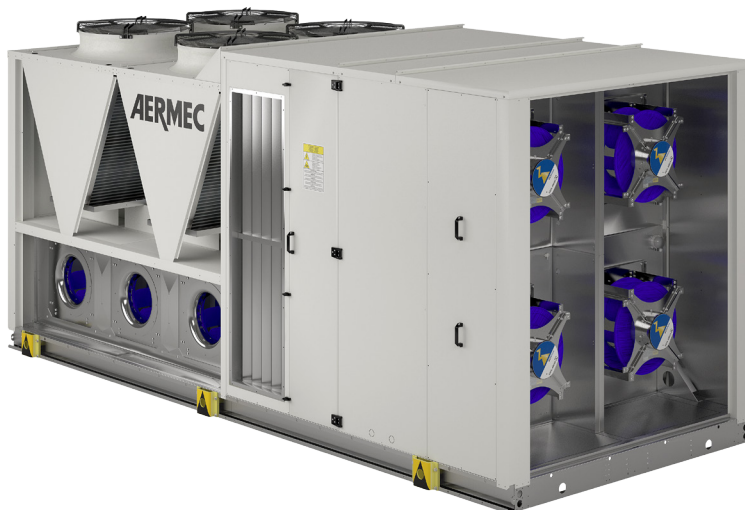


RTX

17/23

Rooftop
Air/air for external installation
with plug fans and scroll compressors
Cooling capacity 152÷315kW
Heating capacity 153÷311kW

R410A



- **FAN TREATMENT SECTION**
- **PLUG FANS COUPLED WITH EC BRUSHLESS MOTORS**
- **THERMODYNAMIC HEAT RECOVERY**
- **FREE-COOLING/ENTHALPIC FREE-COOLING OPTION**
- **FOR MEDIUM DENSITY APPLICATIONS**

Features

- Independent Roof-Top air-cooled air conditioner to treat, filter and renew air based on the selected configuration. Being fitted to function with 30% external and expelled air (MB3 and MB4 versions), RTX units are designed for medium density applications like shopping malls, shops, offices and production areas.
 Based on the version and accessories selected, the units allow you to manage free-cooling mode and, in the MB3 and MB4 versions, there is thermodynamic recovery of the energy contained in the expelled air, allowing for higher performance and efficiency.

Versions

RTX_F cold only
RTX_H heat pump

Configurations

- MB2** single ventilating section for return air and external air
- MB3** double ventilating section for return air, external air and expelled air. Total free-cooling function (with 100% of external air) and standard thermodynamic recovery function.
- MB4** double ventilating section for return air, external air and expelled air. Partial free-cooling function (up to 50% of the external air) and standard thermodynamic recovery function.
- MB1** single ventilating section for recirculation only

Each of the different configurations can be further customised thanks to a wide selection of accessories.

- 2 cooling circuits
- High performance, low electrical consumption UNEVEN scroll tandem compressors

- Finned pack direct expansion internal and external exchangers.
- Plug type (EC) flow and recovery fans (if any). The impellers are facing so as to ensure that the air flows through all the internal components with minimum noise.
- Axial fan unit for extremely silent functioning positioned on the condensing section.
- G4 air filter installed upstream of the components to ensure low pressure drops.
- Microprocessor control able to manage the different functioning modes, ensuring maximum energy savings in any conditions of use. Interfaces to connect to remote supervision and control systems available as options.

