

Lo-Carbon Sentinel Kinetic Range Overview

- Manufactured in the UK
- Building Regulations ADF and ADL compliant
- Recognised in SAP PCDB
- Specific Fan Power down to 0.4 W/l/s
- Up to 94% heat recovery
- Fully automatic Summer bypass
- Horizontal and/or vertical duct outlets
- Integrated digital controller for simple and accurate commissioning
- Lightweight for easy installation
- External condensate connection
- Plug and play controls; Humidistat, Wireless Remote
- Acoustic Enclosure option for reduced breakout noise
- Acoustic Top Box option for reduced in-duct noise

The Sentinel Kinetic Range Incorporates:

- A wholehouse heat recovery system with up to 94% energy efficiency
- An easily accessible heat recovery cell protected by two removable ISO 45% Coarse (G3) filters
- Two Lo-Carbon energy saving EC/DC fans which ensure long life (typically over double the life of AC motors) and lowest possible energy use
- Fully insulated construction with built-in condensation drain
- Specifically designed for new build constructions with a high level of insulation

The Lo-Carbon Sentinel Kinetic meets the latest requirements of the Building Regulations ADF and ADL for wholehouse system ventilation: System 4 - Continuous mechanical supply and extract with heat recovery. The Lo-Carbon Sentinel Kinetic models have 3 fully adjustable speeds and a purge setting (maximum flow). Provided with the unit is a digital controller that can be used to preset the speeds to any required airflow within the performance range.

Integral Humidity Sensor

The integral humidity sensor (models with H suffix) 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 temperature.

Acoustic Solution

For scenarios where noise is a critical issue, The Sentinel Kinetic Acoustic Solution is also available for all Sentinel Kinetic units. An Acoustic Enclosure will reduce breakout noise and the Acoustic Top Box will reduce in-duct noise at key frequencies. The acoustic solution sound data for each product can be found on the relevant product page.



Filtration

A new ISO filtration standard has come into force. The test method has changed so direct comparisons between EN779 2012 and ISO 16890 cannot be drawn. Below is a guide to the filter efficiencies:

ISO 16890	EN779
45% Coarse	G3
65% Coarse	G4
ePM10 50%	M5
ePM2.5 70%	F7

For sensors see Accessories & Controllers section.

Sentinel Control

The Sentinel controller is the most advanced system available, providing Demand Control Ventilation (DCV), minimising energy consumption and noise levels, and optimising ventilation performance. Sentinel controlled units may be set to operate fully automatically or with varying levels of manual intervention.

Building Management System (BMS) Options

There are two levels of BMS available: Basic Output and full Electronic BMS.

Basic Output provides a 5 volt output from the LED terminals on the controller. This output occurs whenever a message appears in the digital display, for example; 'Check Filters' or a fault code. The output can also be converted to volt-free with the addition of an optional Opto-Coupler.

Electronic BMS: A full range of two-way digital signals are available through the RJ11 connector on the control board. The BMS system provider will translate this signal to extract the desired data. Contact Vent-Axia to discuss your specific requirements.

LED Alarm

MVHR units are often installed in lofts or other locations where they are difficult to monitor. The optional remote LED alarm illuminates when any message is visible in the MVHR unit display panel. The LED alarm can be installed in a convenient location within the dwelling allowing end users to see that the unit requires attention.

Control Inputs

Five volt-free pairs of switch terminals for sensor inputs allow boosting from a full range of Vent-Axia controllers – humidistats, PIR, timers.

Two terminals with 0-24V outputs allow 0V to 10V proportional control by sophisticated controllers such as CO₂ sensors and proportional humidistats.

Switched-live for boosting via light switches (220-240V AC) or manual Normal/Boost switches. This connection has the advantage of Delay-On and Delay-Off facility. Delay-On enables you to prevent the Boost airflow between 0 and 10 minutes, after a light switch has been activated. Delay-Off allows the Boost airflow to continue after a light switch is turned off to ensure effective clearance of humidity. This timer is adjustable between 0 and 25 minutes.

The units can be boosted incrementally via the on-board controller or the Wired Remote Controller: One press = 30 minutes, two presses = 60 minutes, three presses = continuous.

