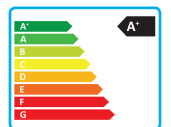


Smarty

SMART WAY TO HANDLE THE AIR

SALDA

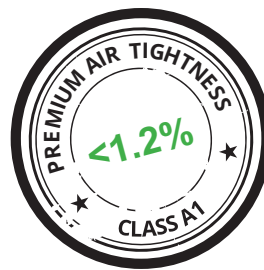
WWW.SALDA.LT



With sensors: CO₂, H₂O



Designed for Passive Houses



* Comparing with F class AHU.

SMARTY

Fresh and healthy air has become a standard in modern buildings. Allergy particles, dust, moulds and noisy surroundings have a negative effect on health and life quality. *Smarty* air handling units are designed to solve all these issues in residential premises. Our clients enjoy the benefits of efficiency, Reliability and user-friendly approach. Enjoy the new standard of Smart Air Handling!



- **High efficiency:** high savings on electricity and heating;
- **No allergies, dust and moulds:** fresh air in any season;
- **User-friendly control and full automatization:** control your climate via PC.
- **Reliability:** long life components;
- **Easy maintenance:** one person service;

APPLICATION

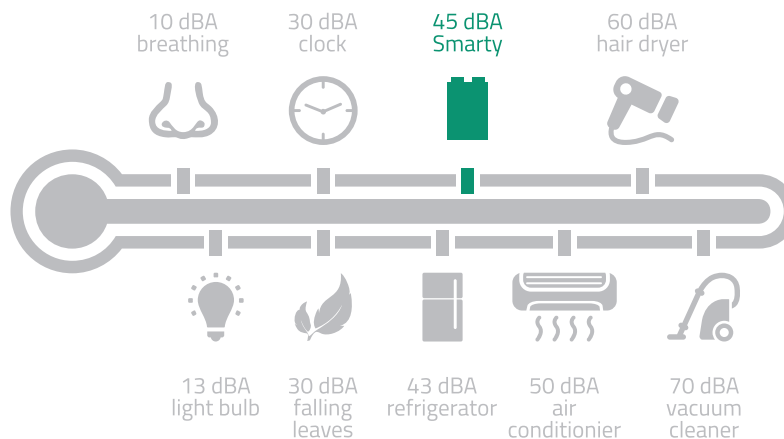


Smarty 3X V, 3X P for heated premises up to 200 m².

Smarty 2X V, 2X P for heated premises up to 100 m².

SILENT AIR HANDLING

Modern ventilation must be silent. The Smarty casing-radiated sound power level (45 dBA) is lower than what most household equipment emits. In living premises, the sound pressure level drops till 25 dBA and lower. Relax and rest in the fresh air.

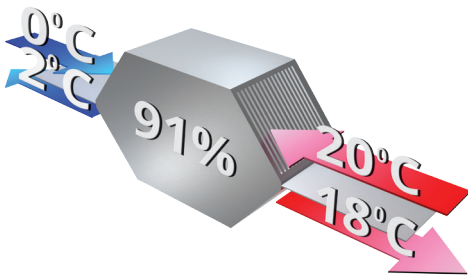


SMARTY - YOUR SMART INVESTMENT!*

LOWER EXPENSES ON HEATING due to effective heat recovery

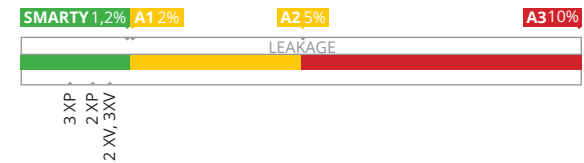
Efficient heat recovery. We have installed efficient counter-flow plate heat exchangers in all our *Smarty* units. *Smarty* heat exchangers may achieve a thermal efficiency up to **91%** (EU 1253/2014).

* Calculations are performed according the methodology of COMMISSION REGULATION (EU) No 1253/2014.

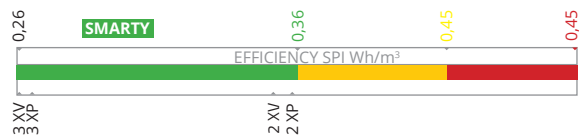


LOWER EXPENSES ON ELECTRICITY due to effective fans and extremely low air leakage

High air tightness. The casing properties of *Smarty* units are guaranteed by end-of-line testing in the manufacturing process!



Fan efficiency. *Smarty* use the highest efficiency EC fans to ensure low energy consumption.



