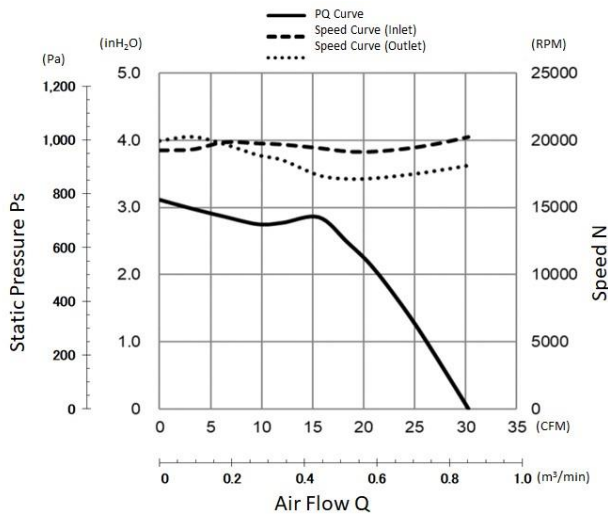


General Specifications

- Motor Type: DC Brushless Motor
- Motor Protection: Auto Restart/Polarity Protection
- Insulation Resistance:
10M Ω by DC500V Megger
- Dielectric Withstand Voltage:
AC 700V 1s or 500V 1min
- Allowable Ambient Temperature Range:
-10°C ~ +60°C (Operating)
-30°C ~ +70°C (Storage)
(non-condensing environment)

Characteristics Curves



PWM Benefits & Applications

PWM Benefits

- Increased Life Expectancy
- Energy Saving
- Lower Vibration
- Lower Noise
- Current Spike Prevention

PWM Applications

- Routers
- Switches
- Storage
- Data Centers
- Optical Repeaters
- Broadcast Equipment
- Inverters
- UPS
- Battery Chargers
- Fuel Cells
- Industrial Power Supplies
- Welders
- Plasma Cutters
- Instrumentation
- Test Equipment
- Enclosures and more

- Customized fan performances at multiple operating points.
- Peak efficiency resulting in lower total ownership costs.
- Cost effective and better reliability.

Life Expectancy L10

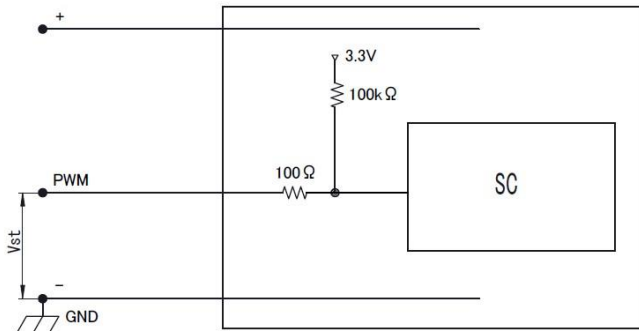
40°C 70,000 Hours

Specifications

MODEL	Rated Voltage	Operating Voltage	Current		Input Power		Speed		Max. Air Flow		Max. Static Pressure		Noise	Mass
			Avg	Max	Avg	Max	Inlet	Outlet	(CFM)	(m ³ /min)	(inH ₂ O)	(Pa)		
04056EA-12R-EUB-2	(V)	(V)	(A) ^{*1}	(A) ^{*1}	(W) ^{*1}	(W) ^{*1}	(min ⁻¹) ^{*1}	(min ⁻¹) ^{*1}	(CFM)	(m ³ /min)	(inH ₂ O)	(Pa)	(dB) ^{*1}	(g)
	12	10.8 ~ 12.6	1.30	1.70	15.60	20.40	20000	18000	30.3	0.86	3.10	771	69.0	90

PWM Specifications

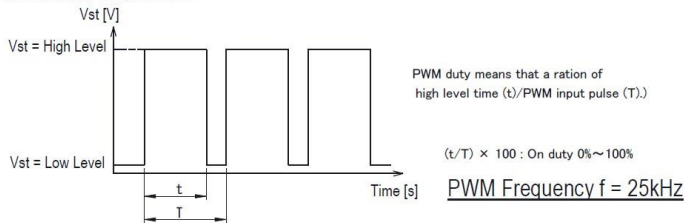
PWM CONTROL
● CONNECTION



1. Vst : PWM CONTROL VOLTAGE

Vst = Low Level (0V ~ 0.4V) → Stop (On Duty 0%)
 Vst = High Level (4.0V ~ 5.0V) → Full Speed (On Duty 100%)
 Vst = OPEN → Full Speed

2. PWM Duty & Input Pulse



3. The condition for PWM control are as follows.

- When you use this under PWM control, always be sure the motor's operation under practical mounting state.
- Fan motor may not start up caused by PWM control at very low speed condition.

