

J10

2U Active Air Cooler

PRODUCTION SPECIFICATION

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Socket SP5

Model Number : J10

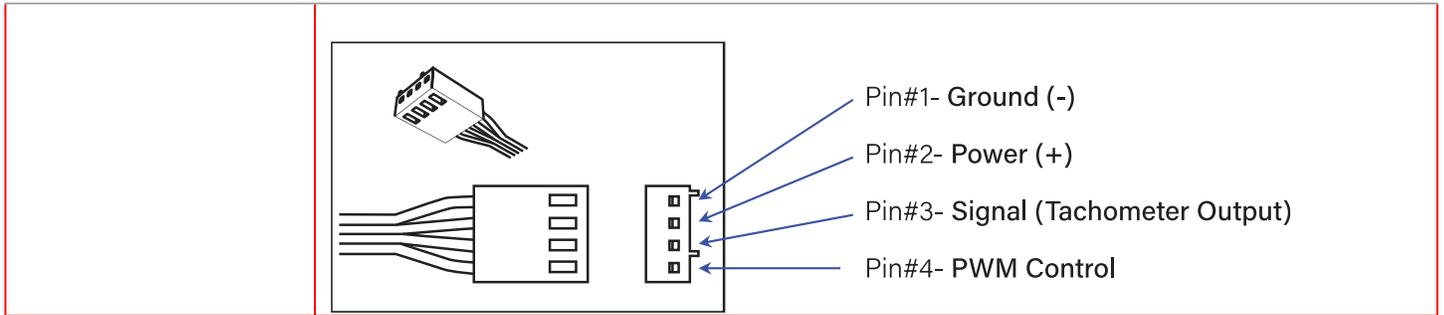
- Recommend for AMD® CPU as following
 - AMD® Genoa® Processor Family, Socket SP5
- Active Cooler for 2U Server & Up

Overall Specification

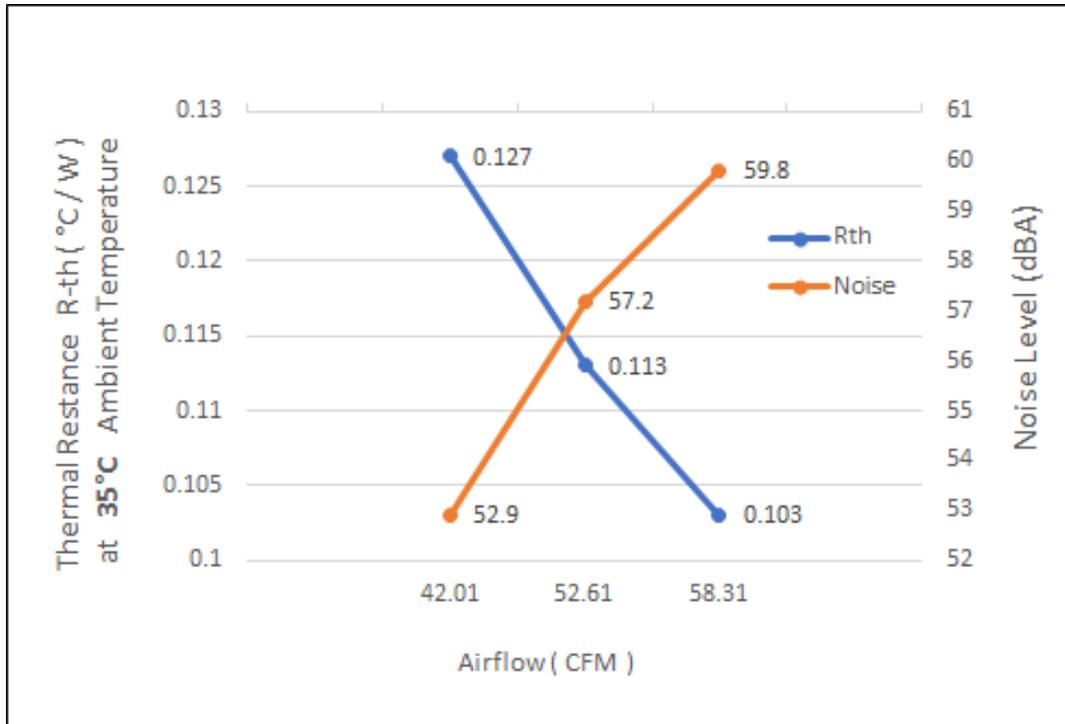
Dimension	118 x 92.4 x 65 mm
Weight	510 g
Material	5 Heatpipes with Aluminum Fin Base and Aluminum Fin Stack
Fan	6025 Side-blow fan with PWM Function
Mounting Method	Captive Screw Set, Per AMD Design Guide
TDP	Support CPU Power up to 320 Watts at 40°C ambient temperature
Thermal Grease	SHIT-ETSU 7762 or Equivalent

Cooling Fan Specification

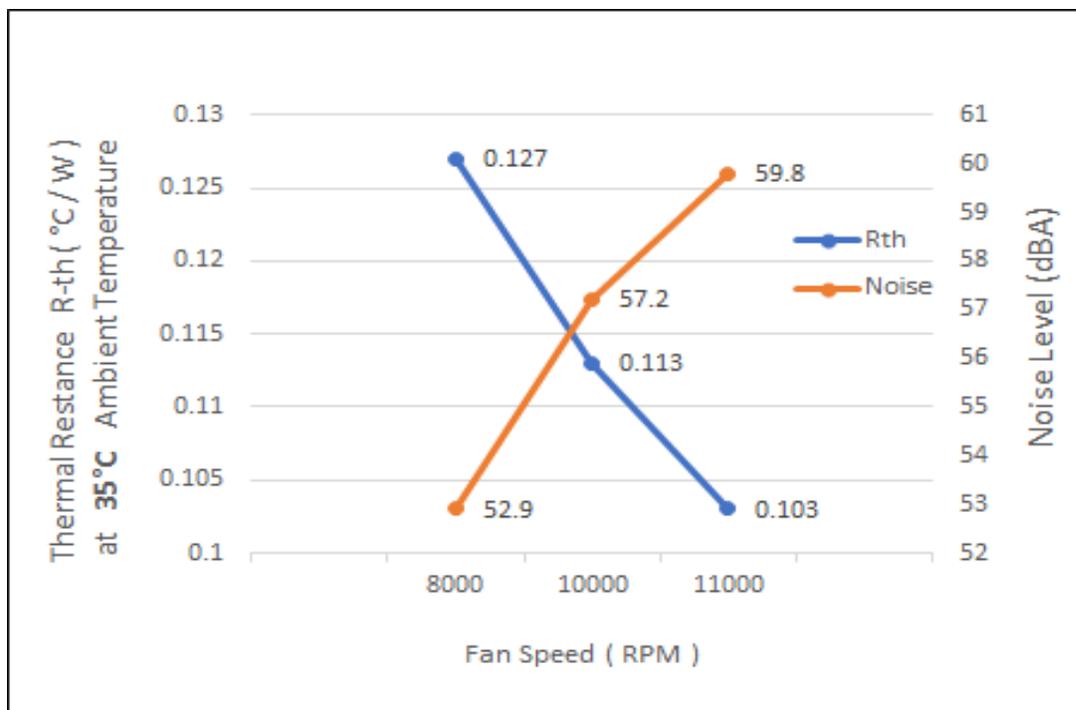
Model Number	DF126025BU-PWM
Dimension	60 x 60 x 25 mm
Bearing	Double Ball
Rated Voltage	12V
Rated Speed	At Duty Cycle 0~20%: 2300± 200 RPM At Duty Cycle 50%: 5400± 10% RPM At Duty Cycle 100%: 11000±10% RPM
Input Power	At Duty Cycle 0~20%: 0.84 W At Duty Cycle 50%: 2.76 W At Duty Cycle 100%: 18.0 W
Maximum Airflow	At Duty Cycle 0~20%: 11.91 CFM At Duty Cycle 50%: 28.38 CFM At Duty Cycle 100%: 58.31 CFM
Rated Static Pressure	At Duty Cycle 0~20%: 1.48 mm-H2O At Duty Cycle 50%: 7.54 mm-H2O At Duty Cycle 100%: 28.8 mm-H2O
Acoustical Noise	At Duty Cycle 0~20%: 25.8 dBA At Duty Cycle 50%: 44.4 dBA At Duty Cycle 100%: 59.8 dBA
Lead Wire Pin Out	Pin#1- Black(-) Pin#2- Yellow(+) Pin#3- Green(Tachometer/ Signal Output) Pin#4- Blue (PWM)



