COMAIR ROTRON

ebm MOTORS AND FANS

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multicomp

PAPST

SANYO DENKI

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Fans

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Axial Flow Fans - Mains ac

92, 119mm 'Slimline'

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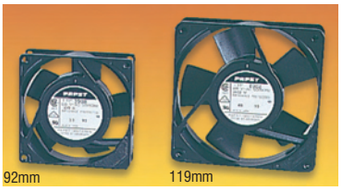

- Aerodynamically shaped slimline 25mm deep ac fans
- Shaded pole motor driven with internal rotor
- Aluminium alloy frame with glass reinforced polycarbonate impeller
- Fitted with ball bearings and 2.8 x 0.5mm push-on blade terminals
- Approved to **VDE, CSA** and **UL** recognised

Life expectancy >30000 hours

	92mm	119mm		92mm	119mm		92mm	119mm
Height	92	119	Depth	25	25	Fix Centres	82.5 x 82.5	105 x 105
Width	92	119	Cut-out ∅	89	116	Fix Centres ∅	4.5	4.5

Voltage V ac	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA@1m	Operating Temp °C	Mftrs. List No.	Order Code
92mm, Super Low Noise							
115	5	22.9	10.8	27	-40 to +80	3906L	960-1430
230	6	18.2	8.6	24	-40 to +80	3956L	960-1449
92mm, Low Noise							
115	5	31.2	14.7	34	-40 to +80	3906M	960-1457
230	6	26.5	12.5	29	-40 to +80	3956M	960-1465
92mm, Standard							
115	10	38.8	18.3	43	-40 to +80	3906	960-0922
230	11	38.8	15	36	-40 to +80	3956	960-0930
119mm, Super Low Noise							
115	8	38.8	27.7	34	-40 to +80	9906L	960-1490
230	9.5	31.8	23.4	29	-40 to +80	9956L	960-1503
119mm, Standard							
115	12	58.8	36	42	-40 to +70	9906	960-0949
230	14	49.7	36	42	-40 to +70	9956	960-0957
610mm Connecting Lead						LZ120	959-9720

Blade connections can be used with connecting lead (959-9720) or hard wired and soldered.

204290

Voltage	Order Code	Price Each 1+	5+	10+	15+	+
92mm, Super Low Noise						
115V	**960-1430●**	64.68	61.45	58.36	55.47	– –
230V	**960-1449●**	64.68	61.45	58.36	55.47	– –
92mm, Low Noise						
115V	**960-1457●**	99.28	79.41	72.95	61.74	– –
230V	**960-1465●**	99.28	79.41	72.95	61.74	– –
115V	**960-0922●**	89.84	71.82	68.17	61.74	– –
230V	**960-0930●**	97.93	78.28	72.95	61.74	– –
92mm, Standard						
115V	**960-1490●**	56.12	53.32	50.65	48.14	– –
230V	**960-1503●**	65.82	62.56	59.40	56.44	– –
115V	**960-0949●**	65.82	62.56	59.40	56.44	– –
230V	**960-0957●**	65.82	62.56	59.40	56.44	– –
610mm		**1+**	**5+**	**10+**	**15+**	**+**
Connecting Lead	**959-9720●**	4.90	4.56	4.50	4.41	– –

80mm, 92mm, 119mm 'Slimline'

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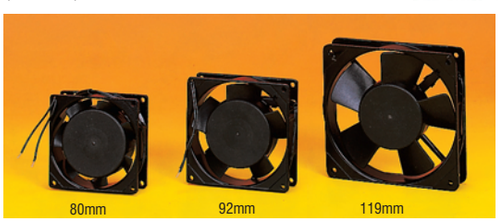

- Low cost slimline ac fans
- Impedance protected
- Aluminium frame with **UL94V-0** rated plastic impeller
- Supplied with a 330mm 24AWG lead wire
- **UL**recognised and **CSA** approved (except 926-048, 926-050)

Operating temperature -10°C to +70°C Life expectancy >30000 hours @ 55°C

Voltage Vac	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA @ 1m	Bearing Type	Order Code
80mm						
115	11	22	10.3	34	BB	960-6530
230	14	22	10.3	34	BB	960-6548
92mm						
115	12	37	17.4	40	BB	960-6556
230	14	37	17.4	40	BB	960-6564
119mm						
115	18	78	36.7	46	BB	960-6572
230	18	78	36.7	46	BB	960-6580

	80mm	92mm	119mm
Height	80	92	119
Width	80	92	119
Depth	25	25	25
Cut-out ∅	77	89	116
Fix Centres	71.5 x 71.5	82.5 x 82.5	105 x 105
Fix Centres ∅	4.3	4.3	4.3

204303

Voltage	Order Code	Price Each 1+	10+	25+	50+	+
80mm						
115V	**960-6530●**	42.35	38.40	35.40	30.00	– –
230V	**960-6548●**	42.35	38.40	35.40	30.00	– –
92mm						
115V	**960-6556●**	41.71	37.74	34.77	29.70	– –
230V	**960-6564●**	41.71	37.74	34.77	29.70	– –
119mm						
115V	**960-6572●**	47.37	43.11	40.50	34.71	– –
230V	**960-6580●**	47.37	43.11	40.50	34.71	– –

80mm, 92mm, 119mm

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80mm H=80, W=80, D=38. Cut-out ∅=77, Fix. Centres=71.5 x 71.5 x 4

92mm H=92, W=92, D=38, Cut-Out ∅=98 (88 flats) Fix. Centres 81.5 x 82.5

119mm H=119, W=119, D=38 Cut-out ∅=115, Fix. Centres=105 x 105 x 4

- Powerful high pressure fans with an external rotor shaded pole motor
- Approved to **VDE, CSA** and **UL** recognised
- Fitted with sleeve (SB) or ball (BB) bearings

Life expectancy >62500 hours

Voltage V ac	Power Watts	Air Flow cu ft/min	l/sec	Noise dBA@1m	Operating Temp °C	Connec. Type*	Bearing Type	Mftrs. List No.	Order Code
80mm, Ultra Low Noise									
115	8	21.2	36	21	-10 to +80	Lead	SB	8830N	960-1473
230	9	17.6	30	18	-10 to +80	Lead	SB	8880N	960-1481
80mm, Super Low Noise									
115	11.5	27.6	13	28	-10 to +70	Lead	SB	8800N	959-9800
230	10.5	22	10.4	24	-10 to +70	Lead	SB	8850N	959-9797
80mm, Low Noise									
115	11	35.9	16.9	34	-10 to +75	Lead	SB	8500N	959-9754
230	10	29	13.7	30	-10 to +70	Lead	SB	8550N	959-9762
80mm, Standard									
115	11	35.9	16.9	35	-40 to +95	Lead	BB	8506N	960-1414
230	12	29.4	13.7	31	-40 to +90	Lead	BB	8556N	960-1422
80mm, Dual Voltage									
115/220	11	29	13.7	31	-10 to +80	Lead	SB	8560N	959-9924
92mm, Standard									
115	11	52.4	24.7	41	-10 to +65	Lead	SB	3600	960-0523
230	12	44.1	20.8	36	-10 to +55	Lead	SB	3650	960-0531
115	11	52.4	24.7	42	-40 to +75	Lead	BB	3606	960-0540
230	12	44.1	20.8	37	-40 to +75	Lead	BB	3656	960-0558
119mm, Super Low Noise									
115	11	50	23.5	26	-10 to +70	Pin	SB	4840N	959-9789
230	10	47	22	25	-10 to +60	Pin	SB	4890N	959-9770
119mm, Low Noise									
115	9	59	27.8	32	-10 to +55	Pin	SB	4800N	959-9738
230	9	57	26.8	30	-10 to +45	Pin	SB	4850N	959-9746
119mm, Standard									
115	20	105.9	49.9	50	-10 to +70	Pin	SB	4600N	959-9703
230	18	94	44.3	46	-10 to +45	Pin	SB	4650N	959-9711
115	18	105.9	44.9	51	-10 to +95	Pin	SB	4606N	960-1511
230	19	94	44.3	47	-10 to +95	Pin	BB	4656N	960-1520
610mm Connecting Lead								LZ120	959-9720

*Fans with pin type connection should be used with a connecting lead (959-9720) or hard wired and soldered.

204300

Voltage	Order Code	Price Each 1+	5+	10+	15+	+
80mm, Ultra Low Noise						
115V	**960-1473●**	72.55	68.94	65.52	62.24	– –
230V	**960-1481●**	72.55	68.94	65.52	62.24	– –
80mm, Super Low Noise						
115V	**959-9800●**	70.08	65.93	59.54	53.11	– –
230V	**959-9797●**	72.55	68.94	65.52	62.24	– –
80mm, Low Noise						
115V	**959-9754●**	69.69	64.26	59.66	52.29	– –
230V	**959-9762●**	69.30	65.85	62.59	59.44	– –
80mm, Standard						
115V	**960-1414●**	64.84	63.76	57.90	55.57	– –
230V	**960-1422●**	55.25	54.62	51.15	– –	– –
80mm, Dual Voltage						
115/220V	**959-9924●**	95.88	93.65	91.07	83.44	– –

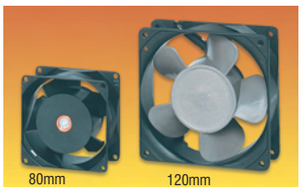
Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

C = CYAN M = Magenta Y = Yellow B = Black/SING

Voltage	Order Code	Price Each 1+	5+	10+	15+	+
92mm, Standard						
115V	**960-0523**●	71.59	70.15	68.01	64.42	– –
230V	**960-0531**●	71.59	70.15	68.01	64.42	– –
115V	**960-0540**●	73.40	71.94	70.50	69.10	– –
230V	**960-0558**●	78.72	77.27	74.81	70.84	– –
119mm, Super Low Noise						
115V	**959-9789**●	66.66	63.34	60.15	57.16	– –
230V	**959-9770**●	73.93	72.83	70.31	64.26	– –
119mm, Low Noise						
115V	**959-9738**●	70.05	69.08	63.13	58.46	– –
230V	**959-9746**●	69.89	63.03	59.44	52.48	– –
119mm, Standard						
115V	**959-9703**●	61.05	57.83	54.56	49.33	– –
230V	**959-9711**●	61.05	57.83	54.56	49.33	– –
115V	**960-1511**●	92.31	91.57	88.74	85.46	– –
230V	**960-1520**●	92.31	91.57	88.74	85.46	– –
610mm						
Connecting Lead	**959-9720**●	4.90	4.56	4.50	4.41	– –

80mm, 120mm

Minebea



- **UL94V-0** plastic impeller and diecast aluminium casing
- Shielded ball bearings
- Impedance protected
- Connection via two 0.11" terminals
- **UL** recognised, **CSA** approved

Fan size	60mm	80mm	120mm	150mm
Cut-out ∅	58.5	77	114.5	151
Fix Centres	50	71.5	105	162
Fix. hole ∅	4.3	4	4.3	4.3

Dimensions H	W	D	Voltage V ac	Power Watts	Air Flow cu ft/min	Noise dBA@1m	Mftrs. List No.	Order Code
60	60	30	115	4.5	7.0	29	2412PS-12W-B30-A00	101-2734
80	80	38	230	10	26.5	33	3115PS-23T-B30-A00	942-0177
120	120	38	230	15	95.3	37	4715MS-23T-B5A-A00	942-0185
150	172	38	230	35	176.5	56	5915PC-23T-B30-A00	101-2742

204298

Dimensions H	W	D	Voltage ac	Order Code	Price Each 1+	10+	25+	50+	+
60	60	30	115	NEW **101-2734**●	53.71	48.76	44.76	42.15	– –
80	80	38	230	NEW **942-0177**●	49.96	44.98	41.71	36.82	– –
120	120	38	230	NEW **942-0185**●	55.62	50.05	46.46	40.98	– –
150	172	38	230	NEW **101-2742**●	178.86	172.19	162.10	141.92	– –

80mm, 119mm

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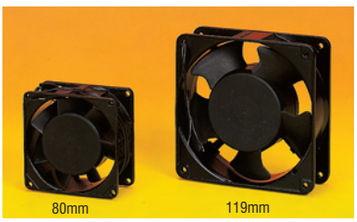

- Low cost, low noise, high pressure fans
- Impedance protected
- Sleeve bearings
- Diecast aluminium zinc housings
- **UL94V-0** rated plastic impellers
- Supplied with 300mm, 22 AWG lead wire
- Approved to **TUV**, **UL** recognised and **CSA**

Operating temperature -10°C to +70°C Life expectancy >30000 hours @ 55°C

Voltage V ac	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA@1m	Bearing Type	Order Code
80mm, Standard						
115	12	30	14.1	35	SB	926-061
230	14	30	14.1	35	Ball	371-9741
119mm, Low Noise						
115	11	76	35.8	38	SB	926-085
230	11	76	35.8	38	SB	926-097
119mm, Standard						
115	18	105	49.5	48	SB	926-103
230	18	107	50.4	50	SB	926-115

	80mm	119mm
Height	80	119
Width	80	119
Depth	38	38
Cut-out ∅	77	116
Fix Centres	71.5 x 71.5	105 x 105
Fix Centres ∅	4.3	4.3

204302

Voltage	Order Code	Price Each 1+	10+	25+	50+	+
80mm, Standard						
115V	**926-061**▲‡	41.71	37.80	35.07	29.70	– –
230V	**371-9741**▲‡	17.85	16.48	15.75	15.30	– –
119mm, Low Noise						
115V	**926-085**▲‡	40.97	37.17	34.53	29.70	– –
230V	**926-097**▲‡	40.97	37.17	34.53	29.70	– –
119mm, Standard						
115V	**926-103**▲‡	43.21	41.04	38.61	33.93	– –
230V	**926-115**▲‡	43.21	41.04	38.61	33.93	– –

160mm

ebmpapst

- Efficient, low noise fans
- Thermally protected shaded pole motor.
- **VDE** approved, **UL** recognised, **CSA** certified
- Fitted with ball bearings.

