



客戶承認書
SPECIFICATION FOR APPROVAL

CUSTOMER: _____

DESCRIPTION: _____ DC FAN _____

CUSTOMER P/N: _____ REV: _____

DELTA MODEL: _____ BUB0712HHDA017JR _____ REV: _____ 02 _____

SAMPLE ISSUE DATE: _____ 06/10/2019 _____

QUANTITY: _____

**PLEASE SIGN BACK ONE COPY OF THIS SPECIFICATION
AFTER COMPLETION OF APPROVAL**

APPROVED BY: _____

DATE: _____

STATEMENT OF DEVIATION

NONE

DESCRIPTION :

DELTA DOC CENTER

Specification For Approval

Customer :

Description : DC FAN

Customer P/N :

rev. :

Delta model no. : BUB0712HHDA017JR

Delta Safety Model No.: BUB0712HHDA01

Sample revision. : 02

Issue no.:

Sample issue date : 06.10.2019

Quantity :

1. SCOPE:

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS BLOWER FAN.

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	12 VDC
OPERATION VOLTAGE	10.8 -12.6 VDC
INPUT CURRENT(AVG.) #	0.21 (MAX. 0.26) A SAFETY CURRENT ON LABEL: 0.62A
INPUT POWER(AVG.)	2.52 (MAX. 3.12) W
SPEED	3600±10% R.P.M.
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	0.406 (MIN. 0.366) M ³ /MIN. 14.38 (MIN. 12.942) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	16.00 (MIN. 12.96) mmH ₂ O 0.630 (MIN. 0.501) inchH ₂ O
ACOUSTICAL NOISE (AVG.) (0.5M)	46.0 (MAX. 50.0) dB-A
INSULATION TYPE	UL: CLASS A
INSULATION STRENGT	10 MEG OHM MIN. AT 500 VDC (BETWEEN FRAME AND (+) TERMINAL)
DIELECTRIC STRENGTH	5 mA MAX. AT 500 VAC 50/60 Hz ONE MINUTE, (BETWEEN FRAME AND (+) TERMINAL)

THE MAX VALUE OF CONSUMING CURRENT DOES NOT REPRESENT THE PEAK VALUE,
THE PEAK VALUE NEED MEASURE BY OSCILLOSCOPE.

(continued)

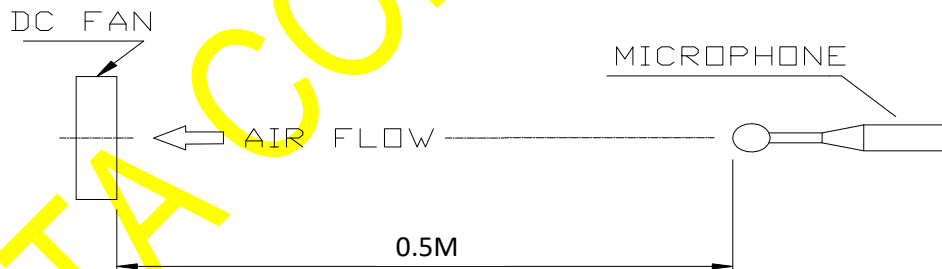
PART NO:

DELTA MODEL: BUB0712HHDA017JR

LIFE EXPECTANCE (L10) (AT LABEL VOLTAGE)	50,000 HOURS CONTINUOUS OPERATION AT 40 °C WITH 15 ~ 65 %RH.
ROTATION	CLOCKWISE FROM TOP SIDE VIEW.
OVER CURRENT SHUT DOWN	THE CURRENT WILL SHUT DOWN, WHEN ROTOR LOCKED AND FIXED.

NOTES:

1. ALL READINGS ARE MEASURED AFTER STABLY WARMING UP THROUGH 10 MINUTES.
2. STANDARD AIR PROPERTY IS AIR AT (Td) 25°C TEMPERATURE, (RH) 65% RELATIVE HUMIDITY , AND (Pb) 760 mmHg BAROMETRIC PRESSURE.
3. THE VALUES WRITTEN IN PARENS , (), ARE LIMITED SPEC.
4. ACOUSTICAL NOISE MEASURING CONDITION:



NOISE IS MEASURED AT RATED VOLTAGE IN FREE AIR IN ANECHOIC CHAMBER WITH B & K SOUND LEVEL METER WITH MICROPHONE AT A DISTANCE OF HALF METER FROM THE FAN INTAKE.

