

## HRS Heat recovery unit



### HORIZONTAL INSTALLATION

These units allow to extract a determined amount of air from the environment and replace it with fresh air.

An aluminium plate recovery unit allows effective heat exchange between the expulsion air flow and that of fresh air: the fresh air is pre-heated or pre-cooled in this way, depending on the season, at the cost of the expelled air.

The air introduced is filtered before passing through the recovery unit, which is protected from dirtying with a filter of the same type also on the expulsion side. The air introduced can also be post-heated in the versions with hot water heating coil.

### Features

- Available in 8 sizes and 2 versions:
  - HRS:** standard version
  - HRS W:** version with additional hot water coil. It is used when post-heating is necessary. Available in models from 090 to 390.
- Horizontal installation.
- Panels realised in Aluzink sheet steel, removable for inspection and maintenance.
- Acoustic and heat insulation of the panels using polyethylene/polyester with average thickness of 20 mm.
- Condensate drip tray in ABS with low condensate drain connection.
- Air filters with G3 efficiency, easily extractable laterally, to allow periodical cleaning.
- Double intake centrifugal fans, coupled directly onto electric motors (with single intake for HRS 030).
- Terminal board on machine to ease the electric connections and fan control.
- Aluminium plate heat recovery unit housed in condensate drip tray.

## Accessories

- **HRS\_CS:** Section of water cooling/heating (with stainless steel condensate drip tray).
  - **HRS\_ED:** Regulation shutter.
  - **HRS\_S:** N° 4 circular connection kits for direct connection of the unit to the circular conduits.
    - HRS090S (ø 315 mm)
    - HRS160S (ø 355 mm)
    - HRS230S (ø 400 mm)
  - **HRS\_SC:** Electronic speed regulator.
  - **HRS\_AT:** Anti-freeze thermostat, allows to control that the temperature does not fall below a pre-established value. **Accessory installed in the factory, to be requested**
- when placing the order for the HRS W version.**
- **PX:** Control panel with switch-over. Wall installation. (from size 090 to 300)
  - **PX2:** Control panel with switch

Accessories compatibility								
	HRS 030	HRS 060	HRS 090 HRS 090W	HRS 160 HRS 160W	HRS 190 HRS 190W	HRS 230 HRS 230W	HRS 300 HRS 300W	HRS 390 HRS 390W
HRS090CS			✓					
HRS160CS				✓				
HRS190CS					✓			
HRS230CS						✓		
HRS300CS							✓	
HRS390CS								✓
HRS090ED			✓					
HRS160ED				✓				
HRS190ED					✓			
HRS230ED						✓	✓	✓
HRS090S			✓					
HRS160S				✓	✓			
HRS230S						✓	✓	✓
HRS030SC	✓							
HRS060SC		✓						
HRS01AT *			✓	✓	✓	✓	✓	✓
PX			✓	✓	✓	✓	✓	
PX2			✓	✓	✓	✓	✓	

\* Accessory installed in the factory, **compatible only with HRS W version**, to be requested when placing the order.

## Technical data

Mod.		HRS 030	HRS 060	HRS 090	HRS 160	HRS 190	HRS 230	HRS 300	HRS 390
Nominal air flow rate	m <sup>3</sup> /h	300	620	920	1580	1850	2250	2950	3920
Useful static pressure <sup>(1)</sup>	Pa	45	55	65	70	77	80	100	100
Total max input	A	0,75	1,8	2,2	4,4	4,8	5,2	8,3	5
♪ Sound Pressure	dB(A)	43	51	50	53	52	51	54	56

### Recuperator

Efficiency <sup>(2)</sup>	%	53	54	55	54	54	54	51	57
Recovered heating capacity <sup>(2)</sup>	kW	1,5	3,1	4,7	7,9	9,2	11,2	13,9	20,6
Conditioned air temperature <sup>(2)</sup>	°C	8,3	8,5	8,8	8,5	8,5	8,5	7,8	9,3

Efficiency <sup>(3)</sup>	%	46	48	48,5	47,5	47	47,5	45	50
Recovered cooling capacity <sup>(3)</sup>	kW	0,27	0,58	0,88	1,48	1,73	2,11	2,63	3,86
Conditioned air temperature <sup>(3)</sup>	°C	29,2	29,1	29,1	29,2	29,2	29,2	29,3	29,0

### Fans

Power	W	92 x 2	90 x 2	147 x 2	350 x 2	350 x 2	350 x 2	550 x 2	750 x 2
Poles	n°	4	4	4	4	4	4	4	4
Number of fans	n°	2	2	2	2	2	2	2	2
Number of speeds	n°	1 <sup>(5)</sup>	1 <sup>(5)</sup>	3	3	3	3	3	1
Protection rating	IP	44	44	44	44	44	55	44	55
Isolation class	F	F	F	F	F	F	F	F	F
Electric power supply		230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz	400V 3N~ 50Hz

