S&P UK VENTILATION SYSTEMS LTD

AIR HANDLING

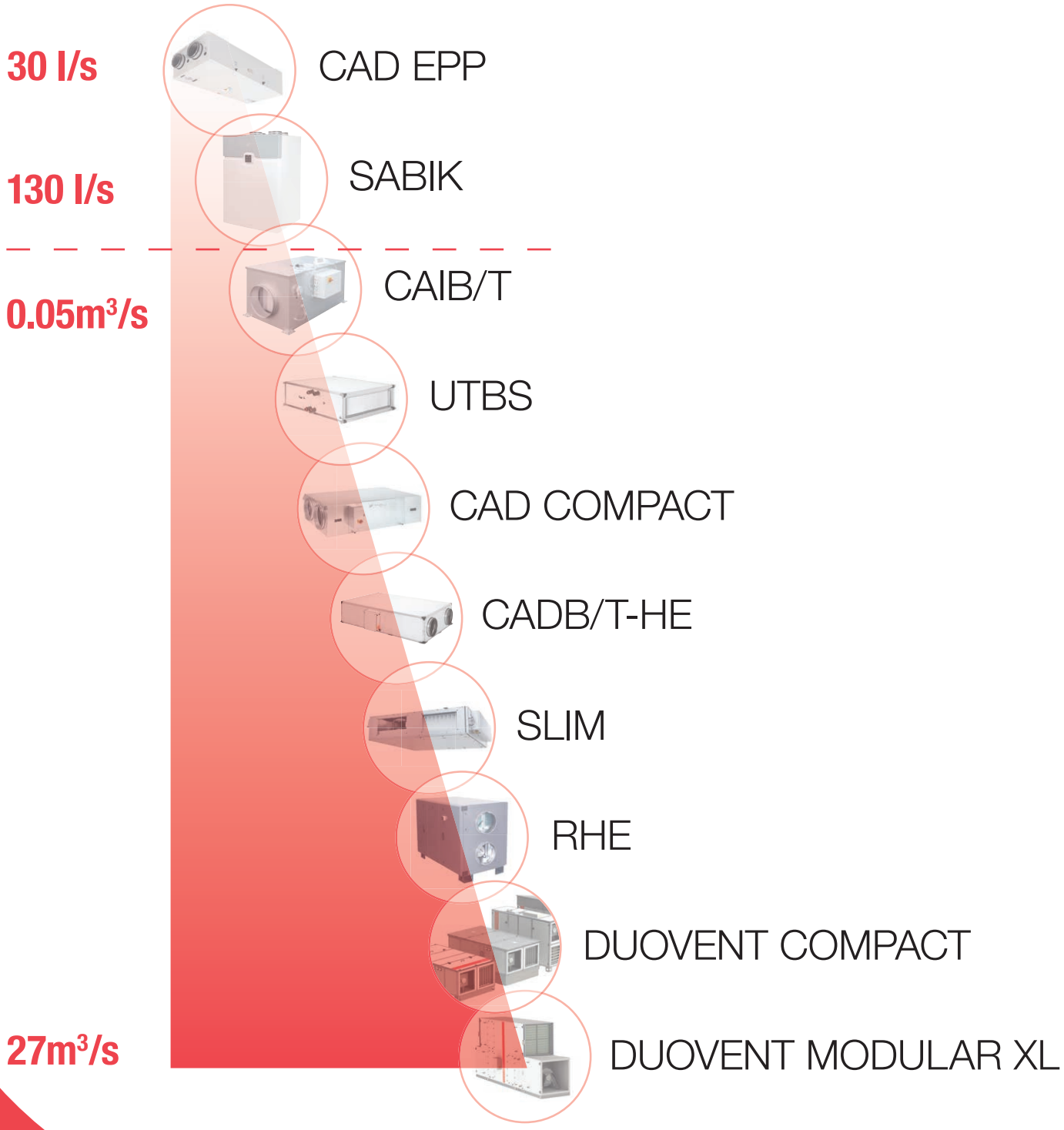
by S&P

S&P UK offers an extensive range of air handling units for many applications.
With our specialist support, we're on hand to deliver the assistance you need, no matter the size or complexity of your project.

www.solerpalau.co.uk

Air Handling by S&P

S&P UK offers an extensive range of air handling units to meet your needs, with airflows ranging all the way from 30 l/s up to 27m³ per second.



