

GS-Flat

Serie



GS-Flat

Breathe
with heat recovery technology

MultiCross®



highly efficient, high-performance solutions

Content

- › Precise conditioned air
- › Legend / symbols
- › Always the right choice
- › System competence of the GS-Series Flat
- › All benefits at a glance
- › Dimensions
- › Performance data
- › That's in the GS-Series Flat
- › Control functions
- › Circuit diagram
- › ECO Smart

Great performance in a small space
with the flat device serial GS-Flat

Precise air conditioned!



legend



Unity with
EC motor **and** counter flow heat exchanger



High Energy-efficient heat recovery
Counterflow heat exchanger for heat recovery figures over 90%



EC - Motor - Technology



Summer bypass
Tight fitting



Touch Panel Control
System



Filter quality



Summer bypass



Preconfigured
Siemens control



Heat pump
heating / cooling



Integrated mixed
air in the device



Flow const.
Regulation



Electric heating
battery



Volume flow
Minimum / Maximum



Pressure constant
control



Warm water pump
heating battery



Housing insulation
panel thickness in mm



CO₂-
sensor



Cooling coil
water / WP



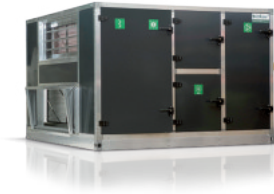
Multifunctional control
with PC interface



Rel. Humidity
control



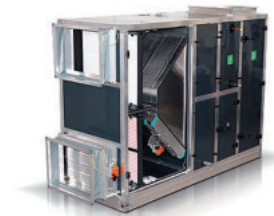
Gas pre-mix
modulating burner



GS - H - 1200	•	•	•	•	•	•	•	•	•	•
GS - H - 2500	•	•	•	•	•	•	•	•	•	•
GS - H - 3500	•	•	•	•	•	•	•	•	•	•
GS - H - 5000	•	•	•	•	•	•	•	•	•	•
GS - H - 6000	•	•	•	•	•	•	•	•	•	•
GS - H - 7500	•	•	•	•	•	•	•	•	•	•
GS - H - 8000	•	•	•	•	•	•	•	•	•	•
GS - H - 9500	•	•	•	•	•	•	•	•	•	•
GS - H - 11000	•	•	•	•	•	•	•	•	•	•
GS - H - 12500	•	•	•	•	•	•	•	•	•	•
GS - H - 16000	•	•	•	•	•	•	•	•	•	•



GS - Flat - 1500	•	•	•	•	•	•	•	•	•	
GS - Flat - 2500	•	•	•	•	•	•	•	•	•	
GS - Flat - 3500	•	•	•	•	•	•	•	•	•	
GS - Flat - 5000	•	•	•	•	•	•	•	•	•	



GS - HSmall - 2500	•	•	•	•	•	•	•	•	•	•
GS - HSmall - 3500	•	•	•	•	•	•	•	•	•	•
GS - HSmall - 5000	•	•	•	•	•	•	•	•	•	•
GS - HSmall - 6000	•	•	•	•	•	•	•	•	•	•
GS - HSmall - 7500	•	•	•	•	•	•	•	•	•	•



GS - FK - 300	•	•	•			•	•	•	•	
GS - FK - 700	•	•	•			•	•	•	•	
GS - FK - 1200	•	•	•			•	•	•	•	
GS - FK - 1900	•	•	•			•	•	•	•	



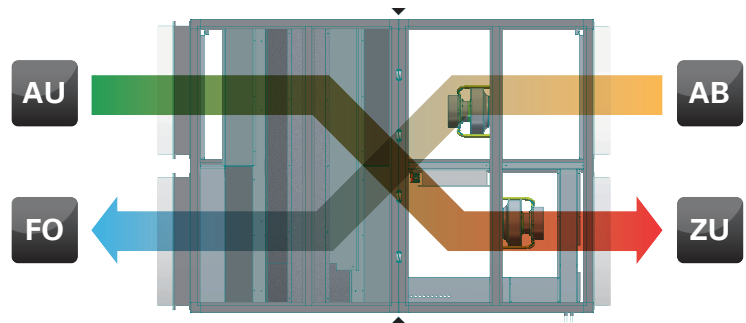
GS - VK - 300	•	•	•			•	•	•	•	
GS - VK/HK - 700	•	•	•			•	•	•	•	
GS - VK/HK - 1200	•	•	•			•	•	•	•	
GS - VK/HK - 1900	•	•	•			•	•	•	•	



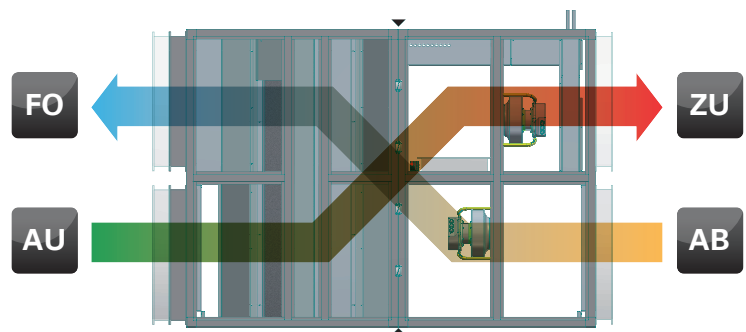
OPK - bis 100000	•	•	•	•	•	•	•	•	•	•
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> Change the air duct

Variant 01



Variant 02



View from below

▼ Division of modules at delivery

> Internal heating or cooling register

01 pumps hot water coil

OR

02 Electric heater

OR

03 Pumps cold water cooling coil

OR

04 heat pump heating and cooling



Integration of continuous modulation of Mitsubishi Heavy Industries heat pumps (Series FDS)

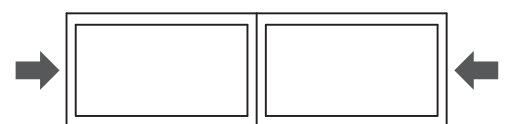
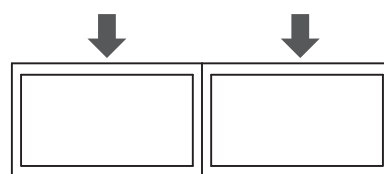
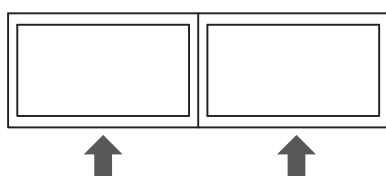
* (In the external casing of the device)

> service

below (Standard)

above

laterally



> With EcoSmart IC ...