HIGHT TOTAL ANNUAL SAVINGS

Energy costs for heating and ventilation (Smarty 3X)

	Supplied air heating cost	Energy consumption for fans	Energy to compensate leakages	Your savings with Smarty
Smarty 3X V	€ 162	€ 149	€ 2	
B class HR unit	€ 398	€ 218	€ 4	€ 308
F class HR unit	€ 584	€ 436	€ 22	€ 730
No heat recovery	€ 1243	€ 0	€ 0	€ 931

Energy costs for heating and ventilation (Smarty 2X)

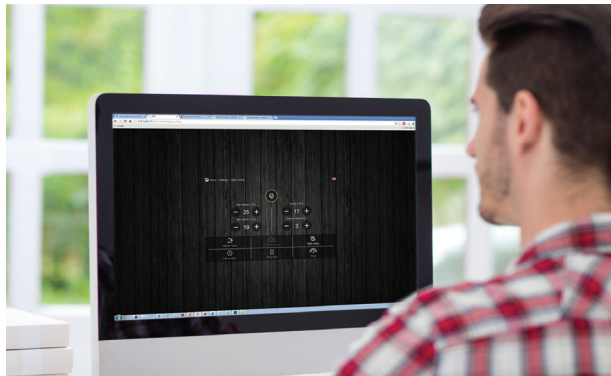
	Supplied air heating cost	Energy consumption for fans	Energy to compensate leakages	Your savings with Smarty
Smarty 2X V	€ 55	€ 84	€ 1	
B class HR unit	€ 195	€ 107	€ 2	€ 164
F class HR unit	€ 287	€ 214	€ 11	€ 371
No heat recovery	€ 610	€ 0	€ 0	€ 470

SUITABLE FOR TIGHT SPACES

We know that it is sometimes hard to find a place for new equipment, so a compact design was one of our goals. You can always find a place for *Smarty*.



USER-FRIENDLY CONTROL



SMARTY AIR HANDLING UNITS
can be managed by:

- optional Stouch remote controller;
- remote control via PC MB-Gateway or building management system connections;
- demand level control presence sensor: CO₂, humidity or presence.

With MB-Gateway you can control your climate via PC even when you are far away from home.

SAVE MONEY AND ENJOY FULL COMFORT BY USING SMART CONTROL OPTIONS

- **Away from home?**

Reduce electricity and heating costs by using building protection mode or calendar events;

- **Variable number of people in your premises?**

With CO₂ sensors air handling units provide the required airflow levels for a healthy climate and save electricity when the number of people decreases;

- **Hot summers with cool nights?**

Use night-cooling to reduce the temperature in your premises and save money on air conditioning.

ONE PERSON MAINTENANCE



Our approach is to simplify all the necessary maintenance work. The easy access to internal components, quick filter change and ordering system enable you to save time and money on expensive maintenance services.

Contaminated filters increase pressure losses, which lead to higher electricity consumption. A visual warning of a filter change helps you to avoid unnecessary expenses.

CONSTRUCTION*



- Integrated control board:
 - Integrated pressure transmitter for balanced and constant airflow**;
 - Control of external components: pre-heater, heater, dampers, etc;
 - Extended control possibilities: Stouch, PC via MB-Gateway, BMS.
- By-pass actuator with integrated pre-heater:
 - 100% summer bypass.
- New generation EC fans, EBM-papst RadiCal*:
 - Low electricity consumption*. Specific fan input (SPI) from 0.27 W/(m³/h);
 - Long lifetime – fans last for more than 10 years.
- Filters:
 - High efficiency G4/G4 filters;
 - Optional F7 filter for maximum filtration of spores and moulds, fine particles and bacteria;
 - Long service life – up to 6 months!



- Premium plastic plate heat exchanger:
 - Efficiency up to **91%** (EU 1253/2014) / **85%** (Passivhaus).

