

ERP cross-flow recuperator efficiency up to 80% with EC motors









GENERAL FEATURES

STRUCTUREStructure and frame with galvanized sheet sandwich panels Choice of materials with high thermal and acoustic insulation characteristics

FANS

The unit is equipped with radial backward blade fans with low-power electronic motor









RECUPERATOR

High-efficiency aluminum heat exchanger with countercurrent flows and integrated bypass as standard



FILTRATION

There are two filters upstream of the recuperator: ePM1 fresh air and ePM10 room air Removal can take place either from the side or from the bottom of the



HRN+ is a ventilation unit complete with heat recovery unit dedicated to air exchange without energy waste. The unit is particularly suitable for commercial premises or collective residential buildings and in all cases where the nominal flow rates for air exchange do not exceed 4500 cu m³/h.

STRUCTURE: Self-supporting sheet metal load-bearing structure, with perimeter sealing

gasket. 25 mm thick galvanized sheet metal sandwich panels, insulated with

polyurethane foam of density 42 kg/m³.

Carpentry and interior infills made of heavy-gauge galvanized sheet metal.

HEAT EXCHANGER: Aluminum cross-flow heat exchanger (80% Erp 2018). Summer and winter

operation.

SUMMER BYPASS: Summer bypass with motorized damper installed.

FANS: Brushless fans with electronic motor and modulating control. Very high

efficiency and low noise levels ErP2018

FILTER: Low pressure drop filters of efficiency

ePM 1- 70% (F7) on fresh air ePm 10 – 50% (M5) on extract air

Easy to extract for routine maintenance, estraction side according to

configuration and drawings

AVAILABILITY AND VERSIONS: 8 models with horizontal or vertical development For all configurations it is possible to change the orientation of the outlet ports on site (more details in

the data sheet and technical drawings). Two versions of control S / I

S - VERSIONS

Simple electrical setup for quick connection of the unit to the grid.

I - VERSIONS

Switchboard complete with board for managing 3 fan speeds, antifreeze and

automatic free-cooling control. Control through digital contacts.

Ogni versione è completata da comando dedicato, accessorio a richiesta

HRN+ units are suitable for indoor, ceiling or floor installation and outdoor installation with canopy (additional accessory). Electric coils (external to the structure) and modules with heating or cooling coil (fluid supply Water) are

available for HRN+ units.

Other accessories and possible adjustments according to data sheet and price

list.



UNIT CONFIGURATIONS

	-1-	-2-	-3-
HRN +	40	V	I

(1) Defines the maximum flow rate

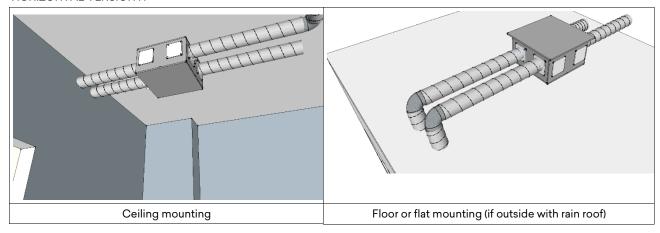
(2) Model from: 40(400 m³/h) to 450 (4500 m³/h)

2) Type of Installation

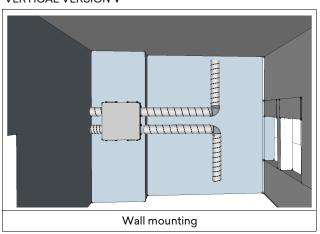
V : Vertical H : Horizontal

MOUNTING CONFIGURATIONS

HORIZONTAL VERSION H



VERTICAL VERSION V





ATTACHMENTS CONFIGURATIONS

The air connections are configurable during installation through the removable panels. However, it is possible to have the unit already with the desired configuration. When ordering, in addition to the unit code, the desired connection configuration should also be specified (Ex. URHRN000 - H4)

The units are shown viewed from above (Version H) and from the front (Version V)

Without the indication of a configuration, the standard position of the four areaulic connections in the horizontal version is marked H5 while for the vertical version the standard position is marked V1.

It is possible to have an additional choice of configuration, depending on the positioning of the condensate drain trap that will determine the ejection side of the unit. This is done during installation and will thus determine the final configuration of the unit.

