深圳腾凯特种机电有限公司
SHENZHEN TENKAI GROUP LIMITED

SPECIFICATION FOR APPROVAL

规格承认书

To: 2302033055

产品型号 Par No. : DA4028VH24B

类别 Category: ☑Fan ☐Blower ☐Centrifugal

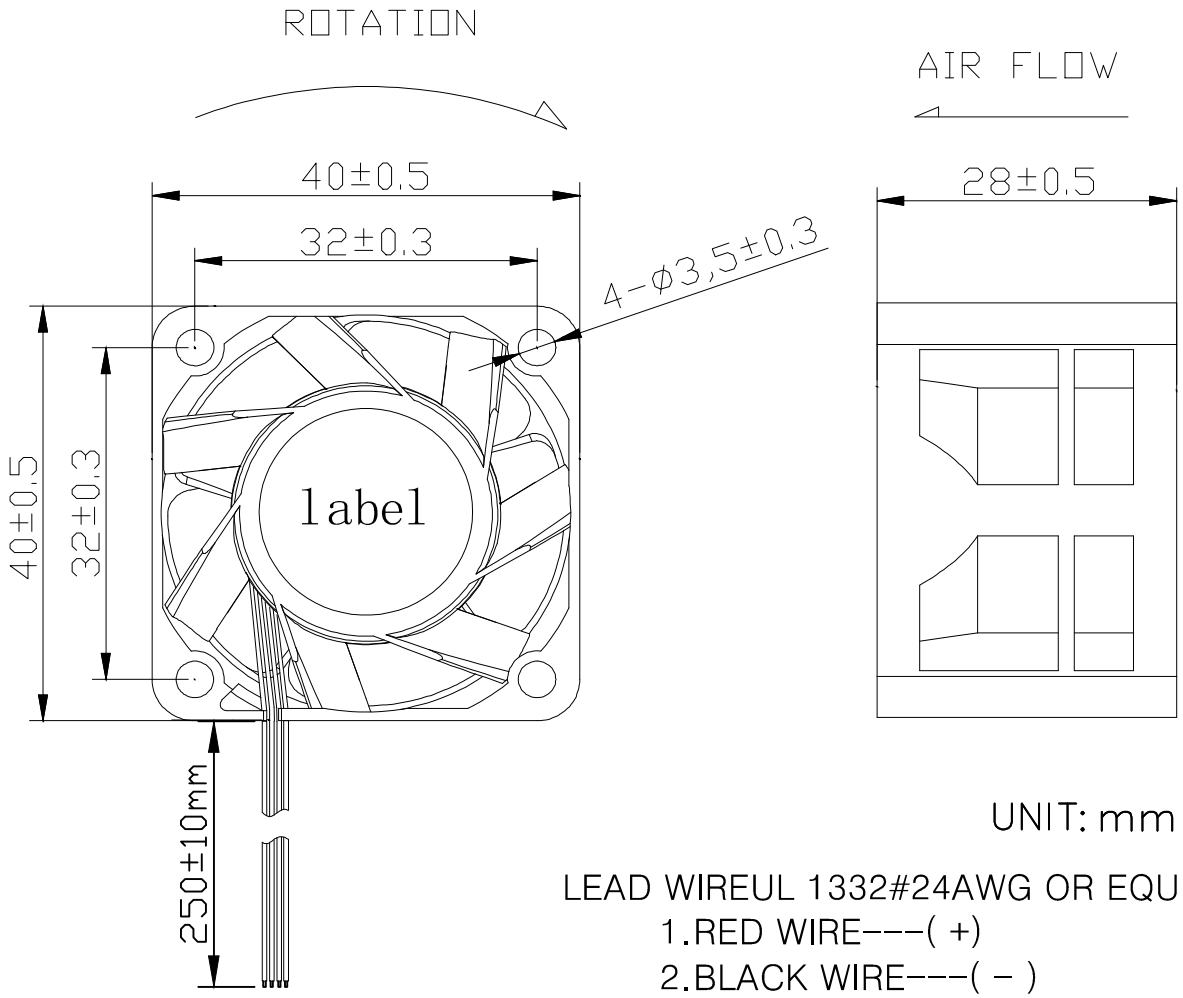
认证 Certification: ☑CE ☑ROHS ☐ UL ☐ TUV

编号 Spec No.:DA4028VH24B-D230202 版次 Version: 01

样品数 Quantity: 17 PCS 日期Date: 2023-02-23

Company Stamp	CUSTOMER APPROVAL Stamp
深圳市腾凯特种机电有限公司 工程部	
制作：朱蒸蒸	承认：
复核：刘良军	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): 深圳市龙华区观澜格澜 9 路金雄达科技园 C 栋 5 楼



UNIT: mm

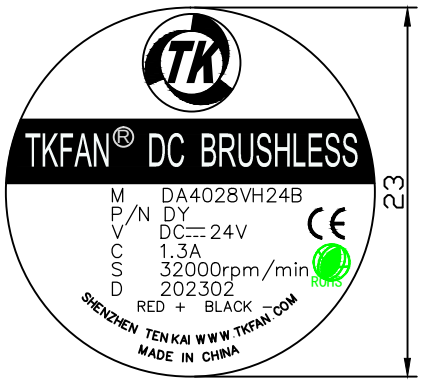
LEAD WIREUL 1332#24AWG OR EQUIVALENT

1.RED WIRE---(+)

