



**AIRE-VOLVE
SINGLE EXTRACT
FANS**



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PROUD TO BUILD BRITISH



We’ve been pioneers in new air technology since 1966. Our heritage is in the design and manufacture of fans and ventilation systems. *We put our energy into efficient ventilation so you don’t waste yours.*



Pioneering
We lead the way in product innovation with a stream of ground-breaking products over decades.



Trusted
We have a reputation for our build quality. We establish long term relationships and are always transparent with our test data.



Agile
We’re one of the UK’s leading manufacturers, covering both residential and commercial air quality. We offer innovative advice and provide flexible solutions.



Expert
Our team is made up of over 600 people, 50 of which have over 25 years’ experience. We have the skills and knowledge to help find the best solution for our customers.



Attentive
We’re expert listeners, rising to any challenge and going the extra mile for our customers. We add value by solving problems. We sell solutions, not fans.



Personal
We work closely with our customers and can provide bespoke solutions to meet their specific project needs. Many of our product ranges were developed this way.

Nuaire becomes the first UK ventilation manufacturer to adopt recycled and renewably produced steel, reducing carbon emissions by over 60%.
Magnelis® steel-based ventilation systems are transitioning to Magnelis® XCarb®, a low carbon-emission steel that is both recycled and renewably produced.



For help with selecting a unit, speak to us on **029 2085 8200** or email: enquiries@nuaire.co.uk

ABOUT EXTRACT FANS

For over 50 years, Nuaire has been known for its extract fans. Brands such as Squif, Opus, Genie, and Scurbo are iconic names in the ventilation market.

Since then, we have expanded and progressed, utilising industry-leading technologies to ensure the highest quality of fans on the market. Advancement in controls and fan technology have made single and twin extract fans high performance and high efficiency solutions for many project applications.

Choice of fan can depend on a number of factors, including; project type, application, duty requirements and typical occupancy rates. Our comprehensive range makes selection simpler, with a wide range of solutions available.



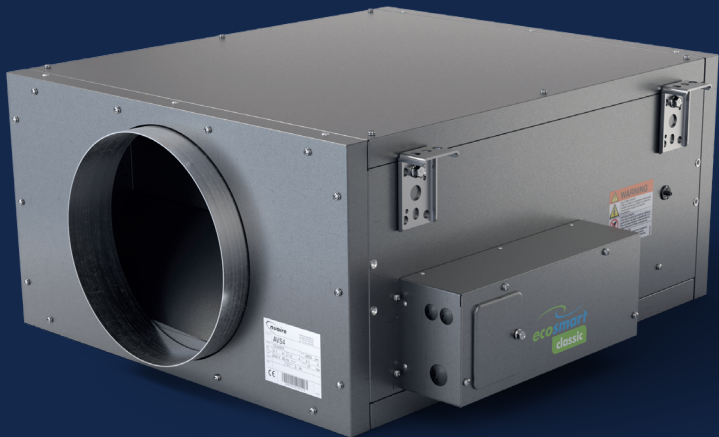


ABOUT AIRE-VOLVE

Aire-Volve Single (AVS) is a range of extract fans with superior market-leading efficiencies and acoustic properties.

Units are double-skinned for the lowest possible noise levels, making them ideal for projects with strict acoustic requirements. Due to their extremely low depth, units are suited to ceiling void application, however, due to Nuaire's patented fan design, units can be mounted in any orientation, providing complete design and installation flexibility.

AVS is the market leader in quiet, efficient single fan solutions.



CODING AVS1

AV S 1
1 2 3

SAMPLE CODING

1. Aire-Volve range
2. Single fan
3. Case size 1-9

COMPACT DESIGN Most compact size by duty on the market, ideal for ceiling void applications.

WIDE RANGE Available in duties up to 1.9m³/s and with a full range of matching ancillaries.

HIGH EFFICIENCY Latest EC motor technology guarantees longer life and lower SFPs.

PEACE OF MIND 5 year warranty as standard.

ECOSMART CONTROL PLATFORM IT'S SO SMART IT'S SIMPLE

Nuaire and ventilation controls have history.

Back in the early 1970s it was standard practice to specify fans as close to the design duty as possible, but without any speed controllers. Understanding the inefficiency this can cause, Nuaire, headed by our then owner and CIBSE Chairman, Brian Moss, developed the first twin fan controller – a cost-effective way to save energy and reduce running costs. Since then, the Nuaire brand has become synonymous with energy-saving controls.

Demand Ventilation Solutions

Below is a conventional ventilation system compared to one using Ecosmart controls.

CONVENTIONAL
SUPPLY & EXTRACT VENTILATION SYSTEM

1. PVC ducting	6. User control
2. Filter	7. 230V Electricity supply
3. Air pressure switch	8. Electrical cabling 230V
4. Temperature switch	9. Electrical heater
5. Control panel	10. Time clock

ECOSMART
SUPPLY & EXTRACT VENTILATION SYSTEM

1. Integrated control	4. (SELV) 12V cable
2. Optional CO ₂ sensor	5. Optional PIR sensor
3. User control	6. 230V Electricity supply

An Ecosmart system combines systems into a simple package, saving space but also time spent installing and commissioning. Alternatively, we offer 'Basic Control' – a simple terminal box for supply and extract fan motor wiring for interfacing to custom-built control panels (by others).

SIMPLE PLUG-AND-PLAY SYSTEM



ABOUT ECOSMART CLASSIC



The UK’s leading energy-efficient plug-and-play solution. Demand ventilation at your fingertips.

Varying the ventilation rate in a building to suit changing occupant levels used to be an expensive option – Ecosmart brings this within everyone’s pocket. Minimising energy losses through re-heating (or cooling) the air replaced through ventilation is at the top of the agenda; building regulations make this a necessity. Ecosmart not only saves energy and carbon emissions it prolongs the life of the heat recovery unit.

Choosing Ecosmart is your reliable option, used by design engineers for many years and is now an integral feature of most Nuaire fans.

- **Saves time on site** - Ecosmart controls are all pre-assembled, configured and installed directly into the heat recovery units, this includes valves and actuators, pipework etc. which helps significantly reduce the time spent on site.
- **Simpler system** - No need for VCD (directly on the fan) no wasted energy or noise generation because air volume can be precisely set via integrated speed control.
- **Simple & precise commissioning** - As recommended in Part L, Ecosmart enables the system to be accurately commissioned via integrated speed control. If the unit is controlled by 0-10V BMS the system's response to a 0-10V dc BMS signal is given in the table above.

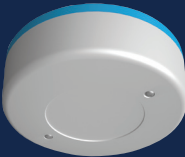
	Ventilation mode	Cooling mode*	Heating mode*
Local control	0.00	-	-
OFF / trickle	0.25	-	-
Speed 1	0.50	0.75	1.00
Speed 2	1.50	1.75	2.00
Speed 3	2.50	2.75	3.00
Speed 4	3.50	3.75	4.00
Speed 5	4.50	4.75	5.00
Speed 6	5.50	5.75	6.00
Speed 7	6.50	6.75	7.00
Speed 8	7.50	7.75	8.00
Speed 9	8.50	8.75	9.00
Speed 10	9.50	9.75	10.00

*Only available on relevant unit.

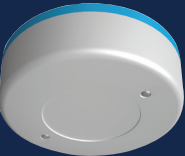
SENSORS & ENABLERS All Ecosmart Classic Systems must include at least one enabler.
(N.B. when used, BMS control and time clocks take over all other enablers).



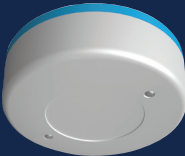
ES-PIR2 (Enabler)
Detects movement and activates system. Incorporates a system status LED, overrun timer and timer adjustment.



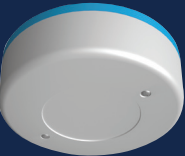
ES-TEMP2 TEMPERATURE (Sensor)
Modulate fan speed based on room temperature. Incorporates two system status LEDs. (Green = OK, Red = Failure) and temperature set point level adjustment.



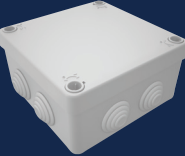
ES-THERMOSTAT2 (Enabler)
Activates the system when the temperature is above set point. Incorporates two system status LEDs. (Green = OK, Red = Failure) and temperature set point level adjustment.



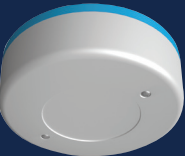
ES-RH2 RELATIVE HUMIDITY (Sensor)
Modulate fan speed based on RH level. Incorporates two system status LEDs. (Green = OK, Red = Failure) and RH set point level adjustment.



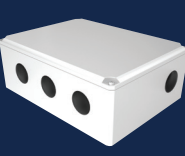
ES-AVI2 (Enabler)
When fan failure occurs the AVI will flash a warning. Supplied with pre-plugged 10m length of communication cable.



ES-CI SEMI-AUTOMATIC USER CONTROL
Fan, heating & cooling selected by external volt free switch, speed selected by 0-10V signal.



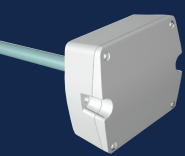
ES-HUMIDISTAT2 (Enabler)
Activates the system when the RH level is above set point. Incorporates two system status LEDs. (Green = OK, Red = Failure) and RH set point level adjustment.



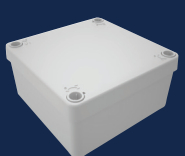
ES-JB JUNCTION BOX
Designed to be compatible with Ecosmart System this unit is supplied with a pre-plugged 10 metre length of communications cable and has 8 further ports.



ES-CO2RM (Sensor) ES-CO2RMPP (Sensor)
Surface mounted room carbon dioxide (CO2) sensors incorporate a temperature sensor. RM = SELV option, RMPP complete with SELV AC powers supply.



ES-CO2 (Sensor)
Duct mounted sensor to modulate fan speed based on CO2 levels. Connect to fan directly. Pre-wired with 2m cable (not adjustable).



ES-HTCSIG (Enabler)
Signal conditioning circuit for humidity, temperature and CO2 sensors.



SWITCHED LIVE (by others)
Any mains voltage signal connected to the switched live terminal (S/L) in the unit. This affects the connected fan only.

TOUCH SCREENS & MANUAL USER CONTROLS



ES-LCD/LCD2 (Enabler)
Touch screen user control in white with time clock facility. Control the function of the fan by manual setting or using a set of timed programs.



ES-UCF Manual 'on' and 'off' system user/speed control.
Incorporates two system status LEDs (Green = OK, Red = Failure).



AIRE-VOLVE SINGLE EXTRACT FANS
PERFORMANCE & TECHNICAL INFORMATION

CODING AVS1

AV

S

1

1

2

3

SAMPLE CODING

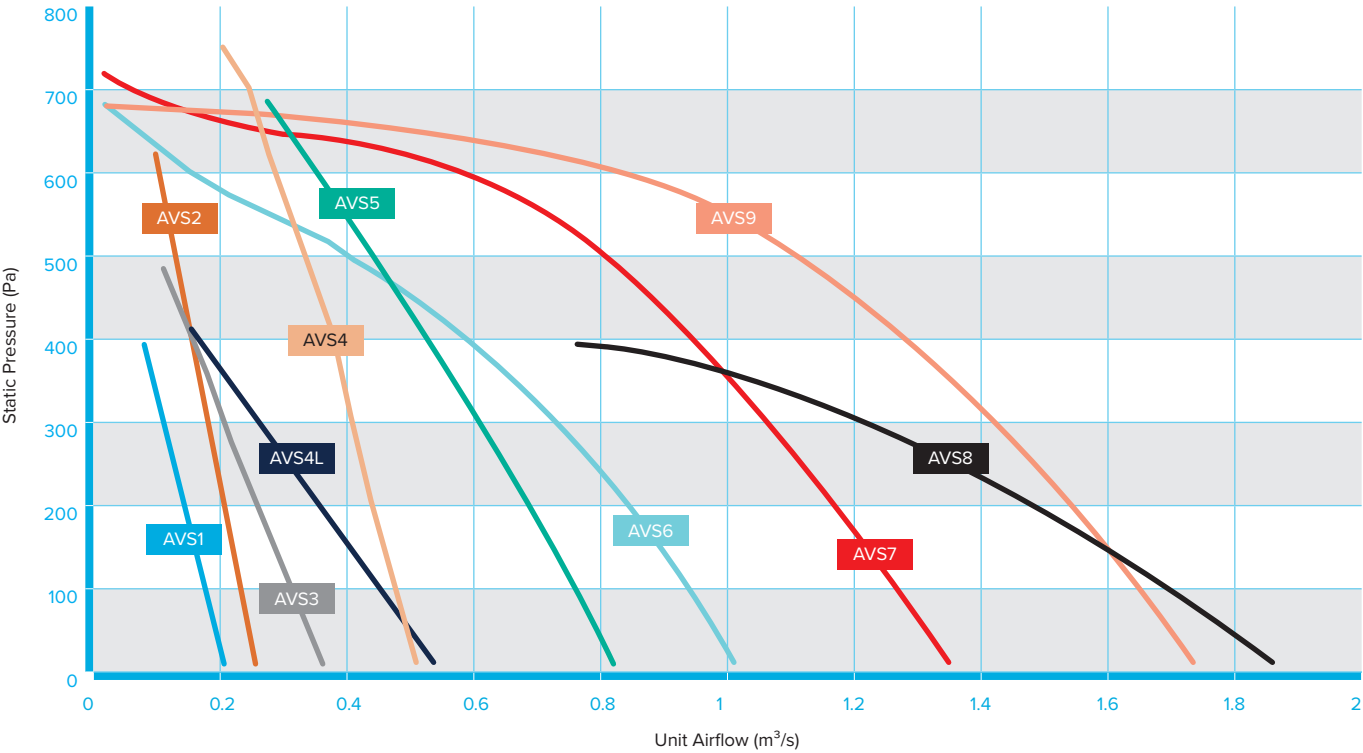
1. Aire-Volve range

2. Single fan

3. Case size 1–9



PERFORMANCE CHART

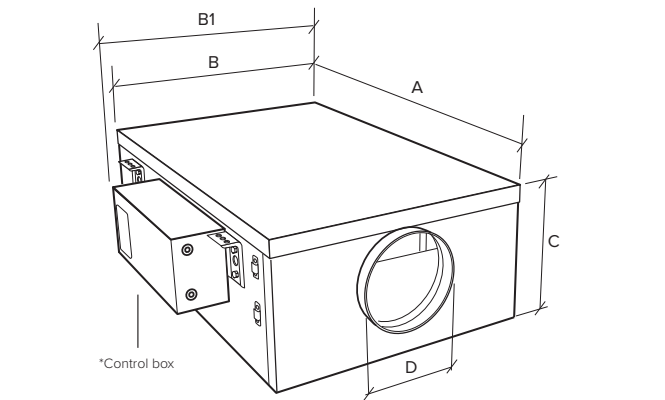


ELECTRICAL AND SOUND

1. Unweighted induct inlet octave band Sound Power level - dB re 1pW
2. Unweighted induct outlet octave band Sound Power level - dB re 1pW
3. Casing radiated octave band Sound Power level - dB re 1pW

CODE	DUCT CONN.	SUPPLY (V/Freq Hz/Phase)	FLC (amps)	SC (amps)	INPUT POWER (Max) (W)	FAN SPEED (Nominal)		FREQUENCY (Hz)								*CASING RADIATED FREE FIELD dBA @ 3m (Spherical Radiation)
								63	125	250	500	1K	2K	4K	8K	
AVS1	200	230/50/1	0.75	0.75	85	3300	1	73	69	63	63	60	56	52	50	20
							2	75	71	63	63	63	59	53	51	
							3	61	53	43	34	25	21	23	17	
AVS2	200	230/50/1	1.4	1.4	170	4000	1	79	75	69	69	66	62	58	56	26
							2	81	77	69	69	69	65	59	57	
							3	67	59	49	40	31	27	29	23	
AVS3	250	230/50/1	1.35	1.35	170	2500	1	78	74	79	67	63	59	53	51	31
							2	82	77	79	74	69	68	58	58	
							3	68	59	59	45	31	30	28	24	
AVS4	315	230/50/1	3.1	3.1	500	3400	1	84	80	81	83	78	75	71	67	36
							2	87	84	80	84	84	81	75	68	
							3	73	66	60	55	46	43	45	34	
AVS4L	315	230/50/1	1.1	1.1	160	1700	1	72	67	67	66	60	57	53	48	29
							2	74	69	69	70	69	62	58	52	
							3	66	57	55	45	37	30	32	22	
AVS5	315	230/50/1	3.5	3.5	550	2400	1	74	71	69	68	62	61	57	52	25
							2	76	73	71	72	71	66	62	56	
							3	62	55	51	43	33	28	32	22	
AVS6	400	230/50/1	2.9	2.9	450	1700	1	77	80	74	72	66	65	61	54	30
							2	80	82	74	73	67	66	63	56	
							3	66	64	54	44	29	28	33	22	
AVS7	400	230/50/1	3.5	3.5	790	1700	1	78	76	73	73	67	65	62	57	29
							2	81	77	74	75	74	71	67	61	
							3	67	59	54	46	36	33	37	27	
AVS8	500	230/50/1	3.2	3.2	710	1100	1	74	76	71	66	62	64	60	54	27
							2	76	78	73	71	71	69	64	57	
							3	62	60	53	42	33	31	34	23	
AVS9	500	400/50/3	1.85	1.85	1000	1500	1	79	77	76	73	66	66	66	58	32
							2	81	78	79	78	76	72	70	61	
							3	67	60	59	49	38	34	40	27	

*Break out fan only: These figures are available at 1m dBA, please contact Nuair.



DIMENSIONS (mm) AND WEIGHT (Kg)

CODE	A	DIM A +SPIGOT LENGTH (inc.85)	B	DIMS B1 +CONTROL (inc.108)	C	SPIGOT D (dia)	WEIGHT
AVS1	580	665	535	643*	250	200	27
AVS2	615	700	535	643	285	200	24
AVS3	745	830	672	780	334	250	43
AVS4	788	873	672	780	376	315	47
AVS4L	914	999	822	930	395	315	67
AVS5	914	999	822	930	422	315	66
AVS6	1087	1172	915	1023	545	400	90
AVS7	1180	1265	1013	1121	575	400	106
AVS8	1338	1423	1237	1345	615	500	157
AVS9	1338	1423	1237	1345	615	500	141

Bottom access on sizes AVS1-9 as standard. Unit sizes 7-9 have a split bottom access panel. *Note: AVS1 control is supplied separately to mount remotely.

SOUND FOR INDIVIDUAL SILENCERS

- 1. Unweighted induct inlet octave band sound power level - db re 1pw
- 2. Unweighted induct outlet octave band sound power level - db re 1pw
- 3. Casing radiated octave band sound power level - db re 1pw

CODE	FREQUENCY (Hz)							
	63	125	250	500	1k	2k	4k	8k
AVS1-MSS	3	8	12	20	22	18	18	14
AVS1-MSL	6	8	15	27	29	24	22	17
AVS2-MSS	3	8	12	20	22	18	18	13
AVS2-MSL	6	10	15	25	26	25	22	17
AVS3-MSS	3	8	12	22	22	24	21	15
AVS3-MSL	6	10	17	27	29	27	23	19
AVS4-MSS	4	4	11	21	18	18	17	17
AVS4-MSL	5	7	17	27	25	24	22	20
AVS4L-MSS	4	4	11	21	18	18	17	17
AVS4L-MSL	5	7	17	27	25	24	22	20
AVS5-MSS	5	7	11	19	21	17	12	12
AVS5-MSL	5	7	16	26	27	23	22	20
AVS6-MSS	5	6	13	17	21	16	15	11
AVS6-MSL	5	7	17	27	25	21	21	17
AVS7-MSS	4	8	11	19	20	16	14	12
AVS7-MSL	5	7	17	27	25	22	23	17
AVS8-MSS	5	7	13	20	21	15	14	12
AVS8-MSL	5	7	17	27	25	21	22	19
AVS9-MSS	5	7	13	19	21	17	15	13
AVS9-MSL	5	7	17	27	25	22	22	20

MATCHED SILENCERS DIMENSIONS (mm) AND WEIGHT (Kg)

CODE	SIZE	SILENCER	A	B	C	WEIGHT
AVS1	Standard	AVS1-MSS	1000	535	250	32
	Long	AVS1-MSL	1500	535	250	46
AVS2	Standard	AVS2-MSS	1000	535	285	32
	Long	AVS2-MSL	1500	535	285	46
AVS3	Standard	AVS3-MSS	1000	672	334	39
	Long	AVS3-MSL	1500	672	334	56
AVS4	Standard	AVS4-MSS	1000	672	376	39
	Long	AVS4-MSL	1500	672	376	56
AVS4L	Standard	AVS4-MSS	1000	822	376	39
	Long	AVS4-MSL	1500	822	376	56
AVS5	Standard	AVS5-MSS	1000	822	433	44
	Long	AVS5-MSL	1500	822	433	65
AVS6	Standard	AVS6-MSS	1000	915	545	64
	Long	AVS6-MSL	1500	915	545	89
AVS7	Standard	AVS7-MSS	1000	1013	575	41
	Long	AVS7-MSL	1500	1013	575	98
AVS8	Standard	AVS8-MSS	1000	1237	615	83
	Long	AVS8-MSL	1500	1237	615	114
AVS9	Standard	AVS9-MSS	1000	1237	615	92
	Long	AVS9-MSL	1500	1237	615	125

For details on system silencers see opposite.

For 500mm length silencers contact Nuaire.

QUICK SELECTION GUIDE

CODE	AV MOUNTS	FLEXIBLE CONNECTOR	ACOUSTIC FLEXIBLE CONNECTOR	END PANEL WITH RECTANGULAR SPIGOT (wxh)
AVS1	NAV3/A	CFC20	ACFXRD200	AVT1-RS (152 x 305)
AVS2	NAV3/A	CFC20	ACFXRD200	AVT2-RS (152 x 305)
AVS3	NAV3/A	CFC25	ACFXRD250	AVT3-RS (229 x 457)
AVS4	NAV3/A	CFC31	ACFXRD315	AVT4-RS (229 x 457)
AVS4L	NAV3/A	CFC31	ACFXRD315	AVT4-RS (229 x 457)
AVS5	NAV3/A	CFC40	ACFXRD400	AVT5-RS (229 x 457)
AVS6	NAV3/A	CFC40	ACFXRD400	AVT6-RS (304 x 762)
AVS7	NAV3/A	CFC50	ACFXRD500	AVT7-RS (381 x 889)
AVS8	NAV6/A	CFC50	ACFXRD500	AVT8-RS (381 x 889)
AVS9	NAV6/A	CFC50	ACFXRD500	AVT9-RS (381 x 889)

For details on system silencer see opposite.

The vertical support brackets are painted in goosewing grey finish.



INTERNALLY MOUNTED AIRE-VOLVE UNIT
CONSULTANT SPECIFICATION

VENTILATION SYSTEM DESCRIPTION

The extract fan shall be as indicated on the drawings and in accordance with the relevant fan schedule. The stale air shall be extracted from the space using an energy efficient demand ventilation principle; the system shall have its volume flow rate of air varied by a range of low voltage sensors and enablers.

FAN DESCRIPTION

The unit shall be double skinned with 35mm infill panels and shall be manufactured from heavy gauge, corrosion resistant Magnelis®* steel, internally lined with acoustic material. Fully detachable top or bottom panels for maintenance/service and manometer test points.

EC motors selected to provide the most energy efficient solution conforming to part L regulations. Units shall be direct or belt drive with high efficiency motors as standard, direct drive with EN60034-30 motors fitted with 'hall effect' air flow failure monitoring, units suitable for operation in ambient temperatures of 40°C. The Fan unit shall have a 5 year warranty. The unit and ancillaries shall be of the Aire-Volve type with Ecosmart controls as manufactured by Nuaire.

INSTALLATION REQUIREMENTS

The mechanical contractor shall ensure that all necessary ancillaries are included eg. AV mounts, flexible connections, attenuators, etc. The contractor shall allow for all necessary ductwork transformations to and from the fan unit and any associated components in accordance with the manufacturer's recommendations, DW 144 and general good practice.

SYSTEM OPERATION

The extract fan shall automatically vary its speed as it receives signals from one of the interconnected sensors. When the signal is received the fan shall either increase speed gradually until the required level is achieved or it will work on a trickle and boost principle. This will then move the fan duty point from trickle/background ventilation rate to the required boost ventilation rate. Both the trickle and boost rates are infinitely variable, easy to adjust and remove the need of a main balancing damper in accordance with Part L.

FAN CONTROL DESCRIPTION

The acoustically lined low noise fan shall be controlled by an integrated Ecosmart control panel mounted to the fan unit*. The Ecosmart control enables the fan's speed to be varied automatically as conditions in the ventilated space change by linking low voltage sensors or as the low voltage user control is adjusted. It also enables multiple fans to be directly interlinked.

The fans shall have the following energy saving and operational functions integrally installed within it, all components will be pre-wired and fitted by the manufacturer:

- Integral frequency inverter/speed controller
- Integral adjustable run-on timer
- Maximum and minimum speed adjustment/ setting (trickle and boost)
- Volt free run & failure/status indication
- 0-10V BMS interface for remote operation
- Low voltage interface with second fan or supply fan
- Multiple low voltage sockets for interconnection of sensors or fans
- Background ventilation/trickle enable switch. Fan, Ecosmart controls and associated sensors/ controllers shall be manufactured by Nuaire.

*AVS1 fan unit has a control supplied loose for remote mounting.

Nuaire's blowers are compliant to EC/327/2011.

INSTALLATION

By the appointed contractor. The Aire-Volve fan can be mounted in any orientation. To mount vertically, specifically designed brackets are available from Nuaire. Mechanical installation requires mounting of the extract unit in the designated position and connection to the associated duct work. Top or bottom access is available. Electrical installation requires the provision and connection of single or three phase electrical supply at the fan. The user control (ES-LCD/LCD2) and low voltage sensor are supplied complete with a 10m length of low voltage, pre-plugged cable.

COMMISSIONING

By the appointed qualified commissioning engineer in accordance with CIBSE commissioning.

Code A: Air Distribution Systems. The systems should be commissioned in the way described in the aforementioned document and the minimum and maximum speed adjustment with the Ecosmart control panel should be set to provide the required ventilation rates. These should be adjusted until the required air volume flow rate is achieved on the approved measuring device. The manufacturer's recommendations should be observed at all times.

*This range is offered with Magnelis® panelling as standard which provides an industrial finish, enabling enhanced corrosion resistance. Paint finishes are available for aesthetically critical applications.



AIRE-VOLVE CONSTANT PRESSURE
PERFORMANCE & TECHNICAL INFORMATION

CODING AVSCP2

AV

S

CP

2

1

2

3

4

SAMPLE CODING

1. Aire-Volve range

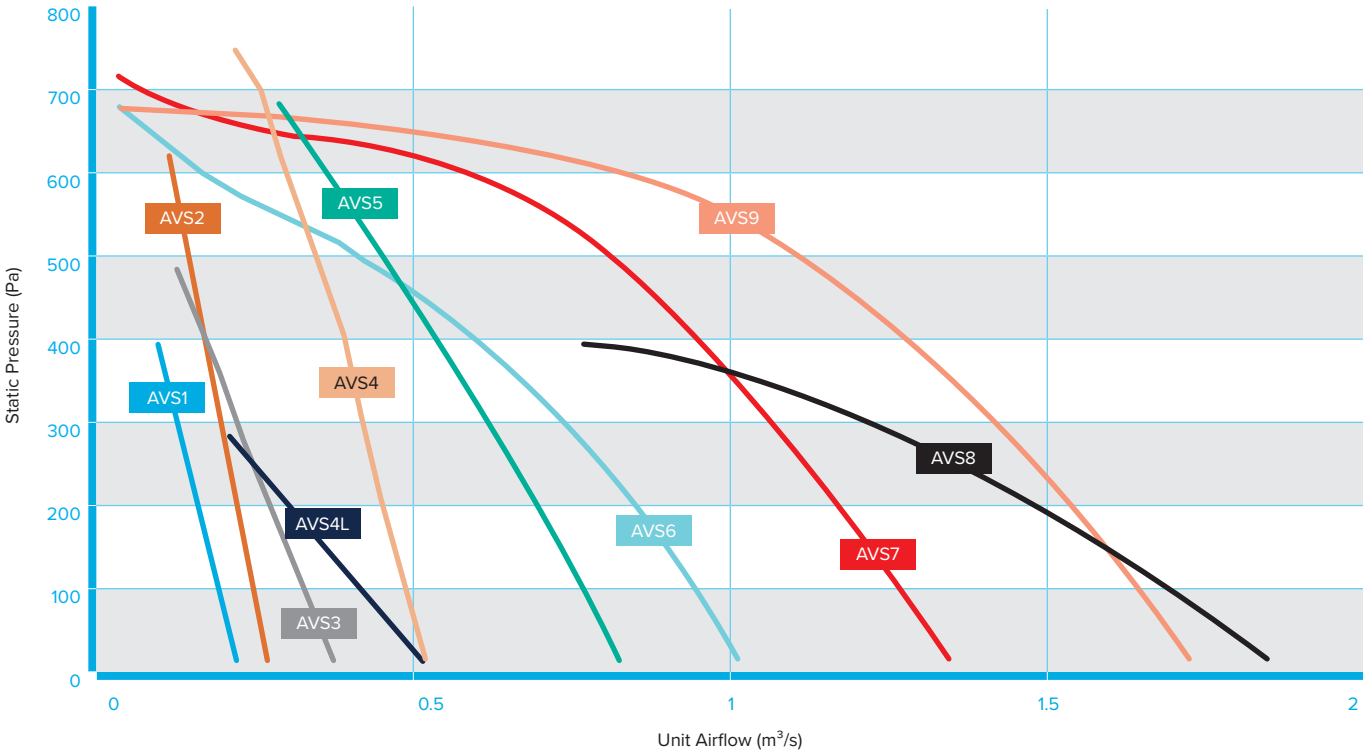
2. Single fan

3. Constant pressure control options

4. Case size 2-9



PERFORMANCE CHART



ELECTRICAL AND SOUND

1. Unweighted induct inlet octave band Sound Power level - dB re 1pW
2. Unweighted induct outlet octave band Sound Power level - dB re 1pW
3. Casing radiated octave band Sound Power level - dB re 1pW

CODE	DUCT CONN.	SUPPLY (V/Freq Hz/Phase)	FLC (amps)	SC (amps)	INPUT POWER (Max) (W)	FAN SPEED (Nominal)		FREQUENCY (Hz)								*CASING RADIATED FREE FIELD dBA @ 3m (Spherical Radiation)
								63	125	250	500	1K	2K	4K	8K	
AVSCP2	200	230/50/1	1.4	1.4	170	4000	1	79	75	69	69	66	62	58	56	26
							2	81	77	69	69	69	65	59	57	
							3	67	59	49	40	31	27	29	23	
AVSCP3	250	230/50/1	1.35	1.35	170	2500	1	78	74	79	67	63	59	53	51	31
							2	82	77	79	74	69	68	58	58	
							3	68	59	59	45	31	30	28	24	
AVSCP4	315	230/50/1	3.1	3.1	500	3400	1	84	80	81	83	78	75	71	67	36
							2	87	84	80	84	84	81	75	68	
							3	73	66	60	55	46	43	45	34	
AVSCP4L	315	230/50/1	1.1	1.1	160	1700	1	72	67	67	66	60	57	53	48	29
							2	74	69	69	70	69	62	58	52	
							3	66	57	55	45	37	30	32	22	
AVSCP5	315	230/50/1	3.5	3.5	550	2400	1	74	71	69	68	62	61	57	52	25
							2	76	73	71	72	71	66	62	56	
							3	62	55	51	43	33	28	32	22	
AVSCP6	400	230/50/1	2.9	2.9	450	1700	1	77	80	74	72	66	65	61	54	30
							2	80	82	74	73	67	66	63	56	
							3	66	64	54	44	29	28	33	22	
AVSCP7	400	230/50/1	3.5	3.5	790	1700	1	78	76	73	73	67	65	62	57	29
							2	81	77	74	75	74	71	67	61	
							3	67	59	54	46	36	33	37	27	
AVSCP8	500	230/50/1	3.2	3.2	710	1100	1	74	76	71	66	62	64	60	54	27
							2	76	78	73	71	71	69	64	57	
							3	62	60	53	42	33	31	34	23	
AVSCP9	500	400/50/3	1.85	1.85	1000	1500	1	79	77	76	73	66	66	66	58	32
							2	81	78	79	78	76	72	70	61	
							3	67	60	59	49	38	34	40	27	

*Break out fan only: These figures are available at 1m dBA, please contact Nuaire.

PRECISE VENTILATION. THE ONLY MULTI-ROOM VENTILATION SYSTEM TO PROVIDE LOCAL 'ON DEMAND' CONTROL.

QUIET OPERATION

Does not generate noise by throttling back on balancing dampers required in conventional systems.

DUCT MOUNTED CVD DAMPERS

For unobtrusive flexibility.

SAVES ENERGY

Up to 70% saving over conventionally controlled central systems. Doesn't needlessly extract conditioned air. Fan speed/motor power is dictated by demand requirement.

UNIQUE DIRECT ACTING MULTI-POSITIONED DAMPER NRG GRILLE

Ensures operation only when room is occupied with integrated PIR2.

