

RTE

ROOF-TOP cooling only and heat pump unit
Cooling capacities from 77 up to 142 kW standard version
Heating capacities from 73 up to 142 kW standard version

R410A



Features

The rooftop units in the RTE range represent the ideal solution for air conditioning environments with average cubage for tertiary, commercial and industrial destination.

The units offer noteworthy advantages in terms of air quality and environmental comfort, easy installation and low noise level.

The use of ecological R410A fluid refrigerant allows to increase the unit efficiency.

The availability of many accessories, e.g. the cross flow recovery systems or the hot air generator with condensation, also confer a noteworthy versatility, making the RTE range perfectly suitable for the various system requirements.

Structure:

Self-supporting with external aluminium alloy and internal galvanised steel sandwich-type panelling with thickness of 50 mm and injected polyurethane insulation (density 42 kg/m³) for the air handling section.

Air handling section fan:

Double intake centrifugal type with blades facing forwards for greater silence, coupled using belts and pulleys with variable pitch.

The direction of delivery air flow can be: **UPWARDS, SIDEWAYS AND DOWNWARDS.**

Condensation section fans:

Statically and dynamically balanced helical type, protected electrically by magnet circuit breakers and mechanically by grids.

Cooling circuit:

Fitted with scroll compressors that guarantee low noise and high efficiency, complete with resistances on the guard, internal and external coil with copper pipes and high efficiency aluminium louvers.

Air filtering:

Pleated synthetic filters with G4 efficiency or F7 rigid pocket filters (optional).

Microprocessor adjustment

complete with electric control board, probes and actuators for all components.

Versions:

RTPA F cooling only version.

RTPA H heat pump.

High temperature functioning (A)

Silenced functioning (L)

SET-UPS:

SMP mixing chamber 2 dampers with rear intake.

SM2 mixing chamber 2 dampers with lateral/lower intake.

SM3 mixing chamber 3 dampers with free-cooling.

FT7 F7 (EN 779) efficiency rigid pocket filters.

REC cross flow heat recovery units with intake fan.

Gxxx condensation hot air generator (72 kW, 92 kW or 150 kW).

Accessories

- **DCPR - Pressure control device** Extends the functioning range of the rooftop in the summer cycle (minimum temperature of the external air up to 10 °C) and in the winter cycle in heat pump mode (maximum temperature of the external air up to 25 °C). Moreover, it makes functioning silent with partial loads. A regulation circuit board varies the number of the motor condensing fan revs on the basis of the condensation pressure, read by the relevant transducers, thus guaranteeing correct

power supply of the thermostatic valve.

- **TP - Pressure transducers (as per standard on heat pumps)** They show the high and low pressures on the display, they manage activity of the compressors and the valves during defrosting and inhibit their functioning when the pressures exceed the limits set.
- **RUB - Cocks on the liquid and pressing line (cooling only version)** Hermetic cocks with manual closure positioned on the compressor delivery and

on the circuit liquid side

- **GP - Protection grids** Protect the external coils from blows and hail.

- **T1 - Right lateral air intake** (only on SM2).

- **T2 - Left lateral air intake** (only on SM2).

- **T3 - Rear air intake** (only on SM2).

- **T4 - Lower air intake** (only on SM2).

- **T5 - Right lateral air intake** (only on SM2).

