

- HRU with efficiency $\geq 75\%$
- Counterflow
- $Q_v > 700 \text{ m}^3/\text{h}$



HRU with counterflow exchanger type HRS-E/W

Heat recovery units with **counterflow** heat exchanger and electrical or water post-heating. The unit is available in different versions, 700 m³/h until 3500 m³/h with vertical outlets in left or right execution or with horizontal outlets. The unit has been tested according to NBN EN308.

Application

- Ventilation for both residential and non-residential applications
- For indoor mounting in a frost protected area
- Outside mounting only possible for horizontal versions (from model 1200H and on) with a roof

Composition

- Housing in prelacquered steel plate RAL9016 (model 700) and RAL7040 (other models)
- 30 mm insulation for model 700, 50 mm for models 1200 - 3500
- Round or rectangular connections depending on the model
- 2 motorised dampers included for horizontal model 2500 or higher
- Evacuation drain with connection 20 mm
- Electrical or warm water post-heating (**external warm water battery optional**)
- Automatic bypass
- Filter detection with timer for model 700 and with pressure switch for other models
- Standard Modbus communication
- Possibility of **regulation by constant pressure** or **regulation by CO₂** (sensors not included)
- The remote control is not included

Fan

- Directly driven EC direct current fan with backward inclined blades
- Can be regulated 20-100%

Exchanger

- Counterflow heat exchanger of German fabrication with an efficiency up to 94%
- Heat exchanger certified according Eurovent EN 13141-7

Filter

- **HRS-E / HRS-W** is equipped with two filters
- Type **HRS-E / HRS-W 700**: 2 x bagfilter M5 - ISO 16890 ePM10 65% (exhaust/supply)
- Other types: 2 x panelfilter M5 - ISO 16890 ePM10 55% / F7 - ISO 16890 ePM1 70% (exhaust/supply)

Mounting

- The HRS 3500 can be supplied in 1 part or in 3 parts, depending the available article number. See the list of article numbers below.

Accessories

- Manual control with weekly timer, type **MC-HRS**
- Air outlet, type **UT** (for models up to 2200 m³/h)
- Connection piece, type **MDV** (for models up to 2200 m³/h)
- Rain roof for outside application, type **RF-HRS**
- Warm water battery, type **CWA / CWAR**
- Replacement filters, type **FS-HRS**

Order example

HRS-EV 700 L

Explanation

HRS = type of heat recovery unit

E = electrical post-heating

V = vertical execution

700 = air flow rate in m³/h

L = left execution

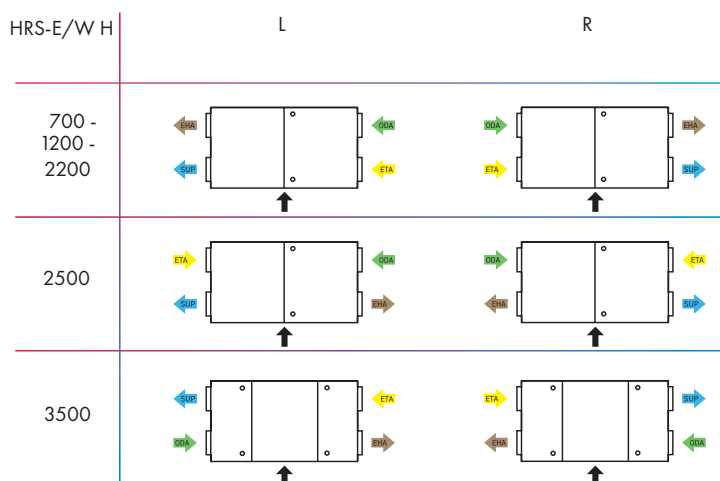
- Qs = Supply air
- Qe = Exhaust air
- SFP = Specific fan power
- η_t = Temperature efficiency