... Multicross shows a cloud - based remote maintenance system for high-efficiency heat recovery systems. The tool collects continuously and over the entire lifecycle of all temperatures and plant data and stores them centrally.

With this information, not only analyzes of state, reliability and efficiency of these systems can be made, but also create diagnoses, optimizing values or perform upgrades, - remotely, and without requiring a technician to be on site.



Customers benefit from lower costs per service and high flexibility. EcoSmart IC runs in the default Web browser and works on all web-enabled devices such as laptops, tablets and smartphones.

> modern media



The highly efficient control EcoSmart can always be combined with our EcoSmart IC Cloud and the new App-Control.

> BACnet / Mod-Bus / KNX / Lon



You have an existing building management system or you are planning a modern building control? Then you can with **regulator series 600** and our standard protocol sorts Show / adjust / lock. (Optional)

GS-Flat

All benefits at a glance!

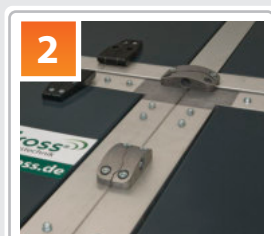
- Heat recovery with counterflow heat exchanger
- Energy-saving EC motor technology
- Regulatory approach to heat coil / electric / heat pump / free cooling
- Compact design with high-quality equipment processing
- Optionally equipped with Z-Line filter or bag filter
- Plug & Play technology
- 100% summer bypass
- 100% recirculation mode
- Sophisticated accessories
- Reliable customer service



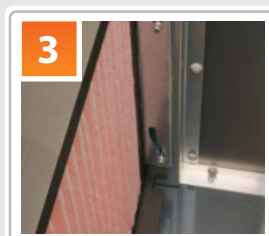
GS-Flat housing



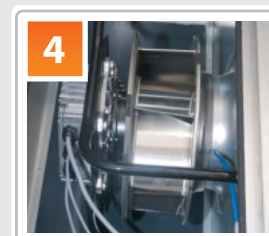
housing connector



Filter M5 / F7

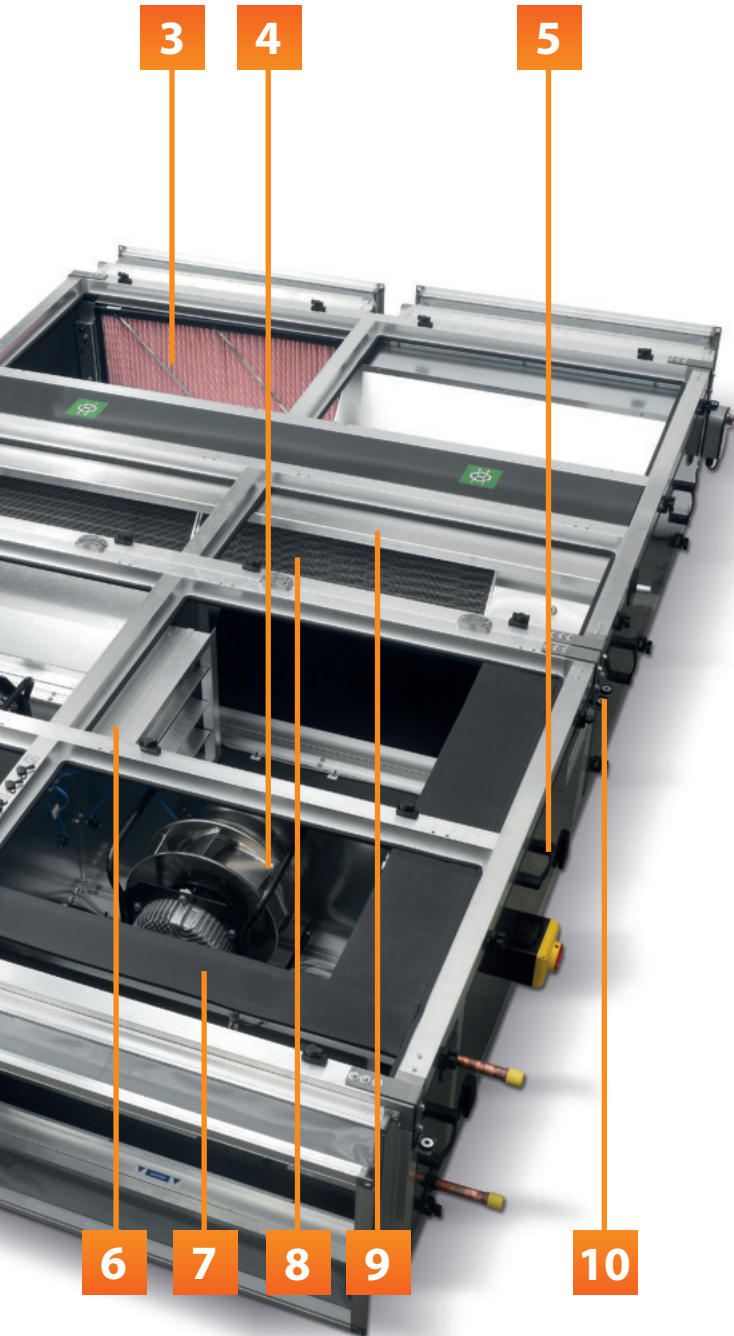


EC-Ventilator



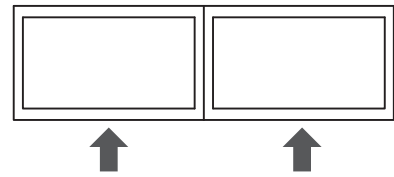
EcoSmart Control



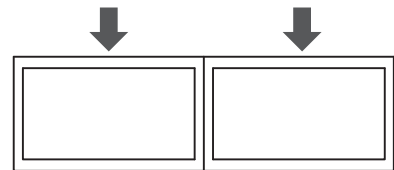


service

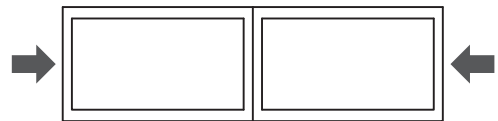
below (Standard)



