



SPECIFICATION FOR APPROVAL

规格承认书

To: Trail Tech, Inc.

产品型号 Par No.: DDW9225HH12B

类别 Category: Fan Blower Centrifugal

认证 Certification: CE RoHS UL TUV

编号 Spec No.: DDW9225HH12B-0101 版次 Version: 01

样品数 Quantity: 10 PCS 日期 Date: 2015-5-19

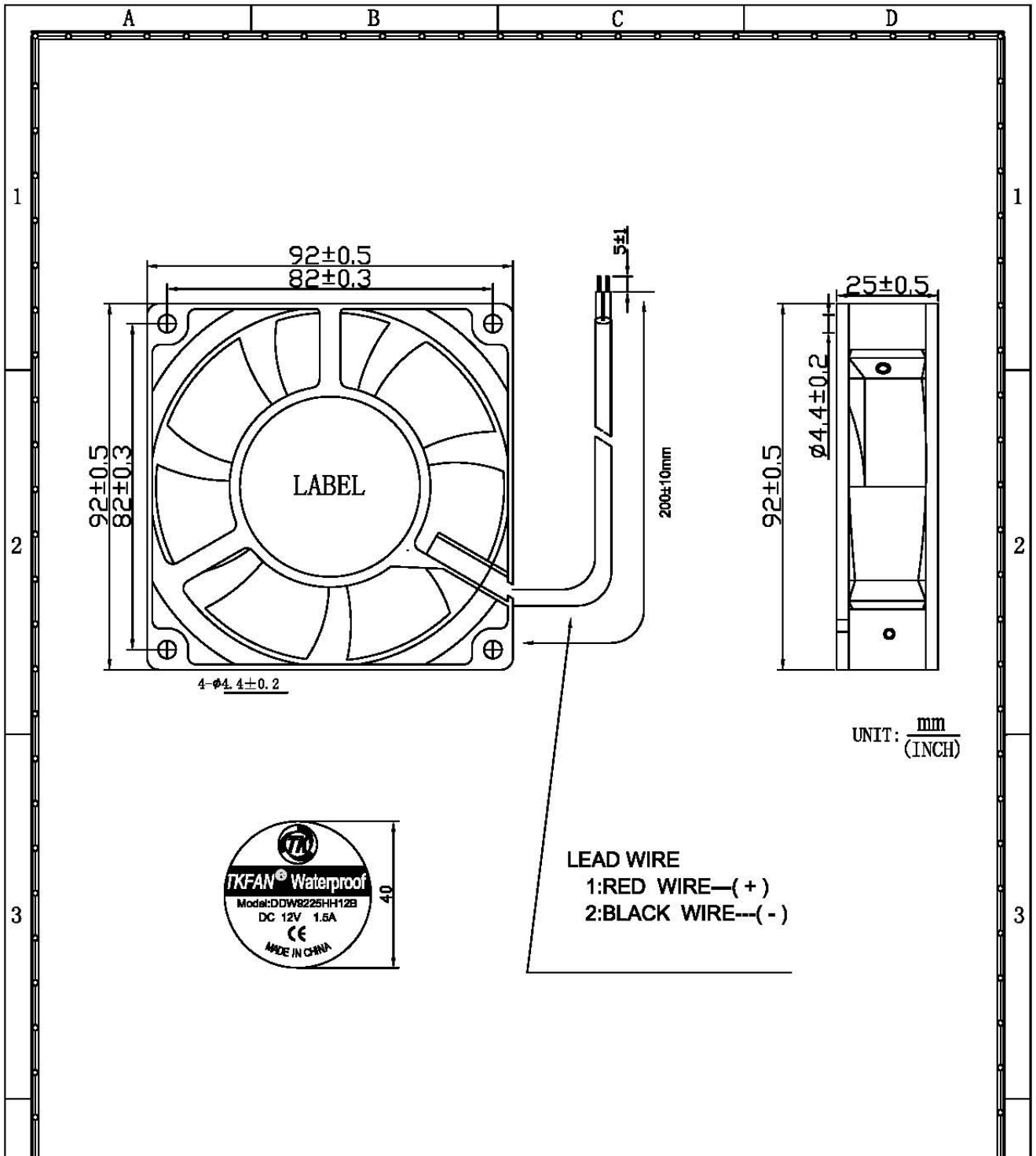
Company Stamp	CUSTOMER APPROVAL Stamp
制作: 刘良军	承认:
复核:	核准:
核准:	日期:

电话(TEL): 86-0755-23126453 传真(FAX): 86-0755-23129135

邮箱(MAIL): sales@tenkai-group.com

网址(WEB): Http://www.tkfan.com

地址(ADD): 深圳市观澜街道第三工业区盈丰路32号



UNIT: $\frac{\text{mm}}{\text{(INCH)}}$

LEAD WIRE
 1: RED WIRE—(+)
 2: BLACK WIRE---(-)



SHENZHEN TENKAI GROUP LIMITED 深圳市腾凯特种机电有限公司		TOLERANCES:		PROJECTION:	UNIT	MM
		LINEAR X .XX (0,50) ±0.10 ±0.05 (50,100) ±0.20 ±0.10 (100,+∞) ±0.30 ±0.15	ANGULAR X ±0.5° X.X ±0.1°		PAGE	1/1
SERIES	DC FAN	PARTS NO	DDW9225HH12B	PART NO		
MADE BY	刘良军	CHECKED		DRAWING		
DATE	2015-5-19	DATE		DATE		

規格參數

SPECIFICATION

Model:			
Item	Unit	Specification	Condition
Dimension	mm	92X92X25	LxWxThickness
Bearing System	----	Two Ball bearing	----
Rated Voltage	VDC	12	----
Operating Voltage Range	VDC	7.5 ~ 13.5	At 25°C
Start-up Voltage	VDC	≤7.5	At 25°C
Rated Current	Amp	1.1	At Rated Voltage
Lock Rotor Current	Amp	0.01(Max.)2.5	Max.at Rotor Locked
Rated Power	Watt	1.32	At Rated Voltage
Rated Speed	RPM	5000±10%	AT Rated Voltage
Air Flow	CFM	100.44	In Free Air
Static Air Pressure	mmH ₂ O	15.44	When Air Flow=0
Noise Level	dBA	48(Max.)50	At Rated Speed
Motor Protection	----	Reverse protection	Yes
Other Features	Tachometer Output	NO	Not Required
	Autostart	Soft start	Yes
	Lock Rotor Alarm	Locking protection	Yes
	Thermal Control	NO	Not Required
	PWM Control	NO	Not Required
	IP Grade	IP 68 (plastic cover)	Yes
	Environmental	NO	Not Required
Connection Lead Type	Lead Wire	200mm	See Page 4
	Connector	Not Required	Not Required
	Build-in LED	NO	Not Applicable
Life Expectancy	Hours	50000 hrs.	At 25°C
Net Weight	Gram	160g	----
Packing	Pieces/Carton	--pcs/carton	----
絕緣阻抗 Insulation Resistance	10MΩ / 裸線与外框間測量, 500VDC/min 10MΩ/between unshackled wire and frame at 500VDC/min		
絕緣耐壓 Dielectric Strength	5Ma Max./導線与外框間測量, 500VAC/min 5Ma Max./Measured between lead wire(+)and frame at 500VAC/min		
極數 Number of Pole	4 極 4 Poles		
EMC	Pass		
運轉溫/濕度範圍 Operating temp. Range	溫度/temperature: -40°C~+60°C 濕度/Humidity: 35%~85%RH		
保存溫/濕度範圍 Storage Temperature	溫度/Temperature: -40°C~+80°C 濕度/Humidity: 35%~85%RH		

耐濕性 Humidity	電器規格依據 MIL-STD 202F Method 103B 濕度：95%RH，溫度：40±2℃ According to MIL-STD 202F Method 103B Humidity: 95%RH,Temp.: 40±2℃
熱衝擊 Thermal Shock	電器規格依據 MIL-STD 202F Method 107D According to MIL-STD 202F Method 107D
絕緣階段 Insulation Shock	UL: A 種 UL: Class A
包裝耐振試驗 Packing Vibration Test	包裝后，XYZ 施 1.1KG 測試 30 分鐘無損壞 Load Vibration test for 30min,No serious damage

风扇特性曲线风量风压测试报告

The Report of Fan Performance P-Q Curve Test

1.产品特性依照 AMCA-210 标准在双箱里包括风量与风压的测试。

The performance including air flow and air pressure measured in Double Chamber is measured according to AMCA210-92 standard.

