the Third Millennium, with the development of combined heating and air conditioning systems where appliances are used only as and when necessary.

Noise pollution control

With low-noise emission products, which undergo scrupulous testing before being put on the market.

Health care

With special filters that hold back the smallest suspension particles, the Cold Plasma Generator system that guarantees effective air purification (making for a healthier environment), and the new photocatalytic device, this air purification system is ideal for places where the highest degree of hygiene is required.



History

1961

Giordano Riello sets up Riello Condizionatori, initially producing for contractors only. The story begins.

1963

The Aermec brand is born and marks all future company products designed and manufactured on site. The brand name gains a stronghold as a major product name in Italy and throughout Europe.

1970

Aermec can already supply fresh and warm air. Aermec presents the first dual section conditioner: the first "split-system". Fancoil production starts.

1973

Aermec receives European Award Gold Mercury.

1980

The Eighties sees the development of water chillers and air handling units.

1990

The Nineties mark the definitive consolidation of the company on the market. The Aermec brand is associated with advanced technology and high quality design.

1998

The name makes the company. From 1 January Aermec becomes the company name as well as product brand.

2002

Design and technology: Aermec launched Omnia a new generation of fancoils, designed for domestic applications. OMNIA is the result of co operation with a worldwide prestigious designer.

2003

Aermec UK was acquired.

2004

The international market ask for number and Aermec answer. Giordano Riello make the producing system more technological.

2008

Aermec responds with more and more efficient units to the world challenge of energy saving with a special attention for our environment.

2011

Aermec turns 50. The company has developed and enlarged, always willing to understand and anticipate the needs of the market. Promoter of "integrated design" between designer and architect.

2012

Aermec Polska was acquired.

2015

The news Europe's largest test facility for air conditioning applications was inaugurated.

2017

Aermec receives Innovation Award from the US Organizations ASHRAE, AHRI and AHR. Aermec receives "Prime Company" certificate for the economic strength and commercial reliability from the Dun & Bradstreet. Aermec Deutschland was acquired.

2018

Aermec awards first prize in "RAC Cooling Industry Award 2018" in London by an Internationally qualified Jury.

2019

Aermec receives the prizes: "NATIONAL ACR & HEAT PUMPS AWARDS 2019" in the category of Data Centre Rooftop Chiller installation, "H&V News Awards 2019" attributed by a HVAC technical jury the United Kingdom.

2020

For the second year in a row, Aermec receives the prize ACR NEWS AWARDS for Data Centers category in the UK.

2021

Aermec turns 60.

Aermec's 60th anniversary coincides with the Covid 19 pandemic.

The company opens a vaccination hub available not only to its own employees but to the entire population of the area.

2022

Aermec breaks through the barrier of 300 million turnover. The Raffaello Riello Research and Training Centre was inaugurated on 12 May.

2023

Founder Giordano Riello leaves us on May 14.

2024

The Spanish companies Airlan and Airlan Industrial were acquired. The holding company Aermec North America that controls Aermec USA and Aermec Canada for the distribution of products in the North American continent was established.

LOGO INDEX:

CERTIFICATIONS:



CE marking

REFRIGERANT:



R290 refrigerant



R32 refrigerant



R1234ze refrigerant



R134a refrigerant



R410A refrigerant



XP10 refrigerant

OPERATIONAL TYPES:



Evaporating unit



Cooling and heating



Cooling only



DHW



Condensing unit



Free-Cooling



Heating only



Multipurpose



For four pipes plants



For three pipes plants



For two pipes plants

INSTALLATION TYPES:



Cassette installation



Ceiling installation



Ducted installation



Floor installation



Wall installation



Air indoor unit



Air outdoor unit



Water indoor unit

KINDS OF EXCHANGERS :



Heat recovery



Plate exchanger



Pump kit



Shell and tube exchanger



Water tank

KINDS OF COMPRESSORS:



Centrifugal compressor



Inverter centrifugal compressor



Rotary compressor



Inverter rotary compressor



Scroll compressor



Inverter scroll compressor



Twin screw compressor



Inverter twin screw compressor

KINDS OF FANS:



Axial fan



Inverter axial fan



Centrifugal fan



Inverter centrifugal fan



EC fan



Inverter EC fan



Plug fan



Inverter plug fan

EXTRA:



Inverter device



Compatible with ModBus protocol



Cold Plasma device



Touch control



Compatible with VMF system (Variable Multi Flow)



Aermec is one of the companies belonging to Giordano Riello International Group and takes part to Eurovent programme for NCD series.