- **T6 - Left lateral air intake** (only on SM2).
- **AI - Lower intake** (only on SM3).
- **PA4 - Rear air intake** Return fan static pressure up to 300 Pa at nominal flow rate.
- **MA - Upper air delivery** Upper air delivery, delivery fan static pressure up to 200 Pa at nominal air flow rate.
- **MA - Left air delivery** Left air delivery, delivery fan static pressure up to 200 Pa at nominal air flow rate.
- **MD - Right air delivery** Right air delivery, delivery fan static pressure up to 200 Pa at nominal air flow rate.
- **PM4 - Delivery fan static pressure up to 400 Pa** Delivery fan static pressure up to 400 Pa at nominal flow rate.
- **BTR - Water heating coil** 2 row hot water coil with 3-way modulating valve. They can be managed in post-heating mode only with DP accessories. They can be coupled with the G72 or G92 generator.
- **BRE - Electric heating coil** Electric heating coil with two stages fitted with twin safety thermostat, one with automatic rearm and the other with manual rearm. The powers proposed are 12, 18, 24 and 36 kW (or indicate the power requested in the order phase).
They can be managed in post-heating mode only with DP accessories. The BRE cannot be coupled with the G72 or G92 generator.
- **PUC - Humidification control set-up.** ON/OFF contact (normally open) for humidification consent. In this case, the unit is complete with humidity probe positioned in the environment air return. A humidity probe is also supplied to be positioned

downstream from the humidification section.

- **DP - Kit for management of dehumidification and post-heating** The control will force compressor functioning in order to dehumidify the air to the set humidity set. If the water or electric coil is present, post-heating can also be managed. It can be coupled with the PUC accessory (humidification contact).
- **SCS - Damper servocontrols for 2-damper set-up** Modulating servocontrols mounted directly on the return and external dampers for the management of fresh air.
- **SCSM - Damper servocontrols with spring return for 2-damper set-up** Servocontrols with spring return mounted directly on the return and external dampers for the management of fresh air. In the event of blackout they close the external air damper completely and completely open the fresh air damper.
- **SCM3 - Damper servocontrols with spring return for 3-damper set-up.** Servocontrols with spring return mounted directly on the dampers for management of freecooling as a replacement for the standard ones. In the event of blackout they close the external air dampers completely and completely open the fresh air damper.
- **FCH - Enthalpy Free-cooling** Only with 3-damper mixing chamber. Manages the flow of external and return air, making reference to their enthalpy values.
- **PR2 - Remote panel** Allows to perform rooftop control operations from a distance.
- **SSV - RS485 serial interface for supervision** Serial board necessary for the interface with supervision

systems.

- **SQA - Air quality probe.** It analyses the quality of the air on the basis of a SnO2 sensor with VOC mixed gas, evaluating contamination by polluting gases. The presence of the probe coupled to the rooftop allows:
 - to set a sensitivity threshold depending on the envisioned maximum contamination of the air.
 - the ventilation of the rooms only when necessary, thus guaranteeing energy saving.
- **TV2** - Power supply voltage 3~230V - 50Hz.
- **TV3** - Power supply voltage 3~ 460V - 60Hz.
- **VTR (3 - 5 - 7) - Anti-vibration mounts** Rubber anti-vibration mounts.
- **PF - Filters dirtying pressure switch**
- **BSP - Special coils** Condensing coils with copper pipes and pre-painted aluminium louvers.
- **BSR - Special coils** Condensing coils with copper pipes and copper louvers.
- **BSS - Special coils** Condensing coils with copper pipes and tinned copper louvers.

NOTE: for further information refer to the technical manual.

