



DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

Specification for Approval

Customer:		
Model Number:	CA24	
Part Number:	LC10300005	
Issued Date:	Friday, June 26, 2026	
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	Taipei Office (Taiwan, R.O.C.) 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, Qiuchang Town, Huiyang Dist, Huizhou City, Guangdong Province, P.R. China Tel: 86-752-822-8000 (Rep.) Fax: 86-752-822-8999
Approval:	Check:	Handler:
Fan fengwei	-	Xiaoli



DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

	CONTENTS	Page
1.	SCOPE	3
2.	ELECTRICAL CHARACTERISTICS	3
3.	MECHANICAL CHARACTERISTICS	4
4.	ENVIRONMENTAL	4
5.	PROTECTION	5
6.	ATTACHMENTS	5
	6.1. Assembly Parts	6
	6.2. Product Dimension	7
	6.3. Frequency Generator Output	8
	6.4. TUV Certificate	9
	6.5. UL Certificate	10-15
	6.6. Electrical specifications for PWM production	16-17



DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

1. SCOPE

This specification defines the electrical and mechanical characteristics of the
☐ AC / ☒ DC Brush less (☐ Liquid State / ☒ 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		
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)	0.689 m ³ /z min (24.33CFM)	1.709m ³ /z min (60.33CFM)	3.308m ³ /z min (116.77CFM)
6.	Static Pressure – At rated voltage At zero air flow	0.993mm-H ₂ O (0.039inch-H ₂ O)	6.11mm-H ₂ O (0.241inch-H ₂ O)	22.89mm-H ₂ O (0.901inch-H ₂ O)
7.	Input Current (Max.)	0.06A	0.25A	1.6A
8.	Speed (Max.)	1250RPM ± 200	3100RPM ± 10%	6000RPM ± 10%
9.	Acoustical Noise	20.88dBA	40.60dBA	54.94dBA
10.	Input Power	0.72W	3.0W	19.2W
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 (25 °C or 77 °F)	50,000 hours		
14.	Rotation	Anticlockwise Air Discharged		
15.	Lead Wires	UL 1061, awg 26 or Equivalent “-”: Black; “+”:Black;”s”: Black. ”PWM”: Black.		



DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

3. MECHANICAL CHARACTERISTICS

Items		Description
1.	Dimension	Display as Drawing
2.	Frame	PBT UL94V-0 (Coffee Colour GP)
3.	Impeller	PBT UL94V-0 (Milk Coffee GP)
4.	Bearing System	Two ball Bearing
5.	Weight	--

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	54.94dBA – Curve (Max55.444dBA) Measuring Condition – Under rated voltage in semi-anechoic chamber equipment sound level meter. (Figure A.)

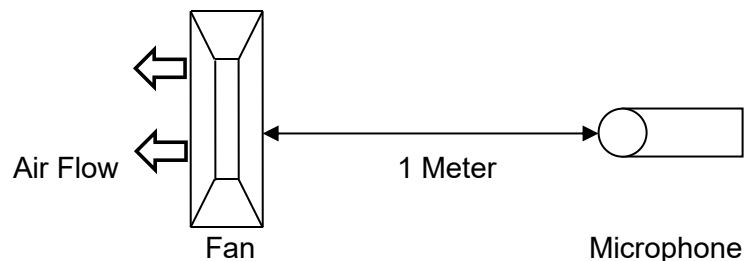


Figure A – Noise Level is measure at rated voltage in anechoic chamber in free air as above.



DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

5. PROTECTION

Items		Description
1.	Polarity Protection	For polarity error connection to power, the circuit withstands reversed connection between positive and negative leads.