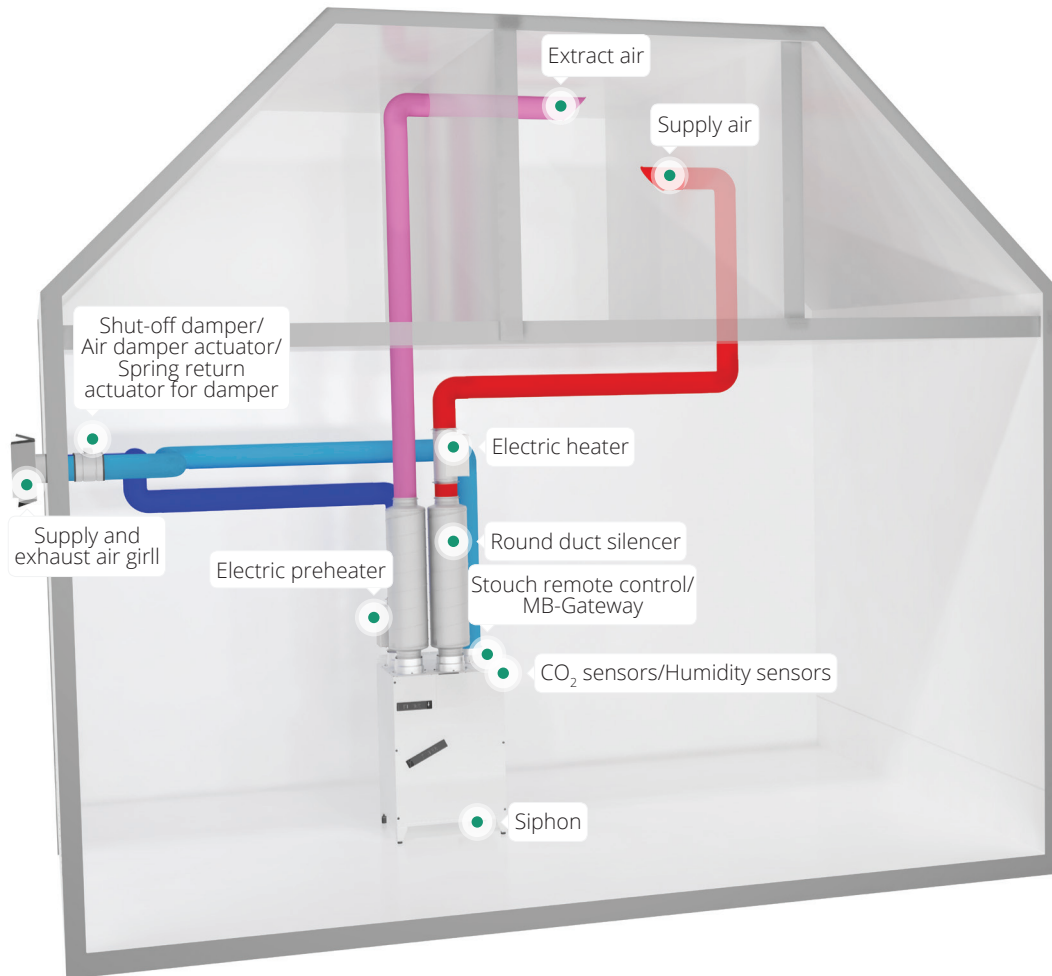
- High class casing:
 - 1 layer of galvanized steel and an EPP of 20-30 mm guarantees premium **A1** class air tightness, **reduces the sound** level and eliminates heat losses.
 - The external side is powder coated – corrosion class **C3**. It enables the installation of equipment even in premises relatively high humidity (RH<60%) and some air pollution (laundry rooms, food processing premises, garages, basements, etc.).

* - image is based on Smarty 3X V; construction of other Smarty units may differ.

** - only for Smarty 3X V/P.

CONNECTION DIAGRAM

Complete system from one source*.



* Smarty 2X V/3X V version 1.1 is equipped with integrated pre-heater.
Smarty 2X V/3X V version 1.2 can control only pre-heater or only heater.