Accessories

- **SSV:** Supervision system.
- **RS:** RS485 BMS serial card
- **LW:** LonWorks interface card
- **BIP:** Ethernet-pCOWeb interface card (BACNET IP)
- **BAC:** BACnet MS/TP pCOnet interface card
- **FCT:** Partial Temperature Free-Cooling for MB2, MB4 versions
- **PSTEP:** Constant flow rate adjustment, flow rate steps based on cooling circuit modulation.
- **FT7:** F7 efficiency pocket filters positioned on the supply air flow
- **FT9:** F9 efficiency pocket filters positioned on the supply air flow
- **FTE:** Electronic filters positioned on the supply air flow.
- **PSF4:** Differential pressure switch signalling dirty recovery and renewal filters (if any)
- **Gx:** Heating module with gas burner
- **BW:** Two-row hot water heating coil.
- **BWV2V:** Two-row hot water heating coil, with 2-way modulating valve
- **BWV3V:** Two-row hot water heating coil, with 3-way modulating valve
- **BE:** Two-stage electric heating coil (**not available with hot air generator**)
- **BEM:** Modulating electric heating coil (**not available with hot air generator**)
- **DCPR:** AC fans with pressure switch device to regulate revolutions based on the condensation and evaporation pressure.
- **AXEC:** Axial fans featuring EC motors with the function of regulating revolutions based on the condensation and evaporation pressure
- **MAN:** High and low pressure gauges
- **CUR:** Humidification control (recovery humidity probe, flow humidity limit probe, ON/OFF contact and modulating analogue output)
- **DP:** Dehumidification (recovery humidity probe) and post-heating (if any) control
- **SCO2:** CO₂ probe (**not available on MB1 model**)
- **SVOC:** VOC Probe (**not available on MB1 model**)
- **STA:** Room temperature probe
- **SUA:** Relative humidity probe
- **RF:** Smoke detector
- **RFC:** smoke detector and damper management
- **PR1:** Remote control panel
- **SCM:** modulating servo-controls (standard on MB3 model or if temperature or enthalpic free-cooling is present)
- **SCMRM:** Modulating servo-controls with spring return
- **VRC:** Condensate drip tray with electric heater (only available on heat pump versions)
- **CA:** Waterproof covers on external air intake
- **CF:** Flue pipe (only on versions with gas burner modules)
- **GP:** External coil protection grid
- **VT:** anti-vibration mounts

NOTE: for more details on accessories and equipment, please refer to the technical manual

Technological functions and advantages

RTX units are designed with the aim of reducing the energy consumption that subsequently dictated the technological choices made on the unit we will now introduce in brief.

- **EXTREMELY HIGH-EFFICIENCY VENTILATION** As ventilation is one of the major power consumption factors, we dedicated particular attention to designing and constructing the ventilation system. Both in flow and in recovery (if any), EC brushless motor plug fans were used, which enable high performance and reduced consumption. Furthermore, compared to conventional centrifugal fans, they have no belts or pulleys, thus facilitating flow adjustment and resulting in compactness, versatility and easy maintenance. Special adaptive logic allows you to adjust the air flow rate to actual system demand with further resulting advantages in terms of consumption reduction. Axial fans for the external section of the

unit are helical. Electronic condensation control is available as an accessory, which regulates fan speed based on the load required, allowing for noise reduction. As an option, the motors can have electronic control (EC) to reduce consumption even in the condensing part.

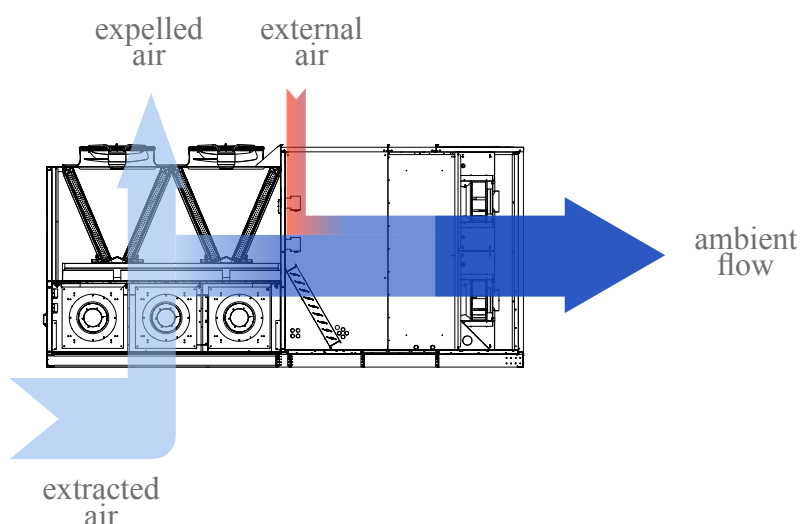
- **MAXIMUM SEASONAL EFFICIENCY** To improve cooling circuit efficiency, we used scroll tandem compressors with different power between them (UNEVEN compressors on all sizes). This detail allows for consumption reduction and improved adaptability to system demands, especially in operation at partial loads, ensuring higher seasonal efficiency.
- **AIR QUALITY IN THE ROOM** Naturally, we also paid special attention to the quality of the air in the room, a task entrusted to the standard G4 efficiency filters. Compact F7 and F9 or electronic H10 fil-

ters are also optionally available on the fresh air flow.