6. ATTACHMENTS

- 6.1. Assembly Parts
- 6.2. Product Dimension
- 6.3. Frequency Generator Output
- 6.4. TUV Certificate
- 6.5. UL Certificate
- 6.6. Electrical specifications for pwm production



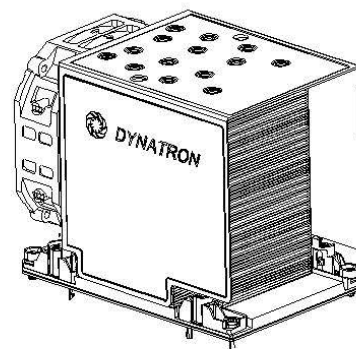
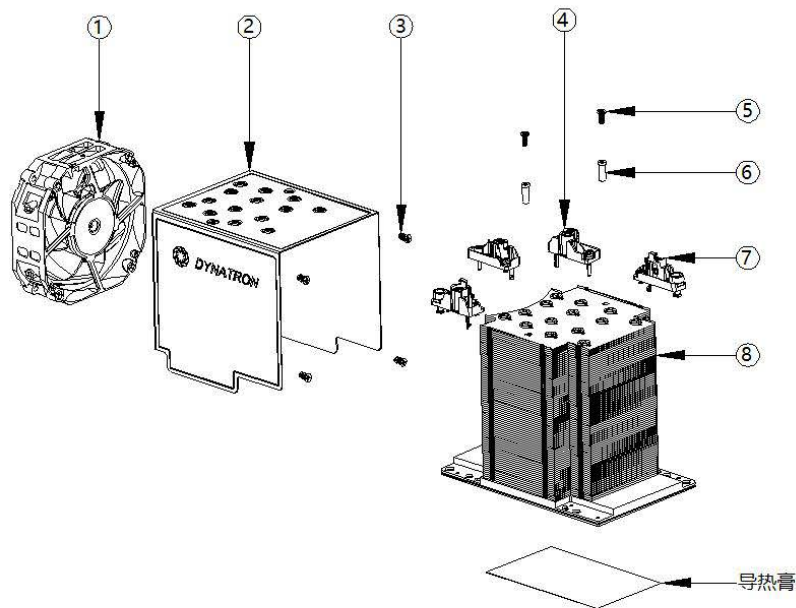
DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

6.1.Assembly Parts

This drawing contains Top Motor technology co.,Ltd. proprietary information. Any reproduction, disclosure, or use of this drawing is restrickly prohibited except as Top Motor technology co.,Ltd. otherwise agrees to in writing.

File No	ITEM#	DESCRIPTION	CHECKER	DATE
EP-881	01	首次发行	黄演琪	2026.05.14
	02			



8	50809460	散热片	AL+CU	1
7	51000940	扣具	/	2
6	51801340	铆柱	SUS	2
5	50905580	螺丝	C1018	2
4	51000930	扣具	/	2
3	50900380	螺丝	C1018	4
2	51302850	金属盖	AL	1
1	LE10300004	FAN	PBT	1