above



laterally



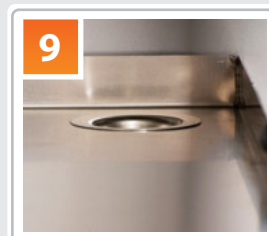
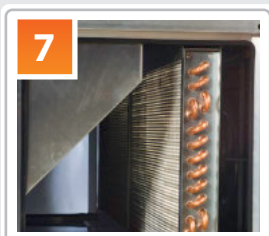
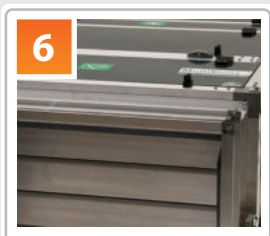
Multi-leaf damper

Heating coil

Counterflow heat exchanger

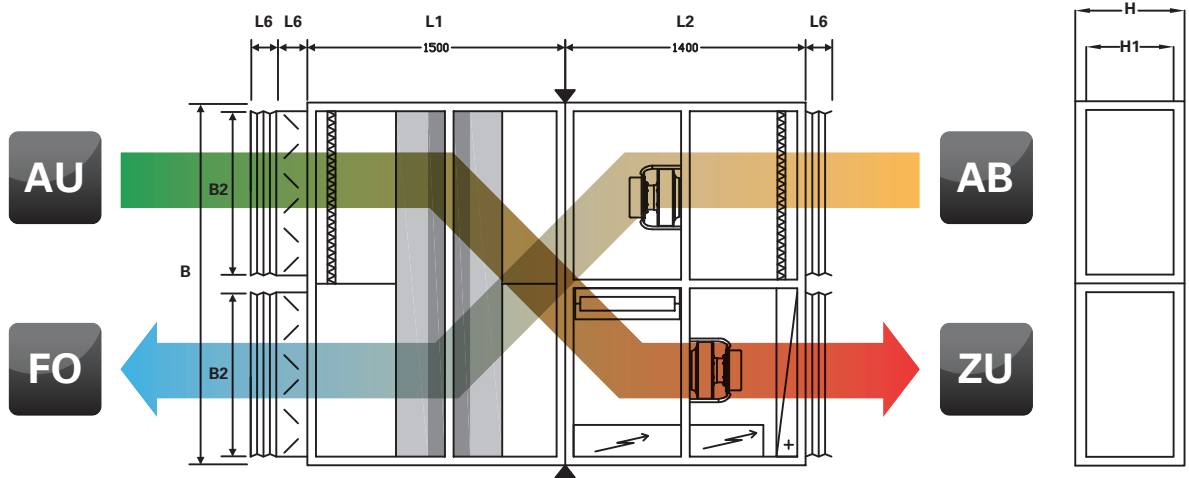
Condensation tray

Devices suspension



Specifications

GS-Flat - Dimensions & Weight

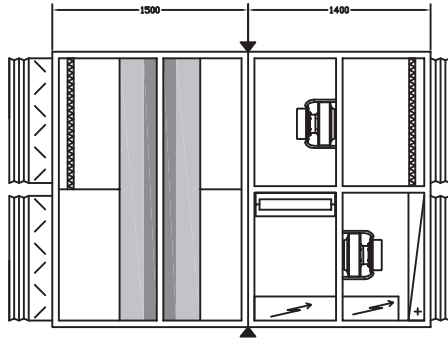


Channel connection WxH = B2xH1
Frame = 30 mm

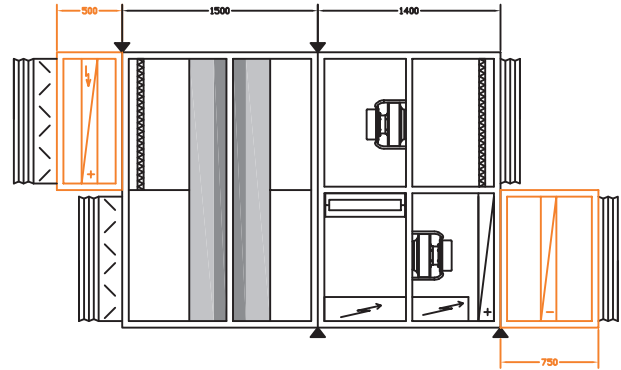
GS-Flat	1500	2500	3500	5000
Panel thickness (mm)	42	42	42	42
Width B (mm)	1250	1550	2110	2810
Height H (mm)	462	544	544	544
Length L (mm)	2900	2900	2900	2900
L1	1500	1500	1500	1500
L2	1400	1400	1400	1400
L6	125	125	125	125
H1	362	444	444	444
B2	490	640	920	1270
Number sections	2	2	2	2
Weight* (kg)	300	372	510	630

Embodiments WRG

Standard version WRG



Empty parts to expand for preheating and cooling coil = 500 mm / 750 mm*



* Extension of a pre-heating and a cooling coil for GS-Flat

The register can be selected according to customer requirements.