Life expectancy >50000 hours

Dia=150, D=55
Cut-out ∅=147
Fix. Centres=162 x 4.5

Voltage V ac	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA@1m	Operating Temp °C	Lead Length	Mftrs. List No.	Order Code
110	39	232	109	52	-30 to +65	330	W2S130-AA25-01	959-9894
240	40	206	97	49	-30 to +65	330	W2S130-AA03-01	959-9908
110/240	40	206	97	49	-30 to +65	330	W2S130-AA03-49	959-9916

204285

Voltage	Order Code	Price Each 1+	5+	10+	15+	+
110V	**959-9894**●	103.60	93.59	90.68	– –	– –
240V	**959-9908**●	100.89	90.88	90.68	– –	– –
110/240	**959-9916**●	158.25	139.29	130.60	125.18	– –

171mm
'Major XT'

COMAIR ROTRON

- Aluminium motor base and polycarbonate impeller
- Terminal connection
- Stainless steel ball bearings

Voltage (V ac)	Power (Watts)	Airflow (CFM)	Noise (dBA)	Speed (RPM)	Dimensions (WxHxD)	Mftrs. List No.	Order Code
115	34/31	220	59.7	2800/3300	150x172x38	ME2B3	118-7513
220/230	35/35	220	59.7	2800/3300	150x172x38	ME77B3	118-7514

347049

Order Code	Price Each 1+	5+	10+	25+
118-7513●	156.51	141.29	129.78	112.63
118-7514●	156.51	141.29	129.78	112.63

171mm
Maltese AC

COMAIR ROTRON

- Die-cast venturi, with **UL94-V0** flame retardant polypropylene impeller
- Air intake over the fan struts
- Stainless steel ball bearings
- Termination via two pin terminal
- 53,000 hours fan life at 40°C, L_{10}
- **UL** recognised, **CSA** and **VDE** approved

Voltage V ac	Frequency Hz	Current A	Power Watts	Noise dBA@1m	Speed RPM	Air Flow cu ft/min	Mftrs. List No.	Order Code
230	50/60	0.2/0.18	40.5/41.4	56.5	2850/3400	250/300	MA77B3.	444-5600
115	50/60	0.33/0.36	50/60	56.5	2850/3350	250/300	MA2B3.	444-5612

Dimensions H	W	D	Voltage V	Order Code	Price Each 1+	5+	10+	25+	+
171.5	150.4	55	230	**444-5600**▲‡	172.29	157.65	144.24	133.55	– –
171.5	150.44	55	115	**444-5612**▲‡	172.29	157.65	144.24	133.55	– –

Voltage V ac	Frequency Hz	Current A	Power Watts	Noise dBA@1m	Speed RPM	Air Flow cu ft/min	Mftrs. List No.	Order Code
230	50/60	0.2/0.18	40.5/41.4	56.5	2850/3400	250/300	MA77B3 031844	102-3677
115	50/60	0.33/0.36	50/60	56.5	2850/3350	250/300	MA2B3 031842	102-3678

RoHS ● Compliant ▲ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

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Dimensions H	W	D	Voltage V	Order Code	Price Each 1+	5+	10+	25+	+
171.5	150.4	55	230	**102-3677**●	172.29	157.65	144.24	133.55	– –
171.5	150.44	55	115	**102-3678**●	172.29	157.65	144.24	133.55	– –

171mm
'Falcon'

- Feathered edge impeller for low noise
- Stainless steel ball bearings
- Die-cast aluminium alloy venturi with flame retardant polycarbonate propeller
- **CSA** and **VDE** approved, **UL** recognised

Voltage V ac	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA@1m	Mftrs. List No.	Order Code
115	41	250	118	54.8	FA2B32.	162-5597
240	40.5	250	118	54.8	FA77B3 31660.	162-5585

Dimensions Dia	D	Voltage	Order Code	Price Each 1+	5+	10+	15+	+
171.5	55	115V	**162-5597**▲‡	174.60	151.86	139.65	121.07	– –
171.5	55	240V	**162-5585**▲‡	189.99	166.92	155.00	153.73	– –
Finger Guards				**1+**	**+**	**+**	**+**	**+**
171 Dia			**170-5404**●	7.72	– –	– –	– –	– –

Voltage V ac	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA@1m	Mftrs. List No.	Order Code
115	41	250	118	54.8	FA2B3 031659	102-3657
240	40.5	250	118	54.8	FA77B3 031660	102-3656

204357

Dimensions Dia	D	Voltage	Order Code	Price Each 1+	5+	10+	15+	+
171.5	55	115V	**102-3657**●	174.60	151.86	139.65	121.07	– –
171.5	55	240V	**102-3656**●	189.99	166.92	155.00	153.73	– –
Finger Guards				**1+**	**+**	**+**	**+**	**+**
171 Dia			**170-5404**●	7.72	– –	– –	– –	– –

172mm

- Metal fan housing and impeller
- Thermally protected external rotor capacitor motor
- Fitted with ball bearings
- **VDE**, and **CSA** approved, **UL** recognised

H=150, W=172, D=38
Dia=172, D=51

Voltage V ac	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA@1m	Operating Temp °C	Mftrs. List No.	Order Code
115	24	229.4	108.2	57	-30°C to +80°C	7006ES	960-1120
230	29	194.1	91.5	52	-30°C to +65°C	7056ES	960-1139
115	29	294.1	138.7	58	-30°C to +75°C	6028ES	960-1147
230	26	247.1	116.6	54	-30°C to +75°C	6078ES	960-1155

204339

Dimensions H	W	D	Voltage	Order Code	Price Each 1+	10+	25+	50+	+
150	172	38	115V	**960-1120**●	206.08	199.24	187.77	162.48	– –
150	172	38	230V	**960-1139**●	206.08	199.24	187.77	162.48	– –
51	Dia.172	51	115V	**960-1147**●	220.99	213.26	200.97	173.88	– –
51	Dia.172	51	230V	**960-1155**●	220.99	213.26	200.97	173.88	– –
Finger Guards									
150mm				**117-1810**●	7.62	6.71	6.05	5.11	– –
172mm				**117-1812**●	8.15	7.17	6.47	6.00	– –

171mm
'Major and Patriot'

Major Patriot

H=171.50, W=150.40, D=50.80, Dia=171.50, D=50.80

- Feathered edge impeller for low noise
- Stainless steel ball bearing
- **CSA** and **VDE** approved, **UL** recognised
- 3.05mm solder terminals

Voltage V ac	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA@1m	Operating Temp °C	Mftrs. List No.	Order Code
115	31	200	94	55.8	-28°C to +70°C	MR2B3 028245	102-3660
230	30	200	94	55.8	-28°C to +70°C	MR77B3 028309	102-3650
115	31	200	94	54	-28°C to +70°C	PT2B3 028254	102-3661
230	30	200	94	54	-28°C to +70°C	PT77B3 028312	102-3649

204338

Dimensions H	W	D	Voltage	Order Code	Price Each 1+	10+	25+	50+	+
Major									
171.5	150.4	50.8	115V	**102-3660**●	126.53	112.86	102.42	87.81	– –
171.5	150.4	50.8	230V	**102-3650**●	131.00	116.79	105.96	90.84	– –
Patriot									
171.5	Dia.	50.8	115V	**102-3661**●	126.53	112.86	102.42	87.81	– –
171.5	Dia.	50.8	230V	**102-3649**●	140.18	122.61	107.01	90.84	– –
Finger Guards									
171.5	150.4			**118-7494**●	9.37	9.24	8.04	7.58	– –
171 Dia				**118-7495**●	8.33	7.84	6.87	6.67	– –

175.5mm
'Tarzan'

H=175.50 W=175.50 D=111.80

- Sealed Ball Bearing
- Earthed through fan mounting hole
- **CSA** and **TUV** approved, **UL** recognised
- Supplied with 304mm lead

Voltage V ac	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA@1m	Operating Temp °C	Mftrs. List No.	Order Code
115	90/70	280	132	61.6	-18°C to +66°C	020169	102-3651

204336

Voltage	Connector Type	Order Code	Price Each 1+	10+	25+	50+	+
115V	Lead	**102-3651**●	169.32	143.94	124.29	– –	– –
Finger Guards		**118-7496**●	12.01	10.64	9.02	8.92	– –

254mm
'Caravel'

- Sealed ball bearings
- Earthed through tapped hole on fan case
- Available with 304mm lead or 3.05mm solder terminals
- **CSA** approved, **UL** recognised

D=88.90, Dia=254.00

Voltage V ac	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA@1m	Operating Temp °C	Mftrs. List No.	Order Code
115	67	455	215	45.4	-30°C to +60°C	CLE2L2 020188	102-3662
230	60	455	215	45.4	-30°C to +60°C	CLE3L2 020190	102-3658
115	67	455	215	45.4	-30°C to +60°C	CLE2T2 020189	102-3659
230	60	455	215	45.4	-30°C to +60°C	CLE3T2 020191	102-3653

204337

Connection Voltage	Type	Order Code	Price Each 1+	10+	25+	50+	+
115V	Lead	**102-3662**●	125.01	106.26	92.95	– –	– –
230V	Lead	**102-3658**●	127.89	108.72	92.95	– –	– –
115V	Solder Terminal	**102-3659**●	131.34	114.27	103.02	99.12	– –
230V	Solder Terminal	**102-3653**●	134.31	116.85	105.33	95.79	– –
Finger Guards		**118-7495**●	8.33	7.84	6.87	6.67	– –

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C = CYAN M = Magenta Y = Yellow B = Black/SING

255mm
'Caravel XL'

- Aluminium motor base and polycarbonate impeller
- Termination via 24" lead wires
- Stainless steel ball bearings

Voltage (V ac)	Power (Watts)	Airflow (CFM)	Noise (dBA)	Speed (RPM)	Dimensions (WxHxD)	Mftrs. List No.	Order Code
115	115	825	60.0	2400	255x255x107	CLE2L5	118-7515
230	110	825	60.0	2675	255x255x107	CLE3L5	118-7516

347054

Order Code	Price Each 1+	5+	10+	25+
118-7515●	225.34	207.31	190.41	185.91
118-7516●	225.34	207.31	190.41	165.25

AC Axial Fan

NEW

- Reliable and rugged plate fans suitable for industrial application
- External rotor motor gives good speed control and energy efficiency
- Sickle blades provide lower sound levels, higher pressure development and improved air flow
- Insulation class F (unless otherwise stated) motor with maintenance free sealed for life bearings
- Terminal box protected by **IP 54**
- Galvanised painted wall plate with full bell-mouth and inlet guard

Voltage	Power Input	Air Flow	Noise (dBA)	Dimensions (WxHxD)	Weight	Mftrs. List No.	Order Code
230V ac, 50/60Hz	47W	945m³/h	44	370 x 370 x 49mm	3.4kg	W4S250-DI02-06*	101-1725
230V ac, 50/60Hz	120W	2441m³/h	49	430 x 430 x 62mm	6.8kg	W4E315-DP18-38	101-1726
230V ac, 50/60Hz	180W	3110m³/h	54	485 x 485 x 68mm	6.8kg	W4E350-DP06-39	101-1727
230V ac, 50/60Hz	300W	5000m³/h	61	540 x 540 x 86mm	7.3kg	W4E400-DS02-38	101-1729
230V ac, 50/60Hz	470W	6732m³/h	61	576 x 576 x 86mm	9.6kg	W4E450-DV01-38	101-1731

Note: * Denotes Class B Motor

416707

Mftrs. List No.	Order Code	Price Each 1+	2+	5+
W4S250-DI02-06	**101-1725**●	448.73	333.77	296.66
W4E315-DP18-38	**101-1726**●	453.75	359.45	319.48
W4E350-DP06-39	**101-1727**●	522.30	410.81	365.15
W4E400-DS02-38	**101-1729**●	603.93	474.94	422.21
W4E450-DV01-38	**101-1731**●	652.89	532.71	473.54

High Performance ac/dc Fans

171.5mm, 225mm

- Robust all-metal construction
- Ball bearings
- Reverse mounting for sucking or blowing
- Locked rotor protection by built-in thermal cut-out
- Mounting in any position
- **CSA, VDE** approved, **UL** recognised

AC Compact Fans — Supply - 230V - Single Phase - 50Hz

Air Flow (l/s)	Dimensions H	W	D	Impeller ∅	Noise Level dBA@1m	Mftrs. List No.	Order Code
104	171.5	171.5	51	143	54	6058ES	960-1198
257	225	225	80	200	59	W2E200-HH38-01	960-1201

213833

Type	Mftrs. List No.	Order Code	Price Each 1+	5+	10+	25+
AC Compact	6058ES	**960-1198**●	123.32	111.07	106.72	– –
AC Compact	W2E200-HH38-01	**960-1201**●	199.66	189.66	179.36	168.49
AC Compact	04013-2-4039	**117-1827**●	15.51	15.12	14.37	12.33
AC Compact	78128-2-4039	**117-1828**●	24.68	23.58	22.41	19.20

AC & DC Axial Flow Fans

- **CE, CUR, TUV** approved, **UL** recognised
- Supplied with 300mm lead
- Full range of fans, ac, dc, slimline and green
- Long life
- Stable operation
- Operating temperature range -10°C to +90°C
- Green range supplied with 3 wires

Voltage V dc	Power Watts	Air Flow cu. ft./min.	ltrs./sec.	Noise dBA@1m	Mftrs. List No.	Order Code
AC - Slimline						
220/240	14/13.5	20	9.4	32.25	SF23080AT/2082HBL.GN	960-6190
220/240	14/13.5	33.5	15.8	38.5	SF23092A/2092HBL.GN	960-6203
220/240	19/18	72	35.6	45	DP201AT/2122HBL.GN	960-6220
AC - Low Cost						
220/240	14/13.5	30	9.44	35	SF23080A/2083HSL.GN	960-6238
115	20/18	95	44.8	45.5	SP101A/1123HSL.GN	960-6246
220/240	20/19	95	44.8	47	DP201A/2123HSL.GN	960-6254
DC - Slimline						
5	0.9	4.9	2.31	29	GM0503PEV1-8.N.GN	960-6262
5	0.55	5.3	2.5	28	GM0504PEV2-8.GN	960-6270
DC - Ultra Slimline						
12	0.7	3.0	1.41	25	GM1203PFV2-8.GN	960-6289
12	0.8	4.5	2.12	21	GM1235PFV2-8.GN	960-6297
12	0.6	6.0	2.83	28.5	KDE1204PFV2.11.MS.A.GN	960-6300
DC - Standard						
12	0.9	6.8	3.2	29	KDE1204PKV2.MS.GN	960-6319
24	1.0	7	3.3	29	KDE2404PKV2.MS.A.GN	960-6327
12	1.1	19.3	9.09	31	KDE1206PTV2.13.MS.A.GN	960-6335
24	1.9	19.3	9.09	31	KDE2406PTV2.13.MS.A.GN	960-6343
12	2.1	39	18.37	32	KDE1208PTV2.13.MS.A.GN	960-6351
24	2.4	6.8	3.2	29	KDE2408PTV2.13.MS.A.GN	960-6360
12	2.0	44	20.7	33	KDE1209PTV2.13.MS.A.GN	960-6378
24	2.2	45	21.2	34	KDE2409PTV2.13.MS.A.GN	960-6386
12	3.6	80	37.7	41	KD1212PTB2-6A.GN	960-6394
24	4.1	80	37.7	41	KD2412PTB2-6A.GN	960-6408
12	6.8	108	50.9	42	KD1212PMB1-6A.GN	960-6416
24	5.5	98	46.2	36.5	KD2412PMB2-6A.GN	960-6424
DC - Green						
12	0.8	8.6	4.05	36	GM1204PFVX-AF.GN	960-6432
12	1.4	10.8	5.08	27.5	KDE1204PKVX.MS.AF.GN	960-6440
12	1.9	18	8.5	37	GM1205PHVX-AF.GN	960-6459
12	1.4	21	9.9	36	GM1206PHV1-AF.GN	960-6467
12	1.6	22	10.4	32	KDE1206PHV1.MS.AF.GN	960-6475
12	1.1	26.2	12.34	38	KDE1206PTVX.MS.AF.GN	960-6483

