

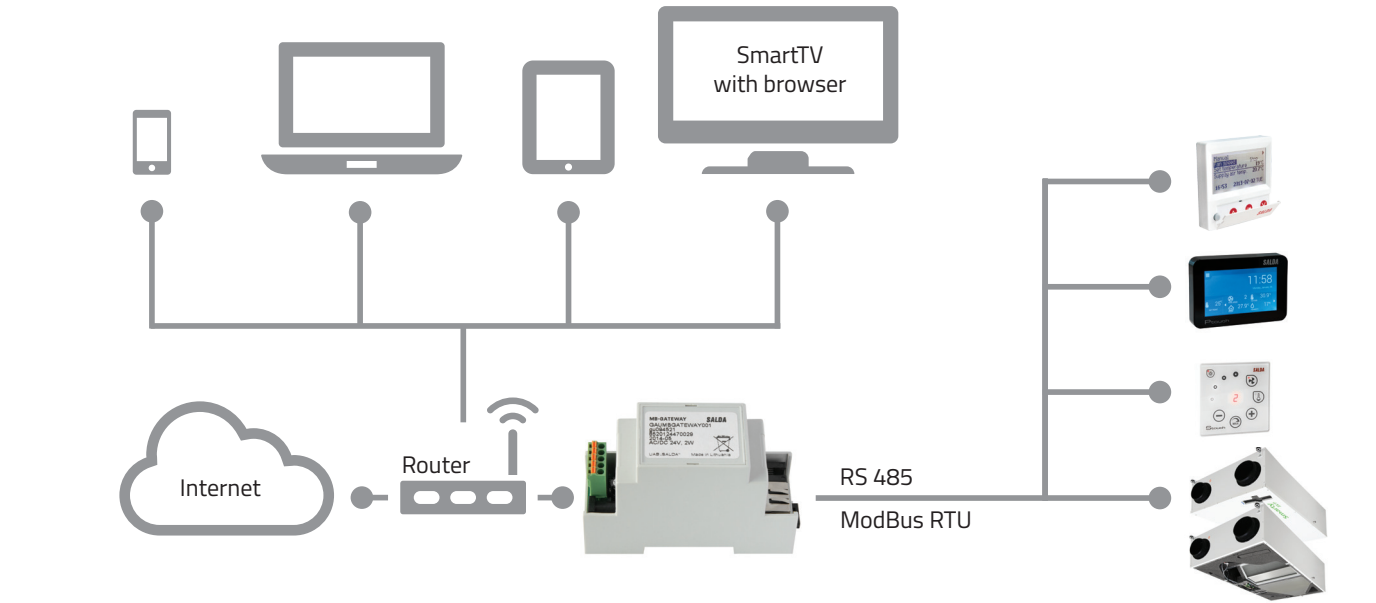
Descriptions of the functions	FUNCTIONS									
	MCB		MiniMCB		MiniMCB basic		PRV V2.3		PRV V2.5	
	Smarty 3X P		Smarty range				SMARTY 3X VEL/VER		RIS EKO 3.0 RIRS EKO 3.0 SMARTY 3X VEL/VER 3.0	
	E	W	E	W	E	W	E	W	E	W
Functions										
Date and time settings	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
System modes for easy and-user friendly control: Stand-by, Building protection, Economy, Comfort. (Specific air flows are used in the system and they are dedicated to each type of mode.)	✓	✓			✓	✓				
4 speeds for easy end-user control ("Stop" – the unit is stopped; "Low", medium, and "High". Service menu allows adjusting each speed individually)									✓	✓
BOOST function (Fans operate at highest speed)	✓	✓	✓	✓	✓	✓	✓	✓		✓
Comfortable air temperature function										
Cold/heat recovery	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fire place function	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heating season (from a selected date, 3-day temperature average or manually)	✓	✓	✓	✓	✓	✓	✓	✓		
Dryness protection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Weekly schedule	✓	✓	✓	✓	✓	✓	✓	✓		
Holiday schedule	✓	✓	✓	✓	✓	✓	✓	✓		
User and service control levels	✓	✓	✓	✓	✓	✓	✓	✓		
Automatic air flow balancing (using integrated pressure transducers)	✓	✓	✓	✓	✓	✓				
Manual air flow balancing	✓	✓			✓	✓			✓	✓
CO ₂ level indication and reduction function	✓	✓	✓	✓	✓	✓	✓	✓		
Night cooling function	✓	✓	✓	✓	✓	✓	✓	✓		
Relative humidity (RH) level indication and reduction function	✓ P	✓ P	✓ P	✓ P	✓ P	✓ P			✓	✓
Software and configuration update possibility	✓	✓	✓	✓	✓	✓	✓	✓		
Supply air temperature control according to the extract air sensor	✓	✓	✓	✓	✓	✓	✓	✓		
Monitoring function (all sensors and I/O)	✓	✓	✓	✓	✓	✓	✓ 5	✓ 5	✓ 5	✓ 5
Mode switch (start/stop)	✓	✓	✓	✓	✓	✓	✓	✓		
Extracted air relative humidity converter	✓	✓	✓	✓	✓	✓	✓ 3	✓ 3	✓ 3	✓ 3
Manual components control	✓	✓	✓	✓	✓	✓				
Functional units										
Fans										
Soft start and stop	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fan failure protection	✓	✓	✓ 4	✓ 4	✓ 4	✓ 4	✓ 6	✓ 6		
Protection by RPM	✓	✓	✓	✓	✓	✓				
Protection by pressure	✓	✓	✓	✓	✓	✓				
Speed synchronous/asynchronous 0-10V control	✓	✓	✓	✓	✓	✓	✓	✓		✓
Electric heater										
On/Off / PWM control	✓		✓		✓ 1		✓		✓	
Manual protection	✓		✓		✓ 2		✓		✓	
Automatic protection	✓		✓		✓ 2					
Overheat protection (additional protection software)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Electric pre-heater										
On/Off / PWM control	✓		✓		✓ 1					
Pre-heater manual/automatic protection (NC)	✓		✓		✓ 2					
Water heater										
Pulse-width modulation (PWM) valve actuator control		✓		✓						✓
Protection using temperature sensor		✓		✓						✓
Protection using thermostat (NC)		✓		✓						✓
Circulation pump control		✓		✓						✓
Return water temperature sensor	✓	✓	✓	✓					✓	✓
Hydronic pre-heater										
Pulse-width modulation (PWM) valve actuator control		✓								
Protection using temperature sensor		✓								
Protection using thermostat (NC)		✓								
Circulation pump control		✓								
Water temperature sensor	✓	✓								
DX cooler										
Control On/Off	✓ P	✓ P					✓	✓	✓	✓
Protection (NC)	✓ P	✓ P								
Reverse (NO-cooling, NC-heating)	✓ P	✓ P								
Water cooler										
Pulse-width modulation (PWM) valve actuator control		✓								✓
Protection using temperature sensor		✓								
Circulation pump control (0-10VDC)		✓								
Temperature sensor	✓	✓								
Control with three-positional valve actuator							✓	✓	✓	✓
Bypass damper										
3-position actuator control	✓	✓					✓	✓	✓	✓
Step motor control	✓	✓	✓	✓	✓	✓				
Filter pollution monitoring										
By pressure switch (NC)	✓	✓	✓	✓	✓	✓			✓	✓
By filter timer	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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	E	W	E	W	E	W	E	W	E	W
Functions										
Rotor										
Pulse-width modulation (PWM) (0-10VDC) motor control	✓	✓							✓	✓
On/Off motor control										
Motor belt levers protection	✓	✓	✓	✓	✓	✓			✓	✓
Rotation speed indication	✓	✓	✓	✓	✓	✓				
Service timer	✓	✓	✓	✓	✓	✓				
Sensors										
Temperature sensor input calibration (Calibration is carried out by standard)	✓	✓			✓	✓				
Temperature sensor failure protection (with emergency mode)	✓	✓	✓	✓	✓	✓				
Supply air temperature sensor	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fresh air temperature sensor	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Exhaust air temperature sensor	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extract air temperature sensor	✓	✓	✓	✓	✓	✓	✓	✓		
Emergency signals and inputs/outputs										
Fire damper actuator control On/Off	✓	✓								
Fire damper test function	✓	✓								
Fire protection input	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Configurable digital inputs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Working indication output	✓	✓	✓	✓			✓	✓	✓	✓
Alarm indication output	✓	✓	✓	✓			✓	✓	✓	✓
Fireplace protection (NC)	✓	✓	✓	✓						
Remote controllers										
Stouch	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Flex							✓	✓	✓	✓
Ptouch	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MB Gateway	✓	✓			✓	✓	✓	✓	✓	✓

