SPECIFICATION FOR APPROVAL

Customer. _____

Description. DC FAN

Part No. _____ REV. _____

Delta Model No. GFC0812DW-CN REV. 00

Sample Issue No. _____

Sample Issue Date. AUG.01 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
****

Customer:

Description: DC FAN

Customer P/N: REV:

Delta Model NO.: GFC0812DW-CN Delta Safety Model NO.: GFC0812DW-SM00

Sample Rev: 00 Issue NO:

Sample Issue Date: 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	7.0 - 15.0 VDC
INPUT CURRENT	6.20 (MAX. 7.20) A SAFETY CURRENT ON LABEL : 7.20A
INPUT POWER	74.40 (MAX. 86.40) W
SPEED	FRONT 12500±10% R.P.M. REAR 11000±10% R.P.M.
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	4.96 (MIN. 4.46) M^3/MIN. 175.00 (MIN. 157.50) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	113.50 (MIN. 91.94) mmH_2O 4.47 (MIN. 3.62) $inchH_2O$
ACOUSTICAL NOISE (AVG.)	76.5 (MAX. 80.5) dB-A
INSULATION TYPE	UL:CLASS A

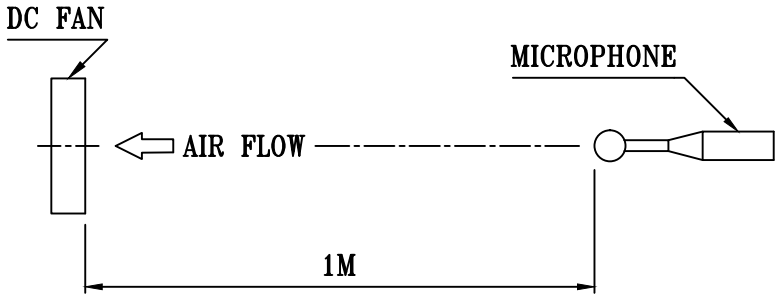
(continued)

PART NO:

DELTA MODEL: GFC0812DW-CN

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)
EXTERNAL COVER	OPEN TYPE
LIFE EXPECTANCE (L10) AT LABEL VOLTAGE	70000 HOURS CONTINUOUS OPERATION AT 40 °C WITH 15 ~ 65 %RH.
ROTATION	TWO FANS ROTATE IN COUNTER DIRECTIONS SHOWED IN THE NAME PLATE SIDE
LOCKED ROTOR SHUT DOWN	THE CURRENT WILL SHUT DOWN WHEN LOCKING ROTOR.
LEAD WIRE	UL 1061 -F- AWG #22 FRONT FAN(FIVE BLADES): RED WIRE POSITIVE(+) BLACK WIRE NEGATIVE(-) REAR FAN(FOUR BLADES): ORANGE WIRE POSITIVE(+) GRAY WIRE NEGATIVE(-) UL 1061 -F- AWG #28 FRONT FAN(FIVE BLADES): BLUE WIRE FREQUENCY(FOO) YELLOW WIRE SPEED CONTROL(PWM) REAR FAN(FOUR BLADES): GREEN WIRE FREQUENCY(FOO) WHITE WIRE SPEED CONTROL(PWM)

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 ANECHOIC CHAMBER WITH B & K SOUND LEVEL METER WITH MICROPHONE AT A DISTANCE OF ONE METER FROM THE FAN INTAKE.

3. MECHANICAL:

3-1. DIMENSIONS ---------- SEE DIMENSIONS DRAWING

3-2. FRAME ------ PLASTIC UL: 94V-0(RECYCLED MATERIAL NOT ALLOWED.)

3-3. IMPELLER ---- PLASTIC UL: 94V-0(RECYCLED MATERIAL NOT ALLOWED.)

3-4. BEARING SYSTEM ---------- FOUR BALL BEARINGS

3-5. WEIGHT ---------- 419 GRAMS

3-5-1. FRONT IMPELLER WEIGHT ---------- 61 GRAMS

3-5-2. REAR IMPELLER WEIGHT ---------- 60 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.