Frost Protection

In order to prevent frost forming inside the unit in winter conditions, the Kinetic range employs a sophisticated frost protection strategy that modifies the airflows ensuring heat recovery continues down to -20°C. Below this temperature, the units will operate as 'extract only' fans. If balanced ventilation is required at low temperatures, a duct pre-heater should be used.

Optional Controls

Model	Stock Ref
LED Alarm with 15 metre cable	448356
Wired Remote Controller with 15 metre cable	443283
Wireless Enable Kit (includes one switch)	441865
Additional Wireless Boost Switch (max 3 switches)	437827

Purge Options

The unit can be set to maximum flow (100%) by pressing and holding the Boost button on the unit itself or optional wired controller for 5 seconds. Purge will continue for two hours unless cancelled by pressing the Boost button again.



In addition, the Acoustic Purge Fan can be used in conjunction with a Sentinel Kinetic MVHR unit or independently via a separate switched live connection or 0-10V external sensor input.

Model	Stock ref
Acoustic Purge Fan	477988
Acoustic Purge Fan XL	479829

Summer Bypass

An internal damper operates when the external temperature is below the internal temperature, and the internal temperature is too high.

The bypass opens and allows the cooler outside air to help cool the dwelling.

Normal mode: Fans run on Normal speed with bypass open until the internal dwelling temperature falls below the set 'Indoor' (maximum desired) temperature.

Evening Purge mode: The fans run on Boost speed until the internal temperature falls below the set 'Indoor' temperature. If, after five hours the

internal temperature is still above the set 'Indoor' temperature, the unit will switch down to normal speed for the remainder of the 'bypass open' period.

Night-time Purge mode: As Evening Purge, except that the unit will continue on Boost speed until the internal air temperature reaches the 'Outdoor' temperature set point (Default 14°C). This mode gives pre-cooling of the dwelling for the following day.

In Evening and Night Time Purge modes, the user can turn off the boost function by pressing the Boost button.

A Summer Bypass can make a contribution to reducing internal temperatures but is not a substitute for appropriate design and construction.

System Cooker Hood Range

System canopy hoods are a motorless hood with extract being provided by the MVHR unit. When the Boost button on the canopy is activated, the MVHR unit goes to boost setting and the summer bypass opens preventing cooking by-products entering the heat exchanger cell. SELV hoods allow the distance between the hood and an electric hob to be reduced from 650mm to 550mm.



Model	Stock ref
White	407509
Aluminium	407206
White SELV	474790
Aluminium SELV	474791

Model Range Overview

	Sentinel Kinetic Range						Kinetic E Range		
									
Model Ranges	Lo-Carbon Sentinel Kinetic			Lo-Carbon Sentinel Kinetic FH	Lo-Carbon Sentinel Kinetic Plus	Lo-Carbon Sentinel Kinetic High Flow	Lo-Carbon Sentinel Kinetic Cooker Hood	Lo-Carbon Kinetic Plus E	
Models	V	B	BH	FH	Plus	High Flow	CH	Plus E	
Acoustic Enclosure	○	○	○	○	○	○		○	
Acoustic Top Box	○	○	○	○	○	○		○	
Auto Summer Bypass		✓	✓	✓	✓	✓	✓		
Easy Access Filters	✓	✓	✓	✓	✓	✓	✓	✓	
Very Low Noise Levels	✓	✓	✓	✓	✓	✓	✓	✓	
Integral Cooker Hood							✓		
Built-In Humidistat			✓	✓	✓	✓	✓		
Kitchen Cupboard Installation	✓	✓	✓						
Max Airflow @ 100Pa	68	68	68	79	117	185	68	117	
Frost Protection	✓	✓	✓	✓	✓	✓	✓	✓	
Delay-On	✓	✓	✓	✓	✓	✓	✓	✓	
Wired Remote Control	○	○	○	○	○	○	○		
Wireless Boost	○	○	○	○	○	○	○		
Clean Filter Indicator (Time)	✓	✓	✓	✓	✓	✓	✓	✓	
Fault Code Indicator	✓	✓	✓	✓	✓	✓	✓	✓	
Potentiometer Adjustment								✓	
Sentinel Control	✓	✓	✓	✓	✓	✓	✓		
Switched Live	✓	✓	✓	✓	✓	✓	✓	✓	
Volt Free Contact	✓	✓	✓	✓	✓	✓	✓		
0V - 10V Proportional Control	✓	✓	✓	✓	✓	✓	✓		
BMS Input/Output	✓1	✓1	✓1	✓1	✓1	✓1	✓1		
Lightweight	✓	✓	✓	✓	✓	✓		✓	
External Condensate	✓	✓	✓	✓	✓	✓	✓	✓	
Horizontal Duct Option	✓	✓	✓	✓	✓	✓	✓	✓	
Horizontal (Slab) Installation									
Left/Right Orientation	✓	✓	✓	✓	✓	✓	✓	✓	
PIN Number Lock	✓	✓	✓	✓	✓	✓	✓		
Running Time Indicator	✓	✓	✓	✓	✓	✓	✓		
Enthalpy Heater Exchanger		○	○	○	○	○			
Mounting Options	 Wall Surface			 Wall Surface		 Wall Surface		 Wall	 Wall Surface