PART NO:

DELTA MODEL: BUB0712HHDA017JR

3. MECHANICAL:

- 3-1. DIMENSIONS----- SEE DIMENSIONS DRAWING
- 3-2. FRAME----- PLASTIC UL: 94V-0
(THE HALOGEN SUBSTANCE CONTENT IS LESS THAN 1500 PPM FOR USING EDX ...ETC)
- 3-3. IMPELLER----- PLASTIC UL: 94V-0
(THE HALOGEN SUBSTANCE CONTENT IS LESS THAN 1500 PPM FOR USING EDX ...ETC)
- 3-4. COVER ----- SECC
- 3-5. BEARING SYSTEM----- SUPERFLO BEARING
- 3-6. WEIGHT----- 54.0 GRAMS(REF.)

4. ENVIRONMENTAL:

- 4-1. OPERATING TEMPERATURE----- 0 TO + 60 DEGREE C
- 4-2. STORAGE TEMPERATURE----- -40 TO +70 DEGREE C
- 4-3. OPERATING HUMIDITY----- 5 TO 90 % RH
- 4-4. STORAGE HUMIDITY----- 5 TO 95 % RH

5. PROTECTION:

- 5-1. LOCKED ROTOR PROTECTION
IMPEDANCE OF MOTOR WINDING PROTECTS MOTOR FROM FIRE IN
96 HOURS OF LOCKED ROTOR CONDITION AT THE RATED VOLTAGE.
- 5-2. POLARITY PROTECTION
BE CAPABLE OF WITHSTANDING IF REVERSE CONNECTION FOR POSITIVE AND
NEGATIVE LEADS.

6. RE OZONE DEPLETING SUBSTANCES:

- 6-1. NO CONTAINING PBBs, PBBOs, CFCs, PBBEs, PBDPEs AND HCFCs.