232443/341589

Dimensions (mm)	Mftrs. List No.	Order Code	Price Each 1+	5+	10+	25+
AC - Slimline						
80 x 80 x 25	SF23080AT/2082HBL.GN	**960-6190**●	21.46	19.81	18.94	18.39
92 x 92 x 25	SF23092A/2092HBL.GN	**960-6203**●	21.46	19.81	18.94	18.39
120 x 120 x 25	DP201AT/2122HBL.GN	**960-6220**●	21.46	19.81	18.94	18.39
AC - Low Cost						
80 x 80 x 38	SF23080A/2083HSL.GN	**960-6238**●	17.85	16.48	15.75	15.30
120 x 120 x 38	SP101A/1123HSL.GN	**960-6246**●	17.85	16.48	15.75	15.30
120 x 120 x 38	DP201A/2123HSL.GN	**960-6254**●	17.85	16.48	15.75	15.30
DC - Slimline						
30 x 30 x 6	GM0503PEV1-8.N.GN	**960-6262**●	18.45	17.03	16.28	15.82
40 x 40 x 6	GM0504PEV2-8.GN	**960-6270**●	18.45	17.03	16.28	15.82
DC - Ultra Slimline						
30 x 30 x 10	GM1203PFV2-8.GN	**960-6289**●	18.45	17.03	16.28	15.82
35 x 35 x 10	GM1235PFV2-8.GN	**960-6297**●	18.45	17.03	16.28	15.82
40 x 40 x 10	KDE1204PFV2.11.MS.A.GN	**960-6300**●	9.81	9.05	8.65	8.40
DC - Standard						
40 x 40 x 20	KDE1204PKV2.MS.GN	**960-6319**●	11.42	10.55	10.08	9.79
40 x 40 x 20	KDE2404PKV2.MS.A.GN	**960-6327**●	11.42	10.55	10.08	9.79
60 x 60 x 25	KDE1206PTV2.13.MS.A.GN	**960-6335**●	11.42	10.55	10.08	9.79
60 x 60 x 25	KDE2406PTV2.13.MS.A.GN	**960-6343**●	11.42	10.55	10.08	9.79
80 x 80 x 25	KDE1208PTV2.13.MS.A.GN	**960-6351**●	9.81	9.05	8.65	8.40
80 x 80 x 25	KDE2408PTV2.13.MS.A.GN	**960-6360**●	11.42	10.55	10.08	9.79
92 x 92 x 25	KDE1209PTV2.13.MS.A.GN	**960-6378**●	9.81	9.05	8.65	8.40
92 x 92 x 25	KDE2409PTV2.13.MS.A.GN	**960-6386**●	11.42	10.55	10.08	9.79
120 x 120 x 25	KD1212PTB2-6A.GN	**960-6394**●	19.61	18.10	17.30	16.81
120 x 120 x 25	KD2412PTB2-6A.GN	**960-6408**●	19.61	18.10	17.30	16.81
120 x 120 x 38	KD1212PMB1-6A.GN	**960-6416**●	19.61	18.10	17.30	16.81
120 x 120 x 38	KD2412PMB2-6A.GN	**960-6424**●	19.61	18.10	17.30	16.81
DC - Green						
40 x 40 x 10	GM1204PFVX-AF.GN	**960-6432**●	9.81	9.06	8.66	8.41
40 x 40 x 20	KDE1204PKVX.MS.AF.GN	**960-6440**●	10.74	9.92	9.48	9.21
60 x 60 x 15	GM1206PHV1-AF.GN	**960-6467**●	10.74	9.92	9.48	9.21
60 x 60 x 20	KDE1206PHV1.MS.AF.GN	**960-6475**●	10.74	9.92	9.48	9.21
60 x 60 x 25	KDE1206PTVX.MS.AF.GN	**960-6483**●	10.74	9.92	9.48	9.21

DC Axial Fans (Panaflo)
Hydro Wave Bearing

RoHS ● Compliant ▲ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

Panaflo axial fans suit a wide range of applications. They force air out in a "funnel" type pattern, and are ideal when cooling a specific area such as a power supply that is surrounded by numerous components with minimum ventilation available. Panaflo's unique Hydro Wave Bearing (HWB) addresses the traditional weakness of sleeve bearings, axial friction. The HWB system utilizes a thrust plate that "floats" on a circulating film of oil greatly reducing axial friction and bearing deterioration. The HWB pattern on the bearing virtually eliminates thrust plate contact.

- Locked rotor protection
- Auto-start function
- Lower circuit noise
- Easy access to lead wires (2) via plug-in connector on housing
- **CSA** Approved and **UL** Recognised

Dimensions (mm)	109-8888 & 109-8886	109-8889 & 109-8890	109-8891 & 109-8892	109-8893 & 109-8894
Dimensions (H x W x D)	60 x 60 x 25.5	80 x 80 x 25.5	92 x 92 x 25.5	120 x 120 x 38
Fixing hole ∅	4	4.5	4.5	4.5
Fixing centres	50 x 50	71.5 x 71.5	82.5 x 82.5	105 x 105

Voltage V dc	Power W	Air Flow cu.ft/min	Air Flow m³/min	Noise dB	Current mA	Speed rpm	Mftrs. List No.
12	1.86	19.1	0.54	32	155	4200	FBA06A12H1A
24	2.04	19.1	0.54	32	85	4200	FBA06A24H1A
12	2.08	39.6	1.12	32	173	2950	FBA08A12H1A
24	2.52	39.6	1.12	32	105	2950	FBA08A24H1A
12	2.7	56.8	1.61	35	225	2850	FBA09A12H1A
24	3.36	56.8	1.61	35	140	2850	FBA09A24H1A
12	2.16	68.9	1.95	30	180	1700	FBA12G12L1A
24	2.64	68.9	1.95	30	110	1700	FBA12G24L1A

419664

Mftrs. List No.	Order Code	Price Each 1+	5+	10+	25+	+
FBA06A12H1A	**109-8886**●	45.24	41.99	40.39	37.92	– –
FBA06A24H1A	**109-8888**●	45.24	41.99	40.39	37.92	– –
FBA08A12H1A	**109-8889**●	49.09	44.33	44.17	41.40	– –
FBA08A24H1A	**109-8890**●	49.09	44.33	44.17	41.40	– –
FBA09A12H1A	**109-8891**●	64.38	58.43	54.20	49.87	– –
FBA09A24H1A	**109-8892**●	64.38	58.43	54.20	49.87	– –
FBA12G12L1A	**109-8893**●	83.49	78.51	75.13	68.71	– –
FBA12G24L1A	**109-8894**●	83.49	78.51	75.13	68.71	– –

Thermal Speed Controlled Fans

'VARIOFAN'

ebmpapst

80mm H=80, W=80, D=25
Cut-out ∅=77, Lead length=310
Fix. centres=71.5 x 71.5 x 4

92mm H=92, W=92, D=25
Cut-out ∅=89, Lead length=310
Fix. centres=82.5 x 82.5 x 4.3

119mm H=119, W=119, D=32
Cut-out ∅=115, Lead length=310
Fix. centres=105 x 105 x 4

- Variable speed
- External NTC thermistor controls speed/airflow relative to temperature
- Thermistor supplied but not fitted, for user flexibility
- Fan speed automatically reduces by upto 50% as thermistor temperature decreases
- Overload and reverse polarity protected
- Glass reinforced plastic (POCAN) housing
- 80mm version **VDE** approved

Life expectancy >27500 hours (sleeve bearing (SB) -20°C to +65°C
>37500 hours (ball bearing (BB)

Voltage V dc	Range V dc	Temp. of NTC °C	Temp. of NTC kΩ	Power Watts	Air Flow cu ft/min	Air Flow ltrs/sec	Noise dBA@1m	Bearing type.	Mftrs. List No.	Order Code
80mm, Slim										
12	8 to 14	30	86.8	0.8	15.9	7.5	10			
		50	30.0	1.5	26.5	15.5	19	SB	8412NGMLV	960-0264
92mm, Slim										
12	8 to 14	30	86.8	1.9	29.5	14.0	16			
		50	30.0	2.4	49.4	23.4	32	SB	3412NGV	960-0272
119mm, Standard										
12	8 to 12.6	30	86.8	1.4	41.2	19.4	22			
		50	30.0	3.4	82.5	29.7	40	BB	4312MV-R	960-0183

204291

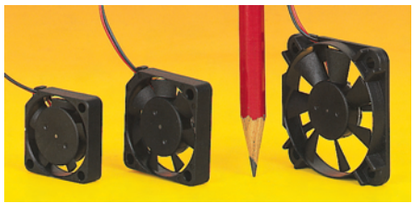
	Order Code	Price Each 1+	10+	25+	50+	+
80mm, Slim	**960-0264**●	45.14	43.00	41.74	39.50	– –
92mm, Slim	**960-0272**●	45.79	43.63	42.37	40.13	– –
119mm, Standard	**960-0183**●	86.78	81.65	76.83	72.99	– –

Axial Flow Fans - Low Voltage dc

Micro Slim - 6mm Deep

multicomp

5 V dc



- 25, 30 and 40mm micro slim fans
- Ideal for precision cooling or compact equipment
- Patented single coil brushless 8 pole motor
- Locked rotor protection
- Precision ball bearings

Operating Voltage 5V dc
Operating temperature -10°C to +70°C
Operating Life 50000 hrs

Dimensions H	W	D	Type	Power Watts	Air Flow cu ft/min	Air Flow ltrs/sec	Noise dBA @ 1m	Mftrs. List No.	Order Code
25	25	6	Low Noise, 25mm	0.4	1.2	0.57	21	GM0502PEV2-8.N.GN	960-6114
25	25	6	Standard,25mm	0.6	1.6	0.76	29	GM0502PEV1-8.N.GN	960-6106
30	30	6	Low Noise,30mm	0.45	2.4	1.15	20	GM0503PEV2-8.N.GN	960-6149
30	30	6	Standard,30mm	0.65	3	1.43	25	GM0503PEV1-8.N.GN	960-6130
40	40	6	Low Noise,40mm	0.5	4.35	2.07	22	GM0504PEV2-8.GN	960-6173
40	40	6	Standard,40mm	0.7	5.5	2.6	26	GM0504PEV1-8.GN	960-6165

204367

	Voltage V dc	Order Code	Price Each 1+	10+	25+	50+	+
25mm							
Low Noise	5	**960-6114**●	26.35	25.29	23.94	20.88	– –
Standard	5	**960-6106**●	26.35	25.29	23.94	20.88	– –
30mm							
Low Noise	5	**960-6149**●	26.35	25.29	23.94	20.88	– –
Standard	5	**960-6130**●	26.35	25.29	23.94	20.88	– –
40mm							
Low Noise	5	**960-6173**●	26.35	25.29	23.94	20.88	– –
Standard	5	**960-6165**●	26.35	25.29	23.94	20.88	– –

Miniature, 'Ultraslim'

25mm 30mm 35mm 40mm

- 25, 30, 35 and 40mm ultra slim fans
- Ideally suited for precision cooling
- Patented Single - coil brushless 8 pole motor design
- Locked rotor protection
- Low power consumption
- Fitted with precision ball bearings
- **TUV** approved, **UL** recognised

Voltage V dc	Power Watts	Air Flow cu ft/min	Air Flow ltrs/sec	Noise dBA@1m	Mftrs. List No.	Order Code
12 ± 15%	0.72	2.0	0.9	24	GM1202PFV2-8.GN	960-6491
12 ± 15%	0.84	3.0	1.4	20.5	GM1203PFV2-8.GN	960-6505
12 ± 15%	0.84	4.5	2.1	21	GM1235PFV2-8.GN	960-6513
12 ± 15%	0.6	6.2	2.9	24.5	KDE1204PFV2.11.MS.A.GN	960-6521

204331

Dimension H	W	D	Voltage V dc	Order Code	Price Each 1+	10+	25+	50+	+	+
25	25	10	12	**960-6491**●	29.99	26.10	24.81	21.51	– –	– –
30	30	10	12	**960-6505**●	29.99	26.10	24.81	21.51	– –	– –
35	35	10	12	**960-6513**●	29.99	26.10	24.81	21.51	– –	– –
40	40	10	12	**960-6521**●	22.15	19.38	18.36	16.08	– –	– –

Miniature, Tube Fans

micronel

24mm 36mm 48mm 60mm

- Brushless, low noise
- Black reinforced plastic housing and impeller
- Supplied with 200mm flying leads
- Sleeved bearings

Voltage V dc	Power Watts	Air Flow cu ft/min	Air Flow ltrs/sec	Noise dBA@1m	Mftrs. List No.	Order Code
24mm Dia						
6	0.19	1.77	0.83	33	D241L-006GK-1	117-5738
12	0.26	2.12	1	38	D241L-012GK-1	117-5739

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

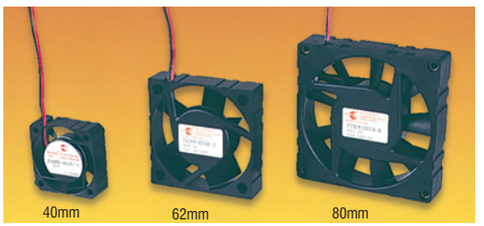
36mm Dia						
12	0.96	9.74	4.6	46	D341T-012GK-2	117-5740
24	0.96	9.74	4.6	46	D341T-024GK-2	117-5741
48mm Dia						
12	3.5	22.38	10.56	53	D481T-012KA-3	117-5742
24	2.9	20.12	9.5	51	D481T-024KA-3	117-5743
60mm Dia						
12	6.68	42.1	19.86	57	D601T-012KA-3	117-5744
24	5.54	40.4	19.05	56	D601T-024KA-3	117-5745

227521

Dimensions Dia x D	Voltage VDC	Order Code	Price Each 1+	10+	25+	50+	+
24x30	6	**117-5738●**	108.17	101.76	96.42	85.68	– –
24x30	12	**117-5739●**	108.17	101.76	96.42	85.68	– –
36x36	12	**117-5740●**	94.68	89.04	84.39	75.00	– –
36x36	24	**117-5741●**	94.68	89.04	84.39	75.00	– –
48x60	12	**117-5742●**	202.76	190.74	180.69	160.62	– –
48x60	24	**117-5743●**	202.76	190.74	180.69	160.62	– –
60x60	12	**117-5744●**	224.54	211.23	200.10	177.87	– –
60x60	24	**117-5745●**	224.54	211.23	200.10	177.87	– –

'Ultra Slim'

micronel



- Brushless, low noise 'ultra slim' fans
- Glass-fibre reinforced plastic housing
- Reverse polarity protected
- 80mm 12 and 24V fans are suitable for both AC and DC operators

Life expectancy >30000 hours (sleeved bearings (SB))
>30,000 hours (ball bearings (BB))

Voltage	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA@1m	Operating Temp °C	Lead Length	Bearing Type	Mftrs. List No.	Order Code
40mm									
5V dc	0.7	6.1	2.9	21	-20 to +60	300	BB	F41MM-005XK-9	117-5746
12V dc	1	6.1	2.9	21	-20 to +60	300	BB	F41MM-012XK-9	117-5747
24V dc	1.3	6.1	2.9	21	-20 to +60	300	BB	F41MM-024XK-9	117-5748
62mm									
5V dc	0.8	14.8	7	25	-10 to +65	320	SB	F62MM-005GK-0	117-5751
12V dc	1.1	14.8	7	25	-10 to +65	320	SB	F62MM-012GK-0	117-5752
24V dc	1.2	14.8	7	25	-10 to +65	320	SB	F62MM-024GK-0	117-5753
80mm									
5V dc	1.3	21.2	10	32	-20 to +65	200	SB	F75EM05VDCP	151-077
12V ac/dc	1.5	21.2	10	32	-20 to +65	200	SB	F75EM12VDAP	151-078
24V ac/dc	1.4	21.2	10	32	-20 to +65	200	SB	F75EM24VDAP	151-079

	40mm	62mm	80mm
Height	41	62	80
Width	41	62	80
Depth	12	15	18
Cut-out ∅	39	59	75
Fixing Centres	32 x 32	50 x 50	71.5 x 71.5
Fixing Centres ∅	3.5	4.0	4.0

204314

	Voltage	Order Code	Price Each 1+	10+	25+	50+	+
40mm	5V	**117-5746●**	71.05	63.48	59.88	52.41	– –
	12V	**117-5747●**	71.05	63.48	59.88	52.41	– –
	24V	**117-5748●**	71.05	63.48	59.88	52.41	– –
62mm	5V	**117-5751●**	71.05	63.48	59.88	52.41	– –
	12V	**117-5752●**	71.05	63.42	59.88	52.41	– –
	24V	**117-5753●**	71.05	63.42	59.88	52.41	– –
80mm	5V	**151-077**	71.30	63.63	58.26	51.68	– –
	12Vac/dc	**151-078**	71.30	63.63	58.26	51.68	– –
	24Vac/dc	**151-079**	69.22	61.74	56.58	51.68	– –