▽ Division of the modules at delivery

Performance data

Performance data

V1 **V2** Speed Class **H1** Class recovery

GS-H Flat	Volume flow m ³ /h	Efficiency* %	Heat recovery* kW	Supply air* °C	Max. Ext. Pressure Pa	Power consumption of kW	Tension V	Erp 2016	Erp 2018 (Optional)	SPL** dB(A)	Number of sections
1500	min. 300	94,38	3,42	21,98	400	0,428	230	✓	✓	47,4	2
	opt. 1100	90,04	11,97	20,41	400	0,866	230			53,2	
	max. 1500	88,93	16,12	20,02	200	0,75	230			35,1	
2500	min. 500	94,37	5,7	21,97	400	0,516	230	✓	✓	49,8	2
	opt. 1400	90,97	15,39	20,75	400	0,976	230			40,7	
	max. 2500	78,80	26,87	20,01	200	1,464	400			40,2	
3500	min. 700	94,46	7,99	22	400	0,54	230	✓	✓	52,6	2
	opt. 2100	90,83	23,05	20,7	400	1,422	230			35,9	
	max. 3500	89,02	37,65	20,05	200	2,046	230			40,8	
5000	min. 630	95,64	7,28	22,43	400	0,558	400	✓	✓	51,4	2
	opt. 3790	89,77	41,12	20,32	400	2,71	400			43,5	
	max. 5000	85,78	53,64	19,96	200	2,934	400			48,6	

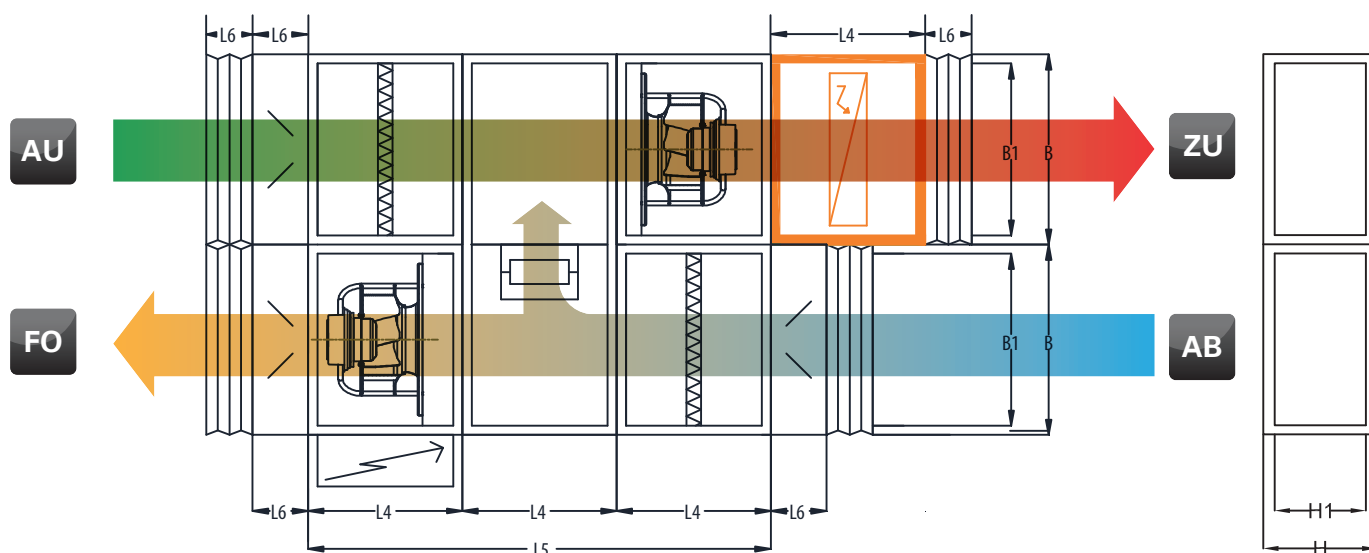
* Outside air -12 °C / 90%, air 22 °C / 50%, wet

** Distance from the sound source 5 meters at 100 Pa ext. Pressure, 250 Hz

Specifications

Mixed air

Mixed air-Flat - Dimensions & Weight



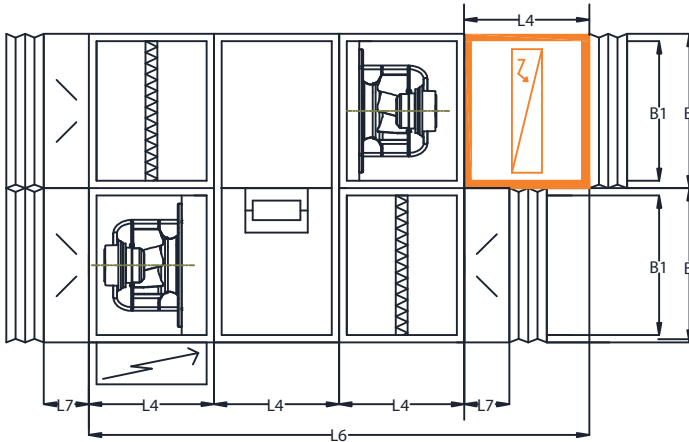
Channel connection BxH = B1xH1
Frame = 30 mm

Mixed air-Flat	1500	2500	3500	5000
Panel thickness (mm)	45	45	45	45
Width B (mm)	625	775	1055	1405
Height H (mm)	462	544	544	544
Length L4 (mm)	500	500	500	500
H1 (mm)	362	444	444	444
B1 (mm)	525	675	955	1305
L4 (mm)	500	500	500	500
L5 (mm)	1500	1500	1500	1500
L6 (mm)	125	125	125	125
Weight* (kg)	134	154	226	630

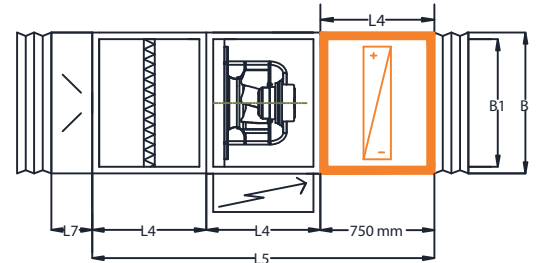
*Weight of standard apparatus according to the drawing - subject to change

Dimensions

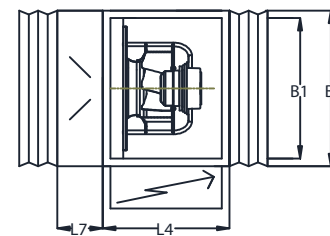
Mixed air-Flat



Flat supply air



exhaust air-Flat



* Extension of a pre-heating and post-heating 500 mm
** Extension of a pre-heating and a cooling coil 750 mm

The register can be selected according to customer requirements.

