IP68 Protected DC Fan with PWM and Tach Output

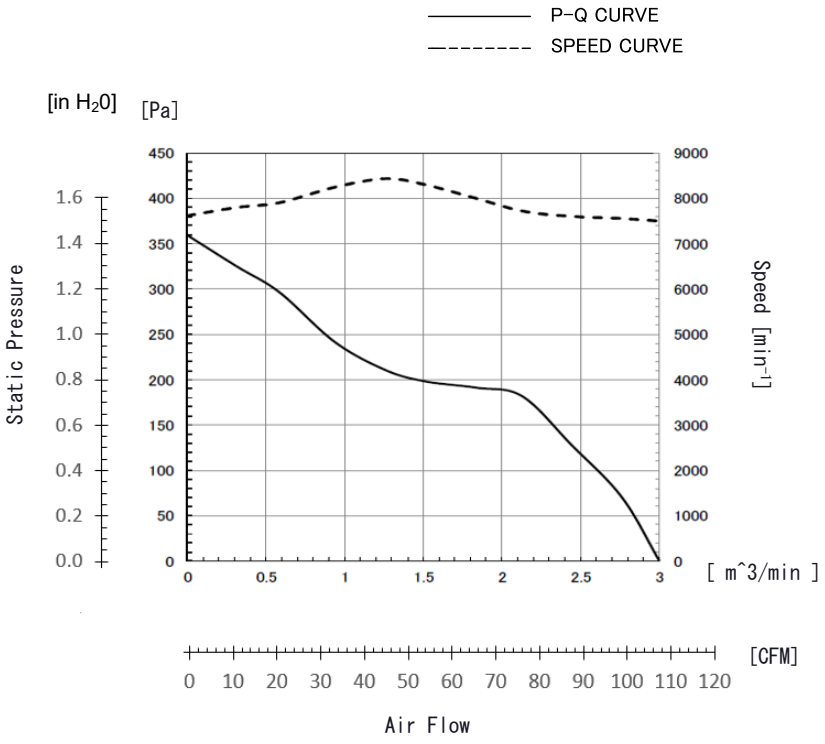
08038RE-12R/24R (0-Type)

General Specifications

Motor Type:
DC Brushless Motor
Motor Protection:
Auto Restart / Polarity Protection (Motor withstands reverse connection for positive and negative leads.)
Insulation Resistance:
10MΩ or over with a DC 500V Megger
Dielectric Withstand Voltage:
AC 500V 1min or AC 700V 1sec
Allowable Ambient Temperature Range:
-10˚C ~ + 60˚C (Operating)
-40˚C ~ + 70˚C (Storage)
(non-condensing environment)

**For reference only. Please see fan outline for details*

Characteristic Curves



Features

- DC axial fan with outstanding P-Q performance, IP68 protection, PWM speed control, and tach output
- IP68 with highest level of protection from water/dust ingress
- Outfitted with NMB precision machined stainless steel ball bearings for long life
- Ideal for applications such as EV chargers, PV inverters, energy storage, Bi-Directional chargers and many other outdoor applications

Life Expectancy L10

80,000 Hours at 25 Celsius

**Fan life expectation is based on free air operation at 25°C, rated voltage, and indoor benign lab environment*

**1: Values in Free Air*

Specifications

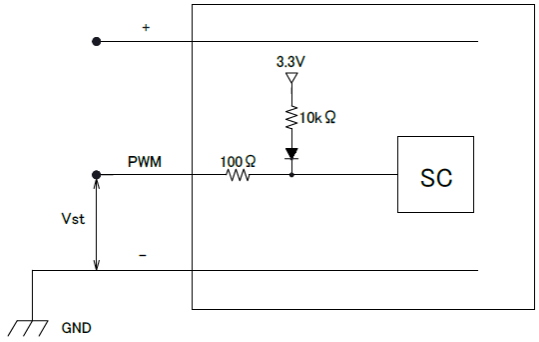
MODEL	Rating Voltage	Operating Voltage	Current		Input Power		Speed	Max. Air Flow		Max. Static Pressure		Noise	Mass
			Avg	Max	Avg	Max							
	(V)	(V)	(A)*1	(A)*1	(W)*1	(W)*1	(min-1)*1	(CFM)	(m3/min)	(in H2O)	(Pa)	(dB)*1	(g)
08038RE-12R-GU-03	12	7.0 to 13.2	1.75	2.15	21.00	25.80	7,500	105.9	3.00	1.43	355	59.5	240
08038RE-24R-GU-05	24	14.0 to 26.4	0.87	1.10	20.88	26.40	7,500	105.9	3.00	1.43	355	59.5	240

IP68 Protected DC Fan with PWM and Tach Output

08038RE-12R (0-Type)

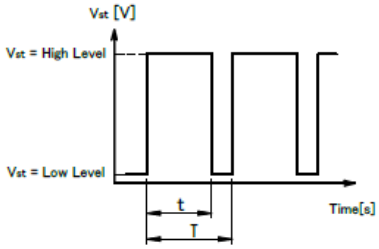
PWM Specifications

Connection



1. PWM Control
   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 & PWM Input Pulse



PWM Duty means that a ratio of high level time (t)/PWM Input Pulse(T).

