

# SMART AIR HANDLING UNITS

for residential buildings

# SALDA



Digital version



# AIR HANDLING UNITS ADAPTED TO YOUR NEEDS



We spend approximately 90 percent of lives indoors, thus creation of a favourable indoor microclimate has a major impact on well-being, health, and achievements. Contaminated outdoor air has a major impact on indoor microclimate. A study conducted in 26 EU States has shown that poor-quality ambient air was a contributor to higher morbidity in more than 67% of the cases. The most common diseases associated with this were allergies and asthma. The series of smart air handling units manufactured by us enables to create healthy and comfortable home-based environment simultaneously saving energy and recovering even up to 91 percent of heat.

## WHY AIR HANDLING UNITS FROM SALDA?

- › **Low energy consumption** (cost-saving fans, smart automatic control system);
- › **Exceptional assemblage quality** (highly hermetic casing of class A1);
- › **Compact design** (easy integration to the interior);
- › **Reliability** (new residential AHU are tested in a climatic chamber);
- › **Convenience** (feature enabling to control by using the SALDA AIR mobile app).

## FORMULA FOR IDEAL AIR AT HOME

### EFFICIENT FILTRATION

SALDA air handling units are equipped with filters of 3 classes.



Coarse filtration: large dust, dust mites, animal dander, pollen.



Medium filtration: in addition mould spores, cement dust.



Fine filtration: in addition small allergens, fine particles.

### INTERNAL TIGHTNESS



Reliable internal airtightness reduces mixing of exhaust and supplied air inside the air handling unit. New generation AHU Smarty X are characteristic of leakages on the inside of less than 1.2%, which makes sure that odours extracted from the premises (kitchen, WCs) would not mix with the supplied air.

Airtightness of every Smarty X is subject to testing!



# CONSIDERABLY LOWER VENTILATION AND HEATING COSTS

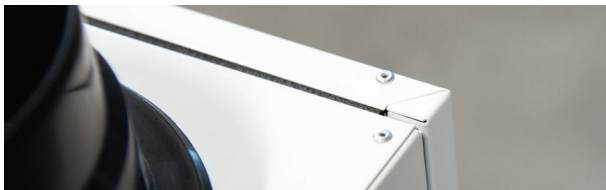
Air handling units from SALDA for residential premises are characteristic of energy efficiency (most of them are assigned to Class A), meanwhile Smarty 2-3 X AHU, which are equipped with demand controllers, exceed the requirements applicable to the highest Class A+. This is achieved thanks to the high-efficiency internal components and smart automatic adjustment.

## RELIABLE EC FANS



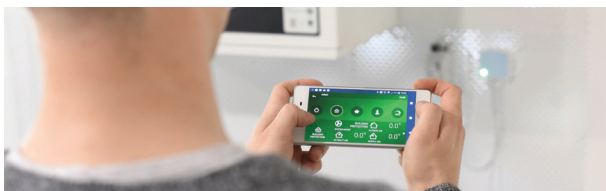
The air handling units are equipped with German (ebmpapst, ZIEHL-ABEGG) or Spanish (Soler&Palau) EC type fans, which consume very little electricity. Their typical lifetime exceeds 15 years. The most cost-saving of them consume only 0.22 W for transportation of 1 m<sup>3</sup>/h!






## HIGH-LEVEL EXTERNAL TIGHTNESS



High-quality assemblage of a AHU is characteristic of high external tightness. Products within series Smarty X are assigned to Class A1 and leakage is less than 1.2%, thus no extra consumption of electricity is needed to compensate for external air loss.

## SMART CONTROL



- 
**› Night-time cooling** significantly reduces costs in summer. The AHU supplies cool night air based on the set algorithm and the data of temperature sensors, in this way reducing the indoor temperature on the premises.
- 
**› Temperature compensation** optimizes operation of the electric heater. The AHU regulates fans based on the algorithm, maintains an optimum temperature of the supplied air. In addition to this, the electric heater is used less, thus significantly reducing electricity consumption.
- 
**› Smart anti-frost protection<sup>2</sup>**. Automation controls air flows based on the data of temperature sensors, thus heat exchanger is defrosted cyclically. AHU within series Smarty X may not use an electric pre-heater when the temperature outdoors is even up to -15°C.
- 
**› Calendar mode** is a standard feature of SALDA AHU automation. It sets proper ventilation modes based on your rhythm of life – in this way ventilation intensity is reduced during the time while you are not at home.
- 
**› Ventilation based on sensors.** 1 or 2 sensors for demand control may be connected to all SALDA air handling units (presence detectors, CO<sub>2</sub>, relative humidity (RH)) and the data thereof may be used as the basis for automatic adjustment of ventilation intensity. RH sensor is a standard feature installed in RIS/RIRS EKO 3.0 AHU.

