# 97×33 mm

## San Ace B97 9BMB type

## General Specifications

- Material ····· Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life ····· See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60˚C, rated voltage)
- Motor protection function ····· Locked rotor burnout protection, Reverse polarity protection
  For details, please refer to p. 547.
- Dielectric strength ····· 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance ····· 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) ····· At 1 m away from the air inlet
- Storage temperature ····· -30 to +70˚C (Non-condensing)
- Lead wire ····· ⊕Red ⊖Black (Sensor) Yellow (Control) Brown
  (For models without PWM control function, there is no speed control wiring.)
- Mass ····· 190 g

## Specifications

The models listed below **have pulse sensors with PWM control function.**

| Model no. | Rated voltage [V] | Operating voltage range [V] | PWM duty cycle* [%] | Rated current [A] | Rated input [W] | Rated speed [min⁻¹] | Max. airflow [m³/min] | Max. airflow [CFM] | Max. static pressure [Pa] | Max. static pressure [inchH₂O] | SPL [dB (A)] | Operating temperature [˚C] | Expected life [h] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **9BMB12P2K01** | 12 | 10.8 to 13.2 | 100 | 3.4 | 40.8 | 6850 | 1.61 | 56.8 | 1280 | 5.14 | 66 | -20 to +70 | 40000/60˚C |
| **9BMB12P2G01** | | 10.2 to 13.8 | 100 | 1.8 | 21.6 | 5750 | 1.34 | 47.3 | 760 | 3.05 | 61 | | |
| **9BMB12P2S01** | | | 100 | 1.4 | 16.8 | 5250 | 1.22 | 43.1 | 610 | 2.45 | 59 | | |
| **9BMB12P2H01** | | | 100 | 1.1 | 13.2 | 4850 | 1.11 | 39.2 | 490 | 1.968 | 57 | | |
| **9BMB12P2F01** | | | 100 | 0.9 | 10.8 | 4500 | 1.04 | 36.7 | 410 | 1.64 | 56 | | |
| **9BMB24P2K01** | 24 | 21.6 to 26.4 | 100 | 1.62 | 38.88 | 6850 | 1.61 | 56.8 | 1280 | 5.14 | 66 | | |
| **9BMB24P2G01** | | | 100 | 0.83 | 19.92 | 5750 | 1.34 | 47.3 | 760 | 3.05 | 61 | | |
| **9BMB24P2S01** | | | 100 | 0.7 | 16.8 | 5250 | 1.22 | 43.1 | 610 | 2.45 | 59 | | |
| **9BMB24P2H01** | | | 100 | 0.55 | 13.2 | 4850 | 1.11 | 39.2 | 490 | 1.968 | 57 | | |
| **9BMB24P2F01** | | | 100 | 0.45 | 10.8 | 4500 | 1.04 | 36.7 | 410 | 1.64 | 56 | | |

* PWM frequency: 25 kHz. Fan does not rotate when PWM duty cycle is 0%.

The following sensor and control options are available for selection.
Available for all models. **Without sensor** **Pulse sensor**
Differs according to the model. Refer to the table on pp. 566 to 567. **Lock sensor**

The models listed below **have pulse sensors.**

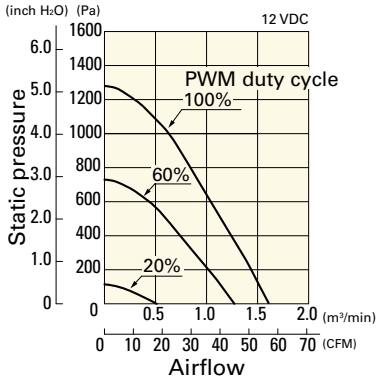
| Model no. | Rated voltage [V] | Operating voltage range [V] | Rated current [A] | Rated input [W] | Rated speed [min⁻¹] | Max. airflow [m³/min] | Max. airflow [CFM] | Max. static pressure [Pa] | Max. static pressure [inchH₂O] | SPL [dB (A)] | Operating temperature [˚C] | Expected life [h] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **9BMB12K201** | 12 | 7 to 13.2 | 3.4 | 40.8 | 6850 | 1.61 | 56.8 | 1280 | 5.14 | 66 | -20 to +70 | 40000/60˚C |
| **9BMB12G201** | | 7 to 13.8 | 1.8 | 21.6 | 5750 | 1.34 | 47.3 | 760 | 3.052 | 61 | | |
| **9BMB12S201** | | | 1.4 | 16.8 | 5250 | 1.22 | 43.1 | 610 | 2.45 | 59 | | |
| **9BMB12H201** | | | 1.1 | 13.2 | 4850 | 1.11 | 39.2 | 490 | 1.968 | 57 | | |
| **9BMB12F201** | | | 0.9 | 10.8 | 4500 | 1.04 | 36.7 | 410 | 1.647 | 56 | | |
| **9BMB24K201** | 24 | 21.6 to 26.4 | 1.62 | 38.88 | 6850 | 1.61 | 56.8 | 1280 | 5.14 | 66 | | |
| **9BMB24G201** | | 12 to 26.4 | 0.83 | 19.9 | 5750 | 1.34 | 47.3 | 760 | 3.052 | 61 | | |
| **9BMB24S201** | | | 0.7 | 16.8 | 5250 | 1.22 | 43.1 | 610 | 2.45 | 59 | | |
| **9BMB24H201** | | | 0.55 | 13.2 | 4850 | 1.11 | 39.2 | 490 | 1.968 | 57 | | |
| **9BMB24F201** | | | 0.45 | 10.8 | 4500 | 1.04 | 36.7 | 410 | 1.647 | 56 | | |

