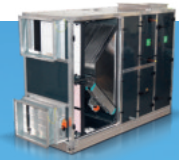


GS-H

Serie



GS-H



GS-Small

Breathe deeply
with Heat Recovery Technology by

MultiCross®



ErP 2016
Ready



ErP 2018
Ready



Highly efficient, powerful solutions

Contents

- › Legend / Symbols
- › Precisely Conditioned Air
- › Always the Right Choice (Headline)
- › System Features of the GS-H Series
- › All Advantages at a Glance
- › Technical Data
- › Performance Data
- › Look Inside the GS-H Series
- › Control Functions
- › Wiring Diagram
- › ECO Smart
- › Areas for Energy Saving

We provide a perfect climate
with individual, environmental and
economic ventilation concepts.

Precisely conditioned air!



Legend



Unit including
EC motor **and** counter-flow heat exchanger



High-efficiency heat recovery with
counter-flow heat exchanger for heat recovery
efficiency of over 90%



EC motor technology



Summer Bypass,
leak-proof



Multifunction Controller
with PC Interface



Timer Programme
Control



Integrated
Recirculation Flap



ECOSmart IC
Cloud



Volume Flow
Constant Control



Integrated
Mixed-Air Flap



App Control for
ECOSmart IC



Pressure Constant
Control



Enclosure Insulation,
Panel Gauge in mm



Touch Panel



Warm Water
Heating Coil



Filter Quality



CO₂-
Sensor



Cooling Coil
PKW (PCW) /WP (HP)



Heat Pump,
Heating / Cooling



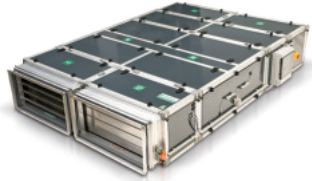
Rel. Humidity
Control



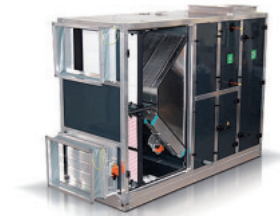
Electric
Heating Coil



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	•	•	•			•	•	•	•		

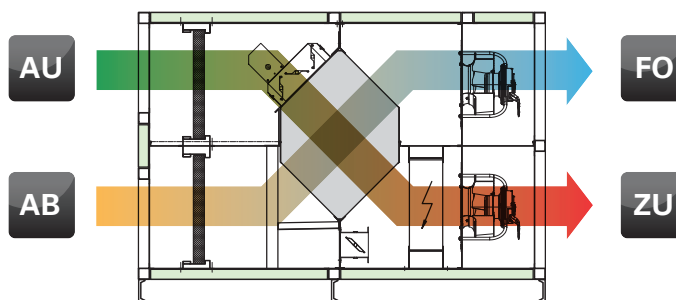


OPK - bis 100000	•	•	•	•	•	•	•	•	•	•	•
------------------	---	---	---	---	---	---	---	---	---	---	---

➤ **Change of Air Conduction**

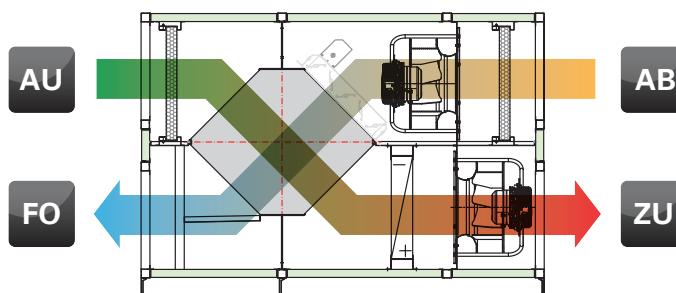
Vertical Design

Variant 01



Horizontal Design

Variant 02



The system is available with either horizontal or vertical connections.
In variant 02 the standard dimensions can vary. Please take this into consideration in the project planning.

➤ **Internal Heating or Cooling Coils**

01 Warm Water Heating Coil

OR

02 Electric Heating Coil

OR

03 Pumped Cold Water Cooling Coil

OR

04 Heat Pump Heating and Cooling Coil

OR

05 Gas Pre-Mix Modulation Burner

* (If two coil units are selected, the second one will automatically be attached to the system externally.)

** (in an external enclosure attached to the system)



➤ **Air-to-Air Heat Pump for Heating and Cooling**

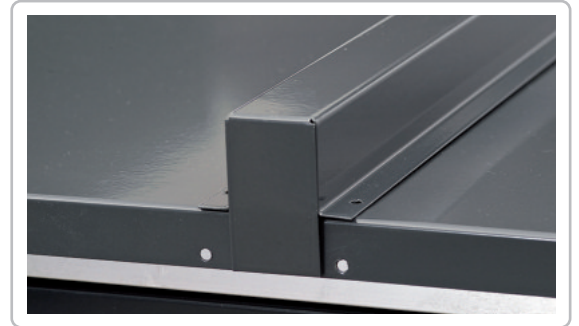


Integration for continuous power control by Mitsubishi Heavy Industries Heat pumps (FDS Series)

> Outdoor Installation

All system sizes from 1,200 to 16,000 m³/h can be delivered either as indoor or outdoor units. Variant 01 is the preferred variant for outdoor installation.

