This Fan! 12th edition

ebmpapst

The engineer's choice

Sustainability is at the Centre of Our Thoughts and Actions. Out of Conviction!

For decades, we have worked according to the simple but strict creed of our co-founder Gerhard Sturm: "Each new product we develop has to be better than the last one in terms of economy and ecology." GreenTech is the ultimate expression of our corporate philosophy.

GreenTech is pro-active development.

Even in the design phase, the materials and processes we use are optimised for the greatest possible eco-friendliness, energy balance and – wherever possible – recyclability. We continually improve the material and performance of our products, as well as the flow and noise characteristics.

GreenTech is eco-friendly production.

GreenTech also stands for maximum energy efficiency in our production processes. It spans all areas such as the responsible sourcing of materials, production in state-of-the-art facilities and use of recyclable packaging.

GreenTech is acknowledged and certified.

Every step in our chain of production meets the stringent standards of environmental specialists and the public. Our complete range of EC products is already well above the thresholds of ErP 2015.

GreenTech pays off for our customers.

EC technology is at the core of our most efficient motors and fans. It allows efficiencies of up to 90%, saves energy at a very high level, significantly extends service life and makes our products maintenance-free.

In this catalogue we have identified all high efficiency EC products with green text and ✓ logo.
EC fans can lower power consumption by up to 90%.

Quality
ISO 9001
SAI GLOBAL

This is a short form catalogue directed at the replacement market, and therefore is intentionally brief.

Local Product
ebm-papst stocks many thousands of different fans and motors in Australia and New Zealand for the local market. This catalogue covers the products typically used in Australia and New Zealand.

Imported Product
There are however overseas manufacturers products imported into Australia & New Zealand using our fans and motors, which we may not stock locally. Usually a locally stocked fan or motor will satisfactorily replace the original. As we have products for a wide range of different power supplies, when replacing components of imported product it is very important to check operating voltage and frequency as well as air flow direction.

Product Identification
Identification labels are located on all fans when leaving the factory; correct identification will make replacement an easy exercise – see pages 8 to 9 for more identification information.

Warranty
All ebm-papst labelled products carry 2 years warranty from date of purchase, subject to correct use and application. Specific warranty details are available on request.

Availability
To locate your nearest wholesaler contact ebm-papst on 1800 764 440 in Australia or (09) 837 1884 in New Zealand or check our website www.ebmpapst.com.au or www.ebmpapst.co.nz.

Disclaimer
Whilst every care has been taken in compilation of this catalogue, ebm-papst A&NZ Pty Ltd take no responsibility for any errors or inaccuracies.

Sound Data
For the purpose of this catalogue, all sound data has been corrected to approximate sound pressure (dBA) at 1 metre measured on the inlet side of the fan at 0 Pa except where stated sound power – see note (3) under each technical table.

Index

Certified System™
Quality
ISO 9001
SAI GLOBAL

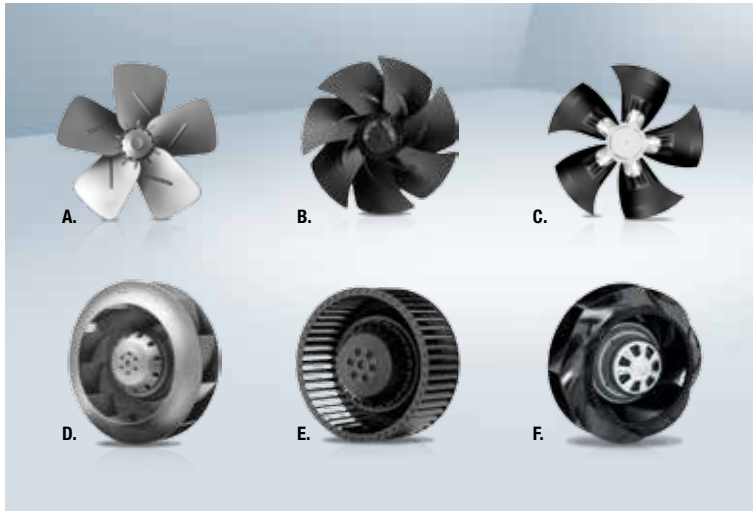
GREEN TECH

Environmental Management
ISO 14001

1. What style of impeller does it have?	
Looks like a propeller	Axial **(A, B or C)**
Looks like a rotating drum	Centrifugal or radial **(D, E or F)**

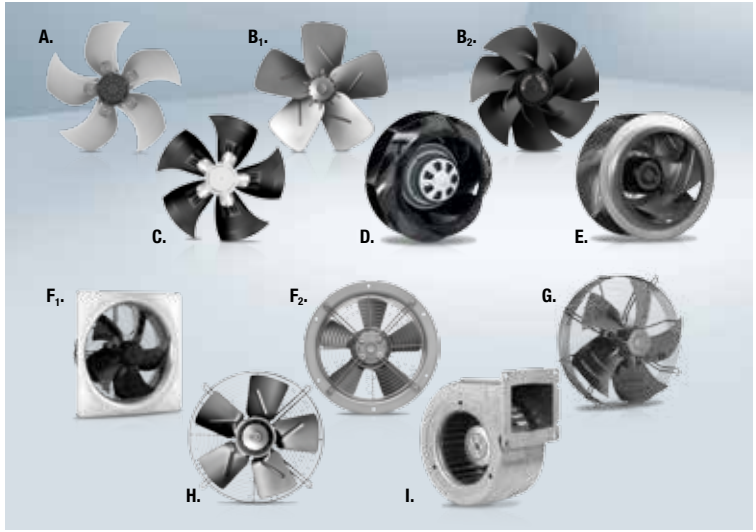
2. What is the diameter?	
Axial	
Up to 1250mm	
Radial	
Up to 900mm	

3. Blade style	
Axial	
Straight blades (typically 5)	'A' Blades **(A)**
Sickle shaped blades (5, 7 or 9)	'S' Blades **(B)**
HyBlade (3 or 5)	HyBlade **(C)**
Radial	
Few blades	Backward curve centrifugal **(D or F)**
Many blades	Forward curve centrifugal **(E)**



4. What type of blade material?	
Axial	
Die-cast alloy	‘S’ Blade (Bolted Fastening) **(A)**
Welded sheet steel	**(B)**
HyBlade (composite plastic)	**(C)**
Radial	
Plastic	**(D)**
Aluminium sheet	**(E)**

5. What mounting style or housing?	
Axial	
Wall plate square or round	**(F_1 or F_2)**
Basket grille	**(G)**
Flat grille	**(H)**
No mounting	**(A, B or C)**
Radial	
No Housing	(Commonly) backward curve **(D or E)**
Housing	(Commonly) forward curve **(I)**

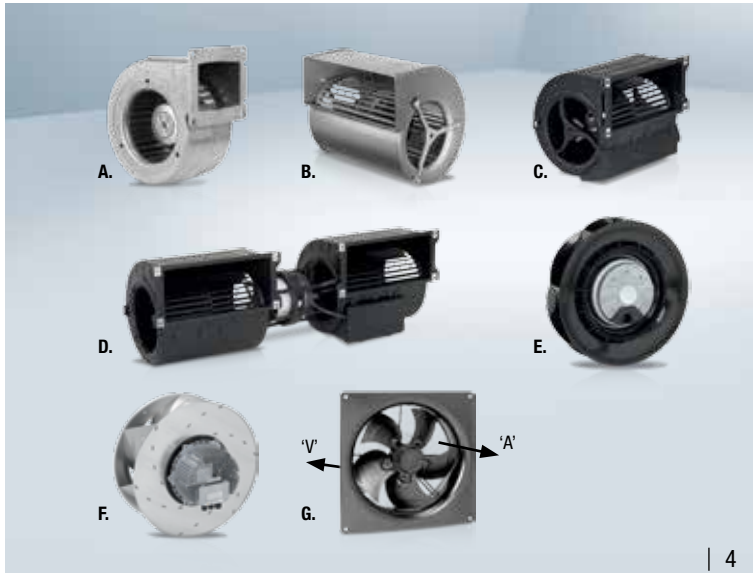


Photos and drawings may not be a correct representation of all products. | 3

5. What mounting style or housing? (continued)	
Radial	
Scroll housing 1 inlet	**(A)**
Scroll with 2 inlets	**(B, C, D)**

6. AC or EC motor (EC has electronics built into the back of the motor)	
AC	**(E)**
EC	**(F)**

7. Which way does the air flow?	
Axial	
When looking at rotor (spinning part) does the air:	
Blow in your face?	Air flow 'A' **(G)**
Blow away from your face?	Air flow 'V' (out over mounting brackets) **(G)**
Radial	
At 90° angle to the motor	

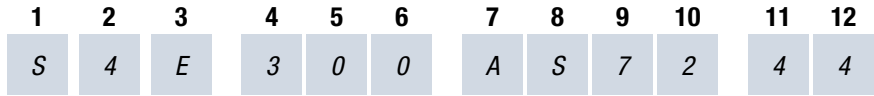


8. What is the power supply? (Don't count the leads, this is not an indication)	
Single Phase (230V), Three Phase (400V) or DC	
If a capacitor is present	Single phase
(Other Voltage may apply if from imported equipment)	

9. What speed? (Most customers may not know this if the label has worn off)	
~2800rpm	2 pole
~1440rpm	4 pole
~960rpm	6 pole
~720rpm	8 pole
Not applicable to EC motors	

10. What colour?	
Either black or unpainted	

11. What has it come off?	
Imported equipment	We can only offer the closest alternative
Local equipment	Which brand? We may be able to work out what the model is



1 ‘A’ bare fan & motor, ‘S’ with wire grille flat or basket, ‘W’ with square or round wall plate

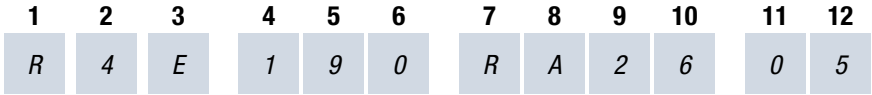
2 number of poles (speed), 2, 4, 6 or 8, (in the case of EC products (1 or 3 core) it is not representative of speed)

3 motor type (S = shaded pole, D = 3-phase, E = 1-phase, G = EC)

4 5 6 impeller diameter (mm)

7 8 9 10 11 12 fan & motor configuration

ebm-papst Radial / Centrifugal Fan Part Number



1 — ‘R’ bare fan & motor, ‘G’ forward curved (single inlet) with housing, ‘D’ forward curved (double inlet) with housing

2 — number of poles (speed), 2, 4, 6 or 8, (in the case of EC products (1 or 3 core) it is not representative of speed)

3 — motor type (S = shaded pole, D = 3-phase, E = 1-phase, G = EC)

4 5 6 — impeller diameter (mm)

