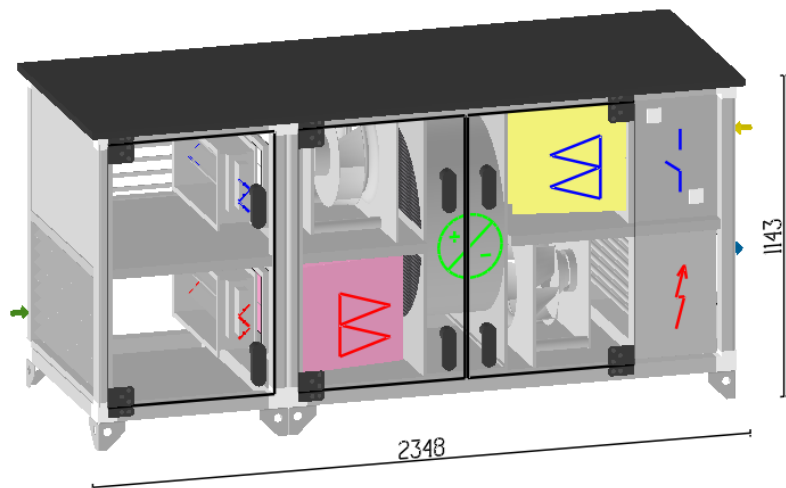


Summary for unit no. 1

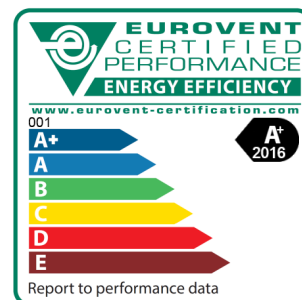
Topvex SR 04 EL (27889)



Topvex air handling units are built with a complete and fully integrated control system - based on Systemair controllers.

Roof unit selection includes a roof, ODS section and an assembly instruction. All delivered separately as a flat package.

Air/fan data	Supply	Extract	
Airflow (1.205 kg/m ³)	0.41	0.41	m ³ /s
Face velocity (unit)	1.37	1.37	m/s
External pressure	250	250	Pa
Fan speed	2545	2465	RPM
Voltage	3x400		V



Unit data

Unit width	850 mm
Weight	371 kg
Ecodesign (calculated at nominal airflow)	2016 - Approved 2018 - Approved
Filter	Supply air F7 - Extract air M5
Heat recovery	85.0 %
SFPv, clean filter pressure drop	1.95 kW/(m ³ /s)
Heating, electric Air	2.4 kW - 16.2/21.0°C - 3x400 V

Sound power level	Supply air	Outdoor air	Exhaust air	Extract air	Sound break out	Sound power level, supply only
Total	73 dB(A)	59 dB(A)	68 dB(A)	61 dB(A)	52 dB(A)	51 dB(A)



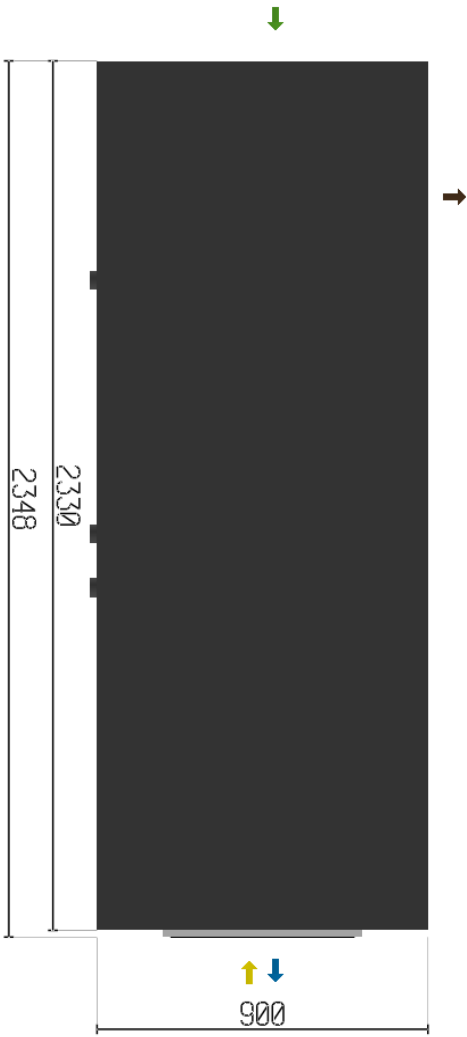
Systemair Fans&Spares Ltd.