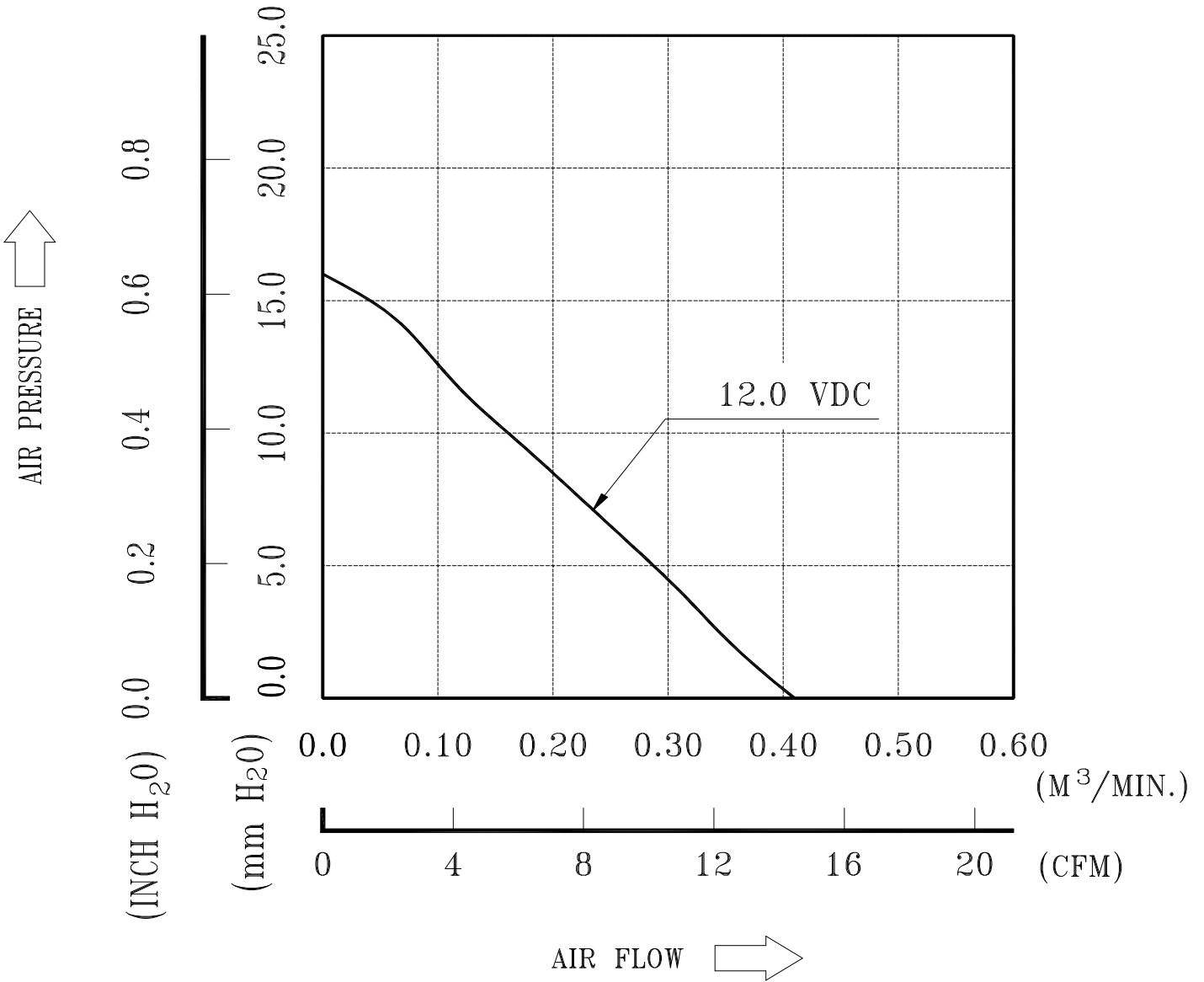
7. PRODUCTION LOCATION

- 7-1. PRODUCTS WILL BE PRODUCED IN CHINA OR THAILAND.

PART NO:

DELTA MODEL: BUB0712HHDA017JR

8. P & Q CURVE:



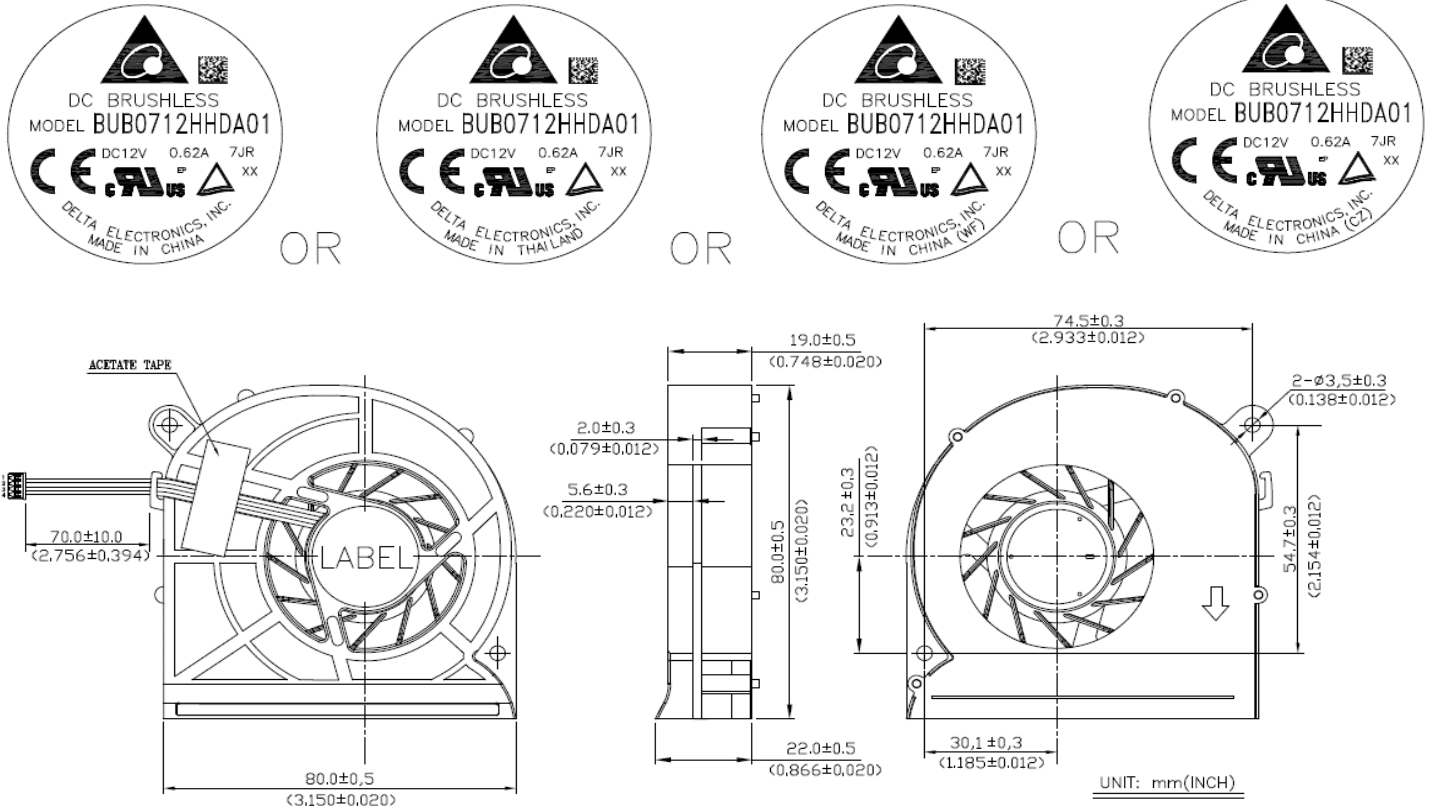
*TEST CONDITION: INPUT VOLTAGE-----OPERATION VOLTAGE
TEMPERATURE-----ROOM TEMPERATURE
HUMIDITY-----65%RH