7 8 9 10 11 12 — fan & motor configuration

ebm-papst Axial

ebm-papst Forward Curve

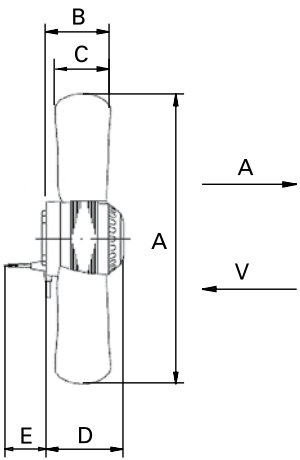
ebm-papst EC Axial

ebm-papst Q-motor

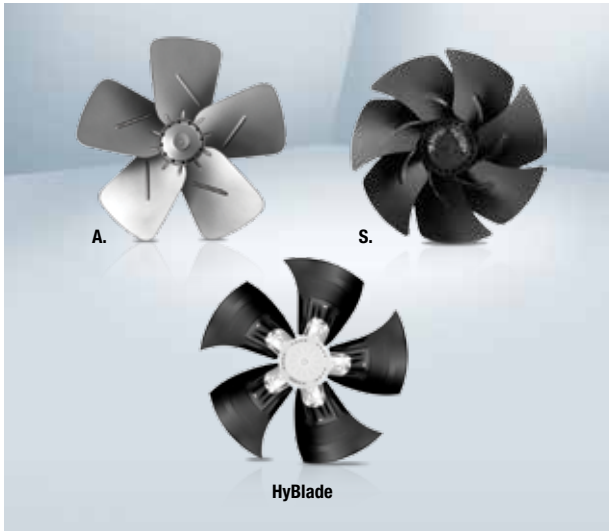
ebm-papst Radial

ebm-papst Compact

ebm-papst Radial Foot Mount



MAY HAVE LEAD OR JUNCTION BOX

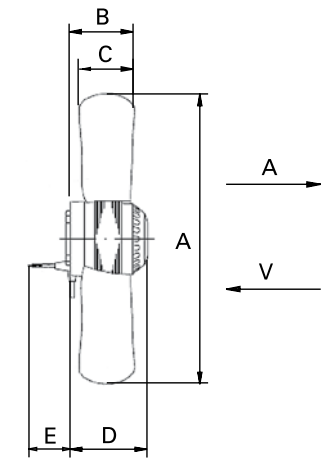


Dimensions

Part No.	Style	A	B	C	D	E
A2E200AK3801	S	197	61	39	62	450
A2E200AI3801	S	197	62	35	62	450
A4S200AH0401	S	197	56	39	62	450
A4S200AI0401	S	197	56	39	62	450
A2E250AE6502	A	250	66	39	83	450
A2E250AL0601	S	251	52	34	72	450
A4S250AH0201	S	251	52	34	72	450
A4S250AI0201	S	251	57	34	72	450
A2D300AP0224	S	298	68	38	104	450
A2E300AC4702	A	300	50	20	98	450
A2E300AP0201	S	300	68	38	104	450
A4E300AA0341	A	300	76	56	83	350
A4E300AB0322	A	300	76	56	83	450
A4E300AB0323	A	300	76	56	83	450
A4D350AR0601	S	352	102	92	102	600
A4E350AA1032	A	353	91	70	102	350

Part No.	Style	Air flow direction	Voltage	Frequency	Air volume	Speed	Power input	Current	Capacitor	Noise level (see inside cover)	Max. air temperature	Approx weight	Wiring diagram	Motor type	Notes
			V		m^3/Hr	RPM	W	A	µF/V	dBa@1M	°C	kg			
A2E200AK3801	S	V	230	50	910	2650	60	0.28	1.5/450	70	70	1.4	A1	AC	(2)
A2E200AI3801	S	A	230	50	890	2600	64	0.3	1.5/450	65	70	1.4	A1	AC	(2)
A4S200AH0401	S	V	230	50	470	1370	30	0.21		42	75	1.2	B	AC	(2)
A4S200AI0401	S	A	230	50	470	1370	30	0.21		42	75	1.2	B	AC	(2)
A2E250AE6502	A	A	230	50	1610	2550	115	0.51	4.0/400	72	55	22	A1	AC	(2)
A2E250AL0601	S	V	230	50	1820	2450	115	0.51	3.0/400	69	65	1.9	A1	AC	(2)
A4S250AH0201	S	V	230	50	1000	1390	69	0.53		54	60	1.7	B	AC	(2)
A4S250AI0201	S	A	230	50	1000	1390	69	0.53		54	60	1.7	B	AC	(2)
A2D300AP0224	S	A	400	50	3130	2580	210	0.36		72	55	3	F2a	AC	(2)
A2E300AC4702	A	A	230	50	2440	2650	140	0.62	5.0/400	75	55	2.5	A1	AC	(2)
A2E300AP0201	S	V	230	50	3140	2700	230	1.1	8.0/400	73	50	3	A1	AC	(2)
A4E300AA0341	A	V	230	50	1650	1350	70	0.3	2.0/400	65	40	2.3	A1	AC	(2)
A4E300AB0322	A	V	240	50	1510	1250	75	0.32	1.5/400	62	70	2.3	A1	AC	(2)
A4E300AB0323	A	A	240	50	1510	1250	75	0.32	1.5/400	62	70	2.3	A1	AC	(2)
A4D350AR0601	S	V	400	50	3300	1420	135	0.42		64	60	3.6	C2	AC	(2)
A4E350AA1032	A	V	230	50	2940	1400	130	0.58	4.0/400	68	55	3.1	A1	AC	(2)

(1) Nominal data in operating point with maximum load (2) Nominal data at 0Pa (3) Sound power



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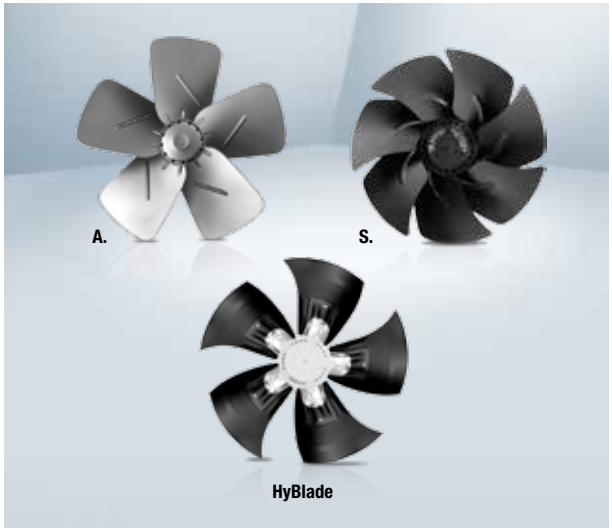

Dimensions

Part No.	Style	A	B	C	D	E
A4D400AP1620	S	400	94	68	117	2500
A4E400AP0201	S	392	94	68	117	600
A6E400AP1012	S	392	85	90	117	1250
A4E450AO0901	HyBlade	446	161.5	102	207.5	JB
A4D450AO1401	HyBlade	446	186.5	101	148	JB
A6E450AN0811	S	446	100	92	122	1500
A6E450AQ0511	A	446	96	92	117	1500
A4D500AJ0301	HyBlade	497	177.5	112	189.5	JB
A4E500AM0301	HyBlade	497	177.5	112	209.5	JB
A6E500AJ0305	HyBlade	497	177.5	112	189.5	1800

*JB = Junction Box

Part No.	Style	Air flow direction	Voltage	Frequency	Air volume	Speed	Power input	Current	Capacitor	Noise level (see inside cover)	Max. air temperature	Approx weight	Wiring diagram	Motor type	Notes
			V		m^3/Hr	RPM	W	A	µF/V	dBa@1M	°C	kg			
A4D400AP1620	S	V	400	50	4180	1440	170	0.53		67	55	4.3	F1a	AC	(2)
A4E400AP0201	S	V	230	50	4235	1430	160	0.73	6.0/400	69	40	4.2	A1	AC	(2)
A6E400AP1012	S	V	230	50	3290	940	120	0.55	3.0/450	59	40	4	A1	AC	(2)
A4E450AO0901	HyBlade	V	230	50	7000	1310	490	2.36	10.0/400	62	65	7.2	A2b	AC	(1)
A4D450AO1401	HyBlade	V	400	50	7070	1360	480	0.98		65	65	7.5	F1b	AC	(2)
A6E450AN0811	S	V	230	50	4415	900	145	0.64	4.0/400	61	55	3.7	A1	AC	(2)
A6E450AQ0511	A	V	230	50	4475	910	155	0.7	4.0/400	62	70	5	A1	AC	(2)
A4D500AJ0301	HyBlade	V	400	50	9000	1340	710	1.4		71	60	8.5	F1b	AC	(1)+(3)
A4E500AM0301	HyBlade	V	230	50	8900	1300	680	3	12.0/450	68	65	10.5	A2a	AC	(1)+(3)
A6E500AJ0305	HyBlade	V	230	50	6100	915	270	1.18	8.0/400	63	65	8.5	A2a	AC	(1)+(3)

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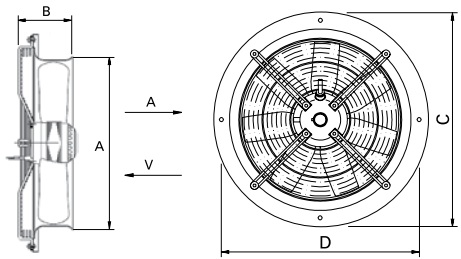
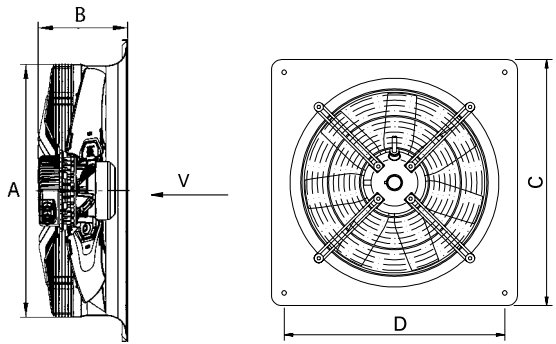


Round Plate Dimensions				
Part No.	A	B	C	D
W2E200CH3801	200	80	280	250
W2E200CI3801	200	80	280	250
W4S200CI0401	200	80	280	250
W2E250CE6502	254	80	320	295
W2E250CL0601	254	80	320	295
W4S250CI0201	256	63	320	295
W2E300CC4702	306	80	397	380
W4E300CB0323	306	80	397	380
W4E300CA0341	306	80	397	380
Square Plate Dimensions				
W2E200DH3801	200	55	312	260
W2E200DI3801	200	55	312	260
W4S200DI0401	200	52	312	260
W2E250DE6502	256	55	370	320
W4S250DI0201	256	63	370	320
W2E300DC4702	306	80	430	380
W4E300DB0323	306	80	430	380