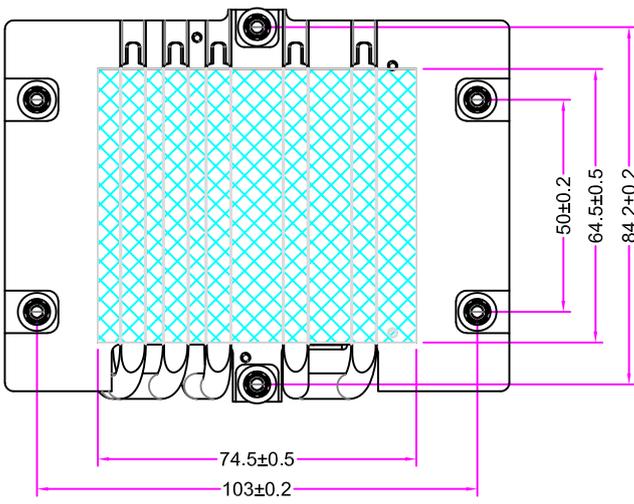
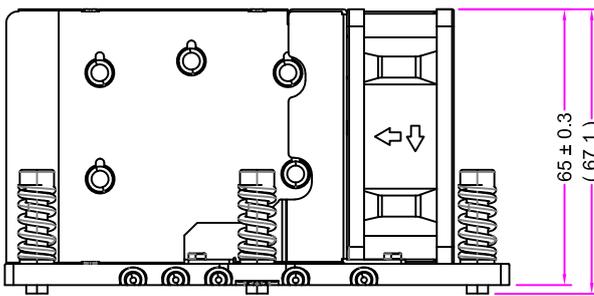
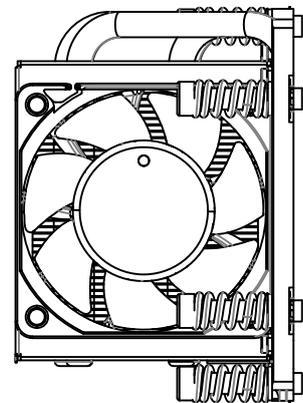
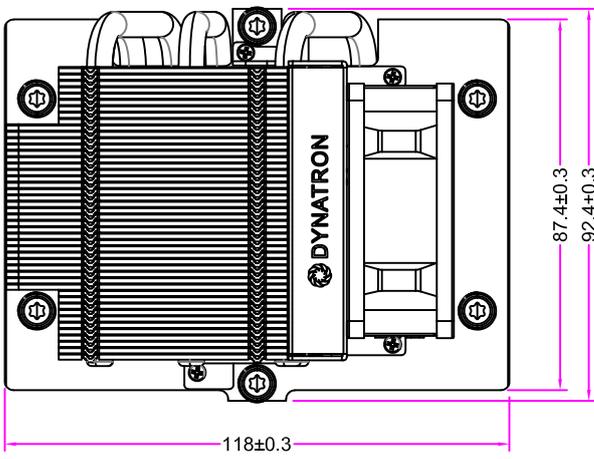
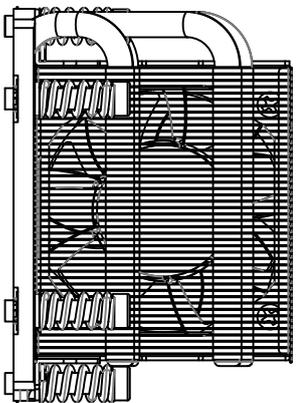
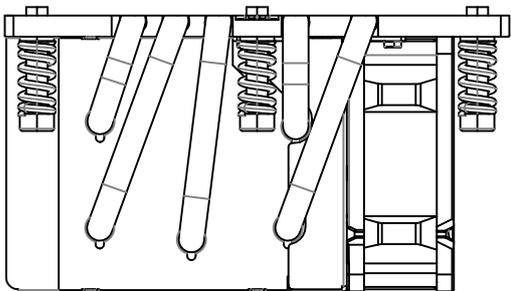
J10 Thermal Performance Curve Cooling Performance vs. Airflow



Cooling Performance vs. Fan Speed



REV#	DESCRIPTION	CHECKER	DATE
0.0	INITIAL RELEASE	LANG	04/04/2022



	NAME	DATE
DRAWN BY	Engr.	04/04/2022
CHECKED BY	LANG	04/04/2022
ENG. APPROVED		
MFG. APPROVED	-	-



DYNATRON CORPORATION

TOP MOTOR

TITLE: 2U Active Cooler Model **J10**
 designed for AMD socket SP5
 (sample LG-776)
 Overall Dimension Drawing

CONFIDENTIAL DOCUMENT

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO DYNATRON CORPORATION AND DYNAEON INDUSTRIAL CO., LTD. ANY REPRODUCTION, DISCLOSURE, OR USE OF THIS DRAWING IS EXPRESSLY PROHIBITED EXCEPT AS DYNATRON CORPORATION AND DYNAEON INDUSTRIAL CO., LTD. MAY OTHERWISE AGREE TO IN WRITING.

