AVC

APPROVAL SHEET

Customer Name	CONRAD
Product	DC FAN
Part No.	DB04028B12U-FAR
Issue Date	DEC.07.2005
Customer No.	DB04028B12U-075
Version	2

CUSTOMER APPROVED	Checked by	Inspected by	Designed by
	Eric Sun 12/07'05	Alan 12/07'05	Jerry 12/07'05

ISO 9001 CERTIFICATE

NO.041008553

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Rev. 2

SPECIFICATION FOR APPROVAL

1. SCOPE:

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

2. CHARACTERS:

	ITEM	SPEC.	
2-1.	RATED VOLTAGE	12	VDC
2-2.	OPERATION VOLTAGE	7.0 ~ 13.2	VDC
2-3.	INPUT CURRENT	0.50 (0.66 MAX.)	A
2-4.	INPUT POWER	6.0 (7.92 MAX.)	W
2-5.	SPEED	11700~14300	R.P.M
2-6.	SPEED CONTROL TYPE	------	
2-7.	SIGNAL OUTPUT	FREQUENCY GENERATOR (FG)	
2-8.	MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	0.673 (0.620 MIN.) 23.78 (21.88 MIN.)	M^3/MIN CFM
2-9.	MAX. AIR PRESSURE (AT ZERO FLOW)	33.65 (28.48 MIN.) 1.325 (1.121 MIN.)	mm-H_2O inch-H_2O
2-10.	ACOUSTICAL NOISE	54.0 (57.0 MAX.)	dB-A

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2-11. INSULATION RESISTANCE —— 10 MEGA OHM MIN. AT 500 VDC
(BETWEEN FRAME AND (+) TERMINAL)

2-12. DIELECTRIC STRENGTH ——— 5 mA MAX. AT 500 VAC 60Hz ONE MINUTE,
(BETWEEN FRAME AND (+) TERMINAL)

2-13. LIFE EXPECTANCE ———— 70,000 HOURS AT 40°C ROOM, HUMIDITY 15%~ 65%RH

2-14. ROTATION ———————— COUNTER-CLOCKWISE VIEWED FROM INLET

2-15. AIR FLOW DIRECTION ———— AIR EXHAUST OVER STRUT

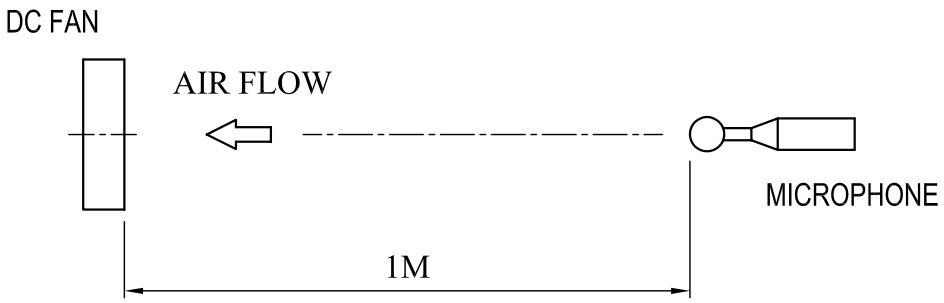
2-16. INSULATION CLASS ———— UL: CLASS A

2-17. LEAD WIRE ———————— UL: 1061 AWG 26 , - : BLACK
+: RED
FG : WHITE

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 CHAMBER IS MEASURED ACCORDING TO AMCA STANDARD 210-85.

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3. MECHANICAL

3-1. DIMENSION ——— SEE DIMENSION DRAWING

3-2. FRAME ——— THERMOPLASTIC PBT OF UL 94V-0

3-3. FAN BLADE ——— THERMOPLASTIC PBT OF UL 94V-0

3-4. BEARING SYSTEM ——— TWO BALL BEARINGS

3-5. WEIGHT ——— 45 g

4. ENVIRONMENTAL

4-1. OPERATING TEMPERATURE ——— -10 TO +70 °C

4-2. STORAGE TEMPERATURE ——— -40 TO +75 °C

4-3. OPERATING HUMIDITY ——— 5 TO 90 % RH

4-4. STORAGE HUMIDITY ——— 5 TO 95 % RH

4-5. DROP TEST ———
IN MINIMUM PACKGING CONDITION FAN WITHSTAND EACH ONE DROP OF THREE FACES FROM 30cm DISTANCE HEIGHT ONTO 10mm THICKNESS OF WOODEN BOARD