Square Plate	Round Plate	Air flow direction	Voltage	Frequency	Air volume	Speed	Power input	Current	Capacitor	Noise level (see inside cover)	Max. air temperature	Approx weight	Lead length	Wiring diagram	Motor type	Notes
Part No.	Part No.		V		m^3/Hr	RPM	W	A	µF/V	dBa@1M	°C	kg				
W2E200DH3801	W2E200CH3801	A	230	50	890	2600	64	0.3	1.5/450	65	70	1.9	450	A1	AC	(2)
W2E200DI3801	W2E200CI3801	A	230	50	890	2600	64	0.3	1.5/450	65	70	1.9	450	A1	AC	(2)
W4S200DI0401	W4S200CI0401	A	230	50	470	1370	30	0.21		42	75	1.2	450	B	AC	(2)
W2E250DE6502	W2E250CE6502	A	230	50	1610	2550	115	0.51	4.0/400	72	55	2.7	450	A1	AC	(2)
W4S250DI0201	W2E250CL0601	V	230	50	1820	2450	115	0.51	3.0/400	69	65	2.7	450	A1	AC	(2)
W2E300DC4702	W4S250CI0201	A	230	50	1000	1390	69	0.53		54	50	1.7	450	B	AC	(2)
W4E300DB0323	W2E300CC4702	A	230	50	2440	2650	140	0.62	5.0/400	75	55	3	450	A1	AC	(2)
	W4E300CB0323	A	240	50	1510	1250	75	0.32	1.5/400	62	70	3	450	A1	AC	(2)
	W4E300CA0341	V	230	50	1650	1350	70	0.3	2.0/400	65	40	2.3	JB	A1	AC	(2)

(1) Nominal data in operating point with maximum load (2) Nominal data at 0Pa (3) Sound power



Condenser Fan Dimensions

Part No.	A	B	C	D	
W4D500GJ0311	535	175	600	560	
W3G500GM5623	528	171	600	560	✓
W3G500GN3307	528	171	600	560	✓
W3G560CE4111	576	190	725	675	✓
W4D630GD0101	696	215	805	750	
W3G630GU2301	696	250	805	750	✓

Condenser Fans	Air flow direction	Voltage	Frequency	Air volume	Speed	Power input	Current	Noise level (see inside cover)	Max. air temperature	Approx weight	Lead length	Wiring diagram	Motor type	Notes	
Part No.		V		m^3/Hr	RPM	W	A	dBa@1M	°C	kg					
W4D500GJ0311	V	400	50	9000	1340	710	1.4	71	60	16	JB	F1b	AC	(1)+(3)	
W3G500GM5623	V	380-480	50/60	10000	1600	940	1.6	76	60	9.2	800	K3	EC	(1)+(3)	✓
W3G500GN3307	V	380-480	50/60	10000	1600	940	1.6	76	60	9.2	800	K3	EC	(1)+(3)	✓
W3G560CE4111	V	200-277	50/60	11300	1160	790	3.5	80	60	18	JB	L1	EC	(1)+(3)	✓
W4D630GD0101	V	400	50	20000	1340	2530	4.95	81	60	38.2	JB	F1b	AC	(1)+(3)	
W3G630GU2301	V	380-480	50/60	21000	1510	3200	4.9	86	65	39.5	JB	L5	EC	(1)+(3)	✓

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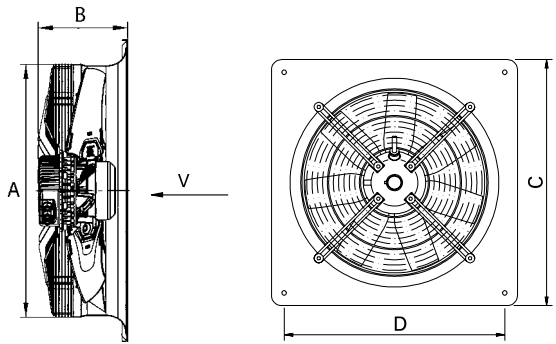
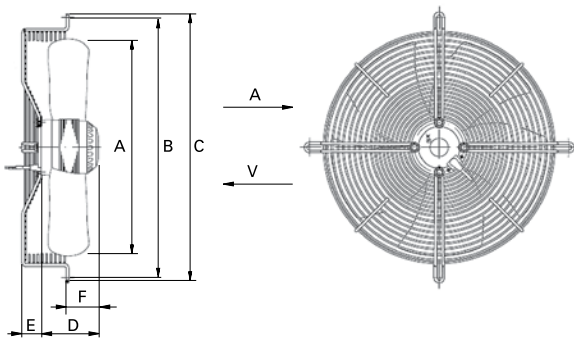


Condenser Fan Dimensions

Part No.	A	B	C	D	
W6D710GH0101	772	243	850	810	
W3G710GO8190	792	219	850	810	✓
W6D800GD0101	857	261	970	910	
W8D800GD0101	857	261	970	910	
W3G800GU2501	857	307	970	910	✓
W3G800GV0101	857	307	970	910	✓
W3G910GU2201	976	307	1070	1010	✓

Condenser Fans	Air flow direction	Voltage	Frequency	Air volume	Speed	Power input	Current	Noise level (see inside cover)	Max. air temperature	Approx weight	Lead length	Wiring diagram	Motor type	Notes	
Part No.		V		m^3/Hr	RPM	W	A	dBa@1M	°C	kg					
W6D710GH0101	V	400	50	16000	910	1010	2.4	77	80	36.7	JB	F1b	AC	(1)+(3)	
W3G710GO8190	V	400	50/60	10300	900	930	1.5	76	60	27.2	JB		EC	(1)+(3)	✓
W6D800GD0101	V	400	50	24500	895	2000	4.3	78	60	44.2	JB	F1b	AC	(1)+(3)	
W8D800GD0101	V	400	50	18200	660	980	2.41	71	65	44.2	JB	F1b	AC	(1)+(3)	
W3G800GU2501	V	380-480	50/60	26500	1020	2560	3.9	85	60	45.7	JB	L5	EC	(1)+(3)	✓
W3G800GV0101	V	380-480	50/60	27500	1090	2860	4.5	85	65	50.2	JB	L5	EC	(1)+(3)	✓
W3G910GU2201	V	380-480	50/60	19600	885	2100	3.2	79	60	51.6	JB	L5	EC	(1)+(3)	✓

(1) Nominal data in operating point with maximum load (2) Nominal data at 0Pa (3) Sound power



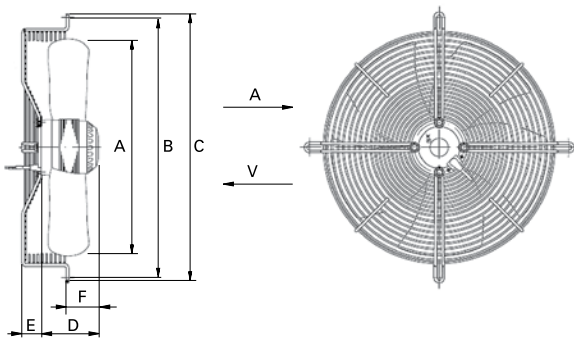
SHAPE OF BASKET GRILLE VARIES

Dimensions

Part No.	A	B	C	D	E	F	
S2D170BA0406	170	220	232	62			
S4E300AB0343	300	360		72.5	66	27	
S4E300AS7244	300	360					
S3G300AK1352	300	360				32.9	✓
S3G300AK1358	300	360				32.9	✓
S4E350AN0248	352	422				59.8	
S4E350AN0260	352	422					
S3G350AN0152	352	422				45.8	✓
S4E400AP0244	392	470				72	
S3G400LC2259	392	470				54.6	✓

Part No.	Air flow direction	Voltage	Frequency	Air volume	Speed	Power input	Current	Capacitor	Noise level (see inside cover)	Max. air temperature	Approx weight	Lead length	Wiring diagram	Motor type	Notes	
		V		m^3/Hr	RPM	W	A	µF/V	dBa@1M	°C	kg					
S2D170BA0406	V	400	50/60	430	2650	40	0.11		59	75	1.4	450	C2	AC	(2)	
S4E300AB0343	A	240	50	1610	1250	75	0.32	1.5/400	63	60	3.1	JB	A1	AC	(2)	
S4E300AS7244	V	230	50	1800	1320	72	0.32	2.0/400	60	50		100	A1	AC	(1)+(3)	
S3G300AK1352	V	200-240	50/60	1120	1500	85	0.74		64	60	2.5	JB	H4	EC	(1)+(3)	✓
S3G300AK1358	V	230	50/60	2075	1290	54	0.5			60	2.5	JB	H3	EC	(1)	✓
S4E350AN0248	V	230	50	3300	1340	165	0.73	4.0/400	56	65	5.1	JB	A2c	AC	(1)	
S4E350AN0260	V	230	50	3300	1340	165	073	4.0/400	69	40		100	A1	AC	(1)+(3)	
S3G350AN0152	V	200-240	50/60	1800	1480	165	1.35		67	60	3.85	JB	H4	EC	(1)+(3)	✓
S4E400AP0244	V	230	50	3990	1440	160	0.71	6.0/400	69	80	6.1	JB	A1	AC	(2)	
S3G400LC2259	V	230	50/60	3410	1630	400	2.6		67	60	6.4	JB	K1	EC	(1)	✓

(1) Nominal data in operating point with maximum load (2) Nominal data at 0Pa (3) Sound power



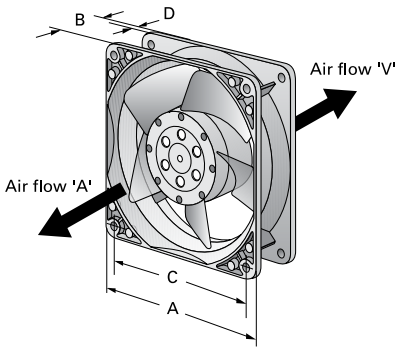
SHAPE OF BASKET GRILLE VARIES

Dimensions

Part No.	A	B	C	D	E	F
S4E450AU0337	445	522				62.5
S3G450LC2859	446	522				57.4
S4D500AM0301	497	565				91
S4E500AM0301	497	565				84
S3G500AM5623	497	565		160.5		52
S6E560AN0101	552	700				77.5
S3G560AP6821	548	700				93
S6D630AN0101	626	750				93
S6E630AN0101	627	750				86
S3G630AQ3723	627	750		180.5		60
S3G603AU2301	627	750		250.5		72.5
S6E710AR0301	703	853		224.5		70