VIEW	
UNITS	MM

DWG. No: **DYN-DM-J10**

REV. **0.0**

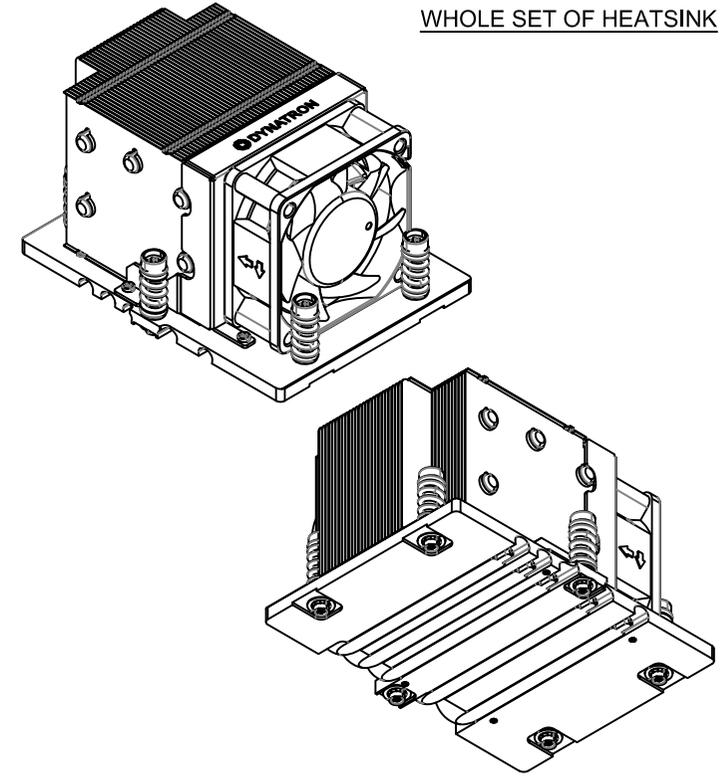
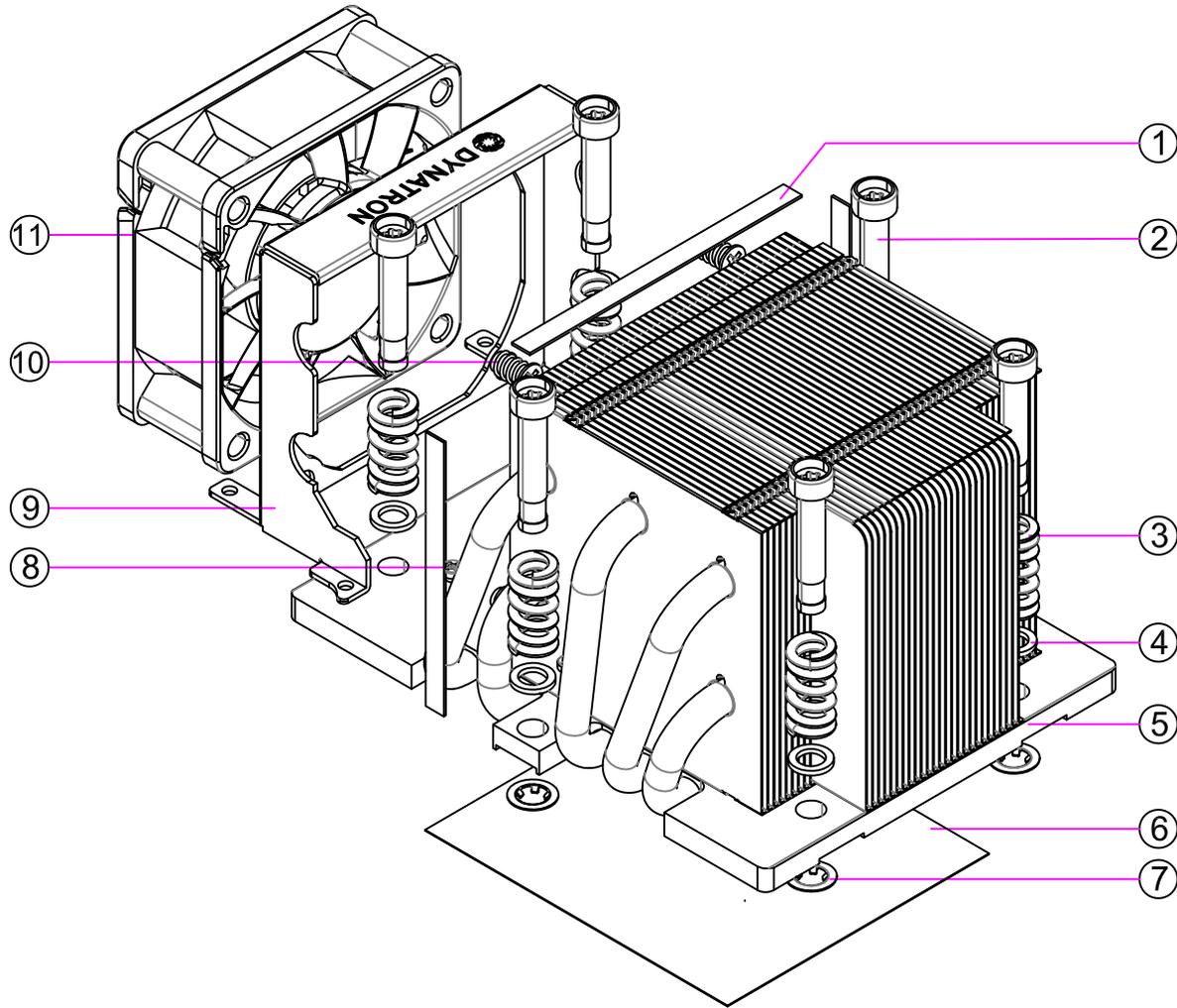
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ASSEMBLY PARTS

WHOLE SET OF HEATSINK

REV#	DESCRIPTION	CHECKER	DATE
0.0	INITIAL RELEASE	LANG	04/04/2022



11	FAN, DF126025BU-PWM (11000 RPM)	PLASTIC FRAME	1
10	SCREW, ø5mm SELF-TAPPING, FAN MOUNTING	STEEL	4
9	FAN BRACKET, 1.0mm THK.	SPCC	1
8	SCREW, FAN BRACKET MOUNTING, M2.5*0.45	STEEL	4
7	CLIP, O.D 9mm	STEEL	6
6	THERMAL GREASE, PREPRINTED	SHIN ETSU 7762	1
5	HEATSINK, ALUMINUM FRAMING BASE WITH HEAT PIPE EMBEDDED	5x HEAT PIPE ALUMINUM FIN STACK	1
4	SPACER, 1.0mm THK.	STEEL	6
3	SPRING, K >/= 5 kgf.mm	SUS303	6
2	SCREW STANDOFFS, M3.5 *0.6	STEEL	6
1	GASKET, FAN-NOISE CUSHION, 0.5mm THK.	FOAM SHEET	3
ITEM#	DESCRIPTION	MATERIAL	QTY.