OPTIONAL ACCESSORIES

Supply and exhaust
air grill



CO₂ sensors



Shut-off damper



Humidity sensors



Air damper actuator



Stouch remote control



Spring return air damper
actuator



MB-Gateway



Electric preheater/heater



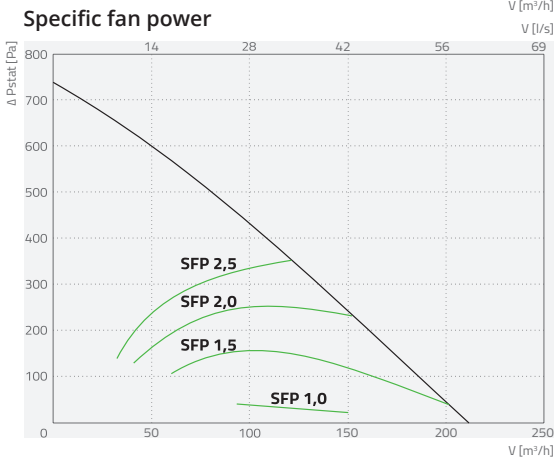
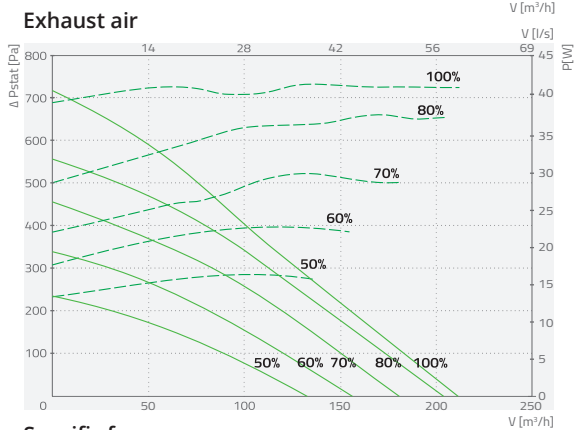
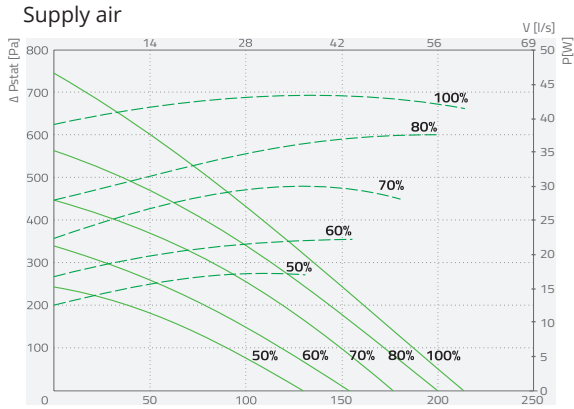
Siphon



Round duct silencer



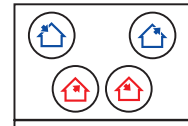
TECHNICAL DATA SMARTY 2X V



$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$



— Performance
- - - Power consumption



View from inspection side

Exhaust air Extract air outdoor air Supply air

Smarty 2X V			
EC fans	phase/voltage/frequency	[f/VAC/Hz]	1/230/50
exhaust	power/current	[kW/A]	0,035/0,35
	fan speed	[min ⁻¹]	4060
supply	power/current	[kW/A]	0,035/0,35
	fan speed	[min ⁻¹]	4060
Pre-heater	phase/voltage/frequency	[f/VAC/Hz]	1/230/50
	power consumption	[kW/A]	0,6/2,6
Thermal efficiency*			91 %
Max power consumption		[kW/A]	0,67/3,35
Filter class	exhaust/supply		G4/G4 (F7 optional)
Housing insulation, Elastic Polyether Polyurethane		[mm]	30
Colour	RAL		white 9016
Weight (net, without packing)		[kg]	25
Comply with ERP			2018
Operation			indoors
Dimension (LxWxH)**		[mm]	595x316x784
Housing protection class		IP	34

* - EU 1253/2014

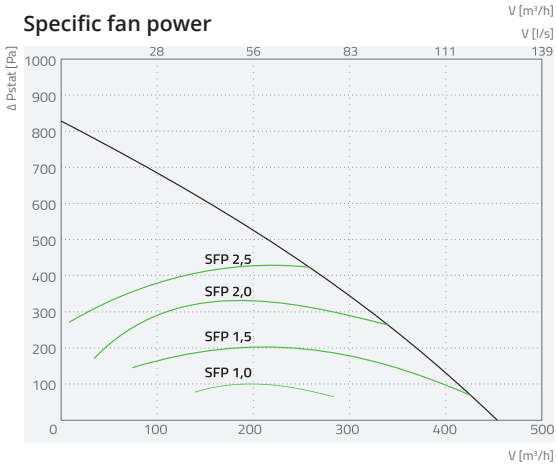
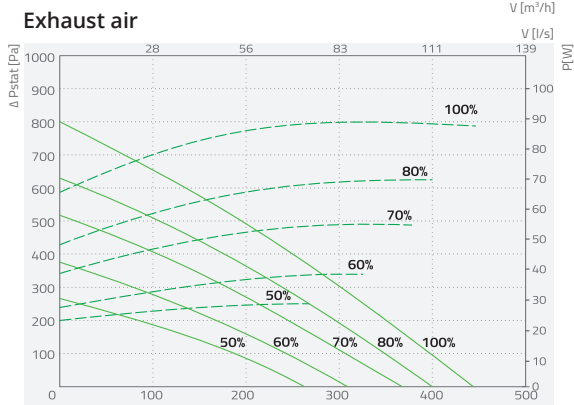
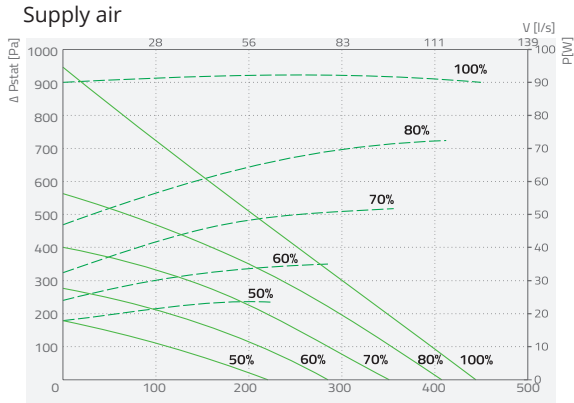
** - Legs are included in the dimensions.

