

# PERFORMANCE SPECIFICATION

PRODUCT TITLE: DC BRUSHLESS FAN

MODEL NO: DC5010

**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? ELECTRICAL CHARACTERISTICS:**

ALL MEASUREMENTS PERFORMED AT 20~30? ROOM TEMPERATURE & 50~70% R.H. UNLESS OTHERWISE SPECIFIED.

| ITEM | DESCRIPTION               | UNIT               | SYMBOL | SPEC.  | CONDITION   |
|------|---------------------------|--------------------|--------|--|---|
| 1    | RATED VOLTAGE             | VOLTS              | V      | 12   |   |
| 2    | OPERATION VOLTAGE         | VOLTS              | V      | 10.2~ 13.8                                   |   |
| 3    | INPUT CURRENT             | AMP                | A      | 0.16 MAX                                     | AT RATED VOLTAGE                                  |
| 4    | INPUT POWER               | WATTS              | W      | 1.92 MAX                                     | AT RATED VOLTAGE                                  |
| 5    | ROTATION SPEED            | RPM                | RPM    | 5500 ±10%                                    | AT RATED VOLTAGE<br>FREE AIR                      |
| 6    | ACOUSTICAL NOISE<br>(AVG) | dB(A)              | dB(A)  | 32 ±10%                                      | DETAILS SEE ATTACHED PAGE.                        |
| 7    | MAX. AIR -FLOW            | CFM                | Q      | 12.21 ±10%                                   | TWO-CHAMBER METHODS<br>DETAILS SEE ATTACHED PAGE. |
| 8    | MAX. AIR -PRESSURE        | mmH <sub>2</sub> O | P      | 2.54 ±10%                                    | TWO-CHAMBER METHODS<br>DETAILS SEE ATTACHED PAGE. |
| 9    | STARTING VOLTAGE          | VOLTS              | V      | 7  | AT RATED VOLTAGE                                  |
| 10   | INSULATION<br>RESISTANCE  | MEG.<br>OHM        | MO     | 10MO MIN.<br>AT 500V DC                      | BETWEEN FRAME AND<br>(+)LEAD WIRE .               |
| 11   | DIELECTRIC STRENGTH       | MILLI-AMP          | mA     | 5mA MAX.<br>AT 500V AC 60Hz.<br>FOR 1 MINUTE | BETWEEN FRAME AND<br>(+)LEAD WIRE .               |

| ITEM | DESCRIPTION        | SPEC.                         |   |
|------|--------------------|-------------------------------|---|
| 12   | ROTATION           | CW VIEW FROM NAME P LATE SIDE |   |
| 13   | AIR-FLOW DIRECTION | AIR INTAKE OVER THE STRUTS    |   |
| 14   | INSULATION RANK    | UL: CLASS A                   |   |
| 15   | LIFE EXPECTANCY    | 50000 HOURS CONTINUOUS        | ? |
|      |                    |                               |   |

? LIFE IS DEFINED AS THE TIME MOTOR SPEED DECREASED MORE THAN 30% COMPARED WITH INITIAL VALUE.

### 3? MECHANICAL

- 3-1. DIMENSIONS ----- SEE SECTION 8
- 3-2. FRAME ----- PLASTIC PBT UL: 94V-0 RATING + FIBRE GLASS.
- 3-3. FAN BLADE ----- PLASTIC PBT UL: 94V-0 RATING + FIBRE GLASS.
- 3-4. BEARING SYSTEM ----- BALL BEARING
- 3-5. WEIGHT ----- 20 GRAMS
- 3-6. LEAD WIRE ----- 1007 AWG # 26
  - + POSITIVE .....RED
  - NEGATIVE .....BLACK

### 4? ENVIRONMENTAL:

- 4-1. OPERATING TEMPERATURE----- -10 TO +70?
- 4-2. STORAGE TEMPERATURE----- -40 TO +75?
- 4-3. DROP TEST
  - IN MINIMUM PACKAGING CONDITION FAN WITHSTANDS EACH ONE DROP OF THREE FACES FROM 30CM DISTANCE HEIGHT ONTO 10mm THICKNESS OF WOODEN BOARD.
- 4-4. VIBRATION TEST
  - FREQUENCY: 10- 55Hz AMPLITUDE: 4MM
  - X , Y , Z DIRECTION EACH FOR 1 HR.

#### 4-5. SHOCK TEST

APPLY PEAK ACCELERATION 50g AND KEEP DURATION OF THE PULSE FOR 11ms ( HALF SINE WAVE ) .

#### 5? PROTECTION:

##### 5-1. POLARITY PROTECTION

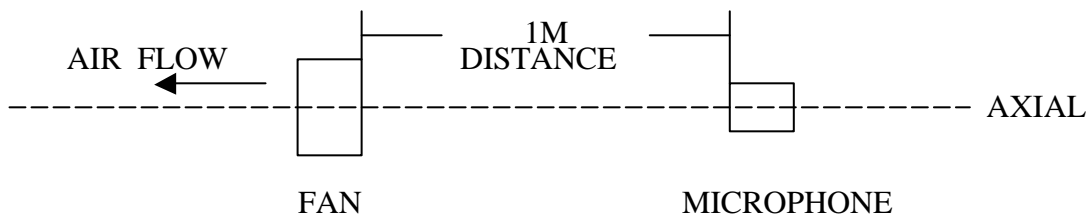
BUILT-IN ELECTRONIC CIRCUIT PROTECTS THE FAN AGAINST REVERSE CONNECTION OF POSITIVE AND REVERSE LEADS.

##### 5-2. LOCKED ROTOR PROTECTION

IMPEDANCE OF MOTOR COIL WINDING PROTECTS MOTOR FROM FLAMING IN THE CONDITION OF 72 Hrs LOCKED ROTOR AT RATED VOLTAGE.

#### 6? ACOUSTICAL NOISE:

##### 6-1. MEASUREMENT SET-UP



6-2. MEASUREMENT PERFORMED IN ANECHOIC TEST CHAMBER UNDER FREE AIR CONDITION.

6-3. CHAMBER BACKGROUND NOISE 17dB MAX.

6-4. READING TAKEN FROM SPECTRUM ANALYZER.

6-5. NOISE DISTRIBUTION CURVE SEE ATTACHED PAGE.

#### 7? STATICS PRESSURE VS AIR FLOW CURVE:

MEASURED PER TWO CHAMBER METHOD