

Self controlled unit for room air renewal with built in static & dynamic heat recovery system

from 2000 to 14000 m³/h



General features

The wholly self-controlled HPX units are designed and developed for civil, commercial or industrial buildings in which the air renewal and its thermal treatment are possible by one compact and efficient solution; in fact, the use of two sequential heat recovery systems (static + dynamic) makes the unit particularly efficient, according to the energy saving and pollution reduction laws and, contemporarily, making the plants easier both for realization and management.

HPX series, T, TB and P version (and T-H, TB-H and P-H version with thermal break frame), consists of five sizes, to cover 2000÷14000 m³/h airflow range, 0,5÷29,3 kW leftover (nominal) cooling power range and 3,2÷40,5 kW leftover (nominal) heating power range.

According to the selected version, HPX unit can satisfy:

- the renewal of room air and the neutralization of summer and winter heat loads connected with it (T version) as above, but with built-in free-cooling system also (TB version)
- the neutralization of the room heat loads also, by using room recycled air partially (P version)

Mechanical features

Unit frame made in extruded aluminium profiles and sandwich panels (thick 42 mm) RAL 7004 pre-painted. Class 0 mineral wool insulation.

Synthetic filter cell, G4 efficiency class, removable by side; as option fibreglass rigid bag filters, F7 efficiency class.

Fan sections composed of belt driven double inlet forward curved blade fans and class F IP55 three-phase motors, suitable for frequency converter control; rubber isolators below fan-motor group; safety micro-switches on inspection doors.

High efficiency cross flow heat recovery - EUROVENT certificated - air to air type, made in aluminium.

Second section of heat transfer by heat pump refrigeration system (R407C) essentially composed of:

- scroll hermetic compressor(s)
- evaporator/condenser coils Cu tube, Al fins
- bi-flux thermostatic valves
- cycle inversion valves
- low/high pressure switches
- high pressure manometers
- liquid separators and receivers

Built-in electrical board complete with microprocessor for temperature control and remotable consolle for setting and for visualizing sensor and set-point temperature values, both for master module and slave module(s) (max 4 modules); prearrangement for remote supervision system by RS485 connection and MODBUS protocol.

Accessories

- > Additional electric heater AEH
- > F7 rigid bag filter FTR
- > Shut-off damper SKR
- > On-Off damper servomotor SSE
- > Air filter pressure switch PSTD
- > Roof cover TPR
- > Air outlet casing with bird net CU
- > Fresh air casing GA

THE SIDE TECHNICAL SPACE, ALLOWS A VERY EASY ACCESS FOR INSPECTIONS AND MAINTENANCE



HPX Model			020	040	060	090	120
Airflow rate	Max	m ³ /h	2400	4800	7000	10000	14000
Airflow rate	Min	m ³ /h	2000	4000	6000	8000	10000
Fresh air - T & TB version		%	100	100	100	100	100
Fresh air - P version		%	50	50	50	50	50
External static pressure	Max	Pa	350	350	350	350	350
Motor power	Min/Max	kW	0,55/1,1	1,1/2,2	2,2/4	2,2/5	3/7,5

Electrical data

Power supply	400V – 3f – 50Hz					
Rated current Min/Max	A	12,0/14,0	23,0/27,0	33,0/40,0	41,0/54,0	53,0/71,0

Cooling capacities

Saved power (1° step) T & TB version	W	2100	4100	6200	9000	11900
Saved power (1° step) P version	W	900	2100	3200	4300	5800
Saved power (2° step)	W	11000	2 x 11000	2 x 16500	2 x 22000	2 x 29000
Total saved power T & TB	W	13100	26100	39200	53000	69900
Total saved power P	W	11900	24100	36200	48300	63800
Leftover power T & TB version	W	500	1100	1900	1300	1000
Leftover power P version	W	5570	11450	17540	22440	29300
Unit EER T & TB version	W/W	3,47	3,45	3,49	3,52	3,53
Unit EER P version	W/W	3,15	3,18	3,22	3,21	3,22

Heating capacities

Saved power (1° step) T & TB version	W	9900	19500	29200	40500	53100
Saved power (1° step) P version	W	4500	9900	15100	20400	27500
Saved power (2° step)	W	12000	2 x 12000	2 x 18000	2 x 24000	2 x 32000
Total saved power T & TB version	W	21900	43500	65200	88500	117100
Total saved power P version	W	16500	33900	51100	68400	91500
Leftover power T & TB version	W	3200	6100	9950	12000	15100
Leftover power P version	W	7150	15200	23470	30150	40500
Unit COP T & TB version	W/W	5,61	5,58	5,62	5,72	5,72
Unit COP P version	W/W	4,23	4,35	4,41	4,41	4,47

