



**SPECIFICATION FOR APPROVAL**

Customer. \_\_\_\_\_  
Description. DC SUPERFLO FAN  
Part No. \_\_\_\_\_ REV. \_\_\_\_\_  
Delta Model No. AUB0812LB-AR00 REV. 01  
Sample Issue No. \_\_\_\_\_  
Sample Issue Date. FEB-28-2007

**PLEASE SEND ONE COPY OF THIS SPECIFICATION  
BACK AFTER YOU SIGNED APPROVAL FOR PRODUC-  
TION PRE-ARRANGEMENT.**

**APPROVED BY :** \_\_\_\_\_

**DATE:** \_\_\_\_\_

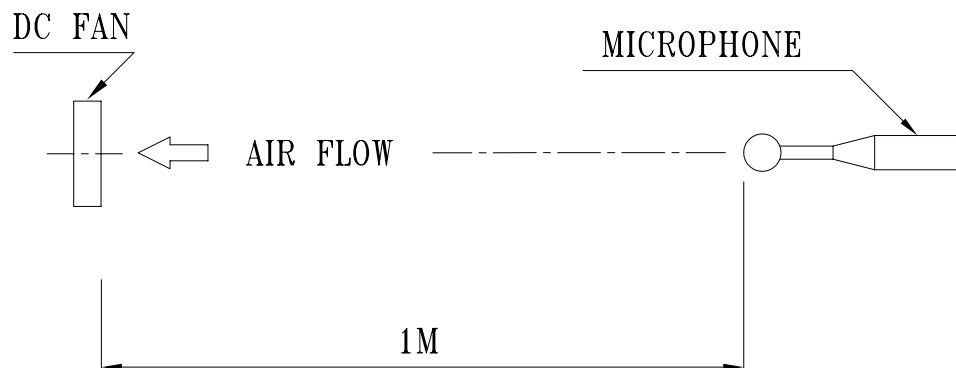
**Delta Electronics Component Co., Ltd.  
Xi Nan District Shi Jie Town.  
Dong Guan City. Guangdong Province,  
China. P. R. C.  
TEL : 86-769-86329008  
FAX : 86-769-86631589**

PART NO:

DELTA MODEL: AUB0812LB-AR00

INSULATION STRENGTH	10 MEG OHM MIN. AT 500 VDC (BETWEEN FRAME AND (+) TERMINAL)
DIELECTRIC STRENGTH	5 mA MAX. AT 500 VAC 60 Hz ONE MINUTE, (BETWEEN FRAME AND (+) TERMINAL)
EXTERNAL COVER	OPEN TYPE
LIFE EXPECTANCE	50,000 HOURS CONTINUOUS OPERATION AT 40 °C WITH 15 ~ 65 %RH.
ROTATION	CLOCKWISE VIEW FROM NAME PLATE SIDE
OVER CURRENT SHUT DOWN	THE CURRENT WILL SHUT DOWN WHEN LOCKING ROTOR
INSULATION TYPE	UL: CLASS A
LEAD WIRE	UL 1007 AWG #24 BLACK WIRE NEGATIVE(-) RED WIRE POSITIVE(+) BLUE WIRE LOCK SIGNAL(-R00)

- NOTES: 1. ALL READINGS ARE MEASURED AFTER STABLY WARMING UP THROUGH 10 MINUTES AT ROOM TEMPERATURE.  
2. THE VALUES WRITTEN IN PARENS , ( ), ARE LIMITED SPEC.  
3. 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 ONE METER FROM THE FAN INTAKE.

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Customer:

Description: DC SUPERFLO FAN

Customer P/N:

Delta Model NO.: AUB0812LB-AR00

Sample Rev: 01 Issue NO:

Sample Issue Date: FEB-28-2007 Quantity:

1. SCOPE:

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS AXIAL FAN. THE FAN MOTOR IS WITH SINGLE PHASE AND FOUR POLES.