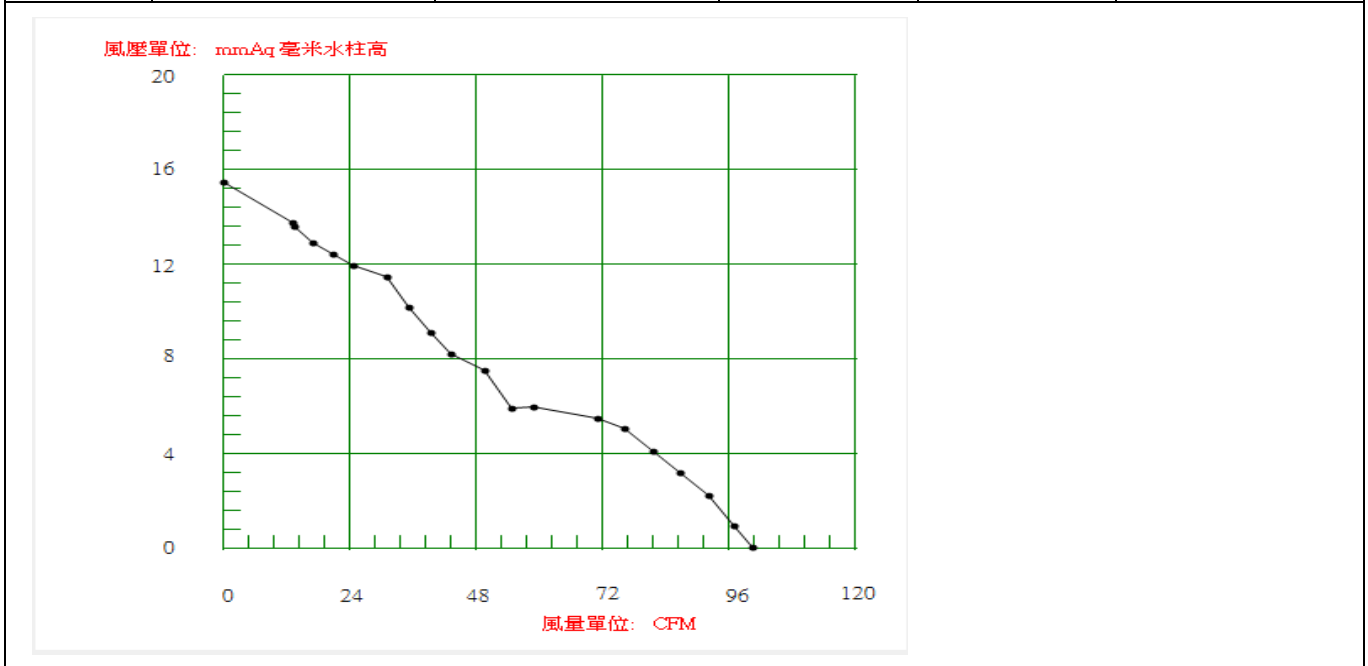
测试编号(No.): 189 测试日期(Date) : 2015/05/18

2.测试数据:

序号 No.	项目 Item	规格 Specification	单位 Unit
1	测试电压 Test Voltage	12	VDC
2	转速 Speed	5081	RPM
3	大气压力 Barometric Pressure	761.5	mmHg
4	相对湿度 Relative Humidity	51	%
5	最大风量(零静压时)Max.Air Flow(At Zero Static Pressure)	100.4	CFM
6	最大风压 (零风量时) Max. Air Pressure(At Zero Air Flow)	15.4	mmH ₂ O

3.P-Q 数据及曲线 P-Q Data and Curve

序号	mmAq	CFM	A	Watt	RPM
1	15.44	0	1.12	13.3	4843
2	12.87	16.97	1.06	12.7	5036
3	11.43	31.1	1.03	12.6	5135
4	8.19	43.11	0.99	11.9	5384
5	5.93	58.87	0.98	11.8	5411
6	4.99	76.12	1.06	12.5	5066
7	3.17	86.76	1.07	12.8	5037
8	0	100.44	1.05	12.4	5081



SHENZHEN TENKAI GROUP

MODEL NO.

