



Kitchen Axial Fan (KAF)

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Features & Benefits

- Fully ERP 2015 Compliant
- Designed to operate at elevated temperatures (70 °C max).
- All models speed controllable via matched eDemand inverter controls
- Robust motor construction for aggressive conditions
- Die cast aluminium impellers.
- IP65 motor and terminal box, suitable for internal or external mounting as standard
- Motor insulation class H, suitable for induct operating temperatures of -40 °C to + 70 °C
- Standard Thermal overload Protection
- Maximum Operating temperature indicator label
- Available from 450 to 630 diameter, Single or Three Phase
- Manufacture controlled to BS EN ISO 9001.
- Performance tested to BS 848 Parts 1 & 2.

The ever tightening requirement for Kitchen Ventilation systems with higher filtration levels and long duct runs requires a powerful and yet compact Fan to provide a cost effective controllable ventilation solution suitable for operating reliably in these atmospherically aggressive installations.

A first within the H&V industry Vent-Axia's New Kitchen Axial Fan range provides such a solution offering robustly engineered fans and motors designed and tested for operation at elevated temperatures (up to 70 °C induct) whilst utilising speed control. By utilising Vent-Axia's advanced eDemand Inverter controls provides accurate and reliable control functionality whilst offering substantial running cost reductions and noise control.

Available in four sizes: 450, 500, 560 and 630mm diameter with a performance envelope from 0.65m³/s to 5.93m³/s and pressure development of up to 600 Pa. Ensuring a compact design, the

units have been constructed from a single sheet of steel, with a single 2 pole motor and axial impeller mounted within the length of the unit casing. The unit is manufactured from electro welded steel with an epoxy paint finish. Factory assembled to BS EN ISO 9001 ensuring a quiet and vibration free unit.

All sizes are protected with a tough black epoxy paint finish for those harsh environmental conditions, internally or externally. Ensuring ease of installation the motor is wired directly into a single IP65 terminal box.

Axial Impellers

The impeller is manufactured in die-cast aluminium and fitted with narrow profiled blades, which provide the maximum efficiency at the maximum airflow. Airflow is Form A to ensure maximum cooling airflow over the motor.

Motors

Specifically designed and this range of fans and the expected environmental conditions. Greased for life ball bearings with temperature resilient grease specially selected to operate at the elevated temperatures likely to be encountered in Kitchen Applications whilst allowing the fans to be installed at any angle. Rotors are dynamically balanced to ISO 1940 grade G6.3. Motors are protected to IP65 against dust and water jets complying with BS EN 60529. They have ribbed aluminium body castings and are mounted towards the airstream for efficient cooling. Motor insulation is Class 'H' (from -40°C to +70°C). All models are speed controllable by either voltage control or frequency inverter (see electrical section for details).

Electrical

Single phase 220-240V/50 Hz. Capacitor start and run. Three phase 380V-415V/50Hz. All motors are fitted with Standard Thermal Overload Protection (S.T.O.P), which should be wired into all controller circuits and into starter contactors.

Terminal Box

IP65 terminal box is supplied with all models with 20mm PGII entry.

Performance

The fan performance is tested and certified in accordance with BS 848 Part 1 1980.

Sound Levels

Fan sound levels, measured in a reverberant chamber in accordance with BS848 part 2 published dB(A) figures are free field sound pressure levels at 3m with spherical propagation at reference level of 2 x 10⁻⁵Pa (20 micro-pascal). The sound power level spectra figures are dB with a reference level of 10⁻¹² Watts (1 pico-watt). To ensure minimum noise levels during speed control, an auto transformer speed control is recommended.

