



SPECIFICATION FOR APPROVAL

Customer : STD

Description : DC FAN

Customer Part No. _____ REV. : _____

Delta Model No. : PFR0848HE-02EM2 REV. : 02

Sample Issue No. : _____

Sample Issue Date : MAY.15 2020

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

APPROVED BY:

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STATEMENT OF DEVIATION

NONE

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Specification For Approval

Customer : STD

Description : DC FAN

Customer P/N :

rev. :

Delta model no. : PFR0848HE-02EM2

Delta Safety Model No.: PFR0848HE-02

Sample revision. : 02

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Quanti PFR

1. SCOPE:

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

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	48 VDC
OPERATION VOLTAGE	36.0 - 60.0 VDC
INPUT CURRENT(AVG.)	1.00 (MAX. 1.20) A SAFETY CURRENT ON LABEL : 2.70 A
INPUT POWER(AVG.)	48.00 (MAX. 57.60) W
SPEED	16800 ± 10% R.P.M.
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	3.681 (MIN. 3.313) M ³ /MIN. 129.98 (MIN. 116.98) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	181.41 (MIN. 146.94) mmH ₂ O 7.142 (MIN. 5.785) inchH ₂ O
ACOUSTICAL NOISE (AVG.)	74.0 (MAX. 78.0) dB-A
INSULATION TYPE	UL: CLASS A
INSULATION STRENGTH	10 MEG OHM MIN. AT 500 VDC (BETWEEN FRAME AND (+) TERMINAL)
DIELECTRIC STRENGTH	5 mA MAX. AT 500 VAC 50/60 Hz OME MINUTE, (BETWEEN FRAME AND (+) TERMINAL)

(continued)

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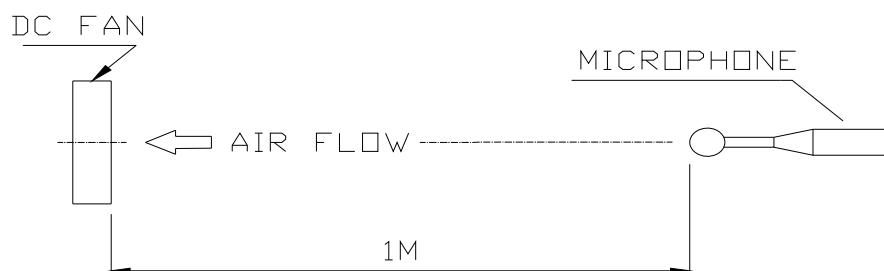
PART NO:

DELTA MODEL: PFR0848HE-02EM2

LIFE EXPECTANCE (L10) (AT LABEL VOLTAGE)	70,000 HOURS CONTINUOUS OPERATION AT 40 ° C WITH 15 ~ 65 %RH.
ROTATION	CLOCKWISE VIEW FROM NAME PLATE SIDE.
LOCK ROTOR 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. 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 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-----250 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.