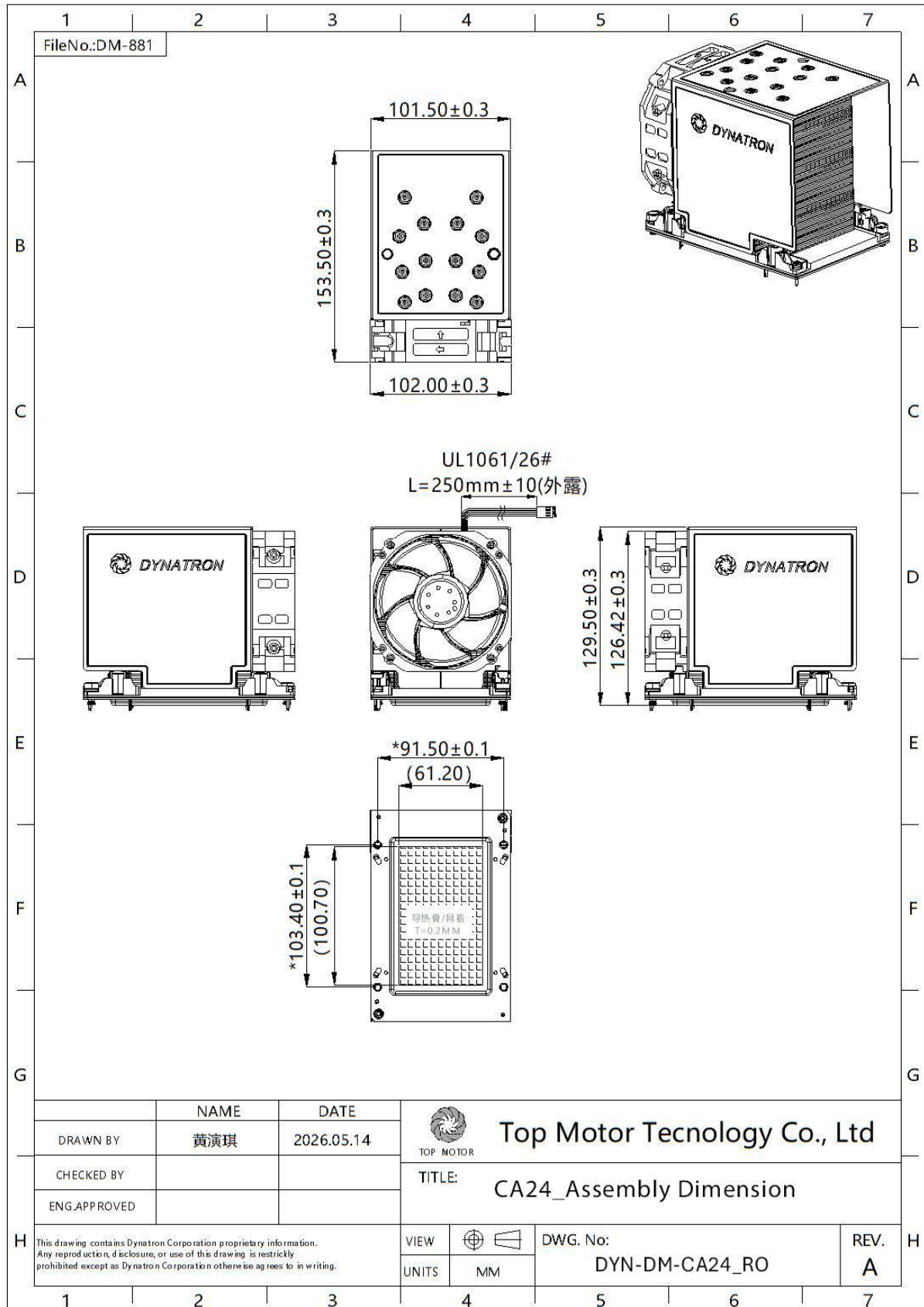
ITEM NO.	P/N NO.	DESCRIPTION	MATERIAL	QTY.
Top Motor Technology Co.,Ltd				
NAME	DATE	TITLE:		
黄演琪	2026.05.14	Exploded Assembly Drawing		
CHECKED		CA24		
ENG. APPR.				
COMMENTS	N/A		DWG. No: DYN-EP-CA24_R0	REV A



DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

6.2. Product Dimension





DYNATRON CORPORATION

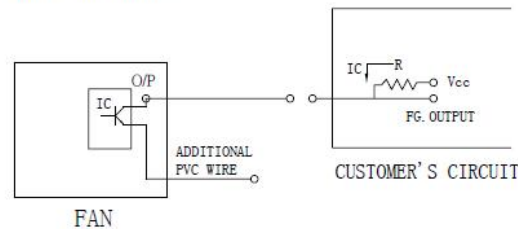
TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

6.3. Frequency Generator Output

FREQUENCY GENERATOR O/P:

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

Electrical schematic:



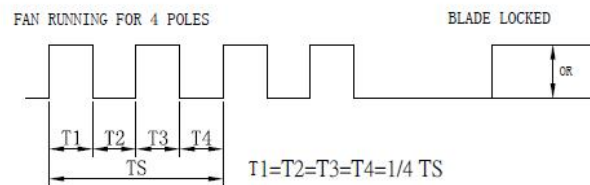
CUSTOMER'S CIRCUIT

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

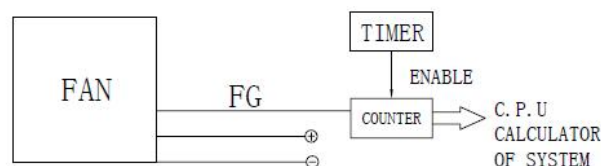
• OUTPUT LEVEL:

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.



DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

6.4. TUV Certificate

Zertifikat Certificate			
Zertifikat Nr. Certificate No.	Blatt Page		
R 50064443	0023		
Ihr Zeichen Client Reference	Unser Zeichen Our Reference	Ausstellungsdatum	Date of Issue
P01007213	ZTW1-RK- 10013649 018	21.04.2023	(day/mo/yr)
Genehmigungsinhaber License Holder		Fertigungsstätte Manufacturing Plant	
Dynaen Industrial Co., Ltd. 8F, No. 35, 37, Lane 221 Gang Cian Rd. Neihu, Taipei 114 Taiwan, R.O.C.		Top Motor Technology (Huizhou) Co., Ltd. Baishi Village, Qiuchang Town, Huiyang District Huizhou City Guangdong P.R. China	
Prüfzeichen Test Mark		Geprüft nach Tested acc. to	
		EN 62368-1:2014	
Zertifiziertes Produkt	(Geräteidentifikation)	Lizenzentgelte - Einheit	
Certified Product	(Product Identification)	License Fee - Unit	
Ventilator (DC Fan)			
wie Blatt (as page) 01, Ergänzung (Addition)			
Bezeichnung (Type Designation):			
1) DF124028 (X) (Y) - (Z) - F, 2) DF125010 (X) (Y) - (Z) - F			
3) DF126010 (X) (Y) - (Z) - F, 4) DF128015 (X) (Y) - (Z) - F			
5) DF128025 (X) (Y) - (Z) - F, 6) DF129212 (X) (Y) - (Z) - F			
7) DF129225 (X) (Y) - (Z) - F, 8) DF121030 (X) (Y) - (Z) - F			
9) DF121225 (X) (Y) - (Z) - F (TOP MOTOR)			
(X4) steht für : S, B, P, Q			
(stands for)			
(Y) steht für : H, M, U, L, E, X			
(stands for)			
(Z) steht für : A-Z, 0-9 oder (or)			
(stands for) freibleibend (blank)			
Nennspannung : DC 12V			
(Rated Voltage)			
Nennstrom : siehe Anlage			
(Rated Current) (see appendix)			
ANLAGE (Appendix): 1.4			
Dieses Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliches Anfordern muss in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.			
This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.			
TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg		Zertifizierungsstelle	
Tel.: (+49/221) 8 06 - 13 71 e-mail: cert-validity@de.tuv.com			
Fax: (+49/221) 8 06 - 39 35 http://www.tuv.com/safety		Dipl.-Ing. (FH) A. Klinker	



DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

6.5.ULCertificate

CERTIFICATE OF COMPLIANCE

Certificate Number UL-CA-2316500-0
Report Reference E157868-20230428
Date 4-May-2023

Issued to: DYNAEON INDUSTRIAL CO LTD
8TH FL 35 LANE 221 GANGCIAN RD
NEIHU DIST TAIPEI 114
Taiwan

**This is to certify that
representative samples of**

GPVV8 - Fans, Electric Certified for Canada - Component
See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the
component requirements in the Standard(s) indicated on
this Certificate. UL Recognized components are incomplete
in certain constructional features or restricted in
performance capabilities and are intended for installation in
complete equipment submitted for investigation to UL LLC.

Standard(s) for Safety: CSA C22.2 NO. 113-18 - 11 th Ed. - Issue Date: 2018-10-01

Additional Information: See the UL Online Certifications Directory at
<https://iq.ulprospector.com> for additional information

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Recognized Component Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.

Deborah Jennings-Corner
Deborah Jennings-Corner, VP Regulatory Services

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <https://ulprospector.com>.





DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

CERTIFICATE OF COMPLIANCE

Certificate Number UL-CA-2316500-0
Report Reference E157868-20230428
Date 4-May-2023

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Model	Category Description
DF121030(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X , (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component
DF121225(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X , (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component
DF124028(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X , (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component
DF125010(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X , (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component
DF126010(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X , (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component
DF128015(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X , (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component
DF128025(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X	Electric Fans - Component

Deborah Jennings-Conner
Deborah Jennings-Conner, VP Regulatory Services

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/customer-service





DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

CERTIFICATE OF COMPLIANCE

Certificate Number UL-CA-2316500-0
Report Reference E157868-20230428
Date 4-May-2023

(Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	
DF129212(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component
DF129225(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component


Deborah Jennings-Conner, VP Regulatory Services
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <https://ul.com/about/locations>.





DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2318931-0
Report Reference E157868-20230428
Date 4-May-2023

Issued to: DYNAEON INDUSTRIAL CO LTD
8TH FL 35 LANE 221 GANGCIAN RD
NEIHU DIST TAIPEI 114
Taiwan

This is to certify that
representative samples of GPWV2 - Fans, Electric - Component
See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.

Standard(s) for Safety: UL 507, Edition 10, Issue Date 2017-11-09, Revision Date 2022-06-22

Additional Information: See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Recognized Component Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.


Deborah Jennings-Canner, VP Regulatory Services

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <http://ul.com/about/contact>.





DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2318931-0
Report Reference E157868-20230428
Date 4-May-2023

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Model	Category Description
DF121030(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X , (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component
DF121225(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X , (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component
DF124028(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X , (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component
DF125010(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X , (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component
DF126010(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X , (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component
DF128015(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X , (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component
DF128025(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X	Electric Fans - Component

Deborah Jennings-Corner
Deborah Jennings-Corner, VP Regulatory Services

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <http://ul.com/customer-service>





DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2318931-0
Report Reference E157868-20230428
Date 4-May-2023

, (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	
DF129212(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X , (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component
DF129225(X)(Y)-(Z)-F, Where (X) may be S, B, P, Q (Y) may U · H · M · L · E · X , (Z) may be alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.	Electric Fans - Component


Deborah Jennings-Conner, VP Regulatory Services

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <https://ul.com/about-us/contact>.





DYNATRON CORPORATION

TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

6.6. 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:VIL=0.8V

Absolute maximum current sourced:Imax=5mA(short circuit current)

Absolute maximum voltage level:Vmax=5.25V(open circuit voltage)

Fan Speed Control

1.1Maximum 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.



DYNATRON CORPORATION

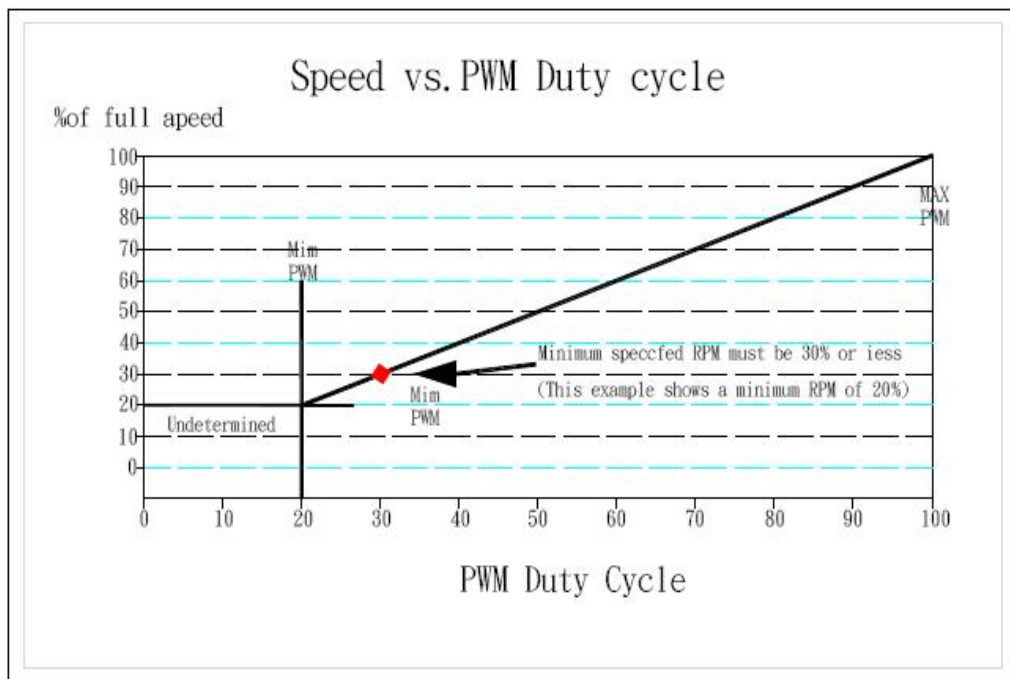
TOP MOTOR TECHNOLOGY (HUIZHOU) CO, LTD

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 RPM, as a percentage of maximum.

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