

RTX

01/08

Rooftop
Air/air for external installation
with plug fans and scroll compressor
Cooling capacity 13 - 51kW
Heating capacity 13 - 52kW

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 (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 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
- 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.

- 1 Cooling circuit
- Scroll compressor with high performance and low electric absorption

- 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

- **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)
- **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:** 2-stage electric heating coil
- **BPGC:** Hot gas post-heating coil
- **VELC:** Electronic thermostatic valve
- **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
- **PRT1:** Wall/recessed (up to 50 m) remote control panel
- **PRT2:** Wall/recessed (up to 200 m) 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
- **CA:** Waterproof covers on external air intake
- **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.

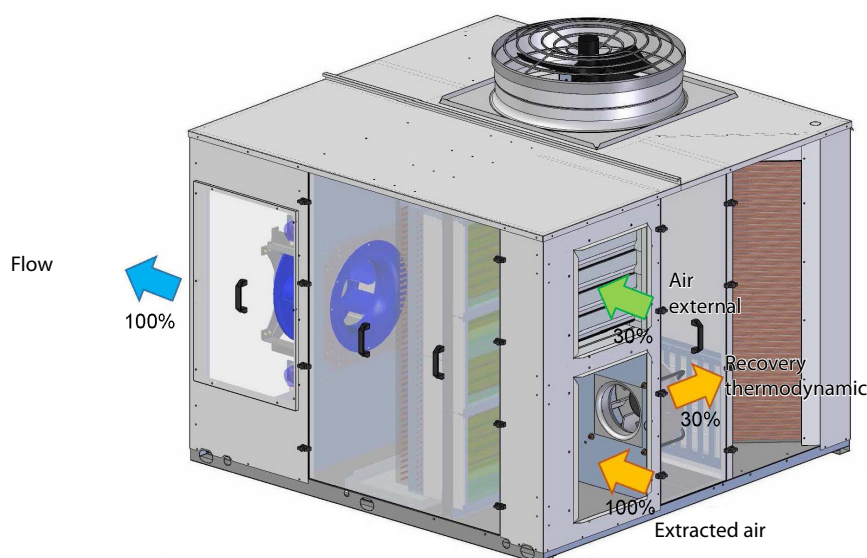
- **AIR QUALITY IN THE ROOM** Naturally, we also paid special attention to the quality of the air in the room, a task entrusted to the standard G4 efficiency filters. F7 and F9 or electronic H10 filters are also optionally available on the fresh air flow.

- **ACTIVE THERMODYNAMIC RECOVERY** In

the 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.

MB4 configuration with double ventilating section for return air, external air and expelled air. Standard free-cooling and thermodynamic heat recovery function.



Technical data

Mod. RTX (vers. MB1)			01	02	03	04	05	06	07	08
Cooling capacity	(1)	kW	12.3	15.3	19.6	22.2	28.1	32.0	42.7	48.1
Sensitive cooling capacity		kW	8.7	10.6	13.8	15.3	19.4	22.1	29.3	32.7
Compressor input power		kW	2.7	3.8	4.8	5.8	6.7	8.9	10.1	12.0
EER		W/W	4.56	4.03	4.08	3.83	4.19	3.60	4.23	4.01
Cooling capacity	(2)	kW	12.3	15.3	19.6	22.2	28.1	32.0	42.7	48.1
Sensitive cooling capacity		kW	8.7	10.6	13.8	15.3	19.4	22.1	29.3	32.7
Compressor input power		kW	2.7	3.8	4.8	5.8	6.7	8.9	10.1	12.0
EER		W/W	4.56	4.03	4.08	3.83	4.19	3.60	4.23	4.01
Heating capacity	(3)	kW	12.5	15.7	20.2	23.3	29.1	33.8	44.3	50.4
Compressor input power		kW	2.7	3.6	4.3	5.0	5.9	7.6	9.2	10.5
COP		W/W	4.63	4.36	4.70	4.66	4.93	4.45	4.82	4.80

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.; 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.

Mod. RTX (standard MB2 vers.)			01	02	03	04	05	06	07	08
Cooling capacity	(1)	kW	12.9	16.1	20.6	23.2	29.4	33.5	44.8	50.4
Sensitive cooling capacity		kW	9.1	11.2	14.5	16.1	20.5	23.2	30.7	34.2
Compressor input power		kW	2.8	3.8	4.8	5.9	6.8	9.0	10.2	12.2
EER		W/W	4.61	4.24	4.29	3.93	4.32	3.72	4.39	4.13
Cooling capacity	(2)	kW	13.4	16.6	21.3	23.9	30.3	34.4	46.2	51.8
Sensitive cooling capacity		kW	8.8	10.8	14.0	15.5	19.7	22.3	29.7	33.3
Compressor input power		kW	2.8	3.8	4.8	5.9	6.8	9.1	10.3	12.3
EER		W/W	4.79	4.37	4.44	4.05	4.46	3.78	4.49	4.21
Heating capacity	(3)	kW	12.8	16.0	20.6	23.7	29.4	34.2	45.2	51.0
Compressor input power		kW	2.50	3.30	3.90	4.60	5.40	7.00	8.60	9.80
COP		W/W	5.12	4.85	5.28	5.15	5.44	4.89	5.26	5.20