Technical data				HRSEV 700	HRSEV 1200	HRSEV 1900
Heating battery	electrical power	[kW]		1,2	2	3
EC Fans	power supply	[50Hz/VAC]		230	230	230
Extract fan	power/current	[kW/A]		0,21/1,6	0,42/2,72	0,51/3,2
Extract fan	fan speed	[min-1]		2930	3400	2540
Supply fan	power/current	[kW/A]		0,23/1,7	0,4/2,61	0,48/3,1
Supply fan	fan speed	[rpm]		2930	3400	2540
Thermal efficiency		%		>90	>90	>90
Max. electrical power		[kW/A]		1,65/8,51	2,87/14,6	3,98/19,31
Automatic defrost		00		integrated	integrated	integrated
Filterclass	extraction			M5	M5	M5
Filterclass	supply			M5	F7	F7
Thermal insulation		[mm]		30	50	50
Working temperature between -5°C and +40°C to maintain balanced air volumes						
Thermal efficiency measured according Eurovent EN 13141-7						
				HRSWV 700	HRSWV 1200	HRSWV 1900
EC Fans	power supply	[50Hz/VAC]		230	230	230
Extract fan	power/current	[kW/A]		0,21/1,6	0,42/2,72	0,51/3,2
Extract fan	fan speed	[min-1]		2930	3400	2540
Supply fan	power/current	[kW/A]		0,23/1,7	0,4/2,61	0,48/3,1
Supply fan	fan speed	[rpm]		2930	3400	2540
Thermal efficiency		%		>90	>90	>90
Max. electrical power		[kW/A]		0,45/3,30	0,87/6,0	0,98/6,31
Automatic defrost		00		integrated	integrated	integrated
Filterclass	extraction			M5	M5	M5
Filterclass	supply			M5	F7	F7
Thermal insulation		[mm]		30	50	50
Working temperature between -5°C and +40°C to maintain balanced air volumes						
Thermal efficiency measured according Eurovent EN 13141-7						

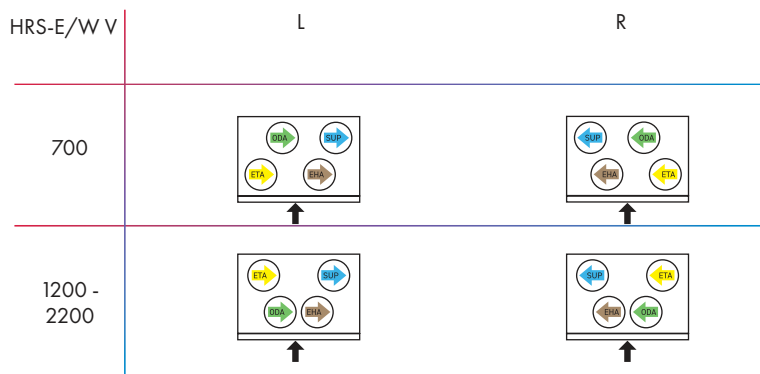
Technical data								
Heating battery	electrical power	[kW]	HRSEH 700	HRSEH 1200	HRSEH 1900	HRSEH 2500	HRSEH 3500	HRSEH 5500 *
EC Fans	power supply	[50Hz/VAC]	1,2	2	3	3,6	6	12
Extract fan	power/current	[kW/A]	230	230	230	3 x 400	3 x 400	3 x 400
Extract fan	fan speed	[min-1]	0,21/1,6	0,42/2,72	0,51/3,2	1/4,47	1,17/5,43	1,84/2,88
Supply fan	power/current	[kW/A]	2930	3400	2540	2200	2390	2180
Supply fan	fan speed	[rpm]	0,23/1,7	0,4/2,61	0,48/3,1	0,88/3,92	1,16/5,4	1,87/3,06
Thermal efficiency		%	2930	3400	2540	2200	2390	2180
Max. electrical power		[kW/A]	>90	>90	>90	>90	>90	>90
Automatic defrost		00	1,64/8,51	2,82/14,07	3,99/19,32	5,5/13,69	8,34/19,59	15,71/23,38
Filterclass	extraction		integrated	integrated	integrated	integrated	integrated	integrated
Filterclass	supply		M5	M5	M5	M5	M5	M5
Thermal insulation		[mm]	M5	F7	F7	F7	F7	F7
			30	50	50	50	50	70
Working temperature between -5°C and +40°C to maintain balanced air volumes								
Thermal efficiency measured according Eurovent EN 13141-7								
EC Fans	power supply	[50Hz/VAC]	HRSEV 700	HRSEV 1200	HRSEV 1900	HRSEV 2500	HRSEV 3500	HRSEV 5500 *
Extract fan	power/current	[kW/A]	230	230	230	3 x 400	3 x 400	3 x 400
Extract fan	fan speed	[min-1]	0,21/1,6	0,42/2,72	0,51/3,2	1/4,47	1,17/5,43	1,84/2,88
Supply fan	power/current	[kW/A]	2930	3400	2540	2200	2390	2180
Supply fan	fan speed	[rpm]	0,23/1,7	0,4/2,61	0,48/3,1	0,88/3,92	1,16/5,4	1,87/3,06
Thermal efficiency		%	2930	3400	2540	2200	2390	2180
Max. electrical power		[kW/A]	>90	>90	>90	>90	>90	>90
Automatic defrost		00	0,44/3,30	0,82/5,37	0,99/6,32	1,89/8,49	2,34/10,95	3,72/6,04
Filterclass	extraction		integrated	integrated	integrated	integrated	integrated	integrated
Filterclass	supply		M5	M5	M5	M5	M5	M5
Thermal insulation		[mm]	M5	F7	F7	F7	F7	F7
			30	50	50	50	50	70
Working temperature between -5°C and +40°C to maintain balanced air volumes								
Thermal efficiency measured according Eurovent EN 13141-7								