<sup>1</sup> - Efficiency of the heat exchanger increases, if lower air flows are used in comparison to the ones used in accordance with this Directive

<sup>2</sup> - only in Smarty X AHU

## EFFICIENT HEAT EXCHANGERS – ROTOR AND COUNTER-FLOW PLATE-TYPE



The installed rotor or counter-flow plate-type heat exchangers have been certified by Eurovent Certita Certification and manufactured by leading European manufacturers. High-level heat return based on calculations made in accordance with EU 1253/2014<sup>1</sup>:

- › up to 91% - with a counter-flow heat exchanger;
- › up to 81% - with a rotor heat exchanger.

## SMART CONTROL OF AN ELECTRIC HEATER



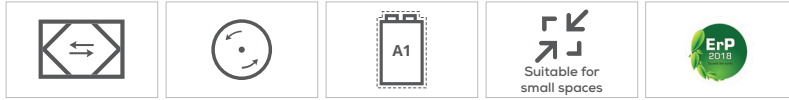
In a temperate climate zone, e.g., in Berlin, a AHU with an electric heater consumes only 15-30 percent of energy for ventilation, the remaining portion of electricity is consumed for heating of air taken from the outside or supplied air. Automation equipped in SALDA air handling units controls electric heaters on the basis of temperature sensor data by using the 0-10V method, thus resulting in reduced electricity consumption up to 30%.

Automatic control equipment of the unit is an equally important element in terms of minimizing energy consumption.

Smart SALDA air handling units have a number of control algorithms, which enable to reduce energy consumption up to 30%.

# SALDA AIR HANDLING UNITS

## FOR RESIDENTIAL PREMISES



AHU	Heat exchanger	Air duct connection	Installation				Apartment size, m <sup>2</sup>
			on the wall	on the floor	on the ceiling	in a kitchen cabinet	
<b>CEILING</b>							
Smarty 2X P	counter flow	versatile	✓	✓	✓		120
Smarty 3X P	counter flow	versatile	✓	✓	✓		220
Smarty 4X P	counter flow	versatile	✓	✓	✓		320
RIS 400 PE/PW EKO 3.0	counter flow	ceiling			✓		220
RIS 700 PE/PW EKO 3.0	counter flow	ceiling			✓		380
RIRS 350 PE/PW EKO 3.0	rotor	ceiling	✓	✓	✓		170
<b>VERTICAL</b>							
Smarty 2X V	counter flow	vertical	✓	✓		✓	100
Smarty 3X V	counter flow	vertical	✓	✓			220
Smarty 4X V	counter flow	vertical	✓	✓			320
Smarty 2R VE	rotor	vertical	✓			✓	110
Smarty 2R VE plus	rotor	vertical	✓			✓	140
RIS 700 VE/VW EKO 3.0	counter flow	vertical		✓			410
RIRS 400 VE/VW EKO 3.0	rotor	vertical		✓			210
RIRS 700 VE/VW EKO 3.0	rotor	vertical		✓			410
<b>HORIZONTAL</b>							
RIS 700 HE/HW EKO 3.0	counter flow	horizontal		✓			420
RIRS 400 HE/HW EKO 3.0	rotor	horizontal		✓			220
RIRS 700 HE/HW EKO 3.0	rotor	horizontal		✓			400