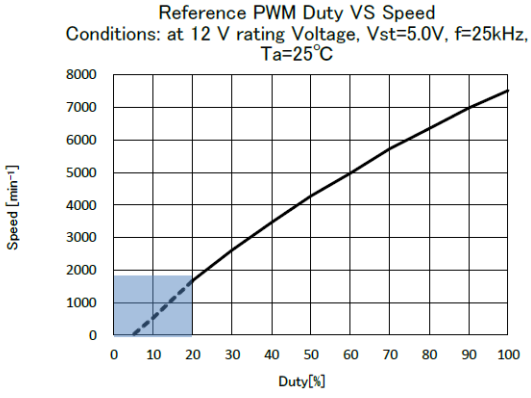
(t/T) × 100 : On Duty 0%~100%

PWM Frequency f = 25± 5[kHz]

3. The condition for PWM control are as follows

- Please install the fan in your system when inputting the PWM function. If the PWM duty is very low, or affected by external factors, the fan might not start up under your system conditions
- Run the fan at rated voltage only during PWM operation
- Please start the fan with duty cycle of 20% or more at 25kHz.[At rated voltage input, Ambient temperature 25℃]

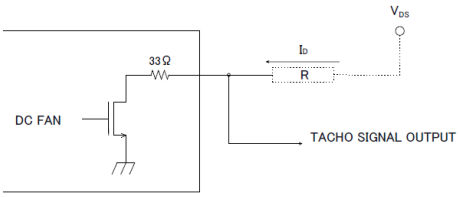
PWM Characteristic Curve



TACHO Specifications

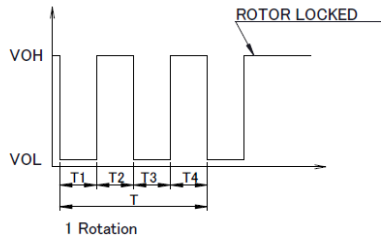
Tachometer Signal

1. Output Circuit: Open Drain
2. Specification
   Absolute Maximum Ratings at Ta=25°C
   V_{DS}max: +15V
   $I_D$max: 5mA[V_{DS}(on)max=1.5V]

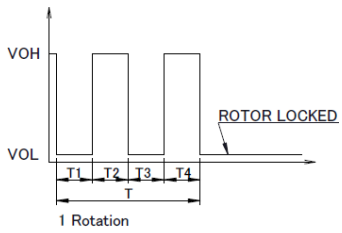


3. Output Waveform: At Rated Voltage
   Output Signal Voltage

Case–1



Case–2



1) When the rotor is locked at VOH position of signal, signal stays at VOH position.
2) When the rotor is locked at VOL position of signal, signal stays at VOL position.

3) T=T1+T2+T3+T4=60/m=1 rotation

   m: Fan Speed (min^{-1})

   Tacho Duty Cycle=50%±10%

For 12 V DC Model

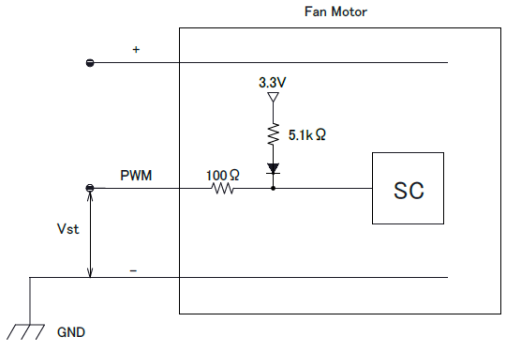
IP68 Protected DC Fan with PWM and Tach Output

08038RE-24R (0-Type)

NMB

PWM Specifications

Connection



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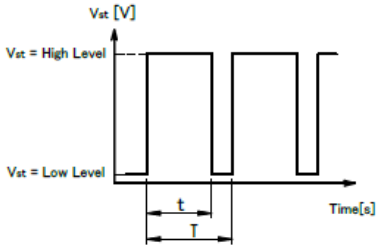

PWM Duty means that a ratio of high level time (t)/PWM Input Pulse(T).