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	12 VDC
START VOLTAGE (ENVIRONMENT TEMPERATURE AT 25°C )	5.0 VDC
OPERATION VOLTAGE	5.0~13.8 VDC
INPUT CURRENT	0.10 (MAX. 0.14) A
INPUT POWER	1.20 (MAX. 1.68) W
SPEED	2400 R.P.M. (REF.)
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	0.78 (MIN. 0.70) M <sup>3</sup> /MIN. 27.59 (MIN. 24.83) CFM
MAX.AIR PRESSURE (AT ZERO AIRFLOW)	2.11 (MIN. 1.71) mmH <sub>2</sub> O 0.083 (MIN. 0.067) inchH <sub>2</sub> O
ACOUSTICAL NOISE (AVG.)	27.0 (MAX. 31.0) dB-A
INSULATION TYPE	UL: CLASS A

(continued)

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PART NO:  
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DELTA MODEL:           AUB0812LB-AR00  
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3. MECHANICAL:

- 3-1. DIMENSIONS ----- SEE DIMENSIONS DRAWING
- 3-2. FRAME ----- PLASTIC UL: 94V-0
- 3-3. IMPELLER ----- PLASTIC UL: 94V-0
- 3-4. BEARING SYSTEM ----- SUPERFLO BEARING
- 3-5. WEIGHT ----- 53.0 GRAMS

4. ENVIRONMENTAL:

- 4-1. OPERATING TEMPERATURE ----- -10 TO +60 DEGREE C
- 4-2. STORAGE TEMPERATURE ----- -40 TO +75 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

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8. BASIC RELIABILITY REQUIREMENT:

8-1. THERMAL           LOW TEMPERATURE: -40°C  
CYCLING               HIGH TEMPERATURE: +80°C  
                        SOAK TIME: 30 MINUTES  
                        TRANSITION TIME < 5 MINUTES  
                        DUTY CYCLES: 5

8-2. HUMIDITY         TEMPERATURE: +25°C ~ +65°C  
EXPOSURE             HUMIDITY: 90-98% RH @ +65°C  
                        FOR 4 HOURS/CYCLE  
                        POWER: NON-OPERATING  
                        TEST TIME: 168 HOURS

8-3. VIBRATION       TEMPERATURE: +25°C  
                        ORIENTATION: X, Y, Z  
                        POWER: NON-OPERATING  
                        VIBRATION LEVEL: OVERALL gRMS=3.2

FREQUENCY(Hz)	PSD(G <sup>2</sup> /Hz)
10	0.040
20	0.100
40	0.100
800	0.002
1000	0.002