* No longer available

Horizontal configurations - side by side flow - top view



Vertical configurations - superposed flow - view from access panel side

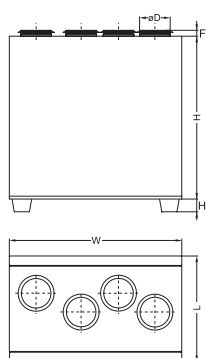


1. Exhaust air
2. Extract air
3. Fresh air
4. Supply air

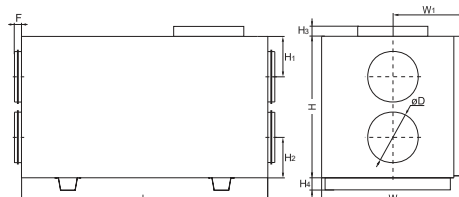
Heat recovery units

	Dimensions														
	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	W [mm]	W1 [mm]	øD [mm]	G [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	F [mm]
HRS-EV / HRS-WV 700	670	-	-	-	1000	-	250	-	-	980	126	-	-	-	40
HRS-EV / HRS-WV 1200	760	-	-	-	1350	-	315	-	-	1200	126	-	-	-	40
HRS-EV / HRS-WV 1900	800	-	-	-	2000	-	400	-	-	1600	140	-	-	-	70
HRS-EV / HRS-WV 2200	802	-	-	-	2000	-	400	-	-	1600	140	-	-	-	70
HRS-EH / HRS-WH 700	1200	-	-	-	670	335	250	-	-	780	210	210	65	126	40
HRS-EH / HRS-WH 1200	1500	-	-	-	760	380	315	-	-	1000	269	269	70	141	40
HRS-EH / HRS-WH 1900	1800	-	-	-	800	400	400	-	-	1245	331	331	106	141	70
HRS-EH / HRS-WH 2200	1800	-	-	-	800	400	400	-	-	1245	331	331	106	141	70
HRS-EH / HRS-WH 2500	2100	-	-	-	900	490	-	600	350	1355	387	327	108	180	50
HRS-EH / HRS-WH 3500	2756	909	1132	709	946	494	-	800	500	1600	413	413	129	180	65
HRS-EH / HRS-WH 5500 *	2644	1740	900	-	1670	835	-	800	500	1600	415	415	-	180	55
															788/768