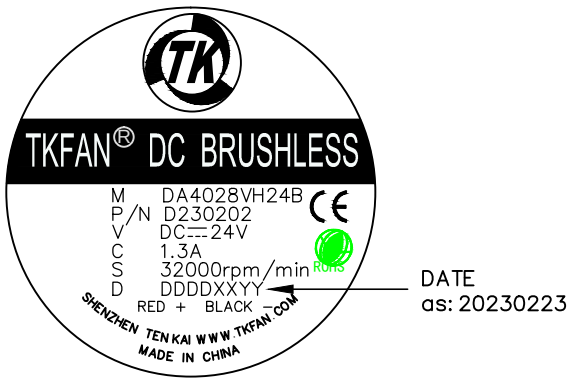
2.BLACK WIRE---(-)

3.YELLOW WIRE---(FG)

4.BLUE WIRE---(PWM)



LABEL 1



LABEL 2

Mark 记号	REASON 变更原因

PROJECTION

单位 UNIT mm

比例 SCALE 1:1

公差 TOL	LINEAR	.X	.XX	ANGULAR
	(0,50]	±0.10	±0.05	X. ±0.5°
	(50,100]	±0.20	±0.10	X.X ±0.1°
	(100,+∞]	±0.30	±0.15	

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深圳市腾凯特种机电有限公司

SHEN ZHEN TENKAI GROUP LIMITED

型号 Model NO.	DA4028VH24B			图号 Drawing NO.	DA4028VH24B-D230202
制图 Drawing	朱蒸蒸	日期 Date	2023.02.23	描述 Description	DC BRUSHLESS BLOWER
检查 Check	刘良军	日期 Date	2023.02.23	材质 Material	页数 Page 1/1
批准 Approved		日期 Date		表面 Finish	版次 Rev A0