Aermec takes part to EUROVENT Programmes: FCH - FCHP for fan coil series.
Aermec is involved in EUROVENT Programme: LCP for chiller range.
The products involved appear on the website www.eurovent-certification.com



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FACILITY

I N D E X

PRECISION AIR CONDITIONING		Air flow rate (m³/h)	Cool. Cap. (kW)	Heat. Cap. (kW)	Page
P 10-932	Direct expansion (air or water cooled); chilled water	-	7-160	-	896
G 070-1342	Direct expansion (air or water cooled); chilled water	-	50-222	-	901
R 20-361	Direct expansion (air or water cooled); chilled water	-	10-37	-	905

PRECISION AIR CONDITIONERS

Aermec is well established in the data centre market, with a multiple year experience and prestigious projects aimed at reducing the overall cost of ownership of modern data centres.

This process is achieved by applying state of the art product solutions with a strong focus on integrated design and sophisticated analyses of individual data centre customer requirements, with the aim of achieving a personalised and optimised solution for each and every individual installation site.

PRECISION AIR CONDITIONING

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P 10-932

Precision Air Conditioners

Cooling capacity 7 ÷ 160 kW



- **Strict control of room temperature and humidity**
- **High efficiency values**
- **Wide selection of configurations**
- **Reduced ground view clearance**



Last generation control panel



DESCRIPTION

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.

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.

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.

The control of filter dirt conditions via Modbus is available as an option.

ELECTRONIC CONTROLLER

The evolved electronic adjustment maximises energy saving and optimizes all operating modes of the units, both direct expansion and chilled water.

- The controller allows to supervise all main components of the unit, with more than 50 different variables that guarantee real time monitoring of all operating cycles.
- The units have a standard RS485 Modbus board, BACnet, LonWorks and SNMP are available as options, for a simple and quick interface with BMS (Building Management System) supervising systems.
- View of all operating parameters in 8 languages.

CHILLED WATER COILS

Only for W configurations

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

Only for X configurations

High efficiency scroll compressor with low power consumption.

These units in the direct expansion configurations work with R410A refrigerant, which does not damage the ozone layer.

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.

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
- Water condenser
- Condensate adjustment pressure valve
- "LAC" (Low Ambient Control) valve has the function of bypassing the condenser, injecting warm gas in the liquid piping, to maintain the refrigerant pressure stable. Use is recommended in very cold climates, in case of inverter compressors and in case of oversized condensers with respect to the real necessities of the units.

Chilled water

- Two ways modulating valves
- Inlet and outlet water temperature probes
- "Power Valve" kit: automatic adjustment and balancing valve of the water circuit, which allows to guarantee a constant water flow rate and monitor the efficiency of the unit in real time.

Heating

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

Humidification

- Room humidity probe
- Flow humidity probe
- Submerged electrodes humidifier (also available with low conductivity cylinder)

Water presence detection

- Available as punctual probe or fabric belt (length 5 m) Allows to have an alarm in case water presence, even partial, is detected.

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.

Electronic expansion valve standard on all sizes.

Mechanicals and structural

- Condensate discharge pump
- Condensation and humidifier drain pump
- Flow overpressure dampers
- Motorised damper on suction
- M5 (EU5) efficiency air filter on air supply
- Flow plenum with adjustable grills.
- Sub-base plenum with front grids.
- **Plenum Free Cooling:** available for direct expansion and downward flow versions, complete with motorised dampers and the external air temperature probe. Used to perform **direct Free Cooling** taking advantage of external air and will work in place of or supporting the direct expansion mechanical cooling.
- 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

- The unit has a standard power supply 400V ~ 3N 50Hz. The following voltages are available as an alternative: 400V ~ 3N 60Hz, 230V ~ 3 60Hz, 380V ~ 3N 60Hz
- Electric power supply line without neutral
- "Basic" version automatic transfer switch (ATS)
- Advanced" version automatic transfer switch (ATS)

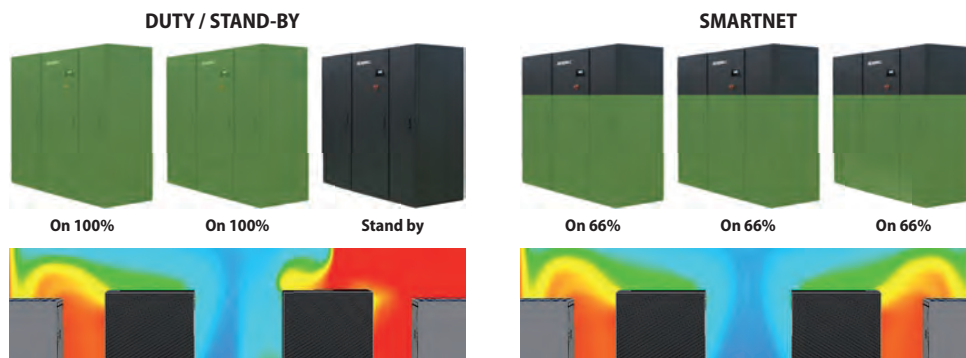
Regulation

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

■ *For further details refer to the technical documentation or to the selection program.*