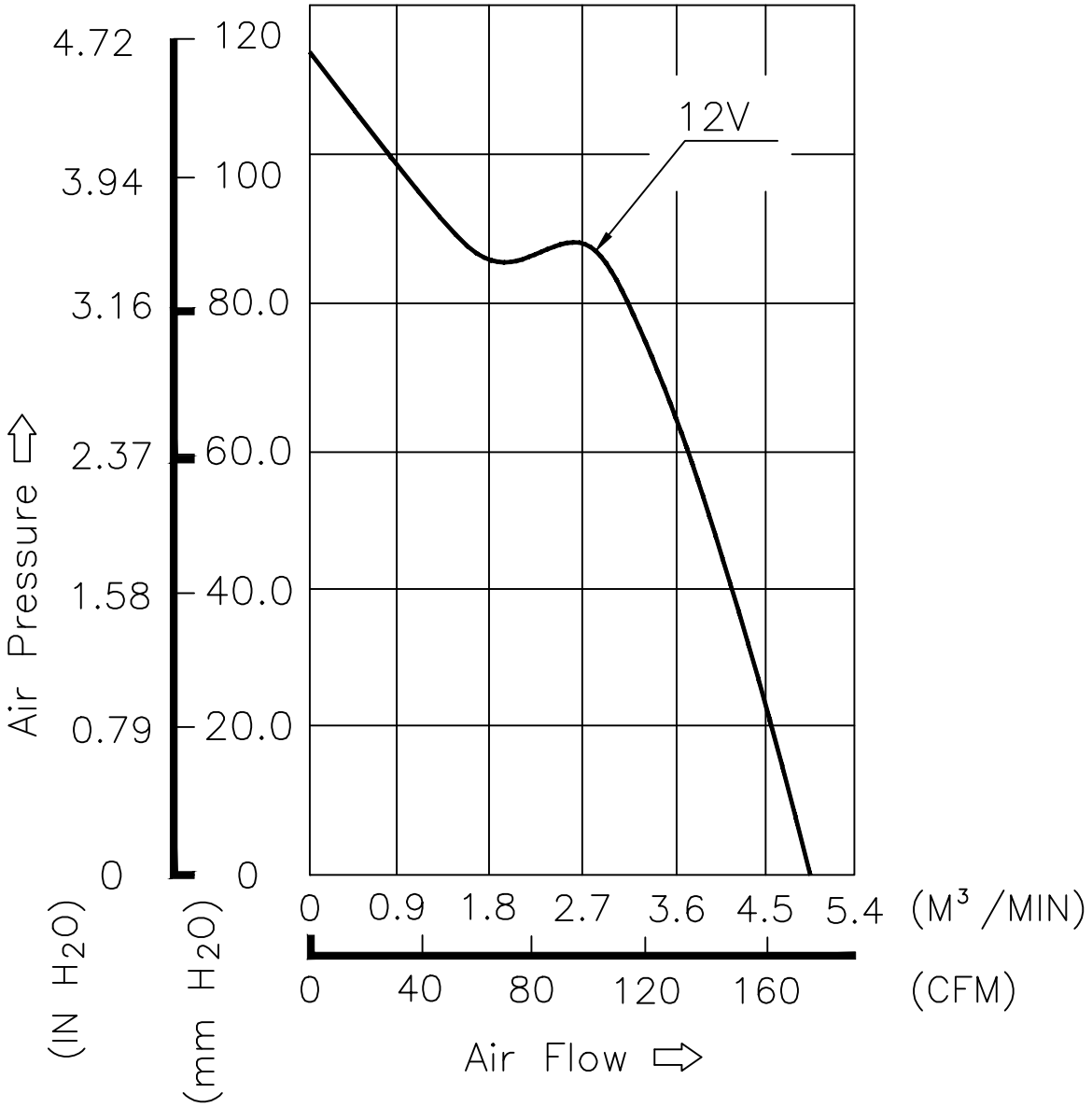
7. PRODUCTION LOCATION

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

PART NO:

DELTA MODEL: GFC0812DW-CN

8. P & Q CURVE:



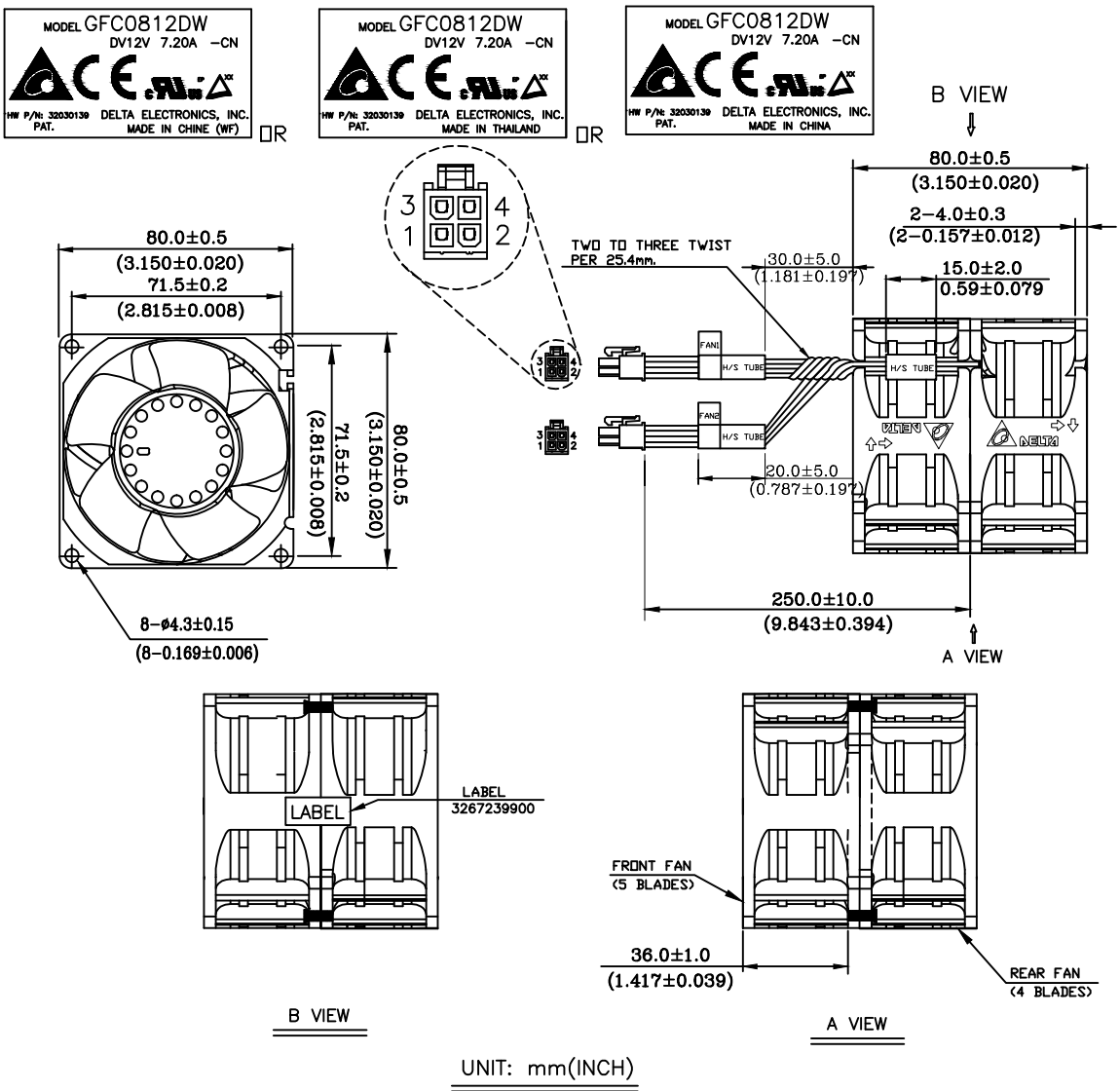
* TEST CONDITION: INPUT VOLTAGE ------- OPERATION VOLTAGE
TEMPERATURE -------- ROOM TEMPERATURE
HUMIDITY ------------ 65%RH