Performance data

Performance data

V1 **V2** Speed class

Flat	Volume flow m ³ /h	Max. Ext. Pressure Pa	Power consumption ** kW	Current consumption A	Voltage V	Speed class	SPL*** dB(A)	Number of sections
1500	min. 300 opt. 850 max. 1700	400 400 200	0,20 0,32 0,34	0,88 1,36 1,46	230 230 230	V2	60,8 61,9 60,1	1
2500	min. 500 opt. 1350 max. 2700	400 400 200	0,25 0,41 0,59	1,07 1,80 2,60	230 230 400	V1	60,7 62,5 64,6	1
3500	min. 700 opt. 1900 max. 3800	400 400 200	0,28 0,57 0,85	1,24 2,53 1,44	230 230 400	V1	60,9 63,3 66,0	1
5000	min. 630 opt. 3790 max. 5000	400 400 200	0,78 1,58 2,22	1,18 2,88 3,28	400 400 400	V2	63,0 55,7 55,1	1

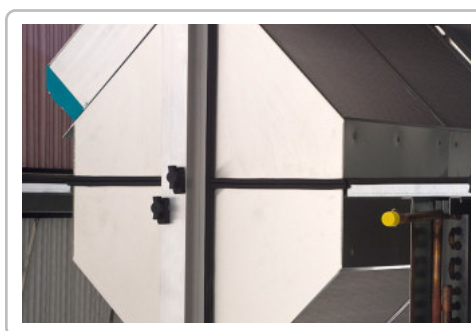
** At 400/200 Pa external pressure | *** distance from the sound source 5m (hemisphere) / Specifications You can change the order!

That's inside



1 Counterflow heat exchanger

Designed as counterflow plate heat exchanger to utilize the energy contained in the air streams sensible and latent heat energy. Exhaust air and outdoor air flow are completely separated from each other. They pass along thin aluminum plates arranged in parallel recovering the heat via countercurrent to each other.

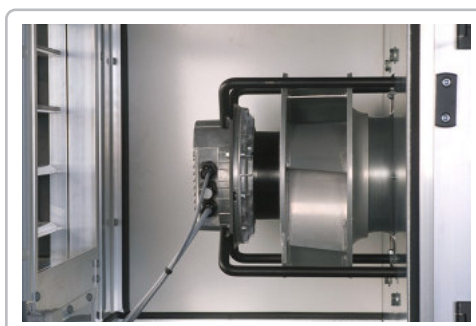


Heat recovery class



2 EC - Technology

Multicross EC motors have much lower power consumption than conventional AC motors. With the EC-engine technology up to 96% efficiencies can be achieved and that over a very wide speed range. The stepless adjustability guarantees optimal adjustment of the system efficiency and the simply 0-10V with a signal. The EC fan motor is not only very effective but also durable, maintenance-free and quiet.

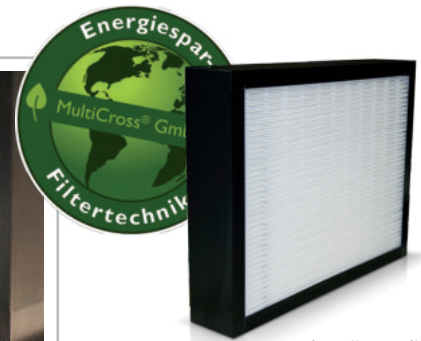
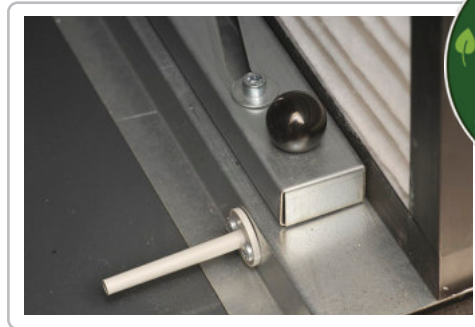


Electrical power consumption class



3 Z-Line Filter

In addition to high strength and stability under heavy load, the filter is characterized by one thing above all: The low energy consumption and environmental awareness that pays off. Standard design with Z-Line filter, optional pocket filters are available. Filter bypass leakage tested according to DIN EN 1886 .



optionally available in wide version



4 housing

Housing consisting of double-wall 45 mm thick panels with particularly good sound insulation properties. The inner and outer shell is made of 1.0 mm galvanized sheet steel that can be optionally coated. Alternatively, the panel can also be carried out in aluminum or stainless steel. The profile frame is made of aluminum, stainless steel optional. Design and construction in accordance with DIN EN 1886 and based on the VDI 6022.

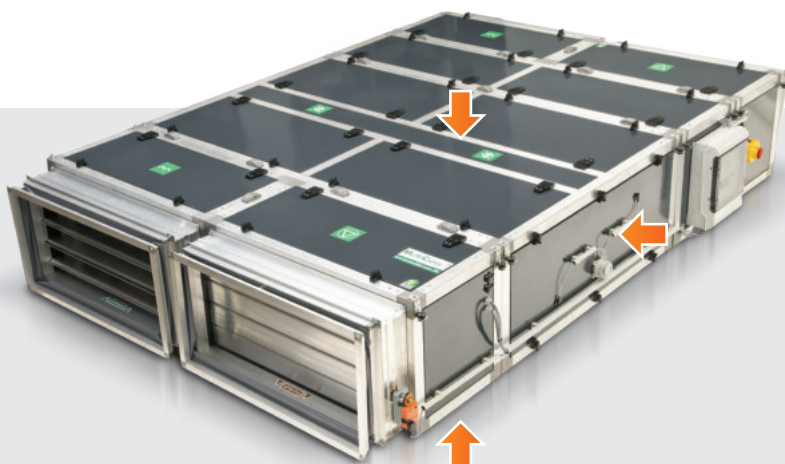


Speed class

Insertion loss of the housing tested according to DIN EN 1886

Frequency band	insertion
125 Hz	12,9 dB
250 Hz	19,6 dB
500 Hz	27,0 dB
1000 Hz	28,8 dB
2000 Hz	30,0 dB
4000 Hz	33,9 dB
8000 Hz	38,5 dB

Tightness class of the housing according to DIN - EN 1886 checked. * top grade



Operation up, down or sideways possible.

