



SPECIFICATION FOR APPROVAL

Customer _____

Description DC FAN

Part No. _____ REV. _____

Delta Model No. AFC0712DB-F00 REV. 01

Sample Issue No. _____

Sample Issue Date JUL.05.2007

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

APPROVED BY: _____

DATE : _____

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Description: DC FAN

Customer P/N:

REV:

Delta Model NO.: AFC0712DB-F00

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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	12 VDC
OPERATION VOLTAGE	8.0 - 13.2 VDC
INPUT CURRENT	0.35 (MAX. 0.45) A
INPUT POWER	4.20 (MAX. 5.40) W
SPEED	6000 R.P.M. ±10%
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	1.188 (MIN. 1.069) M ³ /MIN. 41.95 (MIN. 37.75) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	8.308 (MIN. 6.729) mmH ₂ O 0.327 (MIN. 0.265) inchH ₂ O
ACOUSTICAL NOISE (AVG.)	46.5 (MAX. 50.5) dB-A
INSULATION TYPE	UL: CLASS A

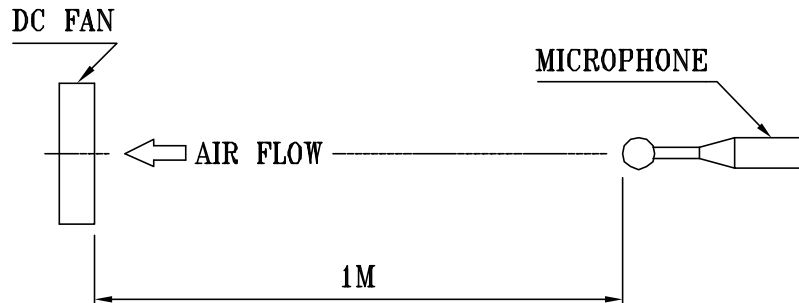
(continued)

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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 1061 -F- AWG #26 BLACK WIRE: NEGATIVE(-) RED WIRE: POSITIVE(+) BLUE WIRE: TACHOMETER OUTPUT (F00) YELLOW WIRE: SPEED CONTROL (PWM)

- NOTES: 1. ALL READINGS ARE MEASURED AFTER STABLY WARMING UP THROUGH 10 MINUTES.
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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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 BEARING
- 3-5. WEIGHT _____ 47 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, PBB0s, CFCs, PBBEs, PBDPEs AND HCFCs.

