Vent-Axia

Improving Indoor Air Quality since 1936

Lo-Carbon Sentinel Econiq for New Build Residential

Edition 2

www.vent-axia.com/econiq

Sentinel Econiq

Built for your Future Homes Standard

Protecting your health and indoor air quality, sustainably

As the drive towards carbon neutrality continues to push forward, the challenge of further lowering Dwelling Emission Rates (DER) requires continuous improvement from all within the building services industry. Compliance to tightening regulations is paramount and it is the duty of the manufacturer to look forward and deliver an offering, which is not only compliant for today, but sets the standard for the future.

Looking beyond the targets set out by the Government for carbon neutrality, it is also vital not to lose sight of the key value offered to homeowners – good Indoor Air Quality (IAQ). The industry surveillance conducted to inform the Government's Future Homes Standard found that the majority of homes with continuous mechanical ventilation installed were below the acceptable IAQ levels outlined in Approved Document F. Further findings showed of the 25 homes with continuous mechanical extract systems installed, only 1 met the ventilation rates outlined in ADF. The cause of these issues can be reduced down to two key factors: poor installation of ventilation systems and a lack of fundamental understanding of ventilation from occupants.

It should also be noted that IAQ isn't just limited to the physical make-up of the air we breathe through particulate emissions, but also extends to other forms of emission and one in particular - noise. The World Health Organization (WHO) claims that increased exposure to noise can lead to cardiovascular disease, cognitive impairment and negative effects on sleep. As a result of these findings, local authorities are under ever increasing pressure to tighten planning requirements around noise in residential new builds.

A reliable, highly efficient, quiet and easy to operate ventilation system is therefore the key to unlocking a healthier, sustainable future. The Mechanical Ventilation Heat Recovery (MVHR) system from Vent-Axia offers market leading energy-efficiency across a range of sizes with an easy-to-operate control platform and extremely low operating noise levels. Along with supplying market leading products for over 85 years, the Sentinel Econiq range from Vent-Axia has just made it even easier to select the right ventilation system for your project.

Lo-Carbon Sentinel Econiq

for New Build Residential

Market Leading Efficiency

As ever, the MVHR range from Vent-Axia boasts market leading efficiencies allowing DER to be kept at a minimum.

Ultra Quiet Performance

This MVHR range has been carefully designed to minimise noise levels across all performance points.

Easy App Commissioning

Simplified and speedy commissioning through the intuitive new app.

Smart Controls

With a common digital control platform throughout the range, the new wired and wireless Sentinel-X smart controls automate the home environment.

Future Homes Standard

A reliable, highly efficient, quiet and easy to operate ventilation system, designed with the Future Homes Standard in mind.

Peace of Mind

Third party testing along with 85 years experience in the field, gives you the peace of mind that our new MVHR range is the number one choice for mechanical extract ventilation.

Lo-Carbon Sentinel Econiq

Product Breakdown

Equipped with Display and App

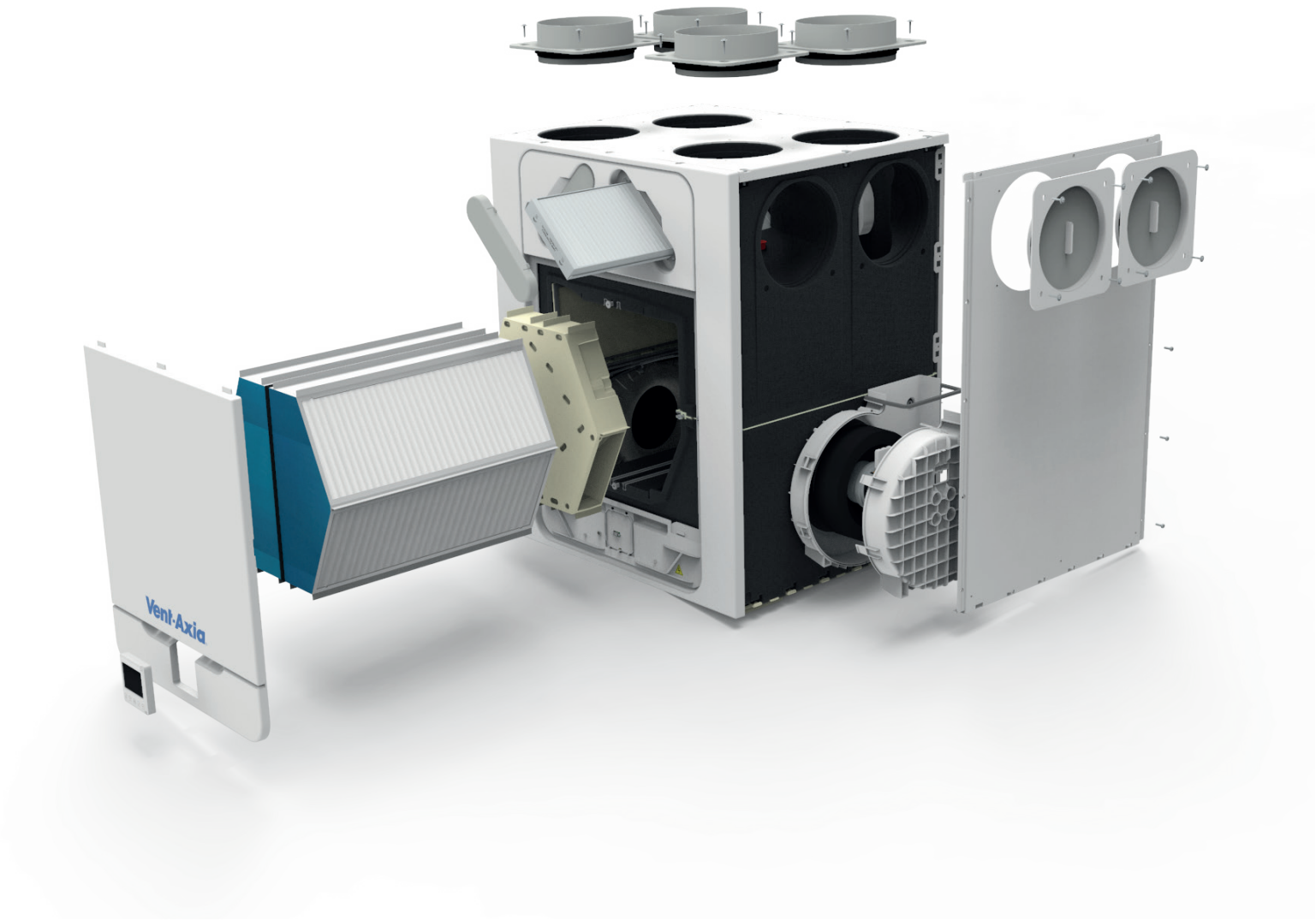
On-board digital display and app connectivity providing an intuitive Part F commissioning wizard and report.

Efficient Filtering of the Outside Air

G4 filters as standard or ISO ePM10 (M5) and ePM2.5 (F7) pollen filtration options for supply.

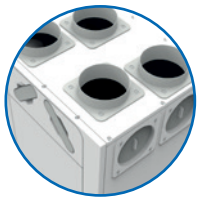
Airtight and Silent Housing

Integral acoustic enclosure provides low noise levels and maximum thermal efficiencies, whilst ensuring vibration of no more than 1mm/s.



Servicing and Maintenance

The units are designed to be fully accessible via the front for ease of servicing and maintenance.



Flexible Installation

Digital reversibility along with top and side spigot connections provide even more flexibility during installation.

Energy Efficient EC3 Motors

Powerful, quiet and energy-efficient EC3 motors supply filtered air with high performance.

Lo-Carbon Sentinel Econiq Passivhaus Certified

- Passivhaus certified
- New Sentinel-X wireless control platform
- Intelligent smart app control as standard
- Horizontal duct option for space-saving installations (M & L only)
- Sound levels as low as 15.5 dB(A) breakout - independently tested and verified by SRL
- Developed and manufactured in the UK
- Constant Volume - Maintains pre-set airflow irrespective of system pressure within it's performance capabilities
- Built-in pre-heater as standard with optional external duct heaters

Passivhaus

MVHR is a critical part of a Passivhaus project and it's success in driving down energy demand, The performance of the MVHR system is considered an integral element of the primary Passivhaus heating demand calculation.

Vent-Axia's new range of MVHR's can support you with your next Passivhaus project with our most advanced MVHR's and wired or wireless control platform.

Our Passivhaus certified MVHR's provide up to 86% Thermal Efficiency. And free cooling through an Intelligent Summer Bypass during the warmer months

F7 Filters as standard, along with Constant Volume and internal pre-heaters means you will have control over your indoor environment.

The Lo-Carbon Sentinel Econiq is Vent-Axia's latest flagship mechanical ventilation with heat recovery system. Designed and developed in the UK, it offers the highest level of comfort and functionality all year round.

Introducing a full range of products, with air performance suitable for all types of homes, the new Sentinel-X wireless controls platform delivers complete control over the home environment, provided through a full range of wired/wireless sensors and a smartphone app.

A Whole New Experience

The highly sculpted interior surfaces, designed using the latest CFD techniques, ensure airflows are maximised through the unit, minimising noise and energy use. This feature alone provides an experience, that will delight homeowners, providing the most discrete and highly efficient ventilation available.