6. RE OZONE DEPLETING SUBSTANCES:

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

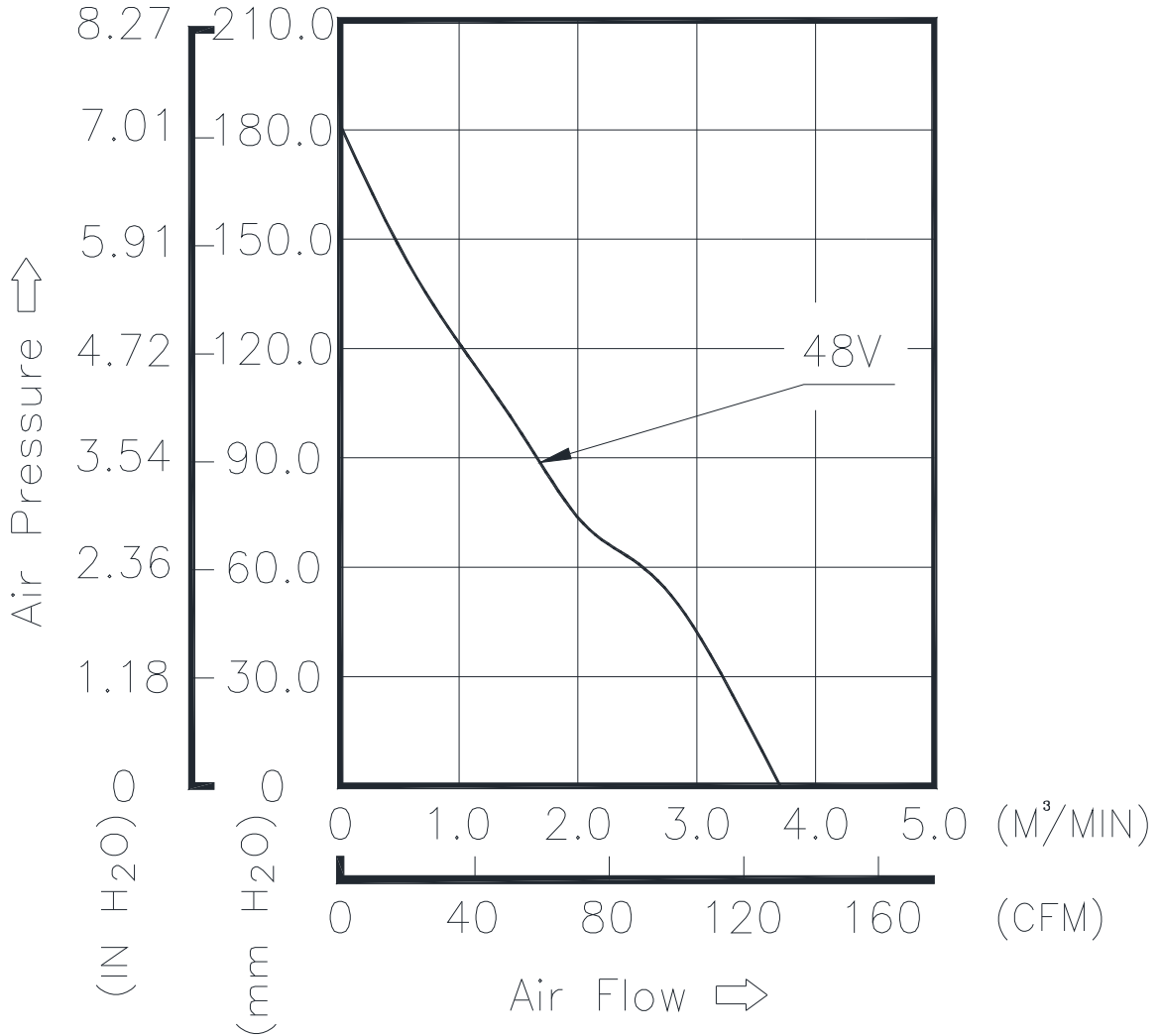
7. PRODUCTION LOCATION

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

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8. P & Q CURVE :



