PROTECHNIC ELECTRIC

SPECIFICATION FOR APPROVAL

CUSTOMER: _____ _____

MODEL: MGT4012YB-W56

Series: C

P/N: _____

Rev: 00

Date: Jul.26.2023

CUSTOMER APPROVAL APPROVED / DATE		
Rev	Date	Description

Notice:

This offer is made according to your current inquiry. Unless otherwise revised, this specification will be final for all future production of orders from your company.

Kindly study in detail and send back to us the specification sheets with your confirmation signature in order to make an arrangement for production.

Approvaled by	Checked by	Authorized by
馬孝菊	白瑞英	陳巧

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⚠ PRODUCT SAFETY

1. Protechnic will not guarantee this product if it is used in conditions other than the parameters outlined in this specifications.
2. Please contact Protechnic to confirm any customer requirements not specified in the specification.
3. Please handle fans carefully. Damage may result from pressure to the impeller, carrying by the lead wires, or dropping fans on a hard surface.
4. The introduction of power, dust water insects or other erosion elements into the hub will result in safety problems or product failure, except in products designed for special environments.
5. Items 1-4, mentioned above, are generally pertinent to our products, and should be a first point of reference.
6. It is very important to establish the correct polarity before connecting the fan to the power source, Positive (+) and Negative (-). Damage may be cause by connecting with reverse polarity.
7. Avoid operating Protechnic products in environments where poisonous or corrosive elements are present (organic, silicon, cyanogens, formal in phenol, H_2S, SO_2, NO_2, Cl_2, etc)
8. Please ensure that fans are stored according to the storage temperature specified. Do not store in a high humidity environment. If fans are stored for more than 6 months, Protechnic recommends testing of fans before using.
9. Not all series fans are provided with the lock rotor protection feature. Damage or failure will result from operating fans without this feature, if the impeller for the fan is in any way hindered or impaired.
10. Install fans carefully. Incorrect mounting or installation may result in excessive resonance, vibration and subsequent noise.
11. Safety is a top priority. Please utilize guard accessories to prevent injury to personnel.
12. Unless otherwise noted, all tests are conducted at 25°C ambient temperature, and 65% relative humidity.
13. When using multiple fans in parallel, connect an 'over 4.7μF 'capacitor externally to the fan to prevent abnormity resulting from unstable power.
14. Any change to the parameters specified in this specification will be determined by mutual agreement between both parties. Parameters not specified will be identical to the final sample approved by your company.

ITEMS	DESCRIPTION
Rated Voltage	D.C. 12.0V
Operating voltage	D.C. 6.0V~13.8V
Start up voltage	D.C. 6.0V (At 25°C power ON/OFF)
Safety Current	3.00A
Operating Current	2.50A (Max. 3.00A)
Safety Power	36.00W
Operating Power	30.00W (Max. 36.00W)
Speed	24,500±10%rpm(INLET) 20,500±10%rpm(OUTLET) (At 25°C,To record speed after fan running normal, This time about 3~5minutes)
Air flow (at zero static pressure)	37.78CFM(1.070m^3/min) Min:34.00CFM(0.963m^3/min)
Air pressure (at zero air flow)	139.50mmH_2O(5.492inchH_2O) Min:113.00mmH_2O(4.449inchH_2O)
Acoustical noise	71.4dB(A) Max:77.4dB(A)
Life expectancy	70,000hrs continuous at 40°C
Insulation resistance	Min 10Meg Ohm between internal stator and lead wire (+) at 500VDC
Dielectric strength	5mA max at 600VAC 50Hz 1 second between frame and (+) terminal
Operating temperature and humidity	-10°C to 70°C,5% to 90%RH
Storage temperature and humidity	-40°C to 70°C,5% to 95%RH
Lock rotor protection	Yes

Noise Test: (ISO10302)

1.Measurement within anechoic chamber under free air condition

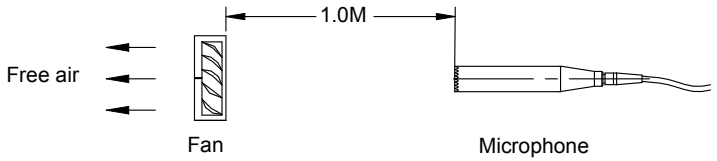
2.Microphone is placed at a distance of 1m on the axis of air intake side

3.Chamber background noise max 9.0dB(A)

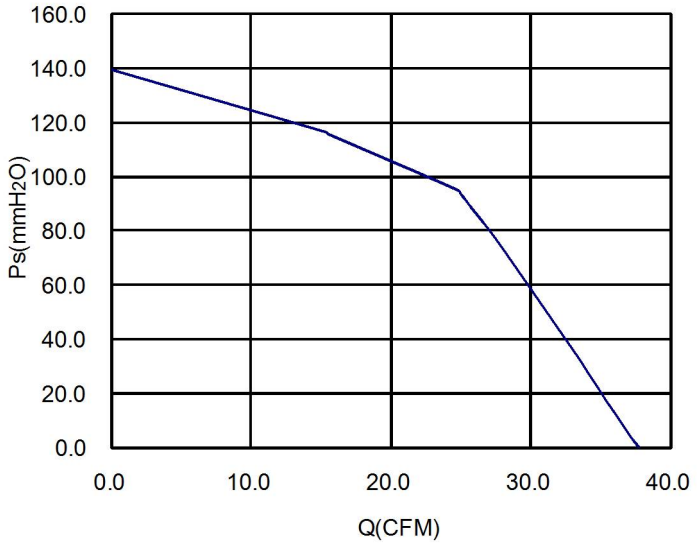
4.Using microphone: G.R.A.S 1/2 inch measure system 40AE+26CA
or 1 inch low measure system 40HF