	DATE	NAME	 DYNATRON CORPORATION
DRAWN	04/04/2022	Engr	
CHECKED	04/04/2022	LANG	
ENG. APPR.			
MFG. APPR.			
TITLE: 2U Active Cooler Model J10 designed for AMD socket SP5 (sample LG-776) BOM & Exploded Assembly Drawing			DWG. No: DYN-EP-J10
COMMENTS:			

NOTES:

1. THE FIGURE IS FOR REFERENCE ONLY, AND NOT FOR SCALE
2. OVERALL DIMENSION : 118 x 92.4 x 65 mm
3. OVERALL WEIGHT ESTIMATED : 510 g



DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

Specification for Approval

Customer:		
Model Number:	DF126025BU-PWM (60*60*25mm)	
Part Number:		
Issued Date:	Monday, March 1, 2021	
Version:	A	
Customer Approval		
Approval:	Check:	
Corporate Headquarters Dynatron Corporation 33200 Western Avenue Union City, CA 94587 U.S.A. Tel: 510-498-8888 Fax: 510-498-8488	<i>Taipei Office</i> <i>(Taiwan, R.O.C.)</i> 8F, No. 35, Lane:221 Gang Cian. Road, Taipei, Taiwan, R.O.C. Tel: 886-2-27995799 (Rep.) Fax: 886-2-2799-9577	Manufactory TOP MOTOR TECHNOLOGY(HUI ZHOU)CO,LTD Baishi Village, QiuchangTown, Huiyang Dist, HuizhouCity, Guangdong Province, P.R.China Tel: 86-752-822-8000 (Rep.) Fax: 86-752-822-8999
Approval:	Check:	Handler:
Guo xuan	-	Ling yan



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1. SCOPE

This specification defines the electrical and mechanical characteristics of the AC / DC Brush less (Sleeve Bearing/ 1-Ball Bearing / 2-Balls Bearing) axial flow fan, which is carefully designed and manufactured for your special needs by Dynatron Corporation.

2. ELECTRICAL CHARACTERISTICS

Items		Description		
1.	Rated Voltage	DC 12 V		
2.	Operating Voltage	10.8V~13.2V		
3.	PWM Frequency 25KHz	Duty Cycle D=0~20%	Duty Cycle D=50%	Duty Cycle D=100%
4.	Start Voltage	8V		
5.	Air Flow – At rated voltage zero static pressure (minimal value)	0.337m ³ / min (11.91CFM)	0.804m ³ / min (28.38CFM)	1.652m ³ / min (58.31CFM)
6.	Static Pressure – At rated voltage At zero air flow	1.48mm-H ₂ O (0.058inch-H ₂ O)	7.54mm-H ₂ O (0.297inch-H ₂ O)	28.8mm-H ₂ O (1.134inch-H ₂ O)
7.	Input Current (Max.)	0.07A	0.23A	1.50A
8.	Speed	2300RPM± 200	5400RPM± 10%	11000RPM± 10%
9.	Acoustical Noise	25.8dBA	44.4dBA	59.8dBA
10.	Input Power	0.84W	2.76W	18.0W
11.	Insulation Resistance – Between Frame and Terminal	10 M ohm at DC 500 V		
12.	Dielectric Strength – Between Frame and Terminal	5 mA (Max.) @ AC 500 V 60 Hz 1 min.		
13.	Life – Continuous operating under normal temperature (40 °C or 104 °F)	70,000 hours		
14.	Rotation	Anticlockwise Air Discharged		
15.	Auto restart Time	3-5sec		
16.	Lead Wires	UL 1007, awg 26 or Equivalent “-”: Black; “+”: Yellow; “S”: Green. “PWM”: Blue.		



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3. MECHANICAL CHARACTERISTICS

Items		Description
1.	Dimension	Display as Drawing
2.	Frame	PBT UL94V-0 (Black GP)
3.	Impeller	PBT UL94V-0 (Black GP)
4.	Bearing System	Two Balls Bearing
5.	Weight	68±5grams

4. ENVIRONMENTAL

Items		Description
1.	Operating Temperature	- 10 °C ~ + 65 °C (65 %RH)
2.	Storage Temperature	- 30 °C ~ + 70 °C (65 %RH)
3.	Vibration Test	Displacement Amplitude: 0.75mm(Equivalent 10G) Frequency Range: 10Hz<->55Hz/30SEC. Linear Scanning 120 Cycle Endurance Timer Per Axis: 30Min. Orientation:X,Y,Z.
4.	Drop Test	Motor withstands one free body drop from 30 cm in high onto 10 mm thickness of wooden board for each of the three faces in minimum packing condition.
5.	Acoustic Noise	25.8/44.4/59.8dBA – Curve (Max26.3/44.9/60.3dBA) Measuring Condition – Under rated voltage in semi-anechoic chamber equipment sound level meter. (Figure A.)

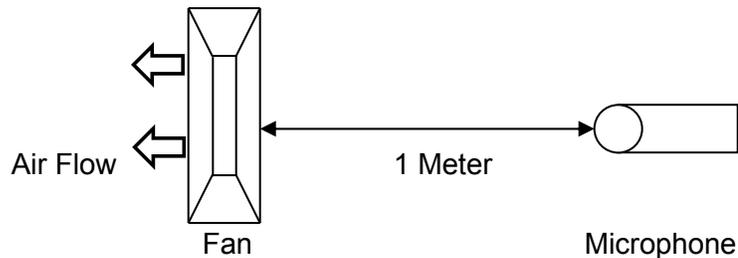


Figure A – Noise Level is measure at rated voltage in anechoic chamber in free air as above.



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5. PROTECTION

Items		Description
1.	Polarity Protection	For polarity error connection to power, the circuit withstands reversed connection between positive and negative leads.
2.	Locked Rotor Protection	Motor winding protects the motor from damage in 72 hours of locked rotor condition at rated voltage.