Telephone : +44 1213220200
 Telefax : +44 1213220201
www.systemair.co.uk
info@systemair.co.uk

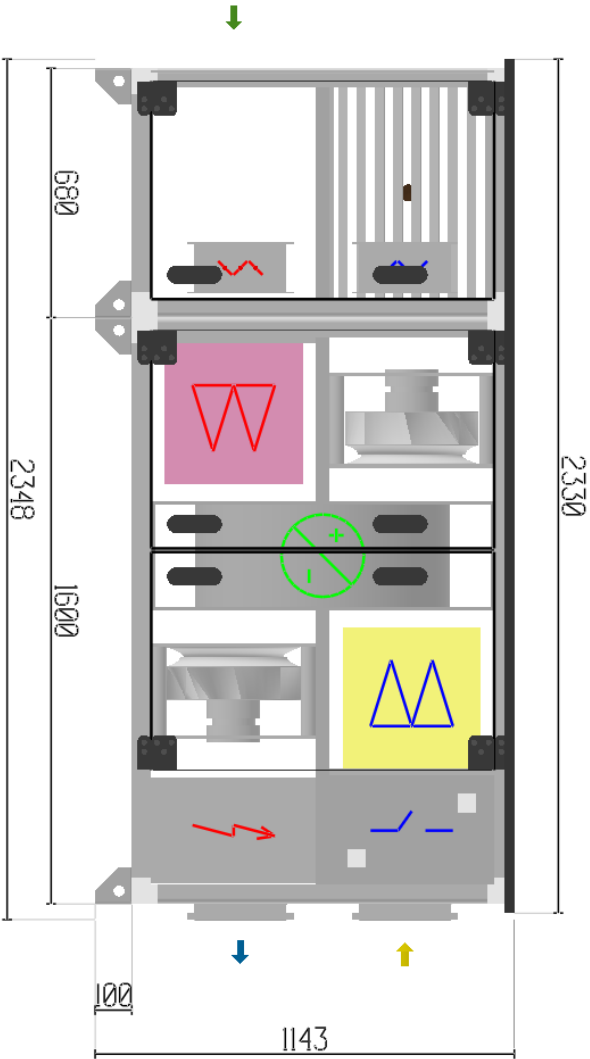
Ecodesign limit values

	Value	Limit 2016	Value	Limit 2018
Thermal efficiency of Heat Recov. System	85.1	67.0	85.1	73.0
SFP internal in W/(m³/s)	1104	1681	1104	1401