PAE – Presa Aria Esterna

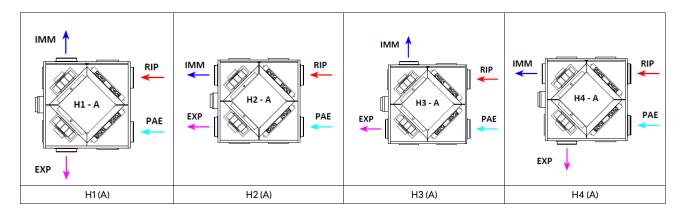
IMM - Immissione aria di Rinnovo

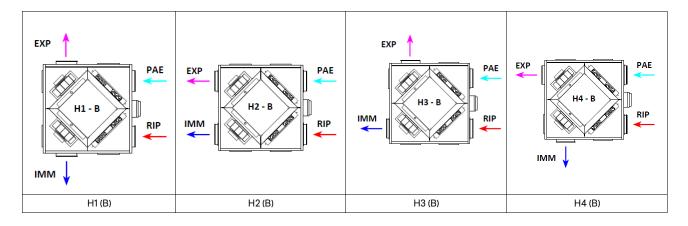
RIP – Ripresa Aria Viziata

EXP – Espulsione aria Esausta

NB. Siphons should always be installed on the ejection side (purple arrow)

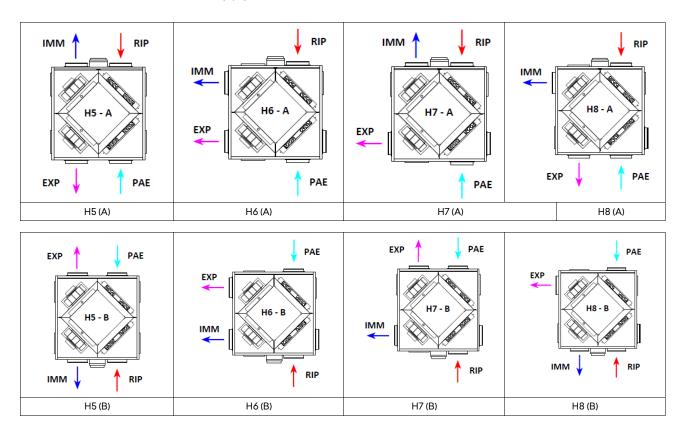
HORIZONTAL VERSION from H1 to H4 (A/B)



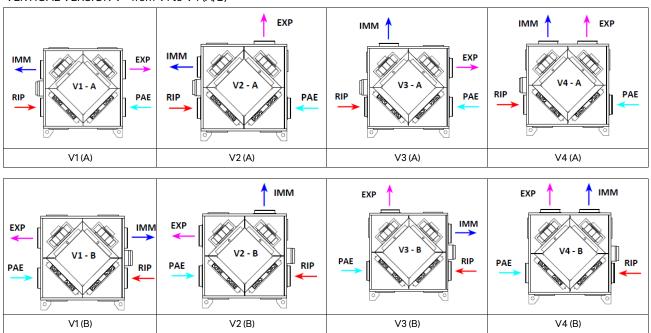




HORIZONTAL VERSION from H5 to H8 (A/B)



VERTICAL VERSION V - from V1 to V4 (A/B)





TECHNICAL FEATURES

GENERAL TECHNICAL DATA

Fans

Fan Type			Brushless fans with electronic motor and modulating control.						
Number Fans	Nr					2			
Nominal air flow rate	m³/h	400	600	1000	1400	1900	2500	3400	4500
Available useful pressure	Pa	148	117	124	122	102	255	121	114
Noise from the case			•			•			
Sound power Lw (EN3747)	dB (A)	61.2	63.6	66.5	67.3	71.1	72.2	75.2	77.3
Sound pressure Lp at 3 m (EN3744)	dB (A)	39.6	41.8	44.5	45.2	48.4	49.7	52.5	54.1
Noise in the channel									
Sound power Lw (EN3747)	dB (A)	69.6	72.6	77.8	78.4	82.5	86.9	86.5	87,4

Heat exchanger

Exchanger type		Piastre in alluminio in controcorrente							
Recovery efficiency	%	73,1	73,8	73,0	74,5	74,8	73,9	77,5	74,8

