



Autonomous reversible air-to-air Rooftop unit, for the thermo-hygrometric treatment, filtration and air renovation, in medium-large surface and volume ambient, such as supermarkets, shopping or exhibition centres.

Hermetic rotary scroll compressors with R410A refrigerant; double refrigerant circuit; aluminum structure and coated galvanized steel base; air treatment section with sandwich panel and EC plug fans. According to the selected version, the unit allows for the management of free cooling, with supply and return fans with motorized dampers for return, expulsion and fresh air. The unit is also available with the thermodynamic Refrigerant Booster heat recovery or cross-flow (plate type), to recover the energy from the exhaust air, increasing the units capacity and the global efficiency.

Control



AIR3000TE

AIR3000TE is made up by two control boards, dedicated to the air side and the refrigerant side respectively. The LCD display has multi-level menu that allows for the monitoring and intervention on the unit. Thermoregulation is proportional to steps, referred to the return temperature; proportional-integral management can also be set. Its functions include the adjustment of the ambient humidity, the thermal or enthalpic (optional) free-cooling and supply temperature limitation. Defrosting is based on a self-adaptive propriety logic with monitoring of several operating and environmental parameters. The management of the ventilation can be realized with constant air flow or pressure regulation: as pressure drop varies, the fans change speed so as to maintain the flow-rate at the designed value. The controller independently manages several optional thermal resources and the amount of fresh air. The presence of the programmable timer allows the user to create an operating profile containing up to 4 typical days and 10 time bands. Diagnostics include complete alarm management, "black box" function (via PC) and alarm history (via display or even PC). Supervision can be developed via third party systems by means of the most common protocols as ModBus, Bacnet, Bacnet-over-IP, Echelon LonWorks protocols. Compatibility with the remote keyboard managing up to 8 units.

Refrigerant

Configurations

AR	Air recirculation function	HR-P	Heat Recovery Plate function: air extractor EC plug fan(s), free cooling function and heat recovery from exhaust air flow thanks to Plate (cross-flow) heat Exchanger.
MF	Mixing and Free cooling function		
CE	Function with EC plug fans for extraction and expulsion and Free cooling		
HR-B	Heat Recovery Refrigerant Booster function: air extractor fan(s), free cooling function and heat recovery from exhaust air flow thanks to Refrigerant Booster coil		

Features

FLEXIBILITY

The unit is available with the opportunity to choose different supply and return airflows directions.

HIGH RELIABILITY

The wide working range, the double refrigerant circuit and the accurate design of the components ensure optimum performance and comfort, with a continuous and constant operation also during heavy thermoigrometric conditions.

VERSATILITY

Different possibilities for the air treatment chambers; from total recirculation only to mixing with fresh air and extraction from the ambient with heat recovery. Each different configuration can be further customized thanks to a wide range of accessories.

REFRIGERANT BOOSTER

Cutting-edge Refrigerant booster heat recovery system that allows for the complete and precise recovery of the energy from the exhaust air, without any waste due to the mixing with external air. The performance of the cooling circuit is maximized, increasing by 15% the cooling capacity and the compressor working at the same condition.

STATIC PLATE HEAT RECOVERY

The static plate heat recovery provides a constant and effective recovery of the sensible energy from the exhaust air. In winter mode the efficiency can reach values higher than 50%, that, together with the zero energy consumption of the component, grant an effective energy and economic saving.

INSTALLATION AND MAINTENANCE

Simplified operations, reduced costs and maintenance directly on site thanks to: the strong and perfectly insulated structure, easy access to internal sections, plug & play approach and automatic setting of the air flow (optional).