Air Quality and Health

The MVHR filter options offer numerous benefits, including improved indoor air quality by removing allergens and particulate matter. They maintain the system's energy efficiency, reduce heating and cooling costs, and enhance the overall longevity of the system. Additionally, they capture bacteria, viruses and VOCs, promoting a healthier living environment. Regular filter maintenance extends the system's lifespan and ensures uninterrupted operation.

Whatever the outside environment, the system can help improve the indoor air quality by filtering out impurities, with ISO ePM2.5 (F7), which can filter out mould spores, bacteria and particles smaller or equal to 2.5µm supplied as standard on the supply side, we also have ISO 60% Coarse (G4) supplied as standard on extract, which can filter out sand, fine hair and particles larger than 10µm. Additional filtration can be achieved with a selection of optional filters, such as ISO ePM10 (M5), which can filter pollen, stone dust and particles smaller or equal to 10µm.

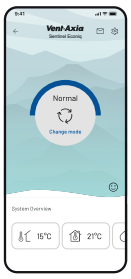
The various sensor options allow for flexible installation in individual rooms, supporting effective management of the air in the home. For example, a CO_2 sensor located within a habitable room helps ensure a healthy and safe working environment. CO_2 levels managed at less than 1000ppm help promote cognitive function. A humidity sensor located in the bathroom detects high levels of moisture can support good indoor air quality.

Low Noise Levels

The Lo-Carbon Sentinel Econiq is one of the quietest systems on the market, with a noise level as low as 15.5 dB(A). The range is designed with an integral acoustic enclosure, made of steel, foam and expanded polypropylene (EPP), minimising breakout noise. The highly efficient motors are mounted on anti-vibration mounts to ensure minimal vibration transmission.

Demand Control Ventilation

The Vent-Axia Connect smartphone application allows a multitude of functions to be adjusted from the comfort of the sofa, available on iOS and Android.



With smartphone compatible controls, the homeowner is in full control of their ventilation all year round. They have the flexibility to increase the ventilation rate during hot periods in the summer or reducing the speed to minimise running costs while away.

The Sentinel control logic built within the MVHR ensures the system operates optimally with automated functions such as frost protection and summer bypass, providing comfort in the home.

Download on the App Store

GET IT ON Google Play

Integral Humidity Sensor

The integral humidity sensor increases speed in proportion to relative humidity levels, saving energy and reducing noise. The sensor also reacts to small but rapid increases in humidity, even if the normal trigger threshold is not reached. This unique feature ensures adequate ventilation, even for the smallest wet room. The night time relative humidity setback feature suppresses nuisance tripping as humidity gradually increases with falling temperatures.

Airtight Buildings

Low-energy buildings typically have very low leakage rates (below $3m^3/(h.m^2)$ at 50Pa). This reduces the effectiveness of the standard frost protection strategy which imbalances the airflows. With Passivhaus design very low air leakage rates are required to meet the standard and must be demonstrated for each certified building. The air change rate must be less than or equal to 0.6 air changes per hour at 50pa, under test conditions.

Spigot Options (MCP & LCP only)

The inclusion of horizontal spigots allows for flexible installation in tight spaces. It is possible to use both vertical and horizontal connections.

Model

Description	Stock Ref
Sentinel Econiq SCP RH	499890
Sentinel Econiq SCP LH	499891
Sentinel Econiq MCP RH	499639
Sentinel Econiq MCP LH	499640
Sentinel Econiq LCP RH	499648
Sentinel Econiq LCP LH	499649
Sentinel Econiq SCP RH with In-Duct Heater Passivhaus Kit	413664
Sentinel Econiq SCP LH with In-Duct Heater Passivhaus Kit	413665
Sentinel Econiq MCP RH with In-Duct Heater Passivhaus Kit	413666
Sentinel Econiq MCP LH with In-Duct Heater Passivhaus Kit	413667
Sentinel Econiq LCP RH with In-Duct Heater Passivhaus Kit	413668
Sentinel Econiq LCP LH with In-Duct Heater Passivhaus Kit	413669

Accessories

Description	Stock Ref
In-Duct Heater - Ø125mm /1.25kW	413662
In-Duct Heater - Ø200mm /2.5kW	413663
Wall Mounting Kit for Controller	411628
Econiq S Acoustic Solution Enclosure Kit	414012
Econiq S Acoustic Solution Top Box Kit	414013
Econiq S Acoustic Solution Top Box & Enclosure Kit	414014
Econiq M & L Floor Stand	414122

Spare Filters

Sentinel Econiq SCP

Description	Stock Ref
ISO 60% Coarse (G4) Filter 2 per Pack	411689
ISO ePM10 50% (M5) Filter 1 per Pack	472669
ISO ePM2.5 70% (F7) Filter 1 per Pack	472671

Sentinel Econiq MCP & LCP

Description	Stock Ref
ISO 60% Coarse (G4) Filter 2 per Pack	411690
ISO ePM10 50% (M5) Filter 1 per Pack	411691
ISO ePM2.5 70% (F7) Filter 1 per Pack	411692

Sensor Overview

Power	Colour	CO_2	PIR	Temp.	Humidity	Wireless	4 Speed Switch	Stock Ref
Battery	White			✓	✓	✓		496431
Battery	White			✓	✓	✓	✓	496437
Battery	Black			✓	✓	✓	✓	497689
0-10V	White	✓		✓	✓			496432
240V	White			✓	✓	✓		496429
240V	White	✓		✓	✓	✓		496433
240V	White		✓			✓		496438
240V	White			✓	✓	✓	✓	496620
240V	Black			✓	✓	✓	✓	497693
240V	White			✓	✓		✓	496621
240V	Black			✓	✓		✓	497697

SEC Class

Model	SEC Class
Econiq SCP	A+
Econiq MCP	A+
Econiq LCP	A+

Passive House Test Results

Model	Airflow range (m^3/h)	Heat recovery rate (%)	Specific electric power (Wh/m^3)
Econiq SCP	70-280	85	0.24
Econiq MCP	100-370	86	0.22
Econiq LCP	150-490	86	0.27

SAP PCDB Test Results

	Econiq SCP		Econiq MCP		Econiq LCP	
	Thermal Efficiency %	SFP (W/l/s)	Thermal Efficiency %	SFP (W/l/s)	Thermal Efficiency %	SFP (W/l/s)
K+1	93	0.39	93	0.41	93	0.56
K+2	92	0.46	93	0.41	93	0.53
K+3	91	0.55	92	0.46	93	0.56
K+4	91	0.70	92	0.55	92	0.62
K+5	90	0.85	91	0.66	91	0.72
K+6	89	1.07	91	0.81	91	0.84
K+7	89	1.31	90	1.00	90	1.01

Model Range Overview

	Sentinel Econiq SCP	Sentinel Econiq MCP	Sentinel Econiq LCP
Certified Passive House Component ID	2213vs03	2212vs03	2211vs03
Internal Pre-heater	✓	✓	✓
Acoustic Enclosure	O	X	X
Acoustic Top Box	O	X	X
Constant Volume	✓	✓	✓
Recommended max system flow (l/s) @ Pressure (Pa)	97 @ 150	125 @ 150	167 @ 150
Part F Compliant App Commissioning Certificate	✓	✓	✓
RF858 connectivity, 802.11b/g/n Wi-Fi and Bluetooth low energy 4.2	✓	✓	✓
Spigot Options Vertical - Horizontal	Vertical	Vertical & Horizontal	Vertical & Horizontal
Spigot size 125mm or 200mm	125	200	200
Left/Right Hand Orientation Through Control	✓	✓	✓
Fully automatic 100% summer bypass	✓	✓	✓
Active Frost Protection to -20°C	✓	✓	✓
Fault Code Indicator	✓	✓	✓
Easy Access Filters: ISO Coarse 65% (G4) Extract Only	✓	✓	✓
Easy Access Filters: ISO ePM10 50% (M5)	O	O	O
Easy Access Filters: ISO ePM2.5 70% (F7) Supply Only	✓	✓	✓
Clean Filter Indicator (Time frame)	✓	✓	✓
PIN Number Lock	✓	✓	✓
Running Time Indicator	✓	✓	✓
Enthalpy Heat Exchanger	O	O	O
Soft-Start Boost	✓	✓	✓
Delay-On	✓	✓	✓
Number of controllable speeds	4	4	4
Installer function to copy/load unit setup	✓	✓	✓
Inputs 2 x 0-10V; 2 x LS; 5 x Volt-Free	✓	✓	✓
Integral Humidistat	✓	✓	✓
Relay outputs - For example control heaters or geothermal heat exchanger	O	O	O
BMS - modbus supported over RS485	✓	✓	✓
Operating ambient temperature (°C)	-20 to +40	-20 to +40	-20 to +40
Operating Humidity (%RH)	0 to 95	0 to 95	0 to 95
Mounting	Wall or Floor	Wall or Floor	Wall or Floor
Maintenance access	From Front	From Front	From Front

O - Denote Optional

Consultant's Specification

Specification

The Mechanical Ventilation Heat Recovery Unit shall be the Lo-Carbon Sentinel Econiq SCP, MCP or LCP as manufactured by Vent-Axia. It should be sized as indicated on the drawings and shall be in accordance with the particular specification.

The unit shall be fully insulated for thermal and acoustic performance and shall incorporate a high-efficiency composite plastic counter-flow heat exchanger with an independently verified thermal efficiency of up to 93% when tested to EN 308.

