SPECIFICATION FOR APPROVAL

Customer. DPC

Description. DC FAN

Part No. _____ REV. _____

Delta Model No. GFM0812DUB7S REV. 02

Sample Issue No. _____

Sample Issue Date. SEP.09 2016

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

APPROVED BY:

DATE :

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STATEMENT OF DEVIATION

****

■ NONE

□ DESCRIPTION :

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SPECIFICATION FOR APPROVAL

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Customer: DPC

Description: DC FAN

Customer P/N: REV:

Delta Model NO.: GFM0812DUB7S Delta safety model NO.: **GFM0812DU**

Sample Rev: 02 Issue NO:

Sample Issue Date: SEP.09 2016 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 VDC
OPERATION VOLTAGE	10.8 - 12.6 VDC
INPUT CURRENT (AVG.)	**9.0 (MAX. 10.8) A** **SAFETY CURRENT ON LABEL: 14.00A**
INPUT POWER (AVG.)	**108.0 (MAX. 129.6) W**
SPEED	FRONT 13800 ± 10% R.P.M. REAR 13200 ± 10% R.P.M.
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	5.398 (MIN. 4.858) M^3/MIN. 190.63 (MIN. 171.57) CFM
MAX.AIR PRESSURE (AT ZERO AIR FLOW)	146.04 (MIN. 118.29) mmH_2O 5.749 (MIN. 4.657) $inchH_2O$
ACOUSTICAL NOISE (AVG.)	82.5 (MAX. 86.5) dB-A
INSULATION TYPE	UL: CLASS A
VIBRATION (AT BASIC FREQUENCY)	OVERALL (RADIAL,AXIAL)<0.90 G

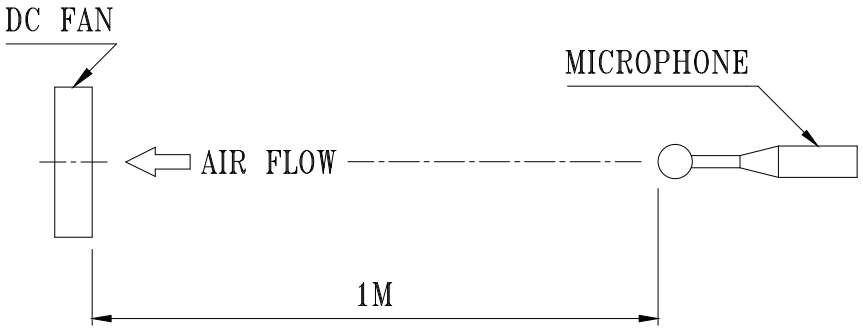
(continued)

PART NO:

DELTA MODEL: GFM0812DUB7S

INSULATION STRENGTH	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)
LIFE EXPECTANCE(L10) AT LABEL VOLTAGE	70,000 HOURS CONTINOUS OPERATION AT 40 °C WITH 15 ~ 65 %RH.
ROTATION	TWO FANS ROTATE IN COUNTER DIRECTIONS SHOWED IN THE DELTA MARK SIDE
OVER CURRENT SHUT DOWN	THE CURRENT WILL SHUT DOWN, WHEN ROTOR LOCKED AND FIXED.

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.

PART NO:

DELTA MODEL: GFM0812DUB7S

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 ---------- BALL BEARINGS

3-5. WEIGHT ---------- 450 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.