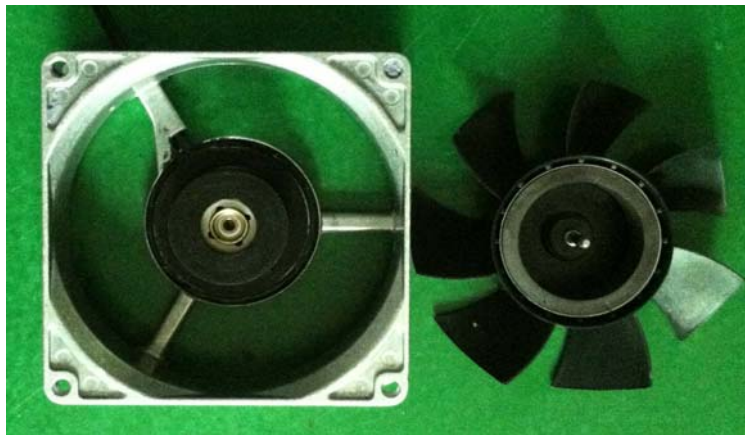
DDW9225HH12B

MTBF REPOPT

MODE NO: DDW9225HH12B		STARTED DATE: 2009.5.16		FINISHED DATE: 2009.10.20							
TEST CONDITIONTEST (1) VOLTAGE: 12VDC (2) TEMPERATURE: 75°C	ITEM	SPECIFICATION	TEST SAMPLES		20						
	OPERATION VOLTAGE	12VDC±10%	TEST HRS/EA		2,200						
	CUPPENT DPAIN	MAX ≤1.1A	TOTAL TEST HRS		44,000						
	SPEED	5000RPM±10%	FAILURE Q' TY		0						
	ACOUSTICAL NOISE		CONFIDENCE LEVEL		90%						
			MTBF		53905hours						
FAILURE DEFINITION		ITEM		CHECK POINT AT THE HOURS							
(1) CURRENT:= 10%/-30%of Original value	Over	TEST DURATION(HRS)		250	500	1k	1.5k	2k	2.2k		
		ACCUMULATED FAILURE Q' TY		0	0	0	0	0	0		
		SURVIVAL Q' TY		20	20	20	20	20	20		
(2) RPM: 30%/-15%of Original value	Over	ACCUMULATED FAILURE RATIO		0%	0%	0%	0%	0%	0%		
		FAILNO.TEST TIME(HRS)SURVIVAL Q' TY ACCUMULATED FAIL RATIO DESCRIPTION									
(3) NOISE LEVEL: Over±10% of origin	TEST RESULT:			2. CONFIDENCE LEVEL:							
	1. FORMULA OF FIGURING OUT ACCELERATION FACTOR: Tu: Required Temp (25°C) Ta: Experiment Temp.(75°C) AF =2^[[(Ta-Tu)/10] =2^[[(75-25)/10] =32 MTBF=[ACTUAL TEST TIME*SAMPLE Q' TY]*AF]/TR/SAMPLE Q' TY MTBF=[(2200*20)*32]/1.3026/20=53905HOURS			ACCORDING TO GEM TABLE90% ZERO FAILURE TR=1.3026							
APPROVED BY: BOPING GONG		CHECKED BY: SHU LIN XIE				TESTED BY: JUN ZHANG					

