

## SPECIFICATION FOR APPROVAL

**Customer** : WBC  
**Description** : DC FAN  
**Dimension** :  $\Phi 37.6 \times 10.5 \text{mm}$   
**Model No.** : AD4010B05M-P09  
**Sample No.** : 22102607  
**Spec No.** : 202210280001  
**Revision** : 2  
**Issue Date** : 2022.11.01

<b>WE APPRECIATED FOR THE OPPORTUNITY OF SAMPLES APPROVAL, PLEASE SEND THIS PAGE BACK TO US FOR FILING AFTER AUTHENTICATION.</b>		<b>Customer APPD.</b>	
		Date:	
<b>DAWN.</b>	<b>CHKD.</b>	<b>APPD.</b>	
Duan Baojin	Zhang Chunbao	Yao Xiaolin	

# 1.SPECIFICATION

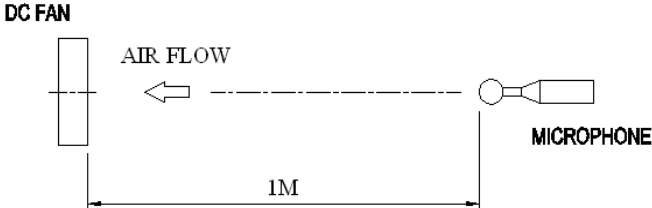
## 1-1.MECHANICAL CHARACTERISTICS

MOTOR DESIGN	DC brushless 4 pole motor design
BEARING SYSTEM	Two Ball Bearing System
MATERIAL OF FRAME	Thermoplastic PBT of UL 94V-0
MATERIAL OF FAN BLADE	Thermoplastic PBT of UL 94V-0
DIRECTION OF ROTATION	Counter-clockwise viewed from front of fan blade
WEIGHT	9.3g

## 1-2. ELECTRICAL CHARACTERISTICS

RATED VOLTAGE	5 VDC
INPUT CURRENT	0.13A(MAX:0.15A)
CURRENT ON LABEL	0.35A
INPUT POWER	0.65W(MAX:0.75W)
OPERATING VOLTAGE RANGE	2.5~5.75 VDC
STARTING VOLTAGE	2.5VDC(At 25°C,POWER ON/OFF)
OPERATING TEMPERATURE/ HUMIDITY RANGE	-10°C ~ +70°C / 15% ~ 65%RH
STORAGE TEMPERATURE/ HUMIDITY RANGE	-40°C ~ +70°C / 15% ~ 65%RH

## 2.PERFORMANCE CHARACTERISTICS

RATED SPEED(RPM)	5260±600RPM	(At 25°C ,After 10 minutes)
AIR FLOW	5.55CFM	Min:5.0CFM
STATIC PRESSURE	3.59mmH2O	Min:3.23mmH2O
SOUND PRESSURE NOISE	30.2dB(A)	Max:31.7dB(A)
	ACOUSTICAL NOISE MEASURING CONDITION: 	
INSULATION RESISTANCE PLASTIC FRAME	Min. 10MΩ at 500VDC between frame and (+) terminal.	
DIELECTRIC STRENGTH	Max. 5mA at 500VAC 60Hz 1 minute between frame and (+) terminal.	
LIFE EXPECTANCY(L10) L10	70,000 Hours, at 40°C, 15%~65%RH	
PROTECTION	✓ Automatic Restart	
	✓ Polarity Protection	
RoHS-Free Pb	RoHS compliance	
IP Protection Grade	(No) IP Protection	

## 3. Safety Approval

SAFETY	UL & CUL	CE	TUV
NO.	E343773	✓	✓

4.PERFORMANCE CURVES

(inch-H2O)

0.16

0.13

0.09

0.06

0.03

0.00

(mm H<sub>2</sub>O)

4.00

3.00

2.00

1.00

0.00

0.00

1.00

2.00

3.00

4.00

5.00

6.00 (CFM)

P&Q

(CMM)