The roof is re-sealed using top-hat DIN rails **WITHOUT** silicone for durable tightness.



> "In-Roof" Installation

The fully pre-installed GS-H "In-Roof" version can be installed on top of an industrial warehouse using a crane or helicopter. The system noise mufflers for fresh and exhaust air can be installed in the roof duct. The outlet unit with Jet-Flow nozzles for heating and cooling can also be integrated.



> State-of-the-Art Control Media



The highly efficient ECOSmart control unit can be integrated into our ECOSmart IC Cloud and the new App control function at any time.

> BACnet / Mod-Bus / KNX / Lon



Do you already have a building management system in place, or are you planning to install one? If so, the **600 Controller Series** and our standardized protocol allows you to use various display, modification and locking functions. (Optional)

GS-H

All Advantages at a Glance!

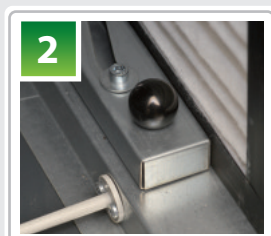
- Heat recovery with counter-flow heat exchanger
- Energy efficient EC motor technology
- Control concept for PWW/electric/heat pump/free cooling
- Compact design with high-quality workmanship
- Optionally with Z-line filter or bag filter
- Plug & Play Technology
- 100% Summer Bypass
- 100% Recirculation operation
- Smart Accessories
- Reliable Customer Service