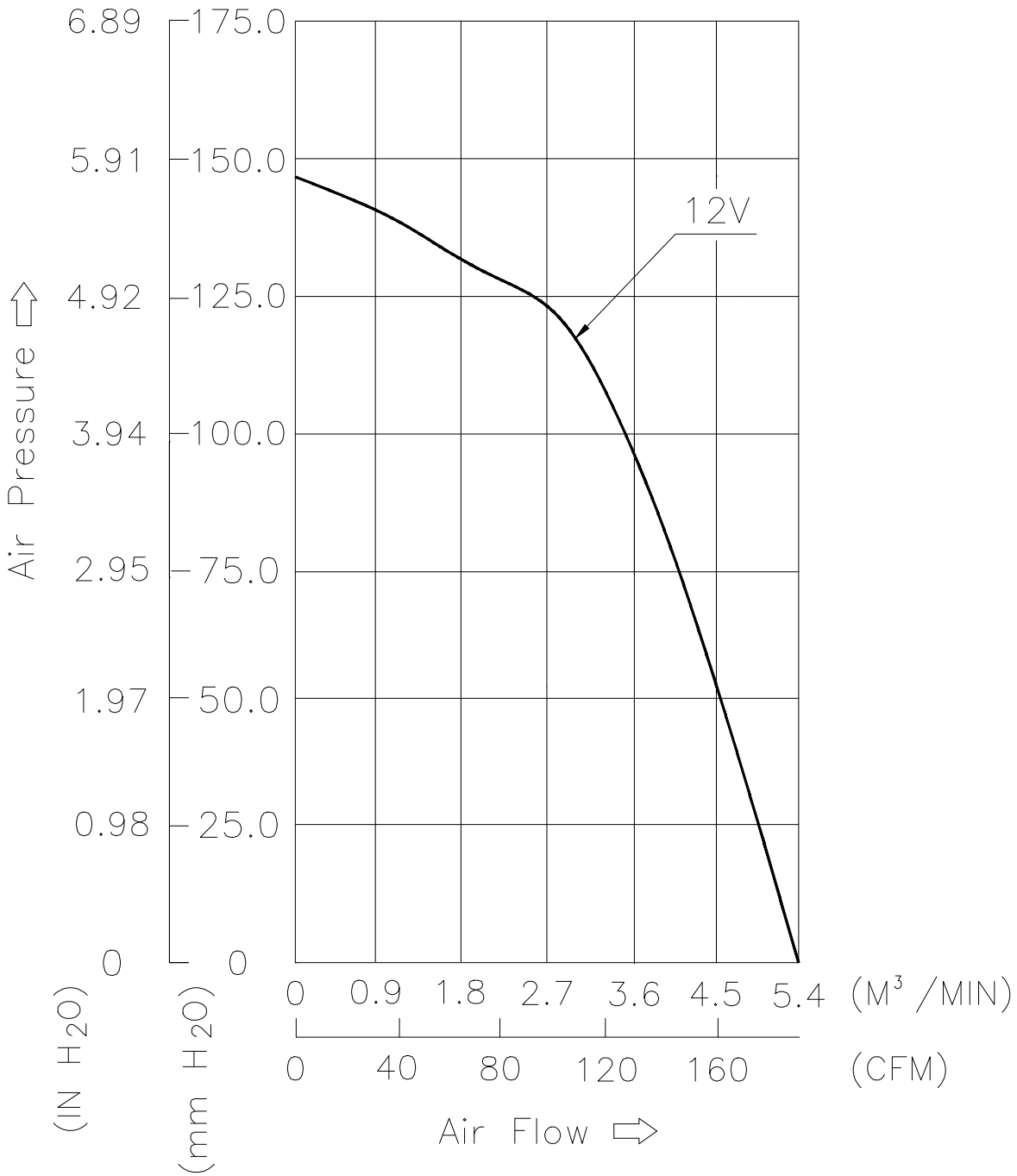
8. VIBRATION TEST

8-1. THE VIBRATION SPEC BE MEASURED BY FIXTURE WHICH WAS APPROVED BY DELTA THE FAN NEED BE 100% QUALIFIED BY VIBRATION TEST BEFORE SHIPPING. VIBRATION EQUIPMENT, PROCESS MUST BE APPROVED BY DELTA ENGINEERING.