Miniature, 40mm

ebmpapst

- High cooling performance, ideal for CPU's, small devices or heat-intensive areas on printed circuit boards
- Overload and electronic reverse polarity protected
- Fitted with sleeve bearings

Voltage V dc	Power Watts	Air Flow Cu. ft./min.	ltrs/sec	Noise dB(A)C/M	Mftrs. List No.	Order Code
5	0.7	4.7	2.2	26	405F	960-0620
5	0.9	5.9	2.8	18	405	960-0639
12	0.7	4.7	2.2	26	412F	960-1260
12	0.8	5.6	2.6	29	412FH	960-1279
12	0.9	5.9	2.8	18	412	960-1287
24	0.7	4.7	2.2	26	414F	960-1295
24	0.9	5.9	2.8	18	414	960-1309

204319

Size H	W	D	Voltage V dc	Order Code	Price Each 1+	5+	10+	25+	+
40	40	10	5	**960-0620●**	31.74	27.17	24.49	21.25	– –
40	40	20	5	**960-0639●**	33.60	28.76	25.93	22.50	– –
40	40	10	12	**960-1260●**	26.98	23.09	21.21	18.06	– –
40	40	10	12	**960-1279●**	27.81	23.80	21.45	18.62	– –
40	40	20	12	**960-1287●**	28.64	24.51	22.09	19.17	– –
40	40	10	24	**960-1295●**	26.98	23.09	21.21	18.06	– –
40	40	20	24	**960-1309●**	28.64	24.51	22.09	19.17	– –

Compact, 40mm

ebmpapst

- Compact 40x25mm mini fan for DC operation
- Available with or without sensor signal to monitor fans performance
- Manufactured from PBT/PA 6.6
- Excellent air flow values and minimum noise level
- DC drive employs an electronically commutated external rotor motor with low power consumption
- Fully integrated commutation electronics
- Fitted with ball bearings
- Life expectancy of over 55,000 hours @ 40°C
- Weight: 50g

Voltage V dc	Power Watts	Air Flow Cu. ft./min.	Current Consumption (mA)	Signal Sensor Wire	Speed RPM	Mftrs. List No.	Order Code
12	2.9	13.6	245		11700	412JH.	433-8078
12	3.2	14.7	270		13000	412JHH.	433-8091
12	3.2	14.7	270	✓	13000	412J/2HH.	433-8108
24	2.4	11.9	100		10300	414J.	433-8110
24	2.7	13.6	115		11700	414JH.	433-8121
24	2.7	13	115	✓	11700	414J/2H.	433-8133
24	4.1	14.7	149		13000	414JHH.	433-8145
24	4.1	14.7	149	✓	13000	414J/2HH.	433-8157

Dimensions (HxWxD)	40 x 40 x 25
Fixing hole ∅	3.5
Fixing centres	32 x 32

Mftrs. List No.	Order Code	Price Each 1+	5+	10+	25+	+
412JH.	**433-8078▲‡**	48.96	46.51	44.20	42.02	– –
412JHH.	**433-8091▲‡**	50.62	48.08	45.67	43.39	– –
412J/2HH.	**433-8108▲‡**	55.61	47.61	42.91	37.24	– –
414J.	**433-8110▲‡**	51.89	44.42	40.03	34.74	– –
414JH.	**433-8121▲‡**	48.96	46.51	44.20	42.02	– –
414J/2H.	**433-8133▲‡**	54.17	46.37	41.79	36.27	– –
414JHH.	**433-8145▲‡**	50.62	48.08	45.67	43.39	– –
414J/2HH.	**433-8157▲‡**	55.61	47.61	42.91	37.24	– –

Voltage V dc	Power Watts	Air Flow Cu. ft./min.	Current Consumption (mA)	Signal Sensor Wire	Speed RPM	Mftrs. List No.	Order Code
12	2.9	13.6	245		11700	412JH	960-0760
12	3.2	14.7	270	✓	13000	412JHH	960-0779
12	3.2	14.7	270		13000	412J/2HH	960-0787
24	2.4	11.9	100	✓	10300	414J	960-0795
24	2.7	13.6	115		11700	414JH	960-0809
24	2.7	13	115		11700	414J/2H	960-0817
24	4.1	14.7	149	✓	13000	414JHH	960-0825
24	4.1	14.7	149		13000	414J/2HH	960-0833

249105

Mftrs. List No.	Order Code	Price Each 1+	5+	10+	25+	+
412JH	**960-0760●**	48.96	46.51	44.20	42.02	– –
412JHH	**960-0779●**	50.62	48.08	45.67	43.39	– –
412J/2HH	**960-0787●**	55.61	47.61	42.91	37.24	– –
414J	**960-0795●**	51.89	44.42	40.03	34.74	– –
414JH	**960-0809●**	48.96	46.51	44.20	42.02	– –
414J/2H	**960-0817●**	54.17	46.37	41.79	36.27	– –
414JHH	**960-0825●**	50.62	48.08	45.67	43.39	– –
414J/2HH	**960-0833●**	55.61	47.61	42.91	37.24	– –

'Slimline'

ebmpapst

RoHS ● Compliant ▲ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

- Brushless, high airflow, low power fans
- Stall and reverse polarity protected
- Glass reinforced pocan (PTB) housings
- Slimline design only 25mm (1") deep, 60mm 15mm (0.59") deep
- Speed sensor options offer integrated speed monitoring using a square wave output which can be used for protection against overheating, component damage or intelligent cooling
- **VDE** and **CSA** approved, **UL** recognised
- 92mm versions **UL** recognised only

	50mm	60mm	80mm	92mm	119mm
Height	50	60	80	92	119
Width	50	60	80	92	119
Depth	15	15	25	25	25
Cut-out ∅	48	57	77	89	116
Fix Centres	42 x 42	50 x 50	71.5 x 71.5	82.5 x 82.5	104.8 x 104.8
Fix Centres ∅	3.7	3.7	4.5	4.5	4.5

*Speed sensor option: Square wave signal amplitude depends on pull up resistor used. 2 pulses per revolution, open collector without internal pull up resistor

Voltage V dc	Range V dc	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA@1m	Bearing type.	Mftrs. List No.	Order Code
50mm, Standard								
12	10.8 to 13.2	1	11.8	5.5	30	SB	512F	960-0191
24	21.6 to 26.4	1	11.8	5.5	30	SB	514F	960-0205
60mm, Low Noise								
12	10 to 13.2	1.1	17.1	8	27	SB	612F	960-0086
24	21.6 to 26.4	1.1	17.1	8	27	SB	614F	960-0094
80mm, Super Low Noise								
12	8 to 15	0.6	19.4	9.1	12	SB	8412NGL	960-0981
12*	8 to 15	0.6	19.4	9.1	12	SB	8412N/2GL	959-9983
24	18 to 28	0.7	19.4	9.1	12	SB	8414NGL	960-0990
24*	18 to 28	0.7	19.4	9.1	12	SB	8414N/2GL	960-0027
80mm, Low Noise								
12	8 to 15	1.3	34.1	16	26	SB	8412NGM	960-1007
12*	8 to 15	1.3	34.1	16	26	SB	8412N/2GM	959-9991
24	18 to 28	1.4	34.1	16	26	SB	8414NGM	960-1015
24*	18 to 28	1.4	34.1	16	26	SB	8414/2GM	960-0035
80mm, Standard								
12	8 to 15	2	40.6	19.1	32	SB	8412NG	960-1023
12*	8 to 15	2	40.6	19.1	32	SB	8412NG/2	960-0000
24	18 to 28	2	40.6	19.1	32	SB	8414NG	960-1031
24*	18 to 28	2	40.6	19.1	32	SB	8414N/2G	960-0043
12	7 to 15	2.8	46.5	21.9	37	SB	8412NGH	960-1040
12*	7 to 15	2.8	46.5	21.9	37	SB	8412N/2GH	960-0019
24	18 to 28	2.8	46.5	21.9	37	SB	8414NGH	960-1058
24*	18 to 28	2.8	46.5	21.9	37	SB	8414N/2GH	960-0051
92mm, Super Low Noise								
12	8 to 15	1.2	35.9	16.9	23	SB	3412NGL	960-0361
24	18 to 28	1.4	35.9	16.9	23	SB	3414NGL	960-0418
92mm, Low Noise								
12	8 to 15	1.6	42.4	20	28	SB	3412NGM	960-0370
24	18 to 28	1.8	42.4	20	28	SB	3414NGM	960-0426
92mm, Standard								
12	8 to 15	2.2	49.4	23.3	32	SB	3412NG	960-0388
12	8 to 15	2.2	49.4	23.3	32	BB	3412N	960-0396
24	18 to 28	2.3	49.4	23.3	32	SB	3414NG	960-0434
24	18 to 28	2.3	49.4	23.3	32	BB	3414N	960-0442
12	8 to 15	2.5	55.3	26.1	36	SB	3412NGH	960-0400
24	18 to 28	2.5	55.3	26.1	36	SB	3414NGH	960-0450
119mm, Low Noise								
12	7 to 12.6	3.2	82.4	38.8	38	SB	4412FGM	960-1066
12*	7 to 12.6	3.2	82.4	38.8	38	BB	4412F/2	960-0060
24	12 to 28	3.2	82.4	38.8	38	BB	4414FM	960-1074
119mm, Standard								
24	12 to 28	5	100	47.2	43	BB	4414F	960-1082
24*	12 to 28	5	100	47.2	43	BB	4414F/2	960-0078

204341

Voltage	Order Code	Price Each 1+	5+	10+	25+	+
50mm, Standard						
12V	960-0191●	28.34	24.63	22.20	19.27	– –
24V	960-0205●	28.34	24.63	22.20	19.27	– –
60mm, Low Noise						
12V	960-0086●	33.53	28.71	25.87	22.45	– –
24V	960-0094●	33.60	28.76	25.93	22.50	– –
80mm, Super Low Noise						
12V	960-0981●	36.09	30.89	27.84	24.16	– –
24V	960-0990●	36.09	30.89	27.84	24.16	– –
24V/Speed Sensor	960-0027●	36.09	30.89	27.84	24.16	– –
80mm, Low Noise						
12V	960-1007●	36.09	30.89	27.84	24.16	– –
12V/Speed Sensor	959-9991●	36.09	30.89	27.84	24.16	– –
24V	960-1015●	36.09	30.89	27.84	24.16	– –
24V/Speed Sensor	960-0035●	36.09	30.89	27.84	24.16	– –
80mm, Standard						
12V	960-1023●	36.09	30.89	27.84	24.16	– –
12V/Speed Sensor	960-0000●	36.09	30.89	27.84	24.16	– –
24V	960-1031●	36.09	30.89	27.84	24.16	– –
24V/Speed Sensor	960-0043●	36.09	30.89	27.84	24.16	– –
12V	960-1040●	38.57	33.02	29.76	25.83	– –
12V/Speed Sensor	960-0019●	38.57	33.02	29.76	25.83	– –
24V	960-1058●	38.57	33.02	29.76	25.83	– –
24V/Speed Sensor	960-0051●	38.57	33.02	29.76	25.83	– –
92mm, Super Low Noise						
12V	960-0361●	36.41	31.60	28.48	24.72	– –
24V	960-0418●	36.41	31.60	28.48	24.72	– –
92mm, Low Noise						
12V	960-0370●	36.41	31.60	28.48	24.72	– –
24V	960-0426●	36.41	31.60	28.48	24.72	– –
92mm, Standard						
12V	960-0388●	36.41	31.60	28.48	24.72	– –
12V	960-0396●	43.70	37.86	34.12	29.61	– –
24V	960-0434●	36.41	31.60	28.48	24.72	– –
24V	960-0442●	43.70	37.92	34.18	29.66	– –
12V	960-0400●	36.92	31.60	28.48	24.72	– –
24V	960-0450●	36.92	31.60	28.48	24.72	– –
119mm, Low Noise						
12V	960-1066●	54.51	46.66	42.06	36.50	– –
12V/Speed Sensor	960-0060●	61.58	54.08	49.67	43.10	– –
24V	960-1074●	61.58	54.08	49.67	43.10	– –
119mm, Standard						
24V	960-1082●	61.58	54.08	49.67	43.10	– –
24V/Speed Sensor	960-0078●	61.58	54.08	49.67	43.10	– –

Standard

ebmpapst

- Brushless, high air flow, low power fans
- Constructed to **VDE0730**
- Stall and reverse polarity protected
- Fitted with sleeved (SB) or ball (BB) bearings
- **CSA** approved, **UL** recognised
- Glass reinforced plastic housings (127 and 135mm, metal)

	60mm	80mm	92mm	119mm	127mm	135mm
Height	60	80	92	119	127	135
Width	60	80	92	119	127	135
Depth	25	32	32	32	38	38
Cut-out ∅	58	77	88	116	124	133
Fix Centres	50 x 50	71.5 x 71.5	71.5 x 71.5	82.5 x 82.5	113 x 113	113 x 113
Fix Centres ∅	4	4.5	4.5	4.5	4.7	4.3

204324

Voltage V dc	Range V dc	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA@1m	Operating Temp °C	Bearing Type	Mftrs. List No.	Order Code
60mm, Super Low Noise									
12	6 to 15	0.7	12.4	5.8	26	-20 to +65	BB	612L	960-1317
12	8 to 15	0.8	12.4	5.8	16	-20 to +65	SB	612NGL	960-0280
24	18 to 28	0.8	12.4	5.8	16	-20 to +65	SB	614NGL	960-0329
60mm, Standard									
24	18 to 28	2.1	24.1	11.4	35	-20 to +65	SB	614NGN	960-0345
12	8 to 15	2.6	27.1	12.8	38	-20 to +65	SB	612NGH	960-0310
12	8 to 15	3.8	33	15.5	43	-20 to +65	SB	612NGHH	960-0647
24	18 to 28	3.8	33	15.5	43	-20 to +65	SB	614NGHH	960-0655
80mm, Super Low Noise									
12	6 to 15	1	18.8	8.8	33	-20 to +75	BB	8312L	960-1333
12	12 to 28	1	18.8	8.8	24	-20 to +75	BB	8314L	960-1341
80mm, Standard									
12	6 to 15	2.2	31.8	15.1	36	-10 to +75	BB	8312	959-9827
48	36 to 54	2.6	32	15.1	36	-10 to +75	BB	8318	960-1325
92mm, Super Low Noise									
12	6 to 15	1.4	33	15.5	29	-10 to +75	BB	3312L	960-1350
92mm, Standard									
12	6 to 15	2.4	47	22.2	37	-10 to +75	BB	3312	959-9851
24	12 to 28	2.4	47	22.2	37	-10 to +75	BB	3314	959-9860
119mm, Super Low Noise									
12	6 to 15	1.2	55.9	26.3	30	-20 to +75	BB	4312L	960-1368
24	12 to 28	1.2	55.9	26.3	30	-20 to +75	BB	4314L	960-1376
119mm, Super Low Noise, 38mm Depth									
12	7 to 14.5	1.4	58.9	27.8	28	-20 to +80	SB	4212NGL	960-0469
24	12 to 28	1.4	58.9	27.8	28	-20 to +80	SB	4214NGL	960-0493
119mm, Low Noise									
12	6 to 15	2.6	82.4	38.8	39	-20 to +75	BB	4312M	960-1384
24	12 to 28	2.6	82.4	38.8	39	-20 to +75	BB	4314M	960-1392
119mm, Low Noise, 38mm Depth									
12	7 to 14.5	3.0	84.8	40	38	-20 to +70	SB	4212NGM	960-0477
24	12 to 28	3	84.8	40	38	-20 to +70	SB	4214NGM	960-0507
119mm, Standard									
12	6 to 15	5	100	47.2	43	-10 to +75	BB	4312	959-9878
24	12 to 28	5	100	47.2	43	-10 to +75	BB	4314	959-9886
48	48 to 56	5	100	47.2	43	-10 to +75	BB	4318	960-1406
119mm, Standard, 38mm Depth									
12	7 to 14.5	5	105.9	49.9	45	-20 to +70	BB	4212NH	960-0698
24	12 to 28	5	105.7	49.9	45	-20 to +70	BB	4214NH	960-0701
127mm, Standard									
24	18 to 30	4.7	117.7	55.5	44	-15 to +72	BB	5214	960-1090
135mm, Standard									
12	6 to 15	9.5	147.1	69.4	48	-25 to +72	BB	5112N	960-1104
24	12 to 30	9.5	147.1	64.4	48	-25 to +72	BB	5114N	960-1112