Part No.	Air flow direction	Voltage V	Frequency	Air volume m^3/Hr	Speed RPM	Power input W	Current A	Capacitor µF/V	Noise level (see inside cover) dBa@1M	Max. air temperature °C	Approx weight kg	Lead length	Wiring diagram	Motor type	Notes	
S4E450AU0337	V	230	50	5770	1300	350	1.55	8.0/400	70	55	8.4	JB	A1	AC	(2)	
S3G450LC2859	V	200-277	50/60	3800	1300	345	2.2		68	60	6.95	JB	K1	EC	(1)	✓
S4D500AM0301	V	400	50	9195	1390	0.72	1.41		71	60	13.8	JB	F1b	AC	(1)+(3)	
S4E500AM0301	V	230	50	8900	1300	680	3	12.0/450	68	65	13.8	JB	A2b	AC	(1)+(3)	
S3G500AM5623	V	200-277	50/60	9000	1420	750	3.4		74	60	10.5	JB	L1	EC	(1)+(3)	✓
S6E560AN0101	V	230	50	8100	920	390	1.78	10/400	67	65	13.6	JB	A2b	AC	(1)+(3)	
S3G560AP6821	V	200-277	50/60		1000	400	1.8		69	60	11.8	800	K1	EC	(1)+(3)	✓
S6D630AN0101	V	400	50		890	600	1.2		67	65	17.7	JB	F1b	AC	(1)+(3)	
S6E630AN0101	V	230	50	11000	860	600	2.62	14.0/400	68	55	14	JB	A2b	AC	(1)+(3)	
S3G630AQ3723	V	230	50	7400	1000	720	3.2		71	60	15.4	JB	L1	EC	(1)+(3)	✓
S3G630AU2301	V	380-480	50/60	21000	1510	3200	4.9		86	65	31.5	JB	L5	EC	(1)+(3)	✓
S6E710AR0301	V	230	50	12000	885	660	2.95	14.0/450	70	60	20.5	JB	A2b	AC	(1)+(3)	

(1) Nominal data in operating point with maximum load (2) Nominal data at 0Pa (3) Sound power

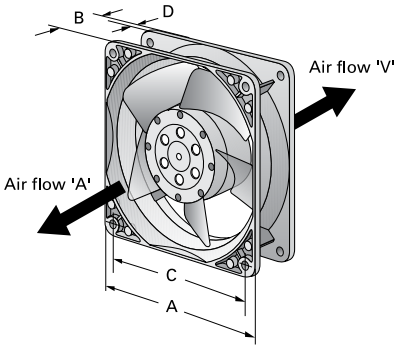


Dimensions

Part No.	Case Style	A	B	C	D	
8314	B	80	32	72	5	✓
8506N	B	80	38	71.5	3	
8556N	B	80	38	71.5	3	
9956	B	119	25	105	4	
3956	B	92	25.4	82.5	4	
4184NX	B	119	38	105	6	✓
4314	B	119	32	104.8	5	✓
4412FM	B	119	25.4	104.8	4	✓
ACi4420HHR	B	119	38	104.8	6	✓
4650N	B	119	38	104.8	6	
4650Z	B	119	38	104.8	9.5	

Part No.	Air flow direction	Voltage	Frequency	Air volume	Speed	Power input	Noise level (see inside cover)	Max. air temperature	Approx weight	Lead	Motor type	Notes	
		V		m^3/Hr	RPM	W	dBa@1M	°C	kg				
8314	V	24		54	3300	2.5	36	75	0.17	310	DC	(2)	✓
8506N	V	115	60	61	3300	11	35	95	0.49	310	AC	(2)	
8556N	V	230	50	50	2800	12	31	90	0.49	310	AC	(2)	
9956	V	230	50	117	2450	14	37	70	0.8	PIN	AC	(2)	
3956	V	230	50	59	2650	11	35	80	0.28	PIN	AC	(2)	
4184NX	A	24		180	3200	4.5	49	75	0.39	PIN	DC	(2)	✓
4314	V	24		170	2800	5	45	75	0.22	310	DC	(2)	✓
4412FM	V	12		140	2400	3.2	38	75	0.175	310	DC	(2)	✓
ACI4420HHR	V	195-265	50/60	180	3350	4.4	42	75	0.25	PIN	EC	(2)	✓
4650N	A	230	50	160	2650	19	46	55	0.55	PIN	AC	(2)	
4650Z	V	230	50	160	2650	19	40	50	0.54	PIN	AC	(2)	

PIN connectors require separate lead. LZ126 Lead + Plug 1000mm.
(1) Nominal data in operating point with maximum load (2) Nominal data at 0Pa (3) Sound power



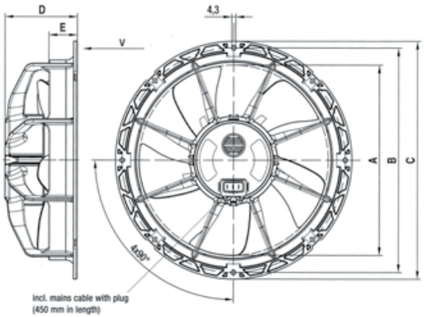
Dimensions

Part No.	Case Style	A	B	C	D
4656N	B	119	38	104.8	6
4656Z	B	119	38	104.8	9.5
4850Z	B	119	38	104.8	9.5
5958	B	127	38	113	7
6224N	C	172d	51	162d	4.5
7214N	A	150d	55	162d	6
W2S130AA0363	A	150d	55	162d	6
W2S130BM0301	A	172d	55	162d	6
W2E142BB0101	C	172	38	152.5	

Part No.	Air flow direction	Voltage V	Frequency	Air volume m^3/Hr	Speed RPM	Power input W	Noise level (see inside cover) dBa@1M	Max. air temperature °C	Approx weight kg	Lead	Wiring diagram	Motor type	Notes	
4656N	A	230	50	160	2650	19	47	85	0.55	PIN		AC	(2)	
4656Z	V	230	50	160	2650	19	40	75	0.54	PIN		AC	(2)	
4850Z	V	230	50	100	1700	13	26	65	0.54	PIN		AC	(2)	
5958	V	230	50	180	2750	18	44	60	0.57	PIN		AC	(2)	
6224N	V	24		410	3400	18	55	72	0.82	PIN		DC	(2)	✓
7214N	V	24		360	3050	12	53	72	0.725	365		DC	(2)	✓
W2S130AA0363	V	230	50	325	2800	47	49	50	1.2	1500	B	AC	(2)	
W2S130BM0301	A	230	50	380	2700	47	60	50	1.2	330	B	AC	(2)	
W2E142BB0101	V	230	50	330	2800	25	52	55	0.9	PIN	A1	AC	(2)	

PIN connectors require separate lead. LZ126 Lead + Plug 1000mm.
(1) Nominal data in operating point with maximum load (2) Nominal data at 0Pa (3) Sound power

ebmpapst




Standard

Truncated

W1G130

Dimensions

Part No.	Type	A	B	C	D	E	
W1G130AA2511	W1G130	130	162	172	58		✓
W1G172EC9101	Standard	172	208	222	78.5	35	✓
W1G200EC9110	Truncated	200	236	250	78.5	40	✓
W1G200EC9145	Standard	200	236	250	78.5	40	✓
W1G230EB8901	Standard	230	266	280	78.5	50	✓

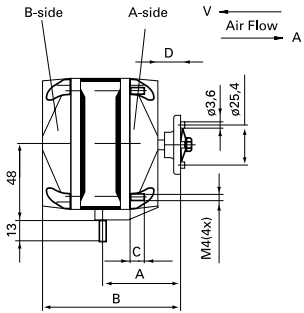
Part No.	Air flow direction	Voltage	Frequency	Air volume	Speed	Power input	Current	Speed step	Noise level (see inside cover)	Max. air temperature	Approx weight	Lead	Wiring diagram	Motor type	Notes	
		V		m^3/Hr	RPM	W	A		dBa@1M	°C	kg					
W1G130AA2511	V	230	50/60	275	3200	24	0.19	High	51	70	0.8	1500	ESM	EC	(1)	✓
W1G172EC9101	V	230	50/60	550	2500	22	0.18	High	63	50	0.95	450	ESM	EC	(1)+(3)	✓
W1G200EC9110	V	230	50/60	520	2100	31	0.24	High	54	50	1	450	ESM	EC	(1)	✓
W1G200EC9145	V	230	50/60	750	2100	31	0.24	High	62	50	1	450	ESM	EC	(1)+(3)	✓
W1G230EB8901	V	230	50/60	980	1500	26	0.20	High	58	50	1.05	450	ESM	EC	(1)+(3)	✓

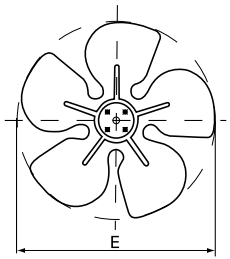
Both speeds of ESM Fan are programmable. Programming device to be ordered separately.
(1) Nominal data in operating point with maximum load (2) Nominal data at 0Pa (3) Sound power

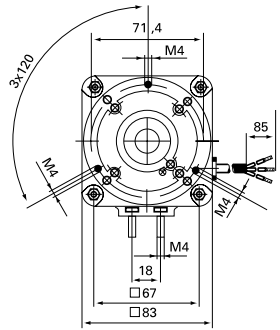
The iQ motor has been designed as a high efficiency replacement for the existing Q-motors currently used in many different applications. With up to 90% power savings and similar mounting dimensions, there is an iQ motor suitable for many replacement applications.