PART NO:

DELTA MODEL: GFM0812DUB7S

9. P & Q CURVE:



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

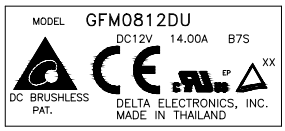
A00

PART NO:

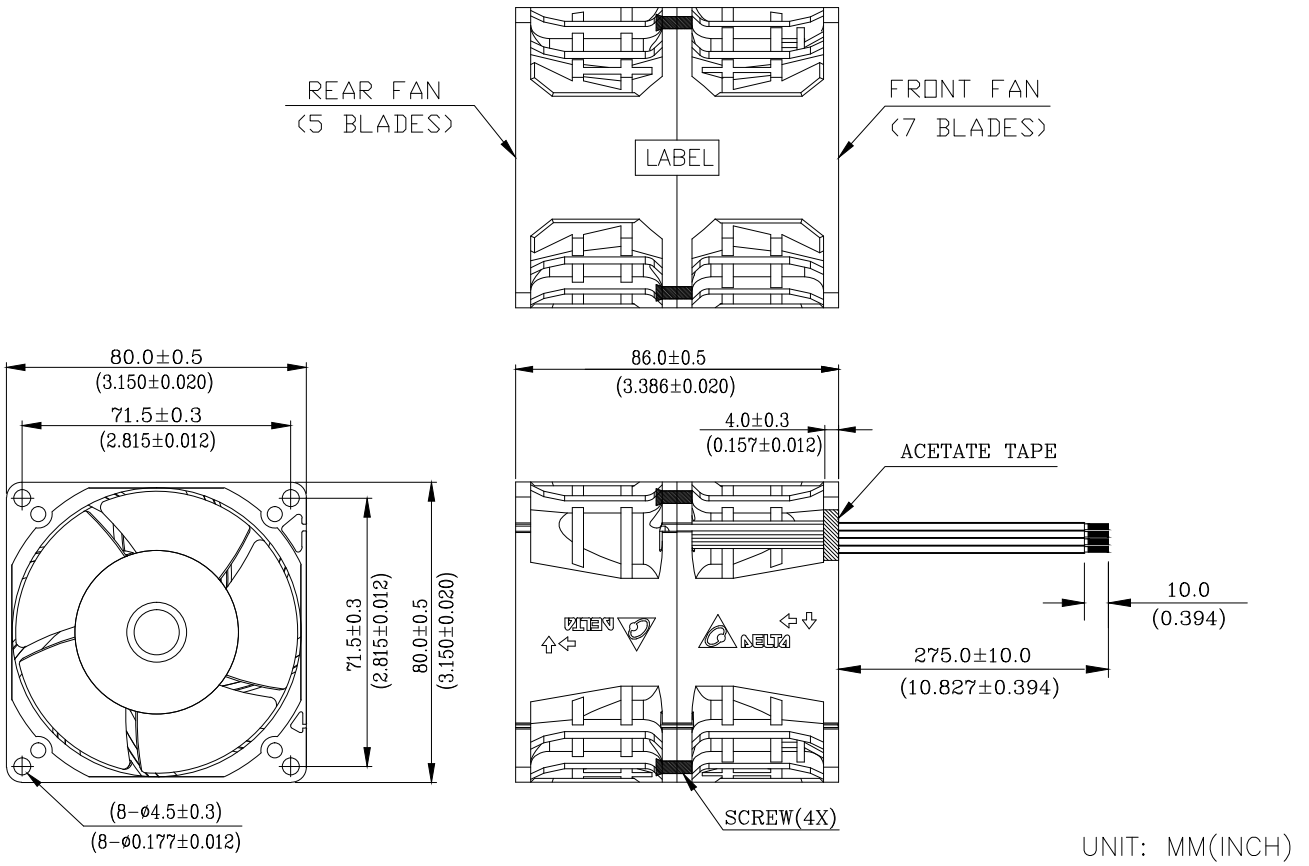
DELTA MODEL: GFM0812DUB7S

10. DIMENSION DRAWING:

LABEL:



OR

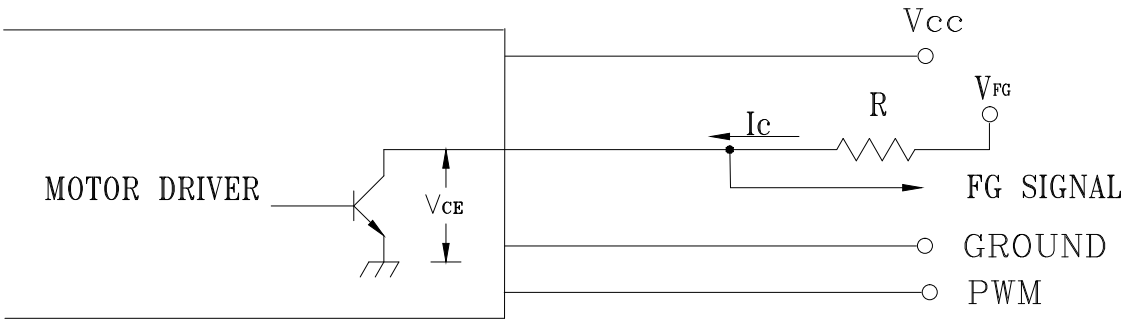


NOTES :

1. LEAD WIRE: UL1430 AWG#20 & UL 1061 AWG#28
   RED WIRE (+) (UL1430 AWG#20) ------ FRONT FAN
   BLACK WIRE (-) (UL1430 AWG#20) ----- FRONT FAN
   BLUE WIRE (F00) (UL1061 AWG#28) --- FRONT FAN
   YELLOW WIRE (PWM) (UL1061 AWG#28) ---- FRONT FAN
   ORANGE WIRE (+) (UL1430 AWG#20) --- REAR FAN
   GRAY WIRE (-) (UL1430 AWG#20) ----- REAR FAN
   WHITE WIRE (F00) (UL1061 AWG#28) --- REAR FAN
   GREEN WIRE (PWM) (UL1061 AWG#28) --- REAR FAN
2. THIS PRODUCT IS RoHS COMPLIANT.
3. SCREW: DELTA P/N 3109022300.
4. ACETATE TAPE (3244507700): SIZE 4*16mm, UL-94V0, BLACK

11. FREQUENCY GENERATOR (FG) SIGNAL:

11-1. INTERFACE CIRCUIT:



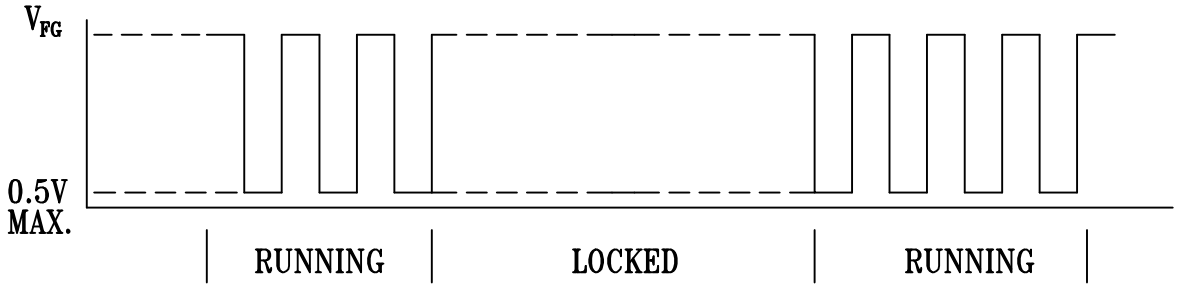
CAUTION:
THE LEAD WIRE OF RD SIGNAL CAN NOT TOUCH
THE LEAD WIRE OF POSITIVE OR NEGATIVE.