CAD EPP

Residential or commercial MVHR unit complete with high efficiency counterflow heat exchanger

From 30 l/s up to 80 l/s

- EPP Lightweight Design
- Wireless Control
- Horizontal or Vertical Installation

SABIK

Residential MVHR units complete with high efficiency counterflow heat exchanger

From 20 l/s up to 130 l/s

- Passive House Certified
- Plug & Play Controls
- Airflow Direction Handing by Installer
- Optional bottom connections for straight through installations

CAIB/T

Packaged supply air handling unit with multiple heating and cooling options

From 0.055 m^3/s up to 5.5 m^3/s

- Multiple Heating & Cooling Options
- Plug & Play Controls
- Double Skinned 50mm Panel
- Controls link to Extract Fan

UTBS

Supply air handling unit with multiple heating, cooling and filtration options

From 0.3 m^3/s up to 1.6 m^3/s

- Multiple Heating & Cooling Options
- Plug & Play Controls
- Low Profile

CAD COMPACT

Commercial heat recovery unit complete with high efficiency Eurovent certified counterflow heat exchanger

From 0.055 m³/s up to 1.25 m³/s

- Small Footprint, Compact Design
- Plug & Play Controls
- Airflow Direction Handing by Installer

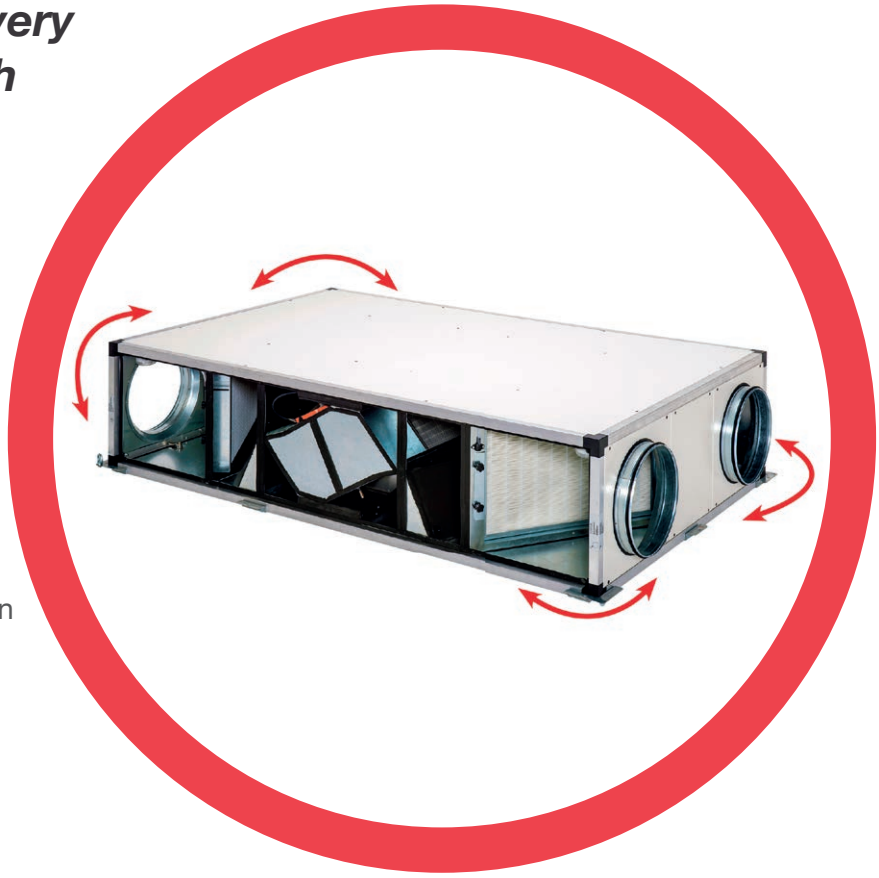
EUROVENT CERTIFIED PERFORMANCE

NBS Source PARTNER

CADB/T-HE

Commercial heat recovery unit complete with high efficiency Eurovent certified counterflow heat exchanger