Compared to the Duty Stand-by (n+1 or n+n) redundancy system, where the backup units were stopped waiting for a problem to arise, **the SMARTNET system allows to maintain the units connected on the network always active** with various advantages:

- greater efficiency of the units with partial loads;
- optimal air distribution, eliminating the risk of environment hotspots;
- internal system redundancy,



TECHNICAL DATA

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

		PXO 071	PXO 141	PXO 211	PXO 251	PXO 321	PXO 322	PXO 361	PXO 422	PXO 461	PXO 512	PXO 662	PXO 852	PXO 932
Cooling performances (1)														
Total cooling capacity	kW	8,2	14,7	21,0	27,4	35,2	33,8	38,1	43,7	48,1	57,8	67,3	84,4	94,9
Sensible cooling capacity	kW	7,9	12,9	21,0	25,7	35,2	33,8	38,1	43,7	46,8	53,6	66,2	73,7	86,3
EER (2)	W/W	3,83	3,40	3,30	3,14	3,13	3,34	3,57	3,47	3,63	3,34	3,26	3,27	3,64
Fans														
Type	type	Plug-fan EC inverter												
Air flow rate	m³/h	2200	3200	7000	7000	12000	12000	14000	14000	14000	14000	18000	18000	21000
Refrigerant circuit														
Number	no.	1	1	1	1	1	2	1	2	1	2	2	2	2
Sound data														
Sound pressure (3)	dB(A)	51	59	56	57	67	67	58	58	58	59	61	61	61
Possible configurations														
Free Cooling		-	-	-	-	Yes	-	-	-	Yes	-	Yes	Yes	-
Two Sources		-	-	Yes	-	Yes	-	-	-	Yes	Yes	Yes	Yes	Yes
Electric data														
Power supply		400V ~ 3N 50Hz												

(1) Condensation temperature 45 °C; incoming air 24 °C / 45 % u.r.; 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).

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

PWO: upwards airflow - with chilled water

		PWO 10	PWO 20	PWO 30	PWO 50	PWO 60	PWO 70	PWO 80	PWO 110	PWO 160	PWO 220
Cooling performances (1)											
Total cooling capacity	kW	9,9	17,2	30,0	41,0	52,8	63,1	65,5	80,0	110,0	160,0
Sensible cooling capacity	kW	9,3	14,9	27,8	36,2	47,4	54,2	61,8	73,0	99,7	146,0
EER (2)	W/W	38,26	29,13	30,00	24,54	22,75	24,17	24,79	24,17	29,33	21,17
Fans											
Type	type	Plug-fan EC inverter									
Air flow rate	m³/h	2200	3200	7000	8000	12000	12000	16000	18000	24000	36000
Refrigerant circuit											
Number	no.	1	1	1	1	1	1	1	1	1	1
Sound data											
Sound pressure (3)	dB(A)	51	59	56	60	67	68	61	62	62	65
Possible configurations											
Free Cooling		-	-	-	-	-	-	-	-	-	-
Two Sources		-	-	-	Yes	-	-	-	Yes	Yes	-
Electric data											
Power supply		400V ~ 3N 50Hz									

(1) Incoming air 24 °C / 45 % r.h.; water 7 °C / 12 °C; external static pressure: 30 Pa. 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).

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

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

		PXU 071	PXU 141	PXU 211	PXU 251	PXU 321	PXU 322	PXU 361	PXU 422	PXU 461	PXU 512	PXU 662	PXU 852	PXU 932
Cooling performances (1)														
Total cooling capacity	kW	8,2	14,7	21,0	27,4	35,2	33,8	38,1	43,7	48,1	57,8	67,3	84,4	94,9
Sensible cooling capacity	kW	7,9	12,9	21,0	25,7	35,2	33,8	38,1	43,7	46,8	53,6	66,2	73,7	86,3
EER (2)	W/W	3,74	3,29	3,24	3,10	3,09	3,29	3,50	3,41	3,57	3,30	3,15	3,18	3,59
Fans														
Type	type	Plug-fan EC inverter												
Air flow rate	m³/h	2200	3200	7000	7000	12000	12000	14000	14000	14000	14000	18000	18000	21000
Refrigerant circuit														
Number	no.	1	1	1	1	1	2	1	2	1	2	2	2	2
Sound data														
Sound pressure (3)	dB(A)	51	57	62	62	67	68	59	59	59	59	63	63	62
Possible configurations														
Free Cooling		-	-	-	-	Yes	-	-	-	Yes	-	Yes	Yes	-
Two Sources		-	-	Yes	-	Yes	-	-	-	Yes	Yes	Yes	Yes	Yes
Electric data														
Power supply		400V ~ 3N 50Hz												

(1) Condensation temperature 45 °C; incoming air 24 °C / 45 % u.r.; 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).