Data Referred to the following conditions (UNI EN 13141-7):

- nominal air flow rate outside air 5°C with 72% ur / exhausted air 25°C with 28% ur

Filter

Side	Rinnovo	Extraction
Filtration class	ePM1 - 70 % (F7)	ePM 10 - 50 % (M5)

Electrical Data

Supply voltage			230 V / 1 / 50Hz 400 V / 3+N / 50Hz					50Hz	
Max power consumption	W	2 X 100	2 X 145	2 X 305	2 X 305	2 X 305	2 X 990	2 X 990	2 X 1100
Unit degree of protection		IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20

Data referring to fan manufacturer's declared ratings

The units must be connected to the distribution channels Performance was verified with supplied "clean " low-loss filters.



Item specifications

HRN+

- unit nonresidential dual-flow ventilation with medium-efficiency heat recovery (n > 73%)
- ideal solution to achieve the highest energy certification of buildings in the tertiary, industrial and collective residential sectors (centralized condominium systems)
- No. 8 models in standard or mirrored configuration with air flow rates of 400, 600, 1000, 1900, 2500, 3400 e 4500 m³/h

CONSTRUCTION:

- self-supporting sheet metal frame
- Double-paneled galvanized sheet metal sandwich case on injected polyurethane foam insulation 25 mm thick and 42 kg/m3 density (acoustic and thermal insulation)
- Sheet metal condensate collection tank, with drain for evacuation
- cross-flow aluminum static heat exchanger
- Automatic defrosting of the exchanger (via antifreeze strategy) (Versions I)
- by-pass as standard
- Backward-bladed radial fans with electronically speed-controlled, low-power (Erp-2018), single-phase (up to size 150) and three-phase (sizes 200, 250, 350, 450) EC motors that provide high values of useful static pressure available to the ductwork
- Circular inlets for connection to air ducts
- Configuration that can be changed on site: the position of air ducts can be changed (by changing the position of the panels)
- Low pressure drop filters (EN-779) class ePM 10 50 % (M5) for extract air and class ePM 1
 70 % (F7
- Dirty filter warning: operated by differential pressure switches
- Side access doors and internal technical spaces for easy inspection/maintenance
- Plug-n-play solutions with pre-wired electrical panel and control on board the machine (version I)

MODE OF INSTALLATION:

- Outdoors with an ambient temperature between -15° C and +50° C
- Horizontal versions for ceiling/floor mounting and vertical versions for wall/floor mounting

VERSIONS AVAILABLE:

- S - VERSION

Simple electrical setup for quick connection of the unit to the grid with fan wiring, mounting filter pressure switch for signaling and bypass damper;

- I - VERSION

Electrical panel complete with board for 3-speed fan management, antifreeze and automatic free-cooling control.

Post battery management through room temperature and 2-point valves; Control through digital contacts Remote panel for wiring to the machine with modbus RTU or WIFI for control through APP