PART NO:

DELTA MODEL: GFC0812DW-CN

9. DIMENSION DRAWING:

LABEL:



UNIT: mm(INCH)

NOTES :

1. HOUSING: MOLEX 39-01-2045 OR EQUIVALENT
2. TERMINAL: MOLEX 39-00-0046 OR EQUIVALENT
3. LEAD WIRE:

FRONT FAN (5 BLADEZ)
UL1061 AWG#22
PIN1:RED WIRE POSITIVE(+)
PIN4:BLACK WIRE NEGATIVE(-)
UL1061 AWG#28
PIN2:YELLOW WIRE SPEED CONTROL(-PWM)
PIN3:BLUE WIRE FREQUENCY(-FOO)

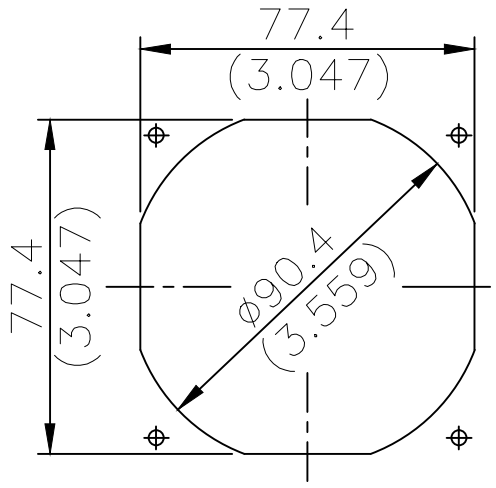
REAR FAN (4 BLADEZ)
UL1061 AWG#22
PIN1:ORANGE WIRE POSITIVE(+)
PIN4:GRAY WIRE NEGATIVE(-)
UL1061 AWG#28
PIN2:WHITE WIRE SPEED CONTROL(-PWM)
PIN3:GREEN WIRE FREQUENCY(-FOO)

4. THIS PRODUCT IS RoHS COMPLIANT

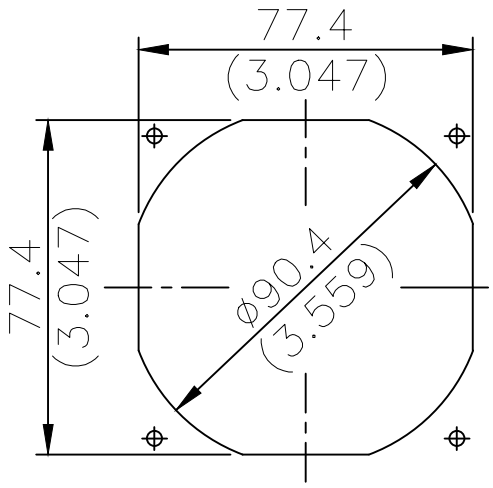
PART NO:

DELTA MODEL: GFC0812DW-CN

10. MOUNTING PANEL CUTOUT:



OUTLET SIDE



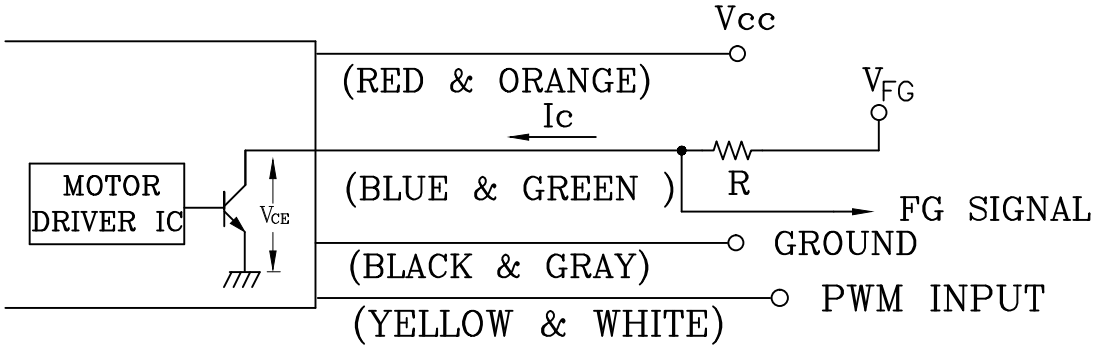
INLET SIDE

PART NO:

DELTA MODEL: GFC0812DW-CN

11. FREQUENCY GENERATOR (FG) SIGNAL:

11-1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



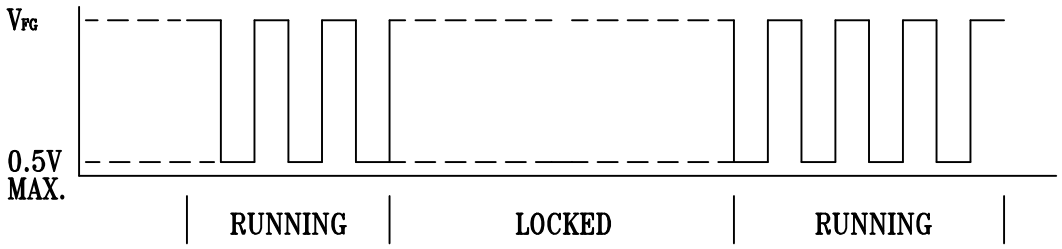
CAUTION: THE FG SINGAL LEAD WIRE MUST BE KEPT AWAY FROM "+" LEAD WIRE & "−" LEAD WIRE.

11-2. SPECIFICATION:

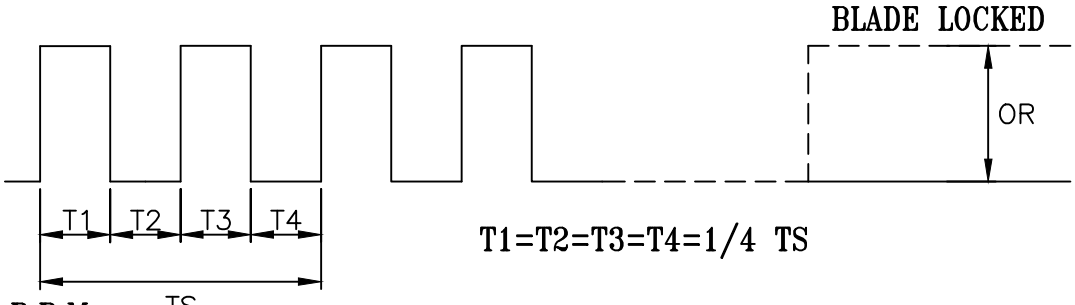
V_{CE} (sat)=0.5V MAX. V_{FG} =15.0VDC MAX.

I_C =10mA 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

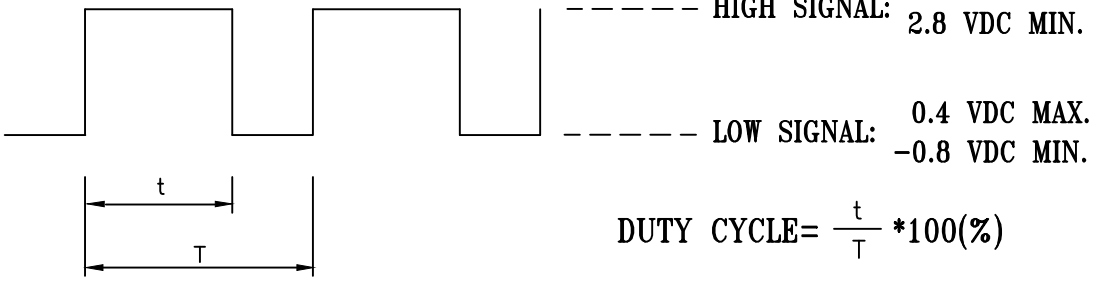
TS=60/N(SEC)