Accessories

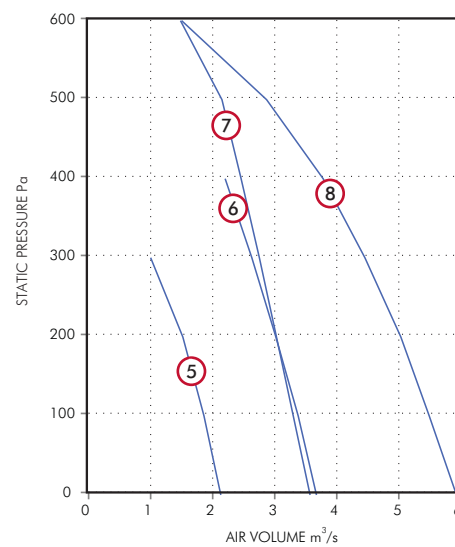
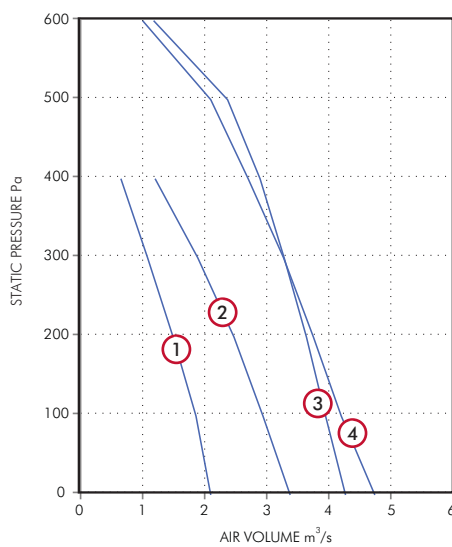
- eDemand Inverter speed Controllers
- Auto Transformer Speed Controllers
- Mounting ancillary Packs
- Cased Attenuators
- Mounting Feet
- Wire Inlet Guard
- Coupling Flanges

Warranty

Standard 2 year warranty, extendable to 5 years by registration subject to installation and maintenance in accordance with fitting and operating instructions supplied with product.



Performance Curve



Performance Guide

Stock Ref	Speed		Performance										Motor kW	Amps S.C.	Amps F.L.C.	
	RPM	Phase	Pole	Curve	0	50	100	150	200	300	400	500				600
KAF45012	2850	1	2	①	2.1	2	1.86	1.69	1.49	1.08	0.65			1.1	29	6.6
KAF50012	2850	1	2	②	3.38	3.2	2.94	2.73	2.47	1.89	1.2			1.5	35	7.8
KAF56012	2800	1	2	③	4.27	4.1	3.95	3.81	3.64	3.28	2.89	2.37	1.18	2.2	66	15
KAF63012	2860	1	2	④	4.74	4.5	4.2	4	3.75	3.27	2.7	2.1	1.00	3	80	13.5
KAF45032	2830	3	2	⑤	2.13	2	1.86	1.72	1.52	1				1.1	11	2
KAF50032	2830	3	2	⑥	3.67	3.56	3.38	3.23	3.02	2.63	2.2			1.5	17	3.4
KAF56032	2760	3	2	⑦	3.57	3.45	3.3	3.16	3.03	2.75	2.46	2.15	1.48	2.2	32	4.9
KAF63032	2785	3	2	⑧	5.93	5.69	5.49	5.26	5.03	4.45	3.78	2.87	1.5	4	66	7.8

Sound Power Level Spectra dB (re 10⁻¹²Watts)

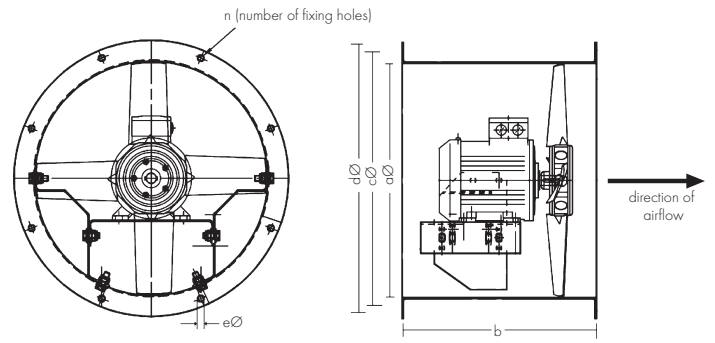
Stock Ref	Phase	Pole	125	250	500	1k	2k	4k	8k	dBA @ 3m	
KAF45012	Inlet/Outlet	1	2	70	71	79	82	82	79	74	67
KAF50012	Inlet/Outlet	1	2	70	76	79	81	81	80	75	67
KAF56012	Inlet/Outlet	1	2	79	94	97	99	98	94	86	78
KAF63012	Inlet/Outlet	1	2	79	90	98	99	98	97	91	81
KAF45032	Inlet/Outlet	3	2	63	73	80	82	83	81	76	68
KAF50032	Inlet/Outlet	3	2	69	80	83	84	85	84	80	70
KAF56032	Inlet/Outlet	3	2	86	98	97	97	92	87	80	75
KAF63032	Inlet/Outlet	3	2	79	90	98	98	99	97	91	81

Published dB(A) figures are free field sound levels at 3m with spherical propagation at a reference level of 2x10⁻⁵ Pa. The free field sound power level spectra figure are dB with reference of 10⁻¹² Watts. To ensure minimum noise levels during speed control an auto transformer or inverter speed controller is recommended.