From 0.135 m³/s up to 2.7 m³/s



- Configurable Spigot Panels, Adaptable Design
- Plug & Play Controls
- Horizontal or Stacked Configuration

EUROVENT CERTIFIED PERFORMANCE

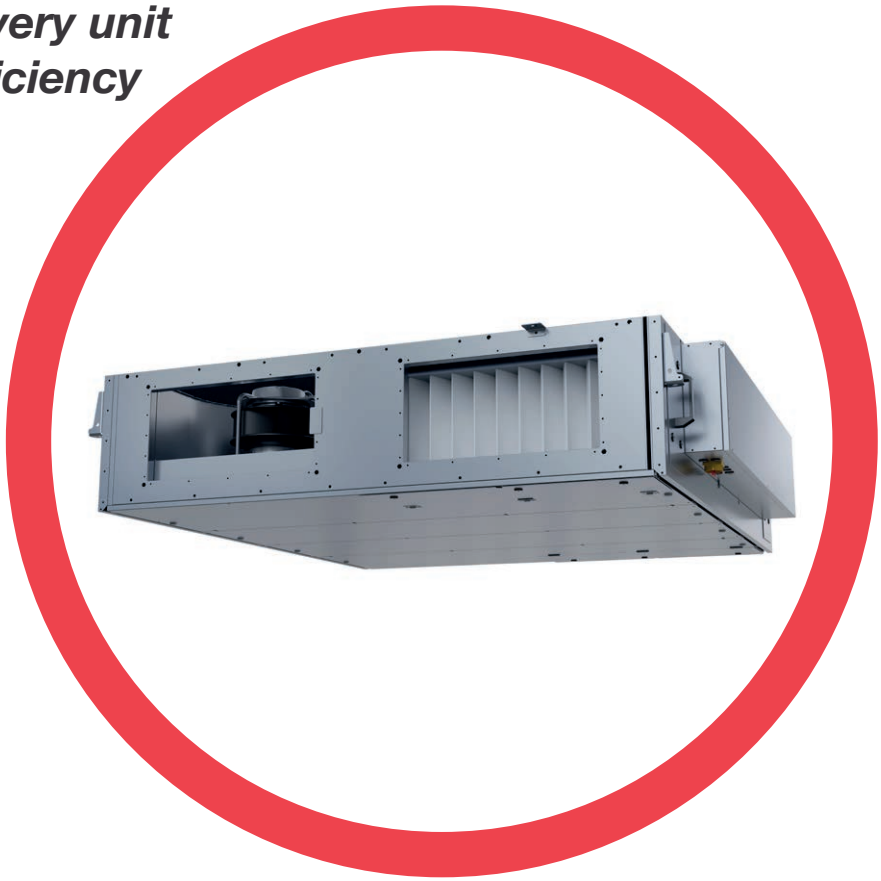
NBS Source PARTNER

SLIM

Commercial heat recovery unit complete with high efficiency Eurovent certified counterflow heat exchanger

From 0.22 m³/s up to 0.55 m³/s

- Low Profile, Slim Design
- Plug & Play Controls
- Integrated Condensate Pump
- Sliding Access Doors



EUROVENT CERTIFIED PERFORMANCE

NBS Source PARTNER

RHE

Commercial heat recovery unit complete with Eurovent certified high efficiency thermal wheel heat exchanger

From 0.22 m³/s up to 4.1 m³/s

- Low Sound, Double Skinned 50mm Panels
- Compact Design
- Plug & Play Controls
- Vertical or Horizontal Configuration