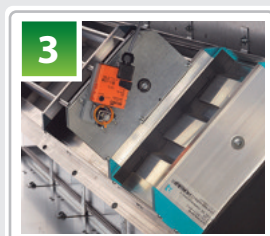
Jalousie
Flap 1



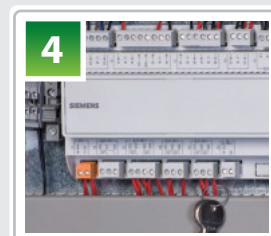
Filter
M5 /F7



Bypass
Flap 100%

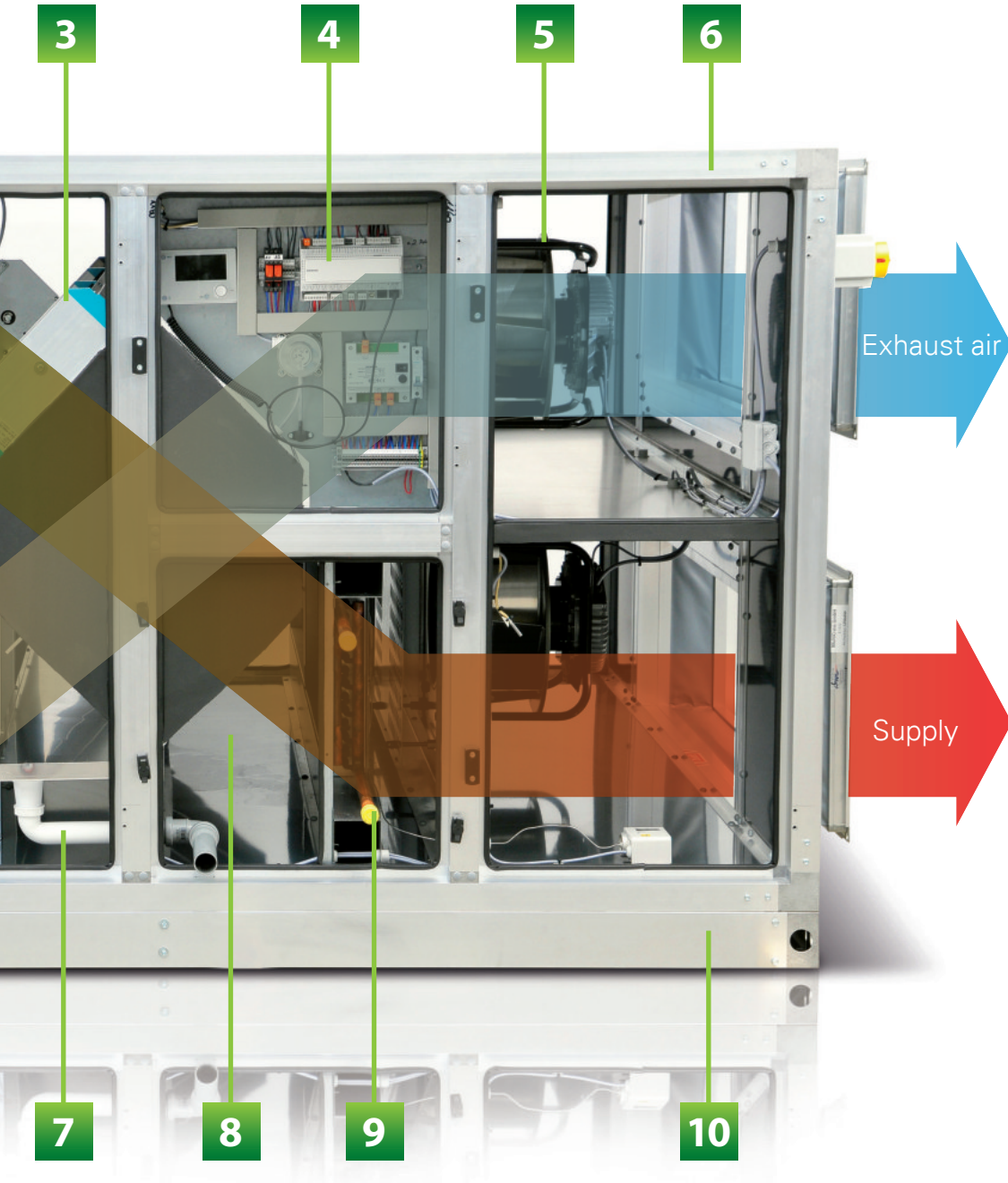


ECOSmart
Controller



EC
Ventilator





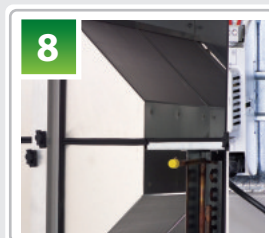
GS-H
Enclosure

Condensate
Tray

Counter-Flow
Heat Exchanger

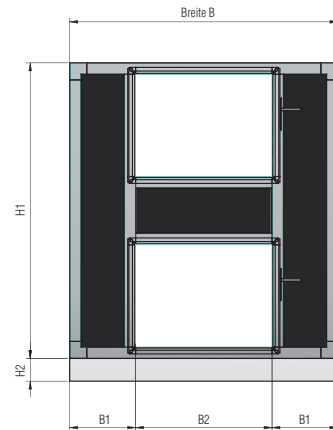
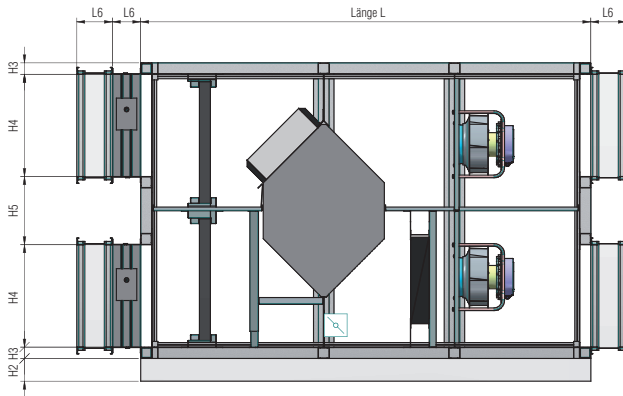
Heating
Coil PWW

Base
Frame



Technical Data

GS-H - Weights & Dimensions



Duct Connection BxH = B2x4
Frame = 30 mm

GS-H	1200	2500	3500	5000	6000	7500	8000	9500	11000	12500
Panel Gauge (mm)	42	42	42	42	42	42	42	42	42	42
Width B (mm)	740	1180	1720	2260	2260	2650	2440	2760	2710	3000
Height H (mm)	1200	1300	1300	1300	1450	1450	1485	1485	1630	1900
Length L (mm)	1830	1980	1980	1980	2120	2120	2260	2260	2490	2550
L6 (mm)	125	125	125	125	125	125	125	125	125	125
H1	1200	1300	1300	1300	1450	1450	1485	1485	1630	1900
H2	100	100	100	100	100	100	100	100	100	100
H3	50	50	50	50	50	50	50	50	50	50
H4	400	450	450	450	550	550	550	550	650	650
H5	200	300	300	300	250	250	285	285	230	500
B1	50	290	380	505	505	575	320	380	405	500
B2	640	600	960	1250	1250	1500	1800	2000	1900	2000
Weight* (kg)	310	457	615	747	859	1587	1056	1110	1255	1549

The air flow direction must be specified in the order!
* The exact weight will be calculated by the design software.

Performance data



V1 Speed Category



H1 Heat Recovery Class

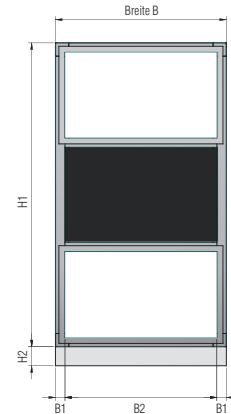
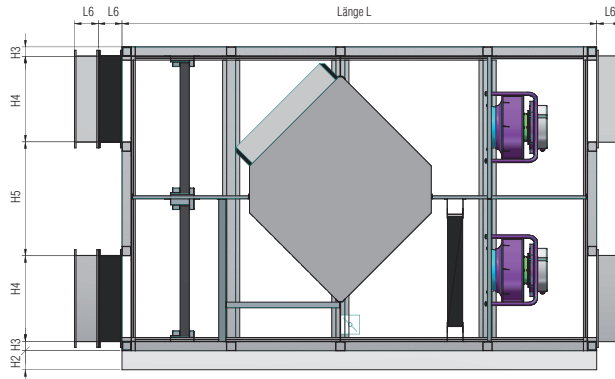