The heat exchanger shall be protected by ePM2.5 (F7) on supply and ISO 60% Coarse (G4) grade filters on extract with the facility to accommodate ISO ePM10 (M5), or an inline filter such as the Vent-Axia Pure Air Carbon Filter. The built-in filters shall be accessible via tool-free access doors. The heat exchanger, motors, summer bypass and all other serviceable parts shall be accessible through the front of the unit.

Intake air shall be pre-heated by the internal pre-heater at a trigger temperature of -3°C to protect the heat exchange cell. The Sentinel Econiq shall automatically vary the ventilation rate via EC/DC motors, as it receives signals from optional or in-built sensor inputs. When a signal is received, the fans shall either vary their speed proportionally or on a normal/boost principle. The unit shall have the facility to commission the supply and extract fans individually via in-built minimum and maximum speed adjustment, alternative wired remote-control unit or via a compatible smartphone using the Vent-Axia Connect application. The fans themselves shall have independent, infinitely variable speed control.

The MVHR unit shall be manufactured with an ABS Outer case construction and an Expanded Polystyrene (EPS) inner chassis with custom motor and impeller mounting features. The inner chassis will assist in reducing noise and act as a large anti-vibration mount avoiding transmission through to the back mounting plate or the base of the unit. The MVHR unit shall be tested to ensure it meets the maximum allowable vibration of no more than 1mm/s, measured on the unit wall fixing points.

The unit shall have a fully automatic 100% summer bypass, integral minimum and maximum infinitely variable speed controls with fascia mounted failure indication. The unit shall have low-energy, high-efficiency EC/DC fan/motor assemblies with sealed for life bearings. The impellers shall be high-efficiency backward curved centrifugal type, achieving an SFP as low as 0.38W/l/s (EN 308).

The unit shall have two condensate drain outlets for handing to be defined onsite and during commissioning. The unit shall have wireless control capability options, using RF868 connectivity, 802.11b/g/n Wi-Fi and Bluetooth low energy 4.2. The unit shall use RF868 to connect to a wide ecosystem of wireless sensors including but not limited to CO_2, temperature, and relative humidity. The unit shall be able to engage Wi-Fi to connect to local devices and create a local area network to allow for a larger network to be created for commissioning. The unit shall have Bluetooth low energy 4.2 to allow connectivity onto compatible smartphone devices. The unit shall be constructed with a removable tool-free front panel which gives access to the removable on-board controller and other accessories. The EPS panel can then be removed with 4 screws allowing full maintenance access. This shall provide access to the following:

- ✓ Supply or extract fan
- ✓ Heat exchanger
- ✓ Access to the electrical connections

Access shall be provided for wiring termination and setup/commissioning. The unit can be supplied with either a backlit user interface or a blank plate, both of which shall be removable for remote mounting if required. Filters shall be accessed via the two filter drawers found near the top of the unit, the S shall have filter drawers and the M and L shall have filter caps.

Units shall be manufactured by Vent-Axia Ltd.

Standard Controls

The Lo-Carbon Sentinel Econiq shall incorporate the following functions through a user interface fitted by the manufacturer or a paired smartphone with the Vent-Axia Connect application: -

- ✓ Integral infinitely variable fan speed control on supply and extract.
- ✓ 6 speeds; 4 adjustable
- ✓ Left or Right hand spigot configuration, programmable during commissioning
- ✓ Tool free filter access
- ✓ Integral BMS interfaces – control and status indication
- ✓ Heating interlocks
- ✓ 24V external sensor supply, e.g. PIR sensor
- ✓ 0-10V proportional speed adjustment
- ✓ Volt free contacts
- ✓ Fully automatic summer bypass
- ✓ Filter check facility
- ✓ Control panel PIN number lock

The unit shall incorporate:

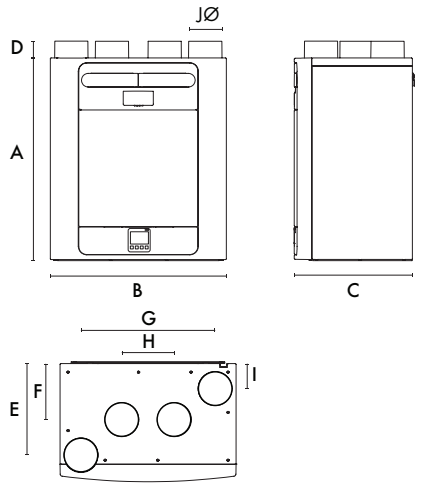
- ✓ An integral humidity sensor with the following features:
  Ambient Response; Raises the humidity trigger point as dwelling temperature reduces.
- ✓ Rapid Response: Monitors the rate of change in humidity and triggers increased airflow even if the humidity trigger threshold is not reached.
- ✓ Proportional Response; incrementally increases the fan speed to reduce noise and reduce energy consumption.
- ✓ RS485 connectivity – Long distance cabling to support multiple sensor connections.
- ✓ RF868 connectivity – Radio reference 868 MHz for multiple wireless sensors pairing Bluetooth low energy 4.2 – Enable pairing within compatible smartphone device
- ✓ 802.11b/g/n Wi-Fi – Enable localised access point or connect to the local area network using the Vent-Axia Connect application, via a compatible smartphone device
- ✓ The unit shall incorporate an automatic 100% summer bypass damper which monitors internal and external temperatures to maintain the user comfort temperature (default 25°C):
  - 'Evening Fresh' turns the unit to maximum speed with the bypass operational for 2 hours or until the user comfort temperature is reached (default 25°C).
  - 'Night Time Fresh' will run the unit at maximum speed with the bypass operational throughout the night or until the dwelling reaches minimum temperature (default 14°C).

Independently acoustically tested to BS EN 13141-7:2010

Sentinel Econiq SCP

Dimensions (mm)

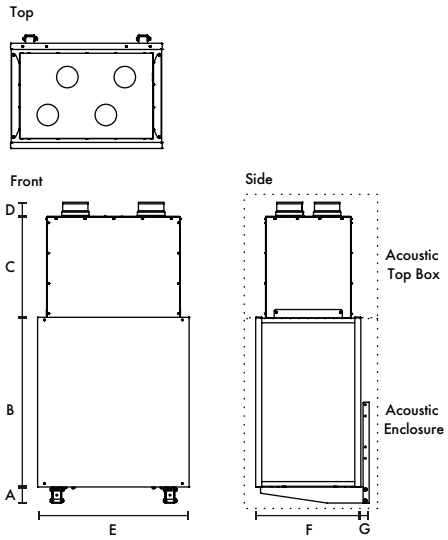
Unit



A	B	C	D	E	F	G	H	I	JØ	kg
760	660	443	63	343	210	503	197	93	125	27

Packed weight: 32kg

Acoustic Solution



A	B	C	D	E	F	G	Acoustic Top Box kg	Acoustic Enclosure kg	Spigot
80	840	501	68	750	520	40	14	27	125

Sound Spectrum (Unit only)

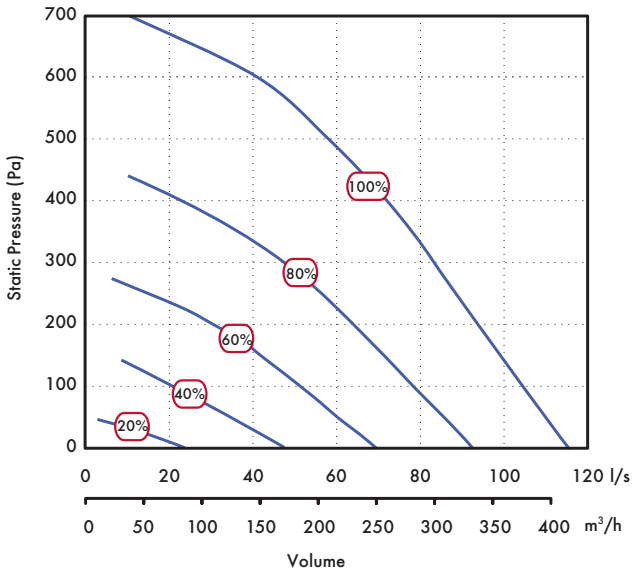
Speed	Test mode	Octave Band (Hz) Sound Power Levels, dB 63	125	250	500	1k	2k	4k	8k	LwA	SPL dB(A) @ 3m
20%	Supply	52.9	50.9	46.8	43.0	34.6	27.1	19.2	25.4	43.9	26.4
	Extract	50.3	49.0	36.0	31.5	23.6	16.1	18.9	25.3	36.4	18.9
	Breakout	34.6	34.8	35.7	34.9	29.6	25.1	21.0	25.3	36.0	15.5
40%	Supply	59.5	56.5	59.4	55.0	48.2	42.6	31.8	26.1	55.9	38.4
	Extract	51.9	51.3	50.4	41.2	35.0	25.3	19.8	25.4	44.8	27.3
	Breakout	40.2	42.6	46.5	45.4	41.0	36.2	25.5	25.3	46.5	26.0
60%	Supply	66.9	62.4	63.3	62.0	57.9	53.5	43.4	34.2	63.2	45.7
	Extract	60.6	60.3	54.2	49.5	44.4	36.2	27.9	26.3	51.7	34.2
	Breakout	45.5	49.8	52.5	53.1	49.7	46.7	36.2	26.9	54.5	34.0
80%	Supply	82.4	67.6	65.2	67.6	64.2	60.8	50.8	43.2	69.2	51.7
	Extract	75.5	68.6	59.3	56.0	48.3	44.2	36.9	31.3	58.6	41.1
	Breakout	59.2	55.0	56.8	60.0	55.4	53.9	44.1	33.4	61.0	40.5
100%	Supply	79.4	69.6	66.6	75.1	64.9	63.6	53.4	45.7	73.7	56.2
	Extract	72.4	70.5	60.5	56.4	49.8	46.3	39.0	33.4	59.5	42.0
	Breakout	63.0	57.1	58.5	63.7	56.8	55.9	46.4	36.2	63.5	43.0