Plan view

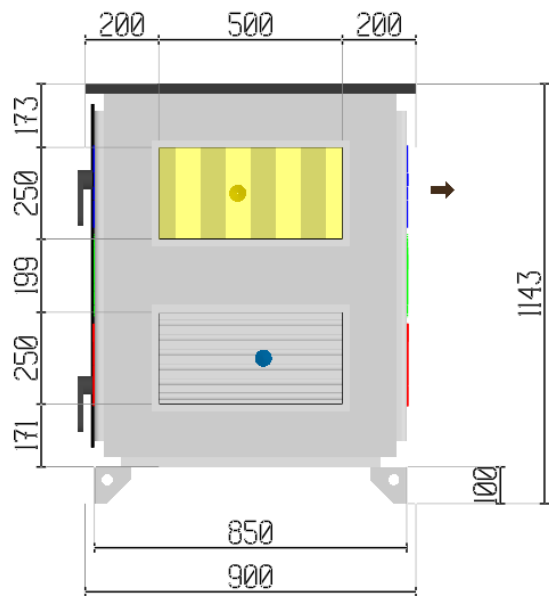


Access side

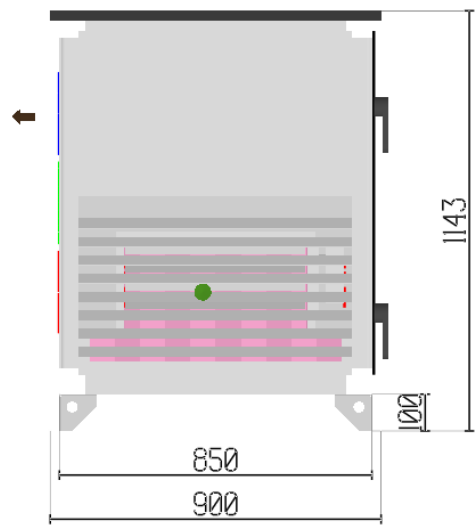


Dividable, size of each part 1600 mm. Duct flanges removable.
Area required for service door opening (mm): 603, 750

Right end



Left end



Technical specification

Unit

Frequency band [Hz]	63	125	250	500	1K	2K	4K	8K	Total
Sound power level	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB]	[dB(A)]
Supply air	74	69	71	68	67	66	61	63	73
Outdoor air	70	71	60	54	51	46	41	38	59
Exhaust air	79	71	66	64	62	60	55	55	68
Extract air	73	70	64	58	53	47	42	37	61
Sound break out	57	59	57	41	38	39	34	46	52
Sound power level, supply only	54	57	56	37	34	36	33	46	51

Control system

Language in controller menu	Select local language by start up
Temperature control	Cascaded extract air control
Air volume control	2 fixed Air flows
External communication	Modbus / Exoline via RS485, Modbus / Exoline / Built in WEB via TCP/IP, BACnet via IP
Coil configuration	Heating
Control for electrical heating	Yes
Mains power supply for control system	
Voltage	3x400 V
Recommended fuse	3 x 16 A

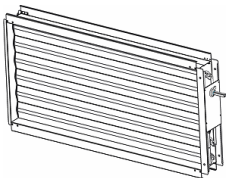
The supply unit consist of

Outdoor set type ODS

Pressure drop	18	Pa
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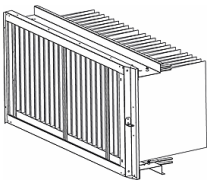
Damper , EFD 50-25 Damper cl.3 + TF24

Pressure drop	11	Pa
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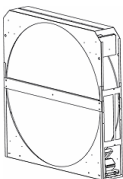
Filter

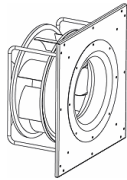
Dimensioning pressure drop	122	Pa
Initial pressure drop/Final pressure drop	50/195	Pa
Filter class	F7	
Filter size	750x434	
Filter length	375	mm



Rotary heat exchanger

	Supply	Extract	
Air flow	0.41	0.41	m³/s
Pressure drop	133	156	Pa
Air temperature before/after	-5.0/16.2	20.0/0.3	°C
Air relative humidity before/after	100/47	50/95	%
Temperature efficiency	85.0		%
Dry efficiency according to EN 308 at 0.41 m³/s	85.1		%
Heat exchanger type	ST - Condensation (Temperature)		





Temperature efficiency	High efficiency	
Rotor drive	Variable speed	
Electrical data	1x230V, 25W, 0.32Amp	

