



## SPECIFICATION FOR APPROVAL

Customer. \_\_\_\_\_  
Description. \_\_\_\_\_ DC FAN \_\_\_\_\_  
Part No. \_\_\_\_\_ REV. \_\_\_\_\_  
Delta Model No. \_\_\_\_\_ AUB0912HH-CF00 \_\_\_\_\_ REV. \_\_\_\_\_ 01 \_\_\_\_\_  
Sample Issue No. \_\_\_\_\_  
Sample Issue Date. \_\_\_\_\_ NOV-01-2007 \_\_\_\_\_

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

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

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

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# SPECIFICATION FOR APPROVAL

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Customer:

Description: DC FAN

Customer P/N:

REV:

Delta Model NO.: AUB0912HH-CF00

Sample Rev: 01

Issue NO:

Sample Issue Date: NOV-01-2007

Quantity:

## 1. SCOPE:

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS AXIAL FLOW FAN.  
 THIS FAN MOTOR IS WITH TWO PHASES AND FOUR POLES.

## 2. CHARACTERS:

| ITEM                                            | DESCRIPTION                                                                      |
|-------------------------------------------------|----------------------------------------------------------------------------------|
| RATED VOLTAGE                                   | 12 VDC                                                                           |
| OPERATION VOLTAGE                               | 7.0 ~ 13.8 VDC                                                                   |
| START VOLTAGE (ENVIRONMENT TEMPERATURE AT 25°C) | 4.0VDC                                                                           |
| INPUT CURRENT                                   | 0.33 (MAX. 0.40) A                                                               |
| INPUT POWER                                     | 3.96 (MAX. 4.80) W                                                               |
| SPEED                                           | 3200 R.P.M. (REF.)                                                               |
| MAX. AIR FLOW (AT ZERO STATIC PRESSURE)         | 1.760 (MIN. 1.584 ) M <sup>3</sup> /MIN.<br>62.13 (MIN. 55.92 ) CFM              |
| MAX. AIR PRESSURE (AT ZERO AIR FLOW)            | 5.492 (MIN. 4.449) mmH <sub>2</sub> O<br>0.216 (MIN. 0.175) inchH <sub>2</sub> O |
| ACOUSTICAL NOISE (AVG.)                         | 41.0 (MAX. 45.0) dB A                                                            |
| INSULATION CLASS                                | UL: CLASS A                                                                      |

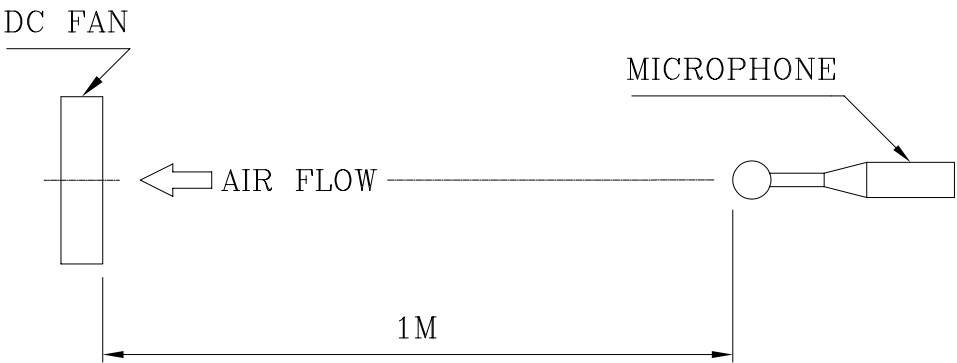
(continued)

PART NO.:

DELTA MODEL: AUB0912HH-CF00

|                        |                                                                                                |
|------------------------|------------------------------------------------------------------------------------------------|
| INSULATION RESISTANCE  | 10MEG OHM MIN. AT 500 VDC<br>(BETWEEN FRAME AND (+) TERMINAL)                                  |
| DIELECTRIC STRENGTH    | 5mA MAX. AT 500 VAC 60Hz<br>ONE MINUTE, (BETWEEN FRAME AND<br>(+) TERMINAL)                    |
| EXTERNAL COVER         | OPEN TYPE                                                                                      |
| LIFE EXPECTANCE        | 50,000 HOURS CONTINUOUS<br>OPERATION AT 40°C , 15~65% RH.                                      |
| OVER CURRENT SHUT DOWN | THE CURRENT WILL SHUT DOWN WHEN<br>LOCKING ROTOR.                                              |
| ROTATION               | CLOCKWISE VIEW FROM NAME PLATE<br>SIDE                                                         |
| AIR FLOW DIRECTION     | AIR INTAKE OVER STRUTS                                                                         |
| LEAD WIRE              | UL 1007 AWG #24<br>BLACK WIRE NEGATIVE(-)<br>RED WIRE POSITIVE(+)<br>BLUE WIRE FREQUENCY(-F00) |

- 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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PART NO.:

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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 ————— 104.0 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 CYCLING

LOW TEMPERATURE: −40°C  
HIGH TEMPERATURE: +80°C  
SOAK TIME: 30 MINUTES  
TRANSITION TIME < 5 MINUTES  
DUTY CYCLES: 5
- 8-2. HUMIDITY EXPOSURE

TEMPERATURE: +25°C ~ +65°C  
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  

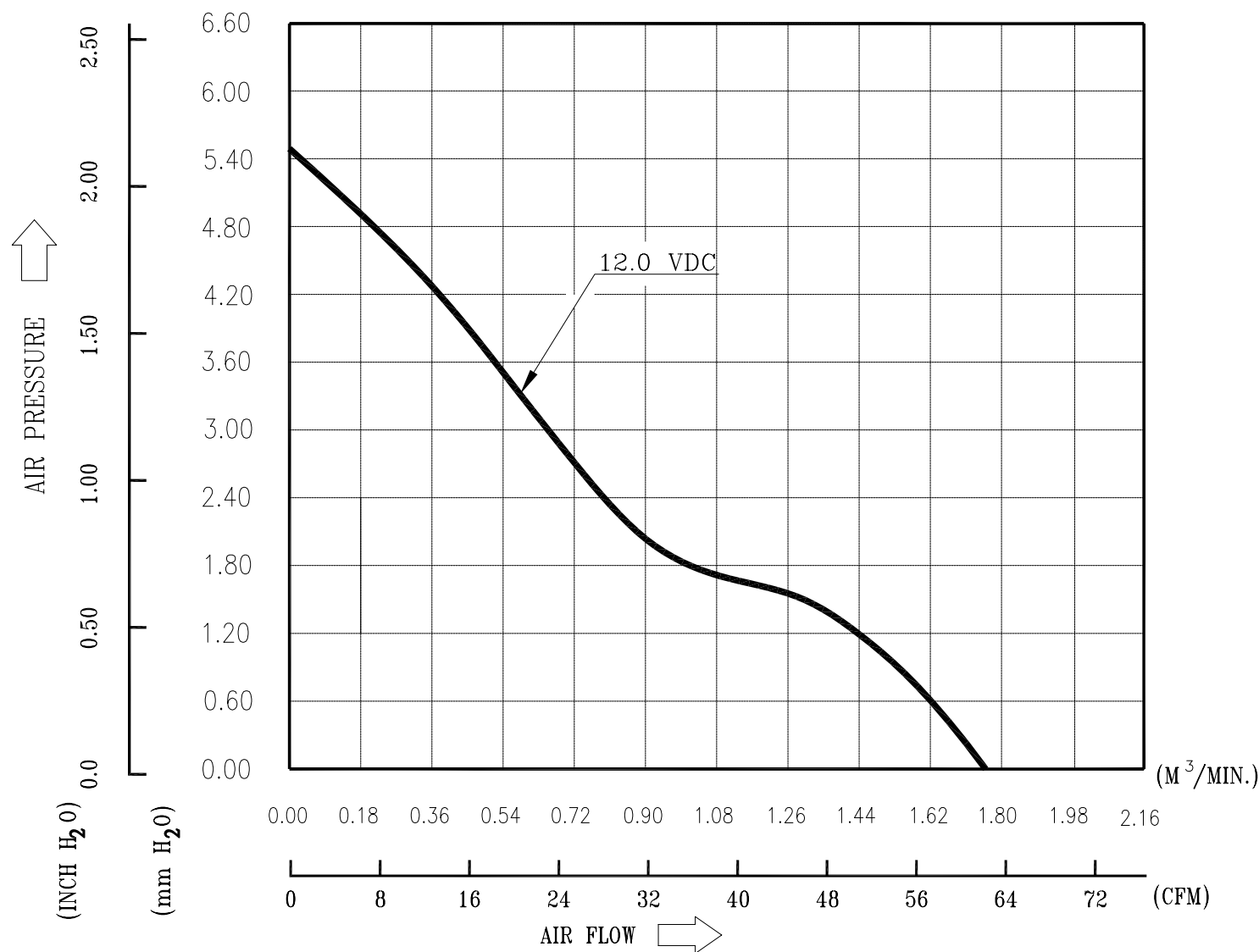
| FREQUENCY(Hz) | PSD(G <sup>2</sup> /Hz) |
|---------------|-------------------------|
| 10            | 0.040                   |
| 20            | 0.100                   |
| 40            | 0.100                   |
| 800           | 0.002                   |
| 1000          | 0.002             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

