

REC PRO 80R

High efficiency heat recovery units
Non residential applications



Comply with ErP Directive 125/2009/CE and EU Regulation 1253/2014.

Classification: Non Residential Ventilation Unit (NRVU). Bidirectional Ventilation Unit (BVU).

- 4 sizes
- Airflow from 3.000 to 24.000 m³/h
- Very high efficiency enthalpy rotor heat exchanger

REGULATION ELECTRONICS MULTIFUNCTION

Built-in electric box by removable side panel provided with main switch and electronic controller for a complete control of all typical functions of the unit; in particular:

- manual control of EC fan motors
- automatic control of EC fan motors (by pressure, temperature or air quality sensor)
- heating/cooling water valve modulating control
- electric heater on/off control (both pre and re-heater)
- heat recovery defrost control
- free-cooling on/off mode control
- post-ventilation
- weekly programming
- alarm management and dirty filter warning
- remote on/off
- remote Summer/Winter mode
- fan management by fire alarm digital input
- BMS



DESCRIPTION

The heat recovery units of the **REC PRO 80 R** series are designed to match the need to equip the buildings with ventilation systems which can combine low energy consumption, high aeraulic performance and high indoor air quality. They can easily be integrated with conventional heating and air-conditioning systems and their construction is optimized for a ducted installation in false ceilings and for an all-seasons operation.

The series is available in 4 sizes with performances ranking from 3.000 to max 24.000 m³/h. The units are suitable for operation in atmospheres that are free from aggressive, corrosive and/or potentially explosive agents, which may affect and irreparably damage their components and structures.

CONSTRUCTION

- Supporting frame by thermal bridge aluminium profiles and sandwich panels 42 mm thickness, galvanized sheet metal inner skin and pre-coated sheet metal outer skin; inspection doors and panels fully removable and continuous galvanized steel baseframe
- Non-flammable mineral wool thermal and acoustic insulation for panels and doors
- High efficiency (> 78% at dry condition) enthalpy thermal wheel recovery, provided with constant speed driver
- Rigid bag filters with polystyrene frame and polyurethane sealing and waterproof fiberglass media; ISO ePM10 70% efficiency class on return air intake, ISO ePM1 50% efficiency class on fresh air intake, easily removable from side doors. Each filter station is already equipped with pressure switch wired to the unit electric box
- Direct driven EC motor plug fans
- Prearrangement for internal electric preheater
- Prearrangement for internal electric reheater
- Prearrangement for hot water coil

UPON REQUEST

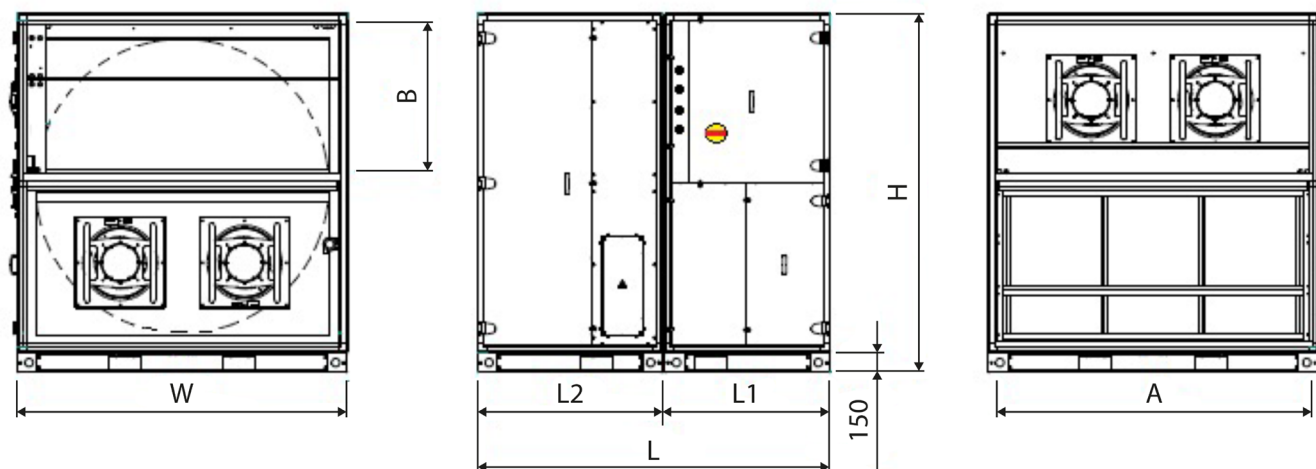
REC 80R can be supplied with the following function components, assembled and connected, to be requested in stage of order:

- **AQS** - CO₂ sensor, ductable type, to be placed on the return duct, it allows a continuous modulation of the fresh air volume, based on air quality desired level.
- **DPS** - Differential pressure sensor. Differential pressure sensor for constant airflow mode control (option DPSa, supplied already mounted and wired on board) or for constant pressure mode control (option DPSp, supplied apart to be installed close to the air duct to be controlled and later wired to unit electric box).

RANGE

CODE	MODEL
1RC8000	REC PRO 80 R 4.800
1RC8001	REC PRO 80 R 9.500
1RC8002	REC PRO 80 R 13.500
1RC8003	REC PRO 80 R 18.000

DIMENSIONS (mm)



MODEL		4800	9500	13500	18000
L	mm	1955	2155	2155	2155
L1	mm	-(1)	1020	1020	1020
L2	mm	-(1)	1135	1135	1135
W	mm	1360	1690	2020	2350
H	mm	1550	1880	2210	2540
Weight (L1+L2) (2)	kg	750 (1)	400+550	500+750	650+1000

Air duct connection (3)		4800	9500	13500	18000
A x B		1350 x 680	1680 x 845	2010 x 1010	2340 x 1175

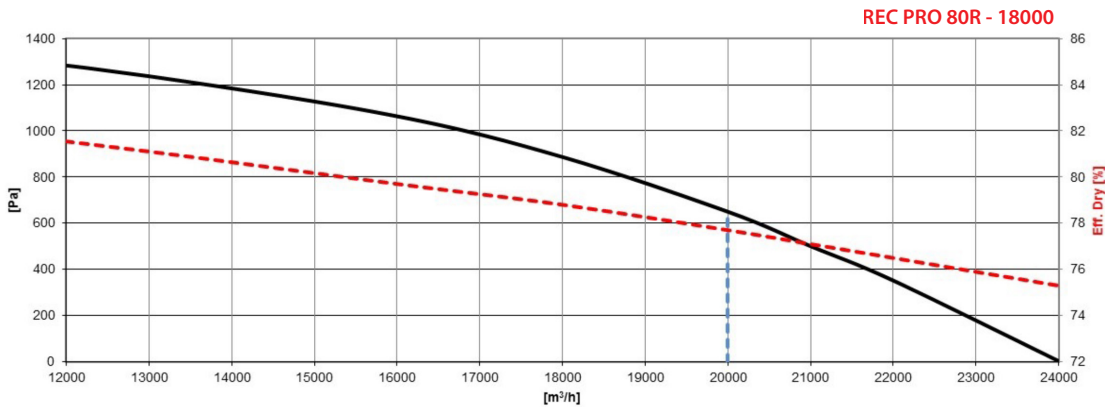
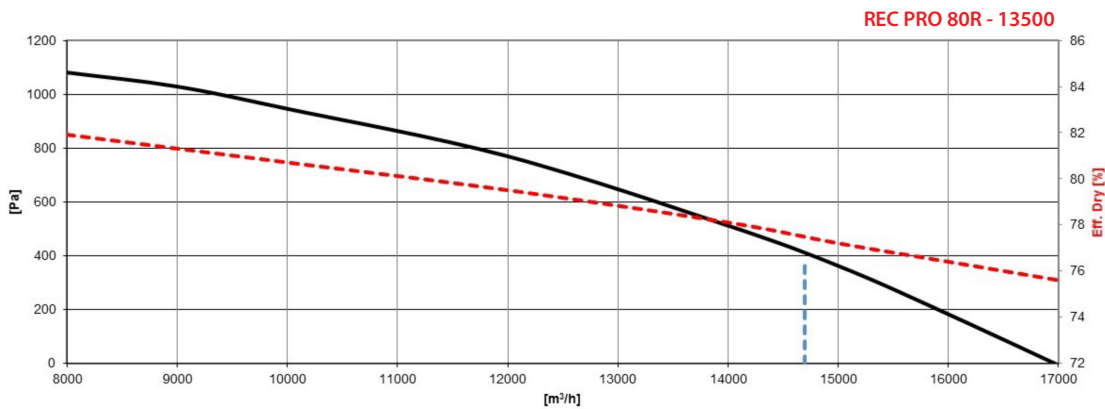
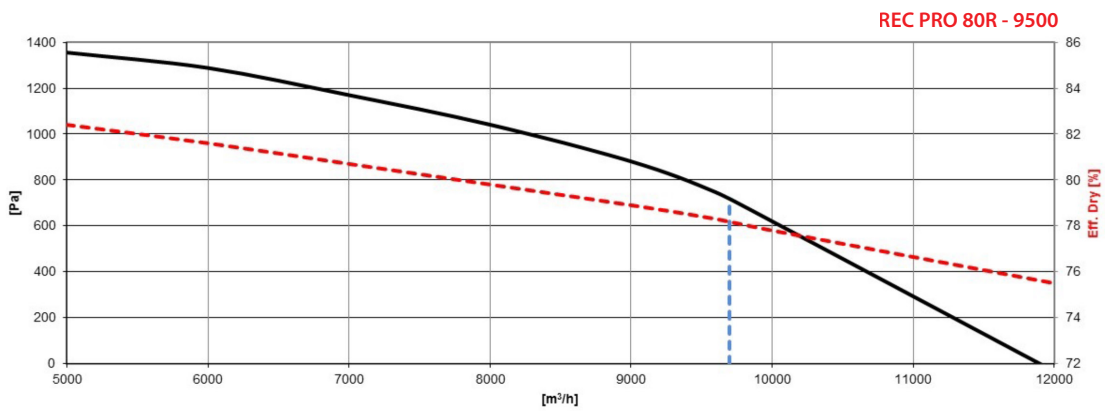
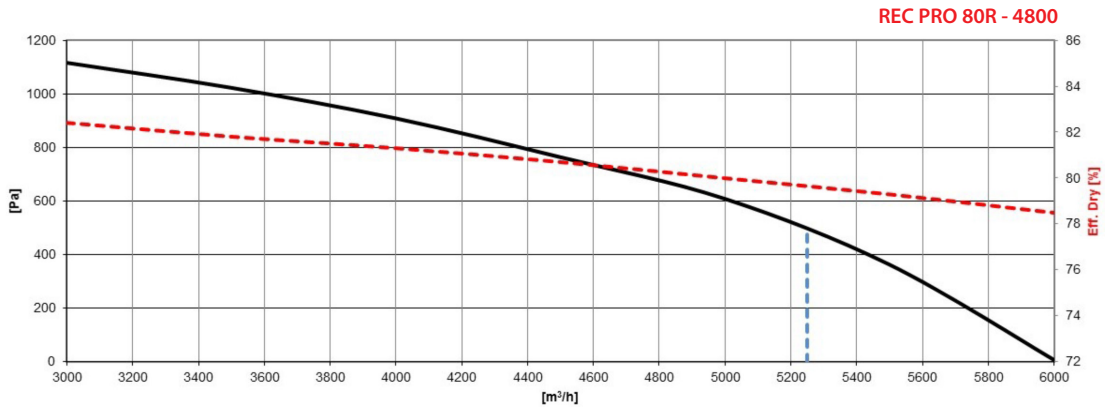
(1) one-piece unit