0.00

0.03

0.07

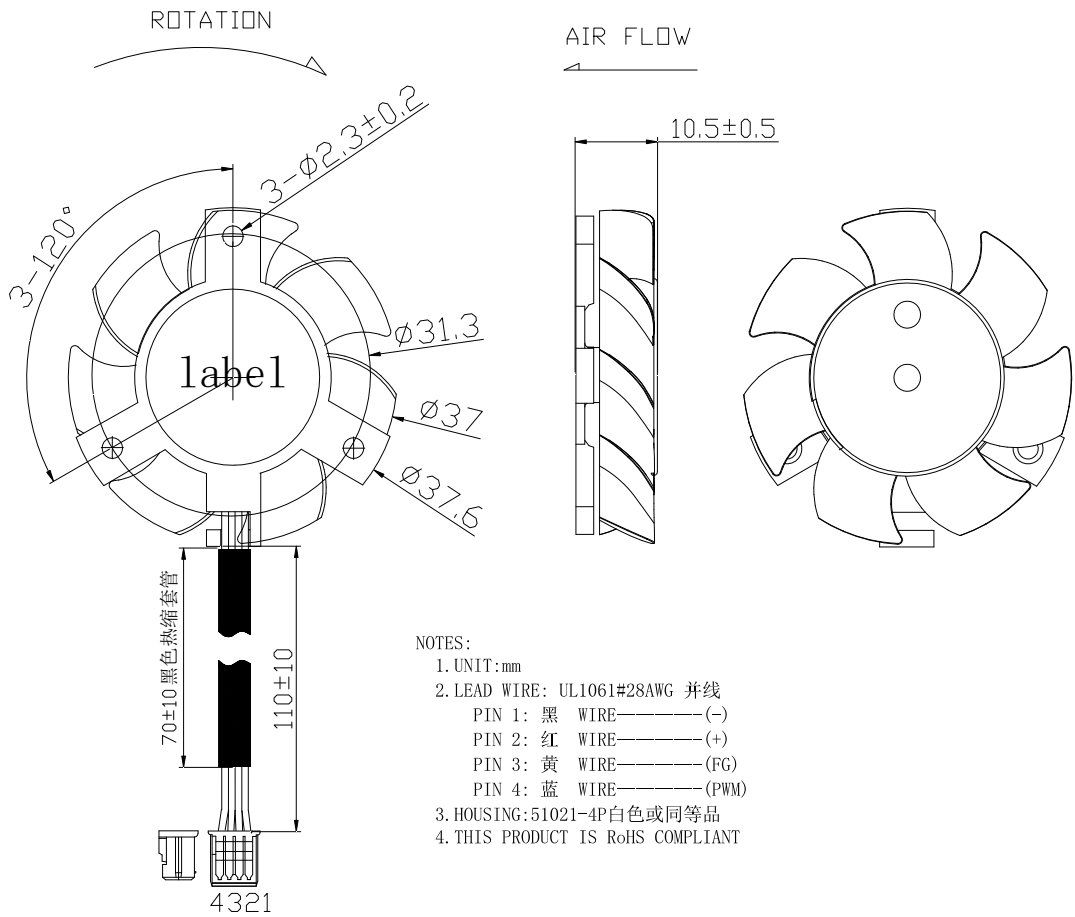
0.10

0.14

0.17

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

5.DIMENSION



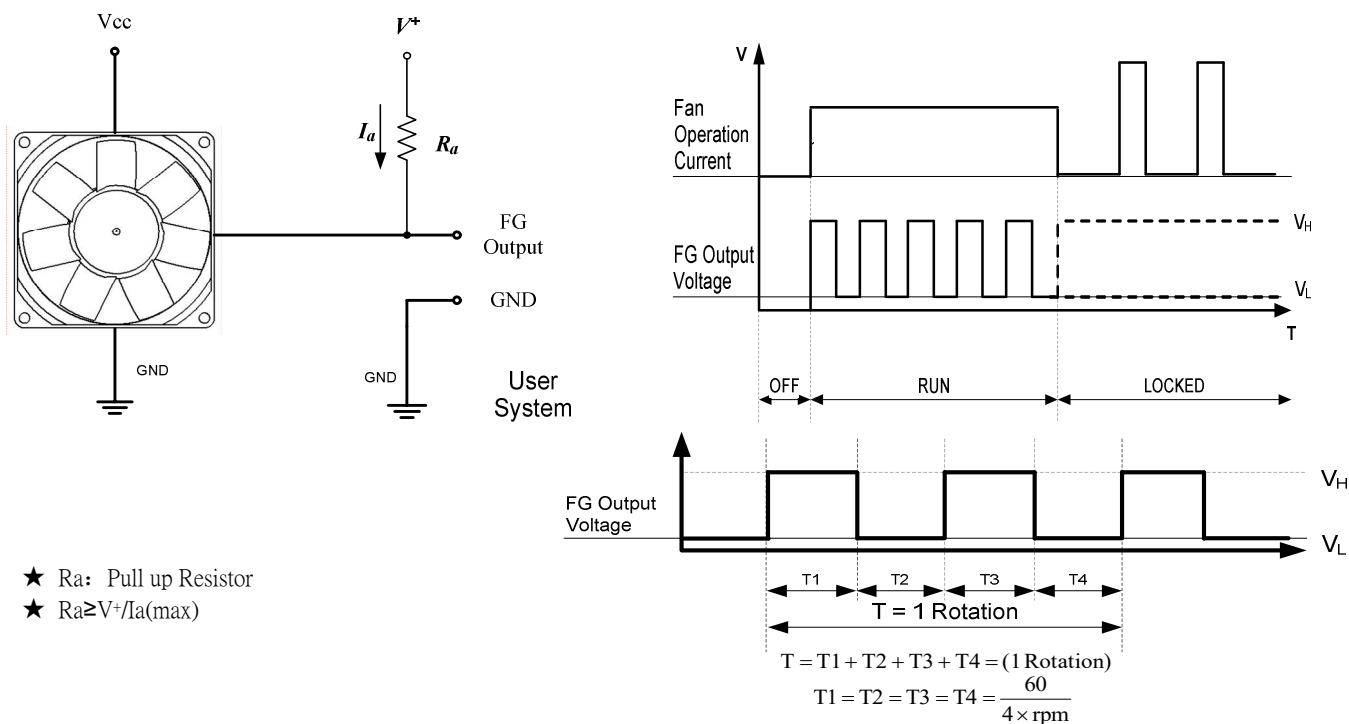
6.LABEL

① : AD4010B05M-P09      ② : 5

③ : 0.35      ④ : XXX==Inner control cod)

⑤ : BALL

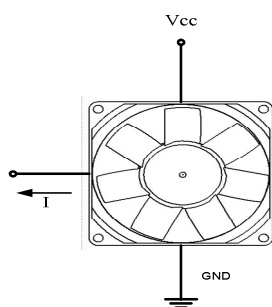
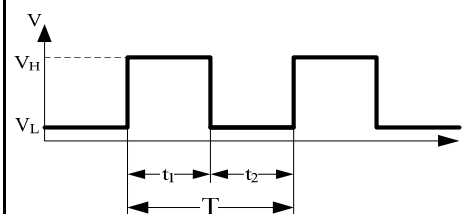
## 7.SENSOR SPECIFICATION



■ Electrical Characteristics: at  $T_a = 25^\circ\text{C}$ ,  $V_{CC} = 5\text{V}$

Parameter	Ratings			Unit
	Min	Type	Max	
FG Supply Voltage ( $V^+$ )	--	--	5.75	V
FG Output Current ( $I_a$ )	--	--	5	mA
FG Output ( $V_L$ )	--	--	0.6	V
FG Output ( $V_H$ )	--	$(V^+) \pm 10\%$	--	V

## 8.PWM SPECIFICATION



PWM Signal Table

Parameter	Min	Typical	Max	Unit
$F_{pwm}$	20K	25K	30K	Hz
$V_H$	--	6	--	V
$V_L$	--	--	0.6	V
$I$	--	6	--	mA
D.C.	0	--	100	%

