

RPL

Countercurrent flow heat recovery unit



- **EASY AND QUICK INSTALLATION**
- **VERSIONS WITH WATER COIL OR ELECTRIC FOR THE POST-HEATING**

Features

The RPL heat recoveries, for horizontal inside installation allow the combination of maximum comfort with a safe 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.

The unit is equipped with a countercurrent heat recovery unit and allows an effective heat exchange between the expulsion air flow and fresh air that is pre-heated or pre-cooled, depending on the season, thus saving the energy that would otherwise be lost with the expelled exhaust air.

They can be integrated in the direct expansion and hydronic systems both in heating and cooling mode..

Version for horizontal installation:

RPL: Standard average useful static head

of about 120 Pa, with fans orientation type 1 (see example on side)

RPL_W: With water coil

Cooled/ Hot for the sizes 030 - 100

Hot for the sizes 140 - 400

RPL_E: With electric heating coil

- Double suction centrifugal fans or plug-fan with AC motors (except for the size 400 that uses radial fans with EC motor)
- **Aluminium plate countercurrent flow heat recovery system** with heating efficiency in compliance with the European regulation 1253, housing in condensate collection basin.
- **Ventilation by-pass** of the external air flow equipped with internal damper, with free-cooling and even anti-freeze function.
- **Synthetic filter class M5** according to EN779 placed on the expelled air intake
- **Synthetic filter class F7** according to EN779 placed on the external air inlet

- Self-supporting sandwich panels in galvanised sheet metal with injected polyurethane insulation density 45 kg/m³ and a thickness of 25 mm. The polyurethane is in compliance with the standard UL 94 class HBF and the panel with the standard NF P 512: 1986 in class M1.
- Condensate collection basin in galvanised steel
- Easy accessible fans, from bottom for the sizes 030-100, from the side for the sizes 140-400
- Accessible fans, from the top and from the bottom for the sizes 030-100, from the side for the sizes 140-400
- **Electronic phase cutting regulation devices, supplied**, that allow to continuously vary the rotation speed of the fans equipped with AC motors (sizes 030-300).
The fan with EC motor, of only one size 400, can be controlled with a controller 0-10 Vdc, accessory RVC.

Accessories

- **M4F_:** External module equipped with pre-filters class G4 (according to EN779) to be placed on the external air inlet.
- **MBF_:** External module with water cooling coil and condensate collection basin (only for sizes 140-400).
- **MBP_:** Module with post-heating water coil.
- **MBE_:** Module with electric coil (anti-freeze and/or post-heating function).
- **MSU_:** Module equipped with silencer baffles. The accessory is supplied in 1 piece.
- **FGC_:** Circular flanges. The accessory is supplied in 1 piece.
- **P5F:** Dirt filters pressure switch for filter M5.
- **P7F:** Dirt filters pressure switch for filter F7.
- **RVC_:** Speed regulation devices for unit supplied with fans EC available for the size 400. The accessory is supplied in 2 pieces.

Compatibility of accessories

RPL	030	050	070	100	140	200	300	400
M4F	M4F03	M4F05	M4F07	M4F10	M4F14	M4F20	M4F30	M4F40
MBF	/	/	/	/	MBF14	MBF20	MBF30	MBF40
MBP	MBP03	MBP05	MBP07	MBP10	MBP14	MBP20	MBP30	MBP40
MBE	MBE03	MBE05	MBE07	MBE10	MBE14	MBE20	MBE30	MBE40
MSU	MSU03	MSU05	MSU07	MSU10	MSU14	MSU20	MSU30	MSU40
FGC	FGC030	FGC050	FGC070	FGC100	FGC140	FGC200	FGC300	FGC400
P5F	P5F	P5F	P5F	P5F	P5F	P5F	P5F	P5F
P7F	P7F	P7F	P7F	P7F	P7F	P7F	P7F	P7F
RVC	/	/	/	/	/	/	/	RVC40

Choice of unit

By suitably combining the numerous options available, it is possible to configure each model in such a way as to meet the most specific system requirements.