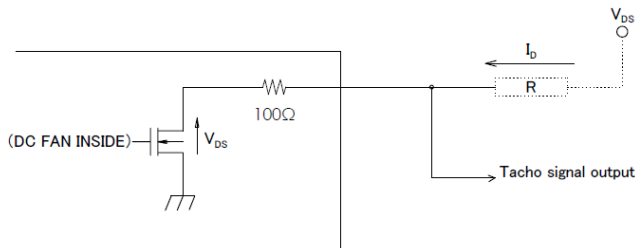
To run at Rating Voltage

- Please use the start with Duty 20% or more at 25kHz.
- [At rated voltage input, Ambient temperature 25°C]

TACHO Specifications

TACHO SIGNAL

- OUTPUT CIRCUIT: OPEN DRAIN
- SPECIFICATION
 Absolute Maximum Ratings at Ta=25°C
 V_{DS} max : +15V
 I_b max : 5mA [V_{DS}(sat)max = 1.5V]

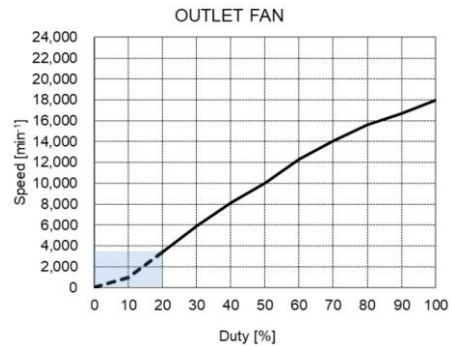
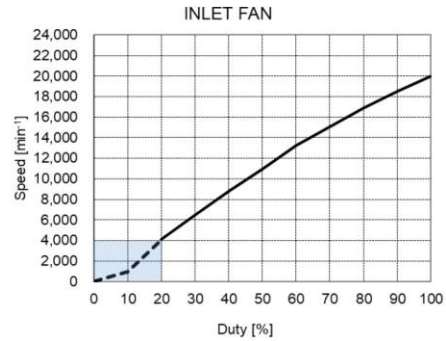


TACHO SIGNAL CIRCUIT

PWM Characteristics Curve

REFERENCE PWM Duty VS Speed

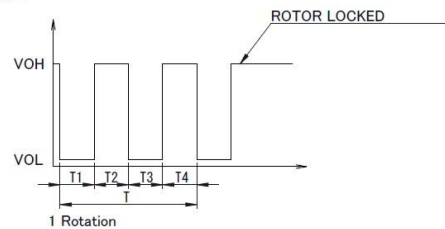
Condition : at rating voltage, Vst=5V, f=25kHz, Ta=25°C



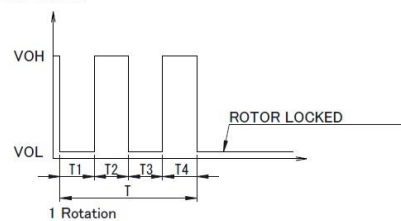
3. OUTPUT WAVEFORM : AT RATED VOLTAGE

4. OUTPUT SIGNAL VOLTAGE

3-1



3-2 Case-2

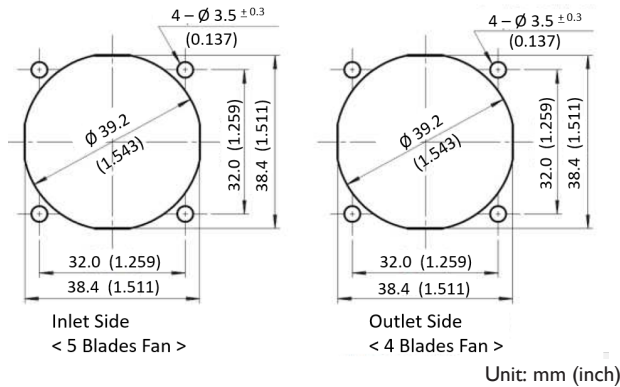


- When the rotor is locked at VOH position of signal, signal keeps VOH position.
- When the rotor is locked at VOL position of signal, signal keeps VOL position.
- $T = T_1 + T_2 + T_3 + T_4 = 60 / m = 1$ rotation