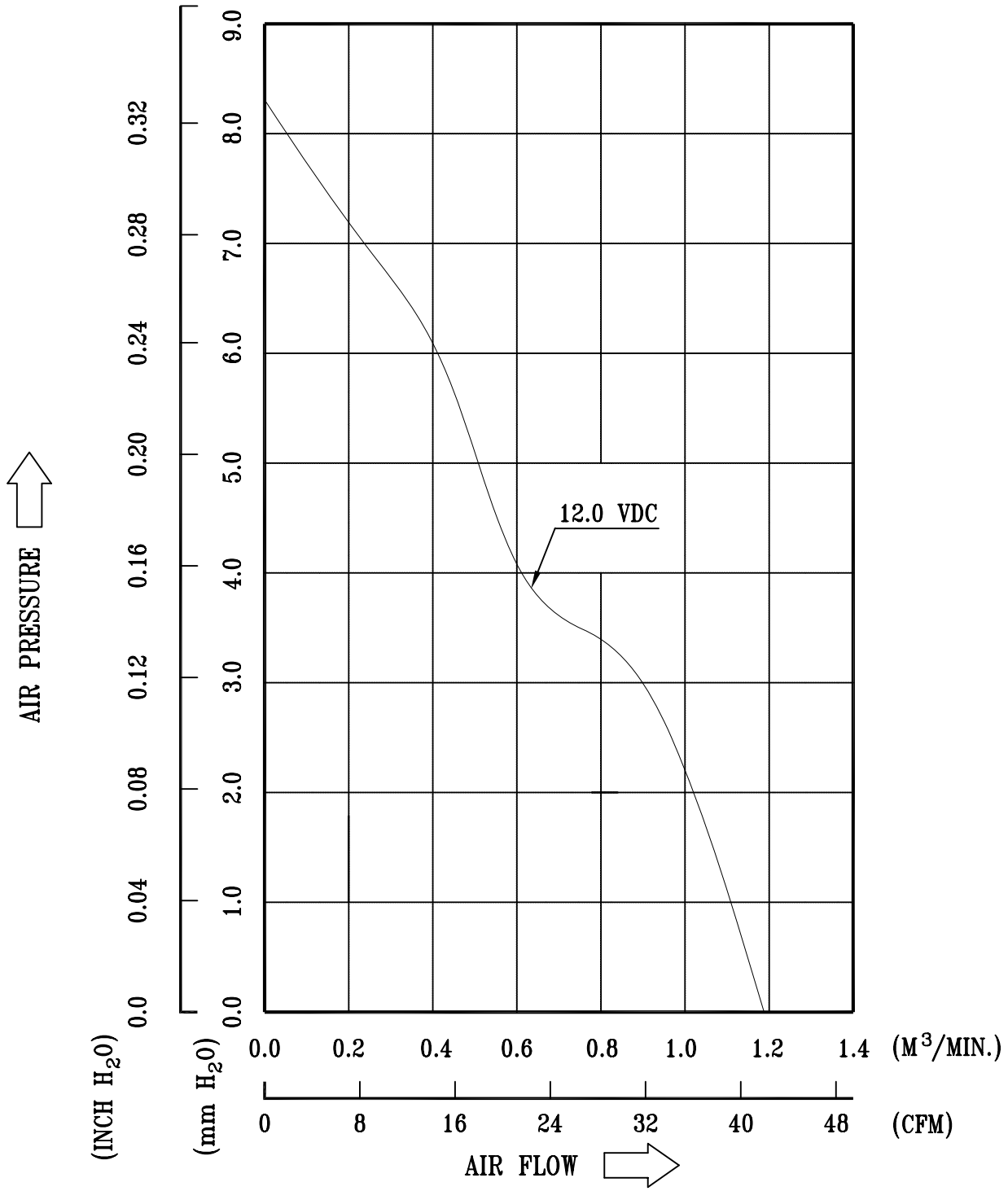
7. PRODUCTION LOCATION

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

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8. P & Q CURVE:



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

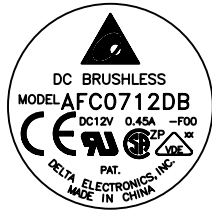
A00

PART NO:

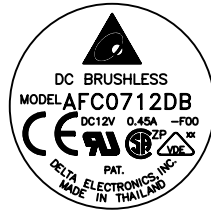
DELTA MODEL: AFC0712DB-F00

9. DIMENSION DRAWING:

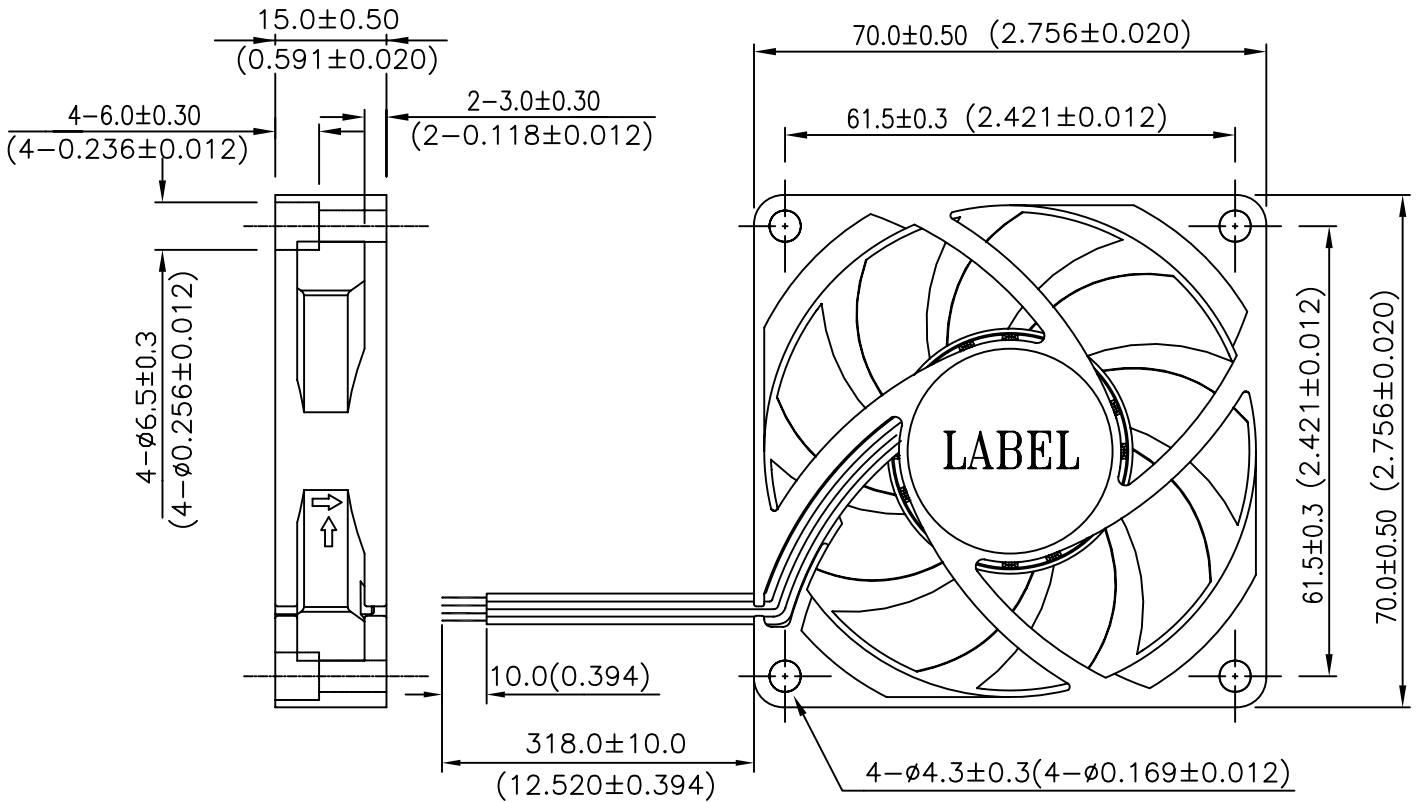
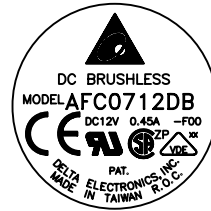
LABEL:



OR



OR



UL 1061 -F- AWG #26
BLACK WIRE: NEGATIVE(-)

RED WIRE: POSITIVE(+)

BLUE WIRE: TACHOMETER OUTPUT (F00)

YELLOW WIRE: SPEED CONTROL (PWM)

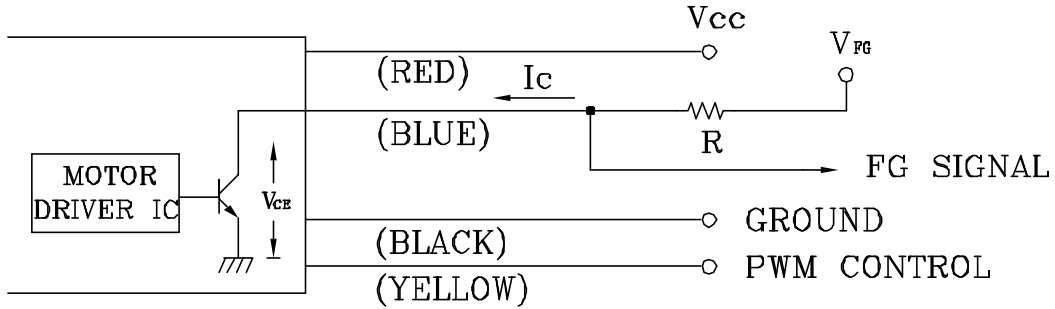
UNIT: mm(INCH)

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10. ROTATION DETECT (FG) SIGNAL:

1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



CAUTION: THE FG SIGNAL LEAD WIRE MUST BE KEPT AWAY FROM "+" LEAD WIRE & "-" LEAD WIRE.