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

PWU: downwards airflow - with chilled water

		PWU 10	PWU 20	PWU 30	PWU 50	PWU 60	PWU 70	PWU 80	PWU 110	PWU 160	PWU 220
Cooling performances (1)											
Total cooling capacity	kW	9,9	17,2	30,0	41,0	52,8	63,1	65,4	80,0	110,0	160,0
Sensible cooling capacity	kW	9,3	14,9	27,8	36,2	47,4	54,2	61,8	73,0	99,7	146,0
EER (2)	W/W	32,09	23,54	27,03	20,91	21,28	22,77	23,21	19,80	24,39	19,80
Fans											
Type	type	Plug-fan EC inverter									
Air flow rate	m³/h	2200	3200	7400	8200	12000	12000	16000	18000	24000	36000
Refrigerant circuit											
Number	no.	1	1	1	1	1	1	1	1	1	1
Sound data											
Sound pressure (3)	dB(A)	51	60	57	62	68	68	62	63	63	66
Possible configurations											
Free Cooling		-	-	-	-	-	-	-	-	-	-
Two Sources		-	-	-	Yes	-	-	-	Yes	Yes	-
Electric data											
Power supply		400V ~ 3N 50Hz									

(1) Incoming air 24 °C / 45 % r.h.; water 7 °C / 12 °C; external static pressure: 30 Pa. 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).

(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 air flow.



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



Version with air intake from the bottom, stand for raised floor, blind front panel and upwards air supply.

DOWNWARDS FLOW CONFIGURATIONS



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

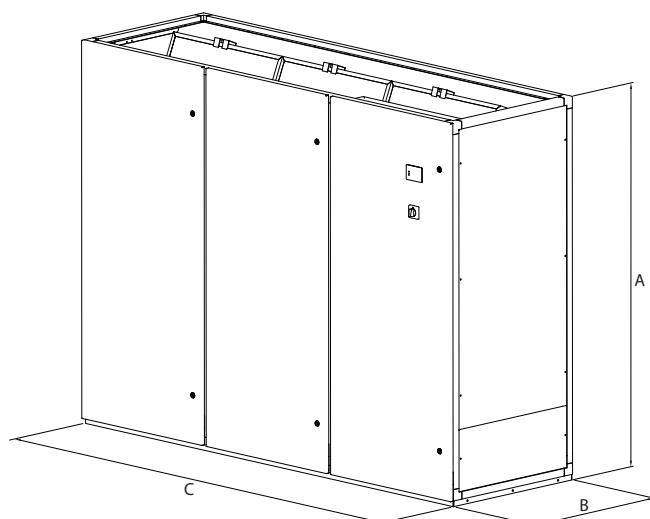


Version with upwards suction with frontal air flow with grilled plenum distribution.



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

DIMENSIONS



		PXO 071	PXO 141	PXO 211	PXO 251	PXO 321	PXO 322	PXO 361	PXO 422	PXO 461	PXO 512	PXO 662	PXO 852	PXO 932
Dimensions and weights														
A	mm	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990
B	mm	600	600	880	880	850	850	880	880	880	880	880	880	880
C	mm	750	750	860	860	1410	1410	1750	1750	1750	1750	2300	2300	2640
Empty weight	kg	180	210	270	270	365	390	440	450	450	500	640	660	860

		PWO 10	PWO 20	PWO 30	PWO 50	PWO 60	PWO 70	PWO 80	PWO 110	PWO 160	PWO 220
Dimensions and weights											
A	mm	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990
B	mm	600	600	880	880	850	850	880	880	880	880
C	mm	750	750	860	860	1410	1410	1750	1750	2640	3495
Empty weight	kg	155	160	220	240	240	260	340	360	540	700

		PXU 071	PXU 141	PXU 211	PXU 251	PXU 321	PXU 322	PXU 361	PXU 422	PXU 461	PXU 512	PXU 662	PXU 852	PXU 932
Dimensions and weights														
A	mm	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990
B	mm	600	600	880	880	850	850	880	880	880	880	880	880	880
C	mm	750	750	860	860	1410	1410	1750	1750	1750	1750	2300	2300	2640
Empty weight	kg	180	210	270	270	365	390	440	450	450	500	640	660	860

		PWU 10	PWU 20	PWU 30	PWU 50	PWU 60	PWU 70	PWU 80	PWU 110	PWU 160	PWU 220
Dimensions and weights											
A	mm	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990
B	mm	600	600	880	880	850	850	880	880	880	880
C	mm	750	750	860	860	1410	1410	1750	1750	2640	3495
Empty weight	kg	155	160	220	240	240	260	340	360	540	700

Aermec reserves the right to make any modifications deemed necessary.
All data is subject to change without notice. Aermec does not assume responsibility or liability for errors or omissions.