AHU	Dimensions, (LxWxH), mm	Power connection	Maximum power consumption, kW/A	Heaters, kW			Filter class	Maintenance side	Cooker hood connection, mm
				electric pre-heater	electric heater	water			
<b>CEILING</b>									
Smarty 2X P	1009x590x250	1~230V, 50Hz	0.10 / 0.85	on the duct	on the duct	-	G4/G4**	R	-
Smarty 3X P	1225x685x318	1~230V, 50Hz	0.17 / 1.55	on the duct	on the duct	-	G4/G4**	R	-
Smarty 4X P	1225x685x318	1~230V, 50Hz	0.42 / 1.89	on the duct	on the duct	-	G4/G4**	R	-
RIS 400 PE/PW EKO 3.0	1300x769x330	1~230V, 50Hz	W 0.17/1.50 E0.9 1.07/5.50 E1.6 1.77/8.50 E3.0 3.17/14.50	on the duct	0.9 / 1.6 / 3.0	on the duct	F7/M5	R	-
RIS 700 PE/PW EKO 3.0	1380x1074x350	1~230V, 50Hz / 3~400V, 50 Hz (4.5kW šildytuvas)	W 0.34 / 2.82 E1.2 1.54 / 8.34 E3.0 3.34 / 15.84 E4.5 4.84 / 9.3	on the duct	1.2 / 3.0 / 4.5	on the duct	F7/M5	L/R	-
RIRS 350 PE/PW EKO 3.0	900x693x398	1~230V, 50Hz	W 0.17 / 1.60 E 0.77 / 4.20	on the duct	0.6	on the duct	F7/M5	L	-
<b>VERTICAL</b>									
Smarty 2X V*	595x316x697	1~230V, 50Hz	0.67 / 3.35	0.6	on the duct	-	G4/G4**	R***	-
Smarty 3X V*	599x538x810	1~230V, 50Hz	1.37 / 6.75	1.2	on the duct	-	G4/G4**	R***	-
Smarty 4X V*	599x538x810	1~230V, 50Hz	1.62 / 7.09	1.2	on the duct	-	G4/G4**	R***	-
Smarty 2R VE	598x320x620	1~230V, 50Hz	0.75 / 3.91	on the duct	0.6	-	M5/M5	L/R	125

\* - There are two versions of Smarty X AHU, data is provided for version 1.1

\*\* - Filter F7 is an available option

\*\*\* - May be connected on the right-hand side

AHU	Dimensions, (LxWxH), mm	Power connection	Maximum power consumption, kW/A	Heaters, kW			Filter class	Maintenance side	Cooker hood connection, mm
				electric pre-heater	electric heater	water			
<b>VERTICAL</b>									
Smarty 2R VE plus	598x320x620	1~230V, 50Hz	0.78 /4.13	on the duct	0.6	-	M5/M5	L/R	125
RIS 700 VE/VW EKO 3.0	1000x670x1110	1~230V, 50Hz	W 0.34 /2.80 E 1.54 /8.01	on the duct	1.2	on the duct	M5/M5	L/R	-
RIRS 400 VE/VW EKO 3.0	900x553x890	1~230V, 50Hz	W 0.18 / 1.60 E 1.38 / 5.94	on the duct	1.2	on the duct	F7/M5	L/R	-
RIRS 700 VE/VW EKO 3.0	1100x655x1020	1~230V, 50Hz	W 0.34 / 2.90 E 2.34 / 11.60	on the duct	2.0	on the duct	F7/M5	L/R	-
<b>HORIZONTAL</b>									
RIS 700 HE/HW EKO 3.0	1200x670x975	1~230V, 50Hz	W 0.34 /2.80 E 1.54 /8.02	on the duct	1.2	on the duct	M5/M5	L/R	-
RIRS 400 HE/HW EKO 3.0	1000x560x650	1~230V, 50Hz	W 0.18 / 1.60 E 1.38 / 6.80	on the duct	1.1	on the duct	F7/M5	R/L (modifiable)	125
RIRS 700 HE/HW EKO 3.0	1100x653x740	1~230V, 50Hz	W 0.34 / 2.90 E 2.34 / 11.60	on the duct	2.0	on the duct	F7/M5	R/L (modifiable)	125

## ECODESIGN DATA

AHU	Energy efficiency		Max. air flow at 50Pa	Heat recovery, %	SPL, W/(m³/h)	Annual electricity consumption (AEC), kWh	Annual heating saved (AHS), kWh	Sound power level, dBA
	timer	demand controlled						
<b>CEILING</b>								
Smarty 2X P*	A	A	218	86.3	0.33	423	4486	49
Smarty 3X P*	A	A	395	85.0	0.28	364	4447	45
Smarty 4X P*	B	A	588	82.0	0.42	523	4356	54
RIS 400 PE/PW EKO 3.0	A	A	395	81.9	0.22	252	4410	50
RIS 700 PE/PW EKO 3.0	A	A	700	81.6	0.29	281	4401	50
RIRS 350 PE/PW EKO 3.0	A	A	308	81.0	0.40	362	4356	49
<b>VERTICAL</b>								
Smarty 2X V*	A	A+	182	90.4	0.31	391	4610	51
Smarty 3X V*	A	A+	394	86.9	0.26	344	4505	50
Smarty 4X V*	B	A	583	82.0	0.40	501	4356	54
Smarty 2R VE	B	B	201	76.6	0.47	531	4192	49
Smarty 2R VE plus	B	B	256	75.9	0.50	563	4170	48
RIS 700 VE/VW EKO 3.0	A	A	750	81.4	0.27	269	4396	51
RIRS 400 VE/VW EKO 3.0	A	A	388	75.0	0.29	262	4224	46
RIRS 700 VE/VW EKO 3.0	A	A	751	73.0	0.33	299	4169	47
<b>HORIZONTAL</b>								
RIS 700 HE/HW EKO 3.0	A	A	760	81.3	0.25	266	4394	55
RIRS 400 HE/HW EKO 3.0	A	A	400	75.0	0.30	272	4224	46
RIRS 700 HE/HW EKO 3.0	A	A	735	73.0	0.32	290	4169	48