○ - Denote Optional, 1- Seek technical advice from Vent-Axia. *ZMH rectangular spigot model.

Sentinel Demand Control

The Lo-Carbon Sentinel Kinetic Range can be used with a wide range of optional Vent-Axia controllers and sensors. Ranging from integral humidistats, through wireless controllers to wired remote sensors.

Wired Remote Controller

- Standard with horizontal units, optional extra with vertical units
- Supplied with 15 metres of cable (max length), the Wired Remote Controller duplicates all the features of the on-board control panel, allowing commissioning, diagnosis and user control
- Flush mounting, suitable for a single gang pattress box 16mm deep

Stock Ref

443283



Wireless Transmitter Controller Receiver Kit

- Manual boost
- Adjustable overrun timer
- Easy wireless installation
- Reduces installation time
- Future proof - add more controllers at any time

Stock Ref

441865



Wireless Transmitter Controller

- Additional controller for 441865
- A maximum of 4 controllers can be used per system
- Can be connected to other accessories (eg Humidistat) to send a boost signal wirelessly

Stock Ref

437827



Ambient Response Humidity Sensor

- Pullcord override and neon indicator
- Changeover relay switch
- Operating range: 30% - 90%RH
- Ambient operating temp. 5°C to 40°C
- 220-240V AC
- Will fit single gang box for surface mounting

Stock Ref

563550



Ecotronic Humidity Sensor

- Set Point adjustable
- Maximum switching load 1 amp in-ductive
- Pullcord override indicator
- Ambient operating temp. 0°C to 40°C
- Supply voltage 220-240V

Stock Ref

563532



Air Quality Sensor

- Ambient operating temp. 0°C to 50°C
- Min - Max mode or direct damper control
- Surface mounted
- 1 - 25 min O/R timer
- Supply voltage 220-240V

Stock Ref

563506



Normal Boost Switch

- A single gang switch to boost from low to high speeds on heat recovery systems
- 85 x 85 x 10mm (H x W x D)

Stock Ref

455213



Visonex PIR Sensor

- Fits any UK single gang mounting box
- Adjustable timer overrun (5-25 mins)
- Range of detection up to 10 metres
- Designed to meet IP43
- Ambient operating temp. range 0°C to 50°C

Stock Ref

459623



CO₂ + Temp Room Sensor

- 240V DC
- 0 - 2000ppm CO₂ working range
- 0 - 50°C working range
- Auto-calibrating NDIR CO₂
- Thin film platinum temperature sensor for high accuracy

Stock Ref

433257



Momentary Push Switch

- Compatible with Sentinel Kinetic range, the momentary switch boosts the unit for 30 minutes
- 85 x 85 x 10mm (H x W x D)

Stock Ref

448929



Normal Boost Switch with Light Indicator

- Single gang switch with LED illumination when in the Boost condition
- 85 x 85 x 10mm (H x W x D)

Stock Ref

449060



Normal Boost Switch - Stainless Steel

- A single gang switch to operate normal/boost functions on MVHR systems
- Brushed stainless steel finish
- 90 x 90 x 18 (H x W x D)

Stock Ref

437320



Isolator Relay Controller

- Allows fan unit to be isolated from other mains circuit when used with TIM2 trickle/boost switch or light switch control

Stock Ref

442030