PART NO:

DELTA MODEL: BUB0712HHDA017JR

9. DIMENSION DRAWING:

LABEL



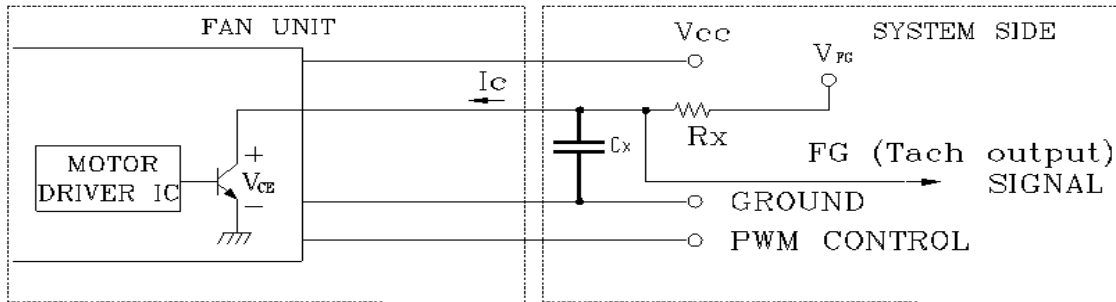
- NOTES:
1. HOUSING: JWT A1251H02-4P-HF OR EQUIVALENT
 2. TERMINAL: JWT A1251TOP-2 OR EQUIVALENT
 3. LEAD WIRE: UL3302 AWG#28
PIN1: RED WIRE-----(+)
PIN2: BLUE WIRE----- (PWM)
PIN3: YELLOW WIRE----- (F00)
PIN4: BLACK WIRE----- (-)
 4. THIS PRODUCT IS ROHS COMPLIANT.
 5. DELTA'S RESTRICTIONS ON HALOGEN APPLY ONLY TO ROMINATED AND CHLORINATED COMPOUNDS. NO OTHER HALOGEN IS RESTRICTED. SUBSTANCES RESTRICTIONS FOR HALOGEN-FREE (INCLUDE FAN PLASTIC PARTS, PWB BOARD, IC, ELECTRICAL MATERIALS & CABLE ASSY),
 - a. BROMINE (Br) < 900 PPM,
 - b. CHLORINE (Cl) < 900 PPM
 - c. (Br) + (Cl) < 1500 PPM.