6. ATTACHMENTS

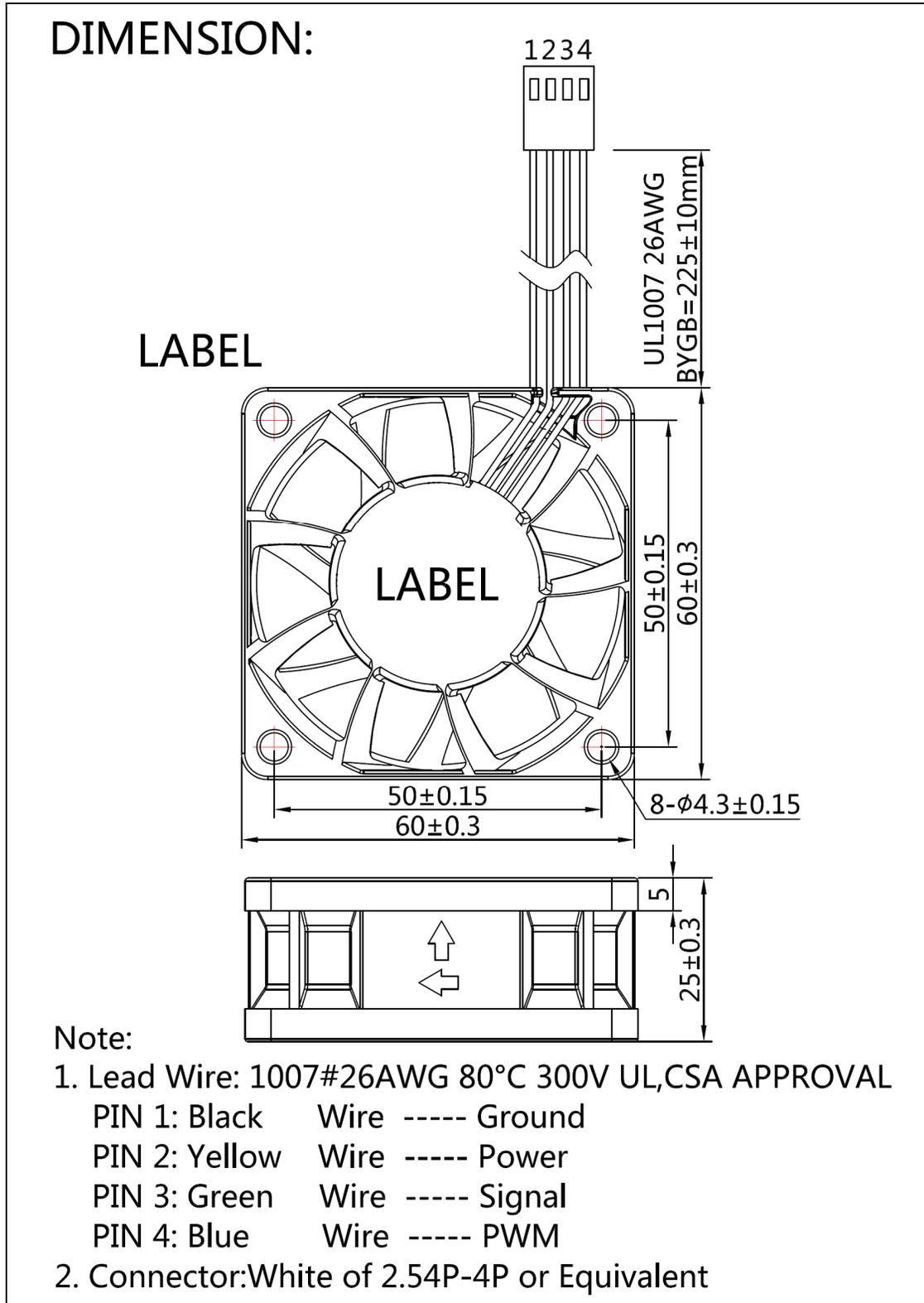
- 6.1. Product Dimension
- 6.2. Frequency Generator Output
- 6.3. TUV Certificate
- 6.4. UL Certificate
- 6.5. Electrical specifications for PWM production



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6.1. Product Dimension





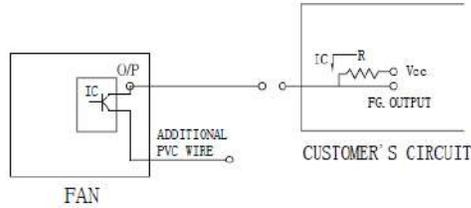
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6.2. Frequency Generator Output

FREQUENCY GENERATOR O/P:

Frequency generator function is activated by an internal IC for customer's application.
Electrical schematic:



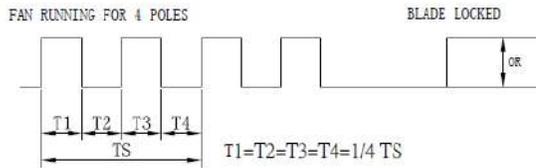
CUSTOMER'S CIRCUIT

V_{cc} = From +5 To +28 VDC (Generally using +12 or +24 VDC)

I_c = 5 mA max.

$R = V/I$ (Output "R" value calculation)

● SUPPLY A WAVEFORM:



$N = R.P.M.$ (Rotation speed will be different for various models
L/M/H/HH/VH/SH)

$TS = 60/N$ (Sec)

* Voltage level after blade locked

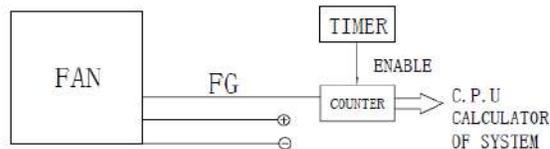
● OUTPUT LEVEL:

High = V_{cc} 10%

Low = 0-0.5V

I_c = 5 mA max.

● APPLICATION:



● FUNCTIONS:

- . By means of waveform & customer's design, schematic can reach alarm function, either in the form of buzzing or LED flashing.
Adjust rotation speed.
- . When power supply output voltage level decreases, it will result in the lowering of fan rotation speed. The irregular situation will be controlled by using FG. O/P through P/S circuit to increase the output voltage and result in a stable rotation speed.



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6.3. TUV Certificate

Zertifikat		Certificate			
Zertifikat Nr. <i>Certificate No.</i>	R 50064443	Blatt <i>Page</i>	0002		
Ihr Zeichen <i>Client Reference</i>	PC/DTI	Unser Zeichen <i>Our Reference</i>	ZTW1-TCC- 10013649 002	Ausstellungsdatum <i>Date of Issue</i>	11.11.2005 (day/mo/yr)
Genehmigungsinhaber <i>License Holder</i>			Fertigungsstätte <i>Manufacturing Plant</i>		
Dynacon Industrial Co., Ltd. 1st Fl., No. 362, Tanan Rd. Taipei 111 Taiwan, R.O.C.			Dynacon Ind. Co., Ltd. Ta-Li Management Zone Ching-Hsi, Dongguan P.R. China		
Prüfzeichen <i>Test Mark</i>		Geprüft nach <i>Tested acc. to</i>			
		EN 60950-1:2001+A11			
Zertifiziertes Produkt <i>(Geräteidentifikation)</i>			Lizenzentgelte - Einheit <i>License Fee - Unit</i>		
<i>Certified Product (Product Identification)</i>			<i>License Fee - Unit</i>		
Ventilator (DC Fan)					
wie Blatt (as page) 01					
Ergänzung (Addition)					
Bezeichnung : DF(X1)(X2)(X3)(X4)(X5)ZZZZ-(X6)					
(Type Designation)					
(X1) steht für (stands for) : 05, 12, 24					
(X2) steht für (stands for) : 40, 50, 60, 70, 80					
(X3) steht für (stands for) : 10, 15, 20					
(X4) steht für (stands for) : S, B, P, Q					
(X5) steht für (stands for) : U, H, M, L, E					
Z steht für (stands for) : A-Z, 0-9 oder freibleibend (or blank)					
(X6) steht für (stands for) : A, B					
Nennspannung : DC 5V (X1 = 05); DC 12V (X1 = 12)					
(Rated Voltage) DC 24V (X1 = 24)					
Nennstrom : siehe Aufbau-Übersicht					
(Rated Current) (see constructional dataform)					
ANLAGE (Appendix): 1.1					
<small>Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde. Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht. This certificate is based on our Testing and Certification Regulation. The product fulfills above-mentioned-requirements, the production is subject to surveillance.</small>					
TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln			Zertifizierungsstelle		
Tel.:(+49/221)8 06 - 13 71 Fax:(+49/221)8 06 - 39 35 e-mail: Althoff@de.tuv.com					
			Dipl.-Ing. F. Stöckel		