\* There are two versions of Smarty X air handling units, data is provided for version 1.1

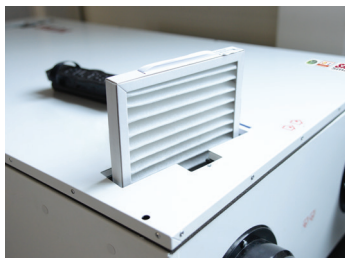
PERFECT DESIGN

## ENSURES USER-FRIENDLY INSTALLATION AND MAINTENANCE

The air handling units has been adapted to every type of accommodation. Smarty 2X easily fits in a place sufficient for a kitchen cabinet, meanwhile Smarty 3X is installed in the ancillary premises above other domestic appliances, e.g., a washing machine.



USER-FRIENDLY INSTALLATION AND MAINTENANCE DETERMINE THE FOLLOWING LOW COSTS



- › All units have an integrated plug&play system;
- › Settings of one device can be easily transferred to another one by using MCB tool<sup>1</sup>;
- › Filter contamination is determined based on a timer and it is indicated on the control panel or mobile app;
- › All components can be easily removed by using simple tools, when it is necessary to clean, replace, or inspect.

## SMART AND EASY HANDLING

### KEY FEATURES

- › 4 air flow modes;
- › BOOST feature;
- › Holiday mode;
- › Weekly mode;
- › Fire place feature;
- › Night-time cooling feature;
- › Relative humidity adjustment\*;
- › Protection from dryness\*;
- › CO<sub>2</sub> level control\*\*;
- › Filter contamination control (pressure switch\*\*\* or timer);

- › Heat exchanger protection from freezing;
- › Rotor protection from failures;
- › Connection of electric heater and pre-heater and smart control (on/off or 0-10V);
- › Control and protection of water heater/cooler or DX;
- › Control of motorized air dampers;
- › Connection of fire safety system;
- › BMS connection;
- › Connection to a computer or a mobile app via MB-Gateway.



Google Play store:



iTunes Apple store:



<sup>1</sup> - only for AHU within series Smarty;