4-6. VIBRATION TEST ———
SINEWAVE
DISPLACEMENT AMPLITUDE: 0.75 mm (EQUIVALENT 10G)
FREQUENCY RANGE: 10Hz - 55 Hz / 30 SEC. 55Hz - 10 Hz / 30 SEC.
LINEEAR SCANNING 120 CYCLE
ENDURANCE TIMER PER AXIS: 2 HOURS
ORIENTATION: X,Y,Z

4-7. SHOCK TEST ———
APPLY PEAK ACCELERATION 50 g AND KEEP DURATION OF THE PULSES FOR 11MS (HALF SINE WAVE)

4-8. RoHS ——— SEE RoHS STANDARD

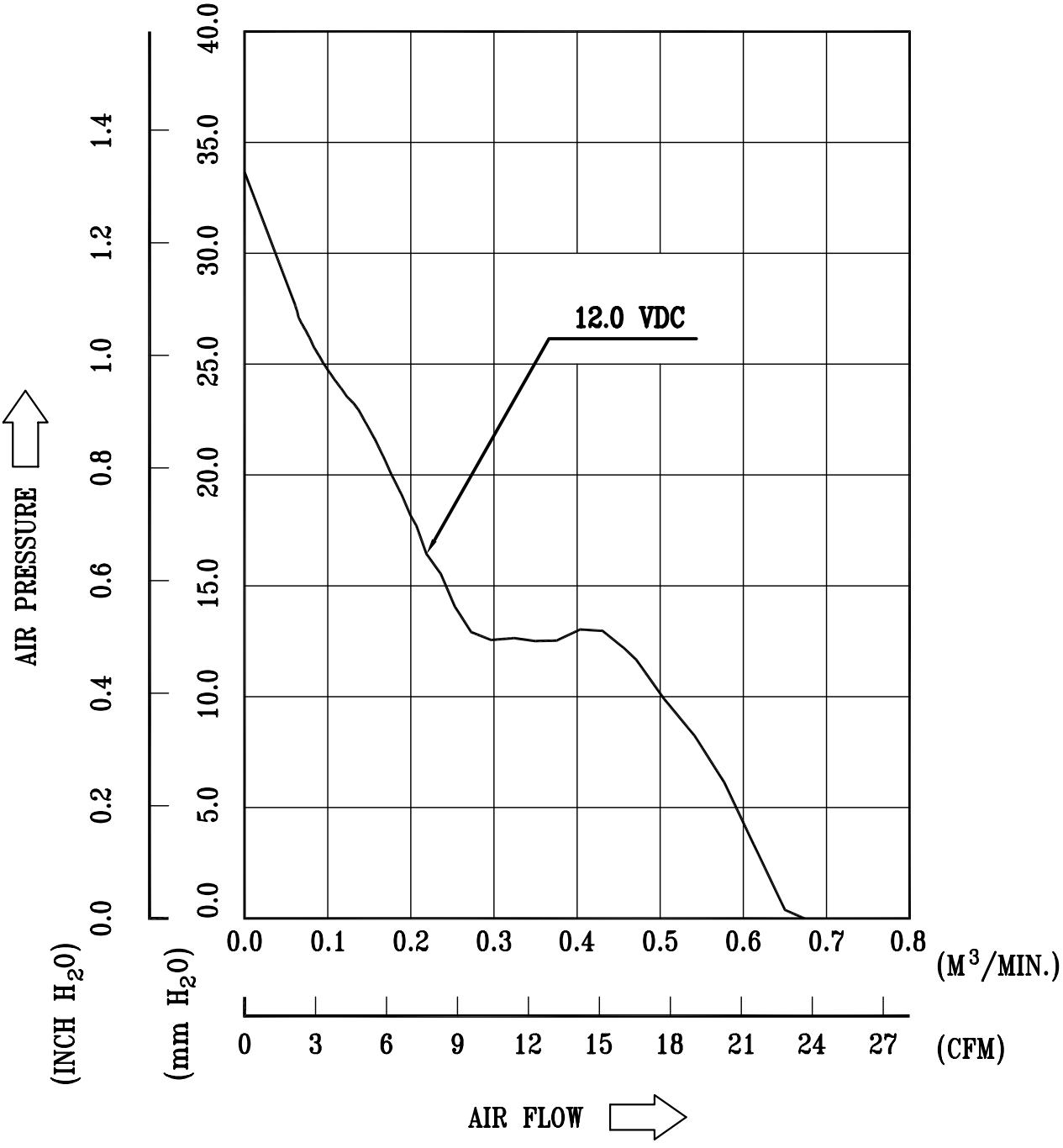
5. PROTECTION

5-1. LOCKED ROTOR PROTECTION ———