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6.4. UL Certificate

15-10-29

GPWW2.E157868 - Fans, Electric - Component



ONLINE CERTIFICATIONS DIRECTORY

GPWW2.E157868 Fans, Electric - Component

[Page Bottom](#)

Fans, Electric - Component

[See General Information for Fans, Electric - Component](#)

DYNAEON INDUSTRIAL CO LTD
8TH FL 35 LANE 221 GANGCIAN RD
NEIHU DIST
TAIPEI, 114 TAIWAN

E157868

DC fans, Models D(F)1206(Z)(Y1)(X1), D(F)1207(Z)(Y1)(X1), where (F) may be F or C, (Z) may be SH, BH, BA, SM, BM, BB, SL, BL, BC, SD, BE, BF, SG, BI, BJ, SK, BN, BO, SP, BQ, BR, SS, BT, BU, SV, BW, BX, SY, BY or BZ, (Y1) may be "-", 0 through 9 or A through Z, (X1) may be 0 through 9 or A through Z.

Models DF248015(S)(X)(Y)(Z)(W), DF488015(S)(X)(Y)(Z)(W), where (S) may be S, B or P, (X) may be U, H, M or L, (Y) and (Z) may be any alphanumeric character, blank, "-" or any symbol, (W) may be seven any alphanumeric character, blank, "-" or any symbol.

Models DF121225(A)(B)(C), DF121225(A)E(C), DF241225(A)(B)(C), DF128015(A)U(C), DF128015(A)(B)(C), DF128025(A)U(C), DF128025(A)(B)(C), DF128025(A)E(C), DF248025(A)U(C), DF248025(A)(B)(C), DF129225(A)(B)(C), DF129225(A)E(C), DF249225(A)U(C), DF249225(A)(B)(C), DF126010(A)(B)(C), DF246025(A)U(C), DF246025(A)(B)(C), DF126025(A)U(C), DF126025(A)(B)(C), DF126025(A)E(C), DB126015BU(C), DB126015B(B)(C), DF123010(A)(B)(C), DF053010(A)(B)(C), DF127015(A)U(C), DF127015(A)(B)(C), DF245010(A)(B)(C), where (A) may be S, B, P or Q, (B) may be H, M or L, (C) may be xxxxxxxx, where x may be A through Z, 0 through 9, "-" or blank.

Models DF122510(X)(Y2)(Z)-(M), DF124020(X)(Y2)(Z)-(M), DF244020(X)(Y1)(Z)-(M), DF126025(X)(Y3)(Z)-(M), DF246025(X)(Y3)(Z)-(M), DF121225(X)(Y1)(Z)-(M), DF124028(X)(Y3)(Z)-(M), where (X) may be S, B, P, Q, (Y1) may be H, M or L, (Y2) may be U, H, M or L, (Y3) may be U, H, M, L or E, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank, (M) may be A or B.

Models DF054010(X)(Y2)(Z1)(Z2)-A, DF054010(X)L(Z1)(Z2)-B, DF124010(X)(Y2)(Z1)(Z2)-A, DF124010(X)L(Z1)(Z2)-B, DF244010(X)(Y2)(Z1)(Z2)-A, DF125015(X)(Y1)(Z1)(Z2)-A, DF125020(X)(Y3)(Z1)(Z2)-A, DF126015(X)(Y1)(Z1)(Z2)-A, DF246015(X)M(Z1)(Z2)-A, DF246015(X)L(Z1)(Z2)-A, DF128020(X)(Y1)(Z1)(Z2)-A, DF128020(X)L(Z1)(Z2)-B, DB127015(X)(Y2)(Z)-A series, where (X) may be S, B, P, Q, (Y1) may be H, M or L, (Y2) may be U, H, M or L, (Y3) may be H, M, L or E, (Z1) may be blank or 3, (Z2) is alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Models DF125010(X)(Y)(Z)-A, DF126020(X)(Y)(Z)-A, DF246020(X)(Y)(Z)-A, DF121525(X)(Y1)(Z)-A, DF121525(X)(Y2)(Z)-B series, Where (X) may be S, B, P or Q, (Y) may be H, M or L, (Y1) may be U, H or M, (Y2) may be L or E, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Models DF128025(X)(a)(Y)-A, DF121225(X)(b)(Y)-C, DF121225(X)E(Y)-C, DF127720(X)(a)(Y)-A, DF121425(X)(c)(Y)-A, DF126010(X)E(Y)-A series, where (X) may be S, B, P, Q, (a) may be H, M, L or E, (b) may be M or L, (c) may be U, H, M, L or E, (Y) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Models DF054010(X)(Y1)(Z1)(Z2)-C, DF124010(X)(Y2)(Z1)(Z2)-C, DF244010(X)(Y2)(Z1)(Z2)-C, DF124020BU(Z1)(Z2)-C, DF124020(X)(Y1)(Z1)(Z2)-C, DF124028BU(Z1)(Z2)-C, DF124028(X)(Y1)(Z1)(Z2)-C, DF126025(X)(Y1)(Z1)(Z2)-C, DF127015BU(Z1)(Z2)-A, DF127015(X)(Y1)(Z1)(Z2)-A, DF128025BU(Z1)(Z2)-B, DF128025(X)(Y1)(Z1)(Z2)-B, DF129225BU(Z1)(Z2)-A, DF129225(X)(Y1)(Z1)(Z2)-A, DF121225BU(Z1)(Z2)-D, DF121225(X)(Y1)(Z1)(Z2)-D, DF121425(X)(Y1)(Z1)(Z2)-B, DB127015BU(Z1)(Z2)-B, DB127015(X)(Y1)(Z1)(Z2)-B, DB058015(X)(Y3)(Z1)(Z2)-A, where (X) may be S, B, P or Q, where (Y1) may be H, M, L or E, where (Y2) may be U, H, M, L or E, where (Y3) may be M or L, where (Z1) may be blank or 3, where (Z2) may be is alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Models DB128015(X)(Y1)(Z)-A, DF128038(X)(Y1)(Z)-A, DB121225(X)(Y2)(Z)-A, DF054010(X)(Y2)(Z)-D, DF124010(X)(Y3)(Z)-D, DF244010(X)(Y4)(Z)-D, DF125010(X)(Y2)(Z)-B, DF126010(X)(Y5)(Z)-B series, where (X) may be S, B, P, Q, (Y1) may be U, H, M, L or E, (Y2) may be H, M or L, (Y3) may be U, M, L or E, (Y4) may be U, H, M or L, (Y5) may be H, M, L or E, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Series 7515: Models DB127515(X)U-ZZZZZ-(A), DB127515(X)H-ZZZZZ-(A), DB127515(X)M-ZZZZZ-(A), DB127515(X)L-ZZZZZ-(A).