(2) basic unit

(3) duct flange external dimensions (also valid for option GAT, SKR2 and MS3)

PERFORMANCE

The following curves are, model by model, the max supply side external static pressure delivered by the basic unit and the heat recovery dry efficiency (in dotted red line) in the whole airflow rate range. The vertical blue line defines the upper limit of working range where unit is still compliant with ErP step 2018. All the shown performances are referred to air filter kept properly clean and fully efficient.



ErP PERFORMANCE AND COMPLIANCE

Regulation UE 1253/2014

VENTILATION			4800	9500	13500	18000
Airflow rate	Nom	m ³ /h	4.800	9.000	13.500	18.000
		m ³ /s	1,33	2,5	3,75	5
External static pressure (1)	Nom	Pa	350	350	350	350
Radiated sound power	Nom	dB(A)	84	88	86	90
Overall power input	Nom	W	2.900	5.250	7.450	10.400
	Max		5.000	10.100	10.200	19.800
Overall input current	Nom	A	4,8	8,5	12,1	16,3
	Max		7,9	15,7	16,2	30
Power supply	V-Ph-Hz		400-3-50			
Fan speed control			0 ÷ 10 V			
Yearly filter energy consumption (4)	kWh		6.570	12.100	17.520	24.230

HEAT RECOVERY (2)			4800	9500	13500	18000
Temperature efficiency	%		80,2 (80,2)	78,9 (78,9)	78,3 (78,3)	78,8 (78,8)
Recovery total capacity	kW		55,6 (8,0)	102,1 (14,7)	151,7 (21,8)	204,2 (29,4)
Off air temperature	°C		15,2 (27,2)	15,2 (27,3)	15,1 (27,3)	15,2 (27,3)

COMPLIANCE WITH EU 1253/2014			4800	9500	13500	18000
Recovery efficiency (3)	%		80,2	78,9	78,3	78,8
Efficiency bonus	W/m ³ /s		216	177	159	174
Filter correction factor	-		0	0	0	0
SFP int limit	W/m ³ /s		1.116	977	959	974
SFP int	W/m ³ /s		958	907	844	884
Compliance airflow rate range	m ³ /h		≤ 5.250	≤ 9.600	≤ 14.700	≤ 19.950

WORKING LIMITS			4800	9500	13500	18000
Max airflow rate unbalancing	%		20			
Air temperature	°C		-0,5			
Fresh air RH	%		MAX 90% (winter) - MAX 65% (summer)			
Room air RH	%		MAX 65% (winter) - MAX 70% (summer)			
Working environment	-		Not explosive, not corrosive, not chlorinated, not saline			

(1) fresh air/supply air circuit

(2) at wet conditions : outside air temperature -10°C 90% RH, room air temperature 22°C 50% RH (outside air temperature 32°C 50% RH, room air temperature 26°C 50% RH)

(3) at dry conditions : outside air temperature 5°C, room air temperature 25°C

(4) based on 6000 operating hours per year at nominal airflow rate and ESP and on 250 Pa max air filter pressure drop before replacing

SOUND LEVELS

Referring to nominal working conditions and at balanced airflow rates, the following table shows the sound power level (SWL) per octave band and total; It also shows the sound pressure level (SPL) at 1m, 5m and 10m on supply/exhaust air, fresh/return air and outside the unit connected to air ducts, not depending on air flow direction configuration.

