



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.
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DELTA ELECTRONICS, INC. TEL : 886-(0)3-3591968
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TAOYUAN CITY 33341, TAIWAN

STATEMENT OF DEVIATION

☒ NONE

☐ DESCRIPTION :

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SPECIFICATION FOR APPROVAL

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 SAFETY CURRENT ON LABEL : 0.60A
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 ³ /MIN. 100.29 (MIN. 90.41) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	14.53 (MIN. 11.77) mmH ₂ O 0.572 (MIN. 0.463) inchH ₂ O
ACOUSTICAL NOISE (AVG.)	52.5 (MAX. 56.5) dB-A
INSULATION TYPE	UL: CLASS A

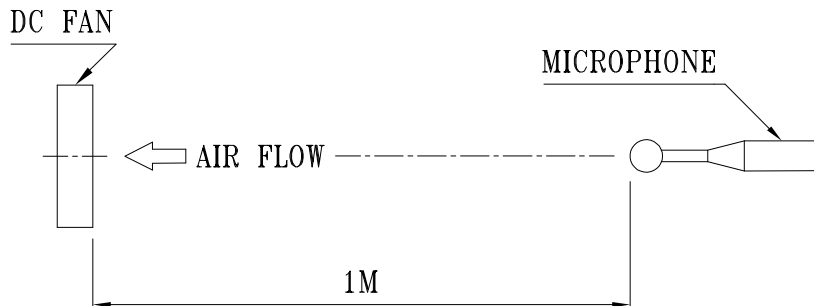
(continued)

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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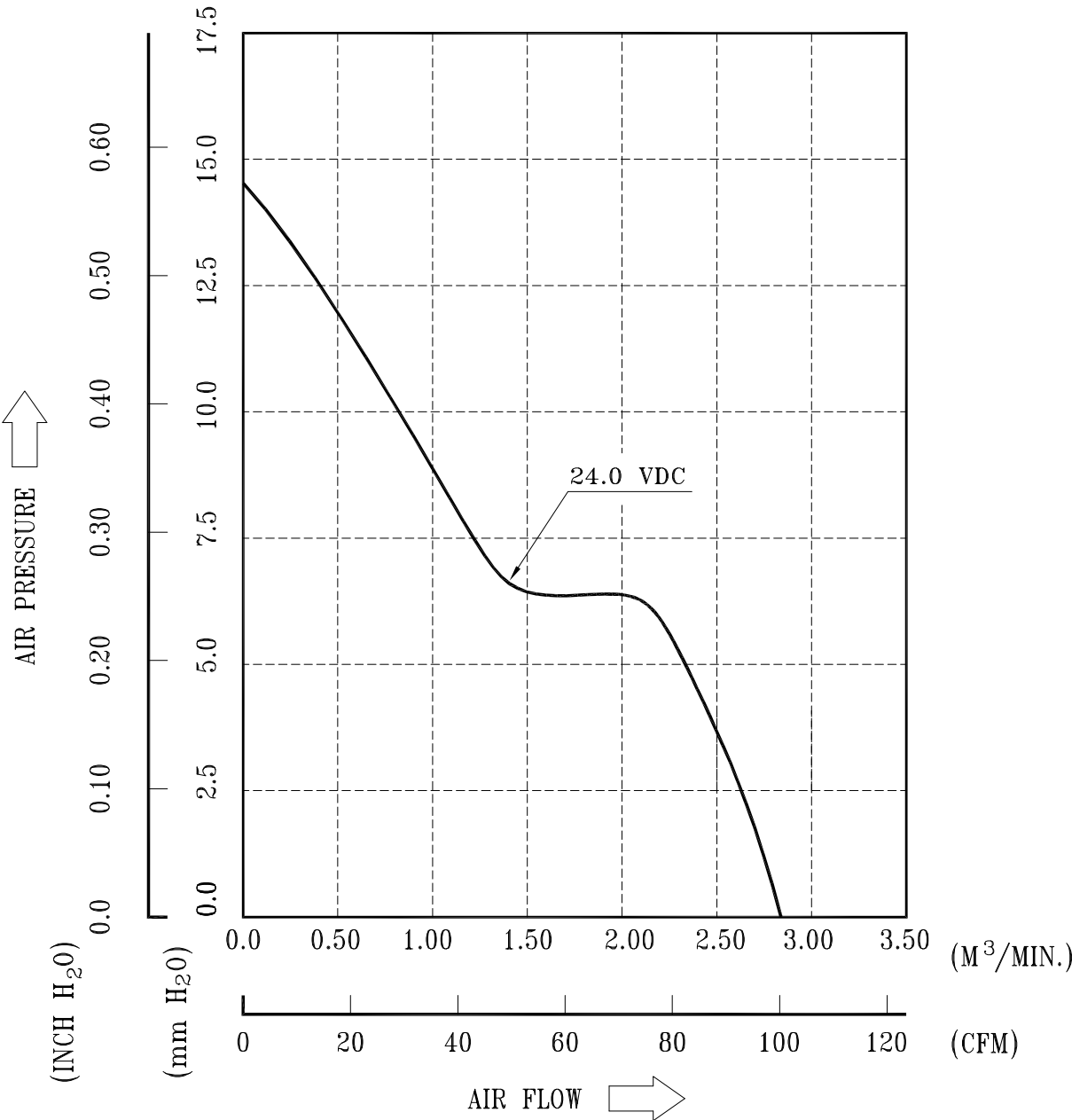
8. BASIC RELIABILITY REQUIREMENT:

- 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 ² /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:



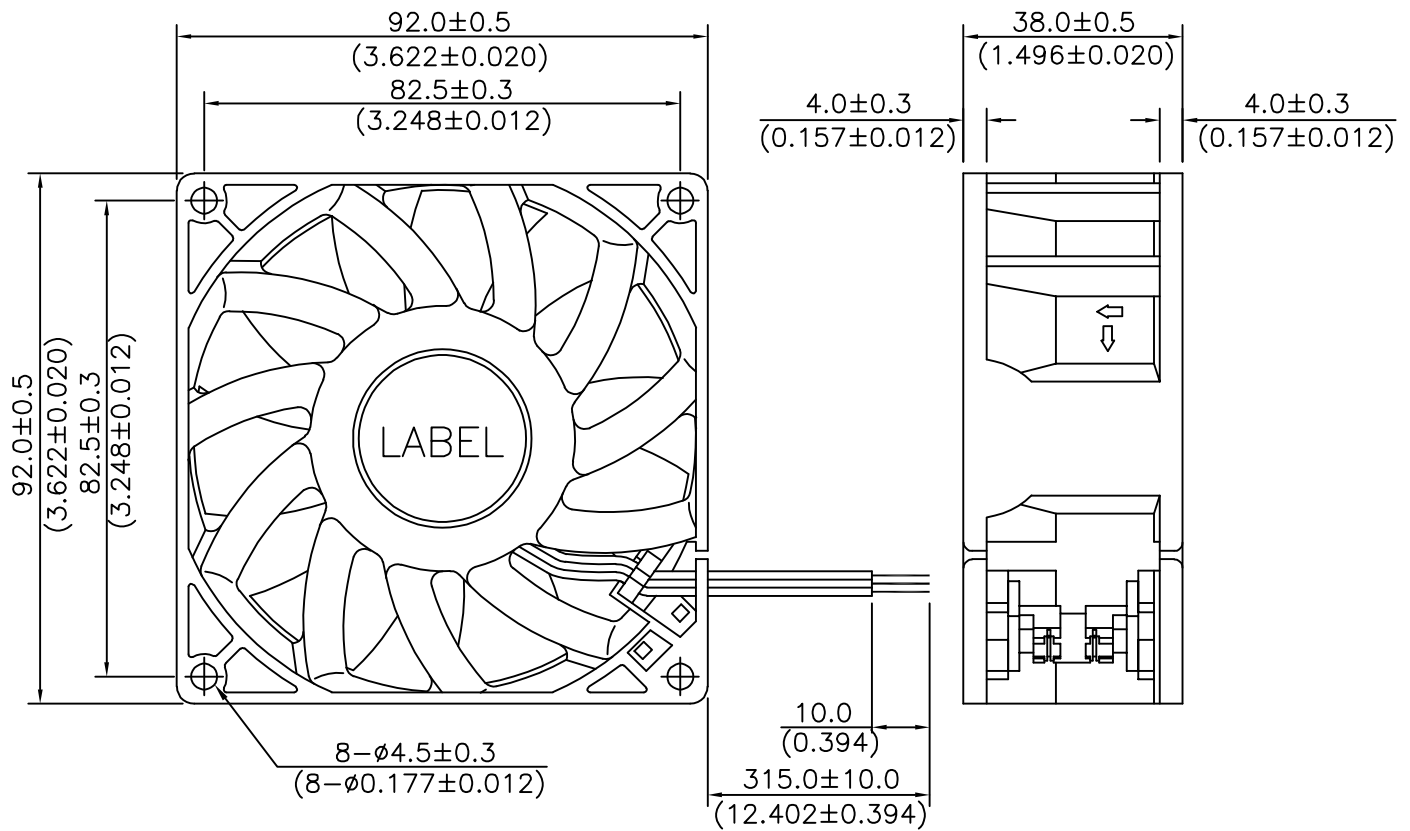
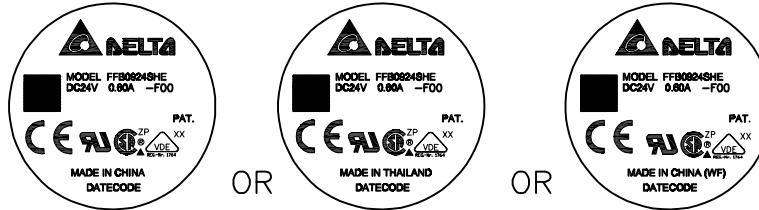
* TEST CONDITION: INPUT VOLTAGE ----- OPERATION VOLTAGE
TEMPERATURE ----- ROOM TEMPERATURE
HUMIDITY ----- 65%RH