Energy-savings iQ Motor compared to Q-Motor

Technical data Typical iQ motor combined with different axial impellers (speed 1,300 rpm)	Air flow*	iQ motor power consumption	Q-motor power consumption	SAVE	Air flow*	iQ motor power consumption	Q-motor power consumption	SAVE	Air flow*	iQ motor power consumption	Q-motor power consumption	SAVE
mm	m^3/h	W	W	%	m^3/h	W	W	%	m^3/h	W	W	%
Impeller diameter	Blade pitch 22 degrees				Blade pitch 28 degrees				Blade pitch 34 degrees			
154	150	2.4	29	91%	210	2.9	29	90%	235	3.2	32	90%
172	220	3	29	89%	300	3.8	32	88%	340	5	33	84%
200	315	3.5	30	88%	440	6	38	84%	515	9.4	42	77%
230	485	9.5	38	75%	720	15	50	70%	800	24	60	60%
254	650	15	45	66%								
*free air flow with wall ring												







MULTIPLE FASTENING LOCATIONS

Dimensions

Part No.	A	B	C	D	E		
M4Q045BD0129/B01	42	76	12	15	154	172	200
M4Q045BD0138	42	76	12	15	154	172	200
M4Q045CA0138	42	82	10	15	200	230	
M4Q045CA0338/A01	42	82	10	15	230	254	
M4Q045CA0375/B01	42	82	10	15	230	254	
M4Q045CA03C8/B01	42	82	10	15	230	254	
iQ3612	43.5	82		15	154	→	254 ✓
M4Q045CF0138	42	87	10	15	254		
M4Q045DA01C8/B01	54	93	10	15	254	300	
M4Q045DA0538	54	93	10	15	300		
M4Q045EA0138	59	103	10	16	300		
M4Q045EF0138	79	125	10	33	300		
M4Q045EF0175/B01	79	125	10	33	300		
iQ3620	43.5	82		15	254	→	300 ✓

Part No.	Power output W	Voltage V	Frequency	Speed RPM	Power input W	Current A	Bearing	Noise level (see inside cover) dBa@1M	Min. static pressure Pa	Max. air temperature °C	Approx weight kg	Lead length	Motor type	
M4Q045BD0129/B01	5	230	50	1300	29	0.19	KL			40	0.9	450	AC	
M4Q045BD0138	5	230	50	1300	29	0.19	GK			40	0.9	450	AC	
M4Q045CA0138	7	230	50	1300	31	0.2	GK			40	1.1	450	AC	
M4Q045CA0338/A01	10	230	50	1300	36	0.25	GK			40	1.2	450	AC	
M4Q045CA0375/B01	10	230	50	1300	36	0.25	GK			40	1.2	1500	AC	
M4Q045CA03C8/B01	10	230	50	1300	36	0.25	KL			40	1.2	470	AC	
iQ3612		220-240	50/60	1300	≤ 23		KL			50	0.6	1500	EC	✓
M4Q045CF0138	16	230	50	1300	60	0.42	GK			40	1.3	450	AC	
M4Q045DA01C8/B01	18	230	50	1300	70	0.48	KL			40	1.4	450	AC	
M4Q045DA0538	23	230	50	1300	86	0.62	GK			40	1.6	450	AC	
M4Q045EA0138	25	230	50	1300	90	0.62	GK			40	2	450	AC	
M4Q045EF0138	34	230	50	1300	110	0.75	GK			40	2.2	450	AC	
M4Q045EF0175/B01	34	230	50	1300	110	0.75	GK			40	2.2	1500	AC	
iQ3620		220-240	50/60	1300	≤ 32		KL			50	0.8	1500	EC	✓

MOUNTING SCREWS TO SUIT Q-MOTOR ARE AVAILABLE

KL = Ball bearing GK = Sleeve bearing

Recommended impellers

Part No.	Power Output	154mm			172mm			200mm			230mm			254mm			300mm		
		22°	28°	34°	22°	28°	34°	22°	28°	34°	22°	28°	34°	22°	28°	34°	22°	28°	34°
M4Q045BD0129/B01	5	X	X	X	X	X	X	X											
M4Q045BD0138	5	X	X	X	X	X	X	X											
M4Q045CA0138	7							X	X	X	X								
M4Q045CA0338/A01	10										X	X	X	X					
M4Q045CA0375/B01	10										X	X	X	X					
M4Q045CA03C8/B01	10										X	X	X	X					
iQ3612	Variable	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
M4Q045CF0138	16													X	X				
M4Q045DA01C8/B01	18													X	X	X	X		
M4Q045DA0538	23																X	X	
M4Q045EA0138	25																X	X	
M4Q045EF0138	34																X	X	X
M4Q045EF0175/B01	34																X	X	X
iQ3620	Variable													X	X	X	X		

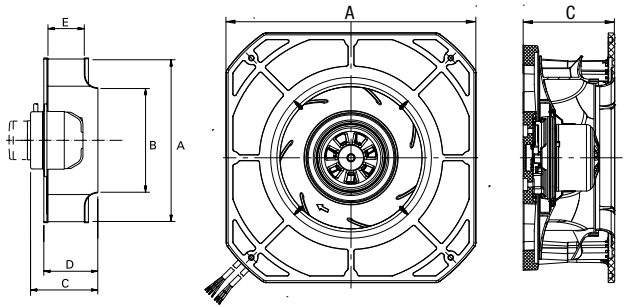
Motor cross-reference guide

Elco	Olmo	Radlon	Fasco
N513	1703.571	RMAV006	39D52079A, 50D52082A
N513	1703.571	RMAV006	39D52079A, 50D52082A
N720	1755.571	RMAV007	39D52079A, 50D52082A
N1020	1810.57	RMAV010CCW	50D55201A, 50D50181A
N1020	1810.57	RMAV010CCW	50D55201A, 50D50181A
N1020	1810.57	RMAV010CCW	50D55201A, 50D50181A
N1630	1945.57	RM016-CCW	50D55102A
			50D55102A
N2040		RM022CCW	50D55102A
N2540	2102.57	RM025AUS	50D50275A
N3445	1990.75		50D54303A
N3445	1990.75		50D54303A

Not suitable for shaft side mounting of Fasco motors. This cross reference is indicative only. If unsure of direct replacement please contact your nearest ebm-papst A&NZ office.

Impeller part number		
Part No. 'V' flow	Part No. 'A' flow	Size & blade angle
7380123634	7376123634	154mm 22° ± 1°30'
7380223634	7376223634	154mm 28° ± 1°30'
7380323634	7376323634	154mm 34° ± 1°30'
7380423634	7376423634	172mm 22° ± 1°30'
7380523634	7376523634	172mm 28° ± 1°30'
7380623634	7376623634	172mm 34° ± 1°30'
7380723634	7376723634	200mm 22° ± 1°30'
7380823634	7376823634	200mm 28° ± 1°30'
7380923634	7376923634	200mm 34° ± 1°30'

Impeller part number		
Part No. 'V' flow	Part No. 'A' flow	Size & blade angle
7381023634	7377023634	230mm 22° ± 1°30'
7381123634	7377123634	230mm 28° ± 1°30'
7381223634	7377223634	230mm 34° ± 1°30'
7381323634	7377323634	254mm 22° ± 1°30'
7381423634	7377423634	254mm 28° ± 1°30'
7381523634	7377523634	254mm 34° ± 1°30'
7381623634	7377623634	300mm 22° ± 1°30'
7381723634	7377723634	300mm 28° ± 1°30'
7381823634	7377823634	300mm 34° ± 1°30'

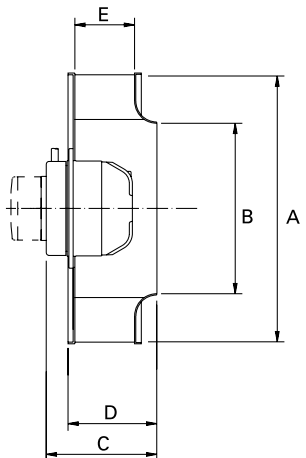


Dimensions

Part No.	Type	A	B	C	D	
R2E133RA0301	A	133	93	55.5	48.5	
R3G133RA0103	A	133	93	63	48.5	✓
R2E190RA2605	A	190	132.4	68.5	62.5	
R3G190RD4503	A	190	132.8	68.5	62.5	✓
K3G190RD4503	B	225		85		✓
R2E220RB0601	A	220	161	71	63.7	
K3G220RD2103	B	270		99		✓
R3G220RC0503	A	220	161	71	63.7	✓
R2E225RA9209	A	225	153.5	99	88.4	
K3G225RE0703	B	270		126		✓

Part No.	Air flow direction	Voltage	Frequency	Air volume	Speed	Power input	Current	Capacitor	Noise level (see inside cover)	Max. air temperature	Approx weight	Lead	Wiring diagram	Motor type	Notes	
		V		m^3/Hr	RPM	W	A	µF/V	dBa@1M	°C	kg					
R2E133RA0301	CW	230	50	192	2700	26	0.12	1.5/400 (P2)	59	45	0.6	450	A1	AC	(1)+(3)	
R3G133RA0103	CW	230	50	280	3770	27	0.27		61	60	0.5	450	H4	EC	(1)+(3)	✓
R2E190RA2605	CW	230	50	545	2350	52	0.23	1.5/400	66	65	1.3	450	A1	AC	(1)+(3)	
R3G190RD4503	CW	230	50	980	4120	169	1.35		71	60	1.36	450	H4	EC	(1)+(3)	✓
K3G190RD4503	CW	230	50	980	4120	169	1.35		71	60	1.91	450	H4	EC	(1)+(3)	✓
R2E220RB0601	CW	230	50	940	2500	102	0.45	2.0/400	70	60	1.8	450	A1	AC	(1)+(3)	
K3G220RD2103	CW	230	50	1260	3230	168	1.4		69	45	2.43	450	H4	EC	(1)+(3)	✓
R3G220RC0503	CW	230	50	1000	2580	85	0.7		65	60	1.2	450	H4	EC	(1)+(3)	✓
R2E225RA9209	CW	230	50	1180	2500	155	0.68	3.5/450	73	60	2.3	450	A1	AC	(1)+(3)	
K3G225RE0703	CW	230	50	1150	2860	170	1.4		68	60	2.2	450	H4	EC	(1)+(3)	✓

(1) Nominal data in operating point with maximum load (2) Nominal data at 0Pa (3) Sound power



K = Spider mount **C** = Cube design
S = Support design

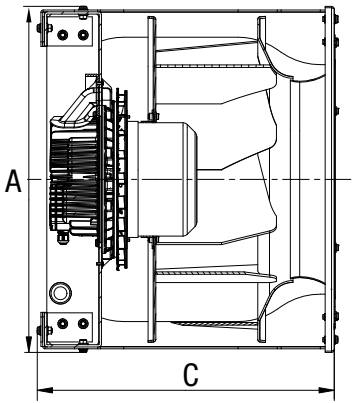
Dimensions

Part No.	Type	A	B	C	D	E	
R2E250RA5001	A	250	172.5	99	85		
R3G250AV29B1	A	284	176	223.9	112	80	✓
R3G280RP54B1	A	294	187.5	215.5	127		✓
R3G280AU06B1	A	319	197.4	252.4	132	90	✓
R3G355AY4001	A	404	250.3	294.2	163.7	112	✓
R3G400AY8701	A	455	282	333	182	125	✓
R3G450AQ2401	A	505	317	357	204	140	✓
R3G500RA2501	A	525	334.5	327.5	227		✓
R3G500AP2501	A	556	352.5	373.5	220	150	✓
R3G560AP2301	A	636	395	422	239	160	✓
R3G560AQ0401	A	636	395	505	239	160	✓