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

Voltage	Order Code	Price Each 1+	5+	10+	25+	+
60mm, Super Low Noise						
12V	**960-1317●**	50.92	43.59	39.29	34.10	– –
24V	**960-0329●**	34.57	29.59	26.67	23.15	– –
60mm, Standard						
24V	**960-0345●**	34.57	29.59	26.67	23.15	– –
12V	**960-0310●**	35.62	31.89	28.75	24.95	– –
12V	**960-0647●**	35.62	31.89	28.75	24.95	– –
24V	**960-0655●**	35.62	31.89	28.75	24.95	– –
80mm, Super Low Noise						
12V	**960-1333●**	54.99	47.07	42.43	36.82	– –
12V	**960-1341●**	54.99	47.07	42.43	36.82	– –
80mm, Standard						
12V	**959-9827●**	53.34	45.66	41.15	35.71	– –
48V	**960-1325●**	62.85	55.41	50.89	44.17	– –
92mm, Super Low Noise						
12V	**960-1350●**	56.93	48.73	43.92	38.12	– –
92mm, Standard						
12V	**959-9851●**	52.30	44.77	40.35	35.02	– –
24V	**959-9860●**	52.30	44.77	40.35	35.02	– –
119mm, Super Low Noise						
12V	**960-1368●**	59.60	53.33	48.07	41.72	– –
24V	**960-1376●**	57.20	48.96	44.13	38.30	– –
119mm, Super Low Noise, 38mm Depth						
12V	**960-0469●**	54.99	47.07	42.43	36.82	– –
24V	**960-0493●**	54.99	47.07	42.43	36.82	– –
119mm, Low Noise						
12V	**960-1384●**	59.60	53.33	48.07	41.72	– –
24V	**960-1392●**	57.20	48.96	44.13	38.30	– –
119mm, Low Noise, 38mm Depth						
12V	**960-0477●**	54.99	47.07	42.43	36.82	– –
24V	**960-0507●**	54.99	47.07	42.43	36.82	– –
119mm, Standard						
12V	**959-9878●**	53.82	46.07	41.52	36.04	– –
24V	**959-9886●**	53.82	46.07	41.52	36.04	– –
48V	**960-1406●**	63.56	55.82	51.27	44.49	– –
119mm, Standard, 38mm Depth						
12V	**960-0698●**	55.05	49.32	44.45	38.58	– –
24V	**960-0701●**	55.05	49.32	44.45	38.58	– –
127mm, Standard						
24V	**960-1090●**	106.00	93.08	85.50	74.20	– –
135mm, Standard						
12V	**960-1104●**	189.39	170.98	157.04	136.29	– –
24V	**960-1112●**	148.49	134.06	123.13	106.86	– –

Standard

Minebea

- **UL94V-0** plastic casing and impeller
- Shielded ball bearings
- Reverse polarity protected
- Auto-restart facility will shut-down the current if a blockage occurs
- Connection by two 300mm lead wires + Red, - Black
- **CSA** approved, **UL** recognised

Fan size	40mm	60mm	120mm
Cut-out ∅	38	57	114.5
Fix Centres	32	50	105
Fix. hole ∅	4	4	4.3

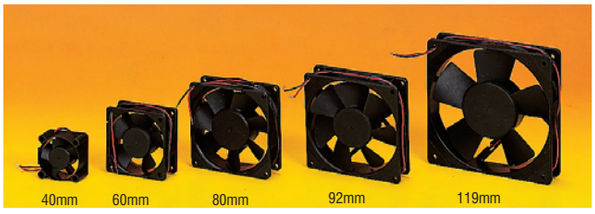
Dimensions H	W	D	Voltage V dc	Power Watts	Air Flow cu ft/min	Noise dBA@1m	Mftrs. List No.	Order Code
40	40	15	5	0.6	6	28	1606KL-01W-B30-L00	101-2743
40	40	15	5	1.2	8.1	34	1606KL-01W-B50-L00	101-2744
40	40	15	12	0.8	6	28	1606KL-04W-B30-L00	942-0134
40	40	15	12	1.02	8.1	34	1606KL-04W-B50-L00	101-2746
40	40	15	24	1.08	6	28	1606KL-05W-B30-L00	101-2747
40	40	15	24	0.5	8.1	34	1606KL-05W-B50-L00	101-2748
50	50	10	5	10.2	6.4	28.5	2004KL-01W-B30-M00	101-2749
50	50	10	5	6.4	10.2	34	2004KL-01W-B50-M00	101-2750
50	50	10	12	10.2	6.4	23	2004KL-04W-B30-M00	101-2751
50	50	10	12	1.92	10.2	34	2004KL-04W-B50-M00	101-2752
52	52	15	12	1.08	12	25.5	2106KL-04W-B40-L00	101-2753
60	60	20	12	0.6	10.9	22.5	2408NL-04W-B10-P00	101-2754
60	60	20	12	1.32	17.6	31.5	2408NL-04W-B50-P00	101-2755
60	60	20	24	0.96	10.9	22.5	2408NL-05W-B10-P00	101-2756
60	60	20	24	1.32	17.6	31.5	2408NL-05W-B50-P00	101-2758
60	60	25	12	1.44	23.5	35	2410ML-04W-B30-E00	942-0142
60	60	25	12	1.44	37	46	2410ML-04W-B80-E00	101-2759
60	60	25	24	6.20	19	31	2410ML-05W-B30-E00	101-2760
60	60	25	24	1.44	37	50	2410ML-05W-B80-E00	101-2761
60	60	25	12	0.6	13	19	2410RL-04W-B10-C00	101-2762
60	60	25	12	1.8	24	33.5	2410RL-04W-B50-C00	101-2763
60	60	25	12	3.24	28.5	38	2410RL-04W-B70-C00	101-2764
60	60	25	24	0.96	13	19	2410RL-05W-B10-C00	101-2765
60	60	25	24	2.88	24	33.5	2410RL-05W-B50-C00	101-2766
60	60	25	24	4.80	28.5	38	2410RL-05W-B70-C00	101-2767
80	80	15	12	2.04	28.2	30	3106KL-04W-B40-C00	101-2768
80	80	15	12	2.76	32.8	34	3106KL-04W-B50-C00	101-2771
80	80	25	12	2.76	38.8	34	3110KL-04W-B50-P00	101-2772
80	80	25	24	2.88	38.8	34	3110KL-05W-B50-P00	101-2773
80	80	25	12	0.84	24	22	3110RL-04W-B10-C00	101-2774
80	80	25	12	3.00	38.5	32.5	3110RL-04W-B50-C00	101-2775
80	80	25	12	4.08	44.5	36	3110RL-04W-B70-C00	101-2776
80	80	25	24	0.96	24	22.0	3110RL-05W-B10-C00	101-2777
80	80	25	24	3.36	38.5	32.5	3110RL-05W-B50-C00	101-2778
80	80	25	24	4.32	44.5	36.0	3110RL-05W-B70-C00	101-2779
92	92	32	12	2.52	47.3	34	3612KL-04W-B30-B00	101-2780
92	92	32	12	5.64	69.9	43.5	3612KL-04W-B50-B00	101-2781
92	92	32	24	2.40	47.3	34	3612KL-05W-B30-B00	101-2783
92	92	32	24	6.0	69.9	43.5	3612KL-05W-B50-B00	101-2784
92	92	38	12	15.6	107	54	3615KL-04W-B70-E01	101-2785
92	92	38	24	16.8	189.0	53	3615KL-05W-B70-E00	101-2786
119	119	25	12	3.36	88.2	35	4710KL-04W-B30-E00	101-2787
120	120	25	12	6.84	90	39	4710KL-04W-B50-E00	942-0150
119	119	25	24	3.60	88.2	35	4710KL-05W-B30-E00	101-2788
119	119	25	24	6.96	114.7	41.5	4710KL-05W-B50-E00	101-2789
119	119	32	12	5.76	99.9	44	4712KL-04W-B30-P00	101-2790
119	119	32	24	6.72	99.9	44	4712KL-05W-B30-P00	101-2791
120	120	38	12	6.6	108.2	42.5	4715KL-04W-B30-P00	942-0169
119	119	38	24	7.44	108.0	42.5	4715KL-05W-B30-P00	101-2792
150	172	25	12	2.06	250	62.5	5910PL-04W-B50-L00	101-2793
150	172	25	48	35.5	290	65.4	5910PL-05W-B70-L00	101-2795

204297

Dimensions H	W	D	Voltage Vdc	Order Code	Price Each 1+	10+	25+	50+	+
40	40	15	5	**101-2743●**	47.85	43.52	40.92	37.24	– –
40	40	15	5	**101-2744●**	47.85	43.52	40.92	37.24	– –
40	40	15	12	**942-0134●**	46.29	41.71	39.60	34.78	– –
40	40	15	12	**101-2746●**	47.85	43.52	40.92	37.24	– –
40	40	15	24	**101-2747●**	47.85	43.52	40.92	37.24	– –
40	40	15	24	**101-2748●**	47.85	43.52	40.92	37.24	– –
50	50	10	5	**101-2749●**	39.39	36.46	35.48	31.57	– –
50	50	10	5	**101-2750●**	39.39	36.46	35.48	31.57	– –
50	50	10	12	**101-2751●**	39.39	36.46	35.48	31.57	– –
50	50	10	12	**101-2752●**	39.39	36.46	35.48	31.57	– –
52	52	15	12	**101-2753●**	34.18	30.60	27.83	25.23	– –
60	60	20	12	**101-2754●**	57.35	45.90	38.25	34.34	– –
60	60	20	12	**101-2755●**	57.35	45.90	38.25	34.34	– –
60	60	20	24	**101-2756●**	57.35	45.90	38.25	34.34	– –
60	60	20	24	**101-2758●**	57.35	45.90	38.25	34.34	– –
60	60	25	12	**942-0142●**	54.30	48.89	46.37	40.79	– –
60	60	25	12	**101-2759●**	56.12	51.04	47.91	43.68	– –
60	60	25	24	**101-2760●**	56.12	51.04	47.91	43.68	– –
60	60	25	24	**101-2761●**	56.12	51.04	47.91	43.68	– –
60	60	25	12	**101-2762●**	27.83	24.15	21.97	18.23	– –
60	60	25	12	**101-2763●**	27.83	24.15	21.97	18.23	– –
60	60	25	12	**101-2764●**	27.83	24.15	21.97	18.23	– –
60	60	25	24	**101-2765●**	27.83	24.15	21.97	18.23	– –
60	60	25	24	**101-2766●**	27.83	24.15	21.97	18.23	– –
60	60	25	24	**101-2767●**	27.83	24.15	21.97	18.23	– –
80	80	15	12	**101-2768●**	39.55	35.94	32.45	28.58	– –
80	80	15	12	**101-2771●**	39.55	35.94	32.45	28.58	– –
80	80	25	12	**101-2772●**	65.36	52.28	43.55	39.87	– –
80	80	25	24	**101-2773●**	65.36	52.28	43.55	39.87	– –
80	80	25	12	**101-2774●**	31.12	27.50	25.16	21.74	– –
80	80	25	12	**101-2775●**	31.12	27.50	25.16	21.74	– –
80	80	25	12	**101-2776●**	31.12	27.50	25.16	21.74	– –
80	80	25	24	**101-2777●**	31.12	27.50	25.16	21.74	– –
80	80	25	24	**101-2778●**	31.12	27.50	25.16	21.74	– –
80	80	25	24	**101-2779●**	31.12	27.50	25.16	21.74	– –
92	92	32	12	**101-2780●**	59.40	54.52	51.49	43.19	– –
92	92	32	12	**101-2781●**	59.40	54.52	51.49	43.19	– –
92	92	32	24	**101-2783●**	59.40	54.52	51.49	43.19	– –
92	92	32	24	**101-2784●**	59.40	54.52	51.49	43.19	– –
92	92	38	12	**101-2785●**	61.68	56.96	54.78	46.61	– –
92	92	38	24	**101-2786●**	61.68	56.96	54.78	46.61	– –
119	119	25	12	**101-2787●**	54.52	49.61	46.61	42.48	– –
120	120	25	12	**942-0150●**	52.76	47.53	45.11	39.66	– –
119	119	25	24	**101-2788●**	54.52	49.61	46.61	42.48	– –
119	119	25	24	**101-2789●**	54.52	49.61	46.61	42.48	– –
119	119	32	12	**101-2790●**	57.81	53.48	50.84	46.90	– –
119	119	32	24	**101-2791●**	57.81	53.48	50.84	46.90	– –
120	120	38	12	**942-0169●**	59.25	53.36	50.68	44.51	– –
119	119	38	24	**101-2792●**	61.23	55.69	52.37	47.69	– –
150	172	25	12	**101-2793●**	301.09	271.50	249.17	215.58	– –
150	172	25	48	**101-2795●**	301.09	271.50	249.17	215.58	– –

Standard

multicomp



- Low cost, low noise, brushless dc fans
- Housing and impeller made from **UL94V-0** thermoplastic
- Fitted with ball bearings and 300mm, 22 AWG lead wire
- **UL** Recognised

● Compliant
▲ Non-compliant
‡ Limited stock - RoHS replacement available

RoHS

Operating temperature -10°C to +70°C Life expectancy >50000 hours @ 40°C

Dimensions	Voltage Vdc	Power Watts	Air Flow cu ft/min	Air Flow ltrs/sec	Noise dBA @ 1m	Order Code
40mm						
40 x 40 x 20	12V	1	7.3	3.4	26	960-6645
40 x 40 x 20	24V	0.96	6.2	2.9	25	960-6653
60mm						
60 x 60 x 25	12V	1.4	18	8.4	31	960-6661
60 x 60 x 25	24V	1.9	18	8.4	31	960-6670
80mm						
80 x 80 x 25	12V	2	35	16.5	32	960-6688
80 x 80 x 25	24V	3.12	35	16.5	32	960-6696
92mm						
92 x 92 x 25	12V	2.1	45	21.2	34	960-6700
92 x 92 x 25	24V	2.9	45	21.2	34	960-6718
119mm						
119 x 119 x 25	12V	3.6	80	37.7	41	960-6726
119 x 119 x 25	24V	4.8	80	37.7	42	960-6734
119 x 119 x 38	12V	6.8	108	50.9	42	960-6742
119 x 119 x 38	24V	5.5	98	46.2	36	960-6750

	40mm	60mm	80mm	92mm	119mm
Height	40	60	80	92	119
Width	40	60	80	92	119
Depth	20	25	25	25	25
Cut-out ∅	38	58	77	89	116
Fix Centres	32 x 32	50 x 50	71.5 x 71.5	82.5 x 82.5	104.8 x 104.8
Fix Centres ∅	4.5	4.5	4.5	4.3	4.3