实物图

The pictures

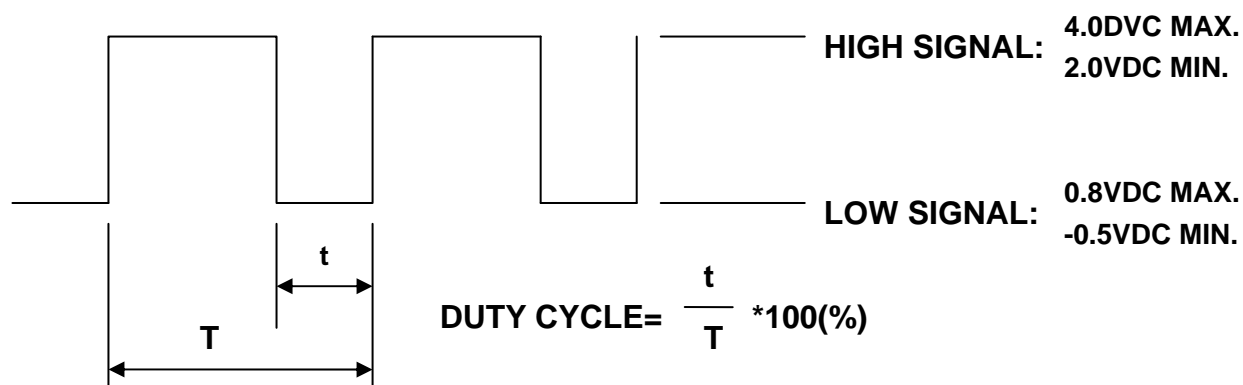


功能描述

Functional description

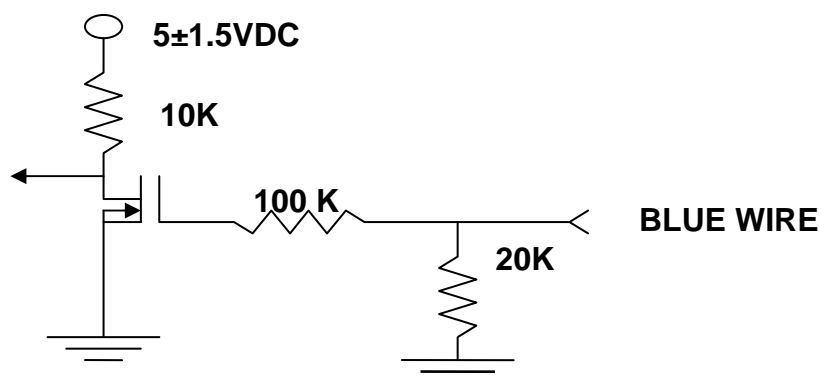
一. PWM CONTROL SIGNAL:

SIGNAL VOLTAGE RANGE:-0.5~+4.0VDC



- THE FREQUENCY FOR CONTROL SIGNAL OF THE FAN SHALL BE ABLE TO ACCEPT 16K~32 KHZ.
- THE PREFERRED OPERATING POINT FOR THE FAN IS 25K HZ.
- AT 100% DUTY CYCLE,THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- AT 0% DUTY CYCLE,THE ROTOR WILL STOP.
- WHEN CONTROL SIGNAL LEAD DISCONNECTED,THE FAN WILL MAXIMUM SPEED.
- AT 25K 3%~5% DUTY CYCLE,THE FAN WILL BE ABLE TO START FROM A DEAD STOP.
- THE FAN SPEED CONTROL IS CLOSED-LOOP.

二.PWM CONTROL LEAD WIRE INPUT IMPEDANCE:



1. THE FAN SPEED WILL DEFAULT TO MAXIMUM WHEN THE SPEED CONTROL INPUT IS LEFT UNCONNECTED.
2. ABSOLUTELY NO INTERNAL PULL-UP.