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G 070-1342

Precision Air Conditioners

Cooling capacity 50 ÷ 222 kW

- **Separate ventilating section for installation under raised floor**
- **Reduced energy consumption of fans**
- **High ratio between supplied cooling capacity and footprint**
- **Optimised distribution of air in the raised floor**



Last generation control panel



DESCRIPTION

Precision air conditioners of the series **G** their construction and operating features are suitable to meet the design criteria of last generation Data Centers.

CONFIGURATIONS

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

GWU: downwards flow air conditioners with chilled water.

For the configuration **W** there is also the version **XH (Extra Height)**. By increasing the height, performance can be enhanced thanks to the larger coil.

FEATURES

Precision air conditioners of the series **G** they are designed for air-conditioning of utility rooms for high power density applications.

In these applications, the structures are characterised by technical floors as high as 1000 mm, creating ample space below to house the flow fans.

The fans are supplied inside a sub-base supplied separately, without increasing the size of the unit, thus optimising the available space with considerable advantages:

- The enlarged coils with ample heat exchange surface enhance performance with less energy consumption.
- Greater filtering surface reducing pressure drops so that less maintenance is needed as they get less dirty.
- Horizontal flow of fans in sub-base with lower pressure drops.

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.

The ventilating sub-base is supplied separately and must be electrically connected at the worksite or on-site.

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.

The control of filter dirt conditions via Modbus is available as an option.

ELECTRONIC CONTROLLER

The evolved electronic adjustment maximises energy saving and optimizes all operating modes of the units, both direct expansion and chilled water.

- The controller allows to supervise all main components of the unit, with more than 50 different variables that guarantee real time monitoring of all operating cycles.
- The units have a standard RS485 Modbus board, BACnet, LonWorks and SNMP are available as options, for a simple and quick interface with BMS (Building Management System) supervising systems.
- View of all operating parameters in 8 languages.

CHILLED WATER COILS

Only for W configurations

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

COMPRESSORS

Only for X configurations

High efficiency scroll compressor with low power consumption.

These units in the direct expansion configurations work with R410A refrigerant, which does not damage the ozone layer.

The dual circuit configuration controls the power output thanks to electronic adjustment that automatically manages the compressors activation depending on the load request.

Electronic expansion valve standard on all sizes.

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
- Water condenser
- Condensate adjustment pressure valve
- "LAC" (Low Ambient Control) valve has the function of bypassing the condenser, injecting warm gas in the liquid piping, to maintain the refrigerant pressure stable. Use is recommended in very cold climates, in case of inverter compressors and in case of oversized condensers with respect to the real necessities of the units.

Chilled water

- Three-way modulating valves
- Inlet and outlet water temperature probes
- "Power Valve" kit: automatic adjustment and balancing valve of the water circuit, which allows to guarantee a constant water flow rate and monitor the efficiency of the unit in real time.

Heating

- Low thermal inertia electric batteries with differentiated stages regulation

Humidification

- Room humidity probe
- Flow humidity probe
- Submerged electrodes humidifier (also available with low conductivity cylinder)

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 the Duty Stand-by (n+1 or n+n) redundancy system, where the backup units were stopped waiting for a problem to arise, **the SMARTNET**

Water presence detection

- Available as punctual probe or fabric belt (length 5 m) Allows to have an alarm in case water presence, even partial, is detected.

Mechanicals and structural

- Condensate discharge pump
- Condensation and humidifier drain pump
- Motorised damper on suction
- M5 (EU5) efficiency air filter on air supply
- Ventilated plenum with panelling for front or rear flow
- Ventilated plenum with panelling for downflow (installation above raised floor)
- 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

- The unit has a standard power supply 400V ~ 3N 50Hz. The following voltages are available as an alternative: 400V ~ 3N 60Hz, 460V ~ 3 60Hz, 380V ~ 3N 60Hz
- Electric power supply line without neutral
- "Basic" version automatic transfer switch (ATS)
- "Advanced" version automatic transfer switch (ATS)

Regulation

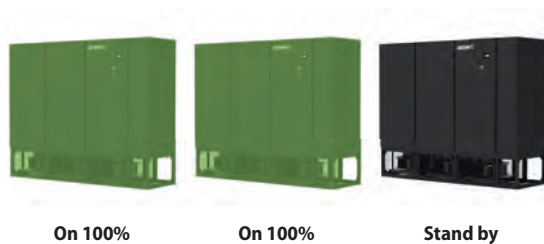
- Constant flow rate ventilation adjustment
- Constant pressure ventilation adjustment
- Local area network configuration and cable
- User terminal for remote installation