204301

Size H	Size W	Size D	Voltage V dc	Order Code	Price Each 1+	10+	25+	50+	+
40	40	20	12	**960-6645**	36.63	32.04	28.83	22.68	– –
40	40	20	24	**960-6653**	36.63	32.04	28.83	22.68	– –
60	60	25	12	**960-6661**	40.48	33.90	31.44	26.55	– –
60	60	25	24	**960-6670**	40.48	33.90	31.44	26.55	– –
80	80	25	12	**960-6688**	39.02	32.58	30.24	24.84	– –
80	80	25	24	**960-6696**	39.02	32.58	30.24	24.84	– –
92	92	25	12	**960-6700**	40.70	35.37	33.09	24.96	– –
92	92	25	24	**960-6718**	40.70	35.37	33.09	24.96	– –
119	119	25	12	**960-6726**	43.45	38.88	36.93	30.93	– –
119	119	25	24	**960-6734**	43.45	38.88	36.93	30.93	– –
119	119	38	12	**960-6742**	45.99	41.10	39.03	33.18	– –
119	119	38	24	**960-6750**	45.99	41.10	39.03	33.18	– –

Long Life

SANYO DENKI

- Up to 20 years (200,000 hours) continuous operation, 5 times longer life than conventional fans
- Diecast aluminium housing with **UL94V-1** plastic impeller
- Oversize ball bearings
- Reverse polarity and locked rotor protection
- Connection by two 300mm, 24Awg leads
- Conforms to **EN609-50**

Life expectancy >200,000 hrs (120mm), >100,000 hrs (80mm, 92mm and 140mm)

Dimensions H	W	D	Voltage V dc	Power Watts	Air Flow cu ft/min	Air Flow ltrs/sec	Noise dBA @ 1m	Mftrs. List No.	Order Code
80	80	25	12	2.1	37.5	17.73	32	109L0812H402	994-8198
80	80	25	24	2.1	37.5	17.73	32	109L0824H402	994-8201
92	92	25	12	2.5	48.9	23	33	109L0912H402	994-8210
92	92	25	24	2.8	48.9	23	33	109L0924H402	994-8228
120	120	38	12	4.8	106	50	41	109L1212H102	994-8236
120	120	38	24	5	106	50	41	109L1224H102	994-8244
120	120	38	48	5.7	106	50	41	109L1248H102	994-8163
140	140	51	12	16.8	209	98.5	52	109L1412H502	994-8171
140	140	51	24	14.4	209	98.5	52	109L1424H502	994-8180

Fan size	80mm	92mm	120mm	140mm
Cut-out ∅	78	89	117	136
Fixing centres	71.5	82.5	104.8	142.5
Fixing hole ∅	4.3	4.3	4.3	4.3

204322

Size H	Size W	Size D	Voltage V dc	Order Code	Price Each 1+	5+	10+	20+
80	80	25	12	**994-8198**	105.90	100.83	95.32	85.90
80	80	25	24	**994-8201**	105.90	100.83	95.32	85.90
92	92	25	12	**994-8210**	119.13	113.43	107.26	96.61
92	92	25	24	**994-8228**	119.13	113.43	107.26	96.61
120	120	38	12	**994-8236**	182.24	173.50	164.02	147.80
120	120	38	24	**994-8244**	182.24	173.50	164.02	147.80
120	120	38	48	**994-8163**	182.24	173.50	164.02	147.80
140	140	51	12	**994-8171**	241.78	230.17	213.63	196.12
140	140	51	24	**994-8180**	241.78	230.17	213.63	196.12

Humidity Protected

ebmpapst

- Improved humidity protection ≤95%
- Designed to meet humidity range according to group C of **DIN40040 item 3.3**

Limits of relative humidity are: Annual Mean Value ≤95%
Maximum value a) On 30 days of the year (naturally distributed) 100 %
b) On all other days ocassionally (under observance of the annual mean value 100%, dewing is allowed)

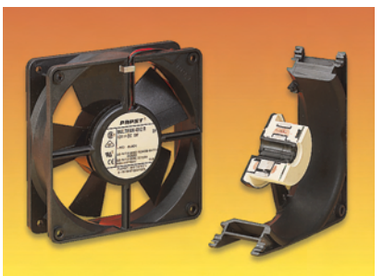
Voltage V dc	Range V dc	Power Watts	Air Flow cu ft/min	Air Flow ltrs/sec	Noise dBA@1m	Bearing Type	Mftrs. List No.	Order Code
12	8 to 15	2.0	19.4	9.1	12	SB	8412NGR	960-0108
24	18 to 28	0.7	19.4	9.1	12	SB	8414NGR	960-0116
12	6 to 15	5	100	47.2	43	BB	4312R	960-0124
24	12 to 28	5	100	47.2	43	BB	4314R	960-0132

204348

Dimensions H	W	D	Voltage V dc	Order Code	Price Each 1+	10+	25+	50+	+
80	80	25	12	**960-0108**	43.25	41.11	38.90	34.62	– –
80	80	25	24	**960-0116**	43.25	41.11	38.90	34.62	– –
120	120	32	12	**960-0124**	65.90	62.59	59.31	52.73	– –
120	120	32	24	**960-0132**	65.90	62.59	59.31	52.73	– –

IP54 Rated

ebmpapst



- **IP54** rating gives protection in extreme environmental conditions
- Complete stator and PCB are totally encapsulated in polyurathane which is applied under high vacuum pressure forming a one piece moulding
- High quality stainless steel bearing system

Dimensions H	W	D	Voltage V dc	Power Watts	Air Flow cu ft/min	Air Flow ltrs/sec	Noise dBA @ 1m	Mftrs. List No.	Order Code
80	80	32	12	2.2	32	15.1	36	8312U	960-0140
80	80	32	24	2.2	32	15.1	36	8314U	960-0159
120	120	32	12	5.4	82.4	38.8	39	4312U	960-0167
120	120	32	24	2.6	82.4	38.8	39	4314U	960-0175

204351

Dimensions H	W	D	Voltage V dc	Order Code	Price Each 1+	10+	25+	50+	+
80	80	32	12	**960-0140**	88.29	83.88	79.44	70.62	– –
80	80	32	24	**960-0159**	83.49	79.32	75.35	71.58	– –
120	120	32	12	**960-0167**	95.78	91.00	86.22	76.64	– –
120	120	32	24	**960-0175**	95.78	91.00	86.22	76.64	– –

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

IP54 Rated

Sprite DC and Muffin XL DC

- Internal fan encapsulation to prevent damage from dust & water
- Die-cast venturi, with **UL94-V0** flame retardant polypropylene impeller
- Stainless steel ball bearings
- Two lead wires AWG22, **UL 1061**
- **UL** recognised, **CSA** and **TUV** approved
- Order code 118-7531 supplied with tacometer

Voltage V dc	Current A	Power Watts	Noise dBA@1m	Speed RPM	Air Flow cu ft/min	Mftrs. List No.	Order Code
24	0.13	3	47.6	3500	35	SD24B5-E2 039029	102-3667
24	0.25	6	50	3100	110	MD24B5-E2 039030	102-3672
24	0.63	15	53.6	3200	150	GL24B7E	118-7531

311680

Dimensions H	D	Voltage V	Order Code	Price Each 1+	5+	10+	25+	+
80	42	24	**102-3667**●	109.35	100.05	91.56	84.77	– –
119	39.1	24	**102-3672**●	120.27	110.04	100.68	93.23	– –
127	38	24	**118-7531**●	195.92	187.00	178.89	171.44	– –

127mm

'Galaxy'

- Feathered edge impeller for low noise
- Stainless steel ball bearings
- **CSA** and **VDE** approved, **UL** recognised
- 3.05mm solder terminals

Voltage V dc	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA@1m	Mftrs. List No.	Order Code
12	15	150	71	53.6	GL12B4	102-3647
24	15	150	71	53.6	GL24B4 031075	102-3648

204365

Dimensions H	W	D	Voltage V dc	Order Code	Price Each 1+	5+	10+	15+	+
127	127	38	12	**102-3647**●	119.23	109.50	101.36	95.40	– –
127	127	38	24	**102-3648**●	119.23	109.50	101.36	95.40	– –

172mm

- Metal fan housing and impeller
- Fitted with ball bearings
- Electronic protection against reverse polarity and blocking
- Electronic motor current limitation on start up and when rotor is blocked
- **VDE** and **CSA** approved, **UL** recognised

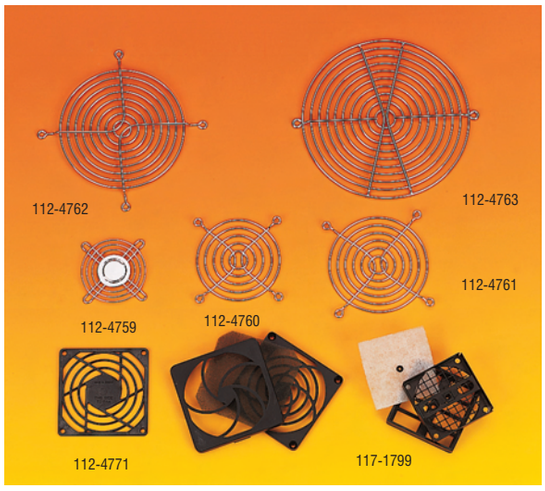
Voltage V dc	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA@1m	Mftrs. List No.	Order Code
12	12	206	97.7	50	6212NM	960-0213
24	18	241.3	114	55	6224N	960-0221

204360

Dimensions Dia.	Depth	Voltage V dc	Order Code	Price Each 1+	5+	10+	15+	+
172	51	12	**960-0213**●	146.58	142.88	139.26	131.92	– –
172	51	24	**960-0221**●	127.88	124.68	121.50	115.10	– –

Accessories

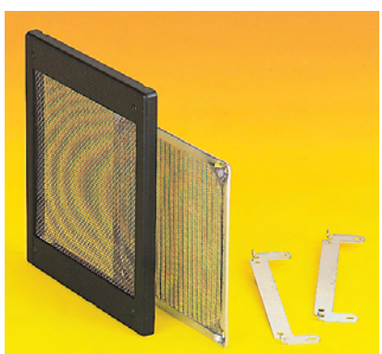
Finger Guards and Filters



204347

Finger Guards	Order Code	Price Each 1+	10+	25+	50+	+	+
40mm, Metal	**112-4757**●	6.15	5.64	5.31	4.83	– –	– –
50/62mm, Metal	**112-4759**●	6.55	6.09	5.73	5.40	– –	– –
80mm, Metal	**112-4760**●	7.08	6.36	6.03	5.61	– –	– –
80mm, Plastic	**112-4771**●	5.45	5.13	4.50	3.99	– –	– –
92mm, Metal	**112-4761**●	7.31	7.20	6.99	6.57	– –	– –
92mm, Plastic	**112-4774**●	5.54	5.25	4.71	3.81	– –	– –
119mm, Metal	**112-4762**●	7.83	7.08	6.66	6.30	– –	– –
119mm, Plastic	**112-4772**●	6.21	5.64	5.07	4.44	– –	– –
127mm, Metal	**112-4773**●	10.50	9.09	7.59	6.60	– –	– –
135mm, Metal	**117-1803**●	11.67	10.27	9.26	8.56	– –	– –
160mm, Metal	**112-4763**●	9.58	8.91	8.49	8.13	– –	– –
Filters							
60/62mm	**117-1799**●	32.01	28.65	26.94	24.39	– –	– –
80mm	**117-1791**●	40.94	40.11	38.88	36.81	– –	– –
119mm	**117-1796**●	34.09	33.39	32.40	29.82	– –	– –
160mm	**117-1808**●	46.39	41.52	38.46	33.96	– –	– –
		Price Per Pack					
		1+	**10+**	**25+**	**50+**	**+**	**+**
Replacement Filters (5 Per Pack)							
60/62mm	**117-1801**●	3.09	2.79	2.52	2.52	– –	– –
80mm	**117-1797**●	3.65	3.18	3.00	2.91	– –	– –
119mm	**117-1798**●	4.53	4.05	3.75	3.51	– –	– –
160mm	**117-1809**●	6.77	6.12	5.43	4.92	– –	– –

Metal Mesh Filter



Fan Mount

- Designed for 120mm fans
- Black fibre glass reinforced plastic bezel with inserted stainless steel wire mesh

204361

Mftrs. List No.	Order Code	Price Each 1+	10+	25+	50+	+
LZ40N	**117-1813**●	28.64	26.94	26.25	24.81	– –

19

Fans

● Compliant
◄ Non-compliant
‡ Limited stock - RoHS replacement available

RoHS

Farnell Page 720 Date: 18-08-06 time: 16:36

Filter Assemblies

ebmpapst

- Mount directly onto existing fixing locations
- Assemblies consist of 3 elements, outer grill cover, inner fixing plate and filter pad
- The grill cover is moulded in polycarbonate with a matt finish, it incorporates quick release fasteners to assist filter changes
- The inner fixing plate is constructed of steel sheet with a black epoxy powder finish. A plastic screen provides protection when the filter is changed and the fan is running
- The filter pad is made of white synthetic bonded fibre to **P15/150R**
- The filter will achieve 75% dust particle retention sown to 5-10 microns in size, can withstand temperatures up to 100°C and is flame resistant to **BS2963**
- Reduction in airflow of 20-30%

311653

Filter Assemblies	Mftrs. List No.	Order Code	Price Each/Per Pack 1+
80mm	PMFA80T	**117-1820●**	4.95
120mm	PMFA120T	**117-1821●**	8.79
Replacement Filters			
80mm x 5 filters	FP80T	**117-1822●**	3.51
120 x 5 filters	FP120T	**117-1825●**	3.66

Filter Assemblies

- Assemblies consist of guard, polyurethane foam filter, and media retainer
- Manufactured from **UL94-V0** high impact plastic

204318

Filter Assemblies	Order Code	Price Each/Per Pack 1+	10+	25+	50+	+
80mm	**112-4764●**	11.11	10.32	9.54	7.98	– –
92mm	**112-4765●**	12.01	11.16	10.29	8.58	– –
119mm	**112-4767●**	13.29	12.36	11.40	9.54	– –
Replacement Filters (5 Per Pack)						
80mm	**112-4768●**	6.15	5.97	5.46	4.50	– –
92mm	**112-4769●**	6.46	5.82	5.37	4.23	– –
119mm	**112-4770●**	7.19	6.24	5.76	4.80	– –

EMC Screened Filters

ebmpapst

- High efficiency EMC screened axial fan filters/finger guards
- One piece welded mesh construction
- Excellent overall screening effectiveness over fan aperture
- Only 1% airflow reduction, compared with 20% from a conventional woven mesh filter

Size	Average screening efectiveness (dB) 40MHz 1GHz/1.1 GHz - 4GHz	Mftrs. List No.	Order Code
40mm	—	PRF40.	341-4530
60/62mm	14.05/15.40	PRF60.	593-631
80mm	23.05/25.80	PRF80	117-1805
92mm	24.74/25.14	PRF90.	593-655
119mm	31.79/22.95	PRF120..	593-667

204305

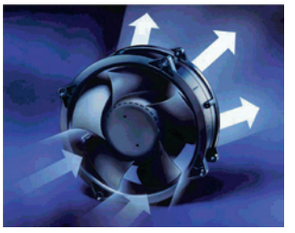
Size	Order Code	Price Each 1+	10+	25+	50+	+
40mm	**117-1826●**	16.38	– –	– –	– –	– –
60/62mm	**117-1804●**	26.59	22.95	21.81	15.30	– –
80mm	**117-1805●**	25.61	22.08	21.00	14.40	– –
92mm	**117-1806●**	27.82	24.03	22.83	15.63	– –
119mm	**117-1807●**	28.83	24.87	23.64	17.88	– –