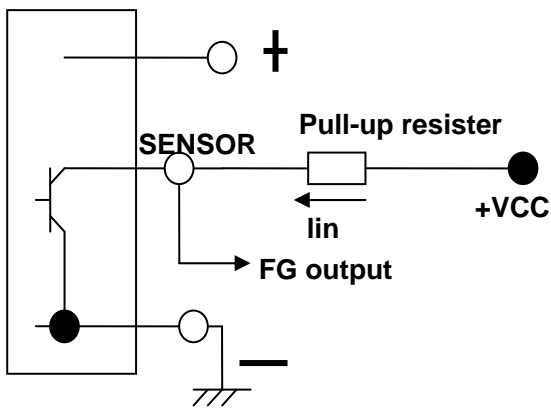
FG and RD Function Introduction

FG (Tach output type) Connection Diagram

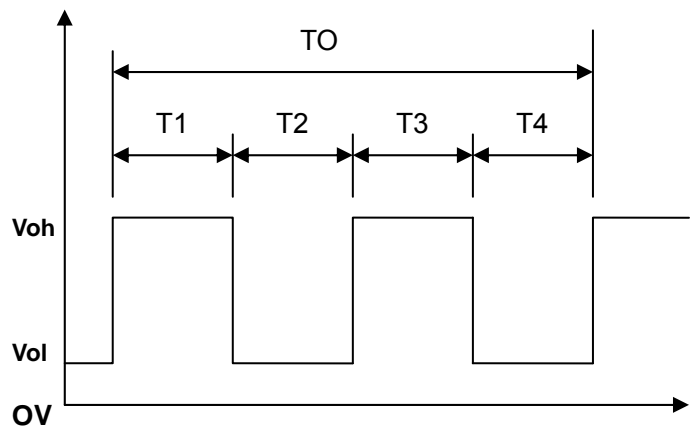
Fan with FG function will create a square wave output. You can know fan speed by sensing the output wave frequency. Most DC fans have four poles. So when the fan runs for one round, there will be two high-level pulses. About other multipole brushless fans, high-level pulses will be different.

But please notice if you want to sense its output wave, there is an external circuit. Please check the circuit diagram below. There is no pull-up and VCC value limit. But please notice the Max I_{in} has to be smaller than 20mA.

Inside of DC fan



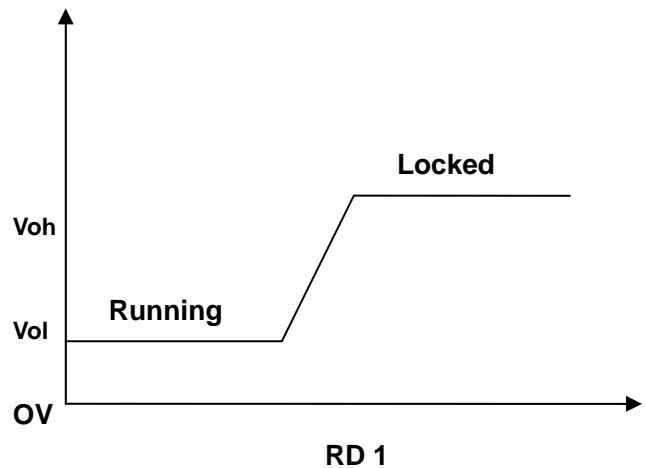
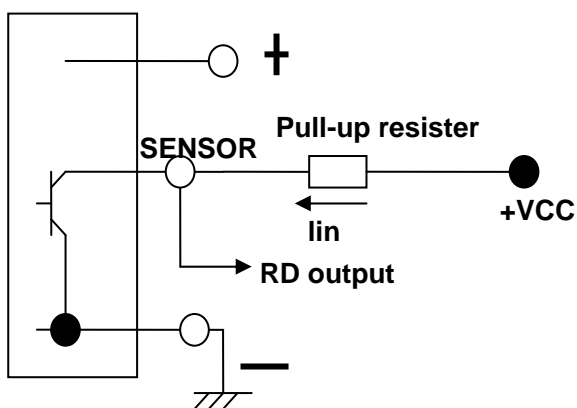
One revolution



RD (Alarm output) connection Diagram

Some fans have an RD extra function. There is an alarm signal output when the fan stops working. Please notice there are two kinds of signal output. Different customers will need different alarm types. Please check the diagram below.

Inside of DC fan



公司简介 COMPANY INTRODUCTION



公司前台
(Company reception desk)



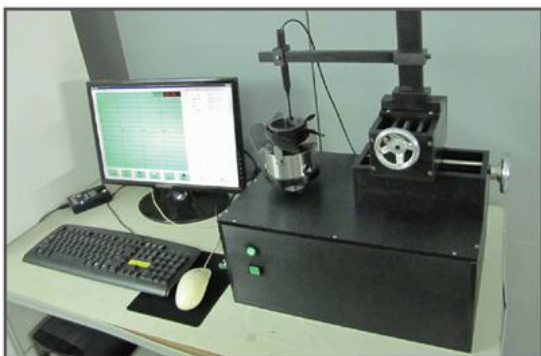
会议室
(Council-chamber)



风动测试仪 (CFM test system)
Can get the CFM data, mmH₂O data,
working Curve autoly.