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

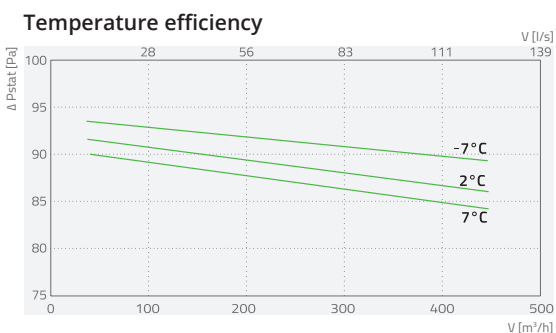
Smarty 2X V	L _{wa} total, dB(A)	L _{wav} dB(A)						
		125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	51	41	45	46	43	41	37	33
Extract	48	38	42	43	39	37	31	29
Surrounding	46	28	39	43	37	33	18	16

Measured at 177 m³/h, 50 Pa

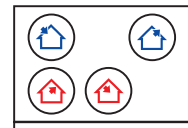
TECHNICAL DATA SMARTY 3X V



$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$



— Performance
- - - Power consumption



View from inspection side

Exhaust air Extract air outdoor air Supply air

Smarty 3X V			
EC fans	phase/voltage/frequency	[f/VAC/Hz]	1/230/50
exhaust	power/current	[kW/A]	0,083/0,75
	fan speed	[min ⁻¹]	3200
supply	power/current	[kW/A]	0,083/0,75
	fan speed	[min ⁻¹]	3200
Pre-heater	phase/voltage/frequency	[f/VAC/Hz]	1/230/50
	power consumption	[kW/A]	1,2/5,2
Thermal efficiency*			87 %
Max power consumption		[kW/A]	1,37/6,75
Filter class	exhaust/supply		G4/G4 (F7 optional)
Housing insulation, Elastic Polyether Polyurethane		[mm]	30
Colour	RAL	white	9016
Weight (net, without packing)		[kg]	39
Comply with ERP			2018
Operation			indoors
Dimension (LxWxH)**		[mm]	599x538x898
Housing protection class		IP	34