The following sensor and control options are available for selection.
Available for all models. **Without sensor** **PWM control**
Differs according to the model. Refer to the table on pp. 566 to 567. **Lock sensor**

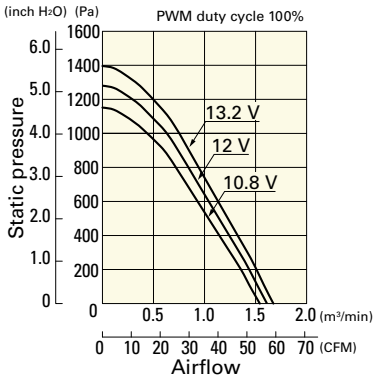
## Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

### 9BMB12P2K01 With pulse sensor with PWM control function

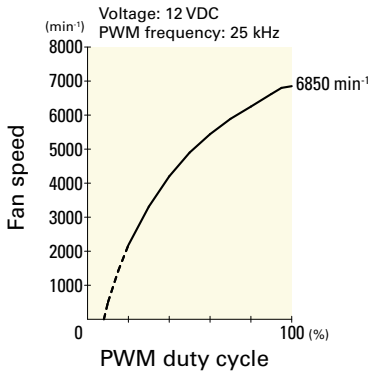
PWM duty cycle




Operating voltage range

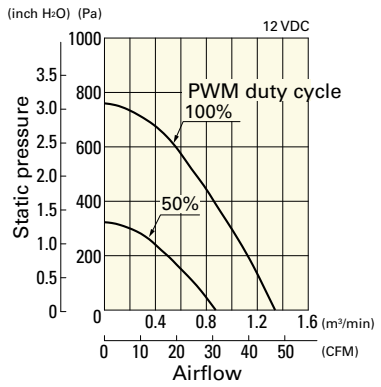



PWM duty - Speed characteristics example

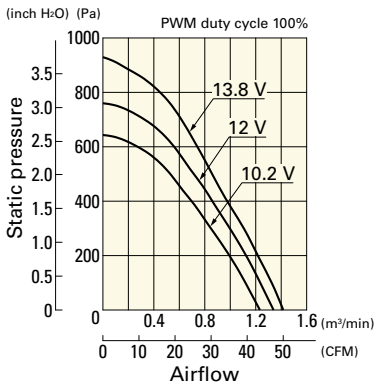



### 9BMB12P2G01 With pulse sensor with PWM control function

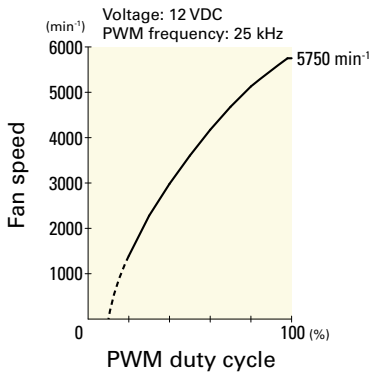
PWM duty cycle




Operating voltage range

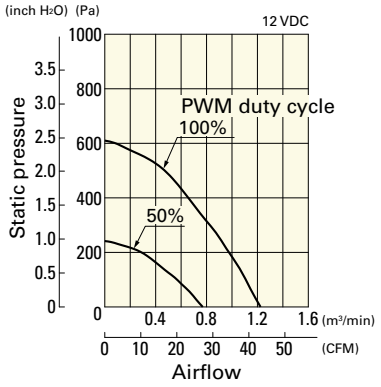



PWM duty - Speed characteristics example

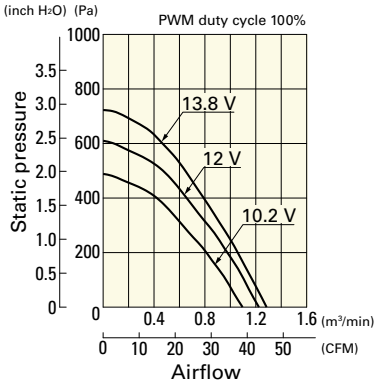