(t/T) × 100 : On Duty 0%~100%

PWM Frequency f = 25± 5[kHz]

3. The condition for PWM control are as follows

- Please install the fan in your system when inputting the PWM function. If the PWM duty is very low, or affected by external factors, the fan might not start up under your system conditions
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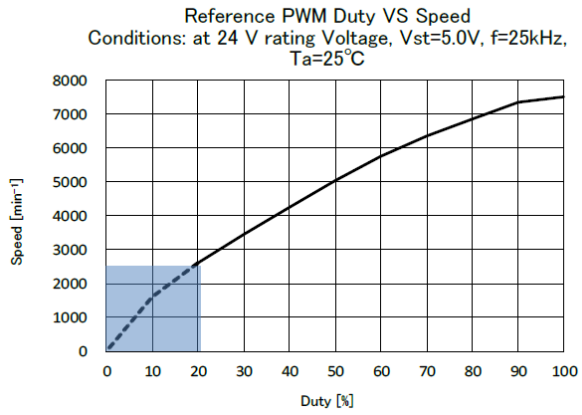
- Please start the fan with duty cycle of 20% or more at 25kHz.[At rated voltage input, Ambient temperature 25℃]

PWM Characteristic Curve



TACHO Specifications

Tachometer Signal

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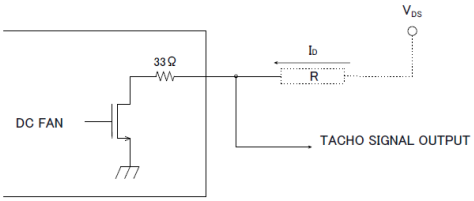

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   Output Signal Voltage

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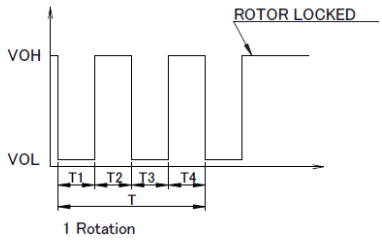
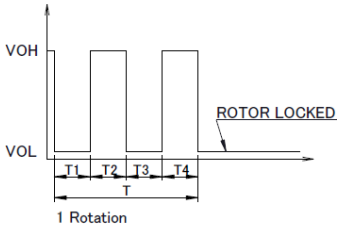


Case–2



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m: Fan Speed (min^{-1})

Tacho Duty Cycle=50%±10%

For 24 V DC Model

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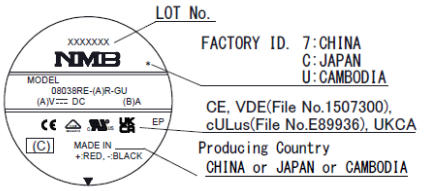
Outlines

(Name Plate)



08038RE-12R-GU-03
(A): 12
(B): 2.15
(C): 03
08038RE-24R-GU-05
(A): 24
(B): 1.10
(C): 05

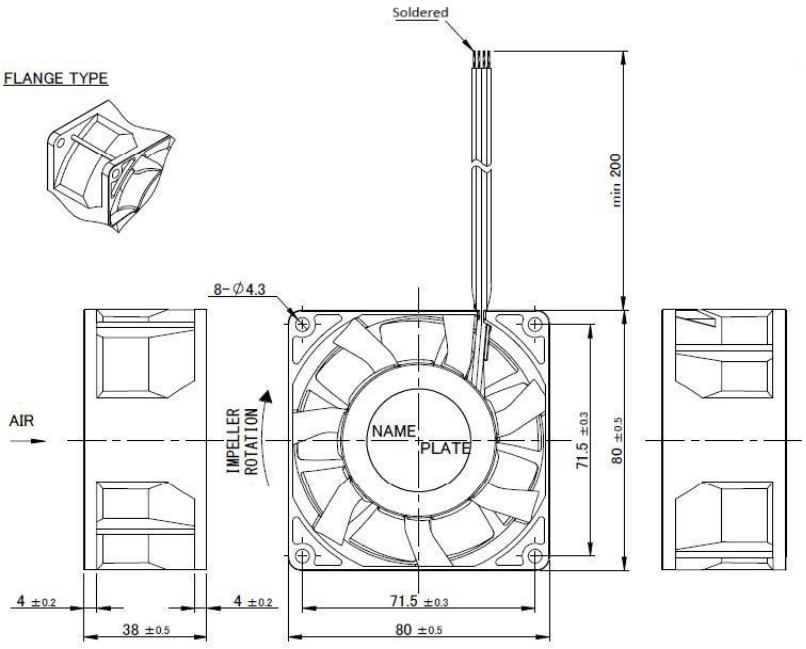
Safety Marking	08038RE-12R-GU-03	08038RE-24R-GU-05
cULus(File No.E89936)	Coming December 2024	Available
CE	None	Available
VDE(File No.1507300)	None	Available

Materials

Casing: Plastic (Black UL 94V-0)
Impeller: Plastic (Black UL 94V-0)
Bearing: Stainless Steel Ball Bearing
Lead Wire: UL1430 AWG26
or equivalent for

Red (+)
Black (-)
White (Tach)
Brown (PWM)

(Outline)



(Panel Out-line)