Sound Spectrum (Solution Top Box & Enclosure Kit)

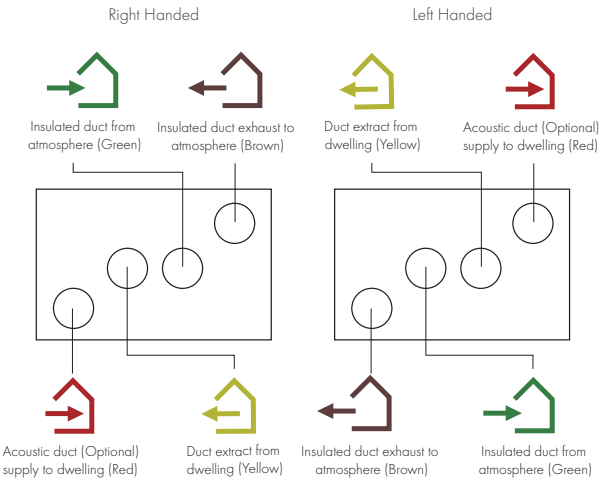
Speed	Test mode	Octave Band (Hz) Sound Power Levels, dB 63	125	250	500	1k	2k	4k	8k	LwA	SPL dB(A) @ 3m
20%	Supply	54.7	50.5	41.5	30.8	18.6	14.7	18.2	24.0	38.0	20.5
	Extract	54.8	41.7	31.4	20.2	15.2	13.8	18.3	24.3	31.9	14.4
	Breakout	36.6	47.3	38.0	24.7	19.3	16.6	19.1	23.6	34.0	13.5
40%	Supply	61.0	57.7	56.0	39.0	27.5	16.6	18.4	24.1	48.9	31.4
	Extract	55.7	50.8	44.6	26.8	19.1	15.0	18.2	24.0	39.2	21.7
	Breakout	55.9	55.2	48.2	35.5	29.9	20.9	20.4	25.3	42.6	22.1
60%	Supply	64.5	64.3	56.2	48.6	36.0	22.8	19.0	24.2	52.3	34.8
	Extract	59.4	57.3	46.6	36.0	25.6	17.4	18.6	24.5	43.9	26.4
	Breakout	43.5	60.5	49.5	43.5	39.0	32.0	23.8	23.7	47.6	27.1
80%	Supply	68.9	65.9	59.9	53.9	41.4	29.3	21.6	24.7	55.9	38.4
	Extract	63.1	69.3	52.6	43.0	33.4	23.7	20.2	24.6	54.5	37.0
	Breakout	48.3	69.8	52.7	48.3	44.7	39.8	33.2	25.9	57.1	36.6
100%	Supply	72.5	70.5	63.1	56.1	43.9	33.0	23.7	25.2	59.3	41.8
	Extract	70.3	61.9	56.2	45.4	36.6	28.0	22.9	24.6	51.5	34.0
	Breakout	54.3	67.1	63.3	51.3	47.9	43.9	38.5	28.7	57.7	37.2

Tested according to BS EN 13141-7:2010. Breakout quoted spherical. Supply and Extract quoted hemispherical. For in-duct data, end reflections are added based on the spigot size of the unit.

Performance (Sentinel Econiq SCP)



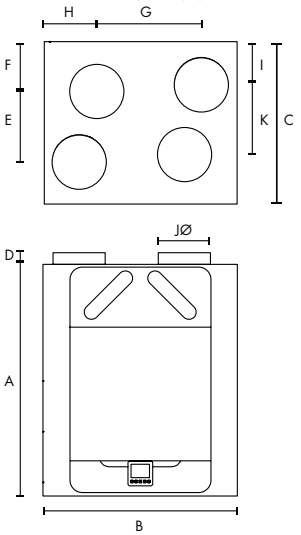
Spigot Configuration (Sentinel Econiq SCP)



Hand-able through controller (except if pre-heater fitted)

Sentinel Econiq MCP & LCP

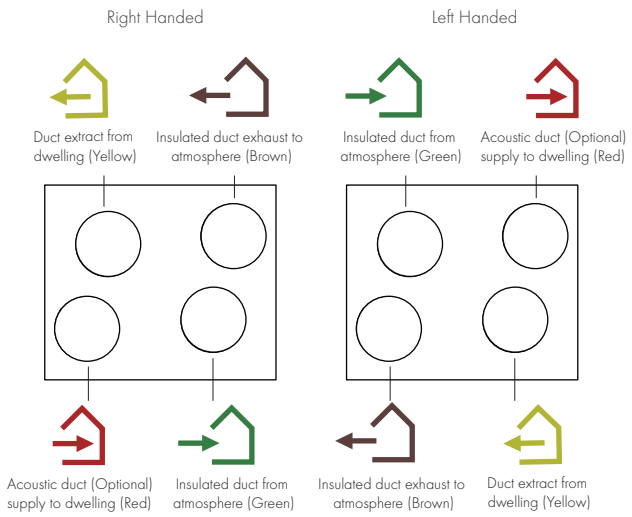
Dimensions (mm) (Sentinel Econiq MCP & LCP)



A	B	C	D	E	F	G	H	I	JØ	K	kg
881	728	608	50	261	187	394	200	160	200	261	50

Packed weight: 55kg

Spigot Configuration (Sentinel Econiq MCP & LCP)



For Passivhaus units handing must be chosen at the point of order as this is managed in production.

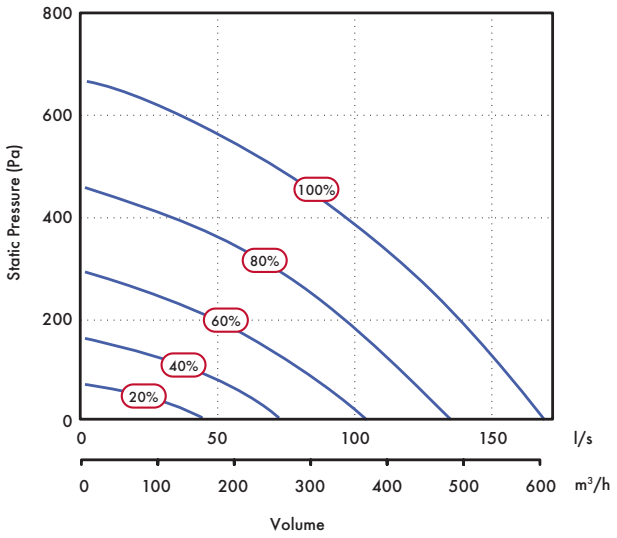
Sound Spectrum (Sentinel Econiq MCP)

Speed	Test mode	Octave Band (Hz) Sound Power Levels, dB 63	125	250	500	1k	2k	4k	8k	SPL dB(A) @ 3m
20%	Breakout	32	41	35	31	24	17	19	23	12
	Inlet	48	42	33	23	19	14	17	22	13
	Outlet	55	55	48	41	34	23	18	22	27
40%	Breakout	36	45	46	42	36	25	19	23	22
	Inlet	54	45	43	33	31	20	18	22	21
	Outlet	64	58	57	52	49	40	26	22	37
60%	Breakout	43	50	51	48	44	36	22	23	29
	Inlet	59	51	51	39	39	29	20	22	28
	Outlet	69	64	65	58	58	51	38	26	45
80%	Breakout	48	55	56	53	50	43	30	24	34
	Inlet	65	56	57	46	44	37	26	22	34
	Outlet	73	68	67	64	63	59	47	35	50
100%	Breakout	60	60	57	58	55	47	36	29	38
	Inlet	69	59	54	48	48	41	31	24	35
	Outlet	76	70	67	69	66	63	53	42	53

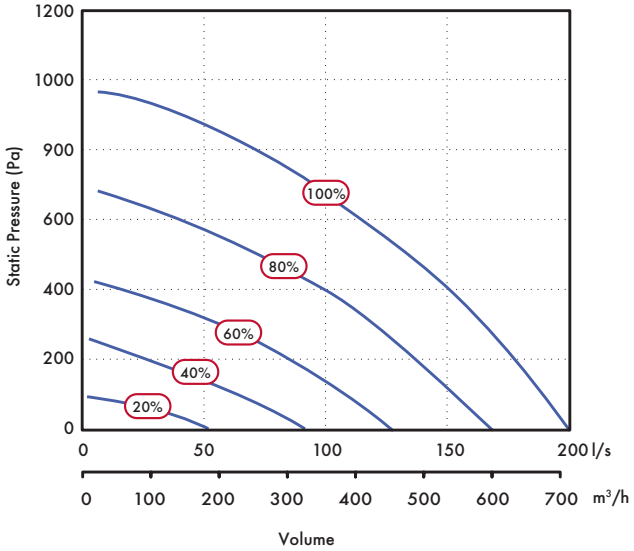
Sound Spectrum (Sentinel Econiq LCP)

Speed	Test mode	Octave Band (Hz) Sound Power Levels, dB 63	125	250	500	1k	2k	4k	8k	SPL dB(A) @ 3m
20%	Breakout	41	41	51	47	40	18	19	23	26
	Inlet	50	43	42	38	31	16	18	23	21
	Outlet	57	56	53	47	40	29	19	24	31
40%	Breakout	41	44	53	52	43	32	20	23	31
	Inlet	60	48	50	38	37	26	19	23	27
	Outlet	68	62	62	56	55	49	33	24	42
60%	Breakout	44	50	55	56	48	42	27	23	34
	Inlet	63	54	59	44	43	37	24	23	35
	Outlet	71	67	67	62	62	59	46	34	49
80%	Breakout	55	54	54	60	52	47	36	24	38
	Inlet	69	60	55	50	48	43	33	24	36
	Outlet	78	72	66	70	67	65	56	44	54
100%	Breakout	67	67	58	72	58	50	42	27	50
	Inlet	81	64	58	57	51	47	39	27	42
	Outlet	91	76	69	74	70	69	62	50	58

Performance (Sentinel Econiq MCP)



Performance (Sentinel Econiq LCP)



Sentinel-X Controller

Battery Controllers & Sensors

Battery - Internal Temperature and Humidity - Wireless
Room mounted humidity and temperature sensor for wired or wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency), or RS485 (Wired connection) communication method whilst being powered by batteries.