GS-H	Volume Flow Rate m³/h	Efficiency* %	Heat Recovery* kW	Supply-Air Temperature* °C	Max. External Compression Pa	Power Consumption** kW	SFP internal (ErP) W/m³/s	Voltage V	Erp 2016	Erp 2018 (optimum)	Sound Pressure Level*** dB(A)	No. of Sections****
1200	min. 280	93,8	3,00	19,9	400	0,36	777	230	✓	✓	37,8	1
	opt. 940	89,7	9,63	18,5	400	0,75		230			43,9	
	max. 1200	88,9	12,17	18,2	200	0,70		230			31,7	
2500	min. 400	94,9	4,33	20,3	400	0,40	653	230	✓	✓	38,6	1
	opt. 1890	89,7	19,36	18,5	400	1,34		230			27	
	max. 2500	88,7	25,32	18,2	200	1,48		400			34,9	
3500	min. 500	95,4	5,45	20,4	400	0,62	599	400	✓	✓	34,8	1
	opt. 2709	89,9	27,79	18,6	400	1,86		400			35,1	
	max. 3500	89,0	35,54	18,3	200	2,04		400			34,1	
5000	min. 630	95,6	6,87	20,5	400	0,66	604	400	✓	✓	34,9	1
	opt. 3790	89,7	38,81	18,5	400	2,64		400			36,5	
	max. 5000	88,7	50,63	18,2	200	2,90		400			40,7	
6000	min. 780	95,6	8,51	20,5	400	0,25	696	230	✓	✓	38,9	1
	opt. 4850	89,6	49,62	18,5	400	3,38		400			38,1	
	max. 6000	88,9	60,86	18,2	200	3,27		400			37,3	
7500	min. 900	95,7	9,83	20,5	400	0,54	714	230	✓	✓	38,9	1
	opt. 5820	89,6	59,53	18,5	400	3,94		400			39	
	max. 7500	88,7	75,93	18,2	200	4,37		400			37,7	
8000	min. 1080	95,4	11,76	20,4	400	0,60	924	230	✓	✓	33,4	1
	opt. 7170	89,2	72,98	18,3	400	4,94		400			38,5	
	max. 8000	88,8	81,07	18,2	200	4,56		400			36,9	
9500	min. 1240	95,4	13,5	20,4	400	0,66	923	230	✓	✓	27,8	1
	opt. 8190	89,2	83,36	18,3	400	5,98		400			45,1	
	max. 9500	91,8	99,55	19,2	200	6,14		400			44,2	
11000	min. 1550	95,2	16,85	20,4	400	0,82	1044	230	✓	✓	28,5	2
	opt. 9560	92,1	100,45	19,3	400	7,46		400			44,2	
	max. 11000	88,7	111,35	18,2	200	7,40		400			42,9	
12500	min. 1550	95,5	16,9	20,5	400	0,82	1018	230	✓	✓	28,3	2
	opt. 10640	92,1	111,8	19,3	400	8,44		400			44,8	
	max. 12500	88,6	126,42	18,1	200	9,14		400			45,8	

The exact technical data at the point of operation will be determined by the design software. I *Outside air -12°C/ 90%, Exhaust Air 22°C/ 50%, humid I **at 400 / 200 Pa external compression I ***Distance from the sound source 5 m, 250 Hz I ****Depending on project requirements the systems can be delivered in several sections. Technical data are subject to modifications.

Technical Data

GS-H Small - Weights & Dimensions



Duct Connection BxH = B2xH4
Frame = 30 mm

GS-H Small	2500	3500	5000	6000	7500
Panel Gauge (mm)	42	42	42	42	42
Width B (mm)	900	900	1300	1300	1300
Height H (mm)	1600	1600	1720	2000	2260
Length L (mm)	2500	2500	2500	2900	3200
L6 (mm)	125	125	125	125	125
H1	1600	1600	1720	2000	2260
H2	100	100	100	100	100
H3	50	50	50	50	50
H4	450	450	550	550	650
H5	500	500	520	800	860
B1	50	50	50	50	50
B2	800	800	1200	1200	1200
Weight* (kg)	457	615	747	859	1587

The air flow direction must be specified in the order!
*The exact weight will be calculated by the design software.

Performance data



V1 Speed Category



H1 Heat Recovery Class



GS-H	Volume Flow Rate m³/h	Efficiency* %	Heat Recovery* kW	Supply-Air Temperature* °C	Max. External Compression Pa	Power Consumption** kW	SFP internal (ErP) W/m³/s	Voltage V	Erp 2016	Erp 2018 (optimum)	Sound Pressure Level*** dB(A)	No. of Sections****
2500	min. 400	94,9	4,33	20,3	400	0,40	653	230	✓	✓	38,6	1
	opt. 1890	89,7	19,36	18,5	400	1,34		230			27	
	max. 2500	88,7	25,32	18,2	200	1,48		400			34,9	
3500	min. 500	95,4	5,45	20,4	400	0,62	599	400	✓	✓	34,8	1
	opt. 2709	89,9	27,79	18,6	400	1,86		400			35,1	
	max. 3500	89,0	35,54	18,3	200	2,04		400			34,1	
5000	min. 630	95,6	6,87	20,5	400	0,66	604	400	✓	✓	34,9	1
	opt. 3790	89,7	38,81	18,5	400	2,64		400			36,5	
	max. 5000	88,7	50,63	18,2	200	2,90		400			40,7	
6000	min. 780	95,6	8,51	20,5	400	0,25	696	230	✓	✓	38,9	1
	opt. 4850	89,6	49,62	18,5	400	3,38		400			38,1	
	max. 6000	88,9	60,86	18,2	200	3,27		400			37,3	
7500	min. 900	95,7	9,83	20,5	400	0,54	714	230	✓	✓	38,9	1
	opt. 5820	89,6	59,53	18,5	400	3,94		400			39	
	max. 7500	88,7	75,93	18,2	200	4,37		400			37,7	