TEST TIME: 2 HOURS ON EACH ORIENTATION

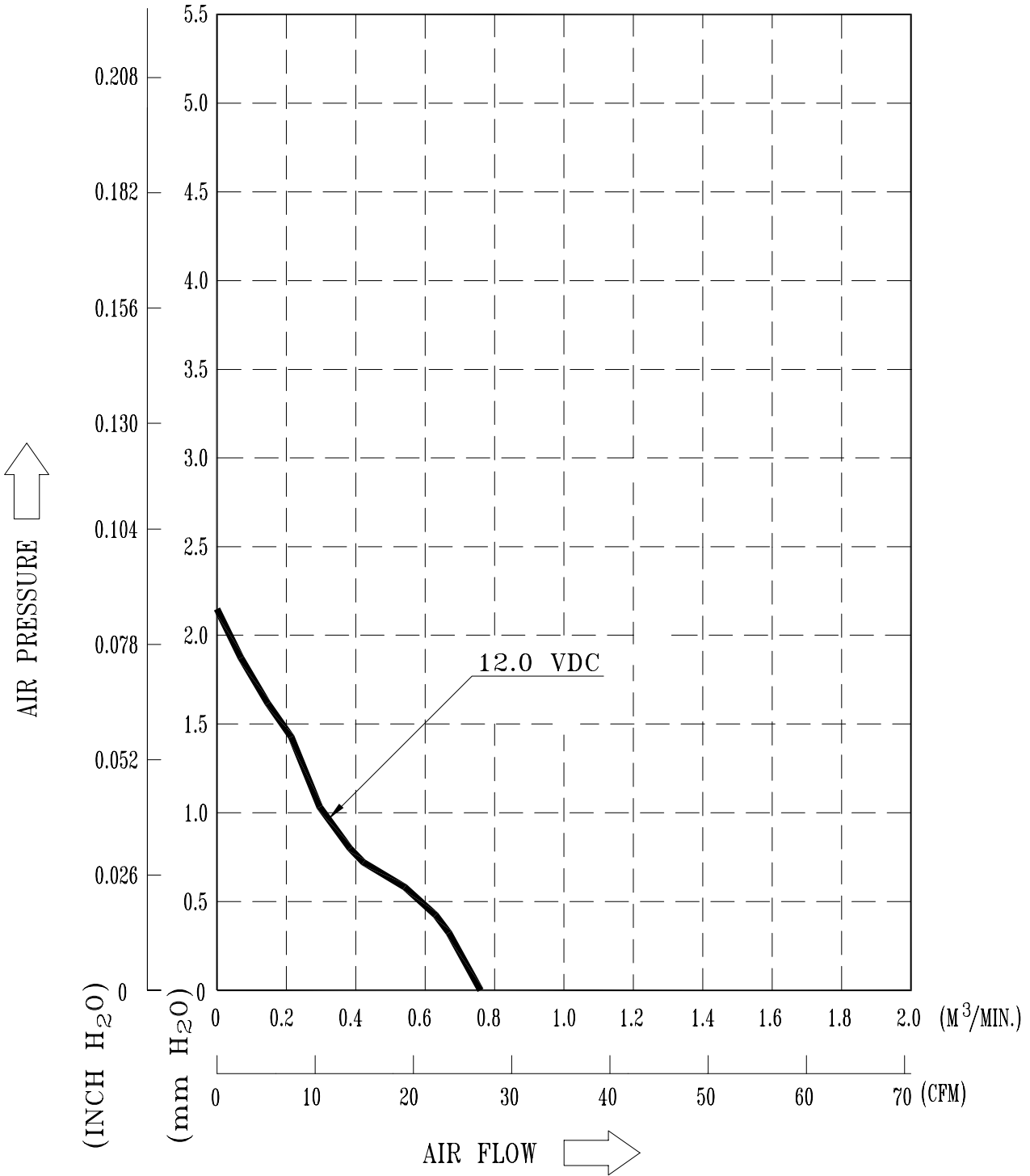
8-4. MECHANICAL      TEMPERATURE: +20°C  
SHOCK                ORIENTATION: X, Y, Z  
                        POWER: NON-OPERATING  
                        ACCELERATION: 20 G MIN.  
                        PULSE: 11 ms HALF-SINE WAVE  
                        NUMBER OF SHOCKS: 5 SHOCKS  
  FOR EACH DIRECTION

8-5. LIFE             TEMPERATURE: MAX. OPERATING TEMPERATURE  
                        POWER: OPERATING  
                        DURATION: 1000 HOURS MIN.

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9. P & Q CURVE:



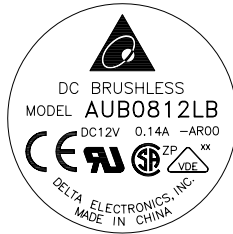
\* TEST CONDITION: INPUT VOLTAGE ----- OPERATION VOLTAGE  
TEMPERATURE ----- ROOM TEMPERATURE  
HUMIDITY ----- 65%RH

PART NO:

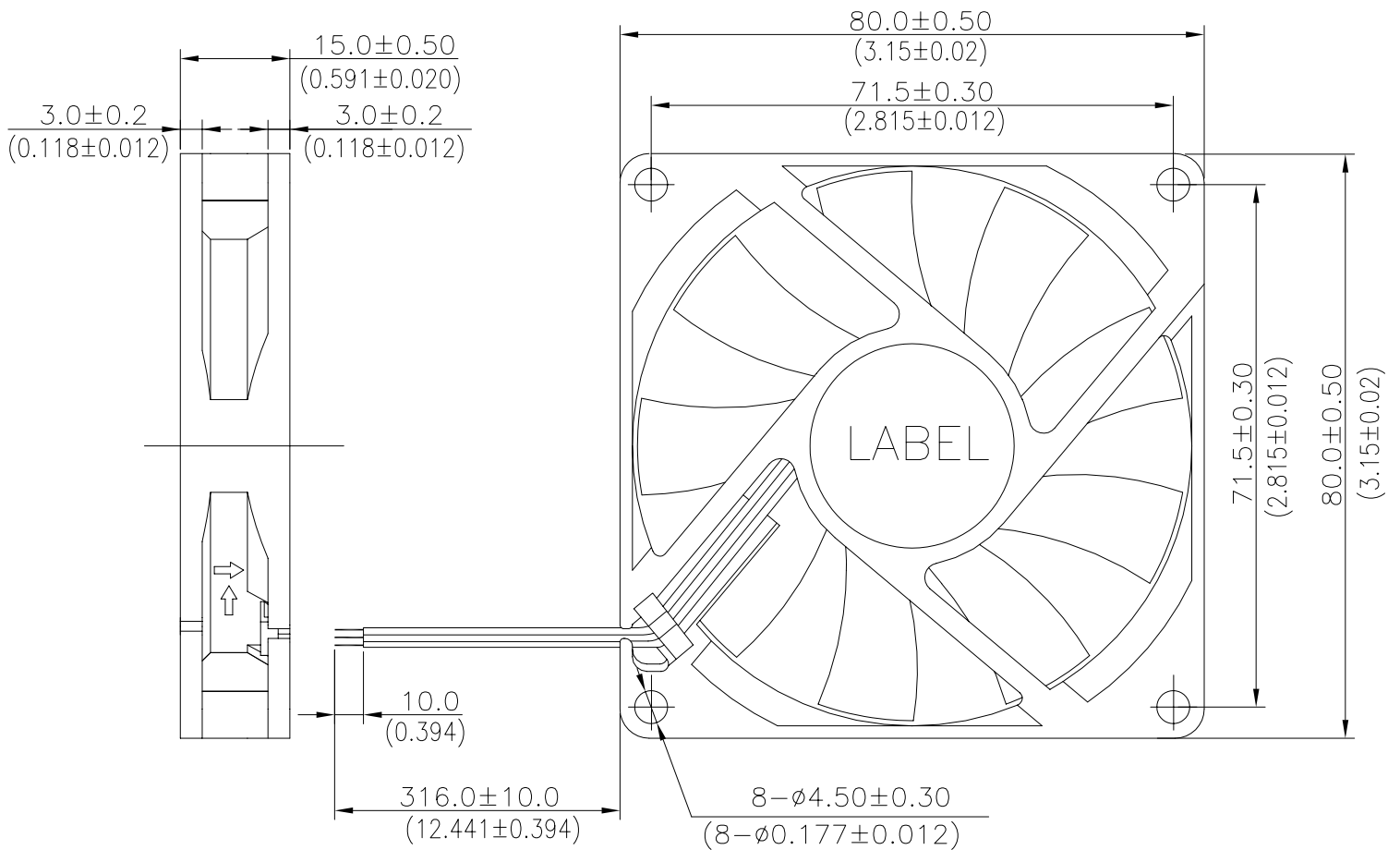
DELTA MODEL: AUB0812LB-AR00

10. DIMENSION DRAWING:

LABEL:



OR



NOTES:

- LEAD WIRE UL:1007 AWG#24  
RED WIRE-----(+)  
BLACK WIRE-----(-)  
BLUE WIRE----- (R00)
- THIS PRODUCT IS RoHS COMPLIANT

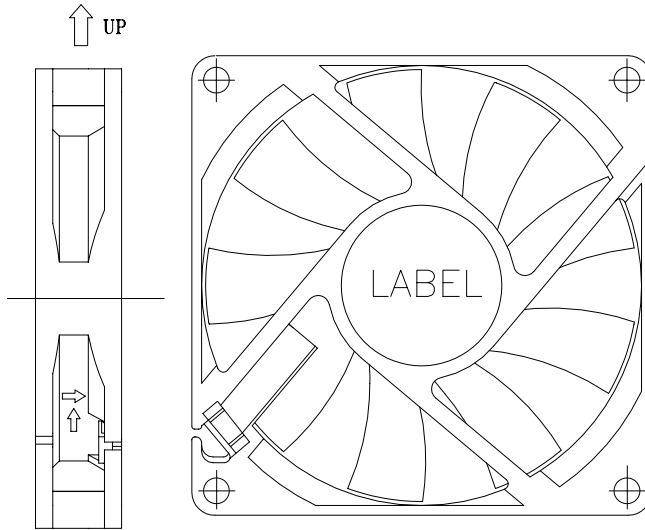
UNIT: mm(INCH)

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PART NO.:

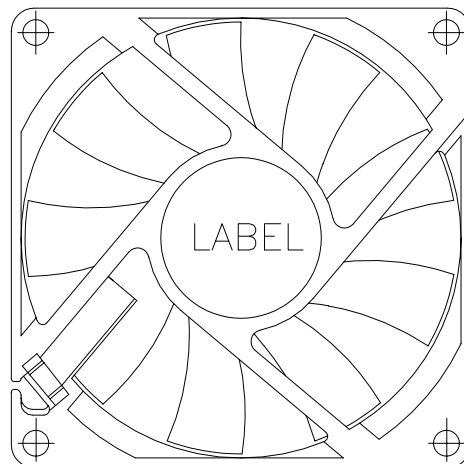
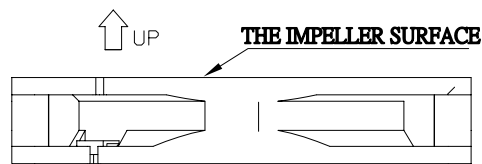
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DELTA MODEL: AUB0812LB-AR00  
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11. SLEEVE BEARING FAN MOUNTING TYPE :

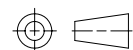
WE SUGGEST THAT THE FAN IS MOUNTED AS THE TYPE A OR B. IF YOU WOULD LIKE TO HAVE OTHER MOUNTING TYPE, PLEASE CONTACT US.



TYPE :A



TYPE :B

  
THIRD ANGLE  
PROJECTION

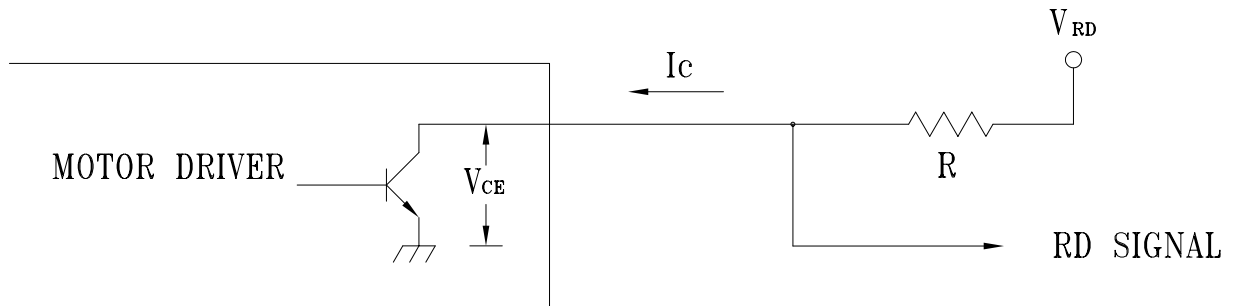


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## 12. ROTATION DETECT (RD) SIGNAL:

### 12-1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



#### CAUTION:

THE LEAD WIRE OF RD SIGNAL CAN NOT TOUCH  
THE LEAD WIRE OF POSITIVE OR NEGATIVE.