2. SPECIFICATION:

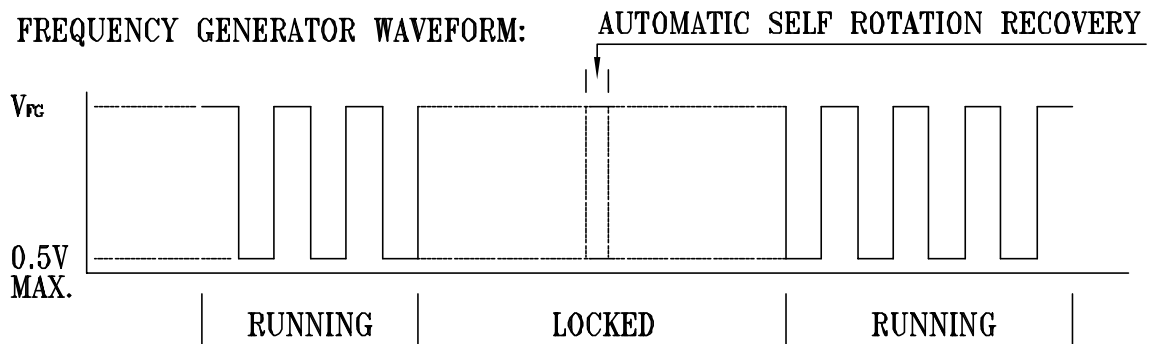
$V_{CE(sat)} = 0.5V \text{ MAX}$

$V_{FG} = 13.8V \text{ MAX}$

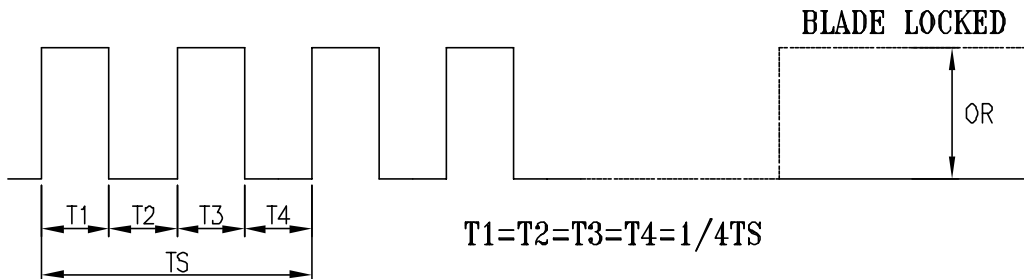
$I_c = 5mA \text{ MAX.}$

$R \geq V_{FG} / I_c$

3. FREQUENCY GENERATOR WAVEFORM:



FAN RUNNING FOR 4 POLES



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

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

*VOLTAGE LEVEL AFTER BLADE LOCKED

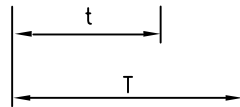
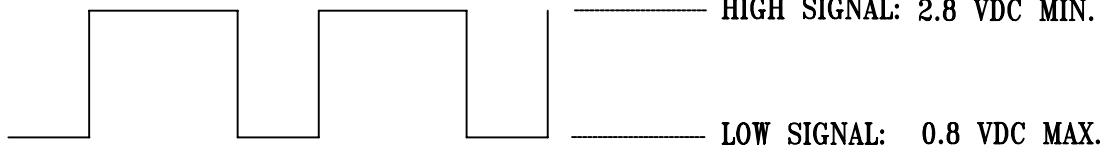
*4 POLES

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11. PWM CONTROL SIGNAL:

SIGNAL VOLTAGE RANGE: 0~20VDC



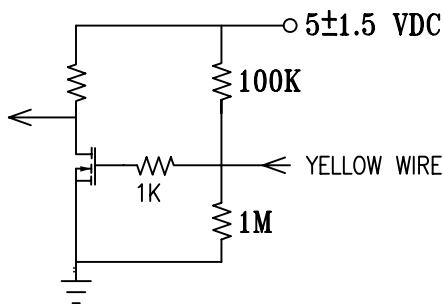
$$\text{DUTY CYCLE} = \frac{t}{T} * 100(\%)$$

- THE FREQUENCY FOR CONTROL SIGNAL OF THE FAN SHALL BE ABLE TO ACCEPT A 30 HZ~300 KHZ.
- THE PREFERRED OPERATING POINT FOR THE FAN IS 20K HZ.
- AT 100% DUTY CYCLE,THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- AT 0% DUTY CYCLE,THE ROTOR WILL STOP SPIN .
- WITH CONTROL SIGNAL LEAD DISCONNECTED,THE FAN WILL SPIN AT MAXIMUM SPEED.
- AT 20K HZ 30% DUTY CYCLE ,THE FAN WILL BE ABLE TO START FROM A DEAD STOP .

12. SPEED VS PWM CONTROL SIGNAL: (AT RATED VOLTAGE & PWM FREQUENCY=20KHZ)

DUTY CYCLE (%)	SPEED R.P.M. (REF.)	CURRENT (A) REF.
100	6000	0.35
0	0	0.01

13. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:



- 13-1. THE FAN SPEED WILL DEFAULT TO MAXIMUM WHEN THE SPEED CONTROLL INPUT IS LEFT UNCONNECTED.