■ *For further details refer to the technical documentation or to the selection program.*

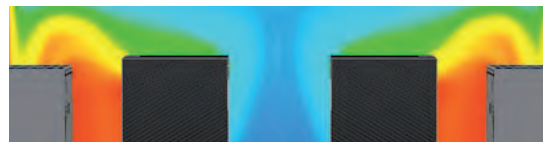
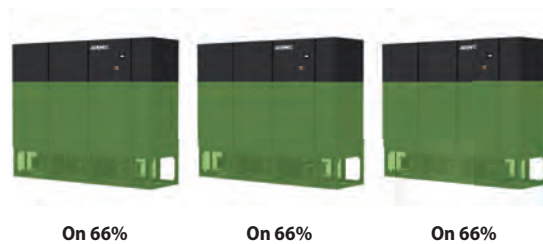
system allows to maintain the units connected on the network always active with various advantages:

- greater efficiency of the units with partial loads;
- optimal air distribution, eliminating the risk of environment hotspots;
- internal system redundancy,

DUTY / STAND-BY



SMARTNET



TECHNICAL DATA

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

		GXU 932	GXU 1342
Cooling performances (1)			
Total cooling capacity	kW	91,2	130,5
Sensible cooling capacity	kW	77,5	121,2
EER (2)	W/W	3,70	3,81
Fans			
Type	type	Plug-fan EC inverter	
Air flow rate	m³/h	18000	31500
Refrigerant circuit			
Number	no.	2	2
Sound data			
Sound pressure (3)	dB(A)	56	61
Electric data			
Power supply		400V ~ 3N 50Hz	

(1) Condensation temperature 45 °C; incoming air 24 °C / 45 % u.r.; 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).

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

GWU: downwards airflow - with chilled water

		GWU 070	GWU 150	GWU 230	GWU 300
Cooling performances (1)					
Total cooling capacity	kW	58,6	96,4	143,6	208,8
Sensible cooling capacity	kW	49,0	79,4	118,0	184,3
EER (2)	W/W	31,83	46,92	62,41	33,68
Fans					
Type	type	Plug-fan EC inverter			
Air flow rate	m³/h	11000	17600	25800	45200
Refrigerant circuit					
Number	no.	2	2	2	2
Sound data					
Sound pressure (3)	dB(A)	58	55	56	62
Electric data					
Power supply		400V ~ 3N 50Hz			

(1) Incoming air 24 °C / 45 % r.h.; water 7 °C / 12 °C; external static pressure: 30 Pa. 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).

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

		GWU 150 XH	GWU 230 XH
Cooling performances (1)			
Total cooling capacity	kW	113,2	222,9
Sensible cooling capacity	kW	93,1	178,2
EER (2)	W/W	55,78	79,32
Fans			
Type	type	Plug-fan EC inverter	
Air flow rate	m³/h	20400	36000
Refrigerant circuit			
Number	no.	2	2
Sound data			
Sound pressure (3)	dB(A)	57	63
Electric data			
Power supply		400V ~ 3N 50Hz	

(1) Incoming air 24 °C / 45 % r.h.; water 7 °C / 12 °C; external static pressure: 30 Pa. 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).

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

DOWNWARDS FLOW CONFIGURATIONS



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

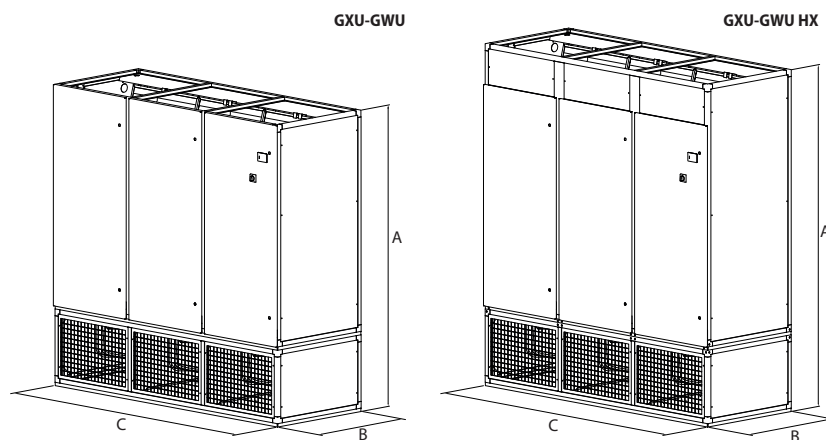


Execution for perimeter installation inside Data Centre. In this case, the sub-base side closure panels must be installed above the flooring. It is in any case essential to make sure that the height of the ceiling allows good air intake.