Accessories coupling		Size 240 - 260 - 300 -350 - 400					
Version		cooling only (F)			PDC (H)		
Functioning	std	L (no 350 and 400)	A (no 350 and 400)		L (no 350 and 400)	A (no 350 and 400)	
DCPR	✓	as per standard		std	as per standard	as per standard	✓
TP	✓	✓	✓	as per standard			
RUB	✓						
GP	✓	✓	✓	✓	✓	✓	✓
T1 (1)	✓	✓	✓	✓	✓	✓	✓
T2 (1)	✓	✓	✓	✓	✓	✓	✓
T3	✓	✓	✓	✓	✓	✓	✓
T4	✓	✓	✓	✓	✓	✓	✓
T5 (1)	✓	✓	✓	✓	✓	✓	✓
T6 (1)	✓	✓	✓	✓	✓	✓	✓
AI	✓	✓	✓	✓	✓	✓	✓
PA4	✓	✓	✓	✓	✓	✓	✓
MA	✓	✓	✓	✓	✓	✓	✓
MS (1)	✓	✓	✓	✓	✓	✓	✓
MD (1)	✓	✓	✓	✓	✓	✓	✓
PM4	✓	✓	✓	✓	✓	✓	✓
BTR	✓	✓	✓	✓	✓	✓	✓
BRE	✓	✓	✓	✓	✓	✓	✓
PUC	✓	✓	✓	✓	✓	✓	✓
DP	✓	✓	✓	✓	✓	✓	✓
SCS	✓	✓	✓	✓	✓	✓	✓
SCSM	✓	✓	✓	✓	✓	✓	✓
SCM3	✓	✓	✓	✓	✓	✓	✓
FCH	✓	✓	✓	✓	✓	✓	✓
PR2	✓	✓	✓	✓	✓	✓	✓
SSV	✓	✓	✓	✓	✓	✓	✓
SQA	✓	✓	✓	✓	✓	✓	✓
TV2	✓	✓	✓	✓	✓	✓	✓
TV3	✓	✓	✓	✓	✓	✓	✓
VTR3 (basic set-up)	✓	✓	✓	✓	✓	✓	✓
VTR5 (for units from 5 to 7.1 m)	✓	✓	✓	✓	✓	✓	✓
VTR7 (for units over 7.1 m)	✓	✓	✓	✓	✓	✓	✓
PF	✓	✓	✓	✓	✓	✓	✓
BSP	✓	✓	✓	✓	✓	✓	✓
BSR	✓	✓	✓	✓	✓	✓	✓
BSS	✓	✓	✓	✓	✓	✓	✓

(1) Right or left direction refers to the direction of air flow inside the handling sections.

Technical data

RTE F		standard					ver. (A)			ver. (L)		
		240	260	300	350	400	240	260	300	240	260	300
COOLING CAPACITY												
Cooling capacity	kW	77.1	88.6	103.0	129.4	142.5	78.0	89.9	105.6	68.7	84.5	102.6
Sensitive nominal cooling capacity	kW	50.1	61.2	67.0	77.7	92.6	50.7	62.1	68.7	44.7	58.3	66.7
Cooling input power	kW	20.7	25.3	31.8	39.7	44.5	20.3	24.8	30.7	24.8	27.3	32.1
E.E.R.		3.72	3.50	3.23	3.26	3.20	3.84	3.62	3.44	2.77	3.09	3.20
MOTOR CONDENSING SECTION												
Compressors												
Type		Scroll										
Number/circuits	n°/n°	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
Partialisation steps	%	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100
External fans		Axial										
Number x input power	n°. x kW	4x0.53	4x0.53	4x0.53	4x0.56	4x0.56	4x0.53	4x0.53	4x0.53	4x0.53	4x0.53	4x0.53
Air flow rate	m³/h	32000	29000	28000	40000	36000	14500	14000	16500	9500	9000	11000
HANDLING SECTION		4	4	4	4	4	4	4	4	4	4	4
Evaporator												
Number of rows	n°											
internal fan		Forward blade centrifugal type										
Nominal air flow rate	m³/h	12000	17000	20000	22000	23000	12000	17000	20000	12000	17000	20000
Number	n°	1	1	1	1	1	1	1	1	1	1	1
Useful static pressure guaranteed	Pa	200	200	200	200	200	200	200	200	200	200	200
Air filters												
Thickness	mm	50	50	50	50	50	50	50	50	50	50	50
Efficiency		G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Sound pressure	dB(A)	72	73	74	77	78	72	73	74	69	70	71
ELECTRIC POWER SUPPLY												
Type	V/ph/Hz	400V/3N/50Hz										