Kitchen Axial Fans (KAF)

Fan Dimensions (mm)

Size	øa	b	øc	ød	øe	n	kg approx
450	450	375	500	530	12	8	41
500	500	375	560	590	12	12	46
560	560	520	620	650	12	12	59
630	630	520	690	720	12	12	64



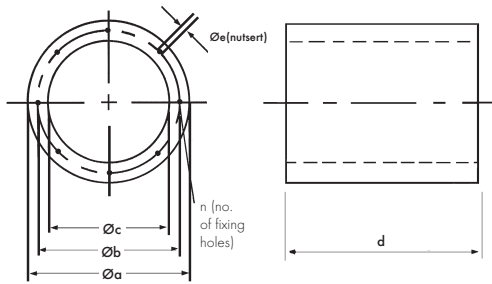
Attenuator Insertion Losses

Dia	63	125	250	500	1k	2k	4k	8k
450	2	4	6	14	17	12	10	6
500	3	4	7	14	17	14	11	7
560	3	4	8	15	18	14	11	7
630	3	4	8	16	18	14	11	7

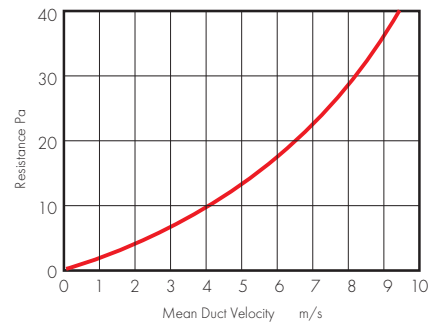
Attenuator Fitted with Pod Insertion Losses

Dia	63	125	250	500	1k	2k	4k	8k
450	4	8	14	20	28	26	23	19
500	4	8	14	20	29	26	23	19
560	4	9	14	20	29	26	23	19
630	4	9	14	20	29	26	23	19

Accessories Dimensions (mm)



Resistance Graph For Case Attenuator Fitted With Pod

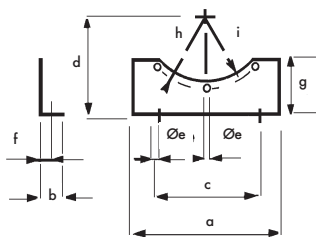


Case Axial Attenuator

Dia	øa	bØ	øc	d	øe*	n	kg	Fitted with pod	Free area
							approx	kg approx	m ² without pod
450	550	500	450	675	M10	8	50	73	0.159
500	600	560	500	750	M10	12	59	87	0.196
560	660	620	560	840	M10	12	70	102	0.246
630	730	690	630	940	M10	12	82	120	0.312

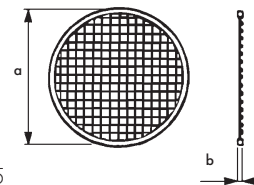
*Threaded hole to take bolt

Mounting Feet



Stock Ref.	a	b	c	d	øe	f	g	h	i
10503450	384	24	315	315	12	14	155	250	238
10503500	425	24	315	315	12	14	135	280	268
10503560	475	24	355	355	12	14	155	310	298
10503630	520	24	400	400	12	14	175	345	333

Inlet Wire Guard



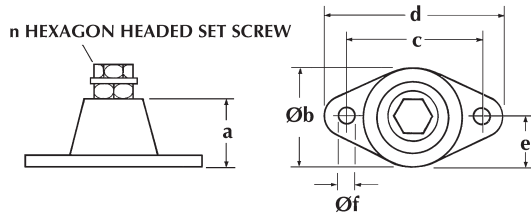
'K' factor loss 0.25

Stock		
Ref. No.	øa	b
10505450	525	3
10505500	595	3
10505560	655	3
10505630	725	3

For more information on the 'K' factor, refer to General Information Section

Accessories Dimensions (mm)

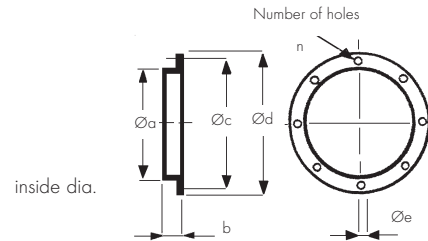
Anti-Vibration Mounts



* Stock	Ref. No.	a	Øb	c	d	e	Øf	n	Max load kg
	10523033	27	37	54	67	18.5	7	M8	23

* 4 required per fan

Coupling Flange



Stock	Ref. No.	Øa	b	Øc	Ød	Øe	n
	10506450	450	60	500	537	12	8
	10506500	500	60	560	595	12	12
	10506560	560	75	620	655	12	12
	10506630	630	75	690	725	12	12