EUROVENT CERTIFIED PERFORMANCE

NBS Source PARTNER

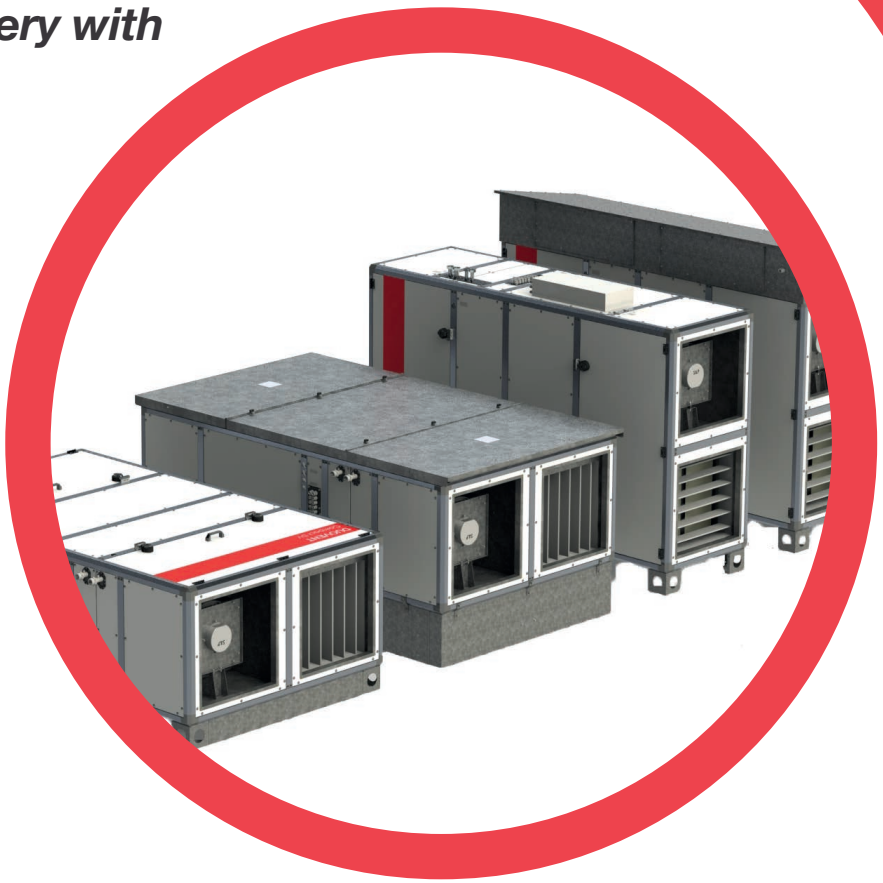
DUOVENT COMPACT

Commercial heat recovery with both Eurovent certified thermal wheel and counterflow exchanger options

From 0.14 m^3/s
up to 4m^3/s

- Low Sound, Double Skinned 45mm Panels
- Compact Design
- Plug & Play Controls
- Vertical, Horizontal, or Stacked Configuration

EUROVENT CERTIFIED PERFORMANCE



DUOVENT MODULAR XL

Bespoke air handling units, supply only or heat recovery with thermal wheel, counterflow & run around coil options

From 1 m^3/s
up to 27 m^3/s

- Frameless Construction
- Case Strength D1
  Leakage Class L1
  Thermal Transmittance T3
  Thermal Bridging TB2
- Bespoke Design
- With and Without Plug & Play Options

Good to Know:
Building Regulations Part L

Mechanical Ventilation

L1(b), L2 - Residential

6.55 The specific fan power for mechanical ventilation systems should not exceed the following:
d. For continuous mechanical supply and extract ventilation systems: 1.5W/(l-s)

6.56 All ventilation systems which provide both supply and extract ventilation within the same unit should be fitted with all of the following:

a. A heat recovery system with a minimum efficiency of 73%.

b. A summer bypass facility (giving the ability to bypass the heat exchanger or to control its heat recovery performance).

c. A variable speed controller.