Execution for installation outside Data Centre, without raised flooring and rear delivery. In this case, the sub-base 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 932		GXU 1342	
Dimensions and weights					
A	mm	1990		1990	
B	mm	921		921	
C	mm	2390		3290	
Empty weight	kg	870		1000	

		GWU 070	GWU 150	GWU 150 XH	GWU 230	GWU 230 XH	GWU 300
Dimensions and weights							
A	mm	1990	1990	2350	1990	2350	1990
B	mm	921	921	1050	921	1050	921
C	mm	1320	1840	1840	2740	2740	4020
Emotv weight	ka	610	750	640	930	950	1250

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R 20-361

Precision Air Conditioners

Cooling capacity 10 ÷ 37 kW



- “In row” installation between the server lines
- Horizontal air flow to offer an effective localised cooling
- Rear and front accessibility for simplified maintenance
- Front and side air flow



Last generation control panel



DESCRIPTION

Precision air conditioners of the **R Series** have construction features and sizes so that they can be installed next to the servers of the Data Center.

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.

Both configurations are available in compact version with reduced depth.

FEATURES

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.

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.

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.

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.

The control of filter dirt conditions via Modbus is available as an option.

ELECTRONIC CONTROLLER

The evolved electronic adjustment maximises energy saving and optimizes all operating modes of the units, both direct expansion and chilled water.

- The controller allows to supervise all main components of the unit, with more than 50 different variables that guarantee real time monitoring of all operating cycles.
- The units have a standard RS485 Modbus board, BACnet, LonWorks and SNMP are available as options, for a simple and quick interface with BMS (Building Management System) supervising systems.
- View of all operating parameters in 8 languages.

CHILLED WATER COILS

Only for U configurations.

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

Only for A configurations

Single circuit configurations with DC brushless compressor with inverter, which allows to optimise the provided power guaranteeing a low electrical absorption.

These units work with R410A refrigerant, which does not damage the ozone layer.

Electronic expansion valve standard on all sizes.

ACCESSORIES

Direct expansion

- 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
- Water condenser
- Condensate adjustment pressure valve
- "LAC" (Low Ambient Control) valve has the function of bypassing the condenser, injecting warm gas in the liquid piping, to maintain the refrigerant pressure stable. Use is recommended in very cold climates, in case of inverter compressors and in case of oversized condensers with respect to the real necessities of the units.

Chilled water

- Two ways modulating valves
- Inlet and outlet water temperature probes
- "Power Valve" kit: automatic adjustment and balancing valve of the water circuit, which allows to guarantee a constant water flow rate and monitor the efficiency of the unit in real time.

Heating

- Single stage electric coils with low thermal inertia.

Humidification

- Room humidity probe
- Flow humidity probe
- Submerged electrodes humidifier (also available with low conductivity cylinder)

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 the Duty Stand-by (n+1 or n+n) redundancy system, where the backup units were stopped waiting for a problem to arise, **the SMARTNET**

Water presence detection

- Available as punctual probe or fabric belt (length 5 m) Allows to have an alarm in case water presence, even partial, is detected.

Mechanicals and structural

- Condensate discharge pump
- M5 (EU5) efficiency air filter on air supply
- Closed front panel for side flow
- Closed side panels for front flow
- Wheels for movement

Electrical

- The unit has a standard power supply 400V ~ 3N 50Hz. The following voltages are available as an alternative: 400V ~ 3N 60Hz, 230V ~ 3 60Hz, 380V ~ 3N 60Hz
- Electric power supply line without neutral
- "Basic" version automatic transfer switch (ATS)
- Advanced" version automatic transfer switch (ATS)

Regulation

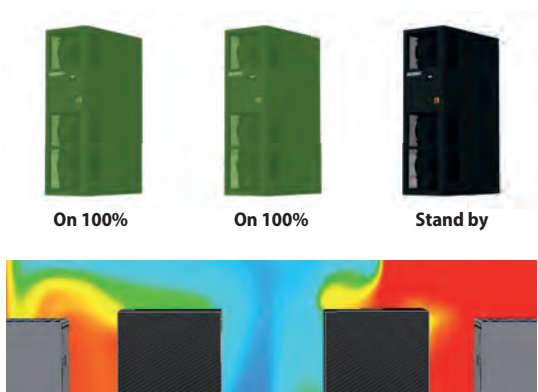
- Constant flow rate ventilation adjustment
- Constant pressure ventilation adjustment
- Local area network configuration and cable
- User terminal for remote installation

■ *For further details refer to the technical documentation or to the selection program.*