Unique: The control unit ECO_{SMART} Pre-wired, tested and optimally matched



Flow control

- Continuously 0 - 100% over 3 speed automatic

Optional:

- Flow rate constant
- Constant pressure
- CO₂ regulation
- Humidity control

Bypass Summer / Winter

- internal sensor with adjustable threshold values for heat recovery
- Free Cooling

Filter monitoring

- pressure control 0/1

Recirculation damper

- Only in night mode ON

Heating surface

Optional:

- Heating register
- Electric
- Heat pump
- Gas pre-mix burner (not with GS-Flat)

Cooling

- Free Cooling

Optional:

- Cooling coil water
- Cooling coil DX (heat pump)

Shutdown fire

- From supply and exhaust air
- From exhaust air

Icing protection of heat recovery unit

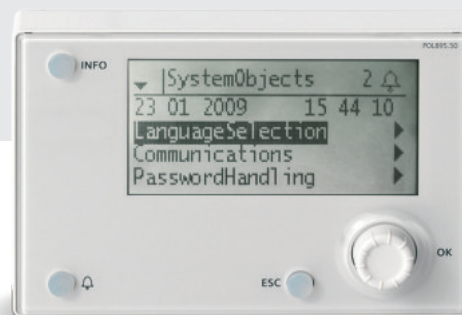
- Siphon 0/1

Optional:

- Electric preheating


Control type

- Exhaust Cascade
- Space cascade
- Supply air cascade



Controller HMI

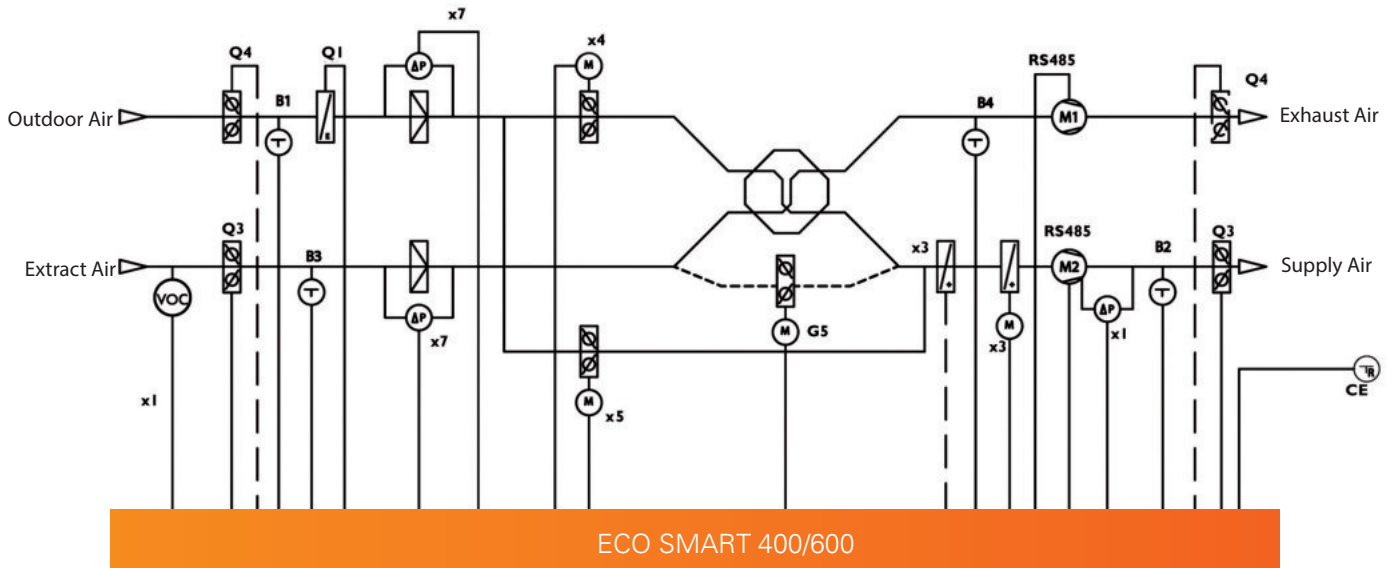
Communication

- Cloud-based remote maintenance system 
- App control **(NEW)** 
- SD card and internal memory

Optional:

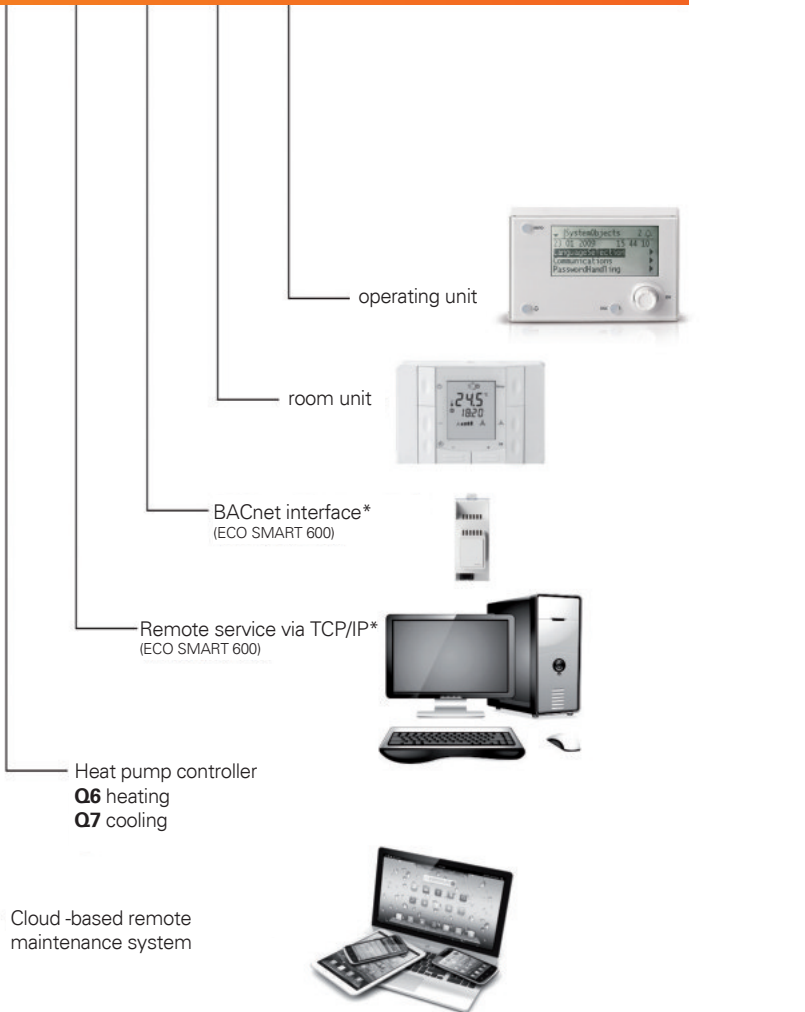
- Web communications over TCP / IP (optional)
- BACnet; Mod-Bus; KNX; Lon
- Connection to the store systems

Circuit diagram



- B1 Outside air sensor
- B2 Supply air
- B3 Extracted air sensor
- B4 Exhaust air sensor *
- CE Room air sensor
- RS485 Supply fan
- RS485 Exhaust fan
- x1 Air quality sensor exhaustair *
- x1 Pressure constant- /
volume flow constant control *
- x3 Heating coil Water *
- x3 Electric heater *
- x4 Bypass winter
- x5 Bypass summer (Booster)
- x7 Filter Siphon outside air
- x7 Filter Siphon exhaust
- Q1 Electric heater "antifreeze" *
- Q3 Supply Actuator *
- Q3 Exhaust air / recirculation air actuator *
- Q4 Exhaust air actuator *
- Q4 Outside air actuator *
- Q5 Recirculation actuator *

ECO SMART 400/600

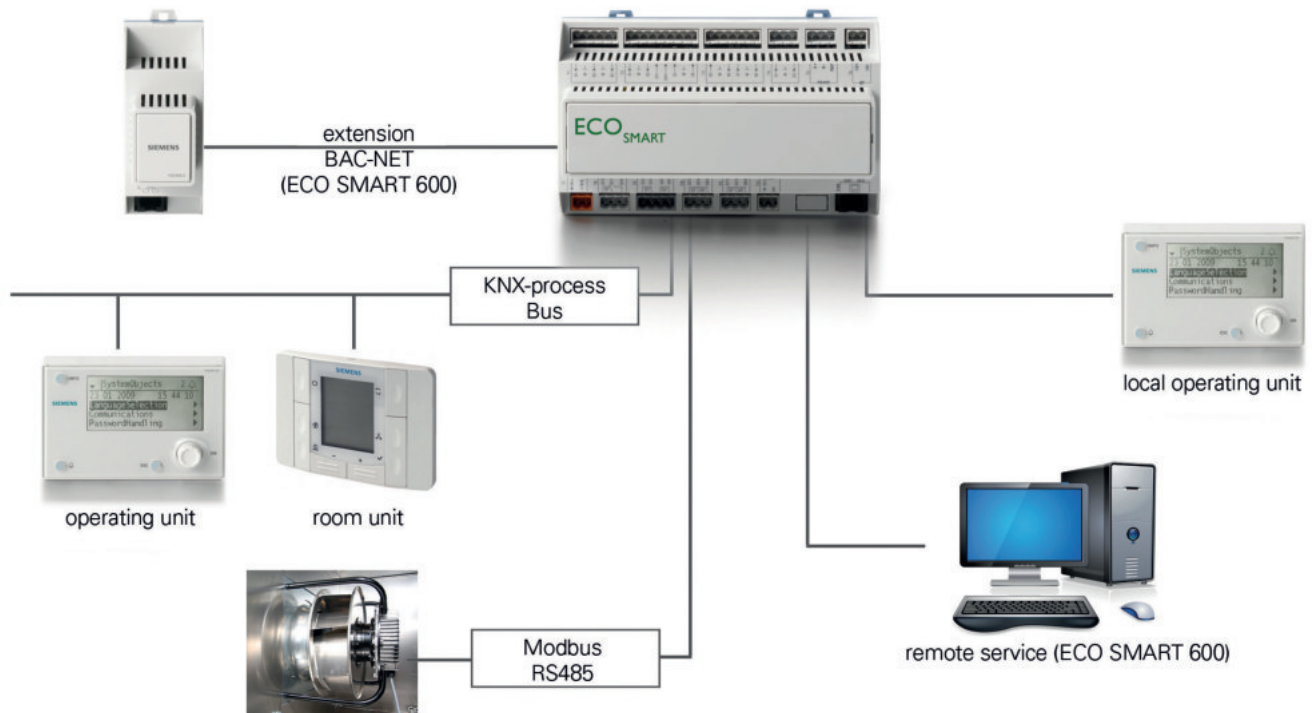


* optionally available



ECOSMART IC provides a simple and convenient operation

Using this, especially for the multi Cross devices developed, regulation and control system can easily be changed. Select the mode, temperature or the desired operating time.