L1(b), L2 - Non-Residential

System Type	SFP (W/(l-s))	
	New Buildings	Existing Buildings
Central balanced mechanical ventilation system with heating & cooling	2.0	2.6
Central balanced mechanical ventilation system with heating only	1.9	2.2
All other central balanced mechanical ventilation systems	1.5	2.0
Zonal supply system where fan is remote from zone – eg ceiling void/ roof units	1.1	1.4
Zonal balanced supply and extract ventilation units, eg ceiling void/ roof units	2.3	2.3
Local balanced supply and extract ventilation system, eg wall/ roof units	2.0	2.0

NOTES:

1. A central system is one which serves the whole or major areas of the building. A zonal system is one which serves a group of rooms or areas in part of the building and requires ducting. A local system or unit is one which serves a single room or area and does not require ducting.
2. For balanced supply and extract systems, the minimum SFP includes an allowance for heat recovery and return filter.

Good to Know:
ISO Filter Standards

Eurovent 4/23 - 2022 'Selection of EN ISO 16890 rated air filter classes for general ventilation applications':

EUROVENT
EUROPEAN INDUSTRY ASSOCIATION

OUTDOOR AIR CATEGORIES:

Category	Description
ODA 1	**OUTDOOR AIR, WHICH MAY ONLY BE TEMPORARILY DUSTY** Applies where the World Health Organisation WHO (2021) guidelines are fulfilled (annual mean for PM2,5 ≤ 5 µg/m³ and PM10 ≤ 15 µg/m³).
ODA 2	**OUTDOOR AIR WITH HIGH CONCENTRATIONS OF PARTICULATE MATTER** Applies where PM concentrations exceed the WHO guidelines by a factor of up to 1,5 (annual mean for PM2,5 ≤ 7,5 µg/m³ and PM10 ≤ 22,5 µg/m³).
ODA 3	**OUTDOOR AIR WITH VERY HIGH CONCENTRATIONS OF PARTICULATE MATTER** Applies where PM concentrations exceed the WHO guidelines by a factor of greater than 1,5 (annual mean for PM2,5 >7,5 µg/m³ and PM10 >22,5 µg/m³).

SUPPLY AIR CATEGORIES:

SUP 1	Refers to supply air with concentrations of particulate matter which fulfilled the WHO (2021) guidelines limit values multiplied by a factor x 0,25 (annual mean for PM2,5 ≤ 1,25 µg/m³ and PM10 ≤ 3,75 µg/m³).
SUP 2	Refers to supply air with concentrations of particulate matter which fulfilled the WHO (2021) guidelines limit values multiplied by a factor x 0,5 (annual mean for PM2,5 ≤ 2,5 µg/m³ and PM10 ≤ 7,5 µg/m³).
SUP 3	Refers to supply air with concentrations of particulate matter which fulfilled the WHO (2021) guidelines limit values multiplied by a factor x 0,75 (annual mean for PM2,5 ≤ 3,75 µg/m³ and PM10 ≤ 11,25 µg/m³).
SUP 4	Refers to supply air with concentrations of particulate matter which fulfilled the WHO (2021) guidelines limit values (annual mean for PM2,5 ≤ 5 µg/m³ and PM10 ≤ 15 µg/m³).
SUP 5	Refers to supply air with concentrations of particulate matter which fulfilled the WHO (2021) guidelines limit values multiplied by factor x 1,5 (annual mean for PM2,5 ≤ 7,5 µg/m³ and PM10 ≤ 22,5 µg/m³).

SUMMARY OF RECOMMENDED MINIMUM EFFICIENCIES DEPENDING ON ODA & SUP:

OUTDOOR AIR			SUPPLY AIR				
			SUP 1* PM2,5 ≤ 1,25 PM10 ≤ 3,75	**SUP 2*** PM2,5 ≤ 2,5 PM10 ≤ 7,5	**SUP 3**** PM2,5 ≤ 3,75 PM10 ≤ 11,25	**SUP 4** PM2,5 ≤ 5 PM10 ≤ 15	**SUP 5** PM2,5 ≤ 7,5 PM10 ≤ 22,5
Category	PM2,5	PM10	ePM1	ePM1	ePM2,5	ePM10	ePM10
ODA 1	≤ 5	≤ 15	70%	50%	50%	50%	50%
ODA 2	≤ 7,5	≤ 22,5	80%	70%	70%	80%	50%
ODA 3	> 7,5	> 22,5	90%	80%	80%	90%	80%

