

DELTA ELECTRONICS, INC.  
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SPECIFICATION FOR APPROVAL  
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Customer:	STANDARD
Description:	DC BLOWER
Customer P/N:	REV:
Delta Model NO.: BFB1012HD-04D4L Delta safety model NO.: N/A	
Sample Rev: 02	Issue NO:
Sample Issue Date: June.06 2017	Quantity:

1. SCOPE:

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS BLOWER.

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	12 VDC
OPERATION VOLTAGE	9.0 - 16.0 VDC
INPUT CURRENT (AVG.)	<b>0.58 (0.69 MAX.) A</b>
INPUT POWER (AVG.)	6.96 ( 8.28 MAX. ) W
SPEED	4000±10% R.P.M.
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	0.50 ( MIN. 0.45) M <sup>3</sup> /MIN 18.3 ( MIN. 14.64) CFM
MAX.AIR PRESSURE (AT ZERO AIR FLOW)	40.6 ( MIN. 32.48 )mmH <sub>2</sub> O 1.62 ( MIN. 1.29)inchH <sub>2</sub> O
ACOUSTICAL NOISE (AVG.)	50.5 (MAX 52.5) dB-A(DISTANCE OF 1M)

(continued)

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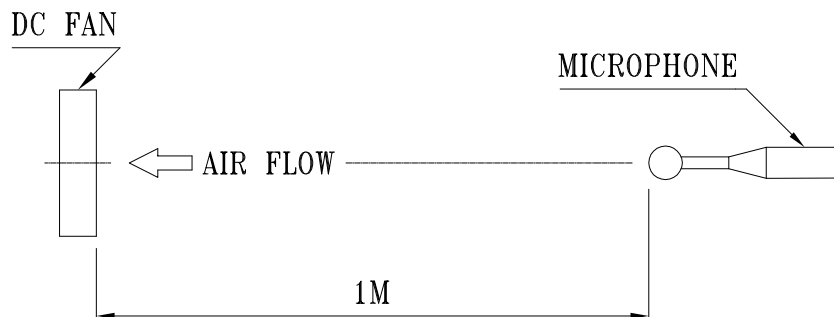
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INSULATION STRENGTH	10 MEG OHM MIN. AT 500 VDC (BETWEEN FRAME AND (+) TERMINAL)
DIELECTRIC STRENGTH	5 mA MAX. AT 500 VAC 50/60 Hz ONE MINUTE, (BETWEEN FRAME AND (+) TERMINAL)
LIFE EXPECTANCE(L <sub>10</sub> )	50,000 HOURS CONTINUOUS OPERATION AT 40°C with 15~65%RH.
ROTATION	COUNTERCLOCKWISE FROM AIR INTAKE SIDE

- 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.

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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 \_\_\_\_\_ 125 GRAMS(Ref.)

4. ENVIRONMENTAL:

- 4-1. OPERATING TEMPERATURE ..... -40 TO +85 DEGREE C
- 4-2. STORAGE TEMPERATURE ..... -40 TO +95 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.

5-3. OVER VOLTAGE PROTECTION

THE FAN WILL SHUT DOWN AT  $19 \pm 1$  V ; RESTART AT  $17 \pm 1$  V.

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 THAILAND.