* - EU 1253/2014

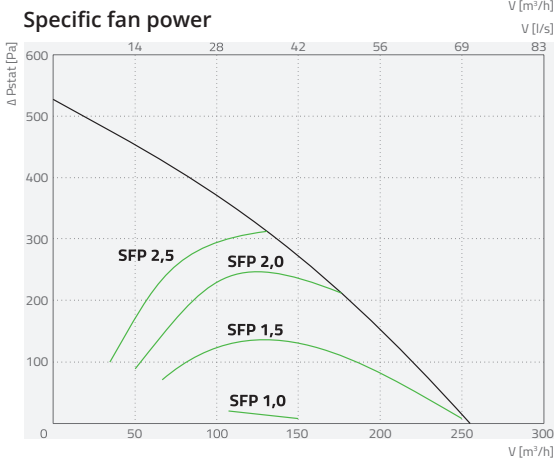
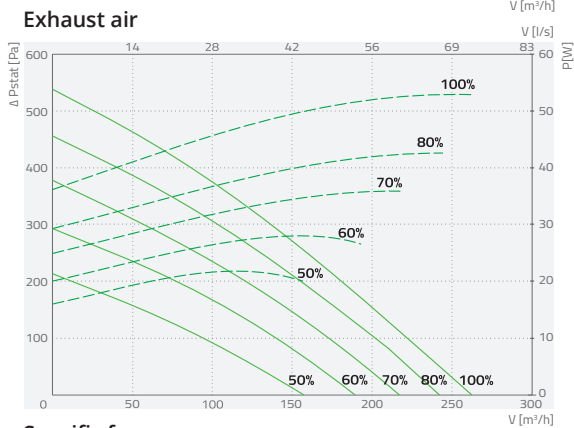
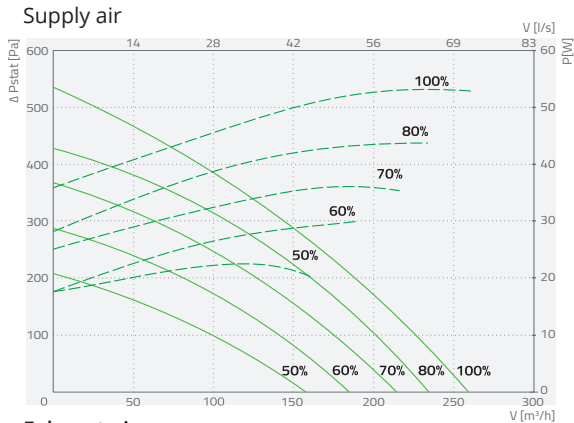
** - Legs are included in the dimensions.

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

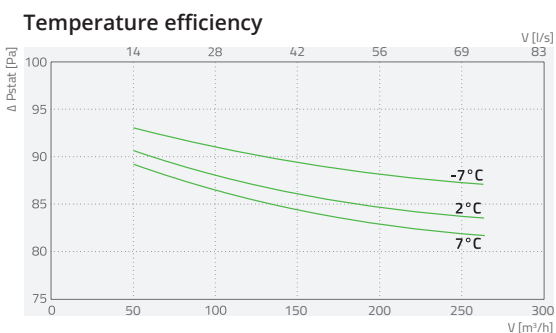
Smarty 3X V	L _{wa} total, dB(A)	L _{wa} , dB(A)						
		125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	55	46	48	49	48	46	45	42
Extract	51	43	45	44	42	41	39	35
Surrounding	46	31	41	43	35	30	25	22

Measured at 285 m³/h, 50 Pa

TECHNICAL DATA SMARTY 2X P



$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$



— Performance
- - - Power consumption



Exhaust air Extract air outdoor air Supply air

Smarty 2X P			
EC fans	phase/voltage/frequency	[f/VAC/Hz]	1/230/50
exhaust	power/current	[kW/A]	0,051/0,4
	fan speed	[min ⁻¹]	4525
supply	power/current	[kW/A]	0,051/0,4
	fan speed	[min ⁻¹]	4525
Thermal efficiency*			85 %
Max power consumption		[kW/A]	0,10/0,85
Filter class	exhaust/supply		G4/G4 (F7 optional)
Housing insulation, Elastic Polyether Polyurethane		[mm]	20
Colour	RAL	white	9016
Weight (net, without packing)		[kg]	30
Comply with ERP			2018
Operation			indoors
Dimension (LxWxH)		[mm]	1009x590x250
Housing protection class		IP	34