- **ACTIVE THERMODYNAMIC RECOVERY** In the MB3 and MB4 configurations, the units have a thermodynamic recovery function to recover the energy contained in the exhaust air, causing the expelled air flow to hit the external finned pack exchanger, allowing for higher performance and efficiency.

Obviously, all of these technological advantages are controlled by cutting edge thermoregulation that is able to manage the different functioning modes, ensuring maximum energy savings in all conditions of use via dedicated software.

MB3 configuration with double ventilating section for return air, external air and expelled air. Total free-cooling function (with 100% of external air) and standard thermodynamic recovery function.



Technical data

Mod. RTX (vers. MB1)			17	18	19	20	21	22	23
Cooling capacity	(1)	kW	152	170	192	213	232	246	289
Sensitive cooling capacity		kW	112	124	137	150	168	179	201
Compressor input power		kW	33,0	37,4	42,6	50,7	56,3	61,5	67,9
EER		W/W	4,60	4,54	4,50	4,21	4,12	4,00	4,26
Cooling capacity	(2)	kW	152	170	192	213	232	246	289
Sensitive cooling capacity		kW	112	124	137	150	168	179	201
Compressor input power		kW	33,0	37,4	42,6	50,7	56,3	61,5	67,9
EER		W/W	4,60	4,54	4,50	4,21	4,12	4,00	4,26
Heating capacity	(3)	kW	153	171	193	216	231	246	296
Compressor input power		kW	30,4	34,0	37,5	43,8	46,0	49,2	61,6
COP		W/W	5,02	5,02	5,14	4,94	5,02	5,00	4,81

Cooling (performance is the same also for the cold only versions)

(1) Internal temperature 27°C d.b., 19°C w.b.; External temperature 35°C d.b., 24°C w.b. (EN14511); U.R. 40%;

(2) Internal temperature 27°C d.b., 19°C w.b.; External temperature 35°C d.b., 26°C w.b.; U.R. 50%

Heating

(3) Internal temperature 20°C d.b., 15°C w.b.; External temperature 7°C d.b. 6°C w.b. (EN14511)

Mod. RTX (standard MB2 vers.)			17	18	19	20	21	22	23
Cooling capacity	(1)	kW	159	178	201	223	242	257	303
Sensitive cooling capacity		kW	119	130	144	157	176	187	211
Compressor input power		kW	33,3	37,8	43,2	51,5	57,4	62,6	68,8
EER		W/W	4,78	4,72	4,65	4,34	4,22	4,11	4,40
Cooling capacity	(2)	kW	164	184	207	230	250	265	312
Sensitive cooling capacity		kW	114	125	138	152	171	180	203
Compressor input power		kW	33,5	38,0	43,5	52,0	57,8	63,0	69,4
EER		W/W	4,90	4,84	4,74	4,43	4,32	4,20	4,50
Heating capacity	(3)	kW	155	174	195	219	234	248	301
Compressor input power		kW	28,1	31,5	34,6	40,5	42,6	45,3	57,1
COP		W/W	5,52	5,52	5,65	5,43	5,49	5,47	5,27

Cooling (performance is the same also for the cold only versions)

(1) Internal temperature 27°C d.b., 19°C w.b.; External temperature 35°C d.b., 24°C w.b. (EN14511); Functioning with 30% external air

(2) Internal temperature 27°C d.b., 19°C w.b.; External temperature 35°C d.b., 26°C w.b.; Functioning with 30% external air

Heating

(3) Internal temperature 20°C d.b., 15°C w.b.; External temperature 7°C d.b. 6°C w.b. (EN14511); Functioning with 30% external air

Mod. RTX (vers. MB3 and MB4 dynamic)			17	18	19	20	21	22	23
Cooling capacity	(1)	kW	160	180	202	226	245	261	305
Sensitive cooling capacity		kW	118	130	144	157	178	188	211
Compressor input power		kW	32,7	37,1	42,3	50,3	55,8	60,8	67,5
EER		W/W	4,90	4,85	4,78	4,48	4,39	4,29	4,53
Cooling capacity	(2)	kW	165	185	208	232	252	268	315
Sensitive cooling capacity		kW	115	126	139	153	171	182	204
Compressor input power		kW	32,9	37,4	42,7	50,8	56,4	61,4	68,1
EER		W/W	5,02	4,96	4,88	4,57	4,47	4,37	4,62
Heating capacity	(3)	kW	159	179	202	228	244	260	311
Compressor input power		kW	28,3	31,9	35,2	41,2	43,5	46,4	58,1
COP		W/W	5,63	5,62	5,75	5,52	5,60	5,61	5,35