規格參數
SPECIFICATION

Model 型号:			
Item 项目	Unit 单位	Specification 參數	Condition 條件
Dimension 尺寸	Mm 毫米	40X40X28	LxWxThickness 长宽高
Bearing System 轴承类型	----	Two Ball Bearing	----
Rated Voltage 额定电压	VDC	24	----
Operating Voltage Range 操作电压范围	VDC	17.5~26.5	At 25℃
Start-up Voltage 启动电压	VDC	≤17.5	At 25℃
Rated Current 额定电流	Amp 安培	1.2	At Rated 在额定电压下
Lock Rotor Current 锁定电流	Amp 安培	0	Locked 锁死
Rated Power 额定功耗	Watt 瓦特	28.8	At Rated 在额定电压下
Rated Speed 额定转速	RPM 圈/分钟	32000±10%	AT Rated Voltage 30℃
Air Flow 风量	CFM	38.5	In Free Air 无风阻条件
Static Air Pressure 静压	mmH_2O	163.3	When Air Flow=0
Noise Level 噪音	dBA	72.2	At Rated Speed 额定速
Polarity protection 反向保护	--	Reverse protection	Yes
Other Spec.	Tachometer Output 转速反馈	Yes	
	Soft-restart function 软启动	Yes	
	Lock Protection 锁定保护	Yes	
	Lock Rotor Alarm 锁定报警	NO	
	PWM Control 速度控制	Yes	
	Thermal Control 过热保护	NO	
	Over voltage protection 过压保护	NO	
	Over current protection 过流保护	NO	
	fixed constant speed Function 恒速功能	NO	
Connection Lead Type 连接方式	Lead Wire 导线型号	250mm 1332#24AWG	See Page 2 见图纸
	Connector 端子	NO	Not Required
Life Expectancy 预期寿命	Hours 小时	50000hrs	At 25℃ 在 25℃条件下
Net Weight 净重	g 克	49g	1PCS
备注 Note			

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	
運轉溫/濕度範圍 Operating temp. Range	溫度/temperature: -40℃~+80℃ 濕度/Humidity: 35%~85%RH
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
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

SHENZHEN TENKAI GROUP	MODEL NO.	DA4028VH24B

MTBF REPOPT

STARTED DATE: 2009.5.16			FINISHED DATE: 2009.10.20	
TEST CONDITIONTEST （1） VOLTAGE:24VDC （2） TEMPERATURE: 75℃	ITEM	SPECIFICATION	TEST SAMPLES	20
	OPERATION VOLTAGE	24VDC±10%	TEST HRS/EA	2,200
	CUPPENT DPAIN	MAX ≤1.2A	TOTAL TEST HRS	44,000
	SPEED	32000RPM±10%	FAILURE Q'TY	0
	ACOUSTICAL NOISE		CONFIDENCE LEVEL	90%
			MTBF	53905hours

FAILURE DEFINITION

(1) CURRENT:= Over 10%/-30%of Original value

(2) RPM: Over 30%/-15%of Original value

(3) NOISE LEVEL: Over±10% of origin

ITEM	CHECK POINT AT THE HOURS							
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		
ACCUMULATED FAILURE RATIO	0%	0%	0%	0%	0%	0%		
FAILNO.TEST TIME(HRS)SURVIVAL Q'TY ACCUMULATED FAIL RATIO DESCRIPTION								

TEST RESULT:

1. FORMULA OF FIGURING OUT ACCELERATION FACTOR:

Tu: Required Temp（25℃） Ta：Experiment Temp.(75℃)

AF =2∧[(Ta-Tu)]

