



## SPECIFICATION FOR APPROVAL

Customer. \_\_\_\_\_

Description. DC FAN

Part No. \_\_\_\_\_ REV. \_\_\_\_\_

Delta Model No. FFB0924SHE-F00 REV. 01

Sample Issue No. \_\_\_\_\_

Sample Issue Date. NOV.11 2022

PLEASE SEND ONE COPY OF THIS SPECIFICATION BACK  
AFTER YOU SIGNED APPROVAL FOR PRODUCTION PRE-  
ARRANGMENT.

APPROVED BY:

DATE :

DELTA ELECTRONICS, INC.  
TAOYUAN PLANT  
252, SHANGYING ROAD, GUISHAN INDUSTRIAL ZONE,  
TAOYUAN CITY 33341, TAIWAN  
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DELTA ELECTRONICS, INC. TEL : 886-(0)3-3591968  
252, SHANGYING ROAD, GUISHAN INDUSTRIAL ZONE, FAX : 886-(0)3-3591991  
TAOYUAN CITY 33341, TAIWAN

STATEMENT OF DEVIATION  
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☒ NONE

☐ DESCRIPTION :

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252, SHANGYING ROAD, GUISHAN INDUSTRIAL ZONE,

TAOYUAN CITY 33341, TAIWAN

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SPECIFICATION FOR APPROVAL

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Customer:

Description: DC FAN

Customer P/N:

REV:

Delta Model NO.: **FFB0924SHE-F00** Delta safety model NO.: **FFB0924SHE**

Sample Rev: 01

Issue NO:

Sample Issue Date: NOV.11 2022

Quantity:

1. SCOPE:

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

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	24 VDC
OPERATION VOLTAGE	14.0 - 27.6 VDC
INPUT CURRENT	0.40 (MAX. 0.60) A <b>SAFETY CURRENT ON LABEL : 0.60A</b>
INPUT POWER	9.60 (MAX. 14.40) W
SPEED	4400 R.P.M. (REF.)
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	2.840 (MIN. 2.560 ) M <sup>3</sup> /MIN. 100.29 (MIN. 90.41 ) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	14.53 (MIN. 11.77 ) mmH <sub>2</sub> O 0.572 (MIN. 0.463 ) inchH <sub>2</sub> O
ACOUSTICAL NOISE (AVG.)	52.5 (MAX. 56.5) dB-A
INSULATION TYPE	UL: CLASS A

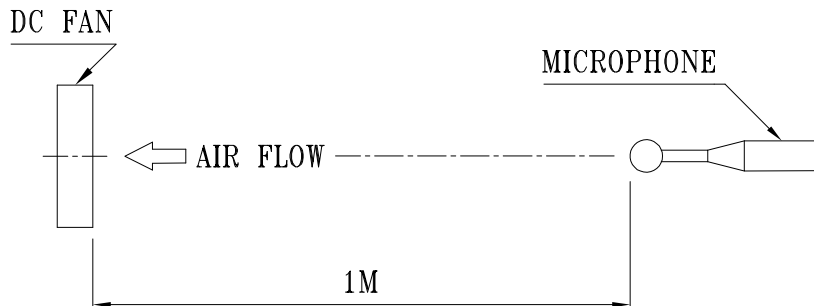
(continued)

PART NO:

DELTA MODEL: FFB0924SHE-F00

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	70,000 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.
LEAD WIRE	UL 1007 -F- AWG #24 BLACK WIRE NEGATIVE(-) RED WIRE POSITIVE(+) BLUE WIRE FREQUENCY(-F00)

- 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 ONE METER FROM THE FAN INTAKE.