### 2. SPECIFICATION:

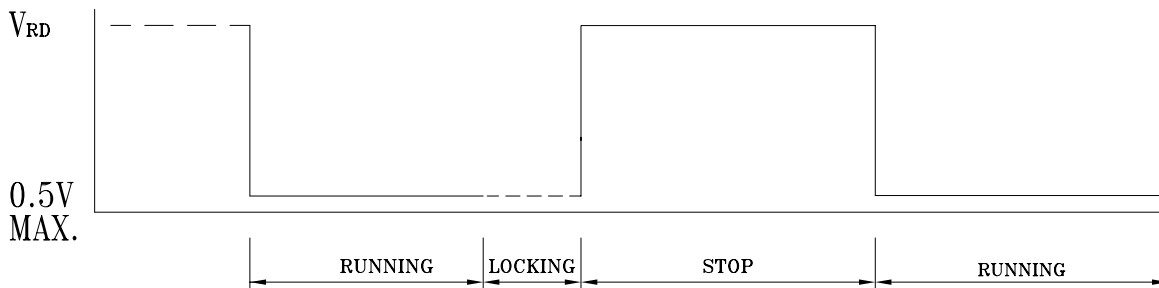
$V_{CE}(\text{sat}) = 0.5V \text{ MAX.}$

$I_c = 5mA \text{ MAX.}$

$V_{RD} = 13.8VDC \text{ MAX.}$

$R \geq V_{RD} / I_c$

### 3. ROTATION DETECT WAVEFORM:





## ***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.**



# CERTIFICATION RECORD

The company named below has been authorized by CSA International to represent the products listed in this record as "CSA Certified" and to affix the CSA Mark to these products according to the terms and conditions of the CSA Service Agreement and applicable CSA program requirements (including additional Markings).

File No: 091949\_0\_000  
Class No: 3812 01 FANS AND BLOWERS

## SUBMITTOR

4510824 Delta Electronics, Inc.  
31-1 Shien Pam Rd  
Kuei Shan Industrial Zone  
Taoyuan Hsien, 333  
Taiwan

## FACTORIES

4510824 Delta Electronics, Inc.  
31-1 Shien Pam Rd  
Kuei Shan Industrial Zone  
Taoyuan Hsien, 333  
Taiwan

4554827 Delta Electronics Component  
(Dongguan)Co., Ltd.  
Delta Plant 4, Delta Ind Estate  
Shigie Town  
Dongguan City, Guangdong 523308  
China

4672496 Delta Electronics Components  
(Wujiang) Ltd.  
18 Jiang Xing East Road  
Yun Dong Deveolpment Zone  
Song Ling Town  
Wujiang, Jiangu  
China