Mixed Flow Fans

Low Voltage DC, 172mm

High Airflow Pressure

ebmpapst



- Combines the structural features of axial and radial fans
- Generates greater static pressure than a standard axial fan
- Metal housing with glass reinforced plastic impeller
- Fully integrated commutation electronics, electronic protection against reverse polarity and blocking

Voltage	Dimensions Dia	D	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA	Mftrs. List No.	Order Code
24V dc	172	51	37	317.8	149.9	63	DV6224	960-0604

204353

Dimensions Dia	D	Voltage	Order Code	Price Each 1+	10+	25+	50+	+
172	51	24V dc	**960-0604●**	181.47	172.37	163.30	154.43	– –

Backward Curved Fans

Backward Curved Centrifugal Fan

230V ac

ebmpapst

- Ideal for sucking applications against pressure systems, example: extraction from hoods and cabinets
- Non-overloading characteristics
- Utilises external rotor motors
- Built-in thermal protection
- Maintenance-free ball bearings
- Operation possible without scroll

Impeller ∅ (mm)	Air Flow (l/s)	Noise level (dB)	Mftrs. List No.	Order Code
133	72	55	R2S133-AE17-05	960-1228
175	119	56	R2S175-AB56-01	960-1236
190	576	63	R2E190-A026-05	960-1244
220	860	74	R2E220-AA40-05	101-1723
225	850	70	R2E225-AT51-05+CAP	960-1252

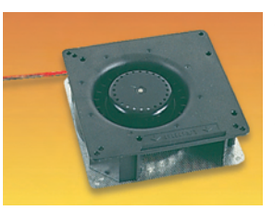
213834

Air Flow (ls)	Mftrs. List No.	Order Code	Price Each 1+	5+
72	R2S133-AE17-05	**960-1228●**	122.68	116.56
119	R2S175-AB56-01	**960-1236●**	163.24	155.07
160	R2E190-A026-05	**960-1244●**	203.57	197.38
900	R2E220-AA40-05	**101-1723●**	205.65	184.36
236	R2E225-AT51-05+CAP	**960-1252●**	279.31	251.37

Flatpack Fans

High Static Pressure for Crowded Enclosures

ebmpapst



- Durable construction - fibreglass blower wheel and housing mounted on galvanised steel plate
- Electronic protection against reverse polarity and thermal overload
- Air flows into axis of rotation and exhausts through port on one edge
- Supplied with two connecting leads approx 300mm long with stripped and tinned ends
- Advanced ball bearing design for very long operational life, 121mm ac fans have sleeved bearings

Operating temperature -20°C to +60°C

Dimensions H	W	D	Voltage	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA	Mftrs. List No.	Order Code
121	121	37	115V ac	19.5	24.7	11.7	56	RL90-18/00.	311-1570
121	121	37	230V ac	20	23.5	11.1	56	RL90-18/50.	311-1581

Dimensions H	W	D	Voltage	Order Code	Price Each 1+	10+	25+	50+	+
121	121	37	115V ac	**311-1570▲‡**	106.25	100.96	95.63	85.02	– –
121	121	37	230V ac	**311-1581▲‡**	106.25	100.96	95.63	85.02	– –

Dimensions H	W	D	Voltage	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA	Mftrs. List No.	Order Code
121	121	37	12V dc	5.5	23.5	11	58	RL90-18/12N	959-9932
121	121	37	24V dc	5	23.5	11	58	RL90-18/14N	959-9940
121	121	37	115V ac	19.5	24.7	11.7	56	RL90-18/00	960-0230
121	121	37	230V ac	20	23.5	11.1	56	RL90-18/50	960-0248
135	135	38	24V dc	5.5	32.4	15.2	55	RG90-18/14N	959-9959

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

C = CYAN M = Magenta Y = Yellow B = Black/SING

Dimensions				Power	Air Flow		Noise	Mftrs.	
135	135	38	230 dc	22	31.8	15	58	RG90-18/56	960-0876
180	180	40	24 ac	5	51.5	24.3	58	RG125-19/14N	959-9967
220	220	56	12V dc	21	118.9	56.1	66	RG160-28/12	960-0868
220	220	56	24V dc	20	122.9	57.9	66	RG160-28/14N	959-9975
220	220	56	230 dc	47	118.9	56.1	66	RG160-28 56S	960-0884

204293

Dimensions H	W	D	Voltage	Order Code	Price Each 1+	10+	25+	50+	+
121	121	37	12V dc	**959-9932**●	89.06	84.60	80.40	76.39	– –
121	121	37	24V dc	**959-9940**●	94.00	89.32	84.89	80.63	– –
121	121	37	115V ac	**960-0230**●	106.25	100.96	95.63	85.02	– –
121	121	37	230V ac	**960-0248**●	106.25	100.96	95.63	85.02	– –
135	135	38	24V dc	**959-9959**●	100.55	95.53	90.75	86.22	– –
135	135	38	230V ac	**960-0876**●	84.37	80.17	76.17	72.36	– –
180	180	40	24V dc	**959-9967**●	117.11	111.29	105.72	100.45	– –
220	220	56	12V dc	**960-0868**●	227.80	210.74	205.16	178.29	– –
220	220	56	24V dc	**959-9975**●	223.34	206.61	201.10	185.69	– –
220	220	56	230V ac	**960-0884**●	200.11	180.05	171.04	152.74	– –

Low Voltage DC, 120mm, 162mm

'Biscuit' and 'Spinnaker'

COMAIR ROTRON

- Air flows into axis of rotation and exhausts through port on one edge
- Ideal for crowded enclosures or where space is a premium
- Stainless steel ball bearings
- Electronic locked rotor protection
- **CSA** and **VDE** approved, **UL** recognised

Voltage V dc	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dBA@1m	Mftrs. List No.	Order Code
12	11	25	11.8	51	BD12A3 032176	102-3654
24	11	25	11.8	51	BD24A3 032179	102-3655
24	30	60	28.3	57	SPD24B1	118-7493

204363

Dimensions H	W	D	Voltage V dc	Order Code	Price Each 1+	5+	10+	15+	+
120	120	31	12	**102-3654**●	78.93	68.68	63.15	58.49	– –
120	120	31	24	**102-3655**●	71.25	63.21	57.00	52.80	– –
162	162	41	24	**118-7493**●	153.08	143.87	137.75	122.84	– –

Low Voltage DC

ebm MOTORS AND FANS

H =47, W =50
L =(203 = 899-914, 260 = 899-926, 365 = 899-938)

- Crossflow fans provide a long but narrow air discharge pattern
- Ideal for cooling electronics in assembly carriers
- Locked rotor and polarity protected
- Very low noise level

Voltage V dc	Power Watts	Air Flow cu ft/min	ltrs/sec	Noise dbA@1m	Mftrs. List No.	Order Code
12	6.1	39.4	18.6	48	Q2G030-EA21-01	960-1570
12	8	53	25	51	Q2G030-GC01-01	960-1589
12	8.5	76.5	36.1	49	Q2G030-FB01-01	960-1597

227522

Length	Voltage V dc	Order Code	Price Each 1+	5+	10+	25+
203mm	12	**960-1570**●	145.68	138.41	131.13	123.39
260mm	12	**960-1589**●	183.75	174.60	165.38	148.49
365mm	12	**960-1597**●	180.53	171.55	163.35	– –

Product Watch obsolescence notification

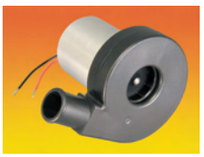
- FREE to all account holders
- Notification of obsolete, end of line and end of stock items
- Replacement or upgrade recommendations

Advanced warning of obsolete components

Blowers

MICROjammer® BRUSHLESS DC BLOWERS — AMETEK ROTRON®

Low Voltage Blowers



- 12, 24VDC input electronically commutated blowers
- Operating temperature 0-50°C
- Choice of 76 and 145mm housings
- Maximum pressure to 64 mbar
- Maximum air flows to 18L/sec
- Adjustable air performance
- Compact size
- Long life
- **ISO 9002**

Mftrs. List No.	Case Dia. (mm)	Overall Height (mm)	Outlet Tube Dia. (O.D. in mm)	VDC	Max. Pressure (mBar Sealed)	Max Flow (L/sec)	Order Code
116521-52	145	84	31.55	24	20	18	113-8976
119349-51	76	71	20.62	12	24	8.5	113-8969
119350-51	76	71	20.62	24	24	8.5	113-8970

233668

Mftrs. List No.	Order Code	Price Each 1+	2+	5+
116521-52	**113-8976**●	1,108.36	991.70	933.37
119349-51	**113-8969**●	639.80	572.46	538.80
119350-51	**113-8970**●	639.80	572.46	538.80

MINIjammer® BRUSHLESS DC BLOWERS — AMETEK ROTRON®

Low Voltage Blowers

- 12, 24VDC input electronically commutated blowers
- Operating temperature 0-50°C
- 127mm housing
- Maximum pressure to 60 mbar
- Maximum air flows to 21L/sec
- Electrical and mechanical control versions
- Internal and external drive versions
- Adjustable air performance
- Thermal protection/locked rotor protection
- Compact size & long life

Mftrs. List No.	Overall Height (mm)	Outlet Tube Dia. (O.D. in mm)	VDC	Max. Pressure (mBar Sealed)	Max. Flow L/Sec	Control Type	Order Code
150016-51	76.2	24	30	16	16	External	113-8971
119382-52	68.58	12	30	16	16	External	113-8973
119384-52	68.58	24	30	16	16	Mechanical	113-8974
119379-52	68.58	24	60	21	21	External	113-8975

233679

Mftrs. List No.	Order Code	Price Each 1+	2+	5+
150016-51	**113-8971**●	464.49	415.60	391.15
119382-52	**113-8973**●	805.65	720.82	678.44
119384-52	**113-8974**●	805.65	720.82	678.44
119379-52	**113-8975**●	903.56	808.44	760.89

Centrifugal Fans

ebmpapst

- Backward curve centrifugal fan, which can be operated with or without a scroll
- Impellor is completely made of plastic **PA6.6**, injection moulded round a sheet metal plate
- Supplied with inlet ring and capacitor
- Ideal for systems requiring high pressure development

Voltage	Power Input	Air Flow	Noise	Dimensions (WxHxD)	Weight	Mftrs. List No.	Order Code
230V ac, 50/60Hz	58/75W	570/620	52/64	190∅ x 62.8mm	1.2kg	R2E190-AO26-05	101-1722
230V ac, 50/60Hz	85/90W	860/900	73/74	220∅ x 71mm	1.5kg	R2E220-AA40-05	101-1723

416703

Mftrs. List No.	Order Code	Price Each 1+	2+	5+	+	+
R2E190-AO26-05	**101-1722**●	173.00	158.06	140.52	– –	– –
R2E220-AA40-05	**101-1723**●	205.65	184.36	163.92	– –	– –

RoHS ● Compliant ▲ Non-compliant ‡ Limited stock - RoHS replacement available

C = CYAN M = Magenta Y = Yellow B = Black/SING

DC Centrifugal Blowers

SANYO DENKI

- Brushless DC motor with plastic fan housing and impeller
- High static pressure performance
- Permanently lubricated dual ball bearing system
- Long life and high reliability (L10 40,000 hours continuous operation at 60°C ambient)
- Current limited system with reverse polarity protection
- **UL**, **CSA** and **TUV** approved

Voltage V dc	Power Watts	Air Flow cu. ft./min.	Noise dBA@1m	Operating Temp °C	Mftrs. List No.	Order Code
12	4.44	12.7	41.5	-10 to +60	109BD12HA2	994-8015
24	4.08	12.71	41.5	-10 to +60	109BD24HA2	994-8023
12	7.2	27.5	52	-10 to +60	109BF12HA2	994-8031
24	7.2	27.5	52	-10 to +60	109BF24HA2	994-8040
12	6.24	27.54	46	-10 to +60	109BJ12HA2	994-8058

233520

Dimensions (mm)	Mftrs. List No.	Order Code	Price Each 1+	5+	10+	20+
75.5 x 76 x 30	109BD12HA2	**994-8015**●	45.47	44.59	44.13	– –
76 x 76 x 30	109BD24HA2	**994-8023**●	57.68	54.90	50.34	46.46
120 x 120 x 32	109BF12HA2	**994-8031**●	61.69	58.84	53.93	49.80
120 x 32 x 32	109BF24HA2	**994-8040**●	61.69	58.84	53.93	49.80
127 x 127 x 32	109BJ12HA2	**994-8058**●	89.64	85.43	78.44	72.39

Single Inlet Blowers - AC

ebmpapst

NEW

- High performance single inlet fans with an external rotor motor offering the advantage of matched motor and impeller in a compact space saving design
- Motors are **IP 44** rated, sealed for life, maintenance free, class B insulation and precision ball bearings
- Impeller is forward curved multi-vane type 'force' fitted for vibration free operation and efficient cooling
- Scroll is made from die-cast aluminium with motor capacitor and terminal block
- May be mounted in any position

Voltage	Power Input	Air Flow	Noise	Dimensions (WxHxD)	Weight	Mftrs. List No.	Order Code
230V ac, 50/60Hz	41/44W	155/155	54/54	159 x 168 x 82mm	1.3kg	G2E108-AA01-50	101-1719
230V ac, 50/60Hz	80/100W	255/265	61/62	178 x 184 x 98mm	1.8kg	G2E120-AR77-A6	101-1720
230V ac, 50/60Hz	240/280W	600/570	72/71	226 x 247.5 x 100mm	2.9kg	G2E160-AD03-50	101-1721

416698

Mftrs. List No.	Order Code	Price Each 1+	2+	5+
G2E108-AA01-50	**101-1719**●	296.24	272.57	242.30
G2E120-AR77-A6	**101-1720**●	327.29	301.15	267.69
G2E160-AD03-50	**101-1721**●	628.28	578.12	513.90

Double Inlet Blowers - AC

ebmpapst

NEW

- Dual inlet fans with an external rotor motor offering the advantage of matched motor and impeller in a compct space saving design
- Motor are **IP44** rated, sealed for life, maintenance free, class B insulation, precision ball bearings and side mounted capacitor and terminal block
- Impeller is forward curved multi-vane type force fitted for vibration free operation and efficient cooling
- Heavy duty body made from galvanised steel
- May be mounted in any position

Voltage	Power Input	Air Flow	Noise	Dimensions (WxHxD)	Weight	Mftrs. List No.	Order Code
230V ac, 50/60Hz	87/100W	435/410	58/57	162x165x146mm	1.5kg	D2E097-BI56-50	101-1707
230V ac, 50/60Hz	87/190W	700/500	58/57	204x213x168mm	3.3kg	D2E133-CI33-87	101-1708
230V ac, 50/60Hz	87/195W	810/600	56/57	204x213x232mm	4.4kg	D2E133-DM27-D8	101-1709
230V ac, 50/60Hz	87/80W	540/510	54/57	171.5x180x215mm	2.6kg	D4E133-AA01-57	101-1718
230V ac, 50/60Hz	87/270W	935/690	62/57	206x219x232mm	4.2kg	D2E146-AP43-62	101-1710
230V ac, 50/60Hz	87/330W	970/690	68/57	206x219x232mm	4.2kg	D2E146-AP47-75	101-1711
230V ac, 50/60Hz	87/245W	1250/1240	64/57	225x241x232mm	4.5kg	D4E160-EG06-11	101-1712
230V ac, 50/60Hz	87/460W	2400/1900	66/57	295x333x255mm	11kg	D4E180-BA02-25	101-1713
230V ac, 50/60Hz	87/420W	2260/2260	64.3/57	327x371x287mm	11.9kg	D4E200-BA05-50	101-1714
230V ac, 50/60Hz	87/700W	2600/2600	67/57	327x370x287mm	12.1kg	D4E225-BC01-36	101-1715
230V ac, 50/60Hz	87/1230W	3730/3220	75/57	387x392x298mm	16.3kg	D4E250-BA01-12	101-1717