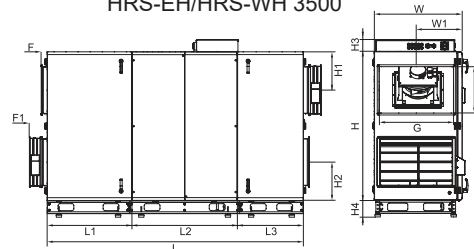
HRS-EV/HRS-WV 700-2200



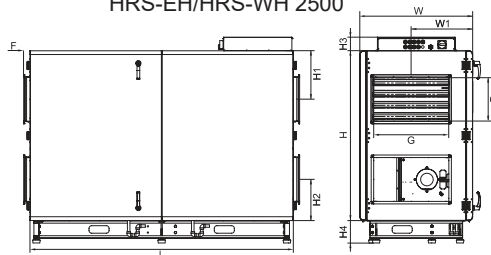
HRS-EH/HRS-WH 700-1900



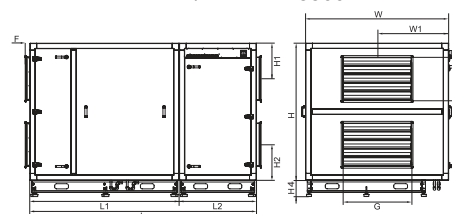
HRS-EH/HRS-WH 3500



HRS-EH/HRS-WH 2500



HRS-EH/HRS-WH 5500



Sound values								
HRS V 700	Lwa total.	Lwa, dB						
	dB(A)	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	73	75	74	66	66	65	63	64
Extract	64	70	74	57	53	48	41	38
Surrounding	48	53	50	47	37	34	32	37
720 m³/h - 125 Pa								
HRS V 1200	Lwa total.	Lwa, dB						
	dB(A)	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	79	66	75	73	72	70	67	58
Extract	68	62	63	64	58	53	48	43
Surrounding	58	51	52	53	50	49	45	40
1300 m³/h - 120 Pa								
HRS V 1900	Lwa total.	Lwa, dB						
	dB(A)	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	75	78	78	69	68	66	64	64
Extract	67	75	75	59	55	49	42	38
Surrounding	51	56	54	50	39	35	33	37
1800 m³/h - 125 Pa								
HRS H 700	Lwa total.	Lwa, dB						
	dB(A)	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	73	65	67	65	64	66	63	54
Extract	61	54	55	57	49	46	41	40
Surrounding	56	45	49	54	45	43	40	37
760 m³/h - 101 Pa								
HRS H 1200	Lwa total.	Lwa, dB						
	dB(A)	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	75	62	65	71	70	65	63	53
Extract	57	51	49	52	51	45	40	32
Surrounding	53	44	43	48	47	43	40	33
1271 m³/h - 119 Pa								
HRS H 1900	Lwa total.	Lwa, dB						
	dB(A)	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	75	78	79	69	68	66	64	63
Extract	65	71	73	58	54	48	41	37
Surrounding	51	56	55	50	39	35	33	36
1750 m³/h - 100 Pa								
HRS H 2500	Lwa total.	Lwa, dB						
	dB(A)	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	83	65	73	75	78	79	71	61
Extract	65	57	61	59	56	54	49	39
Surrounding	62	45	57	58	55	52	44	36
2976 m³/h - 121 Pa								
HRS H 3500	Lwa total.	Lwa, dB						
	dB(A)	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	82	73	83	74	77	75	70	71
Extract	73	73	81	66	60	54	45	47
Surrounding	56	52	59	56	48	44	39	45
3746 m³/h - 150 Pa								