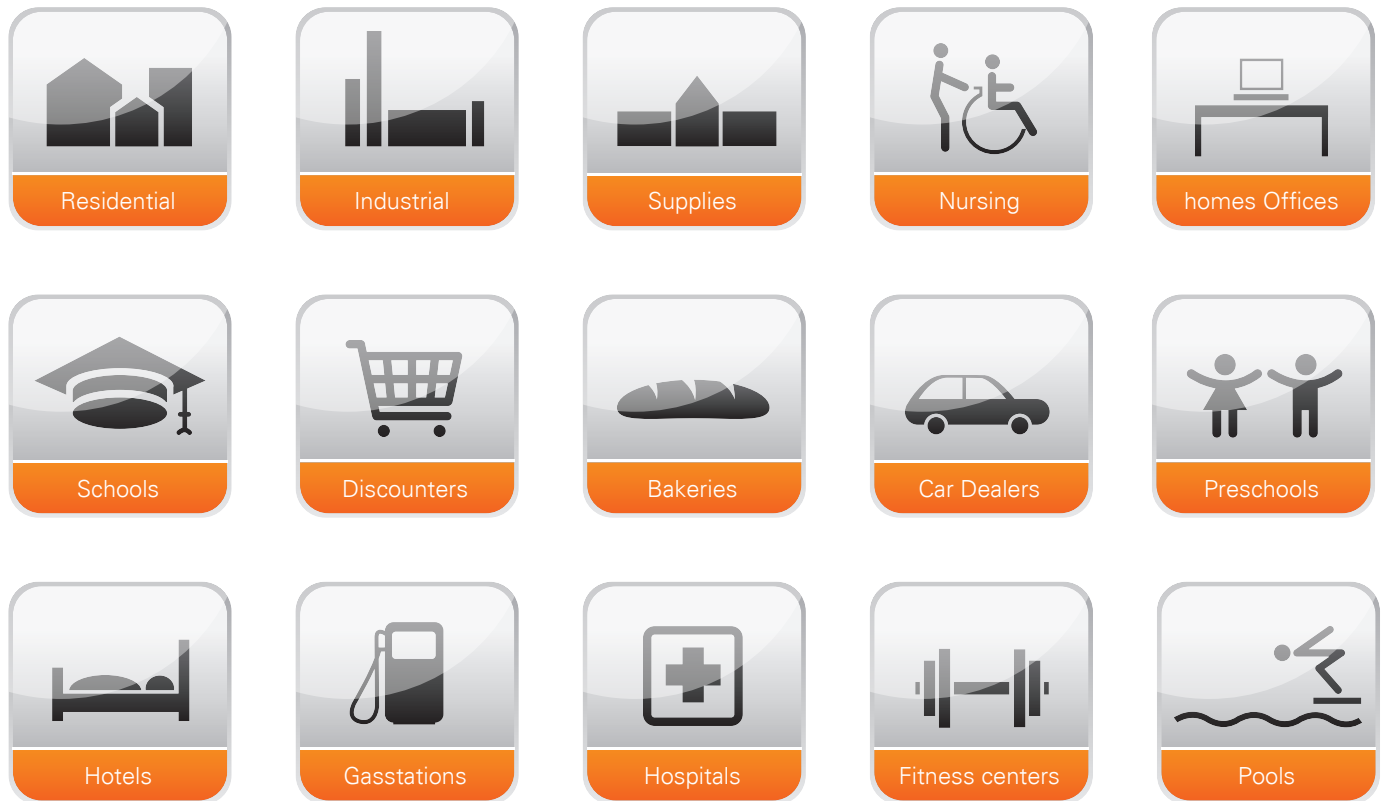
For customer-friendly commissioning the ECO SMART IC is configured system-specifically for each customer. To start up the WRG unit, only the setpoints, speeds and response times must be individually adjusted by the customer.



- Room unit for operation on site
- Operating unit (HMI) for commissioning and function expansion
- Factory pre-programmed and configured rules
- User-friendly menu
- Expansion modules m1 BACnet interface (pre-programmed) *
- Remote service via TCP / IP *
- CO2 / pressure or volume flow constant control possible
- Software updates via SD card

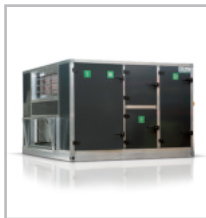
* optionally available

we save your energy costs for
all objects with ventilation requirement



Compact devices - series (GS-H)

- GS** → counterflow heat exchanger
- H** → Connection Type H = Horizontal
- V̇** → 1200m³/h - 16000m³/h
- EC** → EC motor technology



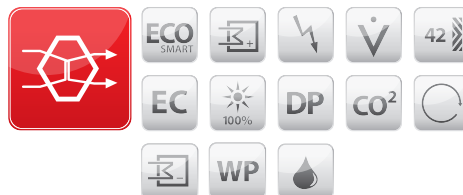
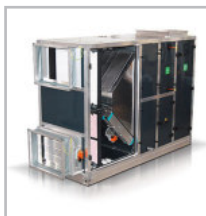
Compact devices - series (GS-Flat)

- GS** → counterflow heat exchanger
- F** → Flat / flat device
- V̇** → 1500m³/h - 5000 m³/h
- EC** → EC motor technology



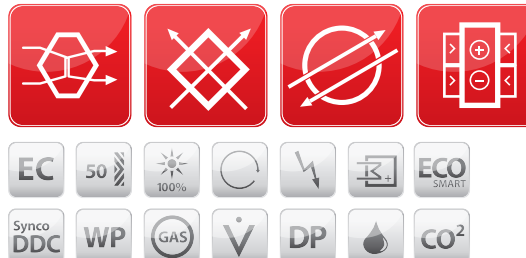
Compact devices - series (GS-HSmall)

- GS** → counterflow heat exchanger
- HS** → Jack type HS = Horizontal Small
- V̇** → 1200m³/h - 7500 m³/h
- EC** → EC motor technology



Open Air Programme (OPK)

- OPK** → Open program air conditioners
- GS/KS** → Execution OPTIONAL
 - GS - counterflow heat exchanger
 - KS - cross-countercurrent heat exchanger
 - RT - rotor heat exchanger
 - AK - ACCU-Block
- V̇** → 1000m³/h - 100000 m³/h
- EC** → EC motor technology



MultiCross®
Wärmerückgewinnungstechnik

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