=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

2. CONFIDENCE LEVEL: ACCORDING TO GEM TABLE90%

ZERO FAILURE TR=1.3026

APPROVED BY: BOPING GONG	CHECKED BY: SHU LIN XIE	TESTED BY: JUN ZHANG

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。

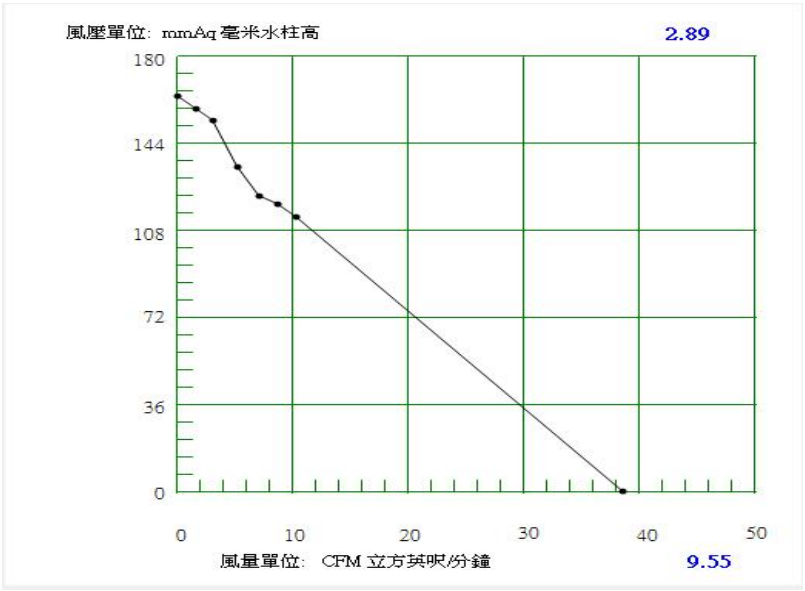
测试编号(No.): 5338　　测试日期(Date) : 2022/08/09

2.测试数据：

序号 No.	项目 Item	规格 Specification	单位 Unit
1	测试电压 Test Voltage	24	VDC
2	转速 Speed	32000	RPM
3	大气压力 Barometric Pressure	761.5	mmHg
4	相对湿度 Relative Humidity	49	%
5	最大风量(零静压时)Max.Air Flow(At Zero Static Pressure)	38.5	CFM
6	最大风压（零风量时）Max. Air Pressure(At Zero Air Flow)	163.3	mmH_2O

3.P-Q 数据及曲线 P-Q Data and Curve

序号	mmAq	CFM	A	Watt	RPM
1	163.25	-0.01			
2	158	1.56			
3	153	3.01			
4	134	5.23			
5	122	7.04			
6	118.5	8.65			
7	113.25	10.27			
8	0	38.49			



风扇特性曲线 PWM 测试报告

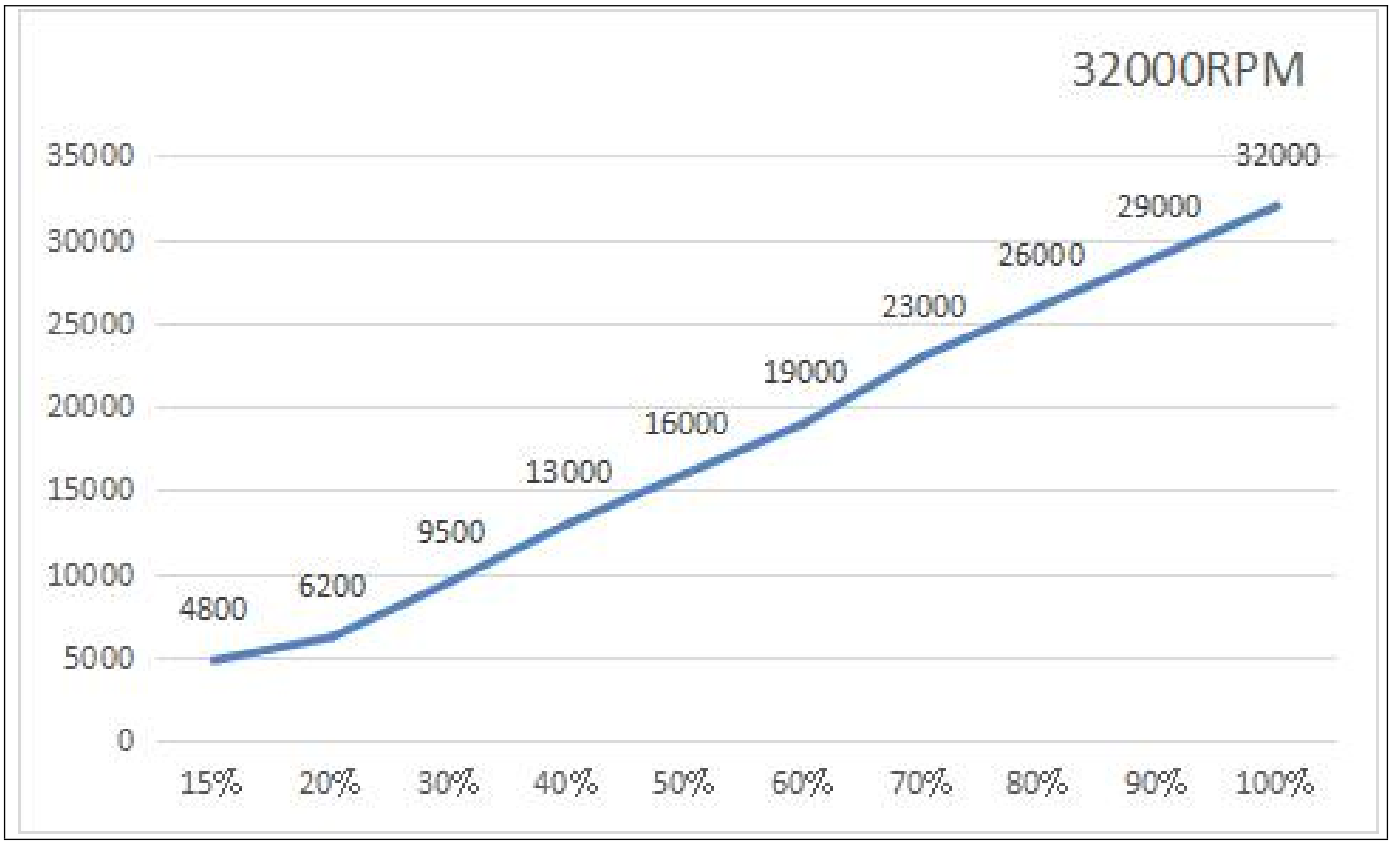
The Report of Fan Perfermance PWM Curve Test