Accessories

Mounting

	Ancillary Pack *	Case Axial Attenuator	Case Axial Attenuator in pod	Mounting Feet	Coupling Flange	Inlet wire guard	Anti Vibration Mounts #
KAF45012	10513450	10514450	10500450	10503450	10506450	10505450	10523033
KAF50012	10513500	10514500	10500500	10503500	10506500	10505500	10523033
KAF56012	10513560	10514560	15000560	10503560	10506560	10505560	10523033
KAF63012	10513630	10514630	10500630	10503630	10506630	10505630	10523033
KAF45032	10513450	10514450	10500450	10503450	10506450	10505450	10523033
KAF50032	10513500	10514500	10500500	10503500	10506500	10505500	10523033
KAF56032	10513560	10514560	15000560	10503560	10506560	10505560	10523033
KAF63032	10513630	10514630	10500630	10503630	10506630	10505630	10523033

Manual Starter

eDemand Controls**

	Starter	Overload	Single phase inverter	Single phase in 3 phase out inverter	3 Phase inverter	Voltage control	Transformer control
KAF45012	444744	444705	444171	x	x	444165	10314113
KAF50012	444744	444705	444171	x	x	444165	10314113
KAF56012	444744	444707	x	x	x	x	x
KAF63012	444744	444707	x	x	x	x	x
KAF45032	444747	444702	x	444177	444172	444166	10314304
KAF50032	444747	444702	x	444177	444173	444166	10314304
KAF56032	444747	444703	x	444177	444173	x	x
KAF63032	444747	444705	x	x	444174	x	x

* Includes 4 Anti vibration mounts, 2 mounting feet, 2 flanges and 2 flexible connectors

** For Manual control requires Speed potentiometer 426332

4 required per fan

x Not suitable

eDemand Controllers Frequency Inverter



Features & Benefits

- Demand ventilation control for A/C speed controllable Fans
- Quick start-up by pre-programmed modes
- IP54 Rated
- Total motor protection using thermistor connection
- LCD multi function display
- Menu language – English, German, French, Italian
- 2 x analogue input for sensors (0-10V – separate power supply required, 0-20mA)
 - CO₂ Control
 - Temperature Control
 - Constant Pressure Control
 - Manual remote speed adjuster (0-20 mA)
- Min/Max speed limitation
 - Volume range set point adjustment
- 2 x Programmable relay output
 - Fault Condition, master slave
- Programmable 2x Digital inputs – On/Off, external fault, Manual speed control
- RS485 Modbus Interface
- Master/Slave capability via 0-10V output

Equipment/Function

- Pin protection, to save user settings
- Quick start up by pre-programmed modes
- Integrated SINEFILTER
- Max environmental conditions 40 °C, 85% Humidity no condensation
- Readout events memory (checking Fault log)
- Speed control of fans without additional (electromagnetic) motor noise
- Integrated SINEFILTER between phase to phase & phase to ground
- Parallel operation of fans, no risk of motor damage (screened motor cables are not required)
- Active power factor adjustment for sinusoidal input current Integrated process controller (PID free programmable)

Technical

Frequency Inverter 1 Phase to 3 Phase

Line voltage 1~ 208 ... 277 V (+/-10%), 50/60 Hz
Output voltage 3~ 230V (max. 250V) for 3~ motors in Δ connection

Stock Ref	444177
Voltage	1 Phase
Rated current / A	5
Max. line fuse / A	10
Max. heat dissip. /W	205
Weight / kg	6.6

Frequency Inverter 3 phase

Line voltage 3~ 208..480 V (-1.5/+10%), 50/60 Hz

Stock Ref	444172	444173	444174
Rated current / A	2.5	5	8
Max. line fuse / A	6	10	10
Max. heat dissip. /W	50	100	150
Weight / kg	3.3	7.2	7.9

Frequency Inverter 1 phase

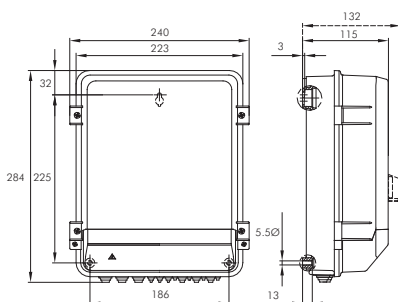
Line voltage 1~ 208 .. 277 V (+/-10%), 50/60 Hz

Stock Ref	444171
Voltage	1 Phase
Rated current / A	10
Input rated Current/ A	-
Max. line fuse / A	16
Max. heat dissip. /W	130
Weight / kg	6.8