Size	SWL [dB] per octave band [Hz]								SWL dB(A)	Supply/Exhaust SPL			Suction air SPL			Outside SPL	
	63	125	250	500	1000	2000	4000	8000		1 m	5 m	10 m	1 m	5 m	10 m	5 m	10 m
										dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
80 R - 4800	70	70	80	77	80	77	73	73	84	76	62	56	70	56	50	42	36
80 R - 9500	82	85	85	84	81	82	78	77	88	80	66	60	74	60	54	46	40
80R - 13500	79	81	86	84	82	77	74	76	86	78	64	58	72	58	52	44	38
80 R - 18000	84	87	87	86	83	84	80	79	90	82	68	62	76	62	56	48	42

REC PRO 80R ACCESSORIES

SKE	On-board electric preheater/reheater
SKW V33	On-board water heating coil
CCS V33	Water cooling coil external section
TPR CCS	Roof covers
SKR SSE	External motorized twin damper
MS3 SSE	3-damper box with actuators
FT9	High efficiency filter
CFA	External rain hood
GAT	Flexible connection
TPR	Roof covers
DPSa	Pressure sensor
DPSp	Pressure sensor

Code	Model	SKE Pre	SKE Post	SKW V33	CCS V33	TPR CCS	SKR SSE	MS3 SSE	MS3 SSE mod.	FT9	CFA Alto	CFA Basso	GAT	TPR	DPSa	DPSp
1RC8000	REC PRO 80R 4.800	5BT0324	5BT0312	5BT0328	5BT0316	5TE0270	5SE0100	5PL0100	5PL0104	5FL4043	5SU0020	5SU0024	5SU0028	5TE0282	5SU0015	5SU0016
1RC8001	REC PRO 80R 9.500	5BT0325	5BT0313	5BT0329	5BT0317	5TE0271	5SE0101	5PL0101	5PL0105	5FL4044	5SU0021	5SU0025	5SU0029	5TE0283	5SU0015	5SU0016
1RC8002	REC PRO 80R 13.500	5BT0326	5BT0314	5BT0330	5BT0318	5TE0272	5SE0102	5PL0102	5PL0106	5FL4045	5SU0022	5SU0026	5SU0030	5TE0284	5SU0015	5SU0016
1RC8003	REC PRO 80R 18.000	5BT0327	5BT0315	5BT0331	5BT0319	5TE0273	5SE0103	5PL0103	5PL0107	5FL4046	5SU0023	5SU0027	5SU0031	5TE0285	5SU0015	5SU0016

SKE - On-Board electric heater

ON-BOARD ELECTRIC PREHEATER SKEp

It is composed of filament type elements inside a galvanized steel frame installed inside the unit as a fresh air preheater and provided of both manual and automatic reset thermostat. On/off control based on exhaust air temperature.

Model		SKEp 4800	SKEp 9500	SKEp 13500	SKEp 18000
Capacity	kW	16,0	24,0	32,0	40,0
ΔT (1)	°C	9,8	7,8	7,0	6,5
Air pressure drop (1)	Pa	≤ 15			
Power supply	V-ph-Hz	400-3-50			

(1) at nominal airflow rate

SKE2 - PREHEATER

Code	Description
5BT0324	SKE 2 - Preheater 80R 4.800
5BT0325	SKE 2 - Preheater 80R 9.500
5BT0326	SKE 2 - Preheater 80R 13.500
5BT0327	SKE 2 - Preheater 80R 18.000

ON-BOARD ELECTRIC REHEATER SKEr

It is composed of filament type elements inside a galvanized steel frame installed inside the unit as a fresh air reheater (after the heat recovery) and provided of both manual and automatic reset thermostat. Modulating control based on supply air temperature.