- Dimensions (HxWxD) (mm) 60 x 60 x 22
- 2 x AAA Batteries
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- Wireless range 20m closed/100m open
- RF 868MHz Wireless or RS485 Wired communication
- Status LED indicator for pairing, health check and fault conditions
- Mounted using provided back plate

Stock Ref
496431

Battery – 4 Speed Switch with Temperature and Humidity - Wireless
Room mounted Speed Switch for wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency) communication whilst being powered by batteries.

- Dimensions (H x W x D) (mm) 90 x 90 x 17
- 2 x AAA Batteries
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- Wireless range 20m closed/100m open
- RF 868MHz Wireless
- Mounted using provided back plate or compatible with a standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check and fault conditions

Model	Stock Ref
White	496437
Black	497689

HMI Kit

Wall-mounted HMI Kit to suit Econiq models with full HMI
Includes HMI Blank controller, HMI backplate and cable.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- 240V local power supply required
- Wireless range 20m closed/100m open
- RF 868MHz Wireless or RS485 Wired communication
- Compatible with standard single gang or surface mounted pattress box

Stock Ref
411628

0-10V Sensors

0-10V $C0_2$, Temperature and Humidity - Wired
Room mounted CO_2 sensor with 0-10V signal output powered by an external 24V supply.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- 24V Power supply required
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- CO_2 range 0-2000PPM
- Compatible with standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check, faults & air quality traffic light index
- 0-10V Wired Communication

Stock Ref
496432

Sentinel-X Controllers

240V Controllers & Sensors

240V - Internal Temperature and Humidity - Wireless

Room mounted humidity and temperature sensor for wired or wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency), or RS485 (Wired connection) communication method whilst being powered by a local 240V supply.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power supply 240V
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- Wireless range 20m closed/100m open
- RF 868MHz Wireless or RS485 Wired communication
- Compatible with standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check, faults & air quality traffic light index

Stock Ref
496429

240V - CO_2, Temperature and Humidity - Wireless

Room mounted CO_2 sensor for wired or wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency), or RS485 (Wired connection) communication method whilst being powered by a local 240V supply.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power supply 240V
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- CO_2 Range 0-2000 PPM
- Wireless range 20m closed/100m open
- RF 868MHz Wireless or RS485 Wired communication
- Compatible with standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check, faults & air quality traffic light index

Stock Ref
496433

240V - 4 Speed Switch with Temperature and Humidity - Wired

Room mounted Speed Switch for wired communication with a compatible system. Using an in-built RS485 communication method powered by a local 240V supply.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power Supply 240V
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- Mounted using provided back plate or compatible with standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check and fault conditions
- RS485 Wired Connection

Model	Stock Ref
White	496621
Black	497697

240V - 4 Speed Switch with Temperature and Humidity - Wireless

Room mounted Speed Switch for wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency) communication whilst being powered by a local 240V supply.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power Supply 240V
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- Wireless range 20m closed/100m open
- RF 868MHz Wireless
- Mounted using provided back plate or compatible with standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check and fault conditions

Model	Stock Ref
White	496620
Black	497693

240V - PIR Sensor - Wireless

Room mounted PIR sensor for wired or wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency), or RS485 (Wired connection) communication method whilst being powered by a local 240V supply. Room mounted presence detector for min/max or on/off control. Wall or ceiling mounting.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power supply 240V
- 5-25min run on timer
- PIR Range 3m
- Compatible with standard single gang or surface mounted pattress box
- Wireless range 20m closed/100m open
- RF 868MHz Wireless or RS485 Wired communication

Stock Ref
496438

Lo-Carbon Sentinel Econiq

- Best in class SFP's and thermal efficiencies up to 93%
- Approved Document F aligned commissioning wizard
- New Sentinel-X wireless control platform
- Intelligent smart app control as standard
- Horizontal duct option for space-saving installations (M & L only)
- ISO ePM10 (M5) and ePM2.5 (F7) filtration options
- Sound levels as low as 15.5 dB(A) breakout
  - independently tested and verified by SRL
- Left/right handing via controls
- Developed and manufactured in the UK
- Acoustic enclosure and top box options (S only)

The Lo-Carbon Sentinel Econiq is Vent-Axia's latest flagship mechanical ventilation with heat recovery system. Designed and developed in the UK, it offers the highest level of comfort and functionality all year round.

Introducing a full range of products, with air performance suitable for all types of homes, the new Sentinel-X wireless controls platform delivers complete control over the home environment, provided through a full range of wired/wireless sensors and a smartphone app.

A Whole New Experience

The highly sculpted interior surfaces, designed using the latest CFD techniques, ensure airflows are maximised through the unit, minimising noise and energy use. This feature alone provides an experience, that will delight homeowners, providing the most discrete and highly efficient ventilation available.

Air Quality and Health

The MVHR filter options offer numerous benefits, including improved indoor air quality by removing allergens and particulate matter. They maintain the system's energy efficiency, reduce heating and cooling costs, and enhance the overall longevity of the system. Additionally, they capture bacteria, viruses and VOCs, promoting a healthier living environment. Regular filter maintenance extends the system's lifespan and ensures uninterrupted operation.

Whatever the outside environment, the system can help improve the indoor air quality by filtering out impurities, with ISO 60% Coarse (G4) supplied as standard, which can filter out sand, fine hair and particles larger than 10µm. Additional filtration can be achieved with a selection of optional filters, such as ISO ePM10 (M5), which can filter pollen, stone dust and particles smaller or equal to 10µm and ISO ePM2.5 (F7), which can filter out mould spores, bacteria and particles smaller or equal to 2.5µm.

The various sensor options allow for flexible installation in individual rooms, supporting effective management of the air in the home. For example, a CO_2 sensor located within a habitable room helps ensure a healthy and safe working environment. CO_2 levels managed at less than 1000ppm help promote cognitive function. A humidity sensor located in the bathroom detects high levels of moisture can support good indoor air quality.

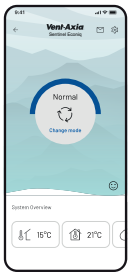
Low Noise Levels

The Lo-Carbon Sentinel Econiq is one of the quietest systems on the market, with a noise level as low as 15.5 dB(A). The range is designed with an integral acoustic enclosure, made of steel, foam and expanded polypropylene (EPP), minimising breakout noise. The highly efficient motors are mounted on anti-vibration mounts to ensure minimal vibration transmission.

Demand Control Ventilation

The Vent-Axia Connect smartphone application allows a multitude of functions to be adjusted from the comfort of the sofa, available on iOS and Android.

With smartphone-compatible controls, the homeowner is in full control of their ventilation all year round. They have the flexibility to increase the ventilation rate during hot periods in the summer or reducing the speed to minimise running costs while away.



The Sentinel control logic built within the MVHR ensures the system operates optimally with automated functions such as frost protection and summer bypass, providing comfort in the home.

Download on the App Store

GET IT ON Google Play

Integral Humidity Sensor

The integral humidity sensor increases speed in proportion to relative humidity levels, saving energy and reducing noise. The sensor also reacts to small but rapid increases in humidity, even if the normal trigger threshold is not reached. This unique feature ensures adequate ventilation, even for the smallest wet room. The nighttime relative humidity setback feature suppresses nuisance tripping as humidity gradually increases with falling temperatures.

Airtight Buildings

Low-energy buildings typically have very low leakage rates (below $3m^3/(h.m^2)$ at 50Pa). This reduces the effectiveness of the standard frost protection strategy which imbalances the airflows.

Spigot Options (M & L only)

The inclusion of horizontal spigots allows for flexible installation in tight spaces. It is possible to use both vertical and horizontal connections.