IMPEDANCE OF MOTOR WINDING PROTECTS MOTOR FROM DAMAGE IN 72 HOURS OF LOCKED ROTOR CONDITION AT THE REATED VOLTAGE

5-2. POLARITY PROTECTION ———
BE CAPABLE OF WITHSTANDING IF REVERSE CONNECTION FOR POSITIVE AND NEGATIVE LEADS

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6. P & Q CURVE



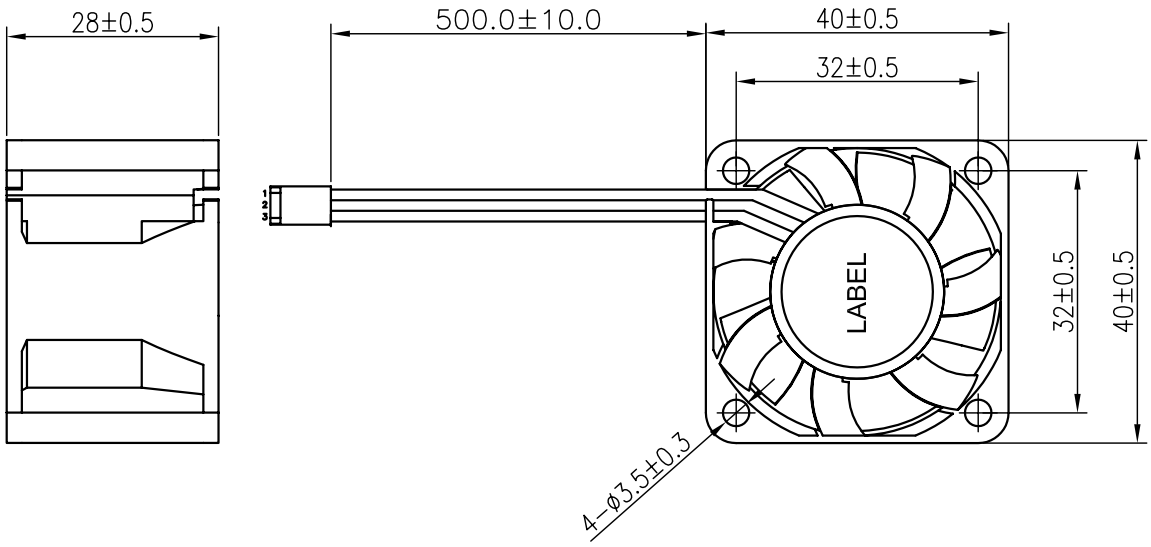
* TEST CONDITION:

INPUT VOLTAGE ——— OPERATION VOLTAGE
TEMPERATURE ——— ROOM TEMPERATURE
HUMIDITY ——— 65%RH

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7. DIMENSION DRAWING





UNIT: mm

NOTES:

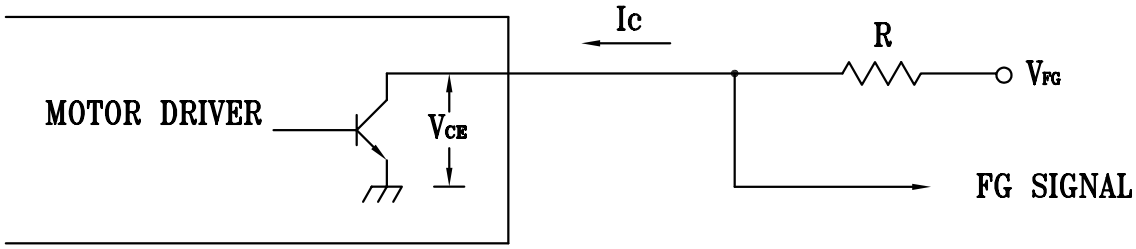
1. LEAD WIRES: PVC WIRES UL1061 AWG#26
   PIN 1:BLACK WIRE ..... (-)
   PIN 2:RED WIRE ..... (+)
   PIN 3:WHITE WIRE ..... (FG)

2. CONNECTOR
   HOUSING: MOLEX 2695-03 22-01-3037 OR EQUIVALENT
   TERMINAL: MOLEX 2759T 08-50-0113 OR EQUIVALENT

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8. FREQUENCY GENERATOR (FG) SIGNAL

8-1. SCHEMATIC:



CAUTION:

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

8-2. SIGNAL SPECIFICATION:

OUTPUT TYPE: OPEN COLLECT

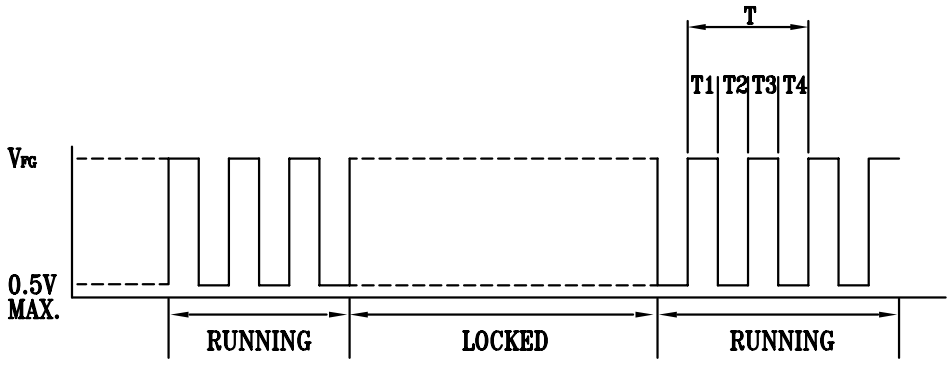
V_{FG} MAXIMUM VOLTAGE = 13.8V

I_C MAXIMUM CURRENT =5mA

LOW LEVEL VOLTAGE = 0.5V MAX.

$R \geq V_{FG} / I_C$

8-3. FREQUENCY GENERATOR WAVEFORM:



T=T1+T2+T3+T4=60/N (Sec) N: SPEED (RPM)

RoHS STANDARD

HAZARDOUS SUBSTANCE		ALLOWABLE CONTENT(ppm)	REMARK
HEAVY METALS	CADMIUM AND CADMIUM COMPOUNDS(Cd)	< 100	DIRECTIVE 91/338/EEC
	LEAD AND LEAD COMPOUNDS (Pb)	< 1000	DIRECTIVE 2002/95/EC : 1. STEEL < 3500 ppm 2. ALUMIUM ALLOYS < 4000 ppm 3. COPPER ALLOYS < 40000 ppm 4. SOLDER < 1000 ppm
	MERCURY AND MERCURY COMPOUNDS(Hg)	< 1000	DIRECTIVE 91/338/EEC
	HEXAVALENT CHROMIUM COMPOUNDS(Cr^{6+})	< 1000	DIRECTIVE 91/338/EEC
BROMINATED ORGANIC COMPOUNDS	POLYBROMINATED BIPHENYLS (PBBs)	< 1000	DIRECTIVE 91/338/EEC
	POLYBROMINATED DIPHENYL ETHERS (PBDEs)	< 1000	DIRECTIVE 91/338/EEC
	OTHER BROMINATED ORGANIC COMPOUNDS	< 1000	DIRECTIVE 91/338/EEC