8. THIS MODEL MUST MEET IP55 REQUEST COATING TO PROTECT WHOLE MOTOR ASSY

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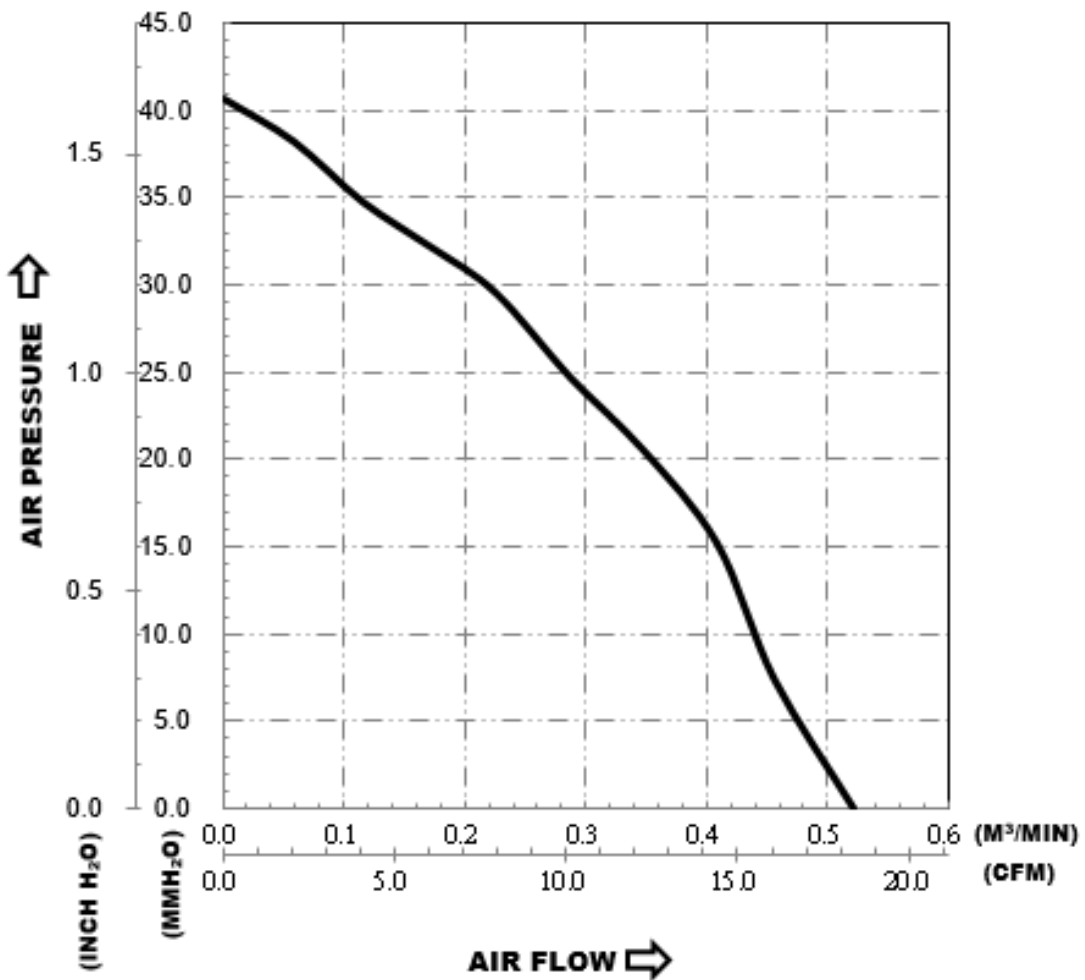
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8. P & Q CURVE:



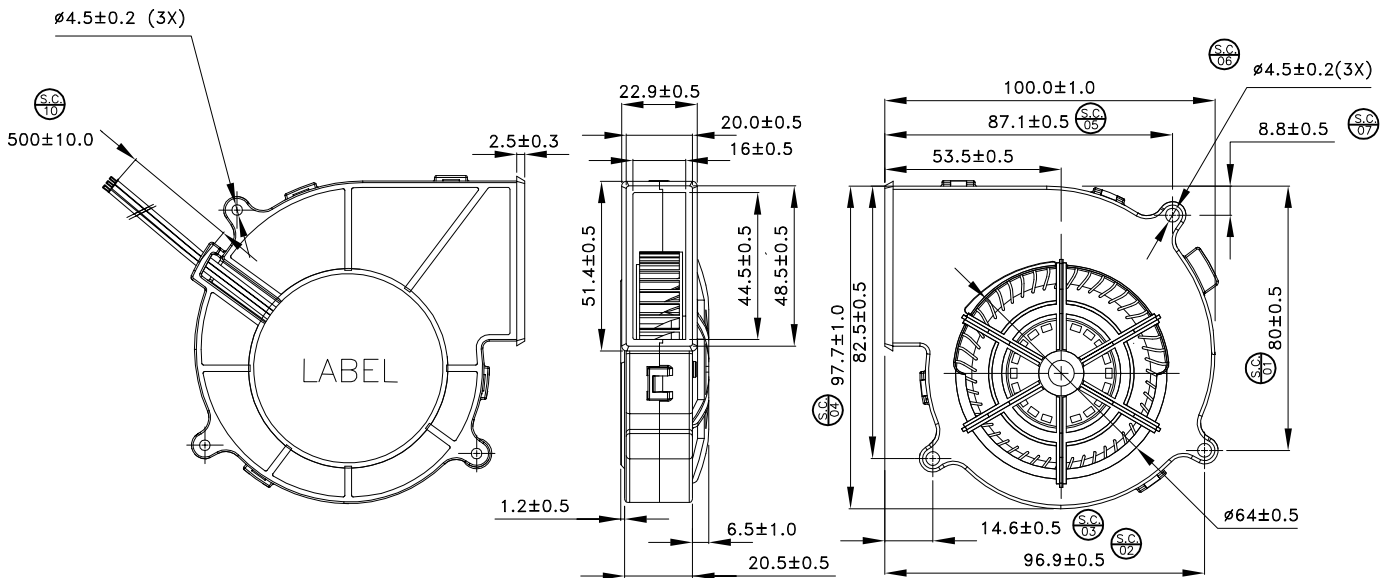
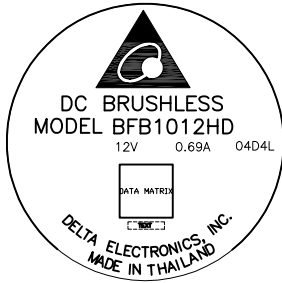
\* TEST CONDITION: INPUT VOLTAGE ——— OPERATION VOLTAGE  
TEMPERATURE ——— ROOM TEMPERATURE  
HUMIDITY ——— 65%RH

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9. Attach: DIMENSIONS DRAWING

LABEL:



DIMENSION UNIT: mm

NOTE.