* Minimum filtration requirements ISO ePM1 50% refer to a final filter stage

** Minimum filtration requirements ISO ePM2,5 50% refer to a final filter stage

ADDITIONAL RECOMMENDATIONS

As the task of air filters in HVAC systems is not only to protect ventilated rooms from too severe level of contamination, but also the HVAC system itself, the minimum efficiency of a first stage filter (on fresh air inlet) should be at least ePM10 50%.

Examples of typical applications corresponding to the respective SUP categories:

CATEGORY	GENERAL VENTILATION
SUP 1	-
SUP 2	**Rooms for permanent occupation.** Refers to supply air with concentrations of particulate matter which fulfilled the WHO (2021) guidelines limit values (annual mean for PM2,5 ≤ 5 µg/m³ and PM10 ≤ 15 µg/m³).
SUP 3	**Rooms with temporary occupation.** Examples: Storage, shopping centres, washing rooms, server rooms, copier rooms.
SUP 4	**Rooms with short-term occupation.** Examples: restrooms, storage rooms stairways.
SUP 5	**Rooms without occupation.** Examples: Garbage room, data centres, underground car parks.

CATEGORY	INDUSTRIAL VENTILATION
SUP 1	**Applications with high hygienic demands.** Examples: Hospitals, pharmaceutics, electronic and optical industry, supply air to clean rooms.
SUP 2	**Applications with medium hygienic demands.** Examples: Food and beverage production.
SUP 3	**Applications with basic hygienic demands.** Examples: Food and beverages production with a basic hygienic demand.
SUP 4	**Applications without hygienic demands.** Examples: General production areas in the automotive industry.
SUP 5	**Production areas of the heavy industry.** Examples: Steel mill, smelters, welding plants.

Comparison of EN 779 and EN ISO 16890 Rated Filter Classes

EN 779: 2012 Filter class	EN ISO 16890 – range of actual measured average efficiencies		
M5	ePM1	ePM2,5	ePM10
M6	5% - 35%	10% - 45%	40% - 70%
F7	10% - 40%	20% - 50%	60% - 80%
F8	40% - 65%	65% - 75%	80% - 90%
F9	65% - 90%	75% - 95%	90% - 100%

Additional Recommendation on Application of Optional Gas Filtration

Following the provisions of EN 16798-3:2017, it is recommended to apply additional gas filters to complement particle filtration for the following combinations of outdoor air quality (gaseous) and supply air quality classes:

OUTDOOR AIR	SUPPLY AIR				
	SUP 1	SUP 2	SUP 3	SUP 4	SUP 5
ODA (G) 1	Recommended	-	-	-	-
ODA (G) 2	Required	Recommended	-	-	-
ODA (G) 3	Required	Required	Recommended	-	-

