



SPECIFICATION FOR REFERENCE

Customer : _____
Description : DC FAN _____
Customer Part No. _____ REV. : _____
Delta Model No. : QFR0812SH-AA39 _____ REV. : 01 _____
Sample Issue No. : _____
Sample Issue Date : MAY.07 2024 _____

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

APPROVED BY:

DATE :

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STATEMENT OF DEVIATION

NONE

DESCRIPTION:

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 Taoyuan City 333, Taiwan (R.O.C.)

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Specification For Reference

Customer : _____

Description : DC FAN

Customer P/N : _____

rev. : _____

Delta model no. : QFR0812SH-AA39

Delta Safety Model No.: N/A

Sample revision. : 01

Issue no.: _____


Sample issue date : MAY.07 2024

Quantity : _____

1. SCOPE:

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

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	12 V
OPERATION VOLTAGE	10.8-13.2V
INPUT CURRENT(AVG.)	0.33A (MAX0.50A) SAFETY CURRENT ON LABEL : 0.50A
INPUT POWER(AVG.)	3.96W(MAX6.00W)
SPEED	4300+/-10% R.P.M. 
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	1.545(MIN. 1.390) M ³ /MIN. 54.57 (MIN. 49.11) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	8.400 (MIN. 6.804) mmH ₂ O 0.331 (MIN. 0.268) inchH ₂ O
ACOUSTICAL NOISE AT 0.5M (AVG.)	41.2 (MAX. 45.2) 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)

(continued)

PART NO:

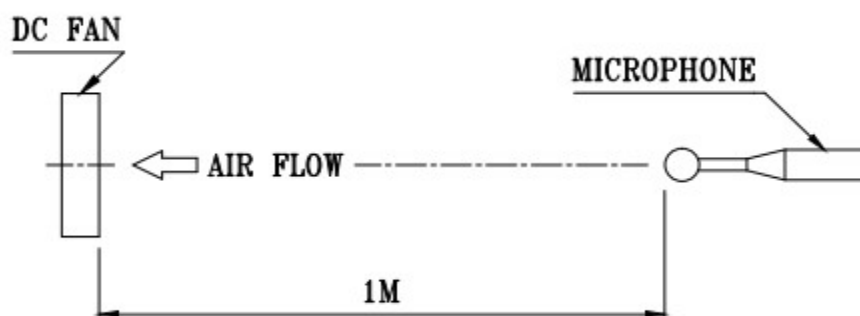
DELTA MODEL: QFR0812SH-AA39

LIFE EXPECTANCE	70,000 HOURS CONTINUOUS OPERATION AT 40 ° C WITH 15 ~ 65 %RH, AT SPEED 7000 RPM
ROTATION	CLOCKWISE VIEW FROM NAME PLATE SIDE
EXTERNAL COVER	OPEN TYPE
OVER CURRENT SHUT DOWN	THE CURRENT WILL SHUT DOWN WHEN LOCKING ROTOR

AVG. IS THE AVERAGE VALUE DURING STEADY OPERATION. AND MAX. IS MAXIMUM AVERAGE VALUE INCLUDED PRODUCTION TOLERANCE. ABOUT THE PEAK VALUE, NEED TO USE OSCILLOSCOPE TO MEASUR

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. THE CHARACTERS SHOWED IN PAGE 1 IS THE CONDITION OF BOTH FANS RUN.
5. ACOUSTICAL NOISE MEASURING CONDITION:



NOISE IS MEASURED AT RATED VOLTAGE IN FREE AIR IN SEMI-ANECHOIC CHAMBER WITH B & K SOUND LEVEL METER WITH MICROPHONE AT A DISTANCE OF 1.0 METER FROM THE FAN INTAKE.

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----- TWO BALL BEARINGS
- 3-5. WEIGHT----- 88 GRAMS(REF.)

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 (DISCONNECT OTHER SIGNAL WIRES).

