

# ERSR

## High-efficiency heat recovery with rotary recovery unit

Air flow rate 1000 - 30000 m<sup>3</sup>/h

- Technology high efficiency
- Mechanically controlled ventilation
- Recovery of up to 80% of the energy of the expelled air
- Air purification



### DESCRIPTION

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

It is more and more necessary in modern systems to create a forced ventilation, but also involves the expulsion of climate-controlled air, thus determining a higher energy consumption.

But ERSR units are equipped with a rotary heat recovery unit (upon request, also hygroscopic rotary) that enables you to save more than 80% 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

**H** With a hygroscopic rotary recovery

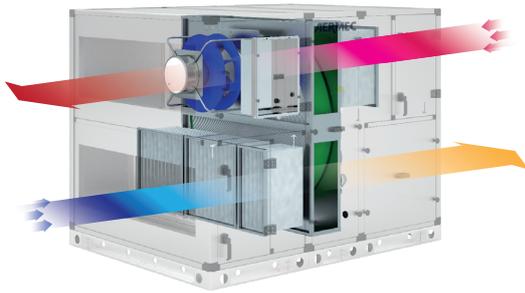
**T** With a sensitive rotary recovery

### STRUCTURE

- Rotary heat recovery unit (with the option in hygroscopic material), high-efficiency and low pressure drops.

- Soft air bag F7 filters (flow and recovery) equipped with a standard differential pressure switch, which can be extracted from either side facilitate their periodic cleaning.
- **Fans (intake and flow), Plug fan with back curved blades with a directly coupled, electronically controlled motor for sizes 07-17 and with an inverter for sizes 21-24.**
- Support frame and sandwich panels, 50 mm thick, in galvanised sheet steel for internal surfaces and pre-painted externally, and with mineral wool insulation (density 40 kg/m<sup>3</sup>). Base in galvanised sheet steel continuous profiles. Sizes 07 to 09 are monoblocs whilst the other sizes are divided into sections. The unit can be inspected from both sides.
- The unit is equipped with a power electric control board on the machine and adjustment purposely designed to reduce energy consumption. Equipped with a communication serial port on RS485 with MODBUS Master/Slave protocol.

## FEATURES



- 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.

### ACCESSORIES

- CAP:** Intake waterproof cover.
- BDL:** Delivery waterproof cover.
- TDP:** Roof for outdoor installation.
- VRC:** Condensate drip tray.
- VVR:** Variable speed recovery unit.
- KDP:** Dehumidification and post-heating management kit.
- RBC:** 3-way valve hot water coil module.
- RBF:** 3-way valve cold water coil module.

### ACCESSORIES COMPATIBILITY

#### Regulation

##### Rectangular flange.

Ver	07	09	12	15	17	21	24
H,T	FRR09	FRR09	FRR12	FRR15	FRR17	FRR21	FRR24

##### Condensate drain tray.

Ver	07	09	12	15	17	21	24
H,T	VRC07	VRC09	VRC12	VRC15	VRC17	VRC21	VRC24

#### Additional modules

##### Rectangular anti-vibration joint.

Ver	07	09	12	15	17	21	24
H,T	GAR07	GAR09	GAR12	GAR15	GAR17	GAR21	GAR24

##### Recirculation damper module.

Ver	07	09	12	15	17	21	24
H,T	-	-	RSR12	RSR15	RSR17	RSR21	RSR24

The accessory cannot be fitted on the configurations indicated with -

##### Flat filters efficiency G4.

Ver	07	09	12	15	17	21	24
H,T	HG407	HG409	HG412	HG415	HG417	HG421	HG424

##### Fresh air intake damper with servocontrol.

Ver	07	09	12	15	17	21	24
H,T	HSR07	HRS09	HRS12	HRS15	HRS17	HRS21	HRS24

##### Roof protection for basic unit in the case of outdoor installation.

Ver	07	09	12	15	17	21	24
H,T	TDP07	TDP09	TDP12	TDP15	TDP17	TDP21	TDP24

##### Delivery waterproof cover.

Ver	07	09	12	15	17	21	24
H,T	BDL07	BDL09	BDL12	BDL15	BDL17	BDL21	BDL24

Harmful elements and smells in the air are eliminated by the efficient filtration system with bag filters (F7), which are easily extracted and regenerated.

**High-efficiency air circulation thanks to plug-fans with electronically controlled motors or inverters, depending on the sizes**

#### Freecooling: free comfort

During in-between seasons, outdoor climatic conditions can be more pleasant than those indoors. In such situations, the ERSRs stop the recovery unit enabling the intake of fresh outdoor air to air-condition indoor rooms at zero cost.

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

Air heat recovery both in summer and winter, thanks to the rotary recovery unit (hygroscopic version also available). Air introduced into the room is always optimised, thanks to the heat exchange between the air recovery and outdoor fresh air.

#### State of the art electronic control

Naturally, all these technological advantages are controlled by state of the art heat regulation, thus ensuring maximum energy savings in every condition of use.