Functionality	CAD - EPP	SABIK	CAIB/T	UTBS	CAD COMPACT	CADB/T-HE	SLIM	RHE	DUOVENT COMPACT	DUOVENT MODULAR XL
Main elements										
General isolator	-	-	●	●	●	●	●	●	●	●
Pre-wired control panel	●	●	●	●	●	●	●	●	●	●
User interface	Remote Switch	Basic Touch-screen	Touchscreen	Touchscreen	Touchscreen	Touchscreen	Touchscreen	Touchscreen	Touchscreen	LCD with roller
Functionality										
Varible Air Volume (VAV)	○	●	●	●	●	●	●	●	●	●
Constant Air Volume (CAV)	-	-	●	●	□	●	●	●	○	-
Constant Operational Pressure (COP)	-	-	○	○	○	○	○	○	○	○
Boost	VAV (VFC)	VAV (VFC)	CAV (VFC)	CAV (VFC)	VAV (VFC)	CAV (VFC)	CAV (VFC)	CAV (VFC)	VAV (VFC)	VAV (VFC)
Remote Enable	● (VFC)	-	● (VFC)	● (VFC)	● (VFC)	● (VFC)	● (VFC)	● (VFC)	● (VFC)	● (VFC)
7-Day Time Clock	○ (VFC)	-	●	●	●	●	●	●	●	●
RH Duct Monitoring Speed Modulation	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)
CO2 Duct Monitoring Speed Modulation	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)
VOC Duct Monitoring Speed Modulation	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)
Temperature Duct Monitoring Speed Modulation	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)
RH Room Monitoring Speed Modulation	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)
CO2 Room Monitoring Speed Modulation	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)
VOC Room Monitoring Speed Modulation	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)
Temperature Room Monitoring Speed Modulation	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)	○ (VFC & 0-10V)
Temprature Regulation										
Intergrated Temperature Sensors	●	●	●	●	●	●	●	●	●	●
Anti-Frost Protection	-	●	●	●	●	●	●	●	●	●
Anti-Frost Water Probe	-	-	●	●	-	●	●	●	●	●
Hot Water Coil Regulation (0-10V)	-	-	○	○	○	○	○	○	○	○
Reversible Hot/Cold Coil Regulation (0-10V)	-	-	○	-	○	○	○	○	-	○
4-Pipe Hot & Cold Coil Regulation (0-10V)	-	-	○	○	○	○	○	○	○	○
DX Coil Regulation (0-10V)	-	-	○	○	○	○	○	○	○	○
Electrical Heater Battery Regulation	-	-	●	●	○	●	●	●	●	●
Electrical Pre-Heater Battery Regulation	-	○	○	○	○	○	○	○	○	●
Bypass Adjustment										
Manual Bypass Configuration	-	-	-	-	●	●	●	●	●	●
Automatic Bypass Configuration with free heating/cooling	●	●	-	-	●	●	●	●	●	●
Night Free Cooling	-	-	-	-	●	●	●	●	●	●
Security Functions										
Internal Shutoff Damper Actuation	-	-	-	-	-	-	-	-	○ (230V)	○
External Shutoff Damper Actuation	-	-	○ (24V)	○ (24V)	○ (230V)	○ (24V)	○ (24V)	○ (230V)	○ (230V)	○
Filter Monitoring	●	●	●	●	●	●	●	●	●	●
Alarm Display on user interface	-	●	●	●	●	●	●	●	●	●
Detailed information about alarms	-	-	●	●	●	●	●	●	●	□
Fan Fault Monitoring	●	●	●	●	●	●	●	●	●	●
Communication										
External Control Wiring	●	●	●	●	●	●	●	●	●	●
External 0-10V Control	●	●	●	●	●	●	●	●	●	●
Run Relay	-	● (VFC)	● (VFC)	● (24V)	● (VFC)	● (24V)	● (VFC)	● (VFC)	● (VFC)	● (VFC)
Alarm/Fault Relay	● (VFC)	-	● (VFC)	● (24V)	● (VFC)	● (24V)	● (VFC)	● (VFC)	● (VFC)	● (VFC)
Emergency Fire Shutdown	-	● (VFC)	● (VFC)	● (VFC)	● (VFC)	● (VFC)	● (VFC)	● (VFC)	● (VFC)	● (VFC)
Modbus RTU (RS-485)	-	-	●	●	●	●	●	●	●	●
BACnet TCP/IP	-	-	●	●	-	●	●	●	-	●
Mounting Location										
Internal	●	●	●	●	●	●	●	●	●	●
External	-	-	○	○	○	○	○	○	○	-

● = Supplied as standard - = Not available ○ = Accessory required

S&P UK VENTILATION SYSTEMS LTD

Contact our team of experts

Receive expert advice from our dedicated team. We have achieved worldwide recognition thanks to our innovation, product quality and customer service.

We are proud to have provided ventilation solutions for over 100,000 UK businesses both big and small.
How could we work with you?

Foot Locker · amazon · UNDERGROUND · NIKE · LIDL · KFC · Rolls-Royce

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