### Filters <sup>(1)</sup>

Efficiency		G3	G3	G3	G3	G3	G3	G3	G3
Air front speed	m/s	0,9	1,7	2,0	2,3	2,7	1,8	2,5	2,8

### Features of the water post-heating coil (HRS W) <sup>(4)</sup>

Geometry	mm	-	-	25x22	25x22	25x22	25x22	25x22	25x22
Rows	n°	-	-	2	2	2	2	2	2
Pipes for row	n°	-	-	14	18	18	22	22	22
Louver pitch	mm	-	-	2,5	2,5	2,5	2,5	2,5	2,5
Heating capacity	kW	-	-	8,2	12,2	14,4	20,3	24,2	29,9
Air outlet temperature	°C	-	-	33,4	30,8	30,2	33,2	31,3	29,7
Air side pressure drop	Pa	-	-	25	32	35	24	36	38
Water side pressure drop	kPa	-	-	8	14	15	17	22	30
Collector diameter	Ø gas	-	-	3/4	3/4	3/4	3/4	3/4	3/4
Weight	kg	-	-	2,5	2,5	2,5	5	5	6,5

The performance refers to the following conditions:

<sup>(1)</sup> Values referring to the nominal air flow rate including recovery unit and filters

■ <sup>(2)</sup> Winter nominal conditions:

- external air temperature: -5°C BS, UR 80%
- environmental air temperature: 20 °C BS, UR 50%
- nominal air flow rate

■ <sup>(3)</sup> Summer nominal conditions:

- external air temperature: 32 °C BS UR 50%
- environmental air temperature: 26 °C BS, UR 50%
- nominal air flow rate

■ <sup>(4)</sup> Heating:

- water input temperature: 70 °C
- Δt = 10 °C
- air input temperature: 8 °C
- nominal air flow rate

<sup>(5)</sup> Can be adjusted electronically with HRS\_SC regulator accessory

♪ Noise pressure level: values referring to 1.5 m from machine intake in free field.

Mod.		HRS 030	HRS 060	HRS 090	HRS 160	HRS 190	HRS 230	HRS 300	HRS 390
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### Features of the water post-heating/cooling coil (HRS\_CS)

Geometry	mm	-	-	25x22	25x22	25x22	25x22	25x22	25x22
Rows	n°	-	-	3	3	3	3	3	3
Pipes for row	n°	-	-	16	22	25	26	26	26
Louver pitch	mm	-	-	2,1	2,1	2,1	2,1	2,1	2,1
<b>Heating <sup>(6)</sup></b>									
Heating capacity	kW	-	-	13,2	19,4	25,7	33,9	38	44,7
Air outlet temperature	°C	-	-	45,1	43,1	44,4	46,9	43,4	40,9
Water flow rate	m <sup>3</sup> /h	-	-	1,2	1,7	2,3	3	3,3	3,9
Water side pressure drop	kPa	-	-	4	11	20	18	21	22
Air side pressure drop	Pa	-	-	29	38	36	25	38	53
<b>Cooling <sup>(7)</sup></b>									
Cooling capacity	kW	-	-	5,4	9,1	12,3	16,3	18,3	21,6
Sensitive cooling capacity	kW	-	-	3,8	6,1	8	10,6	11,9	14,3
Air outlet temperature	°C	-	-	19,2	19	18,7	17,9	18,7	19,5
Water flow rate	m <sup>3</sup> /h	-	-	0,92	1,57	2,04	2,87	3,15	3,7
Water side pressure drop	kPa	-	-	4	14	27	26	31	26
Air side pressure drop	Pa	-	-	38	48	50	40	52	56

The performance refers to the following conditions:

■ <sup>(6)</sup> Heating

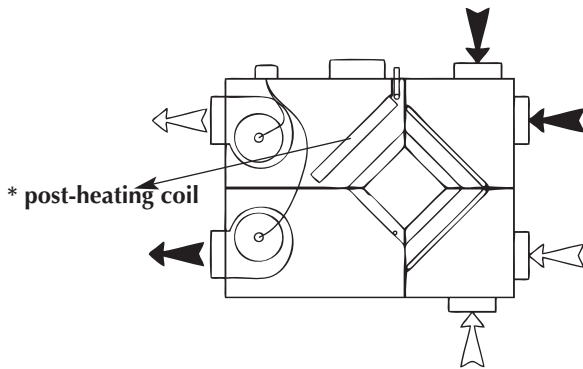
- air input temperature 12 °C,
- water input temperature 70 °C
- Δt = 10 °C
- nominal air flow rate