PART NO:

DELTA MODEL: BUB0712HHDA017JR

10. FREQUENCY GENERATOR (FG) SIGNAL:

10-1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



GENERAL CONDITION: V_{FG} is 3.3V, R_x is 8.2Kohm, and C_x is 4nF.

CAUTION:

THE FG SIGNAL LEAD WIRE MUST BE KEPT AWAY FROM "+" LEAD WIRE & "-" LEAD WIRE.

10-2. SPECIFICATION:

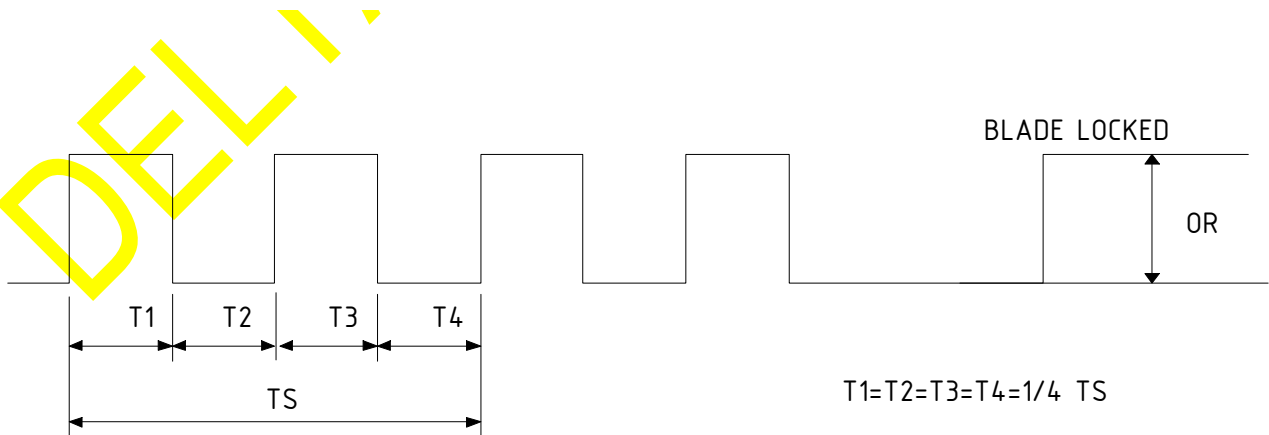
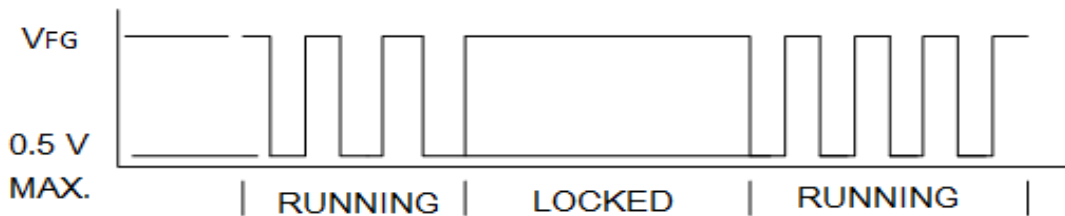
$V_{FG} = 12.6V$ MAX.

$V_{CE} = 0.5V$ MAX.

$I_c = 5mA$ MAX.

$R_x \geq V_{FG} / I_c$

10-3. FREQUENCY GENERATOR WAVEFORM:



$N = R.P.M$

$TS = 60/N(SEC)$

*VOLTAGE LEVEL AFTER BLADE LOCKED

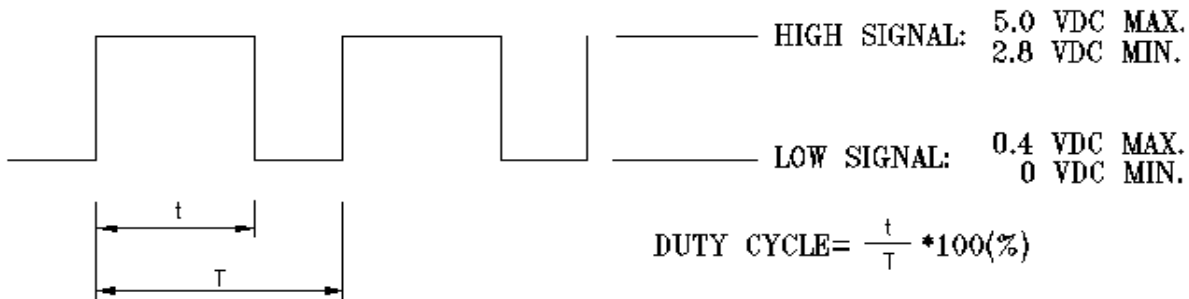
*4 POLES

PART NO:

DELTA MODEL:

BUB0712HHDA017JR

11. PWM CONTROL SIGNAL:

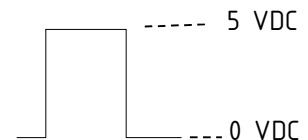


- *THE PREFERRED OPERATING POINT FOR THE FAN IS 25K HZ.
- *AT 100% DUTY CYCLE, THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- *AT 0%~30% DUTY CYCLE, THE ROTOR WILL SPIN AT MINIMUM SPEED.
- *WITH CONTROL SIGNAL LEAD WIRE DISCONNECTED, THE FAN WILL SPIN AT MAXIMUM SPEED.
- *AT 25K HZ, RATED VOLTAGE 12V, 30% DUTY CYCLE, THE FAN WILL BE ABLE TO START FROM A DEAD STOP.

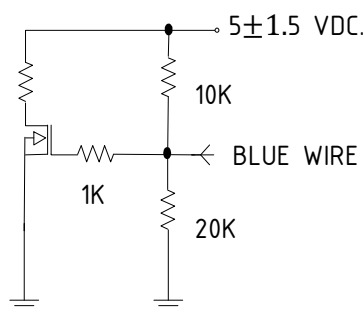
12. SPEED VS PWM CONTROL SIGNAL:
(AT 25°C, Vcc=12VDC & PWM SIGNAL AS FOLLOW)

*PWM SIGNAL
PWM FREQUENCY = 25K HZ

DUTY CYCLE (%)	SPEED R.P.M. REF.	CURRENT (A) TYP.	CURRENT (A) MAX.
100	3600±10%	0.21	0.26
0~30	1250±200	0.03	0.06



13. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:





Application Notice

- 1. Delta will not guarantee the performance of the products if the application condition falls outside the parameters set forth in the specification.**
- 2. A written request should be submitted to Delta prior to approval if deviation from this specification is required.**
- 3. Please exercise caution when handling fans. Damage may be caused when pressure is applied to the impeller, if the fans are handled by the lead wires, or if the fan was hard-dropped to the production floor.**
- 4. Except as pertains to some special designs, there is no guarantee that the products will be free from any such safety problems or failures as caused by the introduction of powder, droplets of water or encroachment of insect into the hub.**
- 5. The above-mentioned conditions are representative of some unique examples and viewed as the first point of reference prior to all other information.**
- 6. It is very important to establish the correct polarity before connecting the fan to the power source. Positive (+) and Negative (-). Damage may be caused to the fans if connection is with reverse polarity, if there is no foolproof method to protect against such error specifically mentioned in this spec.**
- 7. Delta fans without special protection are not suitable where any corrosive fluids are introduced to their environment.**
- 8. Please ensure all fans are stored according to the storage temperature limits specified. Do not store fans in a high humidity environment. We highly recommend performance testing is conducted before shipping, if the fans have been stored over 6 months.**
- 9. Not all fans are provided with the Lock Rotor Protection feature. If you impair the rotation of the impeller for the fans that do not have this function, the performance of those fans will lead to failure.**
- 10. Please be cautious when mounting the fan. Incorrect mounting of fans may cause excess resonance, vibration and subsequent noise.**
- 11. It is important to consider safety when testing the fans. A suitable fan guard should be fitted to the fan to guard against any potential for personal injury.**
- 12. Except where specifically stated, all tests are carried out at room (ambient) temperature and relative humidity conditions of 25°C, 65% RH. The test value is only for fan performance itself.**
- 13. Be certain to connect an “ 4.7μF or greater” capacitor to the fan externally when the application calls for using multiple fans in parallel, to avoid any unstable power.**

