

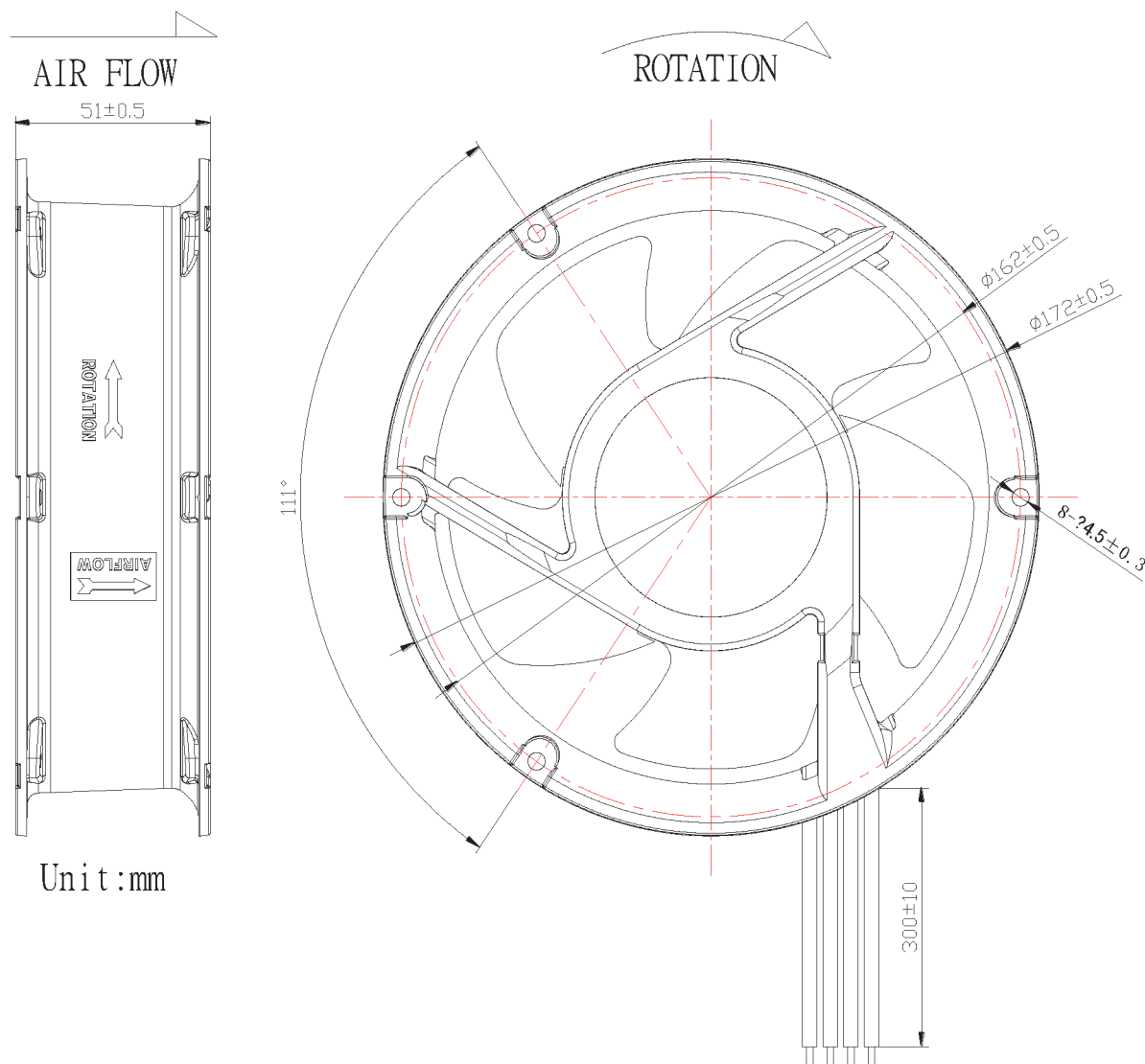


规格书

SPECIFICATION

MODEL
K-DC15051-A24-52

1. DIMENSION DRAWING



NOTE:

1 LEAD WIRES: WIRES UL 1007 #22 AWG

BLACK WIRE----- (-)

RED WIRE----- (+)

YELLOW WIRE----- (FG)

BLUE WIRE----- (PWM)

2.SCOPE:

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

3.CHARACTERISTICS:

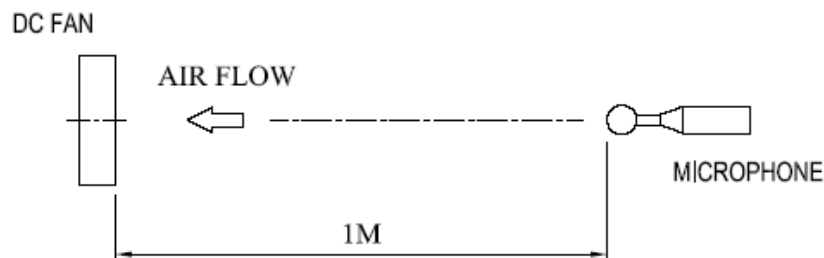
(AT Ta=25°C)

ITEM	SPEC	
3-1. RATED VOLTAGE	24	VDC
3-2. OPERATION VOLTAGE	14 ~ 26.4	VDC
3-3. INPUT CURRENT	2.50 ≤ (UL 3.25)	A
3-4. INPUT POWER	60.0 ≤	W
3-5. SPEED	5200 ± 10%	R.P.M
3-6. SPEED CONTROL TYPE	PWM CONTROL	
3-7. SIGNAL OUTPUT	FREQUENCY GENERATOR (FG)	
3-8. MAX. AIR FLOW	10.70 (9.63 Min)	m ³ /min
(AT ZERO STATIC PRESSURE)	378.0 (340.2 Min)	CFM
3-9. MAX. AIR PRESSURE	34.6 (28.0 Min)	mm-H ₂ O
(AT ZERO FLOW)	1.36 (1.1 Min)	inch-H ₂ O
3-10. ACOUSTICAL NOISE	63.0 (68.0 Max)	dB-A

3-11. INSULATION RESISTANCE	10MEGA OHM MIN. AT 500VDC (BETWEEN FRAME AND (+) TERMINAL)
3-12. DIELECTRIC STRENGTH	5mA MAX. AT 500 VAC 60Hz ONE MINUTE, (BETWEEN FRAME AND (+) TERMINAL)
3-13. LIFE EXPECTANCE	L10 LIFE EXPECTATION 70,000 HOURS AT 40°C ROOM, HUMIDITY 15%~65%RH OPERATE AT RATED VOLTAGE
3-14. ROTATION	COUNTER-CLOCKWISE VIEWED FROM INLET
3-15. AIR FLOW DIRECTION	AIR EXHAUST OVER STRUT
3-16. INSULATION CLASS	UL : CLASS A

NOTE:

- A. THE VALUES WRITTEN IN PARENTHESIS,(), ARE LIMITED SPEC.
B. ACOUSTICAL NOISE MEASURING CONDITION:



NOISE IS MEASURED AT RATED VOLTAGE IN FREE AIR IN ACOUSTICAL CHAMBER WITH LARSON DAVIS TYPE 824S SOUND LEVEL METER

- C. THE AIR FLOW AND AIR PRESSURE MEASURED AT RATED VOLTAGE IN DOUBLE CHAMBE IS MEASURED ACCORDING TO AMCA STANDARD 210-99

4.MECHANICAL

4-1. DIMENSION	SEE DIMENTION DRAWING
4-2. FRAME	DIE-CAST ALUMINUM PAINTED BLACK
4-3. FAN BLADE	THERMOPLASTIC BLACK /PA66+25% GF OF UL 94-V0
4-4. BEARING SYSTEM	TWO BALL BEARINGS
4-5. WEIGHT	590g

5.ENVIRONMENT

5-1. OPERATION TEMPERATURE -10 TO +70°C

NOTICE:DEW CONDENSATION MAY DAMAGE THE OPERATION OF THE FANS.
SHOULD KEEP THE FANS OUT OF DEW CONDENSATION DURING STORAGE
OR OPERATION