测试编号(No.):4564　　测试日期(Date) : 2023-02-23

1.测试数据：

序号	百分比	转速	单位 Unit
1	15％	4800	RPM
2	20％	6200	RPM
3	30％	9500	RPM
4	40％	13000	RPM
5	50％	16000	RPM
6	60％	19000	RPM
7	70％	23000	RPM
8	80％	26000	RPM
9	90％	29000	RPM
10	100％	32000	RPM

3.PWM 数据及曲线　PWM Data and Curve



噪 音 测 试 报 告

The Report of Acoustic Noise Test

报告编号 Report No.TN1511309

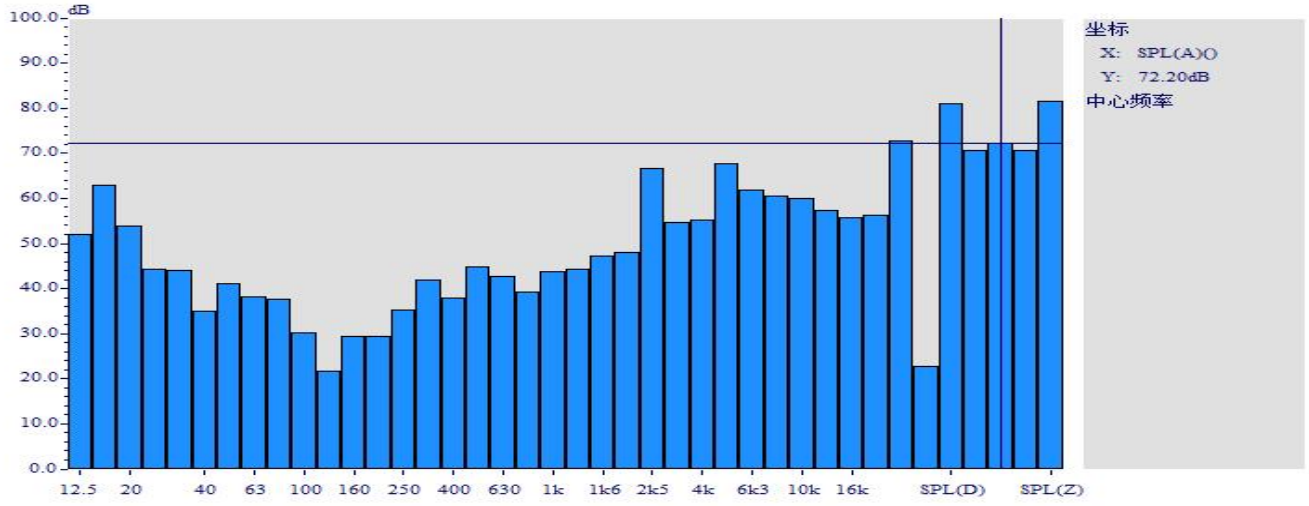
样品名称 Sample Name	Brushless Fan / Blower
测试条件 Test Condition	测试方法 Test Method
1.温度 Temperature: 31 ℃ 2.湿度 Humidity: 75 %RH	1.测试位置 Test Position： 180° 2.测试距离 Test Distance:1.0M From the fan intake 3.背景噪音 Background Noise: 19.1dB(A) 4.测试依照标准 ISO3745 执行 This test executes according to ISO3745 standard