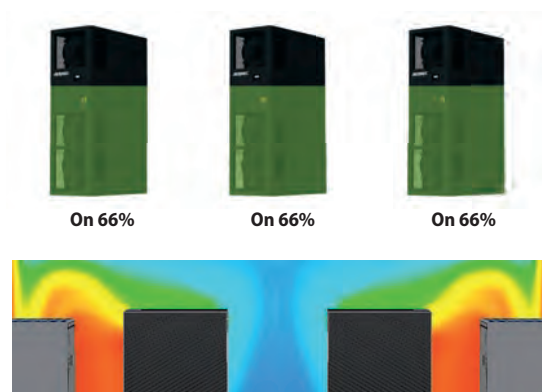
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- optimal air distribution, eliminating the risk of environment hotspots;
- internal system redundancy,

DUTY / STAND-BY



SMARTNET



TECHNICAL DATA

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

		RXA 121	RXA 201	RXA 231	RXA 361
Cooling performances (1)					
Total cooling capacity	kW	9,6	19,3	20,8	32,5
Sensible cooling capacity	kW	9,6	15,1	17,2	26,3
EER (2)	W/W	3,14	3,09	3,36	3,43
Fans					
Type	type	Plug-fan EC inverter			
Air flow rate	m³/h	3200	3600	6000	6600
Refrigerant circuit					
Number	no.	1	1	1	1
Sound data					
Sound pressure (3)	dB(A)	51	54	54	57
Possible configurations					
Free Cooling		-	-	Yes	-
Two Sources		-	-	Yes	-
Electric data					
Power supply		400V ~ 3N 50Hz			

(1) Condensation temperature 45 °C; incoming air 24 °C / 45 % u.r.; 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).

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

RXU: horizontal air delivery - cooled water

		RXU 20	RXU 40
Cooling performances (1)			
Total cooling capacity	kW	24,9	37,8
Sensible cooling capacity	kW	22,2	33,9
EER (2)	W/W	22,81	27,78
Fans			
Type	type	Plug-fan EC inverter	
Air flow rate	m³/h	5600	9000
Refrigerant circuit			
Number	no.	1	1
Sound data			
Sound pressure (3)	dB(A)	54	62
Possible configurations			
Free Cooling		-	-
Two Sources		-	Yes
Electric data			
Power supply		400V ~ 3N 50Hz	

(1) Incoming air 24 °C / 45 % r.h.; water 7 °C / 12 °C; external static pressure: 30 Pa. 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).

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

HORIZONTAL FLOW CONFIGURATIONS



Standard execution
for "In-row" installation
with front and side air delivery
(RXA 121-201, RXU 20).

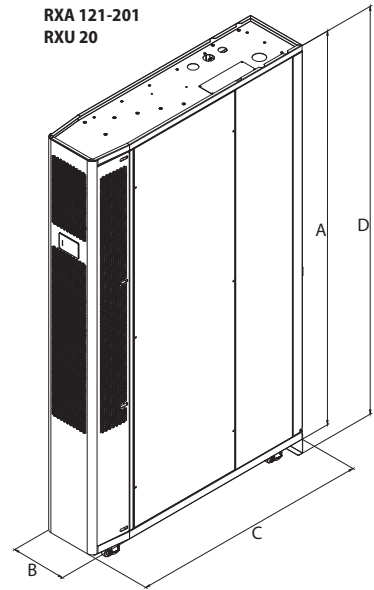
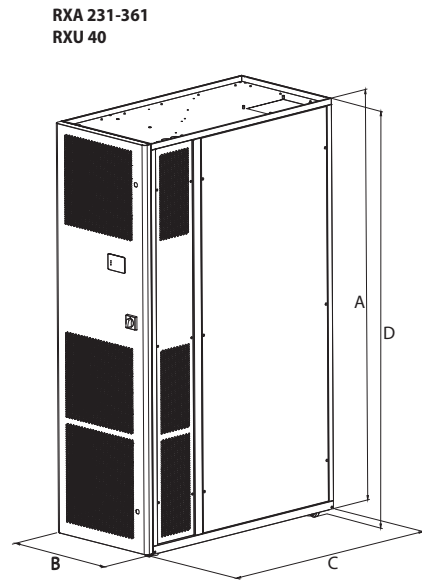


Execution for "In-row" installation
with only front air delivery
(RXA 231-361, RXU 40).



Execution for "In-row" installation
with only side air delivery
(RXA 231-361, RXU 40).

DIMENSIONS



		RXA 121	RXA 201	RXA 231	RXA 361
Dimensions and weights					
A	mm	1975	1975	1985	1985
B	mm	300	300	600	600
C	mm	1200	1200	1222	1222
D	mm	2045	2045	2015	2015
Empty weight	kg	200	215	215	215

		RXU 20	RXU 40
Dimensions and weights			
A	mm	1975	1985
B	mm	300	600
C	mm	1200	1222
D	mm	2045	2015
Empty weight	kg	120	190

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