5-2. STORAGE TEMPERATURE -40 TO +75°C

5-3. OPERATION HUMIDITY 5 TO 90% RH

5-4. STORAGE HUMIDITY 5 TO 95% RH

5-5. DROP TEST

IN MINIMUM PACKAGING CONDITION FAN WITHSTAND EACH ONE DROP OF THREE
FACES FROM 30cm DISTANCE HEIGHT ONTO 10mm THICKNESS OF WOODEN BOARD

5-6. VIBRATION TEST

SINEWAVE DISPLACEMENT AMPLITUDE:0.75mm(EQUIVALENT 10G)

FREQUENCY RANGE:10-55Hz/30SEC 55-10Hz/30SEC.

LINEAR SCANNING 120 CYCLE

ENDURANCE TIME PER AXIS:2 HOURS

ORIENTATION:X,Y,Z

5-7. SHOCK TEST

APPLY PEAK ACCELERATION 50g AND KEEP DURATION OF THE PULSES
FOR 11MS(HALF SINEWAVE)

5-8. ROHS COMPLIANCE-----SEE ROHS STANDARD

6.PROTECTION

6-1. LOCKED ROTOR PROTECTION ☒ YES ☐ NO

IMPEDANCE OF MOTOR WINDING PROTECTS MOTOR FROM DAMAGE IN
72 HOURS OF LOCKED ROTOR CONDITION AT THE REATED VOLTAGE

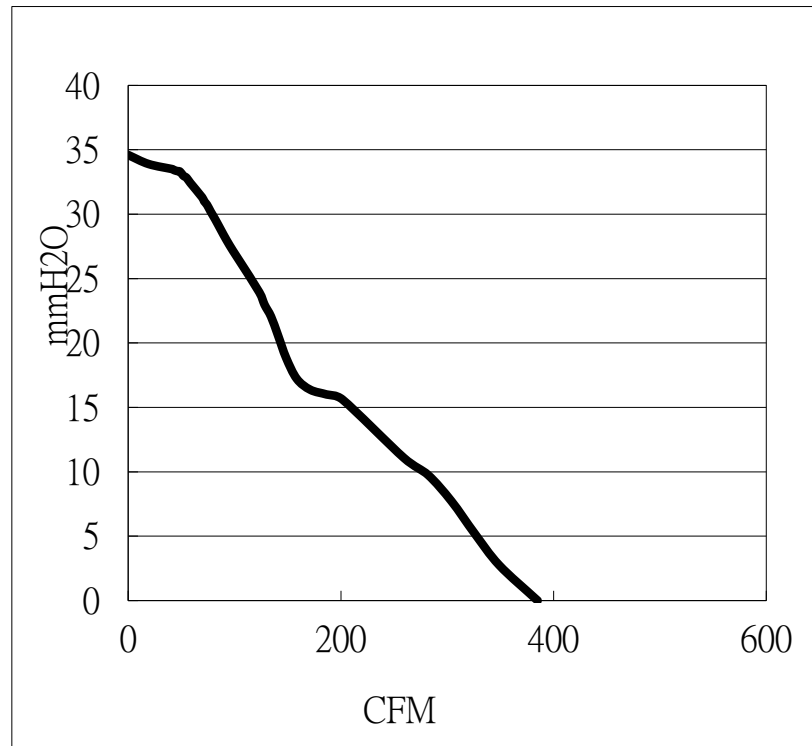
6-2. POLARITY PROTECTION ☒ YES ☐ NO

BE CAPABLE OF WITHSTANDING IF REVERSE CONNECTION FOR POSITIVE
AND NEGATIVE LEADS

6-3. AUTO-RESTART PROTECTION ☒ YES ☐ NO

WHEN THE FAN MOTOR IS LOCKED THE DEVICE WILL CUT OFF THE DRIVE CURREN
FOR A WHILE AND RESTART AUTOMATICALLY LATER. IF THE LOCK SITUATION IS
CONTINUED THE DEVICE WILL WORK AS THE ABOVE SITUATION REPEATLY TILL TI
LOCK IS RELEASED.