测试设备 Test Equipment:

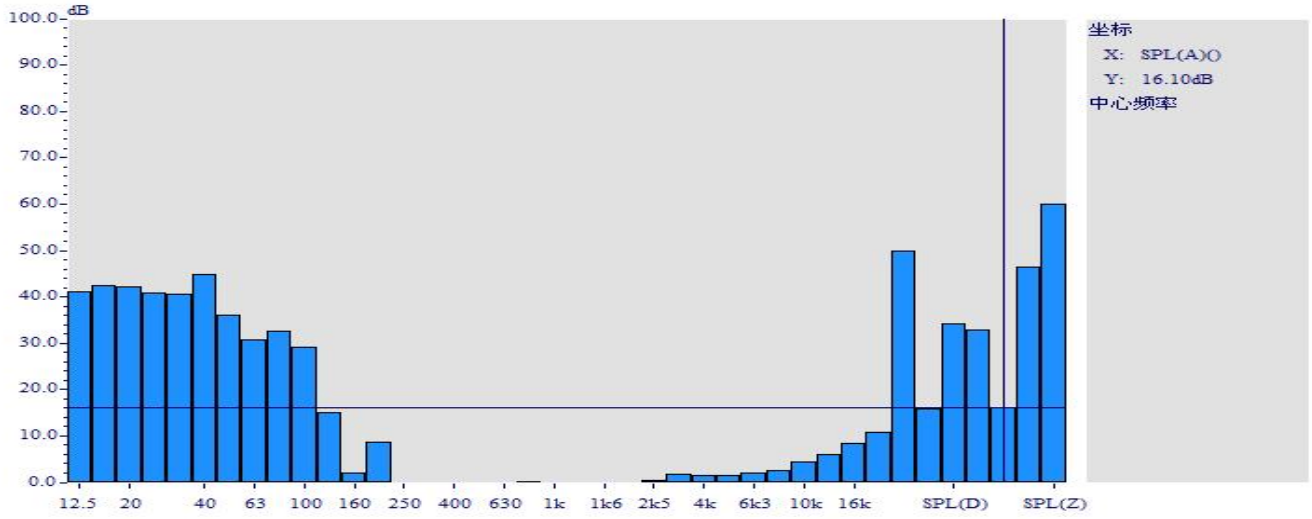
声望 VA-Lab2 二通道噪声频谱分析仪 BSWA VA-Lab2 double channels noise Spectrum Analyzer

测试结果 Test Result: Leq:72.2dB(A); 测试距离 Test distance: 1 meter

倍频段频谱图 Octave-Band(1m)