Series 9225: Models DF129225(X)U-ZZZZZ-(A), DF129225(X)H-ZZZZZ-(A), DF129225(X)M-ZZZZZ-(A), DF129225(X)L-ZZZZZ-(A).

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DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

15-10-29

GPWW2.E157868 - Fans, Electric - Component

Models DB128015(X)(Y)-(Z)-B and DF126028(X)(W)-(Z)-A series, where (X) may be S, B, P or Q; (Y) may be U, H, M or L; (W) may be U, H, M, L or E; (Z) stands for five variables, each may be A through Z, 0 through 9 or blank.

Model DF124028(X)(Y)-(Z)-D, where (X) may be S, B, P or Q; (Y) may be U, H, M, L, E; (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Electric fans, Models DC0504, -1204, -1205, -1206, DF1204, -1208, -2408, -0504, -0505, -1205, -2406 followed by "S" or "B", followed by two alphanumeric characters.

Low voltage fans, Models DB1206, DF1209, -1212, -2409, DH1204 followed by B or S, followed by two alphanumeric characters.

Models DF124056(X)(Y)-(Z)-(Z1), DF126038(X)(Y)-(Z)-(Z1), DB129015(X)(Y)-(Z)-(Z1) and DB129215(X)(Y)-(Z)-(Z1); where (X) may be S, B, P, Q; (Y) may be U, H, M, L, E; (Z) may be a through Z, 0 through 9 or blank; (Z1) may be A, B, C or D.



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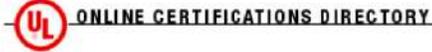


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DYNAEON INDUSTRIAL CO LTD
8TH FL 35 LANE 221 GANGCIAN RD
NEIHU DIST
TAIPEI, 114 TAIWAN

E157868

DC fans, Models D(F)1206(Z)(Y1)(X1), D(F)1207(Z)(Y1)(X1), where (F) may be F or C, (Z) may be SH, BH, BA, SM, BM, BB, SL, BL, BC, SD, BE, BF, SG, BI, BJ, SK, BN, BO, SP, BQ, BR, SS, BT, BU, SV, BW, BX, SY, BY or BZ, (Y1) may be "-", 0 through 9 or A through Z, (X1) may be 0 through 9 or A through Z.

Models DF248015(S)(X)(Y)(Z)(W), DF488015(S)(X)(Y)(Z)(W), where (S) may be S, B or P, (X) may be U, H, M or L, (Y) and (Z) may be any alphanumeric character, blank, "-" or any symbol, (W) may be seven any alphanumeric character, blank, "-" or any symbol.

Models DF121225(A)(B)(C), DF121225(A)E(C), DF241225(A)(B)(C), DF128015(A)U(C), DF128015(A)(B)(C), DF128025(A)U(C), DF128025(A)(B)(C), DF128025(A)E(C), DF248025(A)U(C), DF248025(A)(B)(C), DF129225(A)(B)(C), DF129225(A)E(C), DF249225(A)U(C), DF249225(A)(B)(C), DF126010(A)(B)(C), DF246025(A)U(C), DF246025(A)(B)(C), DF126025(A)U(C), DF126025(A)(B)(C), DF126025(A)E(C), DB126015BU(C), DB126015B(B)(C), DF123010(A)(B)(C), DF053010(A)(B)(C), DF127015(A)U(C), DF127015(A)(B)(C), DF245010(A)(B)(C), where (A) may be S, B, P or Q, (B) may be H, M or L, (C) may be xxxxxxxx, where x may be A through Z, 0 through 9, "-" or blank.

Models DF122510(X)(Y2)(Z)-(M), DF124020(X)(Y2)(Z)-(M), DF244020(X)(Y1)(Z)-(M), DF126025(X)(Y3)(Z)-(M), DF246025(X)(Y3)(Z)-(M), DF121225(X)(Y1)(Z)-(M), DF124028(X)(Y3)(Z)-(M), where (X) may be S, B, P, Q, (Y1) may be H, M or L, (Y2) may be U, H, M or L, (Y3) may be U, H, M, L or E, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank, (M) may be A or B.

Models DF054010(X)(Y2)(Z1)(Z2)-A, DF054010(X)L(Z1)(Z2)-B, DF124010(X)(Y2)(Z1)(Z2)-A, DF124010(X)L(Z1)(Z2)-B, DF244010(X)(Y2)(Z1)(Z2)-A, DF125015(X)(Y1)(Z1)(Z2)-A, DF125020(X)(Y3)(Z1)(Z2)-A, DF126015(X)(Y1)(Z1)(Z2)-A, DF246015(X)M(Z1)(Z2)-A, DF246015(X)L(Z1)(Z2)-A, DF128020(X)(Y1)(Z1)(Z2)-A, DF128020(X)L(Z1)(Z2)-B, DB127015(X)(Y2)(Z)-A series, where (X) may be S, B, P, Q, (Y1) may be H, M or L, (Y2) may be U, H, M or L, (Y3) may be H, M, L or E, (Z1) may be blank or 3, (Z2) is alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Models DF125010(X)(Y)(Z)-A, DF126020(X)(Y)(Z)-A, DF246020(X)(Y)(Z)-A, DF121525(X)(Y1)(Z)-A, DF121525(X)(Y2)(Z)-B series, Where (X) may be S, B, P or Q, (Y) may be H, M or L, (Y1) may be U, H or M, (Y2) may be L or E, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Models DF128025(X)(a)(Y)-A, DF121225(X)(b)(Y)-C, DF121225(X)E(Y)-C, DF127720(X)(a)(Y)-A, DF121425(X)(c)(Y)-A, DF126010(X)E(Y)-A series, where (X) may be S, B, P, Q, (a) may be H, M, L or E, (b) may be M or L, (c) may be U, H, M, L or E, (Y) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Models DF054010(X)(Y1)(Z1)(Z2)-C, DF124010(X)(Y2)(Z1)(Z2)-C, DF244010(X)(Y2)(Z1)(Z2)-C, DF124020BU(Z1)(Z2)-C, DF124020(X)(Y1)(Z1)(Z2)-C, DF124028BU(Z1)(Z2)-C, DF124028(X)(Y1)(Z1)(Z2)-C, DF126025BU(Z1)(Z2)-C, DF126025(X)(Y1)(Z1)(Z2)-C, DF127015BU(Z1)(Z2)-A, DF127015(X)(Y1)(Z1)(Z2)-A, DF128025BU(Z1)(Z2)-B, DF128025(X)(Y1)(Z1)(Z2)-B, DF129225BU(Z1)(Z2)-A, DF129225(X)(Y1)(Z1)(Z2)-A, DF121225BU(Z1)(Z2)-D, DF121225(X)(Y1)(Z1)(Z2)-D, DF121425(X)(Y1)(Z1)(Z2)-B, DB127015BU(Z1)(Z2)-B, DB127015(X)(Y1)(Z1)(Z2)-B, DB058015(X)(Y3)(Z1)(Z2)-A, where (X) may be S, B, P or Q, where (Y1) may be H, M, L or E, where (Y2) may be U, H, M, L or E, where (Y3) may be M or L, where (Z1) may be blank or 3, where (Z2) may be is alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Models DB128015(X)(Y1)(Z)-A, DF128038(X)(Y1)(Z)-A, DB121225(X)(Y2)(Z)-A, DF054010(X)(Y2)(Z)-D, DF124010(X)(Y3)(Z)-D, DF244010(X)(Y4)(Z)-D, DF125010(X)(Y2)(Z)-B, DF126010(X)(Y5)(Z)-B series, where (X) may be S, B, P, Q, (Y1) may be U, H, M, L or E, (Y2) may be H, M or L, (Y3) may be U, M, L or E, (Y4) may be U, H, M or L, (Y5) may be H, M, L or E, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Series 7515: Models DB127515(X)U-ZZZZZ-(A), DB127515(X)H-ZZZZZ-(A), DB127515(X)M-ZZZZZ-(A), DB127515(X)L-ZZZZZ-(A).