Innova

PERFORMANCE

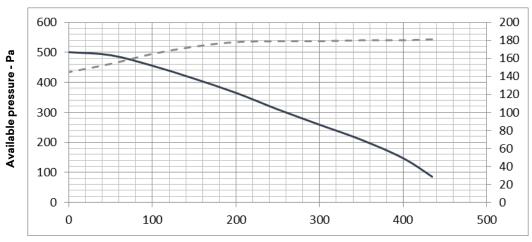
HRN+40

General Data

Speed	Max
Total power input	0,36 kW
Scope	400 m³/h
Pressure	148 Pa

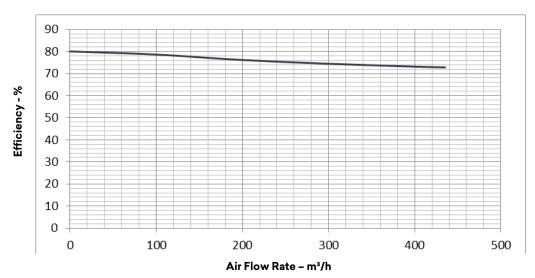
CURVES

AERAULIC PERFORMANCE



Air Flow Rate - m³/h

THERMAL EFFICIENCY



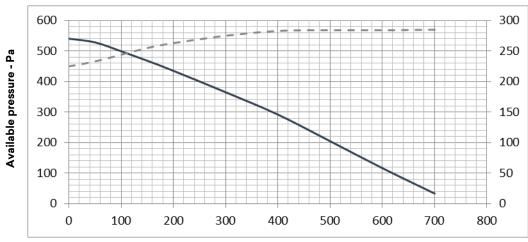


General Data

Speed	Max
Total power input	0,56 kW
Scope	600 m³/h
Pressure	117 Pa

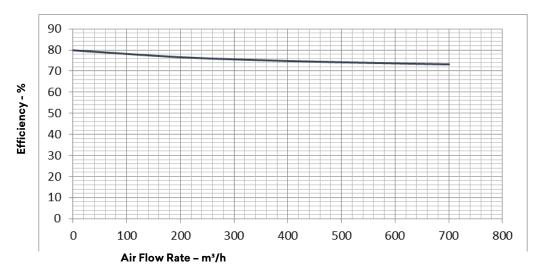
CURVES

AERAULIC PERFORMANCE



Air Flow Rate - m³/h

THERMAL EFFICIENCY



Conditions referred to the following conditions: External Air 5° C 72% U.r. Indoor air 25° C 28% U.r.

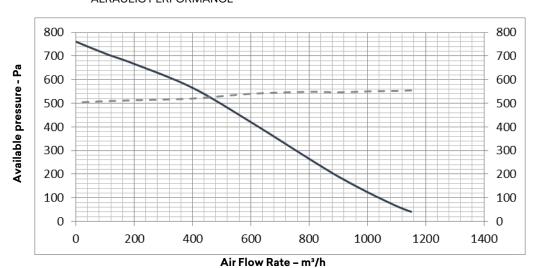


General Data

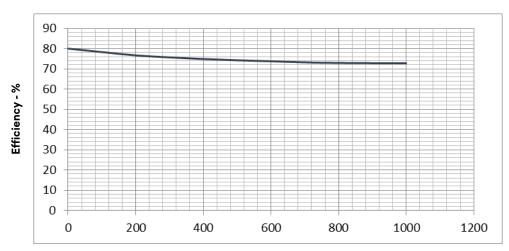
Speed	Max
Total power input	1,1 kW
Scope	1000 m³/h
Pressure	124 Pa

CURVES

AERAULIC PERFORMANCE



THERMAL EFFICIENCY



Air Flow Rate - m³/h

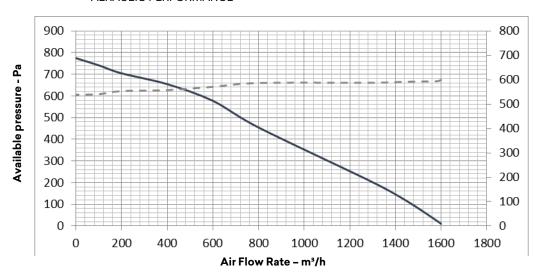


General Data

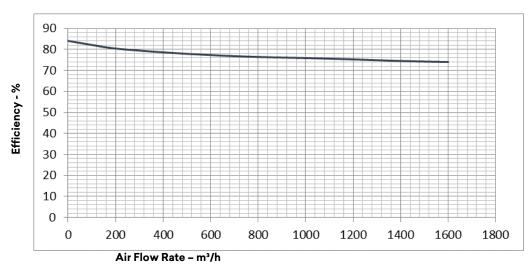
Speed	Max
Total power input	1,18 kW
Scope	1400 m³/h
Pressure	122 Pa