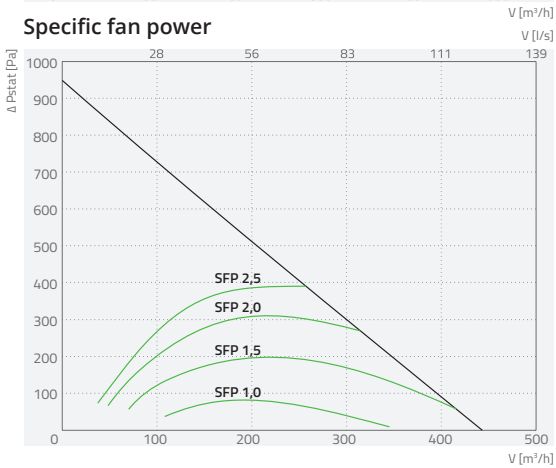
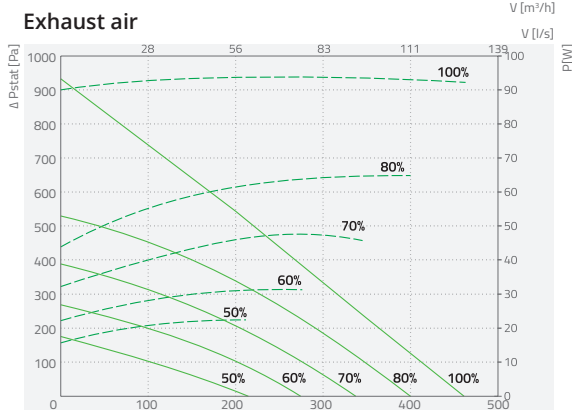
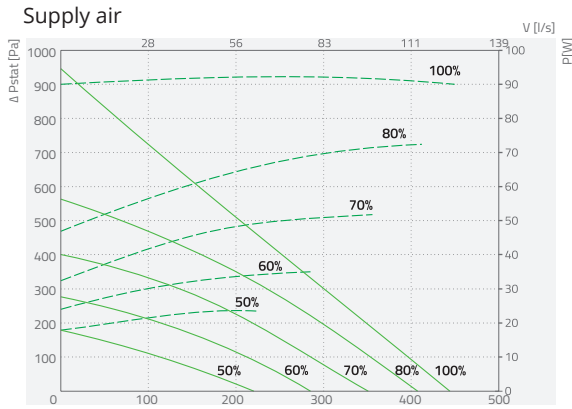
* - EU 1253/2014

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

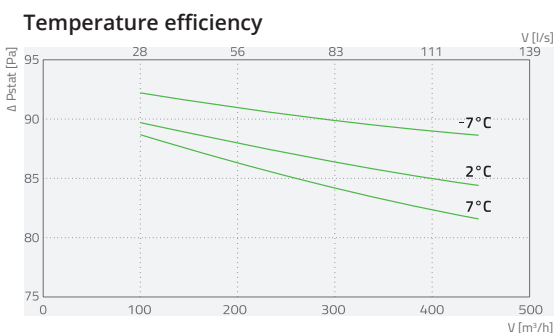
Smarty 2X P	L_{wa} total, dB(A)	L_{wa} , dB(A)						
		125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	59	44	52	51	53	53	51	36
Extract	55	42	47	47	50	48	44	29
Surrounding	46	30	38	44	39	33	26	23

Measured at 153 m³/h, 50 Pa

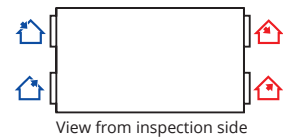
TECHNICAL DATA SMARTY 3X P



$$SFP = \frac{\text{total power for supply \& exhaust fans kW}}{\text{air flow m}^3/\text{h}} \times 3600$$



— Performance
- - - Power consumption



View from inspection side

➡ Exhaust air
 ➡ Extract air
 ➡ outdoor air
 ➡ Supply air

Smarty 3X P			
EC fans	phase/voltage/frequency	[f/VAC/Hz]	1/230/50
exhaust	power/current	[kW/A]	0,085/0,75
	fan speed	[min ⁻¹]	3200
supply	power/current	[kW/A]	0,085/0,75
	fan speed	[min ⁻¹]	3200
Thermal efficiency*			87 %
Max power consumption		[kW/A]	0,17/1,55
Filter class	exhaust/supply		G4/G4 (F7 optional)
Housing insulation, Elastic Polyether Polyurethane		[mm]	30
Colour	RAL	white	9016
Weight (net, without packing)		[kg]	53
Comply with ERP			2018
Operation			indoors
Dimension (LxWxH)		[mm]	1225x685x318
Housing protection class	IP		34

* - EU 1253/2014

Temperature efficiency (balanced mass flow):
Extract air = 20°C/60%RH
Outdoor air = -7°C / 2°C / 7°C

Smarty 3X P	L _{wa} total, dB(A)	L _{wa} , dB(A)						
		125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Supply	57	49	50	53	48	47	45	40
Extract	50	41	43	44	42	39	37	34
Surrounding	42	34	35	36	34	32	31	27