测试结果 Test Result: Leq:16.1dB(A); 背景噪音 Background Noise

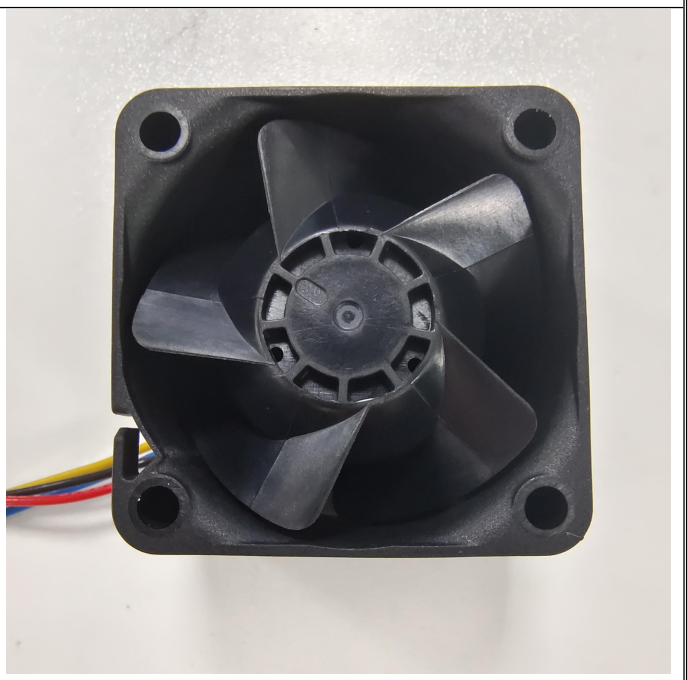


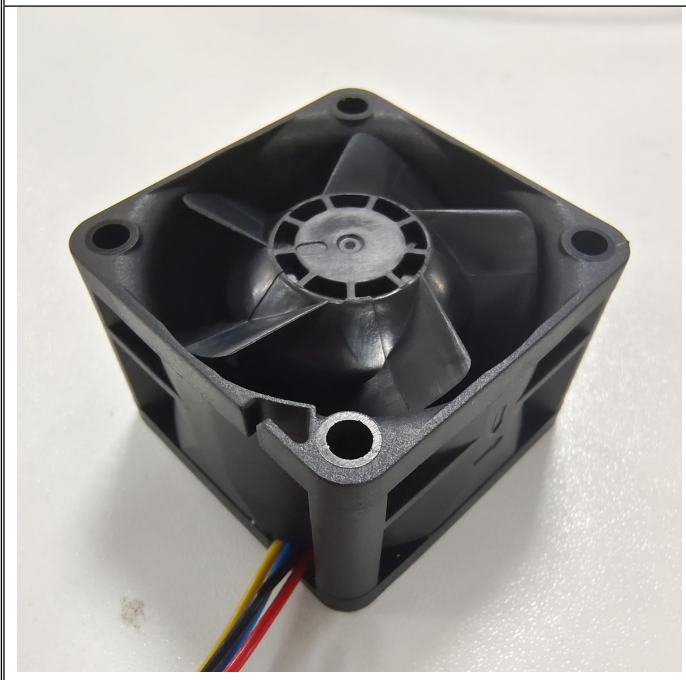
※本报告未经许可严禁擅自更改其中内容 Do not change the content of this report without written permission of authority;
※一般情况，委托检验结果仅对所检验样品有效 Generally. commission test is responsible for the tested samples only;
※报告无主检、审核人签字无效 The test report is invalid without the signatures of Author and Reviewer。