CURVES

AERAULIC PERFORMANCE



THERMAL EFFICIENCY



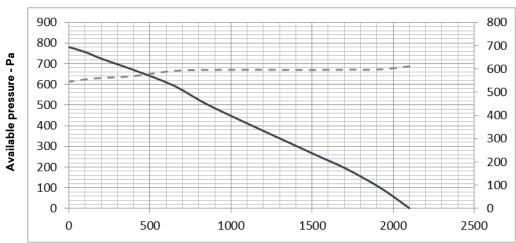


General Data

Total power input	1,23 kW
Scope	1900 m³/h
Pressure	102 Pa

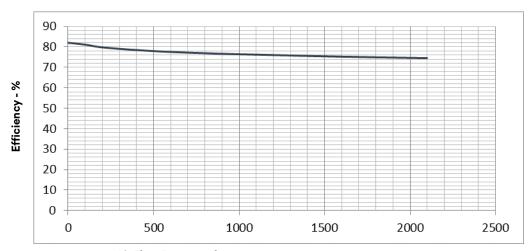
CURVES

AERAULIC PERFORMANCE



Air Flow Rate - m³/h

THERMAL EFFICIENCY



Air Flow Rate - m³/h

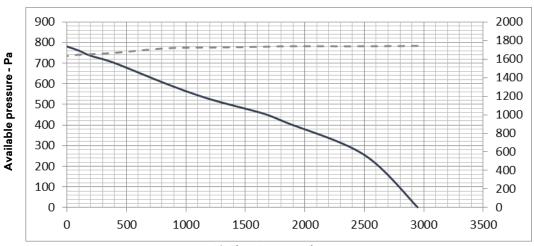


General Data

Speed	Max
Total power input	1,73 kW
Scope	2500 m³/h
Pressure	255 Pa

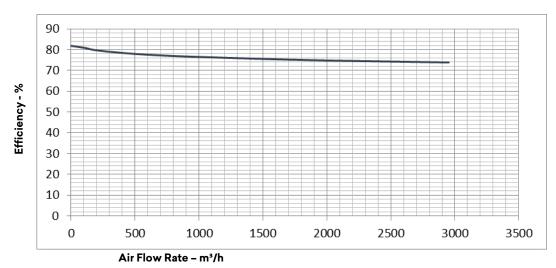
CURVES

AERAULIC PERFORMANCE



Air Flow Rate - m³/h

THERMAL EFFICIENCY



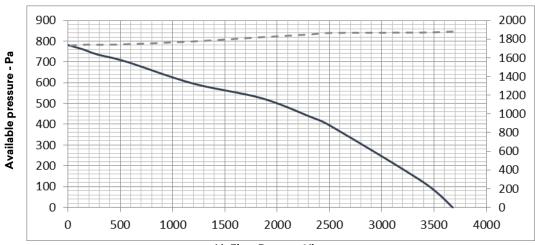


General Data

Speed	Max
Total power input	1,87 kW
Scope	3400 m³/h
Pressure	121 Pa

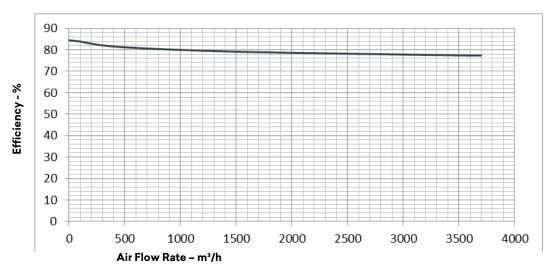
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AERAULIC PERFORMANCE