1. THIS PRODUCT IS RoHS COMPLIANT.
2. LEAD WIRE FLRY-A AWG#22  
RED WIRE POSITIVE (+)  
BLACK WIRE NEGATIVE (-)  
WHITE WIRE PWM CONTROL

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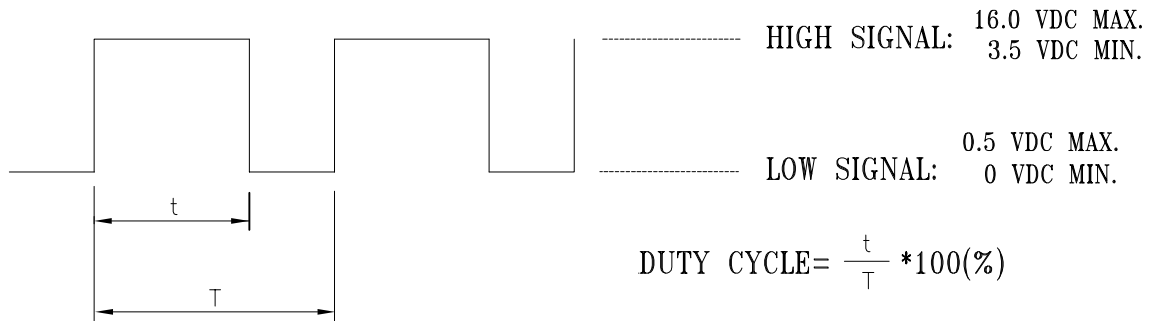
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10. PWM CONTROL SIGNAL:

10-1. PWM SPECIFICATION:

SIGNAL VOLTAGE RANGE: 0~16.0 VDC



THE FAN WILL BE CONTROLLED USING A PULSE WIDTH MODULATED (PWM) SIGNAL FROM THE ELECTRONICS WITHIN THE ENCLOSURE. THE FAN MUST ACCEPT A CMOS COMPATIBLE PWM SIGNAL WITH A FREQUENCY RANGE OF 90HZ TO 110HZ. THE PWM SIGNAL WILL HAVE A DUTY CYCLE FROM 0% TO 100%. A 100% DUTY CYCLE WILL BE DEFINED AS A CONTINUOUS LOGIC HIGH ( $V_{INH}$ ) AND WILL CAUSE THE FAN TO STOP SPINNING. A DUTY CYCLE OF 0% WILL BE DEFINED AS A CONTINUOUS LOGIC LOW ( $V_{INL}$ ) AND WILL CAUSE THE FAN TO STOP SPINING. A DUTY CYCLE AT 35%,65%,90%, THE FAN SPEED WILL BE 1950,4000,4000 RPM. IF THE PWM CONTROL WIRE IS OPEN,THE ROTOR WILL STOP SPINNING.

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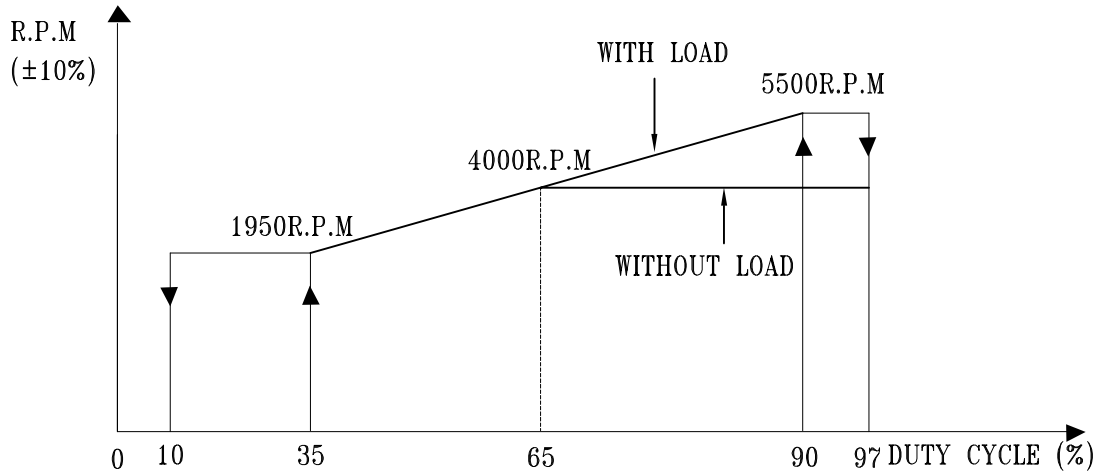
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12. SPEED VS PWM CONTROL SIGNAL : (DC:12V F:100HZ)



DUTY CYCLE (%)	SPEED R.P.M. WITHOUT LOAD
0~10	0
35	1950± 10%
65	4000± 10%
90	4000± 10%
97~100	0

DUTY CYCLE (%)	SPEED R.P.M. WITH LOAD
0~10	0
35	1950± 10%
65	4000± 10%
90	5500± 10%
97~100	0

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