4678360 Delta Electronics (Thailand) Public  
Co., Ltd.  
111 Moo 9 Wellgrow Ind Estate  
Bangna-Trad Rd

AUB0624HHB	24	110	F00 F05 R00 R05
AUB0624L	24	140	-
AUB0624LB	24	60	F00 F05 R00 R05
AUB0624LD	24	50	-
AUB0624MD	24	60	-
AUB0624HD	24	80	-
AUB0624HHD	24	110	-
AUB0624VHD	24	140	-
ASB0605LD	5	210	-
ASB0605MD	5	290	-
ASB0605HD	5	360	-
ASB0605HHD	5	500	-
ASB0612LD	12	110	-
ASB0612MD	12	140	-
ASB0612HD	12	170	-
ASB0612HHD	12	230	-
ASB0612VHD	12	270	-
ASB0624LD	24	50	-
ASB0624MD	24	60	-
ASB0624HD	24	80	-
ASB0624HHD	24	110	-
ASB0624VHD	24	140	-
AUB0624M	24	160	-
AUB0624MB	24	80	F00 F05 R00 R05
AUB0624SH	24	200	STD R00 F00
AUB0624VH	24	180	STD R00 F00
AUB0624VHB	24	150	F00 F05 R00 R05
AUB0648EH	48	210	STD R00 F00
AUB0648SH	48	140	STD R00 F00
AUB0648VH	48	110	STD R00 F00

Note: Series AUB06XXX

1. Impellers removable without use of tools.

2. Condition of Acceptability:  
Accessibility to live parts to be determined at the end product.

AUB812HB	12	200	STD R00 F00
AUB0812HHB	12	240	STD R00 F00
AUB0812LB	12	140	STD R00 F00
AUB0812LLB	12	110	STD R00 F00

# GPWV2.E132003

## Fans, Electric - Component

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## Fans, Electric - Component

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

**DELTA ELECTRONICS INC**

E132003

14TH FL

266 2ND WEN-HWA RD, SEC 1

LINKOU

TAIPEI HSIEN 244, TAIWAN

Model AFB followed by 0405, 0412, followed by HA, HHA, LA or MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0505, followed by HB, LB or MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0512, followed by HB, HHB, LB or MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0605, followed by H, L or M, followed by R00, R05, RR0 or RR05, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0805, followed by H, L or M; Model AFB followed by 0612, 0624, followed by EH, SH VH; Model AFB0612LB followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0612, 0624, 0812, 0824, 0912 or 0924, followed by H, HB, HH, HHB, LB, LLB, MB, SHB or VHB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Models ASB0412MA, ASB0412LA, ASB0405MA; Model ASB followed by 0405, 0412, followed by HA, HHA, LA or MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model ASB followed by 0505, followed by HB, LB or MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model ASB followed by 0512, 0524, followed by HB, HHB, LB or MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model ASB followed by 0812, 0824, followed by HB, HHB, LB, LLB, MB, SHB or VHB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model ASB followed by 0612 or 0624, followed by H, HH, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model ASB followed by 0812, followed by L or M; Model ASB followed by 0912 or 0924, followed by H, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0505, 0512 or 0524, followed by HB, HHB, LB or MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0612, 0624, followed by H, HH, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0912, 0924, followed by H, HH, L, M or VH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0612 or 0624, followed by L, M, H or HH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0812 or 0824, followed by HB, HHB, LB, LLB, MB, SHB or VHB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0924, followed by L, M, H, HH or VH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model BFB followed by 1212, followed by H, HH, L, LL, M or VH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model BFB followed by 1224, followed by H, HH, L, LL, M or VH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model BFB followed by 1248, followed by H, HH, L, LL, M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model BFC followed by 1012, followed by A, B or C, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFB followed by 0405 or 0412, followed by H, L, LL, M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-"

## GUTACHTEN MIT FERTIGUNGSÜBERWACHUNG CERTIFICATE OF CONFORMITY WITH FACTORY SURVEILLANCE

Delta Electronics Inc.  
186 Ruey Kuang Road  
NEIHU TAIPEI (114)  
TAIWAN

ist berechtigt, für ihr Produkt /  
*is authorized to use for their product*

**Einbauventilator für IT-Geräte**  
*Fan for building-in, IT-equipment*

die hier abgebildeten markenrechtlich geschützten Zeichen  
für die ab Blatt 2 aufgeführten Typen zu benutzen /  
*the legally protected Marks as shown below for the types referred to on page 2 ff.*



REG.-Nr. 1764 oder/or



oder/or VDE-REG.-Nr. 1764

REG.-Nr. 1764

Geprüft und zertifiziert nach /  
*Tested and certified according to*

DIN EN 60950-1 (VDE 0805 Teil 1):2003-03; EN 60950-1:2001  
IEC 60950-1(ed.1)