CERTIFICATE OF COMPLIANCE

Certificate Number 20160728-E132003
Report Reference E132003-20130715
Issue Date 2016-August-19

Issued to: DELTA ELECTRONICS INC
252 SHANG YING RD, KUEI SHAN, TAOYUAN HSIEN
333 TAIWAN


This is to certify that representative samples of COMPONENT - FANS, ELECTRIC
See Addendum Page

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 507, Electric Fans.
CSA C22.2 No. 113-15, Fans and Ventilators.

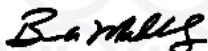
Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

The UL Recognized Component Mark generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark:  may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

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/aboutul/locations/>



CERTIFICATE OF COMPLIANCE

Certificate Number 20160728-E132003
Report Reference E132003-20130715
Issue Date 2016-August-19


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

DC Fans, Model Nos. BUB1012DD(Y), KDB0405HC-DF(X)(Y), KSB0405HB-DD33(Y).

Note: Above (X) may be 43, 44 or 45; (Y) may be xxxxx where x may be A through Z, 0 through 9, "-" or blank.

Model Nos. BUB1112HB(Y9) , KUC1012DA01(Y7), KSB0505HBA02(Y6), BUB0712HHDA01(Y5), KSB0705HAA03(Y6), KSB0505HBA01(Y6), KSB0705HB-A(Y7), KDB0705HCA01(Y6), KDB0705HCA02(Y6) , KDB0705HCA05(Y6) , KSB05105HCA01(Y5), KSB05105HAA03(Y5), BSB0512LAA01(Y6), KSB0505HB-DH1P(Y4), BSB0705HCA04(Y6), BSB0705HCA05(Y6), KSB06105HAA02(Y5), KDB0505HCA07(Y6), KDB05105HBA04(Y5), KSB0705HCA02(Y6), KSB0605HBA04(Y6), KDB05105HBA05(Y5), KSB06105HBA08(Y5), NS65A00(Y11), NS75A00(Y11), NS85A00(Y11), NS85A00-14K17(Y5), NS85B00(Y11), NS85B01-14M03(Y5), KUC2012DA60(Y7), NS75C01(Y11), ND75C00(Y11), NS55B00(Y11), NS75C03(Y11), NS75C04(Y11) , NS75C05(Y11) , NS75C06(Y11) , NS75B02(Y11) , NS75B02-15A04(Y5), NC55C01(Y11) , NS65B01(Y11), NS65B03(Y11), NS65C01(Y11), ND55C09(Y11), ND65C00(Y11) , ND65C02(Y11) , NS75C08(Y11) , NS85B03(Y11), NS55B01(Y11), NS85B02(Y11), ND55C07(Y11), ND55C08(Y11) , ND55C12(Y11), NS85A01(Y11) , NS85A02(Y11) , NS85B04(Y11), BUC0805HB-00(Y6), NS75C09(Y11), ND75C07(Y11), ND75C08(Y11), ND75C09(Y11), ND55C03(Y11), NS6CB00(Y11), NS6CB01(Y11), NS55B03(Y11), ND85C00(Y11), ND85C01(Y11), NS45B02(Y11), NS85B05(Y11), BUC0712HB-00(Y6), ND55C20(Y11), NC55C02(Y11), NS65B00-15L11(Y5), NS65B08(Y11), NS75C11(Y8), ND75C15(Y11), NS55B04(Y11), KUC2005A-00(Y7), FA052B12(Y10), NC55C03(Y11), ND45C00(Y11), ND55C13(Y11), ND55C14(Y11), NS7CB01(Y11), ND45C03(Y11), ND45C04(Y11) , NS4CB00(Y11) , NS65B07(Y11), ND75C10(Y11), ND75C11(Y11), NS85B01(Y11), ND75C16(Y11).

Note: The number after Y represents digit, each digit may be A through Z, 0 through 9, "-" or blank. For Model NS85A00(Y11), the model combination excludes Model NS85A00-14K17(Y5). For Models NS75B02(Y11) series, the model combination excludes Models NS75B02-15A04(Y5) series.