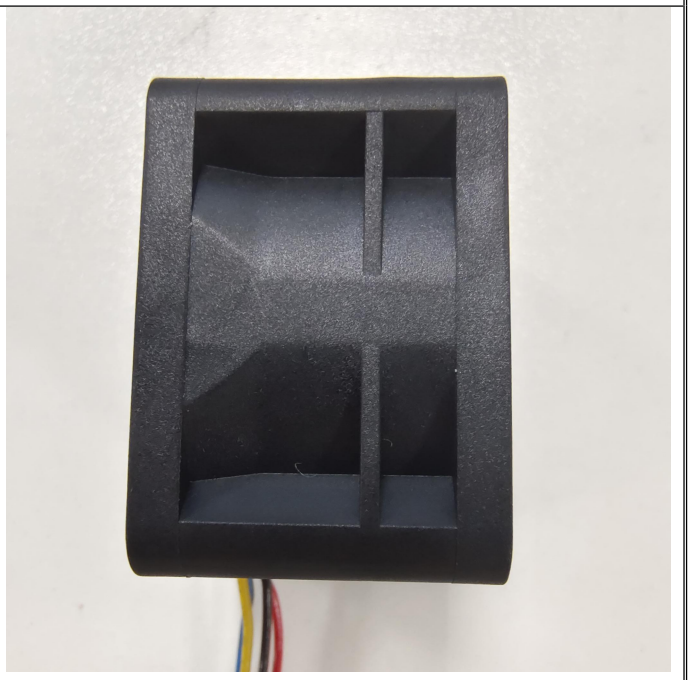
实物图

The pictures





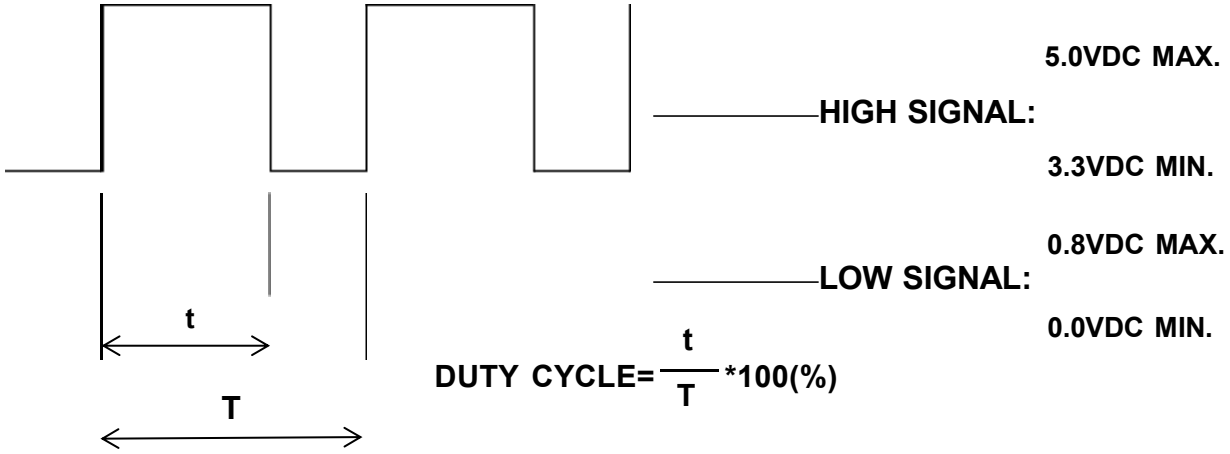




功能描述
Functional description

一. PWM CONTROL SIGNAL　PWM 控制信号:

SIGNAL VOLTAGE RANGE 控制电压输入范围:0.0～+5.0VDC



- 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 DISCINNECTED,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.

转速信号反馈介绍

FG speed feedback signal is introduced

FG (Tach output type) Connection Diagram

Fan with FG function will creat a square wave output.You can know fan speed by sensing the output wave Frequency. Most dc fan have four pole.So when fan run for one round,there will be two high level pulse. About other Multipole brushless fan,high level pulse will be different.

But please notice if you want to sense it's output wave,there is a external circuit. Please check the circuit Diagram below. There is no pull-up and VCC value limit.But please notice the Max I_{in} have to be small than 20mA.