*Optional designs on request

Part No.	Air flow direction	Voltage V	Frequency	Air volume m^3/Hr	Speed RPM	Power input W	Current A	Capacitor µF/V	Noise level (see inside cover) dBa@1M	Max. air temperature °C	Approx weight kg	Lead	Wiring diagram	Motor type	Notes	
R2E250RA5001	CW	230	50	1420	2500	210	0.93	5.0/400	75	70	2.9	450	A1	AC	(1)+(3)	
R3G250AV29B1	CW	230	50	3000	3450	700	3		79	40	5.6	JB	L7	EC	(1)+(3)	✓
R3G280RP54B1	CW	230	50	3450	2880	705	3.1		75	40	5.3	JB		EC	(1)+(3)	✓
R3G280AU06B1	CW	230	50	3600	2800	715	3.1		76	40	6.8	JB	L7	EC	(1)+(3)	✓
R3G355AY4001	CW	400	50	6300	2600	1700	2.6		79	40	13.1	JB	M3	EC	(1)+(3)	✓
R3G400AY8701	CW	400	50	7600	2180	1850	2.9		81	50	15.6	JB	M3	EC	(1)+(3)	✓
R3G450AQ2401	CW	400	50	10700	2040	2730	4.2		81	60	22.5	JB	M3	EC	(1)+(3)	✓
R3G500RA2501	CW	400	50	11600	1700	2680	4.18		70	60	22	JB	M3	EC	(1)	✓
R3G500AP2501	CW	400	50	12600	1780	2825	4.3		84	60	24.6	JB	M3	EC	(1)+(3)	✓
R3G560AP2301	CW	400	50	14800	1500	3000	4.6		80	50	30.5	JB	M3	EC	(1)+(3)	✓
R3G560AQ0401	CW	400	50	17200	1750	4700	7.3		84	40	40	JB	M3	EC	(1)+(3)	✓

(1) Nominal data in operating point with maximum load (2) Nominal data at 0Pa (3) Sound power JB = Junction Box



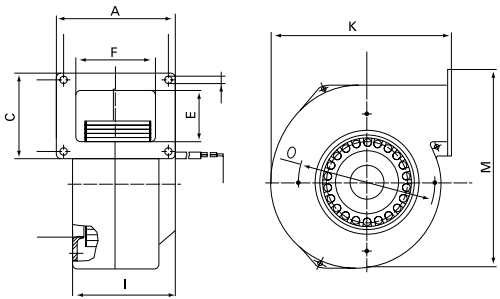
K = Spider mount
S = Support design
C = Cube design
F = Foot mount

Dimensions

Part No.	Type	A	B	C	D	E	
R3G630AC0501	F	635	447	424	290	220	✓
K3G630AR0201	C	760		652.5			✓
K3G710AR0301	C	960		712.5			✓
K3G800AR0801	C	960		783			✓
K3G900AR1001	C	1180		745			✓

Part No.	Air flow direction	Voltage	Frequency	Air volume	Speed	Power input	Current	Noise level (see inside cover)	Max. air temperature	Approx weight	Lead	Wiring diagram	Motor type	Notes	
		V		m^3/Hr	RPM	W	A	dBa@1M	°C	kg					
R3G630AC0501	CW	400	50	18920	1370	4000	6.2	75	50	38	JB	M3	EC	(1)	✓
K3G630AR0201	CW	400	50	14500	1500	6750	10.3	88	50	125	JB	M3	EC	(1)+(3)	✓
K3G710AR0301	CW	400	50	19000	1300	7860	12	86	40	163	JB	M3	EC	(1)+(3)	✓
K3G800AR0801	CW	400	50	22000	1050	7530	11.6	85	40	189	JB	M3	EC	(1)+(3)	✓
K3G900AR1001	CW	400	50	26000	860	7520	11.5	82	40	222	JB	M3	EC	(1)+(3)	✓

(1) Nominal data in operating point with maximum load (2) Nominal data at 0Pa (3) Sound power JB = Junction Box

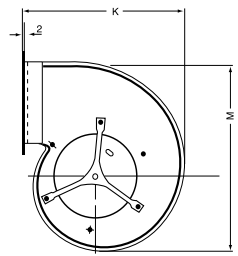


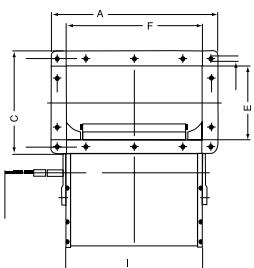
Dimensions

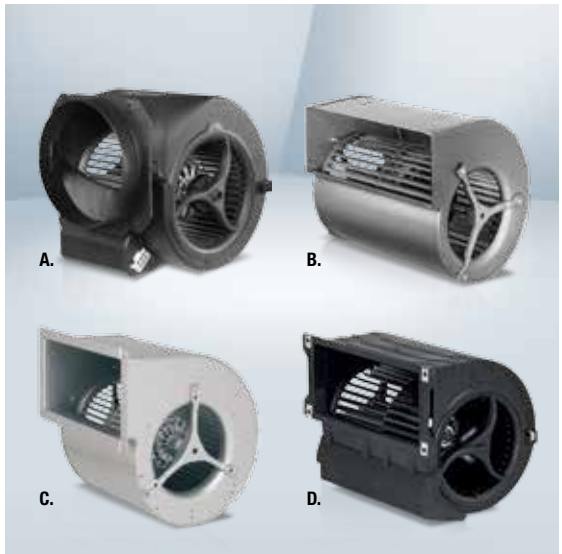
Part No.	A	C	E	F	I	K	M	
G2E120CR2603	110	98	67	77	99	171	180	
G2E140AI2801	130	120	92	94	100	227	248	
G3G140AV0302	130	120	92	94	116	227	248	✓
G2E146DW0701	130	120	92	84	104	227	248	
G3G146AB5401	130	120	92	94	132.5	227	248	✓
G2E160AY4701	130	120	92	94	100	227	248	
G3G160AC5001	130	120	92	94	132.5	227	248	✓
G4E180GS1101	183	278	224	129	155	296	332	
G3G180EU6001	129	134	134	129	179.5	285	332	✓

Part No.	Air flow direction	Voltage	Frequency	Air volume	Speed	Power input	Current	Capacitor	Noise level (see inside cover)	Max. air temperature	Approx weight	Lead length	Wiring diagram	Motor type	Notes	
		V		m^3/Hr	RPM	W	A	µF/V	dBa@1M	°C	kg					
G2E120CR2603	CW	230	50	275	2200	83	0.37	2.0/450	64	70	1.9	450	A1	AC	(2)	
G2E140AI2801	CW	230	50	485	2400	160	0.7	4.0/400	72	70	2.6	450	A1	AC	(2)	
G3G140AV0302	CW	200-277	50/60	430	1800	66	0.5		63	60	2.6	450	H1	EC	(1)	✓
G2E146DW0701	CW	230	50	470	1550	140	0.62	3.0/450	60	50	2.6	450	A1	AC	(2)	
G3G146AB5401	CW	200-277	50/60	600	2520	175	1.3		71	60	3.5	450	J1	EC	(1)	✓
G2E160AY4701	CW	230	50	600	2100	240	1.05	6.0/400	72	50	3.9	450	A1	AC	(2)	
G3G160AC5001	CW	200-277	50/60	640	2150	175	1.3		70	60	3.5	450	J1	EC	(1)	✓
G4E180GS1101	CW	230	50	1030	1130	180	0.8	4.0/400	66	45	6.4	600	A1	AC	(2)	
G3G180EU6001	CW	200-277	50/60	800	1320	162	1.2		62	60	4	450	J1	EC	(1)	✓

(1) Nominal data in operating point with maximum load (2) Nominal data at 0Pa (3) Sound power







Dimensions

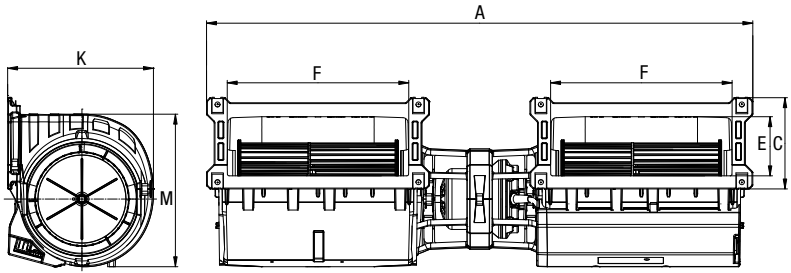
Part No.	Case Style	A	C	E	F	I	K	M	
D2E133DM4701	C	270	142	102	232	232	204	213	
D2E133AM8398	B	215	71	71	215	215	170.5	180	
D3G133LU0101	D	264	108	70	215	235	172.7	180.5	✓
D2E146AP4722	C	270	142	102	232	232	206	219	
D2E146HS9704	A	178	163	149	Round	195	220	216	
D2E146HT6701	A	178	163	149	Round	199	220	216	
D3G146HQ1334	A	173	162	149.5	Round	199	220	216	✓
D3G146LV1301	D	272	116	98	226	244	202	209	✓
D4E146AA0702	C	270	142	102	232	232	206	219	
D4E146AU7069	B	232	104.5	104.5	232	232	206	219	
D4D180CB0102	C	309	278	224	255	255	296	333	
D4E180CA0202	C	309	278	224	255	255	296	333	
D4D200CA0102	C	341	304	250	287	287	327	371	
D4E200CA0202	C	341	304	250	287	287	327	371	
D4D225CC0102	C	341	304	250	287	287	327	370	

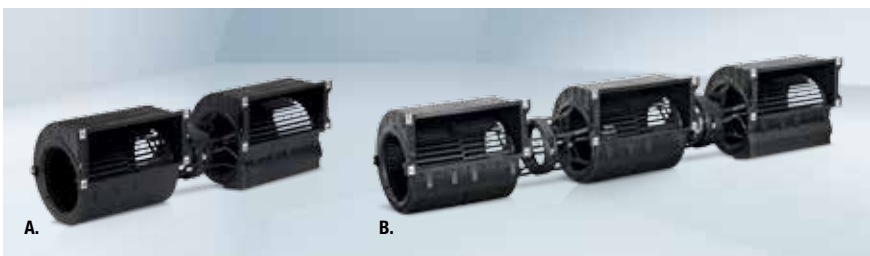
TYPE A AND D REQUIRE PLUG AND LEAD OPTION

Part No.	Voltage V	Phase	Air volume m³/Hr	Speed RPM	Power input W	Current A	Capacitor µF/V	Noise level (see inside cover) dBa@1M	Max. air temperature °C	Approx weight kg	Lead length	Wiring diagram	Motor type	Notes	
D2E133DM4701	230	50	810	1150	190	0.84	3.0/400	56	40	4.4	300	A1	AC	(2)	
D2E133AM8398	230	50	705	1500	185	0.81	3.0/500	60	45	3.8	550	ebm-5-speed	AC	(2)	
D3G133LU0101	200-240	50/60	738	1620	82	0.7		68	40	2.2	300	H4	EC	(1)+(3)	✓
D2E146AP4722	230	50	970	2050	300	1.31	8.0/400	63	30	4.2	350	A1	AC	(2)	
D2E146HS9704	230	50	755	1350	195	0.86	5.0/400 (P2)	57	55	3.5	connector	ebm-4-speed	AC	(2)	
D2E146HT6701	230	50	1060	1850	355	1.55	8	66	50	3.6	connector	ebm-4-speed	AC	(2)	
D3G146HQ1334	230	50	940	2400	230	1.8			50	2.4	connector	H5	EC	(1)	✓
D3G146LV1301	230	50	1150	1550	182	1.4		75	50	2.9	connector	H6	EC	(1)+(3)	✓
D4E146AA0702	230	50	835	1000	100	0.44	2.0/450	55	50	3.5	350	A1	AC	(2)	
D4E146AU7069	230	50	760	1220	97	0.43	2.0/450	55	55		900	ebm-2-speed	AC	(2)	
D4D180CB0102	230/400	50	1880	1050	290	0.92/0.53		62	55	9.5	600	C1/C2	AC	(2)	
D4E180CA0202	230	50	2110	1250	380	1.68	10.0/400	64	60	10.8	600	A1	AC	(2)	
D4D200CA0102	230/400	50	2550	1080	480	1.54/0.89		63	30	12	600	C1/C2	AC	(2)	
D4E200CA0202	230	50	2380	1100	490	2.15	10.0/400 (P2)	60	40	11.9	600	A1	AC	(2)	
D4D225CC0102	230/400	50	2980	1000	680	1.99/1.15		64	45	12.5	600	C1/C2	AC	(2)	