Aktenzeichen: 1164100-2611-0001 / 50676

*File ref.:*

Ausweis-Nr. 1764

Blatt 1

*Certificate No.*

Page

Weitere Bedingungen siehe Rückseite und Folgeblätter /  
*further conditions see overleaf and following pages*

Offenbach, 1994-06-08

(letzte Änderung/updated 2005-01-26 )

VDE Prüf- und Zertifizierungsinstitut  
*VDE Testing and Certification Institute*  
Zertifizierungsstelle  
*Certification*

Name und Sitz des Genehmigungs-Inhabers / *Name and registered seat of the Licence holder*  
Delta Electronics Inc., 186 Ruey Kuang Road, NEIHU TAIPEI (114), TAIWAN

Aktenzeichen / *File ref.*  
1164100-2611-0001 / 50676 / FG13 / DO

letzte Änderung / *updated* Datum / *Date*  
2005-01-26 1994-06-08

Dieses Blatt gilt nur in Verbindung mit Blatt 1 des Gutachtens mit Fertigungsüberwachung Nr. 1764.  
*This supplement is only valid in conjunction with page 1 of the Certificate of Conformity with factory surveillance No. 1764.*

EFC0412BD	DC 12 V
FFB0912HHE/VHE/SHE/EHE	DC 12V
FFB0924HHE/VHE/SHE/EHE	DC 24V
BFB0405LA/MA/HA/HHA	DC 5V
BFB0412LA/MA/HA/HHA	DC 12V
BFB04505LA/MA/HA/HHA	DC 5V
BFB04512LA/MA/HA/HHA	DC 12V
BFB0505LA/MA/HA/HHA	DC 5V
BFB0512LA/MA/HA/HHA	DC 12V
BFB03505LR/MR/HR	DC 5V
AFB0712LA/MA/HA/HHA/VHA	DC 12V
EFB1548LG/MG/HG/HHG/VHG	DC 48V
EFB1748LG/MG/HG/HHG/VHG	DC 48V
EFC1248EE	DC 48V
AFB1524L/M/H/HH	DC 24V
AFB1724L/M/H/HH	DC 24V
BFB0305LP/MP/HP	DC 5V
BFB03505LP/MP/HP	DC 5V
AFB0605LB/MB/HB/HHB	DC 5V (neue Ausführung / new design)
AFB0612LB/MB/HB/HHB/VHB	DC 12V (neue Ausführung / new design)
AFB0624LB/MB/HB/HHB/VHB	DC 24V (neue Ausführung / new design)
SUB0212MH/H/HH/VH	DC 12V
FFB0948HHE/VHE/SHE	DC 48V
AFB1548L/M/H	DC 48V
AFB1748L/M/H	DC 48V
FFB1212SHE/EHE	DC 12V
FFB1224SHE/EHE	DC 24V
FFB1248VHE/SHE/EHE	DC 48V
AUB0605LB/MB/HB/HHB	DC 5V
AUB0612LB/MB/HB/HHB/VHB	DC 12V
AUB0624LB/MB/HB/HHB/VHB	DC 24V
FFB0812HHE/VHE/SHE/EHE	DC 12V
FFB0824HHE/VHE/SHE/EHE	DC 24V
FFB0848HHE/VHE/SHE	DC 48V
BFB0405LP/MP/HP	DC 5V
BFB04505LP/MP/HP	DC 5V
BFB0505LP/MP/HP	DC 5V
EFB0612LA/MA/HA/HHA	DC 12V
EFB0812LE/ME/HE/HHE	DC 12V
EFB0824LE/ME/HE/HHE	DC 24V
AUB0812LLB/LB/MB/HB/HHB/VHB/SHB	DC 12V

Fortsetzung siehe Blatt 10 /  
*continued on page 10*