Air Flow Rate - m3/h

THERMAL EFFICIENCY



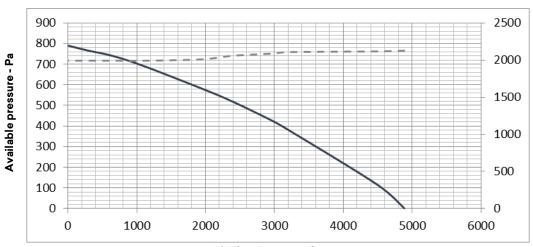


General Data

Speed	Max
Total power input	1,87 kW
Scope	4500 m³/h
Pressure	114 Pa

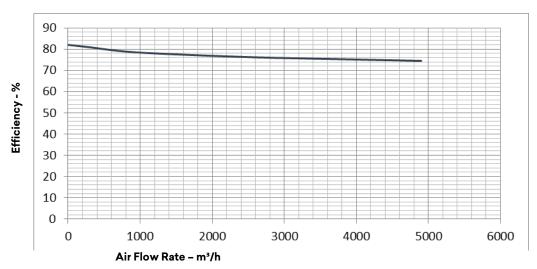
CURVES

AERAULIC PERFORMANCE



Air Flow Rate - m³/h

THERMAL EFFICIENCY



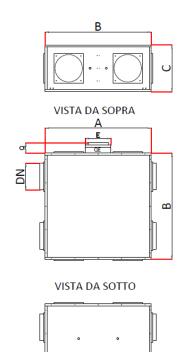


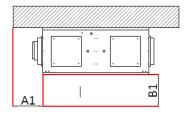
ECODESIGN DATA

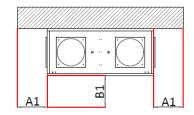
Mode	əl	HRN+ 40	HRN+ 70	HRN+ 100	HRN+ 150	HRN+ 200	HRN+ 250	HRN+ 350	HRN+ 450
Declared	type	UVNR	UVNR	UVNR	UVNR	UVNR	UVNR	UVNR	UVNR
/		Variable speed	Variable speed	Variable speed	Variable speed	Variable speed	Variable speed	Variable speed	Variable speed
Heat reco		To recover	To recover	To recover					
Thermal efficiency of heat recovery	%	73,1	74,5	73,9	75,6	75,5	74,9	74,8	75,9
Rated flow rate	m³/s	0,11	0,15	0,22	0,31	0,43	0,59	0,71	0,89
SPF int	W/(m³ /s)	1006	1117	943	1046	1075	1058	1044	1050
Frontal speed	M/s	0,98	1,06	1,53	1,15	1,11	1.47	1.19	1,17
External pressure rating (Dps , ext)	Pa	148	288	265	266	225	371	416	399
Internal pressure drop (Dps , int)	Pa	254	262	250	290	265	255	260	245
Internal pressure drop to component s extraneous to ventilation (Dps , int)	Pa	1	1	/	1	/	1	/	1
Static efficiency of fans as UE 327/2011	%	50.5	46,9	53,0	55,4	49,3	48,2	49,8	46,7
Declared maximum percentage s of leakage	%	6.8 ext / 7,1 int	6.9 ext / 7.0 int	5.8 ext / 5.9 int	4,5 ext / 5.1 int	3,6 ext / 5,2 int	3,9 ext / 5,5 int	2,4 ext / 3.4 int	1.9 ext / 2.5 int
Energy classi of filter		F7/M5	F7/M5	F7/M5	F7/M5	F7/M5		F7/M5	F7/M5
Position a description signal related filter	of the	Displayed on the unit's filter inspection and instruction manual.	Displayed on the unit's filter inspection and instruction manual.	Displayed on the unit's filter inspection and instruction manual.	Displayed on the unit's filter inspection and instruction manual.				
Sound power level	Lwa	61.2	63.6	66.5	67.3	71.1	72.2	75.2	77.3

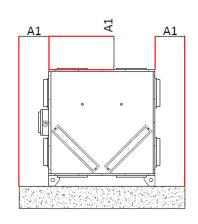


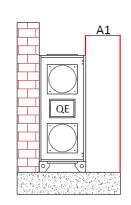
DIMENSIONS AND FUNCTIONAL SPACES











MODEL	HRN+	40	70	100	150	200	250	350	450
Width A	mm	750	1050	1050	1250	1390	1390	1900	1900
Depth B	mm	750	1050	1050	1250	1390	1390	1900	1900
Height C	mm	390	400	400	550	610	610	710	860
Electrical Panel Q,E (BxLxH)	mm	300x120x220							
Diameter DN	Ø	160	200	200	315	355	355	400	450
Weight version H	Kg	75	98	103	155	220	231	245	275
Weight Version V	Kg	78	101	106	158	223	234	248	278
Condense	Ø	16	16	16	16	16	16	16	16

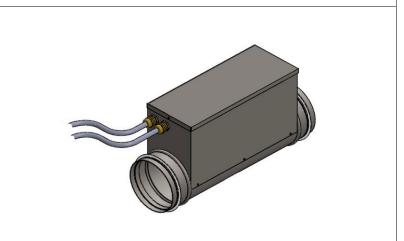


LISTA ACCESORI

Modello BER - BATTERIA ELETTRICA CON REGOLAZIONE A SONDA

Circular-section electric pre/post heating units consist of galvanized sheet metal frame with wire heating element. They are equipped with circular flanges that facilitate installation to the duct.

The side electrical box already complete with cable grommet allows access to the components inside: - Automatic reset thermoprotector; - Manual reset thermoprotector; - Remote control switch; - Terminal board; - Adjustable electronic temperature control; The stepped electronic controller complete with temperature probe that allows control of the supply air temperature after the heater with maximum precision. The electrical coil is provided for stand-alone installation without any communication with the unit.