1. Time Period :  $T = \frac{1}{F_{pwm}} = t_1 + t_2$  (se)

2. Duty Cycle :  $D.C = \frac{t_1}{t_1 + t_2} \times 100 \%$

- ★ Ra: Pull up Resistor
- ★  $Ra \geq V^+/Ia(max)$

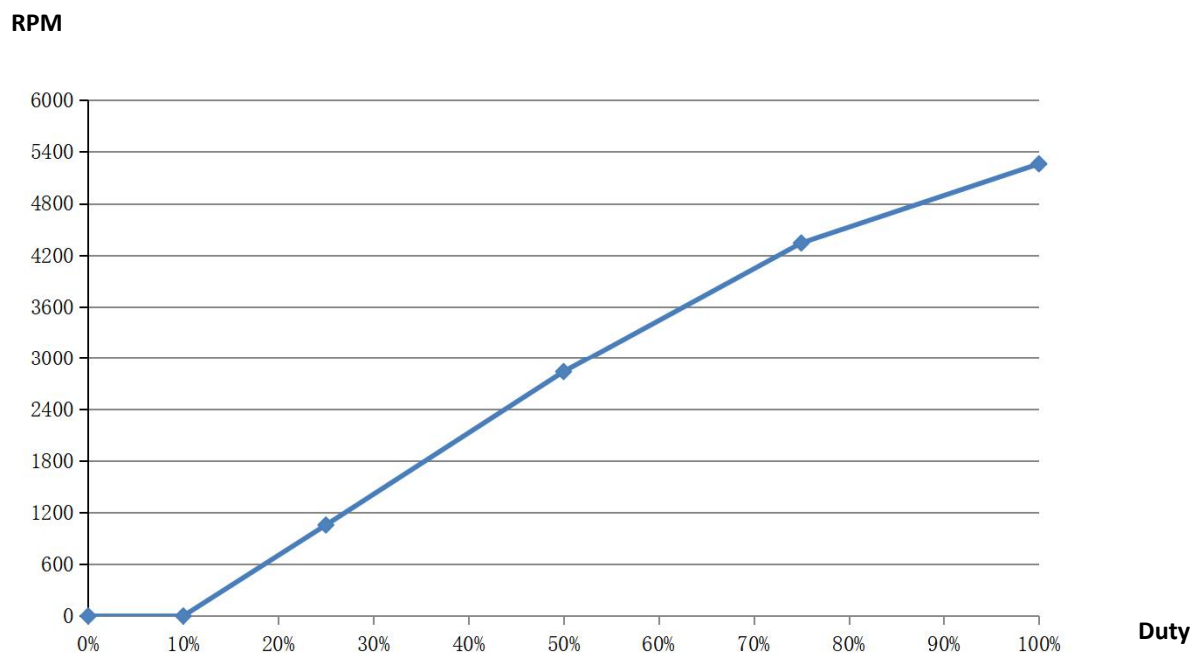
★Electrical Characteristics at  $T_a = 25^\circ C$

★Suggest O.C. Circuit

### ■ Reference

Duty	Speed R.P.M
0-10%	0 -
25%	1055 $\pm 300$
50%	2835 $\pm 600$
75%	4340 $\pm 600$
100%	5260 $\pm 600$

DUTY & SPEED



## 9.Revision History

[illegible]

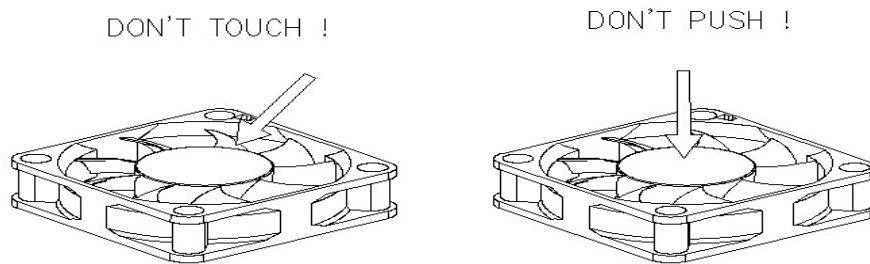


## 10.Descriptions

10-1. **BeCool** will not guarantee the performance of the products if the application condition falls outside the parameters set forth in the specification.

10-2. A written request should be submitted to **Becool** prior to approval if abnormality and deviation from this specification is required.

10-3. 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 fans are hard -dropped to the production floor.



10-4. The correct polarity, Positive(+) and Negative(-), has to be clearly identified before connecting the fan to the power. Be aware of the connection with reverse polarity may lead to damage since no effective protection can be introduced against such errors.

10-5. Except as pertains to some special designs, any failure and problems regarding safety of the product caused by the insert in the hub are not guaranteed.introduction of powder, droplets of water or encroachment of insert in the hub are not guaranteed.