  
TEST TIME: 2 HOURS ON EACH ORIENTATION
- 8-4. MECHANICAL SHOCK

TEMPERATURE: +20°C  
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. OPERATION TEMPERATURE  
POWER: RATE VOLTAGE OPERATING  
DURATION: 1000 HOURS MIN.

9. P & Q CURVE



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

PART NO.:

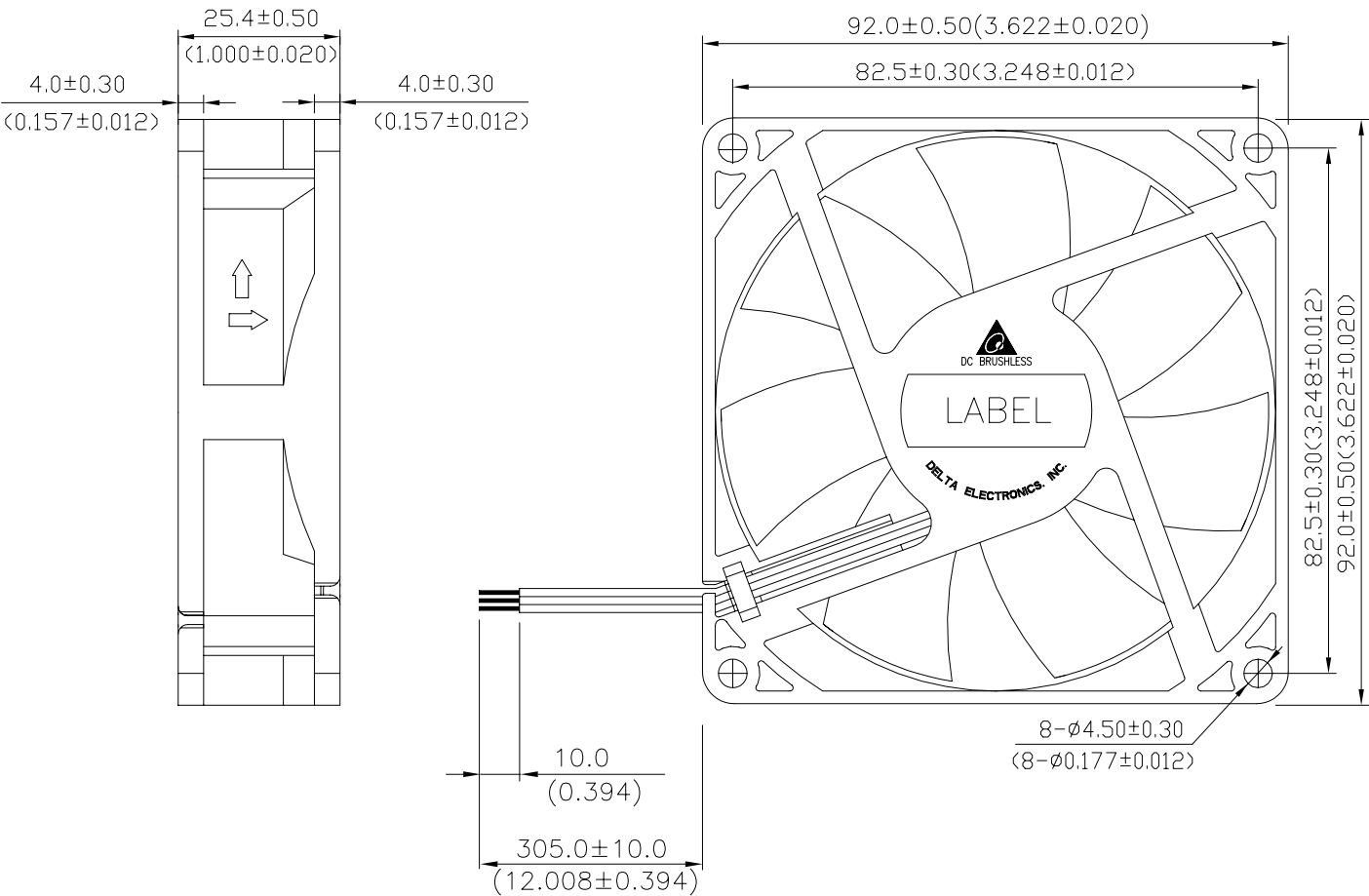
DELTA MODEL: AUB0912HH-CF00

10. DIMENSION DRAWING:

LABEL:



OR



NOTES:

- 1. LEAD WIRE UL1007 AWG#24  
RED WIRE-----(+)  
BLACK WIRE-----(-)  
BLUE WIRE-----(-F00)
- 2. THIS PRODUCT IS ROHS COMPLIANT

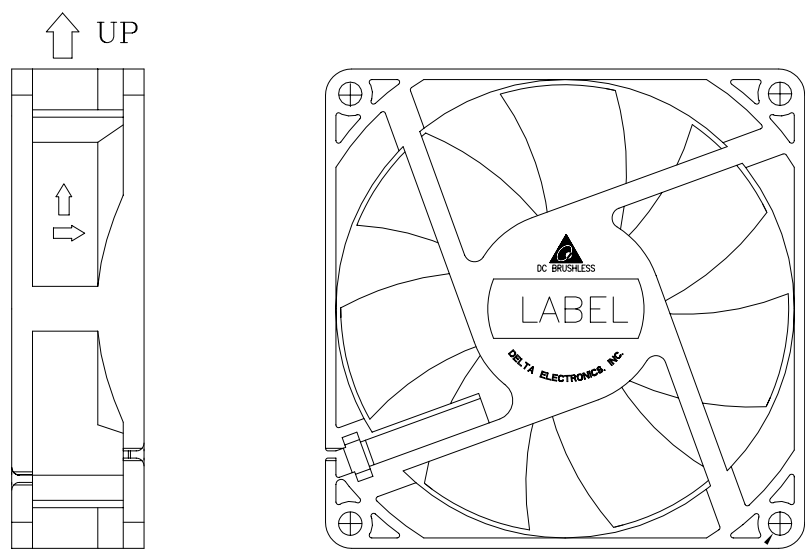
UNIT: MM(INCH)