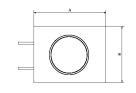
mod	el	Size							
Regulation with fixed- point probe		BER 1	BER 2	BER 3	BER 4	BER 5	BER 6	BER 7	BER 8
Matching		HRN+ 40	HRN+ 70	HRN+ 70/100	HRN+ 100/150	HRN+ 200/250	HRN+ 200/250	HRN+ 200/250	HRN+ 350/450
Power supply		230/1/50	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Pot. Elettr. Nom	KW	2	2	4	8	8	12	16	20
Diameter Ø	mm	200	250	315	315	355	400	400	500

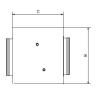


BAF - BATTERIA DI RISCALDAMENTO AD ACQUA (PER FUNZIONAMENTO POST-RISCALDO O PRE-RISCALDO)

Pre/post water-heating units consist of galvanized sheet metal frame and a heat exchange coil composed of copper pipes and aluminum fins. They are fitted with circular flanges that facilitate installation to the duct. They are equipped with threaded connections including valves for air venting and coil discharge.







F2 BAF3 BAF4 BAF5 70/100 HRN+150 HRN+200/250/350 HRN+350/450
70/100 HRN+150 HRN+200/250/350 HRN+350/450
200/200/000 000/100
73 12,89 17,03 27.98
93 1,12 2,95 4.86
,4 17 10,8 12,6
9,6 32,5 34,9 35,3
71 14,96 20,9 33,7
4 11,32 8,9 14,85
14 1,94 3,45 5.8
,9 25,2 17,0 20,5
42 16,68 15,9 15,43
8 59 22 37
90 490 590 890
70 570 800 890
50 450 450 450
5 315 400 500
4" 3/4" M 1" M 1-1/4"

 $^{^{\}star}$ (1) Yields and technical data with nominal flow rates and temperatures: - Water IN / OUT - 45°C / 40°C - Air IN 15°C * (2) Yields and technical data with nominal flow rates and temperatures: - WaTER IN / OUT - 7°C / 12°C - Air IN 27°C / 70%

MOTORIZED ZC	ONE VALVE	
CODE	2 VIE ON/OFF	3 VIE ON/OFF
AHRE0250II	BAC1/BAF1	
AHRE0251II	BAC2-3-4-5 / BAF2-3-4-5	
AHRE0261II		BAC1/BAF1
AHRE0262II		BAC2-3-4-5 / BAF2-3-4-5



EQA649II / EQB649II SMART TOUCH wall control panel with thermostat and temperature, relative humidity and room air quality probe

ERA649II / ERB649II SMART TOUCH wall control panel with thermostat and temperature, relative humidity and room air quality probe with built-in WiFi module, InnovAPP

0-10 V analog remote control for fan speed	-
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REMOTE CONTROL BYPASS COMMAND	
On-off switch for opening the unit's motorized bypass damper.	

Replacement filters	
Filters with low pressure drop Efficiency ePM 1 - 70 % (F7) On the fresh air ePM 10 - 50 % (M5) On the extracted air	

RAINROOF	
Rain cover roof made of steel with mounting brackets.	



UNIT ORDERING CODES

CODE	DESCRIPTION
For connection with	remote controls (modulating speed)
VTVN04U05II	HRN+ 40 H I - High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket
VTVN07U05II	HRN+ 70 H I - High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket
VTVN10U05II	HRN+ 100 H I - High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket
VTVN15U05II	HRN+ 150 H I - High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket
VTVN20U05II	HRN+ 200 H I - High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket
VTVN25U05II	HRN+ 250 H I - High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket
VTVN35U05II	HRN+ 350 H I - High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket
VTVN45U05II	HRN+ 450 H I - High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket
For 0-10 V connecti	ion
VTVN04U0SII	HRN+ 40 Z S - High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket
VTVN07U0SII	HRN+ 70 Z S - High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket
VTVN10U0SII	HRN+ 100 Z S - High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket
VTVN15U0SII	HRN+ 150 Z S - High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket
VTVN20U0SII	HRN+ 200 Z S - High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket
VTVN25U0RII	HRN+ 250 Z S- High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket
VTVN35U0RII	HRN+ 350 Z S - High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket
VTVN45U0RII	HRN+ 450 Z S - High-efficiency heat recovery unit with mechanical bypass, male aeraulic connections with gasket