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.; U.R. 40%; 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.; U.R. 50%; 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.; Functioning with 30% external air

Mod. RTX (vers. MB4 dynamic)			01	02	03	04	05	06	07	08
Cooling capacity	(1)	kW	13.0	16.2	20.8	23.5	29.7	33.8	45.2	50.8
Sensitive cooling capacity		kW	9.2	11.2	14.6	16.2	20.5	23.3	30.8	34.3
Compressor input power		kW	2.7	3.8	4.7	5.7	6.6	8.7	10.0	11.9
EER		W/W	4.81	4.26	4.43	4.12	4.50	3.89	4.52	4.27
Cooling capacity	(2)	kW	13.5	16.7	21.5	24.2	30.5	34.8	46.6	52.3
Sensitive cooling capacity		kW	8.9	10.8	14.2	15.7	19.8	22.4	29.8	33.3
Compressor input power		kW	2.7	3.8	4.7	5.8	6.7	8.8	10.1	12.0
EER		W/W	5.00	4.39	4.57	4.17	4.55	3.95	4.61	4.36
Heating capacity	(3)	kW	13.1	16.5	21.3	24.6	30.4	35.5	46.6	52.9
Compressor input power		kW	2.50	3.30	4.00	4.70	5.50	7.10	8.70	10.00
COP		W/W	5.24	5.00	5.33	5.23	5.53	5.00	5.36	5.29

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.; U.R. 40%; 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.; U.R. 50%; 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.; Functioning with 30% external air

Technical data

GENERAL DATA			01	02	03	04	05	06	07	08
Compressors										
Compressors	type		scroll							
	n°		1	1	1	1	1	1	1	1
Circuits	n°		1	1	1	1	1	1	1	1
Partialisation steps	%		1	1	1	1	1	1	1	1
Refrigerant gas	type		R410A							
Fans										
External fans	type		AC axial							
	n°		1	1	1	1	1	1	1	1
Internal flow fans	type		RAD EC							
	n°		1	1	1	1	1	1	1	1
	Ø mm		355	355	355	400	400	450	450	500
Expulsion fans (MB4)	type		RAD EC							
	n°		1	1	1	1	1	1	1	1
	Ø mm		250	250	280	280	355	355	400	400
Air flow rate	min	m³/h	1800	1800	2700	2700	4000	4000	6500	6500
	nom	m³/h	2000	2700	3500	4000	5200	6500	8000	9500
	max	m³/h	2900	2900	4100	4100	6900	6900	10100	10100
Flow available static pressure	max	(4) Pa	760	597	473	561	424	570	634	681
Sound power	dB(A)		71	71	71	72	77	74	80	81
Sound Pressure	dB(A)		63	63	63	64	69	66	72	73
Electric power supply	V/ph/Hz		400V / 3Ph+N / 50Hz				400V / 3Ph / 50Hz			

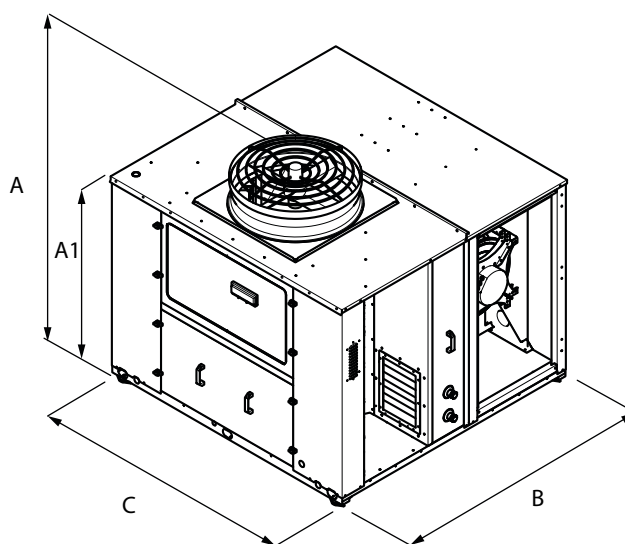
(4) At nominal/maximum flow rate, new clean G4 filter

Sound Pressure

Sound pressure measured in free field (1m, Q=2) away from the outer surface of the ducted unit, Available static pressure 50Pa. (UNI EN ISO 9614-2)

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

Dimensional data



Mod. RTX	Vers.		01	02	03	04	05	06	07	08
Height	(mm)	A	All	1150	1150	1450	1450	1670	1670	1780
Total height	(mm)	A1	All	910	910	1210	1210	1410	1410	1510
Length	(mm)	B	All	1460	1460	1460	1460	1910	1910	1910
Width	(mm)	C	All	1560	1560	1560	1560	1860	1860	2310
Weight	(kg)	MB2		305	305	345	345	535	535	615
		MB4		315	315	365	365	560	560	645