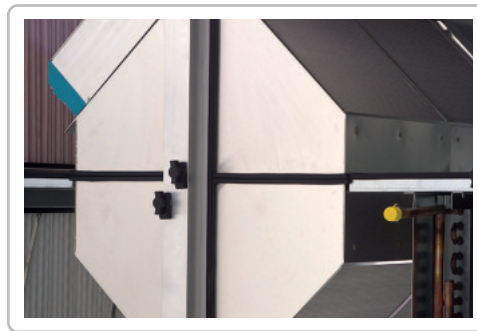
The exact technical data at the point of operation will be determined by the design software. | *Outside air -12°C/ 90%, Exhaust Air 22°C/ 50%, humid | **at 400 / 200 Pa external compression | ***Distance from the sound source 5 m, 250 Hz | ****Depending on project requirements the systems can be delivered in several sections. Technical data are subject to modifications.

Look Inside



1 Counter-Flow Heat Exchanger

Designed as a counter-flow plate heat exchanger, it uses the sensitive and latent heat energy contained in the air streams. The exhaust and outside air streams are completely separated from each other. They are guided past one another, along thin, parallel-aligned aluminium plates in a counter-flow principle.

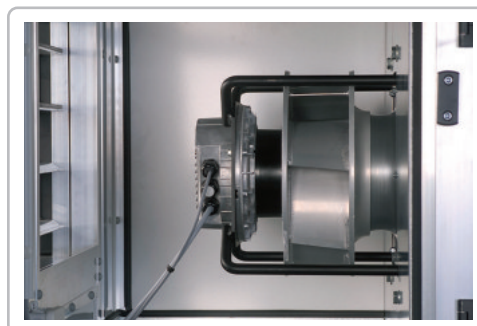


Heat Recovery Class



2 EC Technology

The EC motors used by MultiCross have a significantly lower power consumption than conventional three-phase motors. These motors reach efficiencies of up to 96% over a wide speed range. The continuous controllability allows to set the optimum system efficiency level, simply by means of a 0–10V signal. Other advantages of the EC ventilator motor include its longevity, low maintenance and silent operation.



Electric Power Consumption Class



3 Z-Line Filters

In addition to their high mechanical strength and stability under heavy loads, the filters are distinguished by their low energy consumption and eco-friendliness – qualities that pay for themselves. Z-line filters are installed as standard, bag filters are optional. The filter-bypass leakage has been tested according to DIN-EN 1886.



optionally available in wide version



4 Enclosure

The enclosures are made of 4.5 mm double-walled panels with outstanding sound insulation values. The interior and exterior shell are made of 1.0 mm galvanised steel sheets which can optionally be coated. Alternatively, the panels can be made of aluminium or stainless steel. Aluminium profile frames are standard; stainless steel is optional. Design and construction according to DIN EN 1886 and following VDI 6022.



Speed Category



The insertion loss of the enclosure was 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 enclosure tested acc. to DIN EN 1886. * Top Rating

Unique: The ECO_{SMART} Control unit Pre-wired, tested and optimised



Volume Flow Constant Controller

- Continuous, 0-100% via 3-level automatic mode

Optional:

- Volume Flow Constant
- Pressure Constant
- CO₂ Regulation
- Humidity Control

Bypass Summer / Winter

- Internal sensor with adjustable limit value for Heat Recovery
- FreeCooling

Filter Control

- Pressure Cell 0/1

Recirculation Flap

- "ON" only during night operation

Reheating Coil

Optional:

- PWW Coil
- Electric Heating Coil
- Heat pump
- Gas pre-mix burner (not in GS-Flat)

Cooling

- FreeCooling

Optional:

- Cooling coil PKW (PCW)
- Cooling coil DX (Heat pump)

Switch-off by CFA (Central Fire Alarm)

- Supply and exhaust air OFF
- Exhaust air OFF

Anti-freezing protection of heat recovery unit

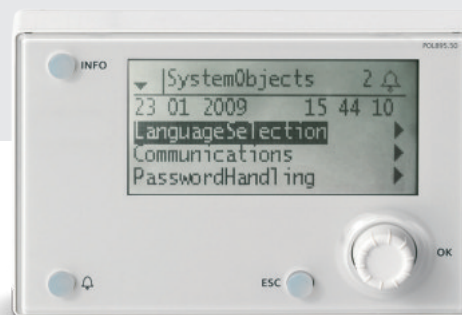
- Pressure Cell 0/1

Optional:

- Electric Preheating Coil



Control Types

- Exhaust air cascade control
- Room cascade control
- Supply air cascade control



Controller HMI

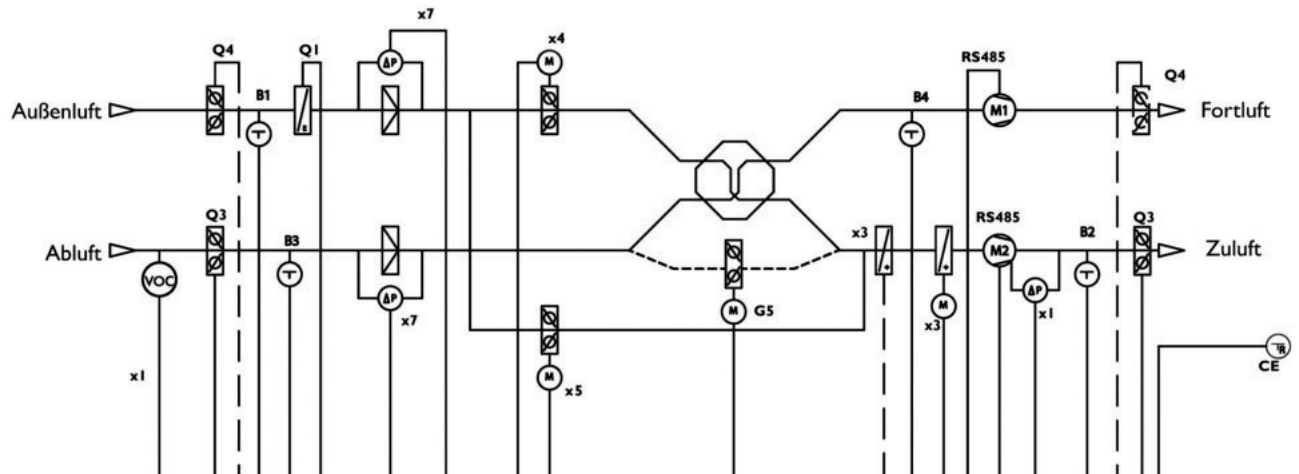
Communication

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

Optional:

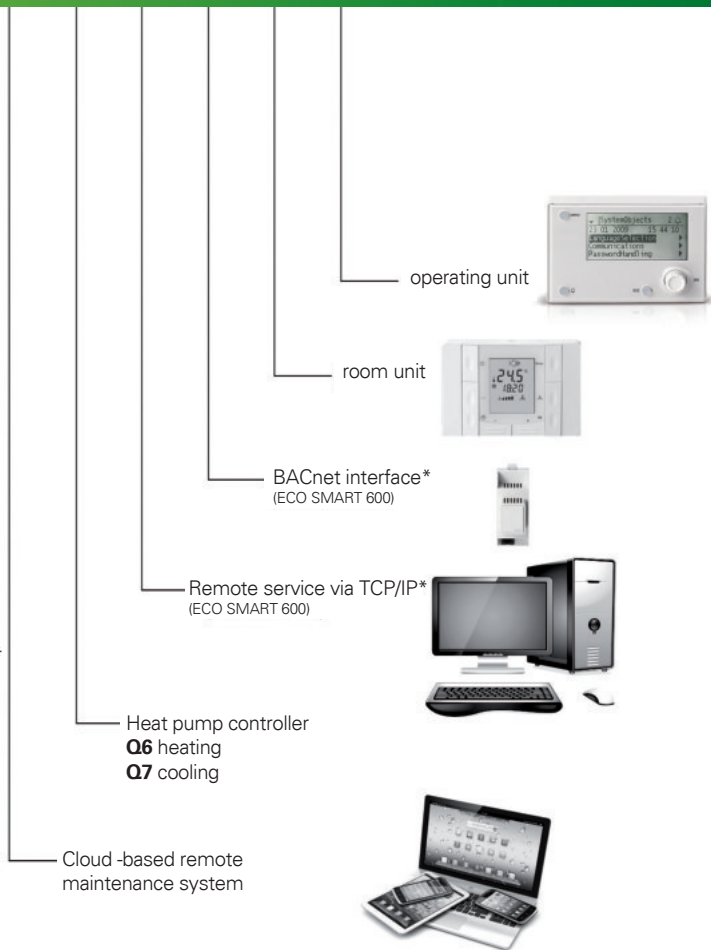
- Web-based management TCP/IP (optional)
- BACnet; Mod-Bus; KNX; Lon
- Connection to Shop Systems

Wiring Diagram



ECO SMART 400/600

- B1 Outside air sensor
- B2 Supply air sensor
- B3 Exhaust air sensor
- B4 Outgoing exhaust air sensor*
- CE Room air sensor
- RS485 Supply air ventilator
- RS485 Outgoing exhaust air ventilator
- x1 Supply air quality sensor, Exhaust air*
- x1 Pressure constant / Volume flow constant controller*
- x3 Heating Coil PWW*
- x3 Electric Reheater
- x4 Bypass Winter
- x5 Bypass Summer (Booster)
- x7 Filter pressure cell outside air
- x7 Filter pressure cell exhaust air
- Q1 Electric heating coil "anti-freeze"
- Q3 Supply air actuator*
- Q3 Exhaust air / Room air actuator*
- Q4 Outgoing exhaust air actuator*
- Q4 Outside air actuator*
- Q5 Recirculation actuator*