1	MiniMCB basic can control only pre-heater or heater	5	Only sensors
2	MiniMCB basic have protections only for pre-heater or heater	6	Can be connected in sequential circuit
3	With FLEX TEST remote controller	P	Function will be available in IQ 2016
4	MiniMCB has RPM or TK input		

Controllers	Ptouch	Stouch	Flex
Smart control, professional adjusting	✓		
LCD 65k colours	✓		
Easy control, optimal adjusting		✓	
Segment		✓	
Simple control, advanced adjusting			✓
LCD Monochrome			✓
Display			
One touch control			
Child lock	✓	✓	
Touch sound feedback	✓	✓	
Modbus communication protocol	✓	✓	
Software updates via SD card	✓	✓	
Sleep mode	✓	✓	✓
0-10 VDC output/input			
Frame			
Dimensions H/L/W [mm]	84/124/16	84/84/22	86/86/19
Date and time	✓		✓
Language selection	✓		✓
Supply air temperature		✓	✓
Set point temperature	✓	✓	✓
Fan speed		✓	✓
Humidity level	✓		✓
CO2 level	✓		✓
Menu	✓		✓

AHU CONTROL OPTIONS



Standards

The design is based on the demands set out in the following EN/ISO standards:

- EN 308** Heat exchangers. Test procedures.
- EN 779** Particulate air filters for general ventilation.
- EN 1751** Aerodynamic testing of dampers and valves.
- EN 60204** Safety of machinery. Electrical equipment of machines.
- EN ISO 12100** Safety of machinery - General principles for design.
- EN ISO 3744** Determination of sound power levels and sound energy levels of noise sources using sound pressure - Engineering methods for an essentially free field over a reflecting plane.
- EN ISO 3741** Determination of sound power levels and sound energy levels of noise sources using sound pressure - Precision methods for reverberation test rooms.
- EN ISO 5136** Determination of sound power radiated into a duct by fans and other air-moving devices - In-duct method.
- EN ISO 9001** Quality management systems.
- Non-residential:
 - EN 1886** Air handling units. Mechanical performance.
 - EN 13053** Ratings and performance for units and components.
 - EN 13779** Ventilation for non-residential buildings. Performance requirements.
- Residential:
 - EN 13141-7** Ventilation for buildings - Performance testing of components/products for residential ventilation.
 - EN 13142** Ventilation for buildings - Components/products for residential ventilation.

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2016 V1