Accessories

- Ambient humidity control: hot gas post heating coil and humidifer.
- Ambient air quality control: CO2 sensor or 4-20 mA remote signal.
- Integration or substitution heating resources: hot water heating coil, electrical heaters.
- High efficiency filters: electronic or bag type ePM01 50% (ISO16890, F7 EN779) or ePM01 85% (ISO16890, F9 EN779)
- Enthalpy free-cooling
- Vair: variable air flow function, it allows to vary supply and return air flow according to the actual request of the HVAC system.
- Remote control keyboard (distance to 200m and to 500m)
- Set-up for remote connectivity with ModBus/Echelon protocol cards

WSM			A164	A184	A204	A704	A804	A904	A1004
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)									
Total cooling capacity	(1)	kW	51,7	56,3	62,2	218	244	280	317
Total sensible capacity	(1)	kW	38,3	43,0	47,4	171	195	213	242
Compressors power input	(1)	kW	13,5	15,6	17,4	60,0	70,5	70,5	80,7
EER (total)	(1)(12)	kW/kW	3,1	2,9	2,9	3,0	2,8	3,1	3,1
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(3)	kW	52,1	56,8	62,8	221	248	284	321
EER	(1)(3)	kW/kW	3,24	3,07	3,07	3,05	2,92	3,21	3,20
Cooling energy class			A	A	A	-	-	-	-
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(2)	kW	55,1	55,8	63,0	219	251	282	318
Compressors power input	(2)	kW	13,2	14,4	17,3	49,6	57,4	68,3	76,9
COP (total)	(2)(12)	kW/kW	3,3	3,1	3,0	3,4	3,4	3,2	3,2
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(2)(3)	kW	54,7	55,3	62,4	216	247	278	314
COP	(2)(3)	kW/kW	3,45	3,20	3,07	3,48	3,46	3,23	3,25
Cooling energy class			A	B	C	-	-	-	-
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)									
Ambient refrigeration									
Prated,c	(7)	kW	52,1	56,8	62,8	221	248	284	321
SEER	(7)(8)		3,60	3,55	3,48	3,77	3,63	3,60	3,46
Performance ηs	(7)(9)	%	141,07	139,17	136,04	147,76	142,07	140,98	135,45
SEASONAL EFFICIENCY IN HEATING (Reg. EU 2016/2281)									
Ambient heating									
PDesign	(7)	kW	46,3	46,9	53,1	183	209	236	268
SCOP	(7)(8)		3,18	3,16	3,14	3,20	3,17	3,02	3,03
Performance ηs	(7)(10)	%	124,15	123,32	122,73	125,13	123,83	117,85	118,10
SUPPLY FANS									
Air flow rate		m³/h	7700	9400	10500	36500	42200	45000	50000
Nominal ESP	(4)	Pa	200	200	200	350	350	350	350
Total power input	(12)	kW	1,14	1,45	1,71	6,87	8,90	9,36	11,5
REFRIGERANT CIRCUIT									
No. Compressors/No. Circuits		N°	4/2	4/2	4/1	4/1	4/2	4/2	4/2
Refrigerant charge	(6)(11)	kg	10,4	10,8	15,0	58,0	66,0	150,0	180,0
NOISE LEVEL									
Unit sound power level	(5)	dB(A)	82	84	85	92	94	97	97
Sound Power on outlet side	(5)	dB(A)	75	76	77	87	90	91	93
SIZE									
Length A	(6)	mm	3065	3065	3065	5565	5565	7430	7430
Width B	(6)	mm	1700	1700	1700	2250	2250	2250	2250
Height H	(6)	mm	1660	1660	1660	2380	2380	2380	2380
Operating weight	(6)	kg	770	900	960	2674	2751	3800	3800

Notes

- Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 0%.
- Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 0%.
- Values in compliance with EN14511
- ESP for standard configuration (optional accessories not included/calculated).
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Unit in AR configuration and standard execution, without optional accessories.
- Parameter calculated according to [REGULATION (EU) N. 2016/2281]
- Seasonal energy efficiency ratio
- Seasonal space cooling energy efficiency
- Seasonal energy efficiency of the heating environment in AVERAGE climatic conditions [REGULATION (EU) N. 2016/2281]
- The gas charge is obtained from a theoretical calculation and may differ from the real one present in the unit and shown on the plate.
- Available static pressure 250Pa (pressure drop resulting from any available accessories not included).

The units highlighted in this publication contain HFC R410A [GWP₁₀₀ 2088] fluorinated greenhouse gases.
Certified data in EUROVENT

Dimensional drawing