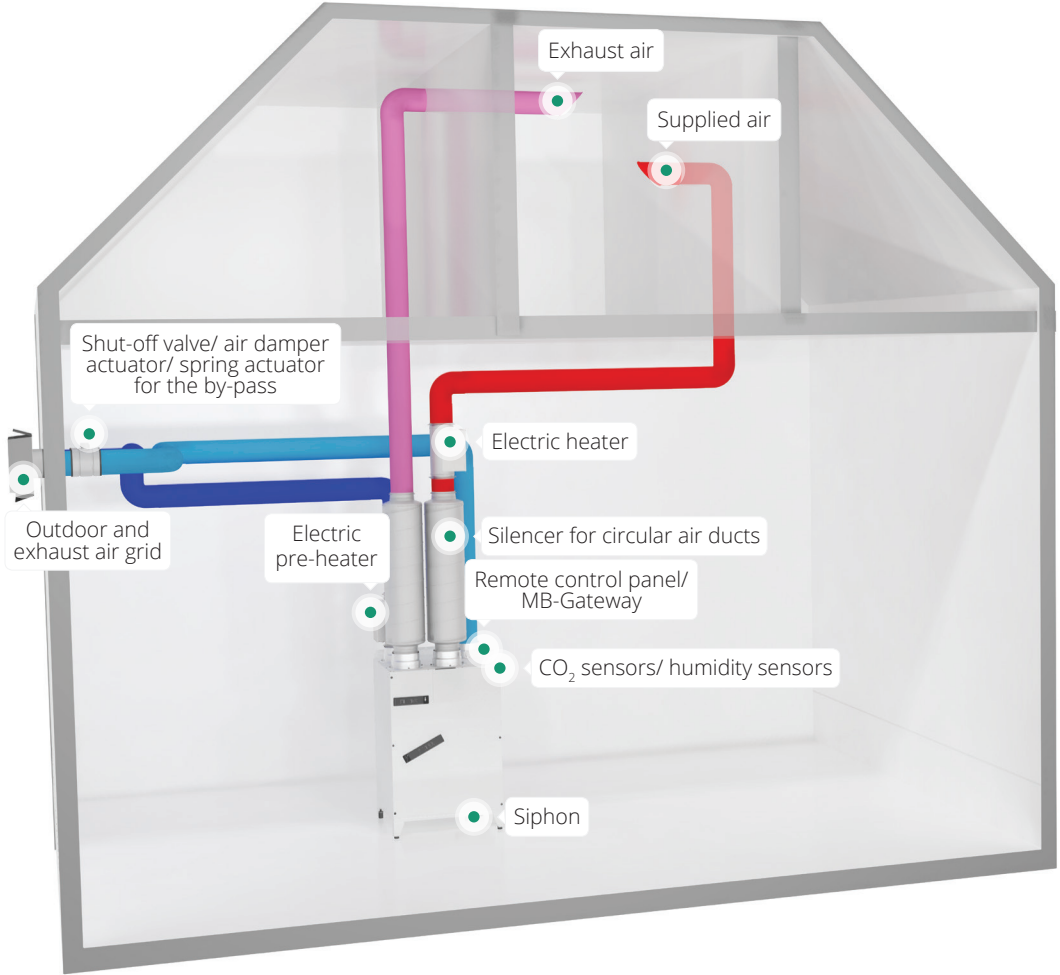
\* - AmberAir Compact CXP, RIS/RIRS EKO 3.0 has an integrated DTJ sensor (exhaust air humidity and temperature), in case of other AHU, this feature requires an additional RH sensor;

\*\* - this feature requires an additional CO<sub>2</sub> sensor;

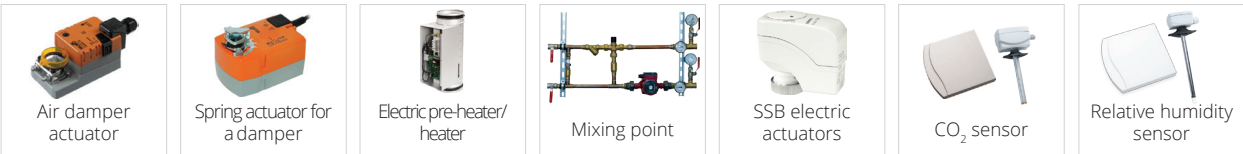
\*\*\* - pressure switches are installed in commercial AHU, they are available as an accessory in devices designed for residential purposes.

NOTE: Unit functionality depends from the unit itself and the accessories.

# COMPATIBLE VENTILATION SYSTEM COMPONENTS FROM A SINGLE SOURCE



## AUTOMATION-CONTROLLED ELECTRIC ACCESSORIES



## CONTROL ACCESSORIES



## MECHANICAL ACCESSORIES



# CERTIFIED BY PASSIVHAUS INSTITUTE



As we keep improving our air handling units, we test and certify them at independent laboratories. Product series Smarty 2-3X has been certified by Passivhaus Institute – energy efficiency meets the requirements applicable to passive houses.



## TESTS PERFORMED AT INDEPENDENT LABORATORIES



All air handling units developed by SALDA undergo a long testing process:

- › In a climatic chamber – efficiency and performance as well as functioning of anti-frost protection, when the temperature is from  $-35^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$ , RH - 90%;
- › In a multi-tube air flow measurement chamber – measurement of the aerodynamic properties of fans;
- › In a noise chamber – measurement of sound emitted from the housing and spreading to the air ducts;
- › Long-term performance test – new residential AHU are tested under real-time operation conditions for one year.

## 2-YEAR WARRANTY




Using only reliable components and modern equipment for assembling the products enables us to guarantee an exceptional operation period thereof. Every air handling unit within series Smarty X is tested within the course of production in order to ensure tightness of the unit.

All SALDA air handling units are provided with a 2-year warranty.



  
SALDA UAB  
Ragainės g. 100  
LT-78109 Šiauliai, Lithuania

  
+370 41 54 04 15  
+370 41 54 04 17

  
office@salda.lt  
www.salda.lt

Distributor