7. P&Q CURVE



*TEST CONDITION

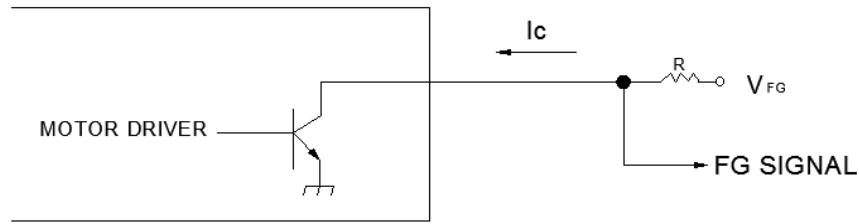
INPUT VOLTAGE ----- OPERATION VOLTAGE

TEMPERATURE ----- ROOM TEMPERATURE

HUMIDITY ----- 65%RH

9. FREQUENCY GENERATOR (FG) SIGNAL

9-1. SCHEMATIC



CAUTION:

THE LEAD WIRE OF FG SIGNAL CAN NOT TOUCH
THE LEAD WIRE OF POSITIVE OR NEGATIVE

9-2. SIGNAL SPECIFICATION:

OUTPUT TYPE: OPEN COLLECT

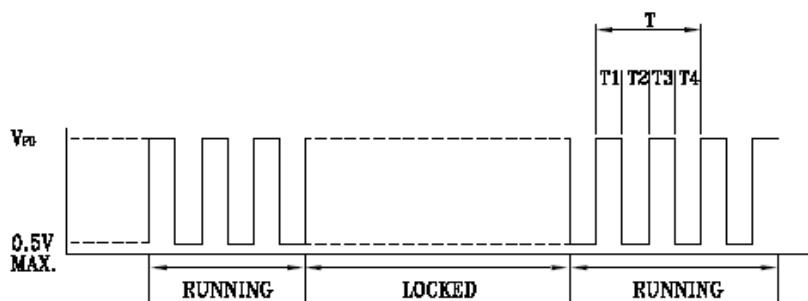
V_{FG} MAXIMUM VOLTAGE = 12V

I_c MAXIMUM CURRENT = 5mA

LOW LEVEL VOLTAGE = 0.5V MAX

$R \geq V_{FG} / I_c$

9-3 FREQUENCY GENERATOR WAVEFORM



$$T = T1 + T2 + T3 + T4 = 60/N(\text{Sec}) \quad N: \text{SPEED (RPM)}$$

Application Notice :

1. CROWN 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 CROWN 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. It 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. CROWN 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.

10. PWM CONTROL

10-1 SIGNAL DESCRIPTION

1. CONTROL SIGNAL: PWM CONTROL
2. SIGNAL TYPE:
INPUT HIGH LEVEL VOLTAGE: MIN. >2.6V , MAX.<5V
INPUT LOW LEVEL VOLTAGE: MAX.<0.5V
3. PWM FREQUENCY RANGE:1KHZ~100KHZ
4. MAX. SINK CURRENT: 8mA

10-2. FAN SPEED CONTROL

1. INPUT VOLTAGE: 5 VDC
2. PWM FREQUENCY : 25 KHZ
3. THE FAN SPEED SHOULD RUN AT FULL SPEED GIVEN
PWM 100% DUTY CYCLE INPUT.
4. THE FAN SPEED SHOULD RUN AT ZERO SPEED GIVEN
AT PWM 0 % DUTY CYCLE INPUT.
5. THE FAN WILL GO TO FULL SPEED WHEN IF THE CONTROL
SIGNAL IS DISCONNECTED.

10-3. PWM DUTY VS RPM CURVED VS PWM CONTROL CHART.

Duty (%)	0%	9%	50%	75%	90%	100%
Speed R.P.M (REF)	0 REF	1000 REF	3300 \pm 25%	4500 \pm 20%	5500 \pm 10%	5500 \pm 10