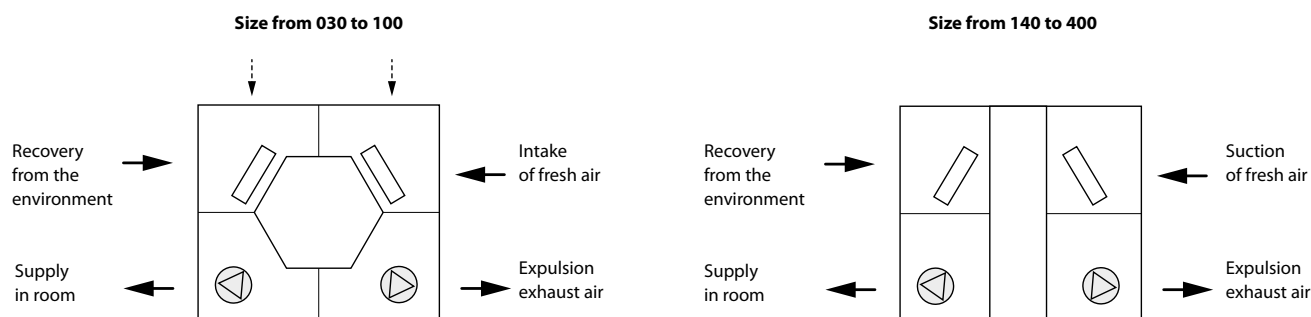
Field	Code
1,2,3	RPL
4,5,6	Size
	030-050-070-100-140-200-300-400
7	Version
	° Standard
8	Installation
	° Horizontal
9	Flow orientation
	° Type 1
X	Type 2
10	Heat exchanger
	° No internal coil
W	Water coil (1)
E	Post-heating electric internal coil

(1) Also to be used with cooled water only for sizes 030-100 including, for sizes 140-400 only be used with hot water.

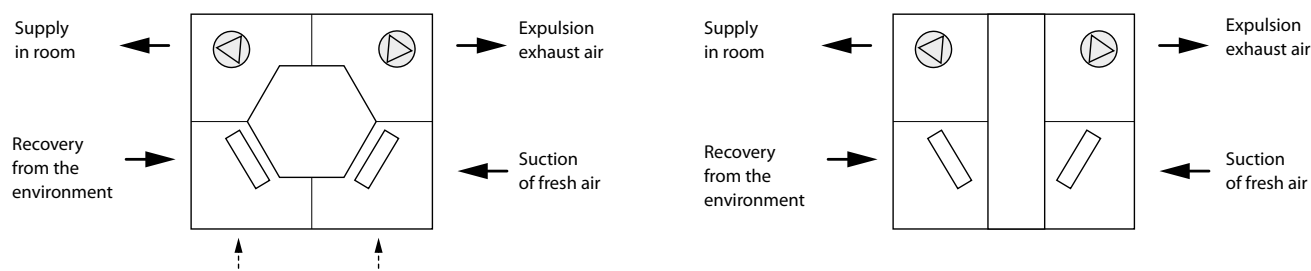
Example of commercial code: **RPL030** (Basis heat recovery unit) **RPL030W** (heat recovery unit with water coil), **RPL030X** (heat recovery unit with flow orientation type 2). Each option is represented in a unique way from all the others, so it is not necessary to indicate (within the commercial code) the standard options (identified by °).