**RBE:** Electric coil module.

**RBP:** 3-way valve cold water and post-heating coil module.

**MSS:** Module equipped with silencer baffles.

**FRR:** Rectangular flange.

**GAR:** Rectangular anti-vibration joint.

**HSR:** Fresh air intake damper with servocontrol.

**RSR:** Recirculation damper module.

**HG4:** Flat filters efficiency G4.

## Accessories

### Air quality probe (VOC).

Ver	07	09	12	15	17	21	24
H,T	QP						

### Variable speed recovery unit.

Ver	07	09	12	15	17	21	24
H,T	VVR07	VVR09	VVR12	VVR15	VVR17	VVR21	VVR24

### Dehumidification and post-heating management kit.

Ver	07	09	12	15	17	21	24
H,T	KDP						

### Intake waterproof cover.

Ver	07	09	12	15	17	21	24
H,T	CAP07	CAP09	CAP12	CAP15	CAP17	CAP21	CAP24

### 3-way valve hot water coil module.

Ver	07	09	12	15	17	21	24
H,T	RBC07	RBC09	RBC12	RBC15	RBC17	RBC21	RBC24

## PERFORMANCE SPECIFICATIONS

Size		07	09	12	15	17	21	24
<b>Heat recovery unit</b>								
Power supply		400V 3N ~ 50Hz						
Unit type		UVNR (Unit ventilation not residential)						
Heat recovery system type	Type/n°							
Heat capacity recovered (EN308) (1)	kW	5,8	10,3	19,4	31,4	41,3	64,3	85,0
Dry heating efficiency (2)	%	79,0	78,9	78,3	78,8	78,9	78,5	78,7
<b>Information in compliance with Annex V of regulation EU no. 1253/2014</b>								
Nominal air flow rate supply / recovery	m³/s	0,31	0,54	1,03	1,65	2,17	3,39	4,47
Nominal air flow rate supply / recovery	m³/h	1100	1950	3700	5950	7800	12200	16100
Minimum air flow rate	m³/h	-	-	-	-	-	-	-
<b>Fans (3)</b>								
Commissioning	type	Analog signal of EC fan						
Type	type	Plug-fan						
Number	no.	1	1	1	1	1	1	1
Supplied electrical power consumption	kW	0,27	0,48	0,85	1,31	1,90	2,20	2,80
Recovered electrical power consumption	kW	0,27	0,48	0,86	1,30	1,90	2,20	2,80
Total input electric power	kW	0,84	2,04	6,10	8,78	10,20	22,37	30,37
SFP int.	W/(m³/s)	1061,00	994,00	927,00	733,00	669,00	778,00	759,00
SFP int. lim. 2018	W/(m³/s)	1141	1106	1033	942	887	886	887
Filters face velocity	m/s	1,8	1,9	1,8	1,8	1,8	1,6	1,7
Nominal external pressure Δp (3)	Pa	100	100	100	100	100	100	100
Useful static supply pressure	Pa	360	520	1000	1100	900	1440	1500
Useful static recovery pressure	Pa	360	520	1000	1100	900	1440	1500
Supplied internal pressure drop Δps int.	Pa	269	262	276	222	216	240	241
Recovered internal pressure drop Δps int.	Pa	272	265	280	225	219	243	244
Fans static efficiency (4)	%	64,5	65,5	62,8	64,1	67,2	64,7	65,8
Internal leakage (5)	%	< 3	< 3	< 3	< 3	< 3	< 3	< 3
External leakage	%	0,2	0,2	0,1	0,1	0,1	0,1	0,1
<b>Air filter</b>								
Expelled air filter	Type/n°							
Delivery air filter	Type/n°							
Delivery filter energy classification		D						
Recovery filter energy classification		D						

(1) Expelled air: Tdb=25°C; Twb<14°C. Fresh air: Tdb=5°C.

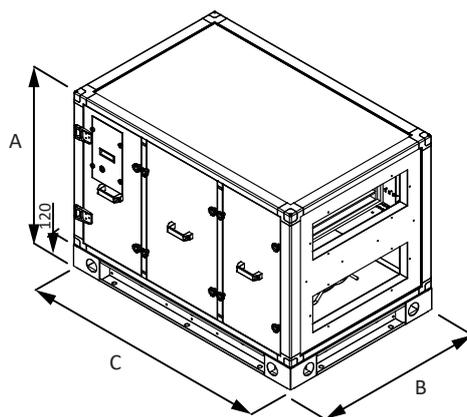
(2) Relation between the inlet air heating gain and the expulsion air heating loss, both relating to the outside temperature, measured in dry reference conditions, with balanced mass flow and an internal/external air heating difference of 20K, excluding the heating gain generated by the fan motors and the internal leakage.

(3) Performances referring to clean filters

(4) According to regulation EU 327/2011

(5) External leakage test performed at +400 Pa and -400 Pa; internal leakage test performed at 250 Pa

## DIMENSIONS AND WEIGHTS



Size		07	09	12	15	17	21	24
<b>Dimensions and weights</b>								
A	mm	965	1285	1445	1765	2085	2405	2725
B	mm	895	1005	1375	1695	1855	2335	2665
C	mm	1375	1535	2045	2365	2365	3005	3005
Empty weight	kg	240	340	570	820	1010	1610	1980

Aermec si riserva la facoltà di apportare in qualsiasi momento tutte le modifiche ritenute necessarie per il miglioramento del prodotto con eventuale modifica dei relativi dati tecnici.

**Aermec S.p.A.**  
Via Roma, 996 - 37040 Bevilacqua (VR) - Italia  
Tel. 0442633111 - Telefax 044293577  
www.aermec.com

Numero Verde  
**800-843085**