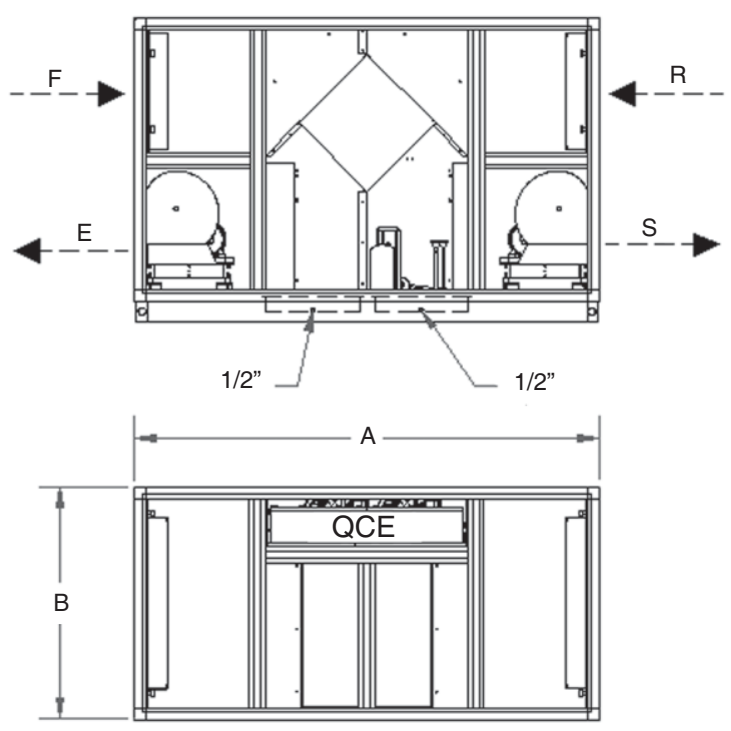
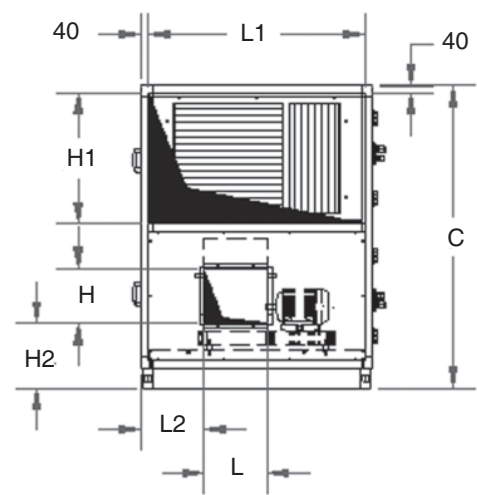
Performance valued at the following air conditions:

- summer external air 32°C 50% U.R. (70,0 kJ/kg) - summer room air 26°C 50% U.R. (53,0 kJ/kg)
 - winter external air -5°C 80% U.R. (-1,1 kJ/kg) - winter room air 20°C 50% U.R. (38,5 kJ/kg).

HPX Accessories | 020 | 040 | 060 | 090 | 120

Additional electrical heater AEH

Heating power	kW	6,0	12,0	18,0	24,0	32,0
Absorbed current	A	8,6	17,3	25,9	34,6	46,1
Power supply		400 V – 3 ph – 50 Hz				
Air pressure drop min/max	Pa	25/35				



- S = supply
- F = fresh air
- R = room air
- E = exhaust
- QCE = electrical board

Dimensions | 020 | 040 | 060 | 090 | 120

Dimensions		020	040	060	090	120
A	mm	2400	2400	2740	3110	3410
B	mm	870	1200	1500	1900	2000
C	mm	1560	1560	1620	1805	2135
L	mm	238	340	403	475	560
H	mm	268	300	351	408	482
L1	mm	790	1120	1420	1770	2170
H1	mm	670	670	720	900	900
L2	mm	196	322	436	687	845
H2	mm	341	325	324	385	348
Weight	kg	670	860	1330	1820	2150

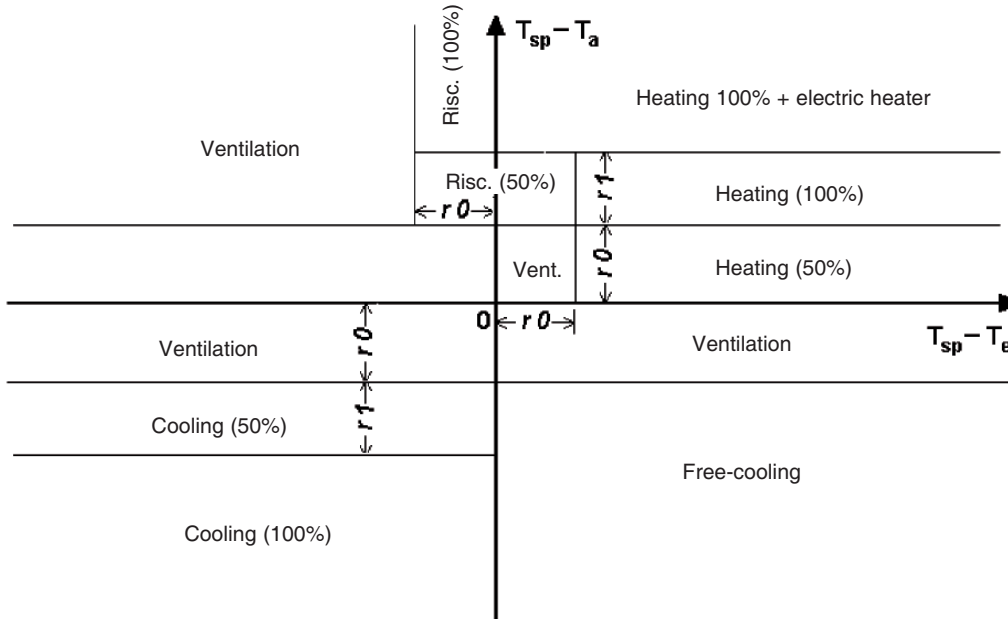
CONTROL

The HPX electronic control system, is composed of two parts, the console and the power board, connected each other through a 4-pole screen cable. The console, to be installed in a easily accessible place, lets the User input the control parameters by keyboarding the front keys.



Furthermore, by RS 485 serial connection between the slave and master units, it's possible to set and control max 4 different units with one console, connected to the master by a 4-wire cable.

According to $T_{sp}-T_e$ and $T_{sp}-T_a$ values, the electronic control determines by it-self the working mode of the system, deciding when cooling, heating or free-cooling mode is to be on.



Defrost mode is according to the third temperature sensor, located on the winter evaporator surface.