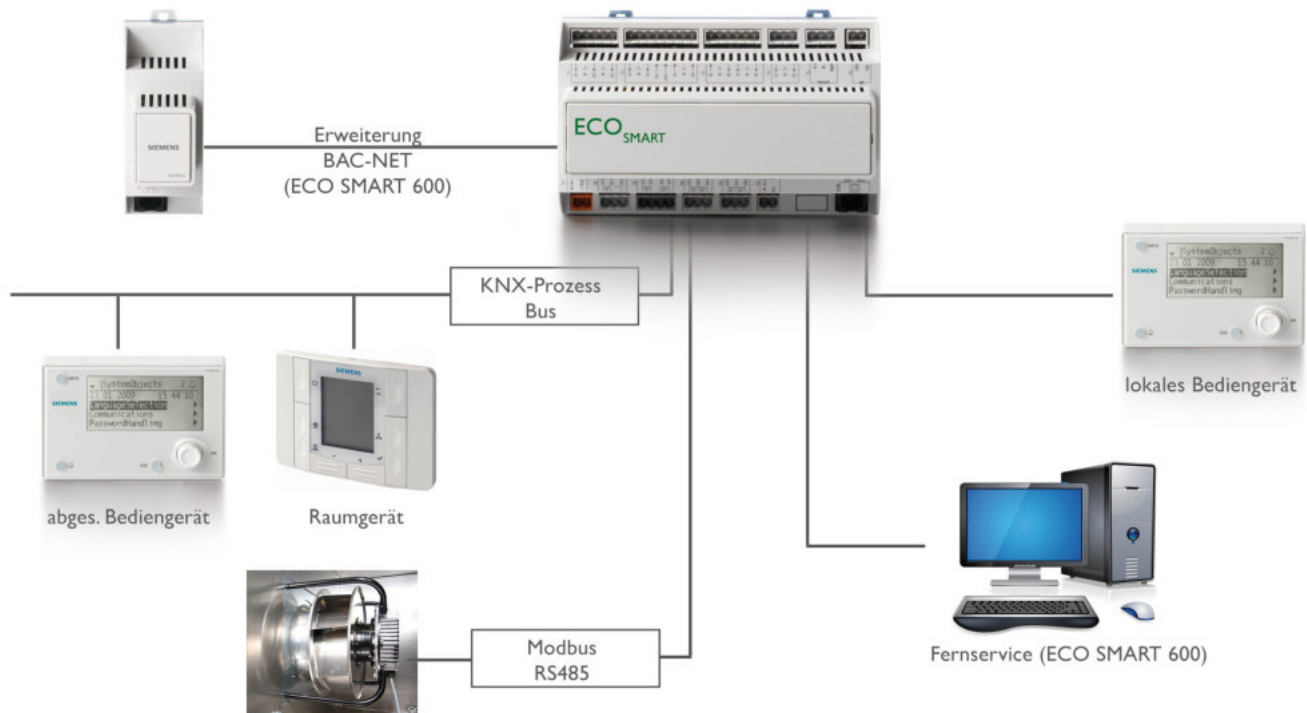


* optional



ECOSMART IC ensures a simple and comfortable operation.

This control and operating unit, which has been specially developed for MultiCross systems, makes it easy for you to choose all the important settings. Select operating mode, temperature or desired operating time.



In order to ensure a customer-friendly activation the ECO SMART IC is specifically preconfigured for each customer system. During the commissioning of the heat recovery unit customers only need to enter the set values, speeds and switching times to suit their individual requirements.