(1) Nominal data in operating point with maximum load (2) Nominal data at 0Pa (3) Sound power

Photos and drawings may not be a correct representation of all products. | 45



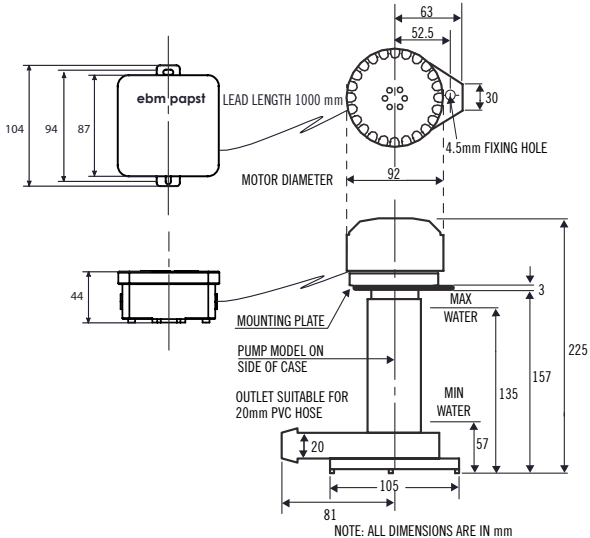


Dimensions

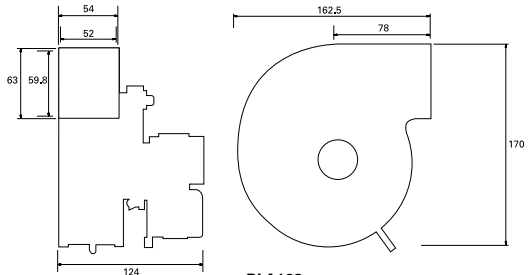
Part No.	Case Style	A	C	E	F	K	M	
K3G133LR1501	A	647	108	70	215	172.7	180.5	✓
K3G146AD0101	A	677	116	98	226	202	209	✓
K3G146AE0101	B	1082	116	100.4	226	202	209	✓
K3G160AD0101	A	722.9	145	96.9	224	222.7	241.4	✓
K3G160BD0201	A	776	196	170	226.5	226.9	245.7	✓

Part No.	Voltage V	Phase	Air volume m³/Hr	Speed RPM	Power input W	Current A	Noise level (see inside cover) dBa@1M	Max. air temperature °C	Approx weight kg	Lead length	Wiring diagram	Motor type	Notes	
K3G133LR1501	230	50	920	1280	69	0.56	60	50	3.6	connector	H6	EC	(1)+(3)	✓
K3G146AD0101	230	50	2300	1400	243	1.8	75	40	4.3	connector	H6	EC	(1)+(3)	✓
K3G146AE0101	230	50	2900	1250	245	1.9		40	5.8	connector	H6	EC	(1)	✓
K3G160AD0101	230	50	2180	1300	240	1.95	60	40	6	connector	H6	EC	(1)	✓
K3G160BD0201	230	50	1780	1150	155	1.25		40	9.9	connector	H6	EC	(1)	✓

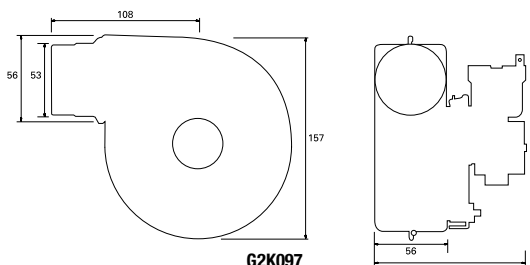
(1) Nominal data in operating point with maximum load (2) Nominal data at 0Pa (3) Sound power


63
52.5
30
4.5mm FIXING HOLE
LEAD LENGTH 1000 mm
104
94
87
MOTOR DIAMETER
92
44
MOUNTING PLATE
3
MAX
WATER
225
157
135
PUMP MODEL ON
SIDE OF CASE
OUTLET SUITABLE FOR
20mm PVC HOSE
MIN
WATER
57
20
105
81
NOTE: ALL DIMENSIONS ARE IN mm

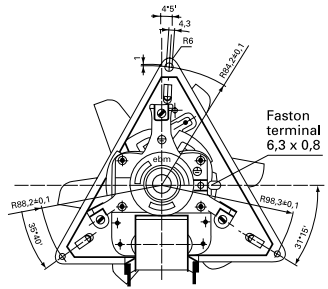
Part No.	Voltage V	Frequency	Speed RPM	Power input W	Current A	Capacitor µF/V	Nominal flow at 1m head L/min	Nominal flow at 2m head L/min	Approx weight kg	Lead length mm	Motor type
ebm Alpha	240	50	2700	50	0.17	1/450	32	25	1.35	1000	AC

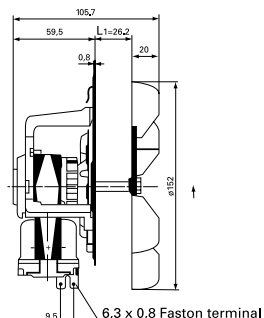


RLA108



G2K097





R2K150

Part No.	Article No.	Voltage V	Phase	Air volume m^3/Hr	Speed RPM	Power input W	Current A	Noise level (see inside cover) dBa@1M	Max. air temperature °C	Approx weight	Motor type
R2K150AC0325	55466.32180	230	50	200	2000	32	0.27		120	0.9	AC
RLA108/0034A76	55461.21760	230	50	100	1800	32	0.27	49	105/150	1.5	AC
G2K097AD0165	55465.12040	230	50	150	1750	60	0.53	53	90/220	3	AC

* RLA108/0034A76 replaces G2K108AA0145 & 46

Velocity Pressure – Air (P_V) Chart

ebmpapst

Velocity	Velocity pressure
m/s	Pa
1.00	0.60
1.25	0.94
1.50	1.35
1.75	1.84
2.00	2.40
2.25	3.04
2.50	3.75
2.75	4.54
3.00	5.40
3.25	6.34
3.50	7.35
3.75	8.44
4.00	9.6
4.25	10.8
4.50	12.2
4.75	13.5

Velocity	Velocity pressure
m/s	Pa
5.00	15.0
5.25	16.5
5.50	18.2
5.75	19.8
6.00	21.6
6.25	23.4
6.50	25.4
6.75	27.3
7.00	29.4
7.25	32
7.50	34
7.75	36
8.00	38
8.25	41
8.50	43
8.75	46

Velocity	Velocity pressure
m/s	Pa
9.00	49
9.25	51
9.50	54
9.75	57
10.0	60
12.5	94
15.0	135
17.5	184
20.0	240
22.5	304
25.0	375
27.5	454
30.0	735
40.0	960
45.0	1215
50.0	1500

$P_V = V^2 \times 0.6$ @ 20°C

Hooke's Law for Fans

Speed variation at constant fan size and constant density:

$$V_2 = V_1 \times \frac{n_2}{n_1}$$

The volume flow changes proportionately to the speed

$$P_2 = P_1 \times \left(\frac{n_2}{n_1}\right)^2$$

All pressures (static, dynamic, total) change proportionately to the square of the speed

$$W_2 = W_1 \times \left(\frac{n_2}{n_1}\right)^3$$

The power requirement at the shaft changes proportionately to the third power of the speed

Change in density at constant speed (or change of the Kelvin temperature at a constant flow medium)

$$V = \text{Const}$$

The volume flow is not affected

$$P_2 = P_1 \times \frac{Q_2}{Q_1} = \frac{T_2}{T_1}$$

The pressures (static, dynamic, total) change proportionately to the density

$$W_2 = W_1 \times \frac{Q_2}{Q_1} = \frac{T_2}{T_1}$$

The power requirement at the shaft charges proportionately to the density

Change in wheel diameter of geometrically similar wheels at constant speed

$$V_2 = \left(\frac{D_2}{D_1}\right)^3 \times V_1$$

The volume flow changes proportionately to the third power of the wheel diameter

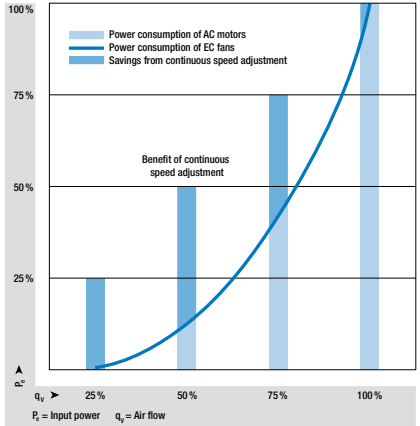
$$P_2 = P_1 \times \left(\frac{D_2}{D_1}\right)^2$$

The pressures (static, dynamic, total) change proportionately to the square of the wheel diameter

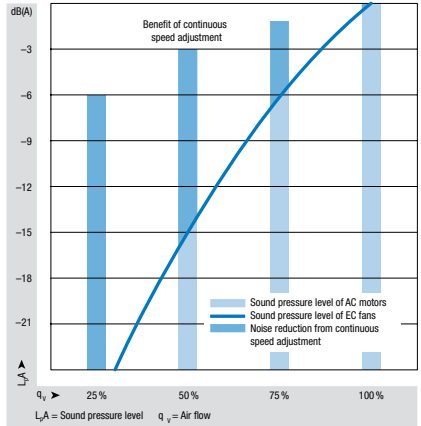
$$W_2 = W_1 \times \left(\frac{D_2}{D_1}\right)^5$$

The power requirement at the shaft charges proportionately to the fifth power of the wheel diameter

ebm-papst EC technology (EC = electronically commutated) is an environmentally sound and, in the long run, more cost-effective alternative to AC technology. ebm-papst EC fans and motors give you high performance, silent speed control and long life expectancy in a product which is the same size as the old, power hungry AC products it replaces.