Available orientation

TYPE 1 Standard



TYPE 2 to be requested during order



Technical data

RPL		030	050	070	100	140	200	300	400
	V/ph/Hz	230V~50	230V~50	230V~50	230V~50	230V~50	230V~50	230V~50	400V/3/50
Type of ventilation unit	*	UVNR (non-residential ventilation unit)							
Heat recovery unit									
Heat recovery system type	* type/no	static at countercurrent flow / 1							
Dry heating efficiency	*(1) %	81,1	78,1	76,8	75,3	76,0	76,3	75,5	75,6
Heat capacity recovered (EN308)	(2) kW	1,6	2,4	3,6	4,8	7,1	10,0	14,9	19,7
Nominal air flow rate supply/recovery	* m³/s	0,08	0,13	0,19	0,26	0,39	0,54	0,82	1,08
	m³/h	300	450	700	950	1400	1950	2950	3900
Minimum air flow rate	m³/h	200	250	400	550	800	1150	1750	2300
Fans									
Drive	*	With speed variator							
Fans	type/no	AC/2	AC/2	AC/2	AC/2	AC/2	AC/4	AC/4	EC/2
Supplied electrical power consumption	kW	0,097	0,137	0,212	0,253	0,384	0,501	0,772	0,792
Recovered electrical power consumption	kW	0,096	0,136	0,212	0,242	0,370	0,476	0,751	0,741
Total input electric power	* kW	0,193	0,273	0,425	0,495	0,755	0,977	1,523	1,534
SFP int	* W/(m³/s)	1225	1500	1305	1302	1224	1140	1123	906
SFP int_lim 2016	W/(m³/s)	1609	1514	1465	1411	1412	1398	1333	1295
Filters face velocity	* m/s	0,8	1,2	1,0	1,4	2,2	2,2	1,9	2,5
Nominal external pressure Δp	(5) Pa	100	100	125	125	145	145	150	150
Useful static supply pressure	(5) Pa	191	218	169	134	215	143	216	196
Useful static recovery pressure	(5) Pa	196	233	175	152	255	184	248	242
Supplied internal pressure drop Δp	* Pa	115	228	189	293	268	270	245	290
Recovered internal pressure drop Δp	* Pa	110	213	182	274	228	230	213	244
Fans static efficiency	*(3) %	33,3	33,3	33,3	45	45	45	45	66,9
External / internal leakage	(4)	<3% / 3.9%							
Filters									
Expelled air filter	type/no	M5/1							
External air filter	type/no	F7/1							
Filters energy class		On request							
Sound Data									
sound power level	* dB(A)	55	56	62	59	59	63	63	71

* Information in compliance with Annex V of regulation EU no. 1253/2014

SFP Specific Fan Power

(1) 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.

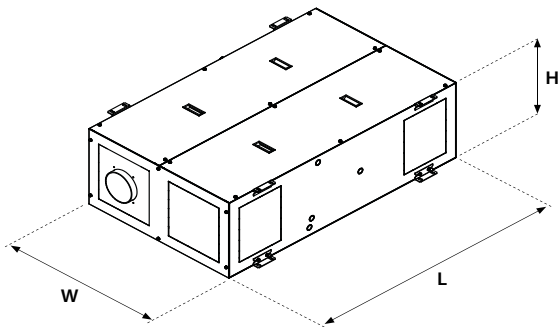
(2) Expelled air: Tbs=25°C; Tbu<14°C. Fresh air: Tbs=5°C

(3) according to regulation EU 327/2011;

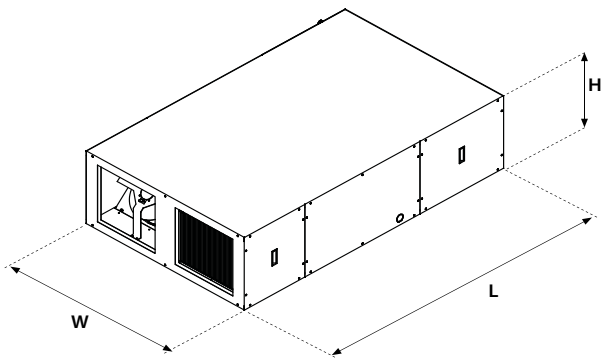
(4) external leakage test performed at +400 Pa and -400 Pa; internal leakage test performed at 250 Pa

(5) Performances referring to clean filters

Dimensions (mm)



030 - 100



140 - 400

RPL			030	050	070	100	140	200	300	400
Height	(H)	mm	400	400	435	435	460	460	600	600
Width	(W)	mm	800	800	945	945	1100	1600	1700	2050
Length	(L)	mm	1300	1300	1600	1600	1800	1800	2350	2350
Weight		kg	89	105	150	150	154	234	374	451