10-6.**Becool** fans are not suitable where any corrosive fluids are introduced to their environment.

10-7. 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.

10-8. It is important to consider safety when testing the fans. A suitable fan guard should be fitted to the fan guard against any potential for personal injury.

10-9. Please be cautious when mounting the fan. Incorrect mounting of fans may cause excess resonance, vibration and subsequent noise.

9-10. 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.

## 11.Statement on RoHS Compliance

We guarantee that all the products including the parts, packaging materials conform to the Directives of RoHS(2015/863/EU)

No	Name of hazardous substance	Threshold value(ppm, mg/kg)
1	Cadmium and cadmium compounds(Cd)	100
2	lead and lead compounds(Pb)	1000
3	Mercury and mercury compounds(Hg)	1000
4	Hexavalent chromium compounds(Cr6+)	1000
5	Polychlorinated Biphenyls(PBB)	1000
6	Polybromodiphenyl ether(PBDE)	1000
7	Di-(2-ethylhexyl)phthalat (DEHP)	1000
8	Butyl-benzylphthalat (BBP)	1000
9	Di-butylphthalat (DBP)	1000
10	Diiso-butylphthalat (DIBP)	1000

Products groups that exemptions from the Restriction of Hazardous Substances (RoHS) Directive will following RoHS exceptions

If have other requirements,A new contract will draw up in additional for discuss.

40 10 B V H - P 1 1

[1] [2] [3] [4] [5] [6] [7] [8] [9]

**[1] Frame Demension**

25:25mm x 25mm	92:92mm x 92mm
30:30mm x 30mm	120:120mm x 120mm
35:35mm x 35mm	140:140mm x 140mm
40:40mm x 40mm	172:172mm x 152mm
45:45mm x 45mm	
50:50mm x 50mm	
60:60mm x 60mm	
70:70mm x 70mm	
80:80mm x 80mm	

**[2] Frame Height**

07:06~07mm	32:32mm
10:08~12mm	35:33~37mm
15:13~17mm	38:38~42mm
20:18~22mm	45:43~47mm
25:23~27mm	51:48~52mm
28:28mm	61:53~62mm
30:30mm	

**[3] Bearing Type**

S:Sleeve Bearing  
 R:Hydraulic Bearing  
 A:AHB  
 B:Two Ball Bearing  
 C:One Ball & One Sleeve Bear

**[4] Stand-by**

**[5] Fan Speed**

L:Low Speed  
 M:Middle Speed  
 H:High Speed

**[6] "-"**

**[7] Function**

N:Normal  
 P:Auto-Restart  
 M:PWM  
 T:Temp.control  
 F:FG Signal without Auto-Restart  
 R:RDH Signal without Auto-Restart  
 L:RDL Signal without Auto-Restart  
 S:FG Signal with Auto-Restart  
 H:RDH Signal with Auto-Restart  
 D:RDL Signal with Auto-Restart

**[8] Voltage Type**

DC	AC
7:15V	A:110~115V
6:3.3V	B:220~230V
5:5V	
1:12V	
2:24V	
3:36V	
4:48V	

**[9] Customization Code**

Can be any Number or Letter

A D 80 25 B 12 M - P 01

[1] [2] [3] [4] [5] [6] [7] [8] [9] [10]

**[1] Product Type**

A:Axial Fan  
B:Blower  
M:Motor

**[2] Power Type**

D:DC  
A:AC

**[3] Frame Demension**

25:25mm x 25mm	92:92mm x 92mm
30:30mm x 30mm	120:120mm x 120mm
35:35mm x 35mm	140:140mm x 140mm
40:40mm x 40mm	172:172mm x 152mm
45:45mm x 45mm	
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05:5V	
12:12V	
24:24V	
36:36V	
48:48V	

**[7] Fan Speed**

L:Low Speed  
M:Middle Speed  
H:High Speed

**[8] "-"**

**[9] Function**

A:AUTO-RESTART    N:NO AUTO-RESTART  
P:PWM  
F:FG SIGNAL  
R:RDH SIGNAL  
L:RDL SIGNAL

**[10] Customization Code**

Can be any Number or Letter