11-2. SPECIFICATION:

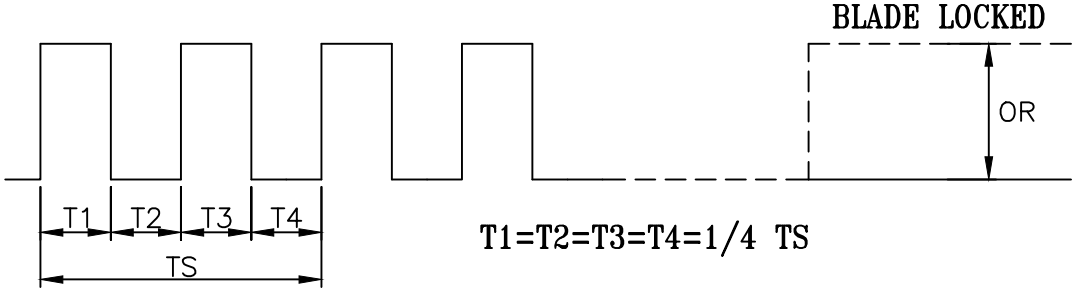
V_{CE}(sat)=0.5V MAX V_{FG}= 12.6V MAX

I_C =5mA MAX. $R \geq V_{FG}/I_C$

11-3. FREQUENCY GENERATOR WAVEFORM:



FAN RUNNING FOR 4 POLES

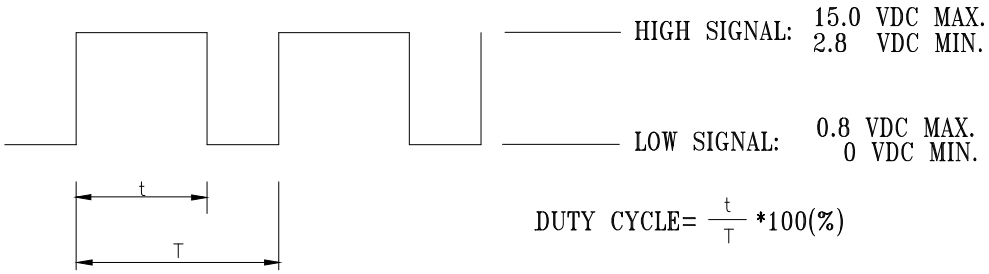


T1=T2=T3=T4=1/4 TS

N=R.P.M
TS=60/N(SEC)
*VOLTAGE LEVEL AFTER BLADE LOCKED
*4 POLES

12. PWM CONTROL SIGNAL:

SIGNAL VOLTAGE RANGE 0~15.0VDC

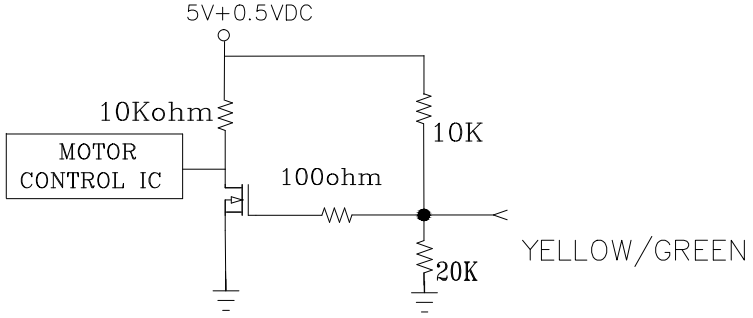


- THE PREFERRED OPERATING POINT FOR THE FAN IS 25K HZ.
- AT 100% DUTY CYCLE,THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- AT 0% DUTY CYCLE,THE ROTOR WILL STOP.
- WHEN CONTROL SIGNAL LEAD DISCONNECTED,THE FAN WILL SPIN AT MAXIMUM SPEED.
- AT 25K 3%~5% DUTY CYCLE ,THE FAN WILL BE ABLE TO START FROM A DEAD STOP.
- THE PWM CONTROL IS POSITIVE DUTY CYCLE.

13. SPEED VS PWM CONTROL SIGNAL: (AT RATED VOLTAGE & PWM FREQUENCY=25KHZ)

DUTY CYCLE (%)	SPEED R.P.M. (REF.)		CURRENT (A) TYP.
	FRONT	REAR	TOTAL
100	13800±10%	13200±10%	9.00 A
60	8550±10%	8200±10%	2.50 A
0	0	0	0.10 A

14. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:



14-1. THE FAN SPEED WILL DEFAULT TO MAXIMUM WHEN THE SPEED CONTROL INPUT IS LEFT UNCONNECTED.