Series 9225: Models DF129225(X)U-ZZZZZ-(A), DF129225(X)H-ZZZZZ-(A), DF129225(X)M-ZZZZZ-(A), DF129225(X)L-ZZZZZ-(A).

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Models DB128015(X)(Y)-(Z)-B and DF126028(X)(W)-(Z)-A series, where (X) may be S, B, P or Q; (Y) may be U, H, M or L; (W) may be U, H, M, L or E; (Z) stands for five variables, each may be A through Z, 0 through 9 or blank.

Model DF124028(X)(Y)-(Z)-D, where (X) may be S, B, P or Q; (Y) may be U, H, M, L, E; (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Electric fans, Models DC0504, -1204, -1205, -1206, DF0504, -0505, -1204, -1205, -1208, -2406, -2408 followed by "S" or "B", followed by two alphanumeric characters.

Low voltage fans, Models DB1206, DF1209, -1212, -2409, DH1204 followed by B or S, followed by two alphanumeric characters.

Models DF124056(X)(Y)-(Z)-(Z1), DF126038(X)(Y)-(Z)-(Z1), DB129015(X)(Y)-(Z)-(Z1) and DB129215(X)(Y)-(Z)-(Z1); where (X) may be S, B, P, Q; (Y) may be U, H, M, L, E; (Z) may be a through Z, 0 through 9 or blank; (Z1) may be A, B, C or D.



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TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

6.5. Electrical specifications for PWM production

USA Dynatron Corp.

Electrical Specifications for PWM production

Voltage

Fan operating voltage shall be within the range 12V \pm 1.2V.

Current

Peak fan current draw during start-up operation (with 13.2V applied, with fan operating in the free stream condition) shall not exceed 2.0 A.

Fan current spike during start-up operation (with 13.2V applied with fan operating in the free stream condition) shall be allowed to exceed 1.0 A for a duration of no greater than 1.0 sec.

Tachometer Output Signal

Fan shall provide tachometer output signal with the following characteristics:

- * Two pulses per revolution
- * Open-collector or open-drain type output
- * Motherboard will have a pull up to 12V, maximum 13.2V

PWM Control Input Signal

The following requirements are measured at the PWM(control) pin of the fan cable

connector: PWM Frequency: Target frequency 25kHz,

acceptable operational range 21 kHz to 28 KHz

Maximum voltage for logic low: $V_{IL}=0.8V$

Absolute maximum current sourced: $I_{max}=5mA$ (short circuit current)

Absolute maximum voltage level: $V_{max}=5.25V$ (open circuit voltage)

Fan Speed Control

1.1 Maximum Fan Speed Requirements

The maximum fan speed shall be specified for the fan model by the vendor and correspond to 100% duty cycle PWM signal input.

1.2 Minimum Fan Speed Requirements

The vendor shall specify the minimum RPM and the corresponding PWM duty cycle. This specified minimum RPM shall be 30% of maximum RPM or less. The fan shall be able to start and run at this RPM. To allow a lower specified minimum RPM, it is acceptable to provide a higher PWM duty cycle to the fan motor for a short period of time for startup conditions. This pulse should not exceed 30% maximum RPM and should last no longer than 2 seconds.



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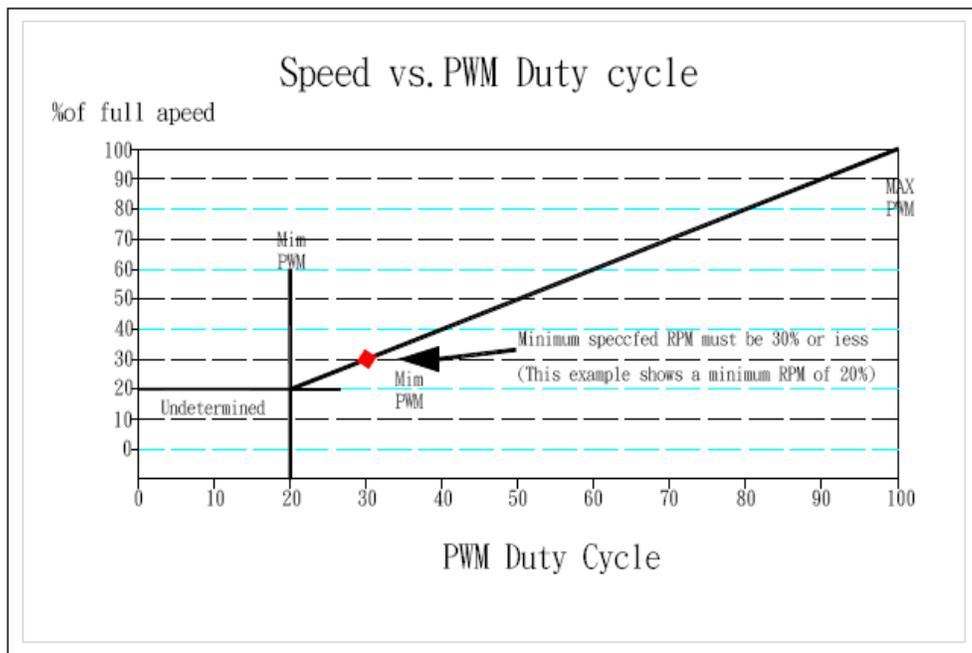
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USA Dynatron Corp.

1.3 Fan Speed Response PWM Control Input Signal

The PWM input shall be delivered to the fan through the control signal on Pin4. Fan speed response to this signal shall be a continuous and monotonic of the duty cycle of the signal, from 100% to the minimum specified RPM. The fan RPM (as a percentage of maximum RPM) should match the PWM duty cycle within $\pm 10\%$. If no control signal is present the fan shall operate at maximum RPM.

Figure 1 Fan speed Response to PWM Control input Signal



1.4 Operation Below Minimum RPM

For all duty cycles less than the minimum duty cycle, the RPM shall not be greater than the minimum RPM. The following graphs and definitions show three recommended solutions to handle PWM duty cycles that are less than the minimum operational PWM, as a percentage of maximum.

Reference resource by Intel's 4-wire PWM Fan controlled specification.