Measured at 230 m³/h, 99 Pa

MAIN FUNCTIONS

Description of the functions	MCB	MiniMCB	MiniMCB basic
	1.4 version	1.1 version	1.2 version
FUNCTIONS			
Date and time settings	✓	✓	✓
System modes for easy and user-friendly control: Stand-by, Building protection, Economy, Comfort. <i>(Specific air flows are used in the system)</i>	✓	✓	✓
BOOST function	✓	✓	✓
Comfortable air temperature function	✓	✓	✓
Cold/heat recovery	✓	✓	✓
Fireplace function	✓	✓	✓
Heating season <i>(from a selected date, 3-day temperature average or manually)</i>	✓	✓	✓
Dryness protection	✓*	✓*	✓*2
Weekly schedule	✓	✓	✓
Holiday schedule	✓	✓	✓
User and service control levels	✓	✓	✓
Automatic air flow balancing <i>(using integrated pressure transducers)</i>	✓	✓**	
Manual air flow balancing	✓	✓	✓
CO ₂ level indication and reduction function	✓*	✓*	✓*2
Night cooling function	✓	✓	✓2
Relative humidity (RH) level indication and reduction function	✓*	✓*	✓*
Software and configuration update possibility	✓	✓	✓
Supply air temperature control according to the extract air sensor	✓	✓	✓
Monitoring function <i>(all sensors and I/O)</i>	✓	✓	✓
Mode switch <i>(start/stop)</i>	✓	✓	✓
Manual components control	✓	✓	✓
FUNCTIONAL UNITS			
ELECTRIC HEATER			
On/Off/PWM control	✓	✓	✓1
Manual protection	✓	✓	✓1
Automatic protection	✓	✓	✓1
Overheat protection <i>(Additional protection software)</i>	✓	✓	✓
ELECTRIC PRE-HEATER			
On/Off/PWM control	✓	✓	✓1
Pre-heater manual/automatic protection (NC)	✓	✓	✓1
AIR DAMPERS (Supply/exhaust air dampers control)			
3-position actuator control	✓	✓	✓
BYPASS DAMPER			
Step motor control	✓	✓	✓
FILTER POLLUTION MONITORING			
By filter timer	✓	✓	✓
SENSORS			
Temperature sensor input calibration <i>(Calibration is carried out by standard)</i>	✓	✓	✓
Temperature sensor failure protection <i>(with emergency mode)</i>	✓	✓	✓
EMERGENCY SIGNALS AND INPUTS/OUTPUTS			
Fire damper actuator control On/Off	✓		
Fire damper test function	✓		
Fire protection input	✓	✓	✓
Working indication output	✓	✓	
Alarm indication output	✓	✓	
Fireplace protection (NC)	✓	✓	
REMOTE CONTROLLERS			
Stouch	✓***	✓	✓
MB-Gateway	✓***	✓	✓

1. A MiniMCB basic can only control the pre-heater or heater. A MiniMCB basic only has protection for the pre-heater or heater.

2. Mini MCB Basic have only CO₂ or humidity sensor. Mini MCB is prepared for the RH Sensor in factory.

*With optional sensor.

** Only for Smarty SMARTY 3X V/P.

*** In version 1.4 remote control panel and BMS/MB-Gateway can be connected both at the same time.

SMARTY AIR HANDLING UNITS ARE AVAILABLE IN SEVERAL CONTROL VERSIONS

Save on equipment: select the unit according to the climate zone and project requirements.

	Control board	Version	Heat recovery	Temp. control	Bypass damper	Pressure sensor (constant air flow)	Integrated pre-heater	Duct based pre-heater	Duct based heater
PRODUCT NAME									
Smarty 2X V 1.1	Mini MCB	Premium	✓	✓	✓		✓		✓
Smarty 2X V 1.2	Mini MCB Basic	Advanced	✓	✓	✓			✓*	✓*
Smarty 3X V 1.1	Mini MCB	Premium	✓	✓	✓	✓	✓		✓
Smarty 3X V 1.2	Mini MCB Basic	Advanced	✓	✓	✓			✓*	✓*
Smarty 2X P 1.1	Mini MCB	Premium	✓	✓	✓			✓	✓
Smarty 2X P 1.2	Mini MCB Basic	Advanced	✓	✓	✓			✓*	✓*
Smarty 3X P 1.1	Mini MCB	Premium	✓	✓	✓	✓		✓	✓
Smarty 3X P 1.2	Mini MCB Basic	Advanced	✓	✓	✓			✓*	✓*
Smarty 3X P 1.4	MCB	Premium +	✓	✓	✓	✓		✓	✓

* - only with pre-heater or heater.



Tested in independent Laboratory "Siventa", according EN ISO/IEC 17025.

Performed tests:

- Aerodynamic;
- Thermal;
- Acoustic;
- Electrical performance;
- Sound power level;
- Sound energy level determination.

Verified:



EPDB

PCDB

Ekofund

CasaClima

Tested in TÜV SÜD

Distributor



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