Low energy consumption: The bars show the power input of fans that are activated incrementally as needed. The air performance is reduced by 50% if 50% of the fans are shut off. The blue line shows the power input with continuous speed adjustment. If all fans are reduced to 50% of their maximum speed, the power is reduced by 87.5%.



Lower noise: While shutting off half of the fans (one-half of the air flow) decreases the noise level by only about 3 dB. When reducing the speed of all fans to 50% of the maximum speed, the noise is reduced by 15dB(A).

Wiring Connection Diagrams

See publications/downloads at ebmpapst.com.au

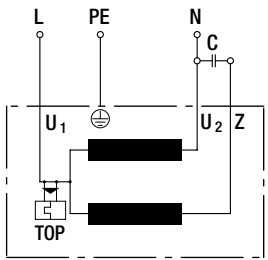
The following information applies generally, but not exhaustively, to the majority of AC products sold in Australia & New Zealand.

Notes

1. BE CAREFUL – always check the data on the motor, if in doubt ask an ebm-papst A&NZ representative
2. 3 phase – change direction of rotation by changing any 2 phases (applies for AC motors only, not EC)
3. All connection leads brought out by ebm-papst are 'internal leads' as defined by EN 60335-1
4. 'PE' = Earth

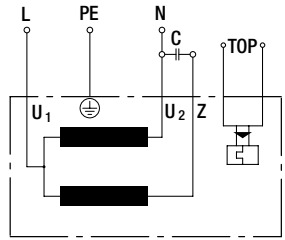
Please check our website www.ebmpapst.com.au or catalogue for complete wiring information.

1~ 230 VAC power line



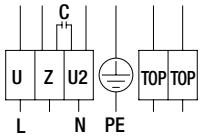
U_1 = blue
U_2 = black
Z = brown
⏚ = green/yellow

A1) Single phase capacitor motor with TOP wired internally



U_1 = blue
U_2 = black
Z = brown
⏚ = green/yellow

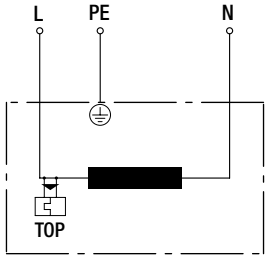
A2a) Single phase capacitor motor with connection for external TOP



U_1 = blue
U_2 = black
Z = brown
⏚ = green/ yellow

Fans
with terminal box

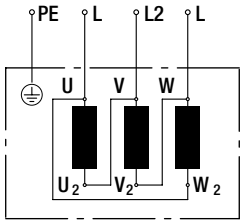
A2b) Single phase capacitor motor with connection for external TOP



L = blue
N = brown
⏚ = green/ yellow

B) Shaded pole motor with TOP wired internally

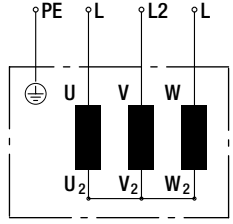
1 speed 3~ 230 VAC power line



U_1 = black
U_2 = green
V_1 = blue
V_2 = white
W_1 = brown
W_2 = yellow
⏚ = green/ yellow

C1) Delta connection (3~ 230 VAC power system) without TOP

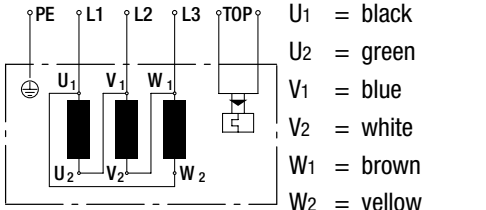
1 speed 3~ 400 VAC power line



U_1 = black
U_2 = green
V_1 = blue
V_2 = white
W_1 = brown
W_2 = yellow
⏚ = green/ yellow

C2) Star connection (3~ 400 VAC power system) without TOP

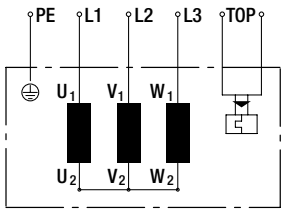
1 speed 3~ 230 VAC power line



U1 = black
U2 = green
V1 = blue
V2 = white
W1 = brown
W2 = yellow
⏚ = green/yellow

D1) Delta connection (3~ 230 VAC power line) with TOP

1 speed 3~ 400 or 480 VAC power line

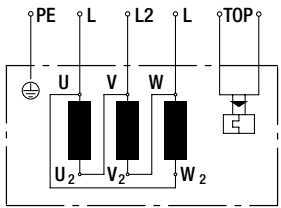


U1 = black
U2 = green
V1 = blue
V2 = white
W1 = brown
W2 = yellow
⏚ = green/yellow

D2) Star connection (3~ 400 or 480 VAC power line) with TOP

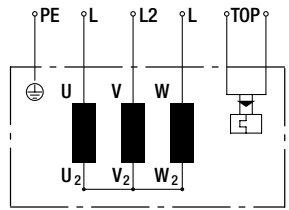
Direction of rotation is reversed by swapping two line phases

2 speed via ▲ / λ-switch 3~ 400 VAC power line



U_1 = black
U_2 = green
V_1 = blue
V_2 = white
W_1 = brown
W_2 = yellow
⏚ = green/yellow

F1a) Delta connection (high speed) with TOP

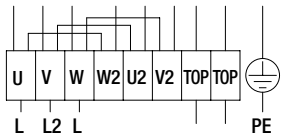


U_1 = black
U_2 = green
V_1 = blue
V_2 = white
W_1 = brown
W_2 = yellow
⏚ = green/yellow

F2a) Star connection (low speed) with TOP

Direction of rotation is reversed by swapping two line phases

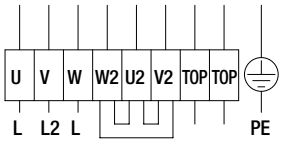
2 speeds via ▲ / Y-switch 3~ 400 VAC power line



Fans
with terminal box

U_1 = black
U_2 = green
V_1 = blue
V_2 = white
W_1 = brown
W_2 = yellow
⏚ = green/yellow

F1b) Delta connection (high speed) with TOP



Fans
with terminal box

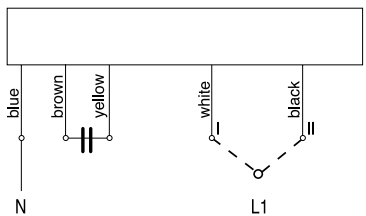
U_1 = black
U_2 = green
V_1 = blue
V_2 = white
W_1 = brown
W_2 = yellow
⏚ = green/yellow

F2b) Star connection (low speed) with TOP

Direction of rotation is reversed by swapping two line phases

ebm 2

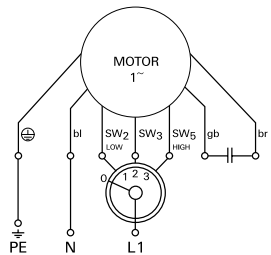
Single phase 2 speed



Rotation speed fast (level II)
Rotation speed slow (level I)

ebm 3

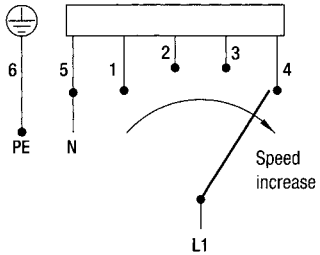
Single phase 3 speed



green/yellow bl blue br brown gb yellow
SW2 black #2 SW3 black #3 SW5 black #5

ebm 4

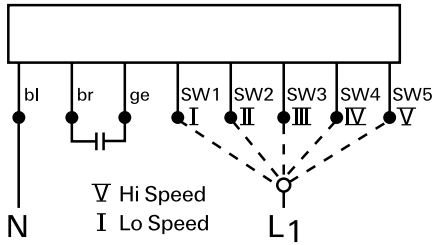
Single phase 4 speed control



Connection Diagram When changing speeds, the switch must break the circuit

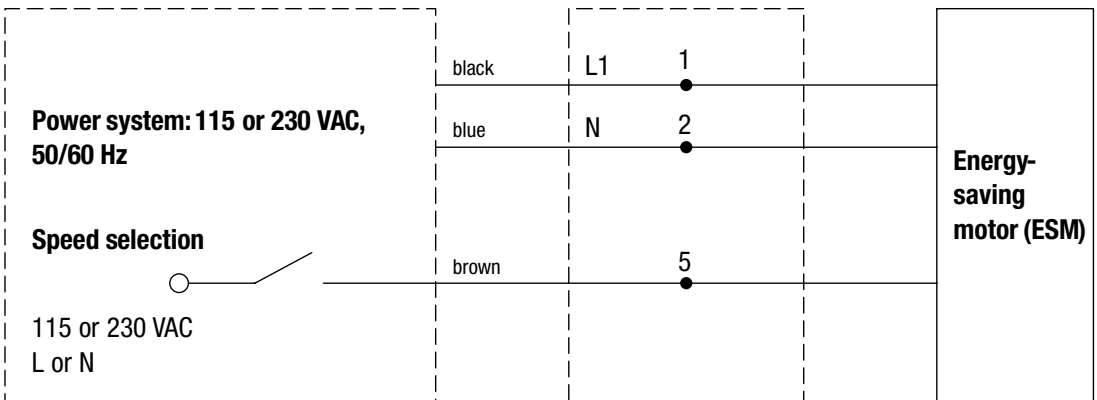
ebm 5

Single phase 5 speed



bl blue br brown ge yellow SW1 white
SW2 red SW3 grey SW4 orange SW5 black

ESM


Power system: 115 or 230 VAC, 50/60 Hz
Speed selection
115 or 230 VAC
L or N
black
blue
brown
L1
N
1
2
5
Energy-saving motor (ESM)

EC Wiring Diagrams

EC wiring diagrams			
Wiring type	Description		
	Power supply	Alarm relay	Bus interface
H1	1~230V 50/60HZ	no	no
H3	1~230V 50/60HZ	no	no
H4	1~230V 50/60HZ	no	no
H5	1~230V 50/60HZ	no	no
H6	1~230V 50/60HZ	no	no
J1	1~230V 50/60HZ	no	no
K1	1~230V 50/60HZ	yes	no
K3	3~230V 50/60HZ	yes	no
L1	1~230V 50/60HZ	yes	ebmBUS
L5	3~230V 50/60HZ	yes	MODBUS
L7	1~230V 50/60HZ	yes	MODBUS
M3	3~380V-480V 50/60HZ	yes	MODBUS

Please check our website www.ebmpapst.com.au or catalogue for complete wiring information.

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