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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 ----- TWO BALL BEARINGS
- 3-5. WEIGHT ----- 198 GRAMS

4. ENVIRONMENTAL:

- 4-1. OPERATING TEMPERATURE ----- -10 TO +70 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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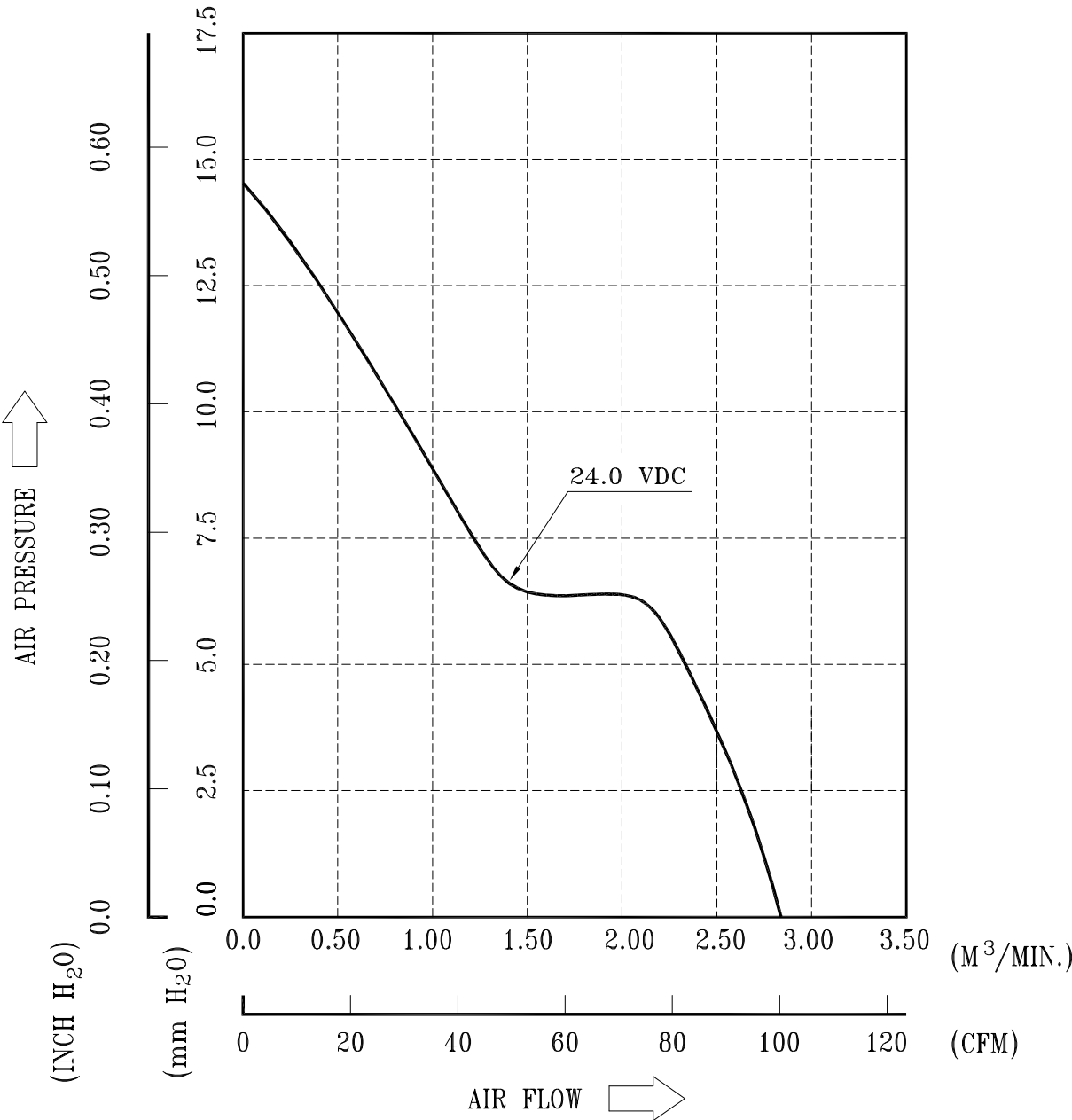
8. BASIC RELIABILITY REQUIREMENT:

- 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 , OPERATING TEMPERATURE  
                         POWER: OPERATING  
                         DURATION: 1000 HOURS MIN.

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9. P & Q CURVE:



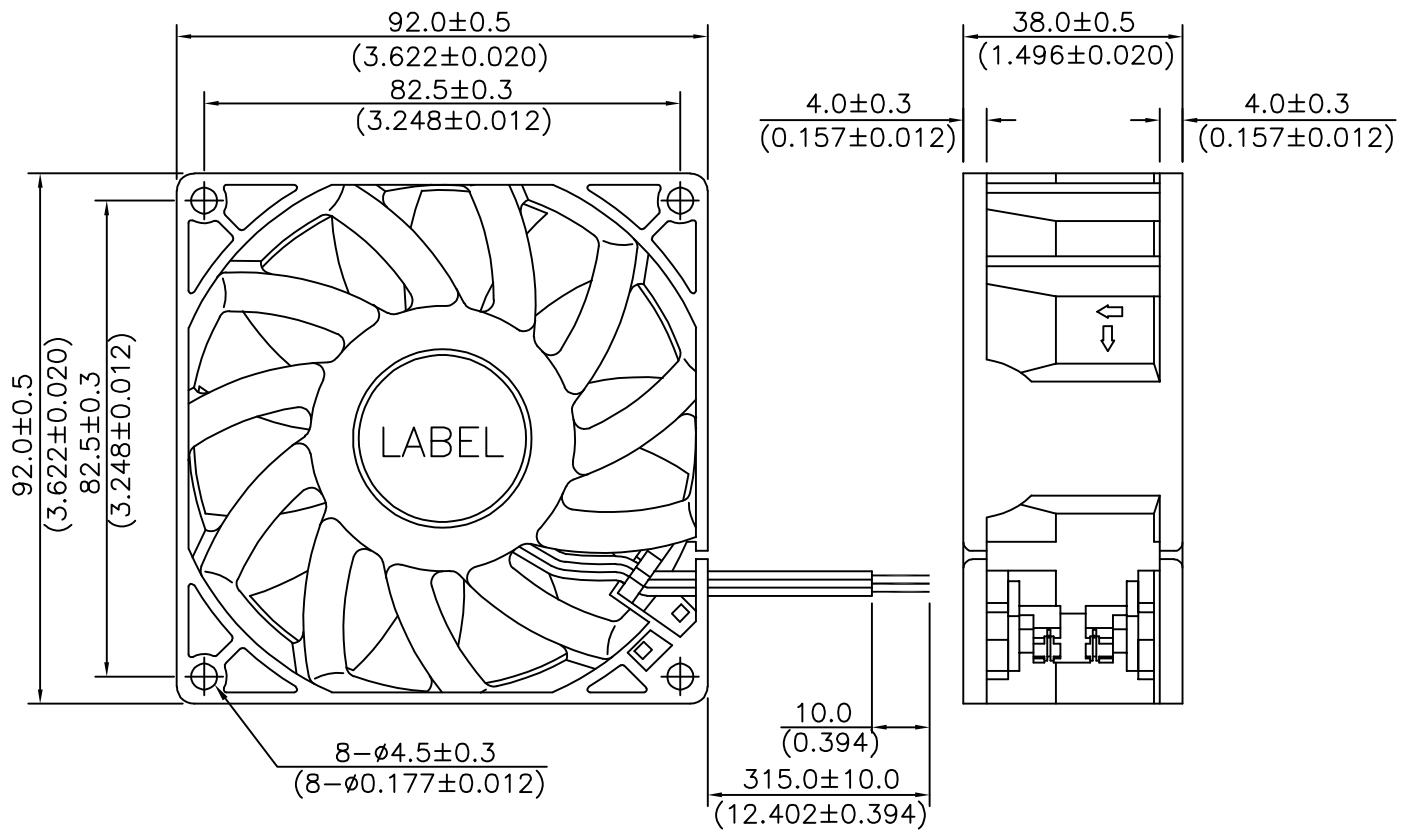
\* TEST CONDITION: INPUT VOLTAGE ----- OPERATION VOLTAGE  
TEMPERATURE ----- ROOM TEMPERATURE  
HUMIDITY ----- 65%RH

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## 10. DIMENSION DRAWING:

LABEL:



UL 1007 -F- AWG #24  
BLACK WIRE NEGATIVE(-)  
RED WIRE POSITIVE(+)  
BLUE WIRE FREQUENCY(-F00)

UNIT: mm(INCH)

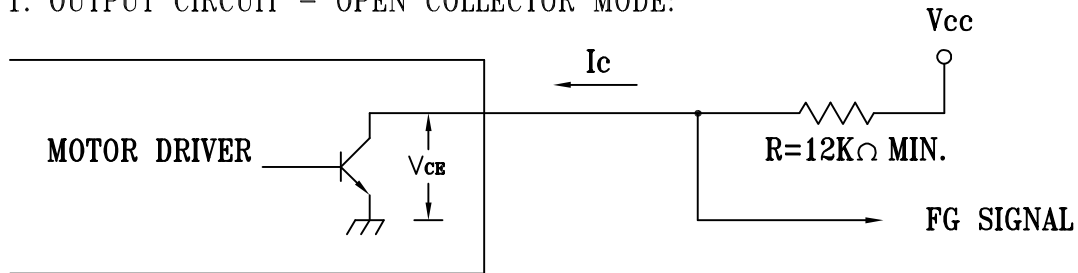


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## 11. FREQUENCY GENERATOR (FG) SIGNAL:

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



#### CAUTION:

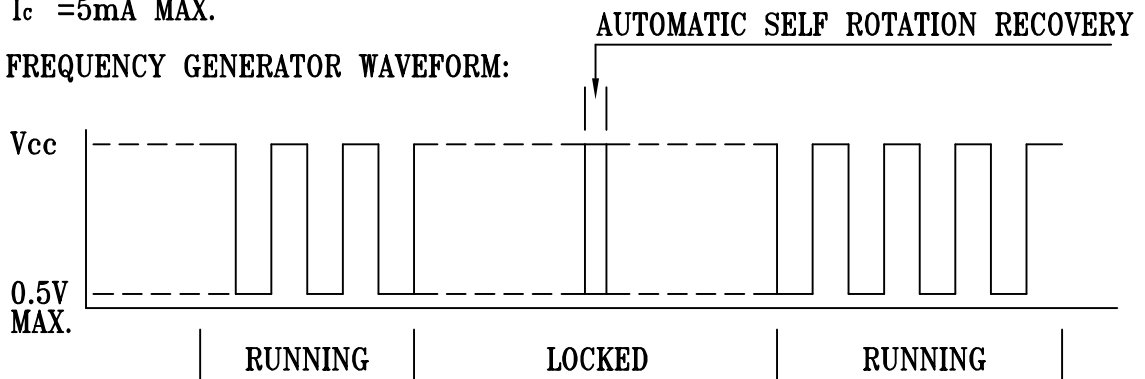
THE LEAD WIRE OF FG SIGNAL CAN NOT TOUCH  
THE LEAD WIRE OF POSITIVE OR NEGATIVE.

### 2. SPECIFICATION:

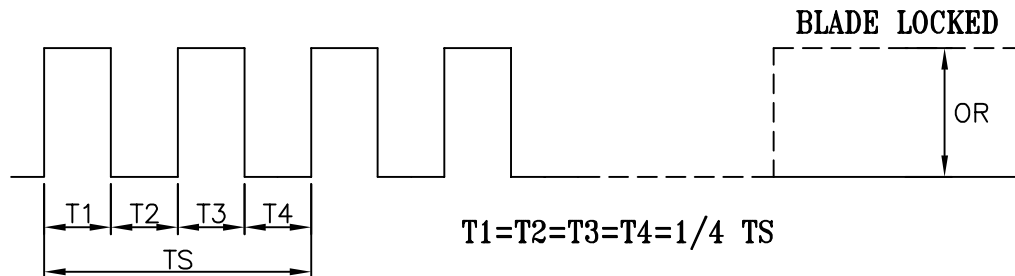
$V_{CE}(\text{sat}) = 0.5\text{V MAX.}$

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

### 3. FREQUENCY GENERATOR WAVEFORM:



FAN RUNNING FOR 4 POLES



$N = \text{R.P.M}$

$TS = 60/N(\text{SEC})$

\*VOLTAGE LEVEL AFTER BLADE LOCKED

\*4 POLES

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