盐雾测试仪 (Salt mist testing system)
Test the salt mist performance of
Waterproof fan with level IP55 and IP68



高斯计
(Gaussmeter)



回流焊机
(Reflow soldering machine)



1.无刷风机 (Brushless FAN)

直流风机尺寸 (DC FAN size available) (单位/UNIT:mm)

10mm	15x15x4	17x17x8	18x18x4		
20mm	20x20x6	20x20x10	25x25x7	25x25x10	
30mm	30x30x7	30x30x10	35x35x10		
40mm	40x40x7	40x40x10	40x40x20	40x40x28	
50mm	50x50x10	50x50x15	50x50x20		
60mm	60x60x10	60x60x15	60x60x20	60x60x25	60x60x38
70mm	70x70x10	70x70x15	70x70x25		
80mm	80x80x10	80x80x15	80x80x20	80x80x25	80x80x38
90mm	92x92x25	92x92x32	90x92x38		
120mm	120x120x15	120x120x25	120x120x32	120x120x38	
130mm	130x130x50				
140mm	140x140x25	140x140x38	140x140x56		
150mm	150x150x38	150x150x50			
170mm	∅ 172x25	172x152x25	∅ 171x50	172x152x51	
200mm	200x200x60	∅ 254x89	255x255x80		

交流风机尺寸 (AC FAN size available) (单位/UNIT:mm)

60mm	60x60x30				
80mm	80x80x25	80x80x38			
90mm	92x92x25	90x90x38			
110mm	110x110x25				
120mm	120x120x25	120x120x38			
130mm	135x135x38				
150mm	150x150x51				
170mm	172x150x38	172x150x51	∅ 172x51		
180mm	180x180x60				
200mm	200x200x60	∅ 200x60	225x225x80	∅ 254x89	

防水风机尺寸 (Waterproof fan size available) (单位/UNIT:mm)

Available PVD IP68 fan size:20x20x6mm-arbitrary size

Available plastic cover IP68 fan size:

40mm	40x40x20	40x40x28			
50mm	50x50x15	50x50x20			
60mm	60x60x15	60x60x20	60x60x25	60x60x38	
70mm	70x70x15	70x70x20	70x70x25		
80mm	80x80x15	80x80x20	80x80x25	80x80x38	
90mm	92x92x25	92x92x38			
120mm	120x120x25	120x120x38			
150mm	150x150x50				
170mm	172x150x51				
180mm	180x180x60				
200mm	∅ 254x89				

2.鼓风机 (Blower FAN)



直流鼓风机尺寸 (DC Blower size available) (单位/UNIT:mm)

10mm	18x18x4				
20mm	20x20x8	22x21x18	22x22x35		
30mm	30x30x4	30x30x10			
40mm	40x40x10	40x40x20			
50mm	50x50x10	50x50x15	50x50x20	50x50x25	
60mm	60x60x15	60x60x25			
70mm	70x70x15	75x7x25	75x75x30	76x76x27	
90mm	97x97x33				
120mm	120x120x32	140x140x40			

交流鼓风机尺寸 (AC Blower size available) (单位/UNIT:mm)

90mm	97x97x33				
120mm	120x120x32				

防水鼓风机尺寸 (Waterproof Blower size available) (单位/UNIT:mm)

Available PVD IP68 fan size:40x40x20mm-arbitrary size

Available plastic cover IP68 fan size:

40mm	40x40x20				
50mm	50x50x15	50x50x20	50x50x25		
60mm	60x60x15	60x60x25			
70mm	70x70x15	75x75x25	75x75x30	76x76x27	
90mm	97x97x33				
120mm	120x120x32				

3.离心风机 (Centrifugal fan)



直流离心机尺寸 (DC centrifugal fan size available) (单位/UNIT:mm)

100mm	Ø100x25	Ø133x41	Ø175x42	Ø190x46	
200mm	Ø220x44	Ø225x93	Ø250x47		
300mm	Ø310x100	Ø355x97			
400mm	Ø400x90				

交流离心机尺寸 (AC centrifugal fan size available) (单位/UNIT:mm)

100mm	Ø133x42	Ø175x42	Ø190x45		
200mm	Ø220x44	Ø225x93	Ø250x47	Ø280x80	
300mm	Ø310x100	Ø355x97			
400mm	Ø400x90				

4. 风扇配件 (Fan guard)



防尘网罩的尺寸 (Fan dust cover size available)

40mm	50mm	60mm	70mm		
80mm	92mm	110mm	120mm		
135mm	150mm	172mm	200mm		



金属网罩的尺寸 (Metal fan net size available)

40mm	50mm	60mm	70mm		
80mm	90mm	120mm	150mm		
172mm	254mm				

5. Waterproof fan products