Model

Description	Stock Ref
Sentinel Econiq S	499883
Sentinel Econiq M	499632
Sentinel Econiq L	499641

Accessories

Description	Stock Ref
Acoustic Purge Fan	477988
Acoustic Purge Fan XL	479829
Wall Mounting Kit for Controller	411628
Econiq S Acoustic Solution Enclosure Kit	414012
Econiq S Acoustic Solution Top Box Kit	414013
Econiq S Acoustic Solution Top Box & Enclosure Kit	414014
Econiq M & L Floor Stand	414122

Sensor Overview

Power	Colour	CO_2	PIR	Temp.	Humidity	Wireless	4 Speed Switch	Stock Ref
Battery	White			✓	✓	✓		496431
Battery	White			✓	✓	✓	✓	496437
Battery	Black			✓	✓	✓	✓	497689
0-10V	White	✓		✓	✓			496432
240V	White			✓	✓	✓		496429
240V	White	✓		✓	✓	✓		496433
240V	White		✓			✓		496438
240V	White			✓	✓	✓	✓	496620
240V	Black			✓	✓	✓	✓	497693
240V	White			✓	✓		✓	496621
240V	Black			✓	✓		✓	497697

Spare Filters

Sentinel Econiq S

Description	Stock Ref
ISO 60% Coarse (G4) Filter 2 per Pack	411689
ISO ePM10 50% (M5) Filter 1 per Pack	472669
ISO ePM2.5 70% (F7) Filter 1 per Pack	472671

Sentinel Econiq M & L

Description	Stock Ref
ISO 60% Coarse (G4) Filter 2 per Pack	411690
ISO ePM10 50% (M5) Filter 1 per Pack	411691
ISO ePM2.5 70% (F7) Filter 1 per Pack	411692

SEC Class

Model	SEC Class
Econiq S	A+
Econiq M	A+
Econiq L	A+

SAP PCDB Test Results

Econiq S

	Thermal Efficiency %	SFP (W/l/s)
K+1	93	0.39
K+2	92	0.46
K+3	91	0.55
K+4	91	0.70
K+5	90	0.85
K+6	89	1.07
K+7	89	1.31

Econiq M

	Thermal Efficiency %	SFP (W/l/s)
K+1	93	0.41
K+2	93	0.41
K+3	92	0.46
K+4	92	0.55
K+5	91	0.66
K+6	91	0.81
K+7	90	1.00

Econiq L

	Thermal Efficiency %	SFP (W/l/s)
K+1	93	0.56
K+2	93	0.53
K+3	93	0.56
K+4	92	0.62
K+5	91	0.72
K+6	91	0.84
K+7	90	1.01

Model Range Overview

	Sentinel Econiq S	Sentinel Econiq M	Sentinel Econiq L
Recommended max system flow (l/s) @ Pressure (Pa)	97 @ 150	125 @ 150	167 @ 150
Acoustic Enclosure	O	X	X
Acoustic Top Box	O	X	X
Part F Compliant App Commissioning Certificate	✓	✓	✓
RF858 connectivity, 802.11b/g/n Wi-Fi and Bluetooth low energy 4.2	✓	✓	✓
Spigot Options Vertical - Horizontal	Vertical	Vertical & Horizontal	Vertical & Horizontal
Spigot size 125mm or 200mm	125	200	200
Left/Right Hand Orientation Through Control	✓	✓	✓
Fully automatic 100% summer bypass	✓	✓	✓
Active Frost Protection to -20°C	✓	✓	✓
Fault Code Indicator	✓	✓	✓
Easy Access Filters: ISO Coarse 65% (G4)	✓	✓	✓
Easy Access Filters: ISO ePM10 50% (M5)	O	O	O
Easy Access Filters: ISO ePM2.5 70% (F7)	O	O	O
Clean Filter Indicator (Time frame)	✓	✓	✓
PIN Number Lock	✓	✓	✓
Running Time Indicator	✓	✓	✓
Enthalpy Heat Exchanger	O	O	O
Soft-Start Boost	✓	✓	✓
Delay-On	✓	✓	✓
Number of controllable speeds	4	4	4
Installer function to copy/load unit setup	✓	✓	✓
Inputs 2 x 0-10V; 2 x LS; 5 x Volt-Free	✓	✓	✓
Integral Humidistat	✓	✓	✓
Relay outputs - For example control heaters or geothermal heat exchanger	O	O	O
BMS - modbus supported over RS485	✓	✓	✓
Operating ambient temperature (°C)	-20 to +40	-20 to +40	-20 to +40
Operating Humidity (%RH)	0 to 95	0 to 95	0 to 95
Mounting	Wall or Floor	Wall or Floor	Wall or Floor
Maintenance access	From Front	From Front	From Front

O - Denote Optional

Consultant's Specification

Specification

The Mechanical Ventilation Heat Recovery Unit shall be the Lo-Carbon Sentinel Econiq S, M or L as manufactured by Vent-Axia. It should be sized as indicated on the drawings and shall be in accordance with the particular specification.

The unit shall be fully insulated for thermal and acoustic performance and shall incorporate a high-efficiency composite plastic counter-flow heat exchanger with an independently verified thermal efficiency of up to 93% when tested to EN 308.

The heat exchanger shall be protected by ISO 60% Coarse (G4) grade filters on extract and supply with the facility to accommodate ePM2.5 (F7) and ISO ePM10 (M5), or an inline filter such as the Vent-Axia Pure Air Carbon Filter. The built-in filters shall be accessible via tool-free access doors. The heat exchanger, motors, summer bypass and all other serviceable parts shall be accessible through the front of the unit.

The Sentinel Econiq shall automatically vary the ventilation rate via EC/DC motors, as it receives signals from optional or in-built sensor inputs. When a signal is received, the fans shall either vary their speed proportionally or on a normal/boost principle. The unit shall have the facility to commission the supply and extract fans individually via in-built minimum and maximum speed adjustment, alternative wired remote-control unit or via a compatible smartphone using the Vent-Axia Connect application. The fans themselves shall have independent, infinitely variable speed control.

The MVHR unit shall be manufactured with an ABS Outer case construction and an Expanded Polystyrene (EPS) inner chassis with custom motor and impeller mounting features. The inner chassis will assist in reducing noise and act as a large anti-vibration mount avoiding transmission through to the back mounting plate or the base of the unit. The MVHR unit shall be tested to ensure it meets the maximum allowable vibration of no more than 1mm/s, measured on the unit wall fixing points. The unit shall have a fully automatic 100% summer bypass, integral minimum and maximum infinitely variable speed controls with facia mounted failure indication. The unit shall have low-energy, high efficiency EC/DC fan/motor assemblies with sealed for life bearings. The impellers shall be high-efficiency backward curved centrifugal type, achieving an SFP as low as 0.38W/l/s (EN 308).

The unit shall have two condensate drain outlets for handing to be defined onsite and during commissioning. The unit shall have wireless control capability options, using RF868 connectivity, 802.11b/g/n Wi-Fi and Bluetooth low energy 4.2. The unit shall use RF868 to connect to a wide ecosystem of wireless sensors including but not limited to CO_2, temperature, and relative humidity. The unit shall be able to engage Wi-Fi to connect to local devices and create a local area network to allow for a larger network to be created for commissioning. The unit shall have Bluetooth low energy 4.2 to allow connectivity onto compatible smartphone devices. The unit shall be constructed with a removable tool free front panel which gives access to the removable on-board controller and other accessories. The EPS panel can then be removed with 4 screws allowing full maintenance access. This shall provide access to the following:

- ✓ Supply or extract fan
- ✓ Heat exchanger
- ✓ Access to the electrical connections

Access shall be provided for wiring termination and setup/commissioning. The unit can be supplied with either a backlit user interface or a blank plate, both of which shall be removable for remote mounting if required. Filters shall be accessed via the two filter drawers found near the top of the unit, the S shall have filter drawers and the M and L shall have filter caps.

Units shall be manufactured by Vent-Axia Ltd.

Standard Controls

The Lo-Carbon Sentinel Econiq shall incorporate the following functions through a user interface fitted by the manufacturer or a paired smartphone with the Vent-Axia Connect application:

- ✓ Integral infinitely variable fan speed control on supply and extract.
- ✓ 6 speeds; 4 adjustable
- ✓ Left or Right hand spigot configuration, programmable during commissioning
- ✓ Tool free filter access
- ✓ Integral BMS interfaces – control and status indication
- ✓ Heating interlocks
- ✓ 24V external sensor supply, eg PIR sensor
- ✓ 0-10V proportional speed adjustment
- ✓ Volt free contacts
- ✓ Fully automatic summer bypass
- ✓ Filter check facility
- ✓ Control panel PIN number lock

The unit shall incorporate:

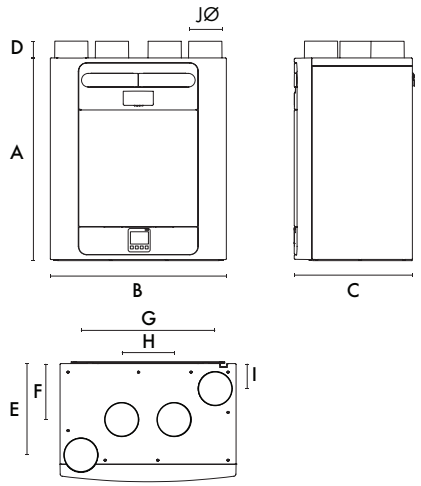
- ✓ An integral humidity sensor with the following features: Ambient Response; Raises the humidity trigger point as dwelling temperature reduces.
- ✓ Rapid Response: Monitors the rate of change in humidity and triggers increased airflow even if the humidity trigger threshold is not reached.
- ✓ Proportional Response; incrementally increases the fan speed to reduce noise and reduce energy consumption.
- ✓ RS485 connectivity – Long distance cabling to support multiple sensor connections.
- ✓ RF868 connectivity – Radio reference 868 MHZ for multiple wireless sensors pairing Bluetooth low energy 4.2 – Enable pairing within compatible smartphone device
- ✓ 802.11b/g/n Wi-Fi – Enable localised access point or connect to the local area network using the Vent-Axia Connect application, via a compatible smartphone device
- ✓ The unit shall incorporate an automatic 100% summer bypass damper which monitors internal and external temperatures to maintain the user comfort temperature (default 25°C): -
  - 'Evening Fresh' turns the unit to maximum speed with the bypass operational for 2 hours or until the user comfort temperature is reached (default 25°C).
  - 'Night Time Fresh' will run the unit at maximum speed with the bypass operational throughout the night or until the dwelling reaches minimum temperature (default 14°C).