Bruce Mahrenholz, Director North American Certification Program

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/locations/>



Delta Electronics, Inc.
Ms. Tammy Chen, Safety Engineer
CPBG QE Dept.
252, Shangying Road,
Guishan Industrial Zone,
Taoyuan County 33341
Taiwan, R.O.C.

Date : 03.03.2014
Our ref. : SSY ZTW1
Your ref.: SF140217DE, -8AB, -9E

Ref : R TÜV-Mark Approval

Type of Equipment : DC Brushless Fan
Model Designation : See Certificate
Certificate No. : R 50155969 0076
Report No. : 11016855 069

Dear Ms. Tammy Chen,

The above specified equipment has been tested and found to be in accordance with the relevant requirements.

Please find enclosed your certificate as specified above.

If cancellation of the certificate is submitted by 15 November in a given year, no fee will be charged for the following year.

The certificate is issued with the reservation that the license holder applies all information required in § 6 of the ProdSG related to name and address of the manufacturer or his authorized representative / importer, including their respective contact addresses on the product prior to marketing of the product in the European Economic Area.

With kind regards,

Certification Body



Jerry F. R. Yang

Enclosure

TÜV RHEINLAND TAIWAN LTD.

11F., No. 758, Sec. 4, Bade Rd.,
Songshan Dist., Taipei City 105,
Taiwan R. O. C.
Tel. (02) 2172-7000
Fax (02) 2528-0018
<http://www.tuv.com>

TAICHUNG BRANCH:
No. 9, Lane 36, Sec. 3, Minsheng Rd.,
Daya Dist., Taichung City 428
Taiwan, R. O. C.
Tel. (04) 2560-2998
Fax (04) 2566-3598

Zertifikat Certificate



Zertifikat Nr. *Certificate No.* R 50155969
Blatt *Page* 0076

Ihr Zeichen <i>Client Reference</i>	Unser Zeichen <i>Our Reference</i>	Ausstellungsdatum	<i>Date of Issue</i> (day/mo/yr)
SF140217DE, -8AB, -9E	ZTW1-SSY- 11016855 069	03.03.2014	

Genehmigungsinhaber <i>License Holder</i>	Fertigungsstätte <i>Manufacturing Plant</i>
Delta Electronics, Inc. 252, Shangying Road, Guishan Industrial Zone, Taoyuan County 33341 Taiwan, R.O.C.	Delta Electronics (Jiangsu) Ltd. No. 1688, Jiangxing East Road Wujiang Economic Development Zone Wujiang City, Jiangsu Province 215200 P.R. China

Prüfzeichen *Test Mark*



Bauart geprüft
Sicherheit
Regelmäßige
Produktions-
überwachung

www.tuv.com
ID 2000000000

Geprüft nach *Tested acc. to*

IEC 60950-1:2005+A1+A2
EN 60950-1:2006+A11+A1+A12+A2

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Ventilator (DC Brushless Fan)

wie Blatt (as page) 01, Ergänzung (Addition)

Bezeichnung (Type Designation)	: 1) BUB0712HHDA01XXXXX	1
	: 2) KSB0505HBA01XXXXXX	1
	: 3) KSB0705HAA03XXXXXX	1
X steht für (stands for)	: 0-9, A-Z, - oder (or) freibleibend (blank)	1

Nur zum Zwecke der Vermarktung (for marketing purpose only)

Nennspannung (Rated Voltage)	: 1) DC 12V	2) 3) DC 5V	
Nennstrom (Rated Current)	: 1) 0.62A	2) 0.4A	3) 0.6A
Max. Umgebungstemperatur (Max. Ambient Temperature)	: 1) 60°C	2) 3) 70°C	

Vermerke: Dieses Netzgerät ist auch geprüft und klassifiziert als Abschnitt 4.4.5.1 a.

(Remark: The equipment is also tested and classified as sub-clause 4.4.5.1 a.)

4

ANLAGE (Appendix): 1.67

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen 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
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

Zertifizierungsstelle

Jerry F. R. Yang