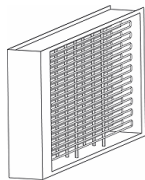
Plug fan, Plug

Air flow	0.41	m³/s
External static pressure	250	Pa
Internal static pressure	386	Pa
Total static pressure. The fan system effect is taken into account in the fan performances.	636	Pa
Fan speed	2545	RPM
Total efficiency by total pressure, incl. motor and speed control	54.3	%
Fan type	High efficiency	
Impeller type	Plastic/Composite	
Mains supply	1x230	V
Direct drive		

Motor

Motor protection	Thermistor	
Consumed power including variable speed control for fan motors	0.48	kW

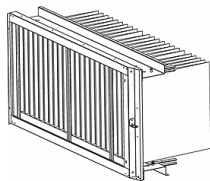
Electric heating



Air flow	0.41	m³/s
Air temperature before/after	16.2/21.0	°C
Capacity	2.38	kW
Nominal capacity, electrical heating	3.99	kW
Voltage	3x400	V
Current, Amp.	5.8	A

The extract unit consist of

Filter

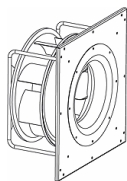


Dimensioning pressure drop	95	Pa
Initial pressure drop/Final pressure drop	22/169	Pa
Filter class	M5	
Filter size	750x434	
Filter length	375	mm

Rotary heat exchanger

Data are stated on supply.		
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Plug fan, Plug

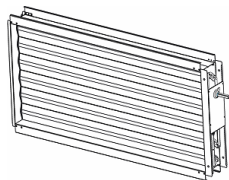


Air flow	0.41	m³/s
External static pressure	250	Pa
Internal static pressure	377	Pa
Total static pressure. The fan system effect is taken into account in the fan performances.	627	Pa
Fan speed	2465	RPM
Total efficiency by total pressure, incl. motor and speed control	57.6	%
Fan type	High efficiency	
Impeller type	Plastic/Composite	
Mains supply	1x230	V
Direct drive		

Motor

Motor protection	Thermistor	
Consumed power including variable speed control for fan motors	0.45	kW

Damper , EFD 50-25 Damper cl.3 + TF24



Pressure drop	11	Pa
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Outdoor set type ODS

Pressure drop	13	Pa
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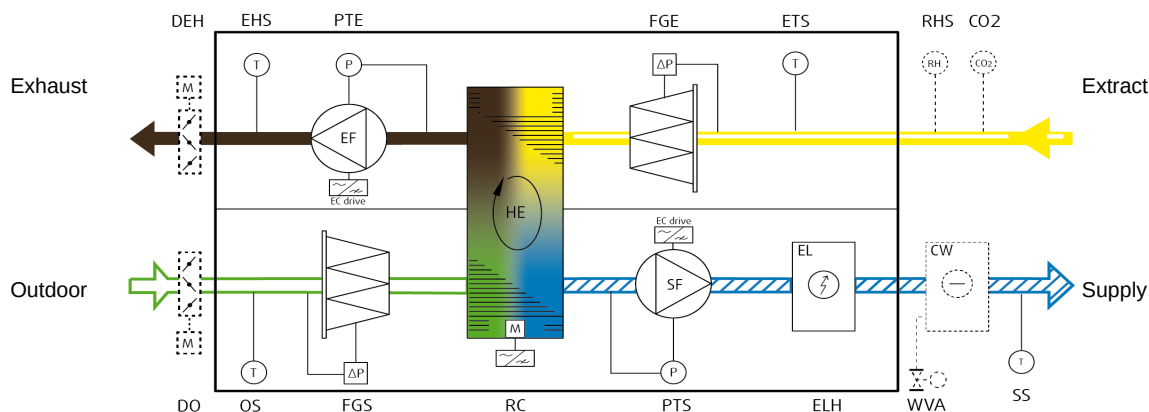
Other parts

6905	Damper (an accessory, ordered separately)	2	pcs
134387	Outdoor set type ODS	1	pcs

Systemair E28 integrated control system

Topvex air handling units are built with a complete and fully integrated control system.
Before shipment the unit has been assembled and passed a final functional test and inspection.

Flow chart



SF	Supply Fan	SS	Supply air temp. Sensor	HE	Heat Exchanger
EF	Extract Fan	OS	Outdoor air temp. Sensor	RC	Rotor Control
PTS	Pressure Transmitter Supply air fan	ETS	Extract air temp. Sensor	DO	Damper Outdoor air
PTE	Pressure Transmitter Extract air fan	EHS	Exhaust air temp. Sensor	DEH	Damper Exhaust air
FGS	Filter pressure Guard Supply air	EL	Electric Heater		
FGE	Filter pressure Guard Extract air	WVA	Water Valve Actuator		
CO2	CO2 sensor	CW	Cold Water cooler		
RHS	Relative Humidity Sensor				

Switchboard and mains supply

The switchboard with terminal blocks, relays, fuses, 24 V AC power supply and controller. Mains power supply is to be connected directly in the main switchboard and cables for external components in the main switchboard or in terminal boxes at the gable of the unit. The unit should be permanently connected to the mains electric supply through a lockable safety switch. The safety switch is not mounted from the factory but delivered with the unit.

Controller and hand terminal

The controller is installed in the switchboard, and the programming and normal handling is carried out from a separate cable-connected (10m) hand terminal with display and buttons - the Systemair Control Panel - the SCP. The protection class of the hand terminal is IP 41.

Schedules

The regulator has individual schedules for start, stop and air flow rate for each week-day as well as schedules for holidays.
The regulator has an automatic summer-winter-time change over.
Outside normal operating hours free cooling is available according to settings.

Constant Air Volume (CAV) - fixed air volumes in m³/h

The air flow rates of supply and extract air are controlled separately. The supply, extract, high and low airflow in m³/h is set separately on the hand terminal. The differential pressures across the fans are measured by pressure transducers. Based on the pressures the actual air flows are calculated by the controller. A PI-regulator is maintaining the set point values by controlling the speed of the fans.

Access rights - passwords

There are 3 different log-on levels

- Basic level (no password) - read-only access to all settings and parameters
- Operator level (password) - read/write access to all settings and parameters, but no access right to the configuration of the system
- Administrator level which has the highest authority (special password) - full read/write access to all settings and parameters (also configuration of the whole system)

Alarms and safety functions

If an alarm condition occurs, the Alarm LED on the hand terminal will flash. The LED will continue to flash as long as there are unacknowledged alarms. Alarms are logged in the alarm list. The list shows the type of alarm, date and time for the alarm and alarm class - A, B or C:

- Alarm type A will stop the fans and close the dampers or switch the unit to a special mode according to the configuration
- Alarm type B is only to inform the users about a failure, and the unit is still running as well as possible
- Alarm type C - only to inform the user that the unit has been switched away from automatic running mode to manual control

If water heater is used then for frost protection a temperature sensor is installed in a return circuit of the coil. The control signal to the mixing valve is kept at a level that secures that water return temperature at all times is held at a factory set minimum. This protection is also active when the unit is not running. This extended system offers the maximum of protection safety. If the water temperature is getting too low anyway the unit including fans is shut down.

Flexible System

A skilled service technician - on the site and on the demand from the user - will be able to adapt the regulation further to the requirements of the users;

- The air flow can be adaptable to the CO2 concentration for CAV air flow regulation as well as for VAV air flow regulation
- The temperature control mode can be changed.
- In addition to the fixed schedule an external start signal for extended operation is available.
- In addition or as an alternative to the fixed schedule an external start/stop input signal is available.
- A large number of other alternative functions are optional.

Modbus / Exoline via RS485, Exoline / Built in WEB via TCP/IP, BACnet via IP

The controller is prepared for communication via RS485 communication port to a MODBUS based BMS system (Building Management System).

The controller can work as a stand-alone system without any support from other controllers.