Model		SKEr 4800	SKEr 9500	SKEr 13500	SKEr 18000
Capacity	kW	16,0	24,0	32,0	40,0
ΔT (1)	°C	9,8	7,8	7,0	6,5
Air pressure drop (1)	Pa	≤ 15			
Power supply	V-ph-Hz	400-3-50			

(1) at nominal airflow rate

SKE2 - REHEATER

Code	Description
5BT0312	SKE 2 - Reheater 80R 4.800
5BT0313	SKE 2 - Reheater 80R 9.500
5BT0314	SKE 2 - Reheater 80R 13.500
5BT0315	SKE 2 - Reheater 80R 18.000

REC PRO 80R ACCESSORIES

SKW V33 - On-Board water heating coil

2-row turbulence Al fin and Cu pipe and header type, it is placed (even after unit installation) between heat recovery and supply fan. It is suitable just for heating mode and it is equipped with modulating water valve (to be installed and wired by Installer). Side water connection.

MODEL		SKW 4800	SKW 9500	SKW 13500	SKW 18000
CODE		SBT0328	SBT0329	SBT0330	SBT0331
Heating capacity (1)	kW	51,23	91,78	144,08	199,79
Water flow rate (1)	l/h	4.410	7.890	12.390	17.180
Off air temperature (1)	°C	45,9	44,5	45,9	47,2
Water pressure drop (1)	kPa	26	20	21	27
Air pressure drop (1)	Pa	59	66	58	52
Weight (valve kit included)	kg	30	43	64	86
In/Out water connection		1 1/4" M	1 1/2" M	2" M	2 1/2" M
Water valve with actuator		DN25 Kvs 6.3 230V 50 Hz	DN32 Kvs 16 230V 50 Hz	DN40 Kvs 25 230V 50 Hz	DN50 Kvs 31 230V 50 Hz

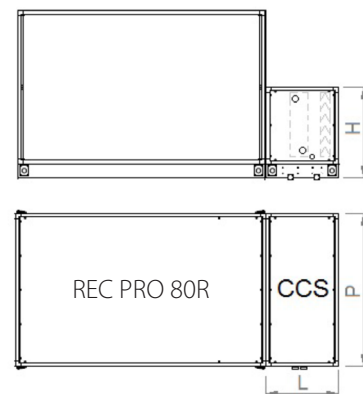
(1) at nominal airflow rate, air inlet temperature 15°C, in/out water temperature 70/60°C

CCS V33 - Water cooling coil external section

4-row turbulence Al fin and Cu pipe and header type, placed in an external section to match basic unit supply air connection side. It is provided with droplet eliminator, drain tray with 1" GAS M drainage connection and modulating water valve (to be installed and wired by Installer). Side water connection.

MODEL		CCS 4800	CCS 9500	CCS 13500	CCS 18000
CODE		SBT0316	SBT0317	SBT0318	SBT0319
Total cooling capacity (1)	kW	35,00	65,27	103,98	147,92
Water flow rate (1)	l/h	6.020	11.230	17.890	25.440
Off air temperature (1)	°C	15,6	15,6	15,2	14,6
Water pressure drop (1)	kPa	13	18	20	30
Air pressure drop (1)	Pa	210	230	205	190
Dimensions L x P x H	mm	535 x 1360 x 850	535 x 1690 x 1015	535 x 2020 x 1180	535 x 2350 x 1345
Total weight	kg	119	172	206	278
In/Out water connection		1 1/2" M	2" M	2 1/2" M	2 1/2" M
Water valve with mod. actuator		DN32 Kvs 16 230V 50 Hz	DN40 Kvs 25 230V 50 Hz	DN65 Kvs 63 230V 50 Hz	DN65 Kvs 63 230V 50 Hz

(1) at nominal airflow rate, air inlet 28°C 60% RH, in/out water temperature 7/12°C



TPR / TPR/CCS / TPR/MS3 - Roof covers

The pre-coated roof cover is to be used when basic unit (TPR) and its possible external sections SILm/SILf (TPRs), CCS V33 (TPRc) and MS3 (TPRm) are installed outdoor.