RTE H		standard					ver. (A)			ver. (L)		
		240	260	300	350	400	240	260	300	240	260	300
COOLING CAPACITY												
Cooling capacity	kW	76.3	87.7	104.9	128.2	141.1	77.2	89.0	104.6	68.0	83.6	101.6
Sensitive nominal cooling capacity	kW	49.6	60.6	66.3	76.9	91.7	50.0	61.1	68.0	44.2	55.6	65.9
Cooling input power	kW	20.4	25.0	30.8	38.5	43.1	20.0	24.4	30.4	24.4	26.8	31.6
E.E.R.		3.74	3.51	3.40	3.33	3.27	3.86	3.64	3.44	2.78	3.12	3.21
HEATING CAPACITY												
HEATING capacity	kW	73.4	86.3	103.0	127.6	142.2	77.1	87.4	101.5	74.5	83.6	98.5
Heating input power	kW	18.9	21.8	26.1	34.4	38.6	19.2	22.1	26.9	19.0	21.8	26.5
C.O.P.		3.88	3.96	3.94	3.71	3.68	4.01	3.95	3.77	3.92	3.83	3.71
MOTOR CONDENSING SECTION												
Compressors												
Type		Scroll										
Number/circuits	n°/n°	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
Partialisation steps	%	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100	0-50-100
External fans		Axial										
Number x input power	n°. x kW	4x0.53	4x0.53	4x0.53	4x0.56	4x0.56	4x0.53	4x0.53	4x0.53	4x0.53	4x0.53	4x0.53
Air flow rate	m³/h	36000	33000	32000	40000	34200	14500	14000	16500	9500	9000	11000
HANDLING SECTION												
Evaporator												
Number of rows	n°	4	4	4	4	4	4	4	4	4	4	4
internal fan		Forward blade centrifugal type										
Nominal air flow rate	m³/h	12000	17000	20000	22000	23000	12000	17000	20000	12000	17000	20000
Number	n°	1	1	1	1	1	1	1	1	1	1	1
Useful static pressure guaranteed	Pa	200	200	200	200	200	200	200	200	200	200	200
Air filters												
Thickness	mm	50	50	50	50	50	50	50	50	50	50	50
Efficiency		G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Sound pressure	dB(A)	72	73	74	77	78	72	73	74	69	70	71
ELECTRIC POWER SUPPLY												
Type	V/ph/Hz	400V/3N/50Hz										

* Environment air 20°C d.b., water 80/70°C

The performance refers to the following conditions:

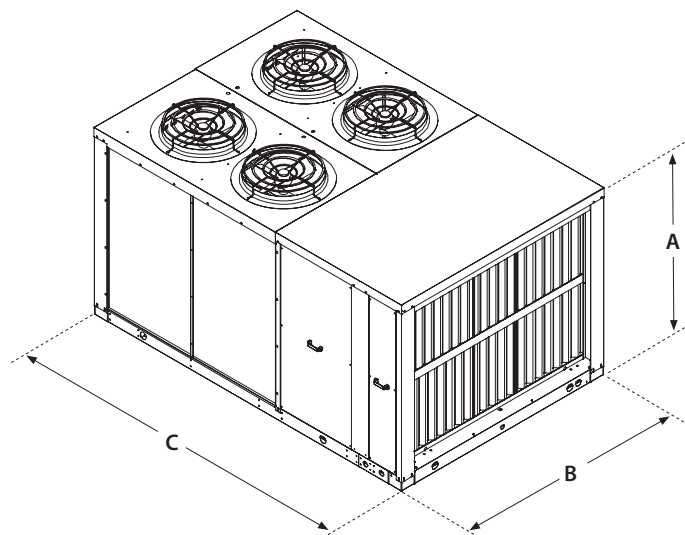
■ Cooling:

- Cooling capacity Tin 27°C RH 50% (Twb 19°C), Text 35°C RH 50%;

■ Heating:

- Heating capacity Tin 20°C RH 50%, Text 7°C RH 70%.

Dimensional data (mm)



		240	260	300	350	400
Height	A	1,830	1,830	1,830	1,830	1,830
Width	B	2,166	2,166	2,166	2,166	2,166
Depth	C	3,290	3,290	3,290	3,286	3,286
Weight (kg)	RTA	1,300	1,390	1,480	1,565	1,645
	RTA H	1,320	1,410	1,500	1,645	1,725

Dimensions and weights of the basic set-up unit.