6. RE OZONE DEPLETING SUBSTANCES:

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

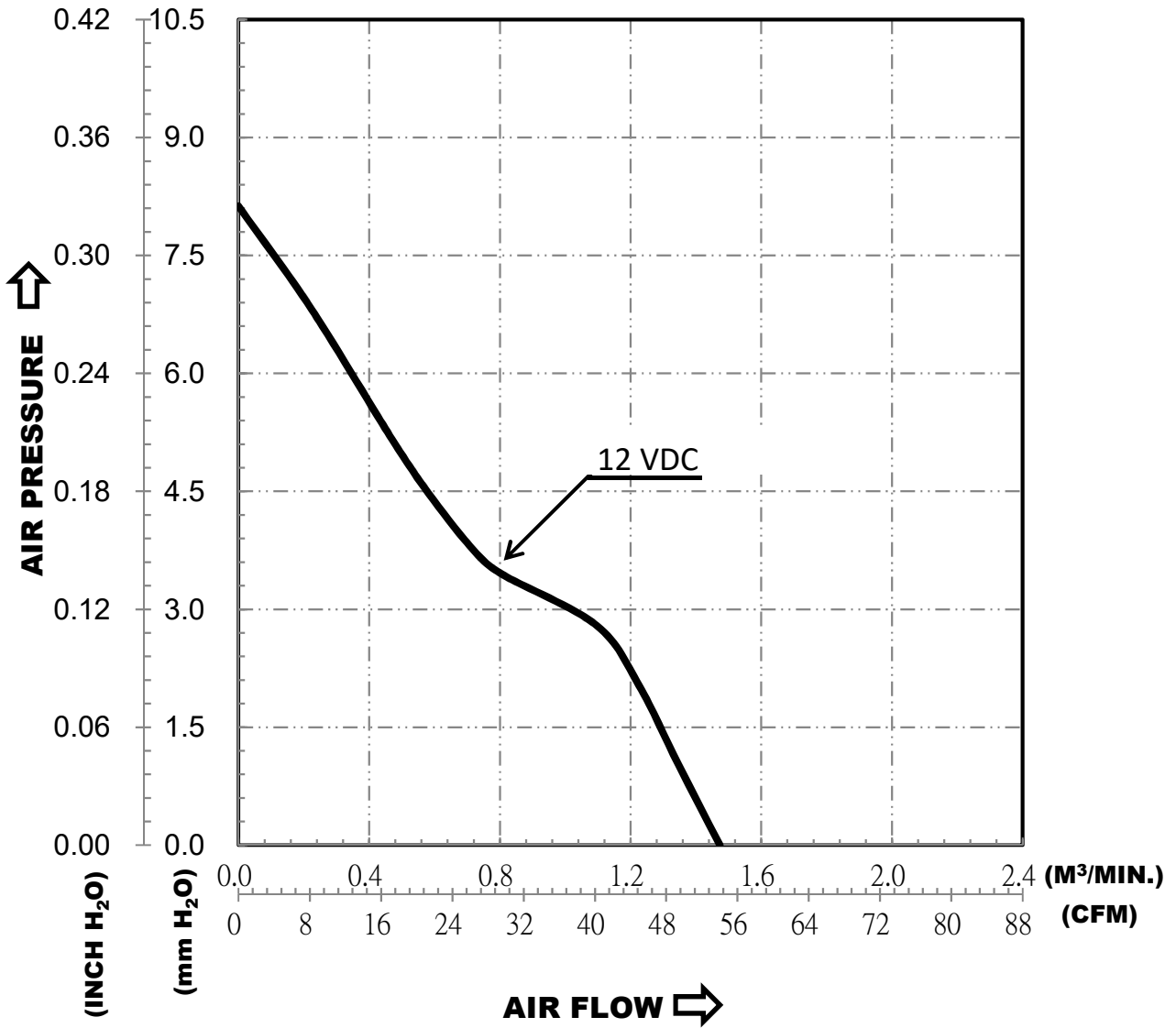
7. PRODUCTION LOCATION

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

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8. P & Q CURVE:



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

PART NO:

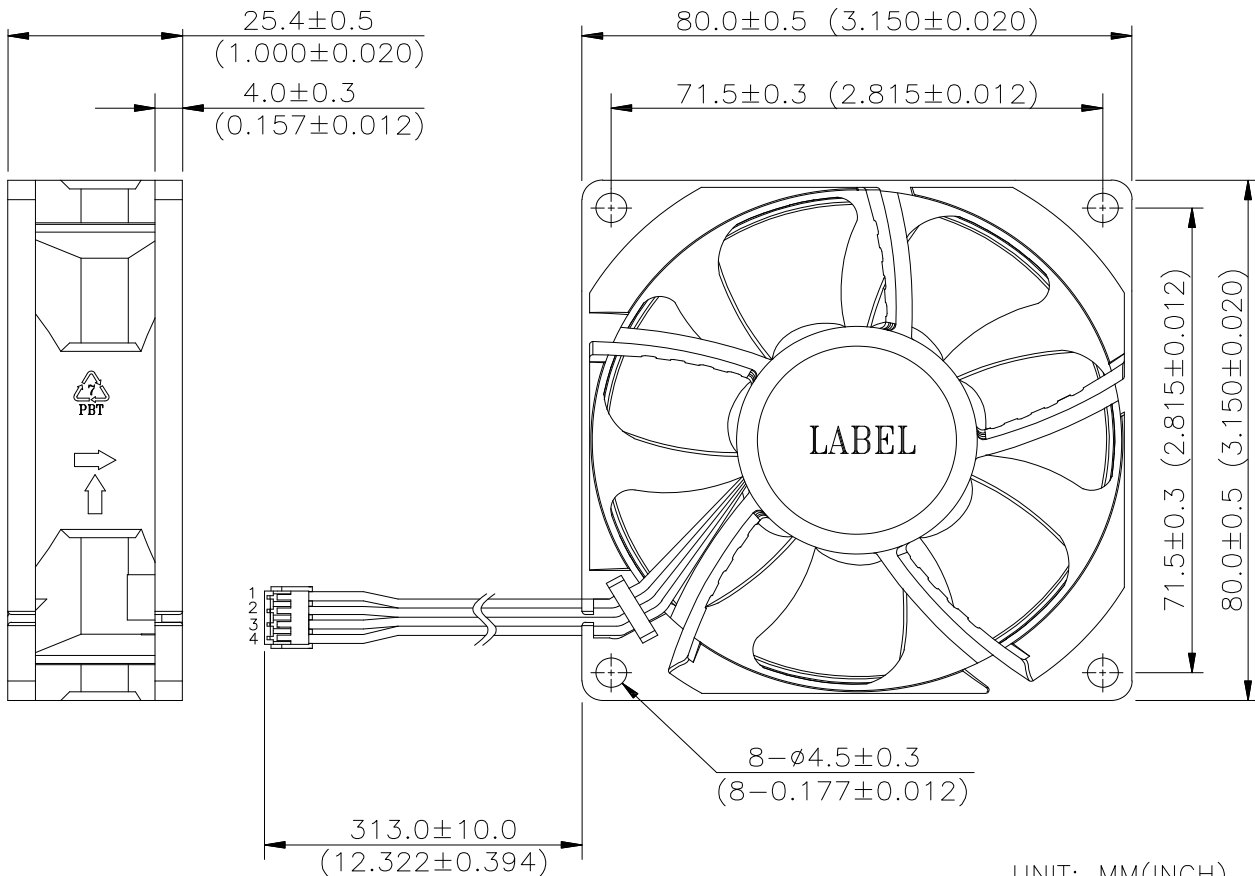
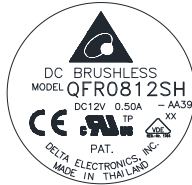
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9. DIMENSION DRAWING:

LABEL



OR



UNIT: MM(INCH)

NOTES:

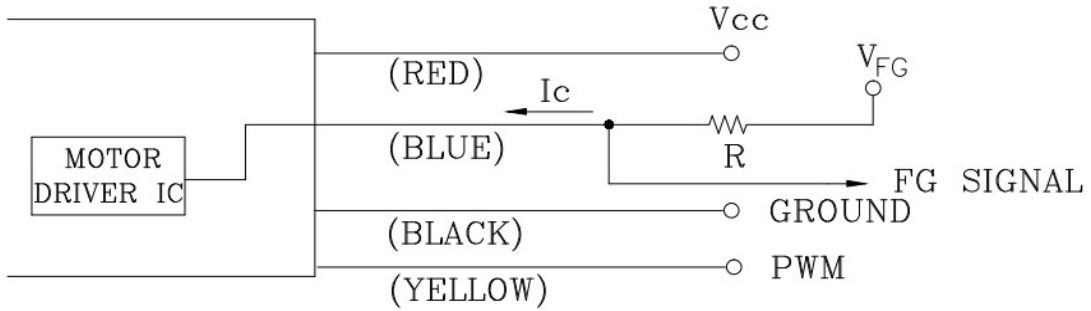
1. HOUSING: JST EHR-4 OR EQUIVALENT
2. TERMINAL: JST SEH-001T-P0.6 OR EQUIVALENT
3. LEAD WIRE UL : 1007 AWG#26
PIN1: BLACK WIRE (-)
PIN2: BLUE WIRE (F00)
PIN3: YELLOW WIRE (PWM)
PIN4: RED WIRE (+)
4. THIS PRODUCT IS RoHS COMPLIANT

PART NO:

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10. FREQUENCY GENERATOR (FG) SIGNAL:

10-1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



CAUTION:

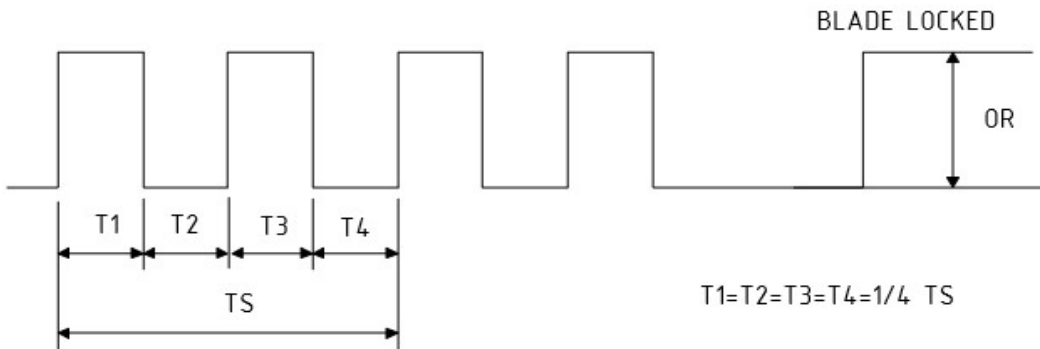
THE LEAD WIRE OF FG SIGNAL CAN NOT BE CONNECTED TO V+ OR V- DIRECTLY.

10-2. SPECIFICATION:

$V_{FG} = 5.0 \text{ TYP}(V_{CC} \text{ MAX})$ $I_c = 5\text{mA MAX.}$
 $V_{CE} = 0.5\text{V MAX.}$ $R \geq V_{FG} / I_c$



10-3. FREQUENCY GENERATOR WAVEFORM:



N=R.P.M

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

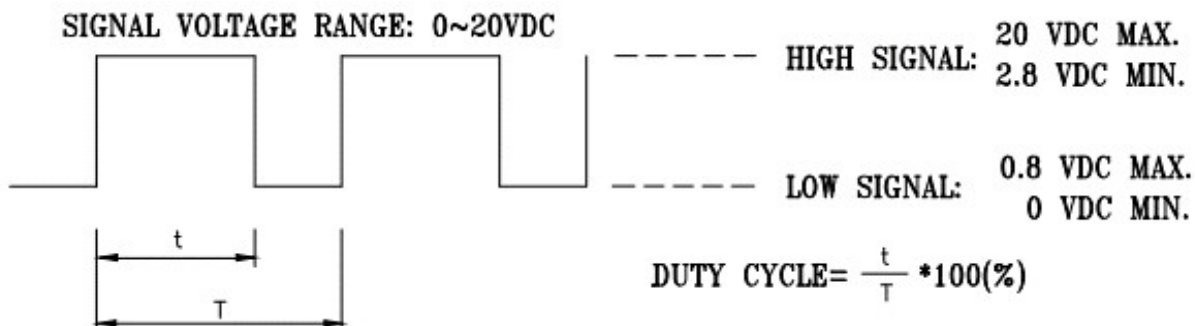
*VOLTAGE LEVEL AFTER BLADE LOCKED

*4 POLES

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11. PWM CONTROL SIGNAL:



11-1. THE PREFERRED OPERATING POINT FOR THE FAN IS 25K HZ.

11-2. AT 100% DUTY CYCLE, THE ROTOR WILL SPIN AT MAXIMUM SPEED.

11-3. AT 0% DUTY CYCLE, THE ROTOR WILL STOP THE SPIN.

11-4. WITH CONTROL SIGNAL LEAD DISCONNECTED , THE FAN WILL SPIN AT MAXIMUM SPEED.

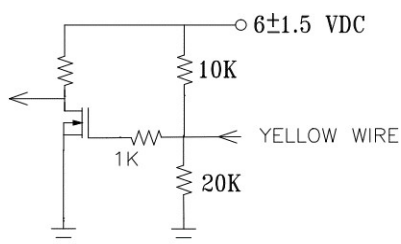
11-5. AT RATED VOLTAGE, 25K HZ 30% DUTY CYCLE, THE FAN WILL BE ABLE TO START FROM A DEAD STOP.

12. SPEED VS PWM CONTROL SIGNAL:

(AT 25°C, RATED VOLTAGE=12V & PWM FREQUENCY=25KHZ)

DUTY CYCLE(%)	SPEED R.P.M.	CURRENT(A) REF.
100	4300 ± 10%	0.33
0	0	0.01

13. PWM CONTROL LEAD WIRE INPUT IMPEDANCE :



13-1. THE FAN SPEED WILL DEFAULT TO MAXIMUM WHEN THE SPEED CONTROL INOUT LEFT UNCONNECTED.



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 “ 4.7 μ F or greater” capacitor to the fan externally when the application calls for using multiple fans in parallel, to avoid any unstable power.**