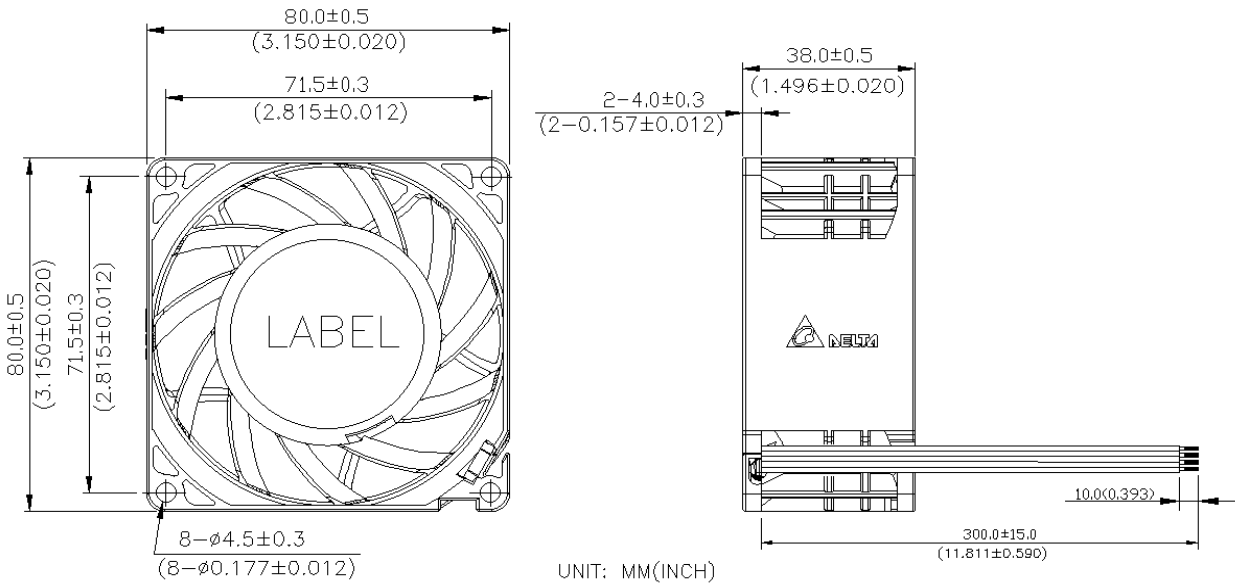
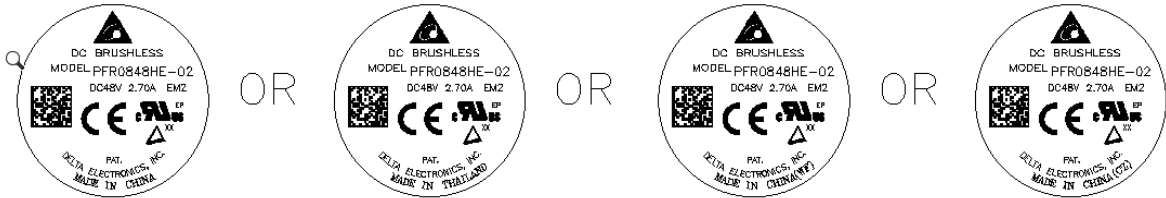
*TEST CONDITION: INPUT VOLTAGE-----OPERATION VOLTAGE
TEMPERATURE-----ROOM TEMPERATURE
HUMIDITY-----65%RH

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9. DIMENSION DRAWING:

LABEL:



NOTE:

- 1. CABLE WIRE: (UL1061 -F- AWG #22 & #28)
 - RED WIRE-----(+)--AWG#22
 - BLACK WIRE) ---- (-)---AWG#22
 - BLUE WIRE------(PWM)---AWG#28
 - YELLOW WIRE-----(F00)---AWG#28

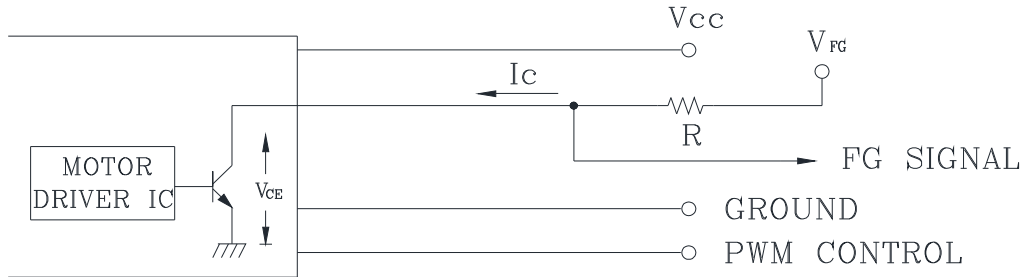
2. THIS PRODUCT IS RoHS COMPLIANT

PART NO:

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10. FREQUENCY GENERATOR (FG) SIGNAL:

10-1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



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

10-2. SPECIFICATION:

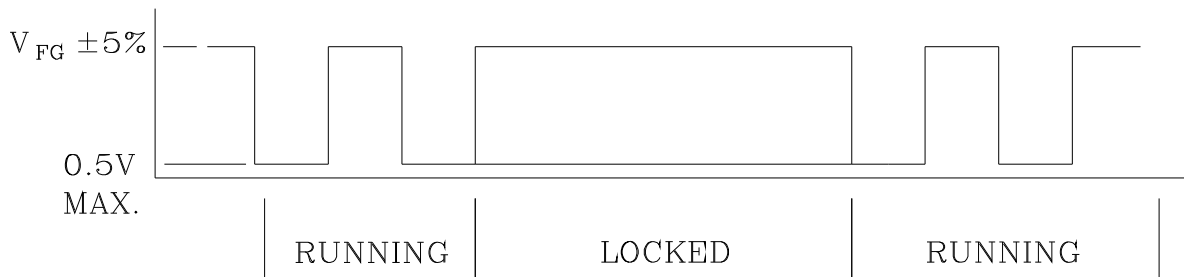
$$V_{CE(sat)} = 0.5V \text{ MAX.}$$

$$V_{FG} = 60.0VDC \text{ MAX.}$$

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

$$R \geq V_{FG}/I_C$$

10-3. FREQUENCY GENERATOR WAVEFORM:



FAN RUNNING FOR F00 OUTPUT



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

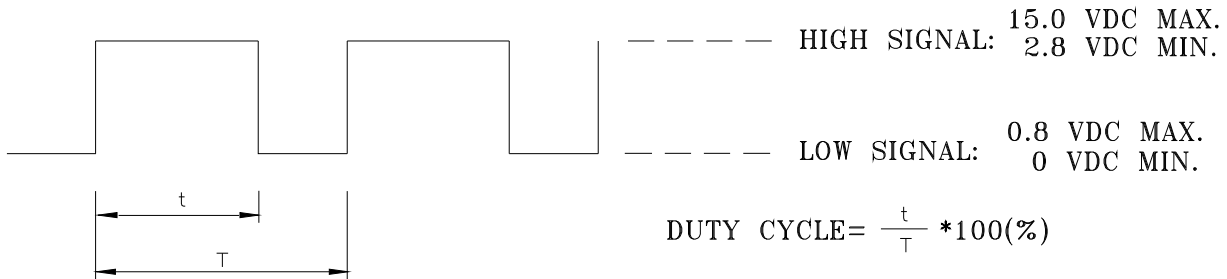
$$TS = 60/N(\text{SEC})$$

*VOLTAGE LEVEL AFTER BLADE LOCKED

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11. PWM CONTRON SIGNAL:
SIGNAL VOLTAGE RANGE: 0~15.0VDC



- THE PREFERRED OPERATING POINT FOR THE FAN IS 25KHZ.
- AT 100% DUTY CYCLE,THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- AT 0% DUTY CYCLE,THE ROTOR WILL SPIN AT MINIMUM SPEED.
- WITH CONTROL SIGNAL LEAD DISCONNECTED,THE FAN WILL SPIN AT MAXIMUM SPEED.
- AT DC48V 25KHZ 30% DUTY CYCLE ,THE FAN WILL BE ABLE TO START FROM A DEAD STOP.

12. SPEED VS PWM CONTROL SIGNAL: (AT RATED VOLTAGE ; 25 DEGREE C ; PWM SIGNAL WITH 5 VDC TTL OR CMOS LEVELS & 25 KHZ)

DUTY CYCLE (%)	SPEED R.P.M.	CURRENT (A) TYP.
100	16800±10%	1.00
50	9250±10%	0.25
0	1750±300	0.06

13. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:

