



- **MECHANICALLY CONTROLLED VENTILATION**
- **STATIC HEAT RECOVERY UNIT**
- **AIR PURIFICATION**

Features

The **ERS** heat recovery units for indoor and outdoor installation are designed for commercial applications and are able to combine maximum environmental comfort with definite energy savings.

With modern systems, there is always the need to create forced ventilation, which, however, also involves expelling air-conditioned air, which thus leads to higher energy consumption. But ERS units are equipped with a static heat recovery unit that enables you to save part of the energy that would otherwise be lost with the expelled stale air.

These units can be integrated with fan coils and chillers, and can operate both in winter and summer.

Versions

ERS_B with a standard static recovery unit (without adjustment)

ERS_T with a static recovery unit with by-pass total T (without adjustment)

- Aluminium plate heat recovery unit, with countercurrent flows, high-efficiency and low pressure drops
- Air filters (flow and recovery) with G4 corrugated setting, the return filter can be supplied with a differential pressure switch. The filters are extractable on both sides to facilitate their periodic cleaning.
- Fans (intake and flow), centrifugal fans with front curved blades and a directly coupled, electronically controlled motor.
- Support frame and sandwich panels, 25 mm thick, in galvanised sheet steel for internal surfaces and pre-painted externally, and insulated

lated with injected polyurethane (density 42kg/m³).

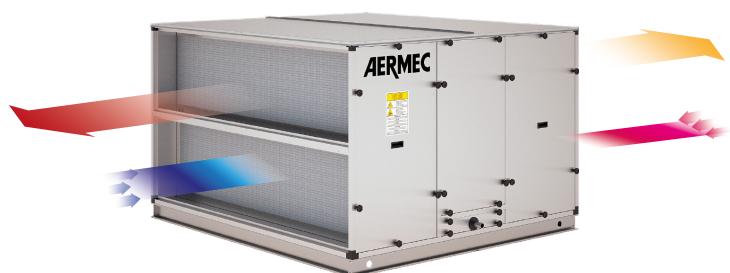
Base in galvanised sheet steel continuous profiles. The unit can be inspected from both sides.

- The unit can be fitted in the factory and therefore, when ordering, can provide for an electric control board on the machine (accessory), with three different types of adjustment, purposely studied to reduce energy consumption.
 1. With manual control of the flow rate (CMF)
 2. Maintaining a constant flow rate (CPOC)
 3. Maintaining constant static pressure (CPRC)
 Naturally, there are also different communication interfaces always available as accessories (RS485, MODBUS, master/slave).

Accessories

- **BLM** Hopper flow outlets.
 - **GAR** fresh air intake anti-vibration joint.
 - **GAE** expelled air intake anti-vibration joint.
 - **CAR** fresh air intake cuff.
 - **CAE** expelled intake cuff
 - **FCR** fresh air circular flange.
 - **FCE** expulsion circular flange.
 - **GMR** fresh air flow anti-vibration joint
 - **GME** expelled air flow anti-vibration joint
 - **BLE** hopper light expulsion.
 - **HBA** integrated direct expansion coil R410A.
 - **HBC** integrated direct expansion coil R407C
 - **HBW** integrated water coil.
 - **HBX_S** upper pre-heating electric coil
 - **HBX_I** lower pre-heating electric coil
 - **HFT_S** upper bag filters
 - **HFT_I** lower bag filters
 - **HSR** fresh air intake damper
 - **HSE** intake damper expulsion
 - **TP** roof protection.
 - **HPF** filter pressure switch on outdoor air intake
 - **V3V** 3-way valve
- Adjustment Accessories**
It is compulsory to select 1 of the 3 following types of fan adjustments
- **CMF** manually controlled flow rate adjustment
 - **CPOC** constant flow rate controlled adjustment
 - **CPRC** constant static pressure control adjustment
 - **PRK** Remote terminal
 - **EVS485** RS-485 interface for supervising systems with MODBUS protocol
 - **EVSEH** Ethernet Modbus interface board
 - **EVSPFB** Profibus DP Slave-V interface board
 - **SRE** ON/OFF servo control for external air damper
 - **SRME** ON/OFF servo control with spring return for external air damper
 - **SRR** - ON/OFF servo control for return air damper
 - **SRMR** - ON/OFF servo control with spring return for return air damper
 - **AFT** Anti-freeze thermostat for HBW
 - **V3VR** 3-way valve V3V
 - **SPR** Recovery pressure probe
 - **SVOC** VOC probe
 - **SCO₂** CO₂ probe
 - **QEX** Electric control board for HBX electric coils

Unit without adjustment



- Air expelled
- Air recovery from the room
- Outdoor fresh air
- Air introduced into the room

■ Quality of the air

Nowadays, the quality of air inside rooms is fundamental. The mechanically controlled ventilation system is not only indispensable from an energetic point of view, but also for the comfort of the rooms. Harmful elements and smells in the air are eliminated by the efficient filtration system with filters (G4), which are easily extracted and regenerated.

■ Air circulation is thanks to the centrifugal fans with electronically controlled motors

They guarantee energy savings compared to traditional fans. The control lets you calibrate the fan's speed according to your requirements, thus optimising efficiency.

■ High-efficiency recovery unit (80% of the energy of the expelled air)

Air heat recovery both in summer and winter, thanks to the static recovery unit. Air introduced into the room is always optimised, thanks to the heat exchange between the air recovery and outdoor fresh air.

■ Freecooling: free comfort

During in-between seasons, outdoor climatic conditions can be more pleasant than those indoors. In such situations, **ERS_T (with by-pass)** enable the intake of fresh outdoor air to air-condition indoor rooms at zero cost.

Unit with adjustment



■ State of the art electronic control

The technological advantages can naturally be controlled by state of the art heat regulation, thus ensuring maximum energy savings in every condition of use. it is possible to choose between:

- Manual control of the flow rate (CMF)
- Maintaining a constant flow (CPOC)
- Maintaining constant pressure (CPRC)

Accessories compatibility

Mod. ERS		10	20		30		40		50	
MECHANICAL ACCESSORIES	Ver.	B	B	T	B	T	B	T	B	T
GAR		10	20	10	30	20	40	30	40	40
GAE		10	20	10	30	20	40	30	40	40
CAR		10	10	10	30	30	40	40	50	50
CAE		10	20	10	30	20	40	30	40	40
FCR		10	20	10	30	20	40	30	40	40
FCE		10	20	10	30	20	40	30	40	40
GMR		10	20	10	30	20	40	30	40	40
GME		10	20	10	30	20	40	30	40	40
BLE		10	20	10	30	20	40	30	40	40
HBA		10	10	10	30	30	40	40	50	50
HBC		10	10	10	30	30	40	40	50	50
HBW		10	10	10	30	30	40	40	50	50
HBX_S		10	20	10	30	20	40	30	50	50
HBX_I		10	20	10	30	20	40	30	50	50
HFT_S		10	10	10	30	30	40	40	50	50
HFT_I		10	10	10	30	30	40	40	50	50
HSR		10	10	10	30	30	40	40	50	50
TP		10	10	10	30	30	40	40	50	50

Mod. ERS		10	20		30		40		50	
WITHOUT CONTROLLER AND ELECTRIC POWER BOARD		B	B	T	B	T	B	T	B	T
HPFE	(1)	•	•	•	•	•	•	•	•	•
HPFR	(1)	•	•	•	•	•	•	•	•	•
V3V	(2)	•	•	•	•	•	•	•	•	•
AFT		•	•	•	•	•	•	•	•	•
SRE	(8)	•	•	•	•	•	•	•	•	•
SRME	(8)	•	•	•	•	•	•	•	•	•
SRR	(8)	•	•	•	•	•	•	•	•	•
SRMR	(8)	•	•	•	•	•	•	•	•	•

Mod. ERS		10	20		30		40		50	
ADJUSTMENT and ACCESSORIES		B	B	T	B	T	B	T	B	T
It is compulsory to choose one from CMF/CPOC/CPRC										
CMF		10	10	10	30	10	40	30	50	40
CPOC	(6)	10	10	10	30	10	40	30	50	40
CPRC	(7)	10	10	10	30	10	40	30	50	40
CCO2	(12)	•	•	•	•	•	•	•	•	•
CVOC	(12)	•	•	•	•	•	•	•	•	•
Adjustment accessories										
PRK	(3)	•	•	•	•	•	•	•	•	•
EVS485	(4)	•	•	•	•	•	•	•	•	•
EVSEH	(4)	•	•	•	•	•	•	•	•	•
EVSPFB	(4)	•	•	•	•	•	•	•	•	•
SRE	(8)	•	•	•	•	•	•	•	•	•
SRME	(8)	•	•	•	•	•	•	•	•	•
SRR	(8)	•	•	•	•	•	•	•	•	•
SRMR	(8)	•	•	•	•	•	•	•	•	•
AFT	(11)	•	•	•	•	•	•	•	•	•
V3VR1		•	•	•	•	•	-	-	-	-
V3VR2		-	-	-	-	-	•	•	•	•
QEX	(10)	•	•	•	•	•	•	•	•	•
HPFE	(5)	•	•	•	•	•	•	•	•	•
HPFR	(5)	•	•	•	•	•	•	•	•	•

(1) Installed on the machine and complete with pressure plugs (without cables)

(2) Supplied with a modulating servocontrol 0 ÷ 10 V, 24Vac power supply, cable length 0.15m. Provide for anti-freeze protection for the hot water coil.

(3) Supplied without a connection cable between it and the unit; if provided with adjustment, the basic unit is already supplied with a controller on the machine with an LCD display.

(4) The choice of one, excludes the others (for other needs, contact the head office)

(5) Installed on the machine and complete with pressure plugs;

(6) From the pressure probe on the fan.

(7) From the pressure probe on the duct.

(8) No. 1 servo control for damper. Power supply 24Vac.

(9) Compulsory in the case of a promiscuous or hot coil.

(10) Compulsory in the case of HBX pre-heat coils

(11) Compulsory accessory in the case of a promiscuous or hot coil.

(12) From duct air quality probe

Technical data

ERS			10	20	30	40	50				
VERSION			B	B	T	B	T	B	T	B	T
Nominal air flow and recovery flow rate	m³/h		1000	2000	1000	3000	2000	4000	3000	5000	4000
Maximum air flow and recovery static pressure available	Pa		340	340	410	280	360	460	280	350	410
Recovered thermal power	kW		8.8	17.7	9	26.5	17.8	35.1	26.5	44.1	35.5
Winter recovery unit efficiency	%		82.4	82.4	83.9	82.4	83.2	82	82.4	82.4	82.8
Recovered cooling capacity	kW		2.1	4.2	2.1	6.3	4.2	8.3	6.3	10.4	8.4
Summer recovery unit efficiency	%		69.2	69.2	70.4	69.2	69.9	68.8	69.2	69.2	69.5
Total number of fans	n°		2	2	2	2	4	4	2	4	4
Each fan max. input power	kW		0.52	0.52	0.52	1.9	0.9	1.9	1.9	1.9	1.9
Each fan max. absorption current	A		3.4	3.4	3.4	8.3	4.0	8.3	8.3	8.3	8.3
Power supply	V/ph/Hz		230V/1/50Hz								
Sound pressure level	dB(A)		24.8	26.9	23.3	29.3	25.3	31.6	32	36.5	33.3
HBW Water coil			10	10	10	30	30	40	40	50	50
Total cooling capacity	(1)	kW	10.7	17.6	10.7	28.4	21.6	37.2	30.6	48.9	42.2
Heating capacity	(2)	kW	12.9	21.5	12.7	33.4	24.6	44	35.5	56.7	47.9
Heating capacity	(3)	kW	6.8	11.4	6.7	17.7	13	23.4	18.9	30.1	25.4
HBC Direct expansion coil R407C			10	10	10	30	30	40	40	50	50
Total cooling capacity	(4)	kW	11.1	15.9	11.1	24.4	20.1	31.8	27.6	41.5	37.5
Heating capacity	(5)	kW	8.4	13.6	8.3	20.8	15.6	27.4	22.5	35.1	30
HBA Direct expansion coil R410A			10	10	10	30	30	40	40	50	50
Total cooling capacity	(6)	kW	12	18.1	12.1	27.7	22.2	36.2	30.9	47	41.8
Heating capacity	(7)	kW	8.5	13.7	8.3	20.9	15.7	27.6	22.6	35.3	30.2

Heating

Fresh air flow rate equal to the air expulsion flow rate; outdoor air temperature (in) -10°C 90% r.h.; room temperature 22°C, 50% r.h.

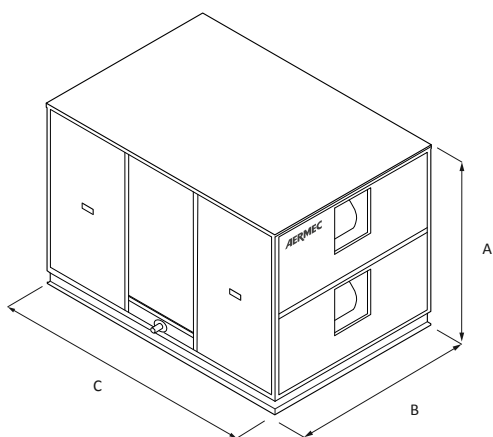
Cooling mode

Fresh air flow rate equal to the air expulsion flow rate; outdoor air temperature (in) 35°C 50% r.h.; room temperature 26°C, 50% r.h.

- (1) Water coil temperature (in/out) 7/12°C; Outdoor air temperature (in) 35°C 50% r.h.; room temperature 26°C, 50% r.h.
- (2) Water coil temperature (in/out) 70/60°C; Outdoor air temperature (in) -10°C 90% r.h.; Room temperature 22°C, 50% r.h.
- (3) Water coil temperature (in/out) 45/40°C; Outdoor air temperature (in) -10°C 90% r.h.; Room temperature 22°C, 50% r.h.
- (4) Evaporation temperature 5°C; Condensation temperature 50°C; Outdoor temperature (in) 35°C 50% r.h.; room temperature 26°C, 50% r.h.
- (5) Evaporation temperature 0°C; Condensation temperature 50°C; Outdoor temperature (in) -10°C 90% r.h.; room temperature 22°C, 50% r.h.
- (6) Evaporation temperature 5°C; Condensation temperature 50°C; Outdoor temperature (in) 35°C 50% r.h.; room temperature 26°C, 50% r.h.
- (7) Evaporation temperature 0°C; Condensation temperature 50°C; Outdoor temperature (in) -10°C 90% r.h.; room temperature 22°C, 50% r.h.

Sound pressure: at 1 m in free field with directivity factor 2.

Dimensional data (mm)



ERS			10	20	30	40	50
Height	A	(mm)	1300	1300	1300	1300	1300
Width	B	(mm)	900	900	1300	1600	2100
Length	C	(mm)	1900	1900	1900	1900	1900
Weight		(kg)	290	315	373	453	531