Independently acoustically tested to BS EN 13141-7:2010

Sentinel Econiq S

Dimensions (mm)

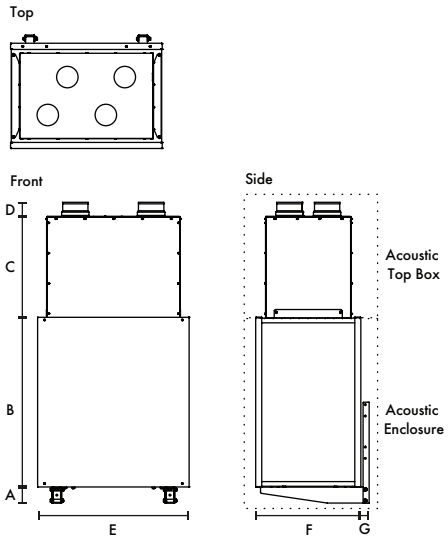
Unit



A	B	C	D	E	F	G	H	I	JØ	kg
760	660	443	63	343	210	503	197	93	125	27

Packed weight: 32kg

Acoustic Solution



A	B	C	D	E	F	G	Acoustic Top Box kg	Acoustic Enclosure kg	Spigot
80	840	501	68	750	520	40	14	27	125

Sound Spectrum (Unit only)

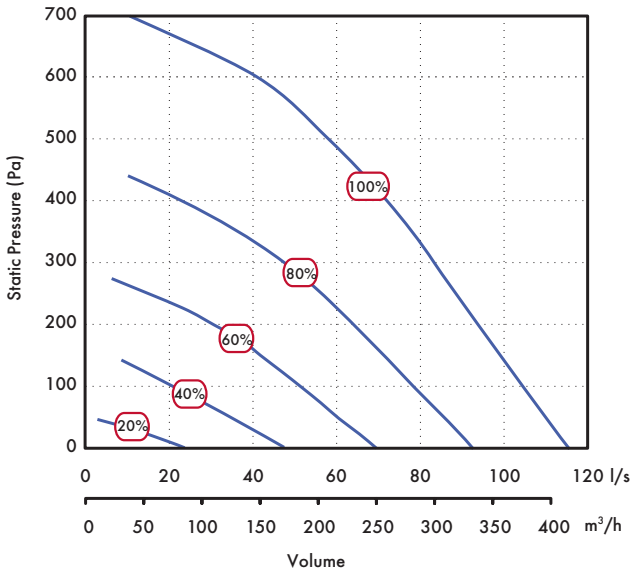
Speed	Test mode	Octave Band (Hz) Sound Power Levels, dB 63	125	250	500	1k	2k	4k	8k	LwA	SPL dB(A) @ 3m
20%	Supply	52.9	50.9	46.8	43.0	34.6	27.1	19.2	25.4	43.9	26.4
	Extract	50.3	49.0	36.0	31.5	23.6	16.1	18.9	25.3	36.4	18.9
	Breakout	34.6	34.8	35.7	34.9	29.6	25.1	21.0	25.3	36.0	15.5
40%	Supply	59.5	56.5	59.4	55.0	48.2	42.6	31.8	26.1	55.9	38.4
	Extract	51.9	51.3	50.4	41.2	35.0	25.3	19.8	25.4	44.8	27.3
	Breakout	40.2	42.6	46.5	45.4	41.0	36.2	25.5	25.3	46.5	26.0
60%	Supply	66.9	62.4	63.3	62.0	57.9	53.5	43.4	34.2	63.2	45.7
	Extract	60.6	60.3	54.2	49.5	44.4	36.2	27.9	26.3	51.7	34.2
	Breakout	45.5	49.8	52.5	53.1	49.7	46.7	36.2	26.9	54.5	34.0
80%	Supply	82.4	67.6	65.2	67.6	64.2	60.8	50.8	43.2	69.2	51.7
	Extract	75.5	68.6	59.3	56.0	48.3	44.2	36.9	31.3	58.6	41.1
	Breakout	59.2	55.0	56.8	60.0	55.4	53.9	44.1	33.4	61.0	40.5
100%	Supply	79.4	69.6	66.6	75.1	64.9	63.6	53.4	45.7	73.7	56.2
	Extract	72.4	70.5	60.5	56.4	49.8	46.3	39.0	33.4	59.5	42.0
	Breakout	63.0	57.1	58.5	63.7	56.8	55.9	46.4	36.2	63.5	43.0

Sound Spectrum (Solution Top Box & Enclosure Kit)

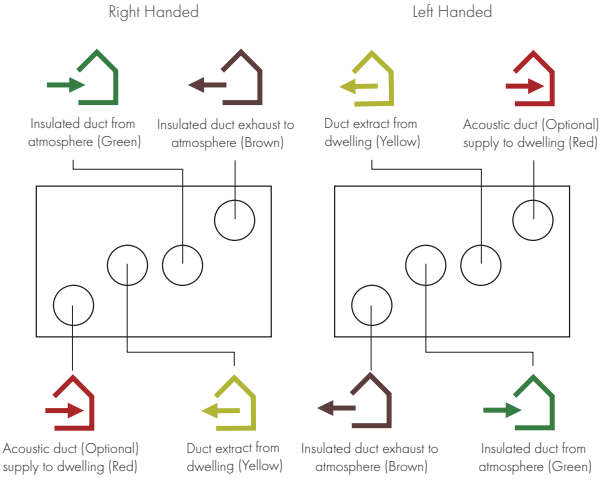
Speed	Test mode	Octave Band (Hz) Sound Power Levels, dB 63	125	250	500	1k	2k	4k	8k	LwA	SPL dB(A) @ 3m
20%	Supply	54.7	50.5	41.5	30.8	18.6	14.7	18.2	24.0	38.0	20.5
	Extract	54.8	41.7	31.4	20.2	15.2	13.8	18.3	24.3	31.9	14.4
	Breakout	36.6	47.3	38.0	24.7	19.3	16.6	19.1	23.6	34.0	13.5
40%	Supply	61.0	57.7	56.0	39.0	27.5	16.6	18.4	24.1	48.9	31.4
	Extract	55.7	50.8	44.6	26.8	19.1	15.0	18.2	24.0	39.2	21.7
	Breakout	55.9	55.2	48.2	35.5	29.9	20.9	20.4	25.3	42.6	22.1
60%	Supply	64.5	64.3	56.2	48.6	36.0	22.8	19.0	24.2	52.3	34.8
	Extract	59.4	57.3	46.6	36.0	25.6	17.4	18.6	24.5	43.9	26.4
	Breakout	43.5	60.5	49.5	43.5	39.0	32.0	23.8	23.7	47.6	27.1
80%	Supply	68.9	65.9	59.9	53.9	41.4	29.3	21.6	24.7	55.9	38.4
	Extract	63.1	69.3	52.6	43.0	33.4	23.7	20.2	24.6	54.5	37.0
	Breakout	48.3	69.8	52.7	48.3	44.7	39.8	33.2	25.9	57.1	36.6
100%	Supply	72.5	70.5	63.1	56.1	43.9	33.0	23.7	25.2	59.3	41.8
	Extract	70.3	61.9	56.2	45.4	36.6	28.0	22.9	24.6	51.5	34.0
	Breakout	54.3	67.1	63.3	51.3	47.9	43.9	38.5	28.7	57.7	37.2

Tested according to BS EN 13141-7:2010. Breakout quoted spherical. Supply and Extract quoted hemispherical. For in-duct data, end reflections are added based on the spigot size of the unit.