m : min⁻¹

Tach Duty Cycle = 50% ± 10%

Panel Cut-Outs



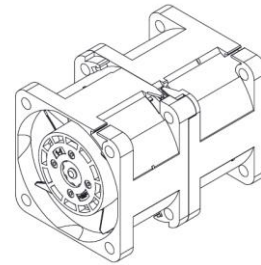
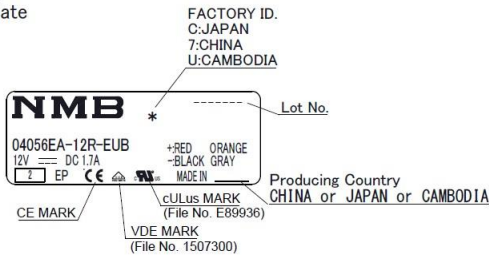
Materials

Inlet FAN
 Casing : Plastic (Black UL94V-0)
 Impeller : Plastic (Black UL94V-0)
 Bearing : Ball Bearing
 Lead Wire : UL10368 AWG26 or AWG28
 or Equivalent
 (+) : Red (-) : Black
 PWM : Brown Tach : White

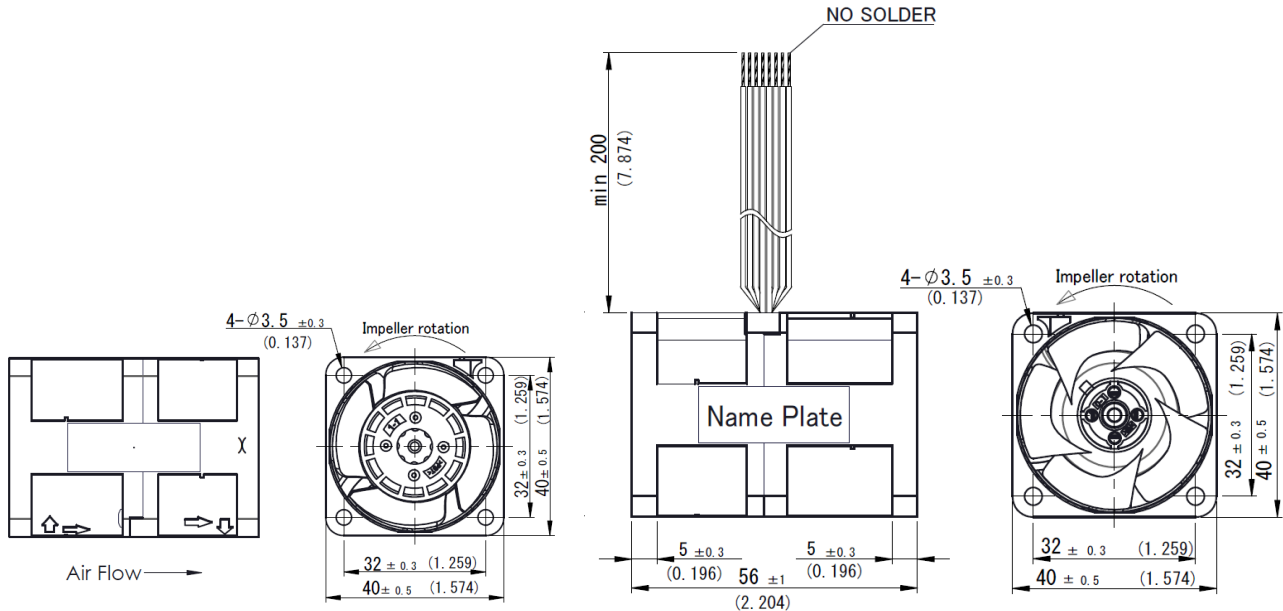
Outlet FAN
 Casing : Plastic (Black UL94V-0)
 Impeller : Plastic (Black UL94V-0)
 Bearing : Ball Bearing
 Lead Wire : UL10368 AWG26 or AWG28
 or Equivalent
 (+) : Orange (-) : Gray
 PWM : Blue Tach : Yellow

Outline

Name Plate



Flange Casing



Unit: mm (inch)