416686

Mftrs. List No.	Order Code	Price Each 1+	2+	5+
D2E097-BI56-50	**101-1707**●	310.14	279.64	248.55
D2E133-CI33-87	**101-1708**●	424.39	381.94	339.50
D2E133-DM27-D8	**101-1709**●	424.39	381.94	339.50
D4E133-AA01-57	**101-1718**●	440.69	397.21	353.07
D2E146-AP43-62	**101-1710**●	528.84	492.71	437.96
D2E146-AP47-75	**101-1711**●	528.84	492.71	437.96
D4E160-EG06-11	**101-1712**●	665.94	601.10	534.34
D4E180-BA02-25	**101-1713**●	927.09	835.49	742.66
D4E200-BA05-50	**101-1714**●	1,038.08	935.81	831.85
D4E225-BC01-36	**101-1715**●	1,047.88	944.21	839.30
D4E250-BA01-12	**101-1717**●	1,204.58	1,086.06	965.40

DC Compact Blower

Minebea

NEW

- High level of reliability
- Precision ball bearing
- Brushless DC Motor
- Auto restart/reverse polarity protection
- Housing - Plastic (Black) UL94V-0 (except 5910PL series Aluminium (Black))
- Impeller - Plastic (Black) UL94V-0
- **UL/CSA/VDE/CE** approved
- RoHS Compliant

Dimensions H	W	D	Voltage V dc	Power Watts	Air Flow cu ft/min	Noise dBA@1m	Mftrs. List No.	Order Code
45	44	12	12	1.08	2.65	35	BM4515-04W-B30-L00	101-2796
45	44	12	12	2.28	3.5	43	BM4515-04W-B50-L00	101-2797
51	51	15	12	0.72	2.1	26	BM5115-04W-B30-L00	101-2798
51	51	15	12	2.16	3.5	42	BM5115-04W-B50-L00	101-2799
51	51	25	12	0.72	3.5	27	BM5125-04W-B30-L00	101-2801
51	51	25	12	2.88	6.7	43	BM5125-04W-B50-L00	101-2802
76	76	25	12	1.92	7.8	39	BG0702-B043-000-00	101-2803
76	76	25	12	3.00	9.5	43	BG0702-B045-000-00	101-2804
76	76	25	24	2.4	7.8	39	BG0702-B053-000-00	101-2805
76	76	25	24	3.36	9.5	43	BG0702-B055-000-00	101-2806
97	94	33	12	4.8	20.5	47.5	BG0903-B042-000-00	101-2807
97	94	33	12	12.4	28.6	54.5	BG0903-B044-000-00	101-2808
97	94	33	24	5.04	20.5	42.5	BG0903-B052-000-00	101-2810
97	94	33	24	11.8	28.6	52.5	BG0903-B054-000-00	101-2811
107	25	25	12	6.7	21.9	48	BG1002-B044-000-00	101-2813
120	120	32	12	11.16	33.2	54	BG1203-B045-000-00	101-2814
120	120	32	24	11.52	33.2	54	BG1203-B055-000-00	101-2815

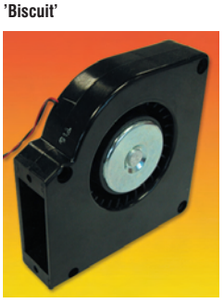
416717

Dimensions H	W	D	Voltage Vdc	Order Code	Price Each 1+	10+	25+	50+	+
45	44	12	12	**101-2796**●	44.46	40.10	36.72	33.23	– –
45	44	12	12	**101-2797**●	44.46	40.10	36.72	33.23	– –
51	51	15	12	**101-2798**●	44.46	40.10	36.72	33.23	– –
51	51	15	12	**101-2799**●	44.46	40.10	36.72	33.23	– –
51	51	25	12	**101-2801**●	44.46	40.10	36.72	33.23	– –
51	51	25	12	**101-2802**●	44.46	40.10	36.72	33.23	– –
76	76	25	12	**101-2803**●	57.74	52.44	50.55	44.11	– –
76	76	25	12	**101-2804**●	57.74	52.44	50.55	44.11	– –
76	76	25	24	**101-2805**●	57.74	52.44	50.55	44.11	– –
76	76	25	24	**101-2806**●	57.74	52.44	50.55	44.11	– –
97	94	33	12	**101-2807**●	67.83	62.63	60.77	54.49	– –
97	94	33	12	**101-2808**●	67.83	62.63	60.77	54.49	– –
97	94	33	24	**101-2810**●	67.83	62.63	60.77	54.49	– –
97	94	33	24	**101-2811**●	67.83	62.63	60.77	54.49	– –
107	25	25	12	**101-2813**●	67.83	62.63	60.77	54.49	– –
120	120	32	12	**101-2814**●	90.72	85.67	81.77	76.69	– –
120	120	32	24	**101-2815**●	90.72	85.67	81.77	76.69	– –

121mm

'Biscuit'

COMAIR ROTRON



NEW

- Single piece diecast aluminium venturi with plastic impeller
- Termination via two 0.110" terminals
- Sleeve bearings
- Operating temperature: -10°C to 70°C
- 118-7526 and 118-7527 complete with thermal speed control

Voltage (V dc)	Power (Watts)	Airflow (CFM)	Noise (dBA)	Speed (RPM)	Dimensions (WxHxD)	Mftrs. List No.	Order Code
12	3.4	25	51.2	1575	121x121x31	BD12S3H	118-7526
24	11.0	25	51.2	3050	121x121x31	BD24S3H	118-7527
12	10.8	26	51.2	3040	121x121x31	BD12B3	118-7528
24	11.5	26	51.2	3100	121x121x31	BD24B3	118-7529

347090

Order Code	Price Each 1+	5+	10+	25+
118-7526●	112.31	101.39	93.12	90.91
118-7527●	112.31	101.39	93.12	90.91
118-7528●	78.04	68.53	62.94	61.43
118-7529●	78.04	68.53	62.94	54.62

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

Windjammer BRUSHLESS BLOWERS

AMETEK ROTRON

AC Blowers (Vacuum or Pressure)

- 120 or 240VAC electronically commutated blower with high flow fan system
- Blower offers a fan system that can be used for either vacuum or pressure
- Operating temperature 0-50°C
- The drive system has a rectifier/filter network, a commutation controller and an electronically commutated DC motor
- The drive system in the Bypass configuration has a cooling fan

- In the ThruFlow configuration, the drive motor is in the working air system
- Maximum pressure to 357mbar
- Maximum air flow to 145 L/sec
- Electrical and mechanical control versions
- Adjustable air performance
- Thermal protection/locked rotor protection
- Separation of cooling air and working air in bypass configuration
- Working air is the cooling air in the Thru-Flow configuration
- Compact size and long life
- **UL** component recognised
- **CSA** and **TUV** certified

Mftrs. List No.	Height	Outlet Tube	Type	Stage	VAC	Max. Amps	Watts	Max. Pressure (mBar Sealed)	Open Flow L/Sec	Control Type	Order Code
Configuration: By Pass											
116634-53	152.4	31.75	B	Single	120	4	250	79	32	Mechanical	113-8977
116640-52	152.4	31.75	B	Single	120	4	250	79	32	Electrical	113-8978
116637-53	157.48	44.45	B	Single	120	4	250	67	54	Mechanical	113-8979
116636-53	182.88	44.45	B	Two	120	4.5	250	119	42	Mechanical	113-8980
116642-53	182.88	44.45	B	Two	120	4.5	250	119	42	Electrical	113-8981
116632-56	193.04	31.75	B	Three	120	4.5	250	188	23	Mechanical	113-8982
116638-58	193.04	31.75	B	Three	120	4.5	250	188	23	Electrical	113-8983
117634-51	152.4	31.75	E	Single	240	2.5	400	74	33	Mechanical	113-8985
117640-51	152.4	31.75	E	Single	240	2.5	400	74	33	Electrical	113-8986
117637-51	157.48	44.45	E	Single	240	2.5	400	62	54	Mechanical	113-8987
117643-52	157.48	44.45	E	Single	240	2.5	400	62	54	Electrical	113-8988
117636-51	185.42	44.45	E	Two	240	3	400	112	46	Mechanical	113-8989
117642-52	185.42	44.45	E	Two	240	3	400	112	46	Electrical	113-8990
117635-53	193.04	44.45	E	Three	240	3.5	400	151	41	Mechanical	113-8991
117641-51	193.04	44.45	E	Three	240	3.5	400	151	41	Electrical	113-8992
117632-52	195.58	31.75	E	Three	240	3.5	400	174	27	Mechanical	113-8994
117638-53	195.58	31.75	E	Three	240	3.5	400	174	27	Electrical	113-8995
117459-55	196.85	31.75	E	Four	240	4	400	212	60	Electrical	113-9014
119102-51	160.02	44.45	H	Single	120	7	800	109	76	Mechanical	113-8997
119101-51	160.02	44.45	H	Single	120	7	800	109	76	Electrical	113-8998
119104-51	187.96	44.45	H	Two	120	8	800	188	56	Mechanical	113-8999
119103-51	187.96	44.45	H	Two	120	8	800	188	56	Electrical	113-9000
117418-51	200.66	31.75	H	Three	120	9	800	285	32	Mechanical	113-9001
117417-51	200.66	31.75	H	Three	120	9	800	285	32	Electrical	113-9002
119152-52	160.02	44.45	K	Single	240	7.5	1200	134	90	Mechanical	113-9003
119151-51	160.02	44.45	K	Single	240	7.5	1200	134	90	Electrical	113-9004
119154-51	185.42	44.45	K	Two	240	9.5	1200	241	74	Mechanical	113-9005
119153-51	185.42	44.45	K	Two	240	9.5	1200	241	74	Electrical	113-9006
117416-51	198.12	31.75	K	Three	240	10	1200	357	39	Mechanical	113-9007
117415-51	198.12	31.75	K	Three	240	10	1200	357	39	Electrical	113-9008
Configuration: Thru Flow											
116629-53	106.68	31.75	A	Single	120	4	250	79	32	Electrical	113-9011
116630-56	127	31.75	A	Two	120	4.5	250	129	29	Electrical	113-9012
117629-52	106.68	31.75	D	Single	240	2.5	400	77	32	Electrical	113-9013

233682

Mftrs. List No.	Order Code	Price Each 1+	2+	5+
116634-53	**113-8977**●	1,359.29	1,216.20	1,144.69
116640-52	**113-8978**●	1,370.39	1,226.13	1,154.00
116637-53	**113-8979**●	1,359.29	1,216.20	1,144.69
116636-53	**113-8980**●	1,381.62	1,236.18	1,163.47
116642-53	**113-8981**●	1,387.28	1,241.23	1,168.22
116632-56	**113-8982**●	1,392.94	1,246.34	1,173.00
116638-58	**113-8983**●	1,404.11	1,256.30	1,182.41
117634-51	**113-8985**●	1,471.55	1,316.65	1,239.18
117640-51	**113-8986**●	1,482.69	1,326.61	1,248.55
117637-51	**113-8987**●	1,471.55	1,316.65	1,239.18
117643-52	**113-8988**●	1,482.69	1,326.61	1,248.55
117636-51	**113-8989**●	1,488.35	1,331.69	1,253.34
117642-52	**113-8990**●	1,499.58	1,341.74	1,262.81
117635-53	**113-8991**●	1,505.24	1,346.79	1,267.56
117641-51	**113-8992**●	1,516.41	1,356.78	1,276.97
117632-52	**113-8994**●	1,505.24	1,346.79	1,267.56
117638-53	**113-8995**●	1,516.41	1,356.78	1,276.97
117459-55	**113-9014**●	2,632.22	2,467.71	2,303.17
119102-51	**113-8997**●	1,898.12	1,698.33	1,598.43
119101-51	**113-8998**●	1,909.38	1,708.42	1,607.90
119104-51	**113-8999**●	1,914.95	1,713.37	1,612.59
119103-51	**113-9000**●	1,926.21	1,723.46	1,622.06
117418-51	**113-9001**●	1,931.78	1,728.44	1,626.78
117417-51	**113-9002**●	1,943.10	1,738.56	1,636.29
119152-52	**113-9003**●	1,987.96	1,778.69	1,674.05
119151-51	**113-9004**●	1,999.25	1,788.82	1,683.58
119154-51	**113-9005**●	2,004.79	1,793.77	1,688.24
119153-51	**113-9006**●	2,016.02	1,803.82	1,697.71
117416-51	**113-9007**●	2,021.71	1,808.90	1,702.50
117415-51	**113-9008**●	2,032.91	1,818.93	1,711.93
116629-53	**113-9011**●	1,376.08	1,231.24	1,158.81
116630-56	**113-9012**●	1,364.82	1,221.15	1,149.31
117629-52	**113-9013**●	1,460.29	1,306.56	1,229.71

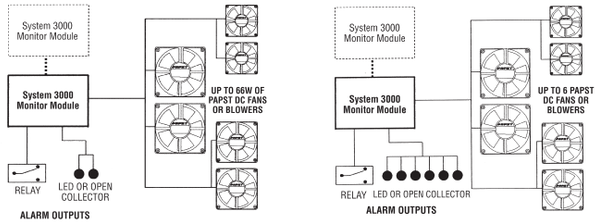
Fan Speed Controllers

System 3000

ebmpapst

Automatic Control for 12,24 and 48V dc Fans

H=38, W=63, L=175
Mounting 4 x 3.5mm holes, 50 x 165 cntrs



The system 3000 is a comprehensive solution for the control and monitoring of PAPST DC fans, altogether providing a thermal management system for electronic equipment. It offers a modular approach enabling the monitor module to function as a seperate monitoring unit or as a complete system integrated with the Control Module

Monitor Module

- Monitoring for upto 6 DC fans or blowers with open collector alarm outputs
- Alarm outputs for direct or remote fan status
- Individual fan alarm output
- Supports 12,24 or 48 Volt DC fans
- Several fan fail threshold settings available
- Easy to integrate and connect to equipment
- Operates as a stand-alone monitor or can be combined with System 3000 Control Module

Control Module

- Temperature dependent speed control
- Multiple point temperature sensing
- Can support up to four thermistors
- Can control any number of fans or blowers upto 65W total power consumption
- Modules available for 12,24 or 48Vdc fans
- Alarm outputs for over temperature and thermistor fail
- Low temperature fan shutdown/standby mode
- Fail safe operation for thermistor fail
- Operates as a stand-alone controller or can be combined with System 3000 Monitor Module

Monitor Module

Input voltage	12 or 24 and 48Vdc ±10%
Protection	Reverse Polarity and power limiting on 5V supply
Max power rating	50W direct module, connection and power leads can be connected externally if combined power ratings are greater than 50W
Operating temperature	0°C to +70°C
Humidity	40% to 80%
Outputs	Relay SPCO, 40Vdc/500mA for fan fail
Monitor Module	Open collector/20mA for fan status

Control Module

Input voltage	12, 24 or 48dc ±10%
Protection	Reverse polarity and power limiting on 5V supply
Max power rating	65W
Min power rating	5W
Operating Temperature	0°C to +70°C
Humidity	40% to 80%
Outputs	40Vdc/500mA Relay SPCO for over temperature and thermistor fail open collector/20mA for over temperature, thermistor fail and standby mode

204355

Fan Voltage	Mftrs. List No.	Order Code	Price Per Pack 1+	5+	10+	+	+
Monitor Module							
24 & 48V dc	S3000-M24-48	**960-0574**●	145.71	138.42	132.85	– –	– –

19 Fans

RoHS ● Compliant ▲ Non-compliant ‡ Limited stock - RoHS replacement available

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prices are subject to change without notice.