■ <sup>(7)</sup> Cooling

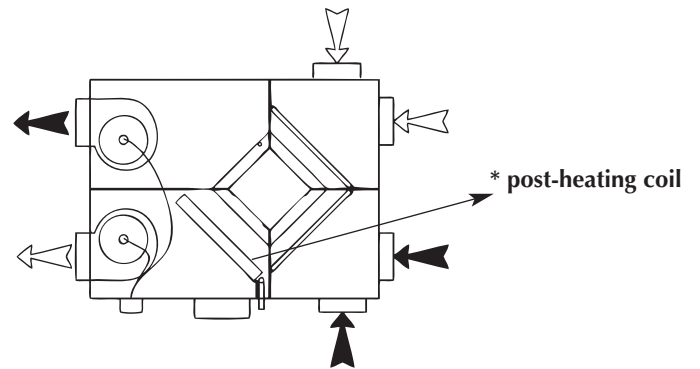
- air input temperature 30 °C, UR 50%
- water input temperature 7 °C
- Δt = 5 °C
- nominal air flow rate

## Internal layout (configurations available)

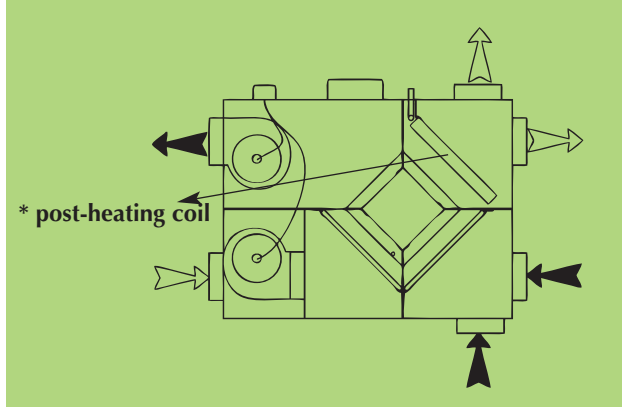
ORIENTATION TYPE 01



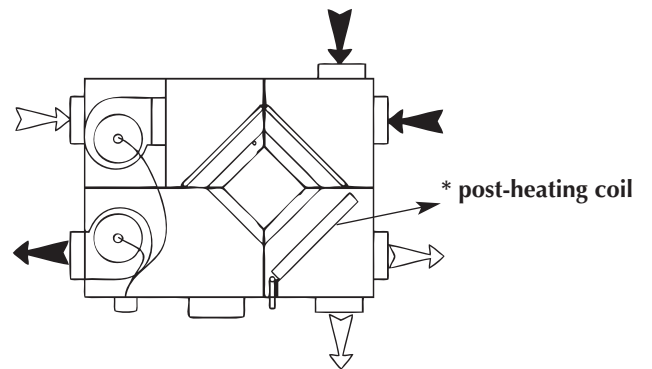
ORIENTATION TYPE 02



ORIENTATION TYPE 03 STANDARD



ORIENTATION TYPE 04



### ORIENTATION TYPE 03 (STANDARD)

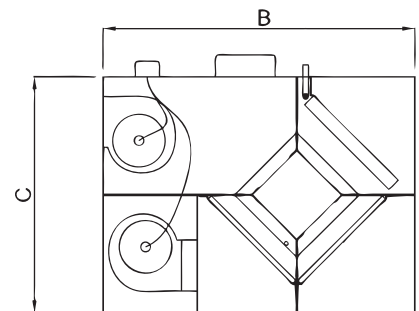
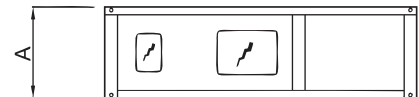
ORIENTATION TYPE 01 / 02 / 04: TO BE REQUESTED WHEN PLACING THE ORDER

\* post-heating coil:  
ONLY AVAILABLE ON HRS W VERSION

Key:



## Dimensional data (mm)



Mod. HRS	Accessories compatibility				
	HRS 030	HRS 060	HRS 090	HRS 160	
Height	A	290	290	410	500
Length	B	990	990	1140	1300
Width	C	750	750	860	860
Weight (kg)		41	45	80	125

Mod. HRS	HRS 190	HRS 230	HRS 300	HRS 390	
Height	A	500	600	600	600
Length	B	1380	1650	1650	1750
Width	C	960	1230	1230	1230
Weight (kg)		138	160	174	190

The technical data given on this documentation is not binding. Aermec S.p.A. reserves the right to apply at any time all the modifications deemed necessary for improving the product.

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