TPR	Roof covers for REC 80 R
STE0282	Roof covers for REC 80 R 4800
STE0283	Roof covers for REC 80 R 9500
STE0284	Roof covers for REC 80 R 13500
STE0285	Roof covers for REC 80 R 18000

TPR CCS	Roof covers for CCS
STE0270	Roof covers for CCS- REC 80 R 4800
STE0271	Roof covers for CCS-REC 80 R 9500
STE0272	Roof covers for CCS - REC 80 R 13500
STE0273	Roof covers for CCS - REC 80 R 18000

TPR/MS3	Roof covers for MS3
STE0274	Roof covers for MS3 4800 - REC PRO 80 R
STE0275	Roof covers for MS3 9500 - REC PRO 80 R
STE0276	Roof covers for MS3 13500 - REC PRO 80 R
STE0277	Roof covers for MS3 18000 - REC PRO 80 R

REC PRO 80R ACCESSORIES

SKR SSE - External motorized twin damper

Dampers to be placed externally on the unit side connected to atmosphere (fresh air and exhaust air circuits), each provided with IP 54 modulating actuator.

SKR SSE - EXTERNAL MOTORIZED TWIN DAMPER

SSE0100	SKR SSE for REC 80 R 4800
SSE0101	SKR SSE for REC 80 R 9500
SSE0102	SKR SSE for REC 80 R 13500
SSE0103	SKR SSE for REC 80 R 18000

FT9 - High efficiency filter

ISO ePM1 80% efficiency type, it allows a higher fresh air filtration in place of the standard filter. Prefilter PF also suggested.

MODEL		80R-4800	80R-9500	80R-13500	80R-18000
Air pressure drop	Pa	25	26	21	22

CODE	DESCRIPTION
5FL4043	FT9 80 R 4800
5FL4044	FT9 80 R 9500
5FL4045	FT9 80 R 13500
5FL4046	FT9 80 R 18000

CFA - External rain hood

It allows the unit to have intakes and exhausts directly in place, and avoid possible risks of injury and entrance of anything.

CFA A: upper external rain hood

CFA B: lower external rain hood

CFA/A - Upper

CODE	DESCRIPTION
5SU0020	CFA/A 80 R 4800
5SU0021	CFA/A 80 R 9500
5SU0022	CFA/A 80 R 13500
5SU0023	CFA/A 80 R 18000

CFA/B - Lower

CODE	DESCRIPTION
5SU0024	CFA/B 80 R 4800
5SU0025	CFA/B 80 R 9500
5SU0026	CFA/B 80 R 13500
5SU0027	CFA/B 80 R 18000

MS3 SSE - Damper box with actuators

External section to match exhaust air/fresh air unit connection side provided with 3 dampers (two outside, one inside for recirculation), driven by IP54 modulating actuators. It adjusts the fresh air amount according to the signal coming from an air quality sensor; therefore it shall be combined with AQS option or with a sensor of equal characteristics.

CODICE	DESCRIPTION
5PL0100	MS3 SSE 4800
5PL0101	MS3 SSE 9500
5PL0102	MS3 SSE 13500
5PL0103	MS3 SSE 18000
5PL0104	MS3 SSEmod 4800
5PL0105	MS3 SSEmod 9500
5PL0106	MS3 SSEmod 13500
5PL0107	MS3 SSEmod 18000

DPS - Pressure sensor

Differential pressure sensor for constant airflow mode control (option DPSa, supplied already mounted and wired on board) or for constant pressure mode control (option DPSp, supplied apart to be installed close to the air duct to be controlled and later wired to unit electric box).

CODE	DESCRIPTION
5SU0015	DPSa
5SU0016	DPSp

GAT - Flexible connection

It is a flexible joint between unit and air ducts, avoiding the transmission of mechanical vibrations towards return and supply duct system. Its dimensions (both for air intakes & outlets) are the same of SKR damper ones, model by model.

CODE	DESCRIPTION
5SU0028	GAT 80 R 4800
5SU0029	GAT 80 R 9500
5SU0030	GAT 80 R 13500
5SU0031	GAT 80 R 18000