Cooling (performance is the same also for the cold only versions)

(1) Internal temperature 27°C d.b., 19°C w.b.; External temperature 35°C d.b., 24°C w.b. (EN14511); Functioning with 30% external and expelled air

(2) Internal temperature 27°C d.b., 19°C w.b.; External temperature 35°C d.b., 26°C w.b.; Functioning with 30% external and expelled air

Heating

(3) Internal temperature 20°C d.b., 15°C w.b.; External temperature 7°C d.b. 6°C w.b. (EN14511); Functioning with 30% external and expelled air

Technical data

GENERAL DATA			17	18	19	20S	20	21	23
Compressors									
Compressors		type	scroll						
		no.	4	4	4	4	4	4	4
Circuits		no.	2	2	2	2	2	2	2
Partialisation steps		%	6	6	6	6	6	6	6
Refrigerant gas		type	R410A						
Centrifugal									
External fans		type	AC axial						
		no.	4	4	4	4	4	4	6
Internal flow fans		type	RAD EC						
		no.	2	2	3	3	3	3	4
		Ø mm	630	630	560	560	560	630	560
Internal recovery fans (MB3)	(3)	MB3 type	RAD EC						
	(3)	MB3 no.	3	3	3	3	3	3	4
	(3)	MB3 Ø mm	500	500	500	500	560	560	560
Expulsion fans (MB4)	(3)	MB4 type	RAD EC						
	(3)	MB4 no.	2	2	2	2	2	2	2
	(3)	MB4 Ø mm	450	450	450	500	560	560	560
Air flow rate	min	m³/h	18200	20300	23100	25900	28000	30800	33600
	nom	m³/h	26000	29000	33000	37000	40000	44000	48000
	max	m³/h	36000	36000	44000	44000	53000	53000	53000
Avail. flow static pressure	(4)	Pa	623	470	497	680	644	415	731
Avail. MB3 recovery static pressure	(4)	Pa	895	776	566	789	788	589	560
Sound data									
Sound power level		dB(A)	83	83	85	88	85	87	90
Sound pressure level		dB(A)	75	75	77	80	77	79	82
Electric power supply		V/ph/Hz	400V/3/50Hz						

(3) Not present in **MB2** and **MB3** configurations

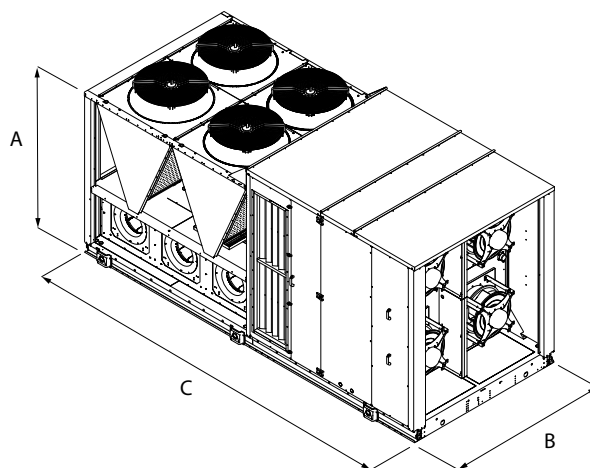
(4) At nominal/maximum flow rate, new clean G4 filter

Sound Pressure

Sound pressure measured in free field, at (1m, Q = 2) away from the external surface of the channelized, Steamer static 50Pa in supply and extract (according to the UNI EN ISO 9614-2).

Note: For further information, refer to the technical documentation available at www.aermec.com

Dimensional data



Mod. RTX	Vers.	17	18	19	20	21	22	23
Height (mm)	A	All	2430	2430	2430	2430	2430	2430
Width (mm)	B	All	2200	2200	2200	2200	2200	2200
Length (mm)	C		5210	5210	5210	7750	7750	7750