*VOLTAGE LEVEL AFTER BLADE LOCKED

*4 POLES

12. PWM CONTROL SIGNAL: (AT RATED VOLTAGE ; 25°C)

SIGNAL VOLTAGE RANGE:-0.8~15VDC

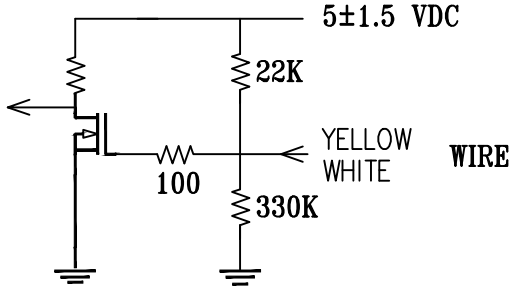


- THE PREFERRED OPERATING POINT FOR THE FAN IS 1KHZ.
- AT 12VDC 1KHZ 100% DUTY CYCLE, THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- AT 12VDC 1KHZ 0% DUTY CYCLE, THE ROTOR WILL SPIN AT STOP.
- WITH CONTROL SIGNAL LEAD DISCONNECTED, THE FAN WILL SPIN AT MAXIMUM SPEED.
- AT 12VDC 1KHZ 30% DUTY CYCLE, THE FAN WILL BE ABLE TO START FROM A DEAD STOP .

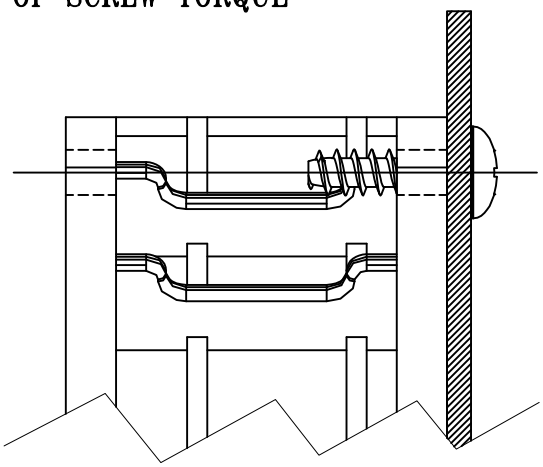
13. SPEED VS PWM CONTROL SIGNAL:
(AT RATED VOLTAGE & PWM FREQUENCY=1KHZ & TEMP=25DEG.C)

DUTY CYCLE (%)	SPEED R.P.M. (REF.)		CURRENT (A) TYP.
	FRONT	REAR	TOTAL
100	12500±10%	11000±10%	6.2A
50	6200±10%	5500±10%	1.1A
0	0	0	0.07A

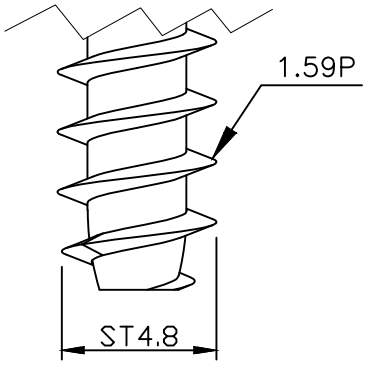
14. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:



5. FRAME TYPE OF SCREW TORQUE



MOUNTING DRAWING



SELF-TAPPING SCREW

MOUNTING HOLE DIAMETER	SCREW TYPE	SCREW SPEC.	RECOMMENDED MAX. TORQUE(kgf-cm)	
			FLANGE TYPE	RIB TYPE
ø4.3	SELF-TAPPING	ST4.8x1.59	5.5	7.5

NOTE:

1. FLANGE TYPE.
2. SELF-TAPPING SCREW ACCORDING TO JIS B 1122 TYPE 2.

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. lt 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 " 4.7μF or greater" capacitor to the fan externally when the application calls for using multiple fans in parallel, to avoid any unstable power.