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10. DIMENSION DRAWING:

LABEL:



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

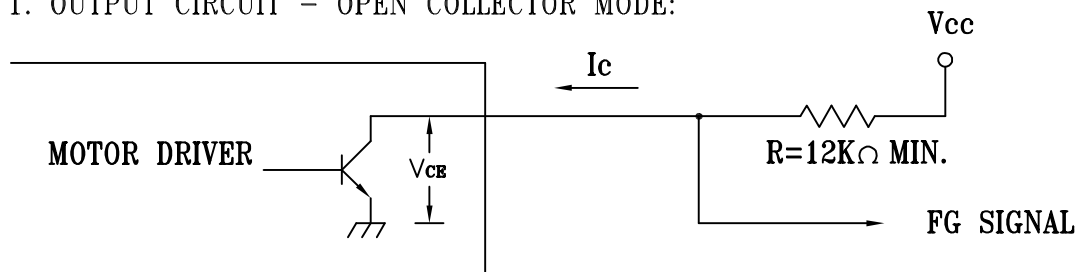
UNIT: mm(INCH)

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11. FREQUENCY GENERATOR (FG) SIGNAL:

1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



CAUTION:

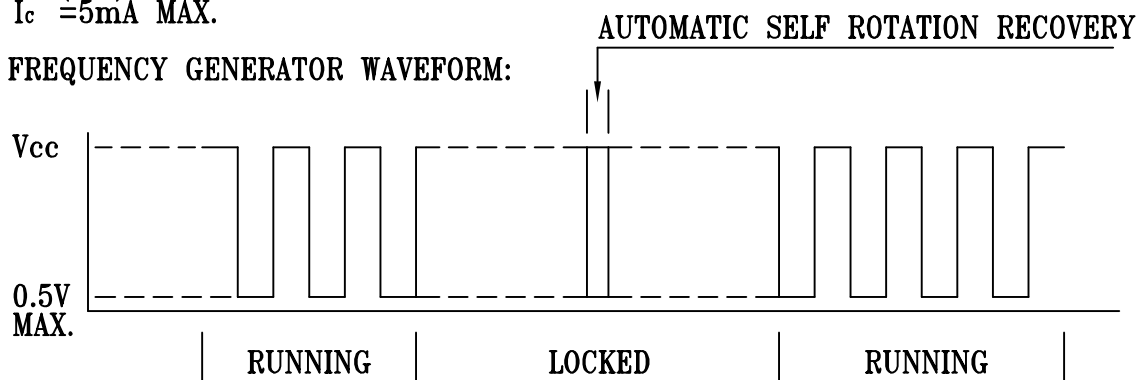
THE LEAD WIRE OF FG SIGNAL CAN NOT TOUCH
THE LEAD WIRE OF POSITIVE OR NEGATIVE.

2. SPECIFICATION:

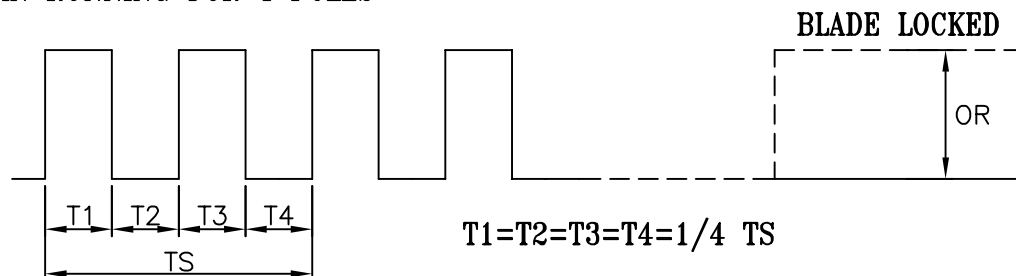
$V_{CE}(\text{sat}) = 0.5V \text{ MAX.}$

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

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