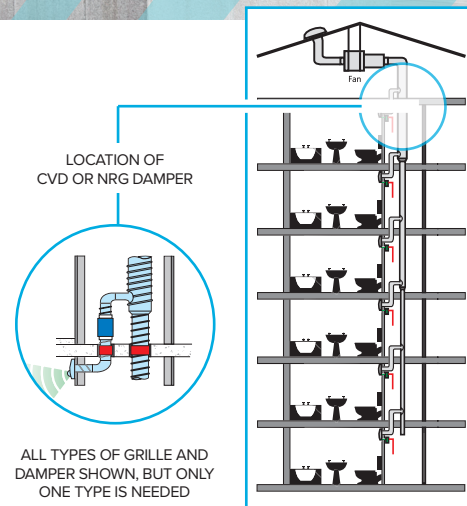
MATCHED DOUBLE WALLED SILENCERS

Magnelis® silencers with 35mm acoustic in fill provides the quietest solution.

PRE-WIRED

All components are assembled, wired and tested at Nuaire facility, simple 'plug and go'.

ECOSMART OPTIONS AVAILABLE



INTERNALLY MOUNTED AIRE-VOLVE UNIT WITH CONSTANT PRESSURE CONSULTANT SPECIFICATION

VENTILATION SYSTEM DESCRIPTION

The extract fan shall be as indicated on the drawings and in accordance with the relevant fan schedule. The vitiated air shall be extracted from the space using an energy efficient constant pressure principle via a variable air volume motorised damper/grille installed in each area, as detailed in the schedule.

SYSTEM OPERATION

The extract fan shall automatically vary its speed as the system pressure varies; the variation in pressure is caused by the opening and closing of the Nuaire inline CVD or surface mounted NRG damper. The damper is autonomous of the fan and requires no field wiring connecting it to the fan. The damper positions are open (boost) and closed (trickle). The inline damper has an integrated airflow sensor which continuously monitors and controls the amount of air being moved. (The air volume is adjusted via minimum and maximum potentiometers on the side of the CVD damper and a run on timer). The damper/grille shall be as manufactured by Nuaire.

The duct mounted damper CVD requires a 230V connection/power supply. Signal from 230V switch live ie. light switch, PIR, humidistat etc. (If the NRG grille is installed it shall be connected to a 12V ac supply via the inclusive 230V transformer unit and has an integral PIR, two position damper and overrun timer). Once commissioned and set to work, the fan will maintain the preset pressure by varying its speed as the ventilation requirement within each area varies ie. as dampers open and close. If the requirement exceeds the maximum or minimum limit, the fan will remain at the design/ limiting speed.

FAN CONTROL DESCRIPTION

The acoustically lined low noise fan shall be controlled by an integrated Ecosmart control panel mounted* adjacent to the fan unit. The Ecosmart control enables the fan's speed to be varied automatically as conditions in the ventilated space change by linking low voltage sensors or as the low voltage user control is adjusted. It also enables multiple fans to be directly interlinked.

The fans shall have the following energy saving and operational functions integrally installed within it, all components will be pre-wired and fitted by the manufacturer:

- Integral frequency inverter/speed controller
- Integral adjustable run-on timer
- Maximum and minimum speed adjustment/ setting (trickle and boost)
- Volt free run & failure/status indication
- 0-10V BMS interface for remote operation
- Low voltage interface with second fan or supply fan
- Multiple low voltage sockets for interconnection of sensors or fans
- Background ventilation/trickle enable switch. Fan, Ecosmart controls and associated sensors/ controllers shall be manufactured by Nuaire.

CVD FEATURES

- Trickle/boost flow rate.
- Run on timer.
- Externally adjusted settings.
- CVD acts as a balancing damper.
- MEMS (air flow sensor) provide precise measurements and control of flow rate.

The Fan unit shall have a 5 year warranty, first year parts and labour the remainder parts only.

*AVSCP1-ES unit has a control supplied loose for remote mounting and size 1 is not available with Constant Pressure.

INSTALLATION

By the appointed contractor. The Aire-Volve fan can be mounted in any orientation. To mount vertically, specifically designed brackets are available from Nuaire. Mechanical installation requires mounting of the extract unit in the designated position and connection to the associated duct work. Top or bottom access is available for quick and easy installation and maintenance. Electrical installation requires the provision and connection of single or three phase electrical supply at the fan. The user control and low voltage sensor are supplied complete with a 10m length of low voltage, pre-plugged cable.

COMMISSIONING

By the appointed qualified commissioning engineer in accordance with CIBSE commissioning Code A: Air Distribution Systems.

The systems should be commissioned in the way described in the aforementioned document and the minimum and maximum speed adjustment with the Ecosmart control panel should be set to provide the required ventilation rates. These should be adjusted until the required air volume flow rate is achieved on the approved measuring device. NOTE: NRG & CVD should not be mixed on same system. The manufacturer's recommendations must be observed at all times.

*This range is offered with Magnelis® panelling as standard which provides an industrial finish, enabling enhanced corrosion resistance. Paint finishes are available for aesthetically critical applications.



COMMERCIAL

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WESTERN INDUSTRIAL ESTATE | CAERPHILLY | CF83 1NA
T 029 2085 8200 **F** 029 2085 8300 **E** INFO@NUAIRE.CO.UK
WWW.NUAIRE.CO.UK

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