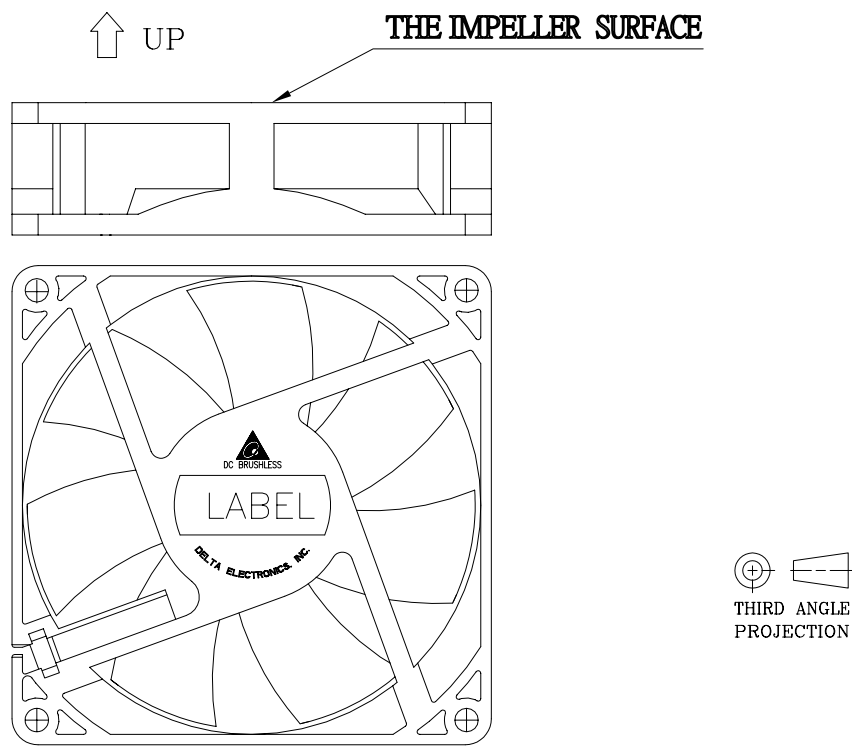
THIRD ANGLE  
PROJECTION

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



THIRD ANGLE  
PROJECTION

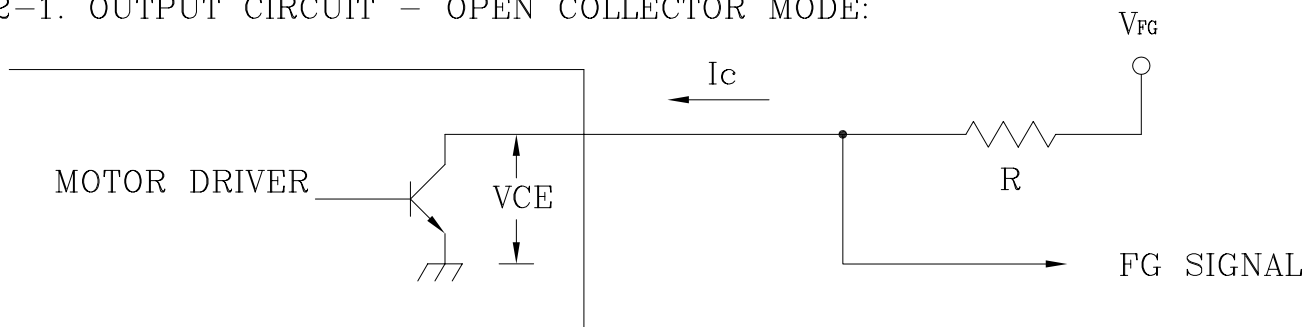
TYPE: B

PART NO:

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## 12. FREQUENCY GENERATOR (FG) SIGNAL:

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



#### CAUTION:

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

### 12-2. SPECIFICATION:

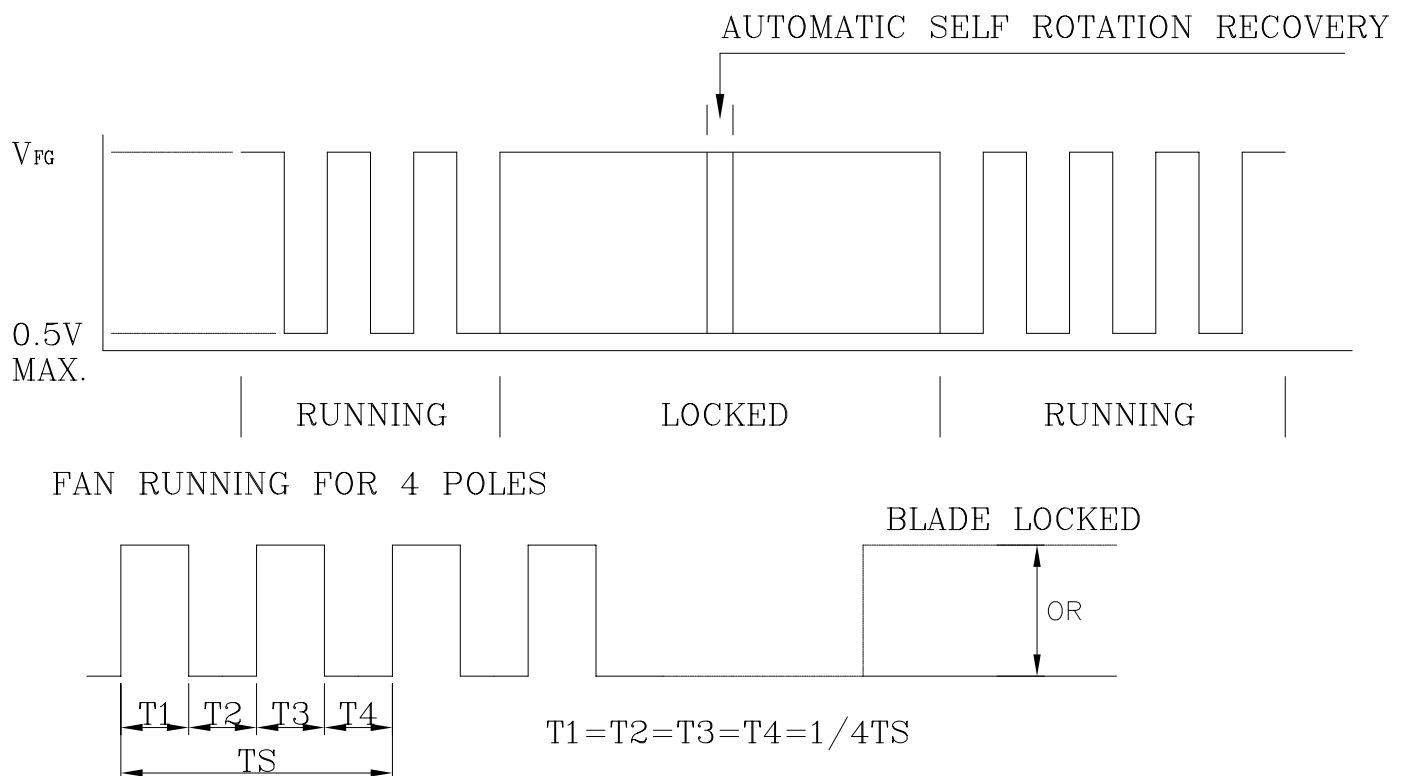
V<sub>CE</sub> (sat)=0.5V MAX.

V<sub>FG</sub> =13.8VDC MAX.

I<sub>c</sub> =5mA MAX.

$R \geq V_{FG} / I_c$

### 12-3. FREQUENCY GENERATOR WAVEFORM:



N=R.P.M

TS=60/N(SEC)

\*VOLTAGE LEVEL AFTER BLADE LOCKED

\*4 POLES

A00



## **Descriptions:**

- 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 fans are 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, as there is no foolproof method to protect against such error.**
- 7. Delta fans 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 relative (ambient) temperature and humidity conditions of 25°C, 65%. The test value is only for fan performance itself.**
- 13. Be certain to connect an “over 4.7µF” capacitor to the fan externally when the application calls for using multiple fans in parallel, to avoid any unstable power.**