Foot Kit for Vertical Floor Installation

		Pairing
Model Feet	AHRN0001II	All

Raincover roof for horizontal outdoor installation

Unit model	HRN+ 40	HRN+ 70/100	HRN+ 150	HRN+ 200 / 250	HRN+ 350 / 450		
Description	Steel	Steel rain roof with mounting brackets, for horizontal outdoor installation					
Roof rain cover model	AHRN0021II	AHRN0022II	AHRN0023II	AHRN0024II	AHRN0025II		

Raincover roof for vertical outdoor installation

Unit model	HRN+ 40	HRN+ 70/100	HRN+ 150	HRN+ 200 / 250	HRN+ 350 / 450
Description	Steel rain roof with mounting brackets, for vertical outdoor installation				
Roof rain cover model	AHRN0013II	AHRN0014II	AHRN0015II	AHRN0016II	AHRN0017II

Electric heating battery

Unit model	HRN+ 40 / 70	HRN+ 100 / 150	HRN+ 200 / 250	HRN+ 350	HRN+ 450			
Description	Elect	Electric battery consisting of galvanized sheet metal frame with wire resistance						
Installation types	All	All	All	All	All			
Power supply voltage	230/1/50	400/3/50	400/3/50	400/3/50	400/3/50			
Code BER	AHRP0221II	AHRP0223II	AHRP0225II	AHRP0226II	AHRP0227II			



Hydronic heating/cooling coil

Unit model	HRN+ 40	HRN+ 70/100	HRN+ 150	HRN+ 200/250/350	HRN+ 450	
Description		H	Hydronic heating/cooling coil			
Installation types	All	All	All	All	All	
Code	AHRP0331II	AHRP0332II	AHRP0333II	AHRP0334II	AHRP0335II	

Zone valves

AHRE0250II	VDZ2 Motorized zone valve On off 2-way connections 3/4" passage 1"	All
AHRE0251II	VDZ2 Motorized zone valve On off 2-way connections 1" passage 1" 1/4	All
AHRE0261II	VDZ3 On off motorized zone valve 3-way connections 3/4" passage 1"	All
AHRE0262II	VDZ3 On off motorized zone valve 3-way connections 1" passage 1" 1/4	All

Wall control commands

CODE	DESCRIPTION	PAIRING	
EQA649II SMART TOUCH wall control panel – black color			
EQB649II	SMART TOUCH wall control panel – white color	All	
ERA649II	SMART TOUCH wall control panel with integrated WiFi module and InnovAPP - black color	All	
ERB649II	SMART TOUCH wall control panel with integrated WiFi module and InnovAPP - white color	All	

Remote control commands

CODE DESCRIPTION		
Remote control bypass command	All	
0-10 V analog remote control for fan speed	All	
	Remote control bypass command	

Acoustic silencer

	DESCRIPTION	PAIRING			
SCE231001II	Silencer / DN 315 mm	HRN+ 150 H I – HRN+ 150 Z S			
SCE235001II	Silencer / DN 335 mm	HRN+ 200 H I – HRN+ 200 Z S HRN+ 250 H I – HRN+ 250 Z S			
SCE240001II	Silencer / DN 400 mm	HRN+ 350 H I – HRN+ 350 Z S HRN+ 450 H I – HRN+ 450 Z S			

Replacement filters

Model	HRN+ 40	HRN+ 70/100	HRN+ 150	HRN+ 200 / 250	HRN+ 350	HRN+ 450
Description	Filters with low pressure drop					
Code	AHRN0031II	AHRN0032II	AHRN0033II	AHRN0034II	AHRN0035II	AHRN0036II



CE Marking

The CE marking (found on each machine) certifies compliance with the following EU standards:

Low Voltage Directive 2014/35/EC Electromagnetic Compatibility Directive 2014/68/EC
 Ecodesign Directive 1253/2014

Rev.21-2024

The data in this technical catalog may be changed by the manufacturer without prior notice.