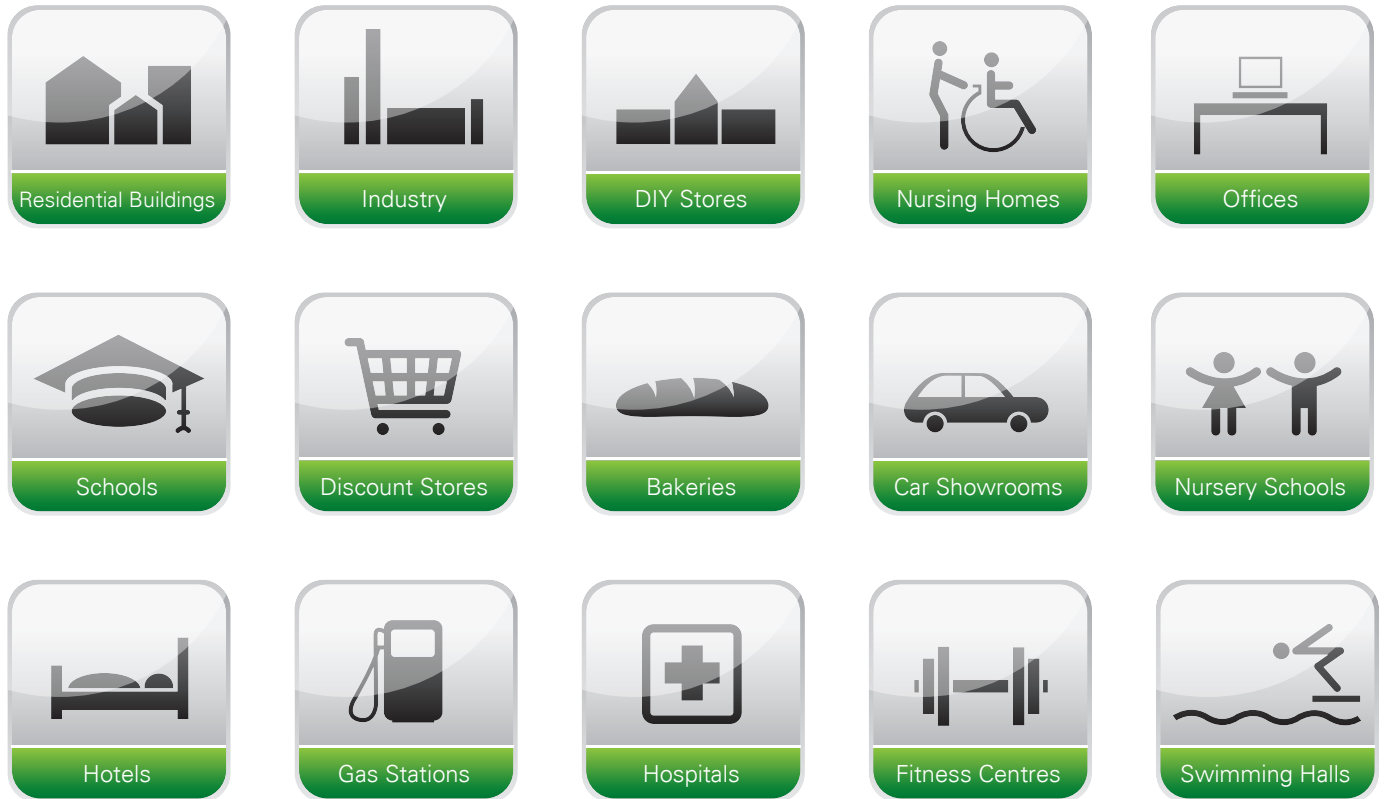


- Room unit for on-site operation
- Operation unit (HMI) for commissioning and functional extension
- Factory pre-programmed and pre-configured control
- User-friendly menu navigation
- Expansion Module m1 BACnet interface (pre-programmed)*
- Remote service via TCP/IP*
- CO2 / pressure OR volume flow constant control
- Software updates via SD card

* optional

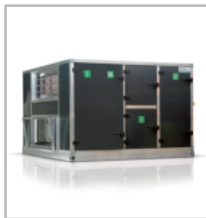
Application Areas for Energy Saving

We help you reduce your energy consumption in all buildings that require ventilation.



Compact Systems Series (GS-H)

- GS** → Counter-Flow Heat Exchanger
- H** → Connection Type H = Horizontal
- V** → 1200m³/h - 16000m³/h
- EC** → EC Motor Technology



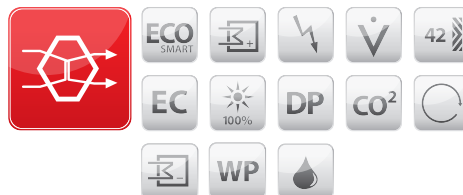
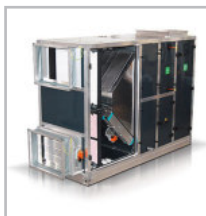
Compact Systems Series (GS-Flat)

- GS** → Counter-Flow Heat Exchanger
- F** → Flat / Flat System
- V** → 1500m³/h - 5000 m³/h
- EC** → EC Motor Technology



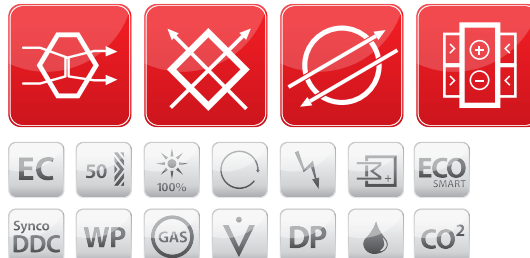
Compact Systems Series (GS-HSmall)

- GS** → Counter-Flow Heat Exchanger
- HS** → Connection Type HS=Horizontal Small
- V** → 1200m³/h - 7500 m³/h
- EC** → EC Motor Technology



Open Series Air Conditioning (OPK)

- OPK** → Open Series Air Conditioning Systems
- GS/KS** → Technical Design OPTIONS
 - GS - Counter-Flow Heat Exchanger
 - KS - Cross Counter-Flow Heat Exchanger
 - RT - Rotor Heat Exchanger
 - AK - ACCU-Block
- V** → 1000m³/h - 100000 m³/h
- EC** → EC Motor Technology



For further information about us and our products please visit our website or email us:

www.multicross.de info@multicross.de