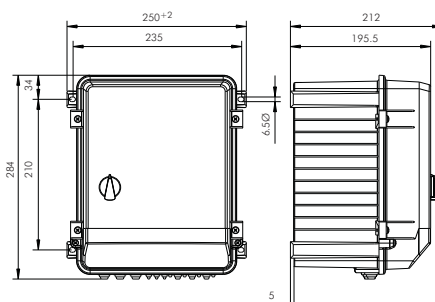
Max output Frequency 100 Hz, Clock frequency 16 Hz
Interference emissions EN 61000-6-3 (unshielded cable)
Interference immunity EN 61000-6-2

For suitability check relevant fan accessory section.

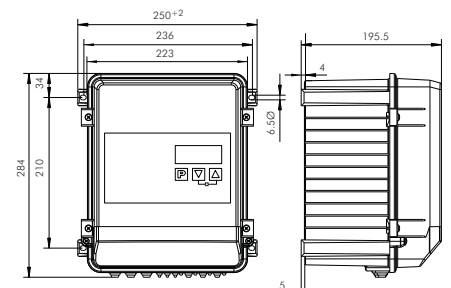
Dimensions (mm)



Stock Ref 444172



Stock Ref 444171



Stock Ref 444173, 444174, 444177

eDemand Controllers Electronic Voltage Controller



Features & Benefits

- Demand ventilation control for A/C speed controllable Fans
- Quick start-up by pre - programmed modes
- IP54 Rated
- Total motor protection using thermistor connection
- LCD multi function display
- Menu language – English, German, French, Italian
- 2 x analogue input for sensors (0-10V – separate power supply required, 0-20mA)
 - CO₂ Control
 - Temperature Control
 - Constant Pressure Control
 - Manual remote speed adjuster (0-20 mA)
- Min/Max speed limitation
 - Volume range set point adjustment
- 2 x Programmable relay output
 - Fault Condition, master slave
- Programmable 2x Digital inputs – On/Off, external fault, Manual speed control
- RS485 Modbus Interface
- Master/Slave capability via 0-10V output

Equipment/Function

- Mains switch with by-pass function
- Pin protection, to save user settings
- Quick start up by pre-programmed modes
- Max environmental conditions 40 °C, 85% Humidity no condensation
- Readout events memory (checking Fault log)

Technical

Line voltage 1~ 230V (-15% / + 10%)
50/60 Hz

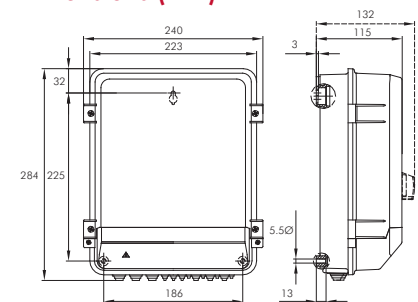
Line Voltage 3~208V - 415V (-10%/+6%)
50/60 Hz

Stock Ref	444165	444166
Voltage	1 Phase	3 Phase
Rated current / A	10	5
Max. line fuse / A	16	10
Max. heat dissip. /W	40	25
Weight / kg	2.4	2.4

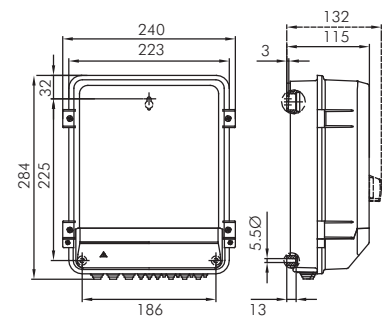
Interference emissions EN 61000-6-3
(unshielded motor cable)

Interference immunity EN 61000-6-2

Dimensions (mm)



Stock Ref 444165



Stock Ref 444166



By Appointment to H.M. The Queen
Suppliers of Unit Ventilation Equipment
Vent-Axia, Crawley, West Sussex

Vent-Axia®

VENT-AXIA CONTACT NUMBERS

Free technical, installation and sales advice is available

Sales Centre:

Domestic & Commercial

Sales Tel: 0844 856 0590
Sales Fax: 01293 565169
Tech Support Tel: 0844 856 0594
Tech Support Fax: 01293 539209

Industrial

Sales Tel: 0844 856 0591
Sales Fax: 01293 534898
Tech Support Tel: 0844 856 0595
Tech Support Fax: 01293 455197

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Email: sales@vent-axia.com

Supply & Service

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A British company supporting British manufacturing
Vent-Axia Group Ltd Right products, right price, right here!