5.Test system: National Instrument NI-4474 data acquisition system

6.Acoustical noise at rated speed



PQ curve: (Rated Voltage or rated voltage at 100%PWM if applied)



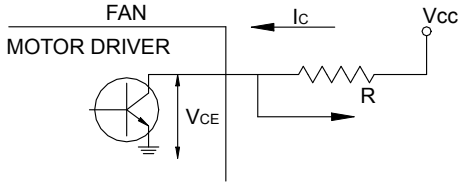
Output of rotary Signal:

1.Output method- open collector method

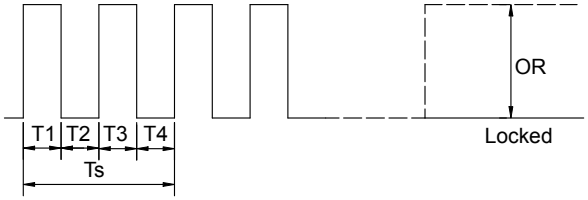
2. Circuit Specification:

2-1.Specification:

Vcc: =15V MAX
Vce(sat):=1.0V MAX
Ic=5mA MAX
R≧Vcc/Ic

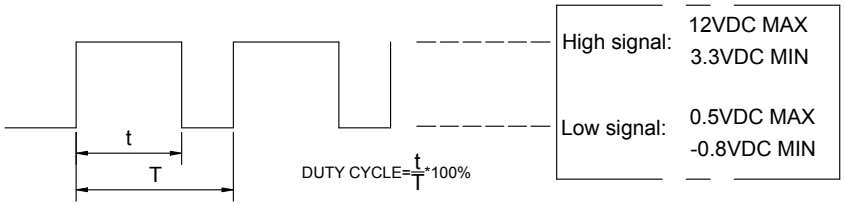


2-2. Frequency Generator Waveform:



One Fan Rotation
N: Revolution per minute (rpm).
T1~T4≈$\frac{1}{4}$Ts=$\frac{60}{4N}$ (sec).
Pulse width duty = T1÷(T1+T2) = 50±5%

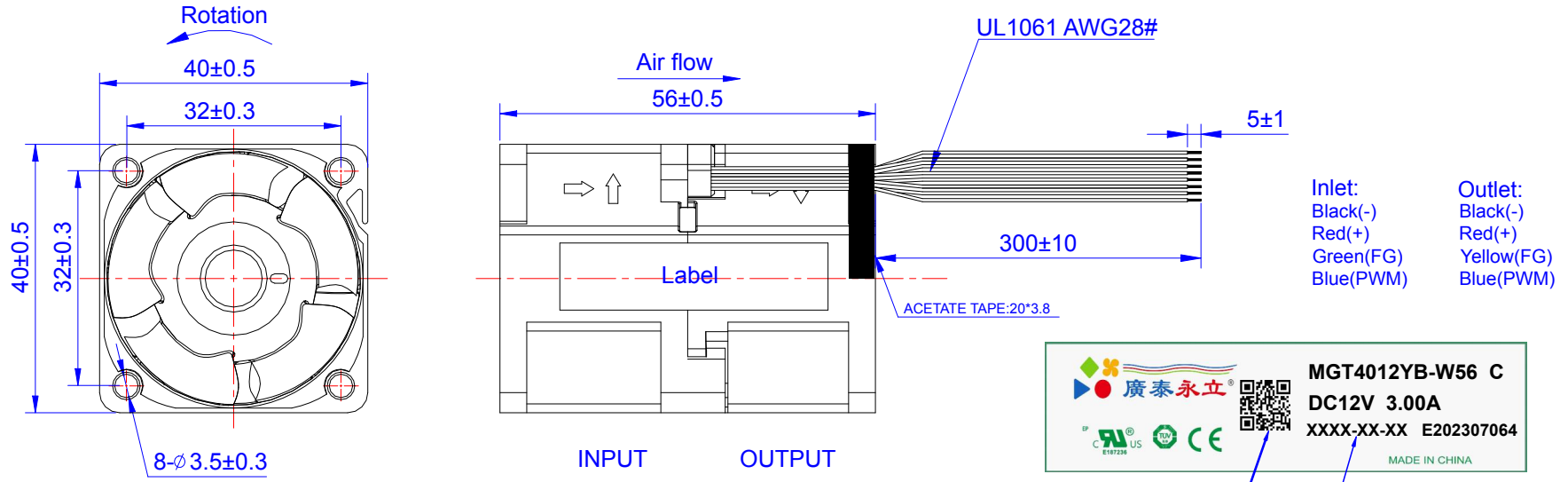
PWM Signal：



1.The control signal frequency of the fan shall be able 18KHz~25KHz.
2.The preferred operating point for the fan is 25KHz.
3.At 100% duty cycle, the rotor will spin at maximum speed.
4.With control signal lead disconnected, the fan will spin at maximum speed.

ITEMS	DESCRIPTION	REMARKS
Frame	PBT(30%GF) UL: 94V-0	
Impeller	PBT(30%GF) UL: 94V-0	
Weight	100g	
Bearing	Dual ball bearings	
Housing	N/A	
Terminal	N/A	
Tube	N/A	
Label	Material: PET	Protechnic

Speed Vs duty cycle (12V)	Duty cycle(%)	100%	20%	0%
	Speed (R.P.M)INLET	24,500±10%	Running	0
	Speed (R.P.M)OUTLET	20,500±10%	Running	0
PWM test method: From 100% duty cycle to 0% duty cycle(At 25°C, rated voltage)				



DC BRUSHLESS FAN		Unit	mm

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