Performance (Sentinel Econiq S)



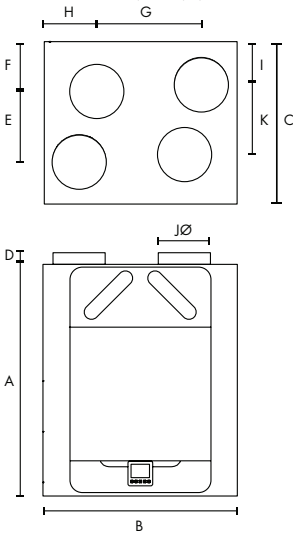
Spigot Configuration (Sentinel Econiq S)



Hand-able through controller (except if pre-heater fitted)

Sentinel Econiq M & L

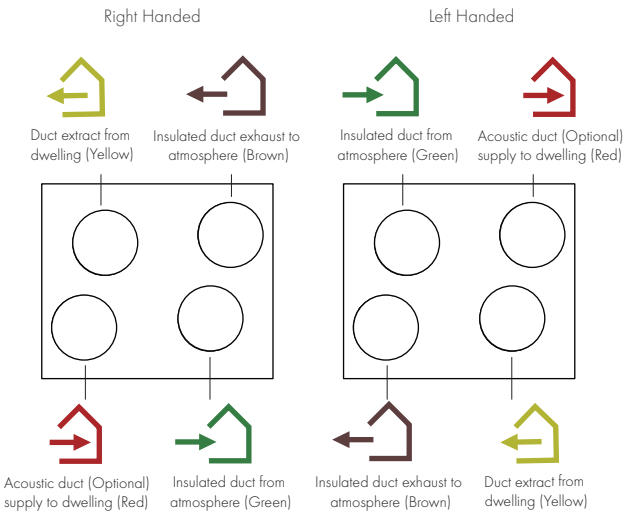
Dimensions (mm) (Sentinel Econiq M & L)



A	B	C	D	E	F	G	H	I	JØ	K	kg
881	728	608	50	261	187	394	200	160	200	261	50

Packed weight: 55kg

Spigot Configuration (Sentinel Econiq M & L)



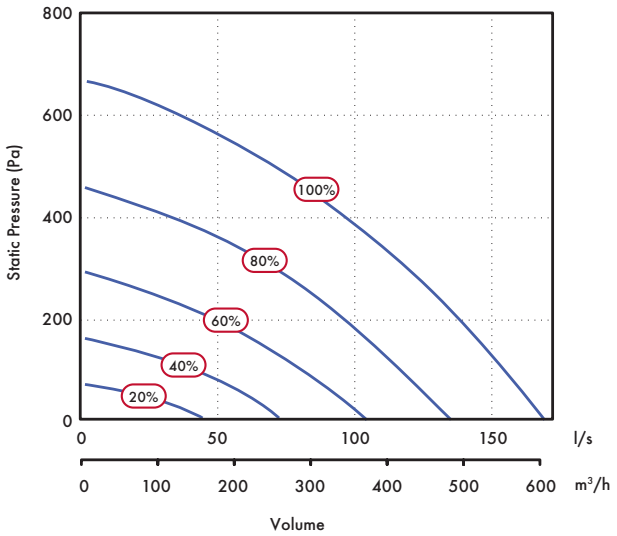
Sound Spectrum (Sentinel Econiq M)

Speed	Test mode	Octave Band (Hz) Sound Power Levels, dB 63	125	250	500	1k	2k	4k	8k	SPL dB(A) @ 3m
20%	Breakout	32	41	35	31	24	17	19	23	12
	Inlet	48	42	33	23	19	14	17	22	13
	Outlet	55	55	48	41	34	23	18	22	27
40%	Breakout	36	45	46	42	36	25	19	23	22
	Inlet	54	45	43	33	31	20	18	22	21
	Outlet	64	58	57	52	49	40	26	22	37
60%	Breakout	43	50	51	48	44	36	22	23	29
	Inlet	59	51	51	39	39	29	20	22	28
	Outlet	69	64	65	58	58	51	38	26	45
80%	Breakout	48	55	56	53	50	43	30	24	34
	Inlet	65	56	57	46	44	37	26	22	34
	Outlet	73	68	67	64	63	59	47	35	50
100%	Breakout	60	60	57	58	55	47	36	29	38
	Inlet	69	59	54	48	48	41	31	24	35
	Outlet	76	70	67	69	66	63	53	42	53

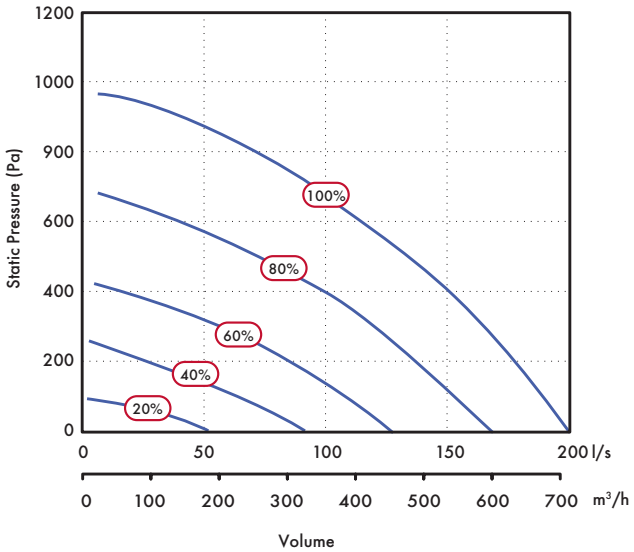
Sound Spectrum (Sentinel Econiq L)

Speed	Test mode	Octave Band (Hz) Sound Power Levels, dB 63	125	250	500	1k	2k	4k	8k	SPL dB(A) @ 3m
20%	Breakout	41	41	51	47	40	18	19	23	26
	Inlet	50	43	42	38	31	16	18	23	21
	Outlet	57	56	53	47	40	29	19	24	31
40%	Breakout	41	44	53	52	43	32	20	23	31
	Inlet	60	48	50	38	37	26	19	23	27
	Outlet	68	62	62	56	55	49	33	24	42
60%	Breakout	44	50	55	56	48	42	27	23	34
	Inlet	63	54	59	44	43	37	24	23	35
	Outlet	71	67	67	62	62	59	46	34	49
80%	Breakout	55	54	54	60	52	47	36	24	38
	Inlet	69	60	55	50	48	43	33	24	36
	Outlet	78	72	66	70	67	65	56	44	54
100%	Breakout	67	67	58	72	58	50	42	27	50
	Inlet	81	64	58	57	51	47	39	27	42
	Outlet	91	76	69	74	70	69	62	50	58

Performance (Sentinel Econiq M)



Performance (Sentinel Econiq L)



Sentinel-X Controller

Battery Controllers & Sensors

Battery - Internal Temperature and Humidity - Wireless
Room mounted humidity and temperature sensor for wired or wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency), or RS485 (Wired connection) communication method whilst being powered by batteries.

- Dimensions (HxWxD) (mm) 60 x 60 x 22
- 2 x AAA Batteries
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- Wireless range 20m closed/100m open
- RF 868MHz Wireless or RS485 Wired communication
- Status LED indicator for pairing, health check and fault conditions
- Mounted using provided back plate

Stock Ref
496431

Battery – 4 Speed Switch with Temperature and Humidity - Wireless
Room mounted Speed Switch for wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency) communication whilst being powered by batteries.

- Dimensions (H x W x D) (mm) 90 x 90 x 17
- 2 x AAA Batteries
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- Wireless range 20m closed/100m open
- RF 868MHz Wireless
- Mounted using provided back plate or compatible with a standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check and fault conditions

Model	Stock Ref
White	496437
Black	497689

HMI Kit

Wall-mounted HMI Kit to suit Econiq models with full HMI
Includes HMI Blank controller, HMI backplate and cable.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- 240V local power supply required
- Wireless range 20m closed/100m open
- RF 868MHz Wireless or RS485 Wired communication
- Compatible with standard single gang or surface mounted pattress box

Stock Ref
411628

0-10V Sensors

0-10V $C0_2$, Temperature and Humidity - Wired
Room mounted CO_2 sensor with 0-10V signal output powered by an external 24V supply.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- 24V Power supply required
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- CO_2 range 0-2000PPM
- Compatible with standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check, faults & air quality traffic light index
- 0-10V Wired Communication

Stock Ref
496432

Sentinel-X Controllers

240V Controllers & Sensors

240V - Internal Temperature and Humidity - Wireless
Room mounted humidity and temperature sensor for wired or wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency), or RS485 (Wired connection) communication method whilst being powered by a local 240V supply.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power supply 240V
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- Wireless range 20m closed/100m open
- RF 868MHz Wireless or RS485 Wired communication
- Compatible with standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check, faults & air quality traffic light index

Stock Ref
496429

240V - CO_2, Temperature and Humidity - Wireless
Room mounted CO_2 sensor for wired or wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency), or RS485 (Wired connection) communication method whilst being powered by a local 240V supply.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power supply 240V
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- CO_2 Range 0-2000 PPM
- Wireless range 20m closed/100m open
- RF 868MHz Wireless or RS485 Wired communication
- Compatible with standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check, faults & air quality traffic light index

Stock Ref
496433

240V - 4 Speed Switch with Temperature and Humidity - Wired
Room mounted Speed Switch for wired communication with a compatible system. Using an in-built RS485 communication method powered by a local 240V supply.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power Supply 240V
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- Mounted using provided back plate or compatible with standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check and fault conditions
- RS485 Wired Connection

Model	Stock Ref
White	496621
Black	497697

240V - 4 Speed Switch with Temperature and Humidity - Wireless
Room mounted Speed Switch for wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency) communication whilst being powered by a local 240V supply.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power Supply 240V
- Temperature range 0~60°C
- Relative humidity range 0-90% RH
- Wireless range 20m closed/100m open
- RF 868MHz Wireless
- Mounted using provided back plate or compatible with standard single gang or surface mounted pattress box
- Status LED indicator for pairing, health check and fault conditions

Model	Stock Ref
White	496620
Black	497693

240V - PIR Sensor - Wireless
Room mounted PIR sensor for wired or wireless communication with a compatible system. Using an in-built RF 868 MHz (Wireless radio frequency), or RS485 (Wired connection) communication method whilst being powered by a local 240V supply. Room mounted presence detector for min/max or on/off control. Wall or ceiling mounting.

- Dimensions (HxWxD) (mm) 90 x 90 x 17
- Power supply 240V
- 5-25min run on timer
- PIR Range 3m
- Compatible with standard single gang or surface mounted pattress box
- Wireless range 20m closed/100m open
- RF 868MHz Wireless or RS485 Wired communication

Stock Ref
496438

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