### 9BMB12P2S01 With pulse sensor with PWM control function

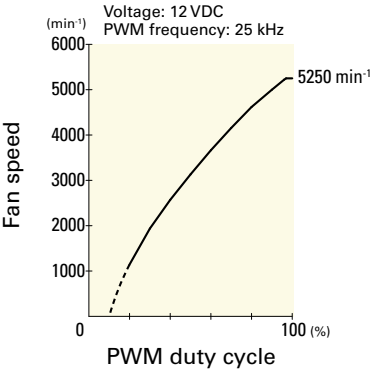
PWM duty cycle




Operating voltage range

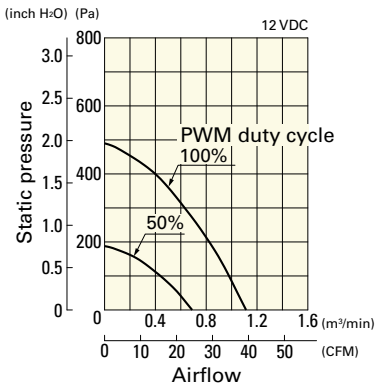



PWM duty - Speed characteristics example

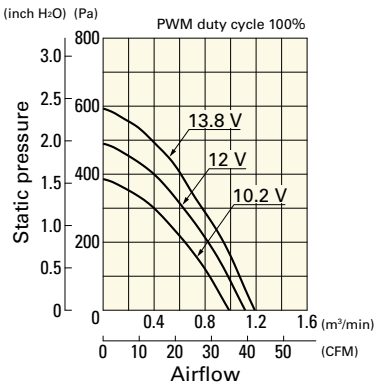



### 9BMB12P2H01 With pulse sensor with PWM control function

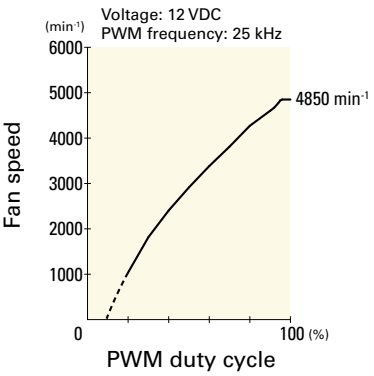
PWM duty cycle




Operating voltage range



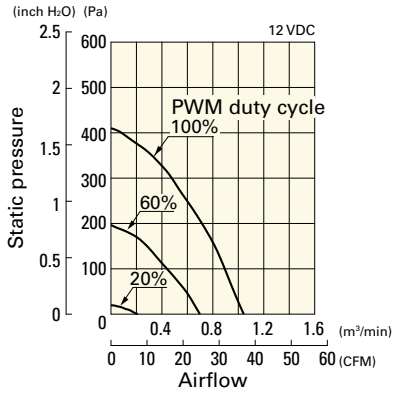

PWM duty - Speed characteristics example



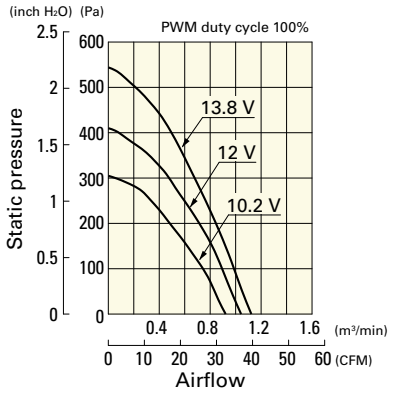
## Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

### 9BMB12P2F01 With pulse sensor with PWM control function

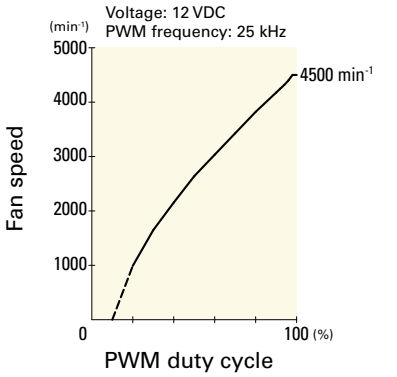
PWM duty cycle




Operating voltage range

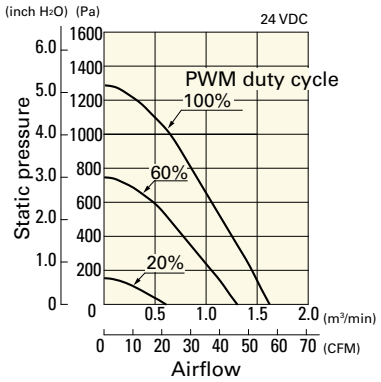



PWM duty - Speed characteristics example

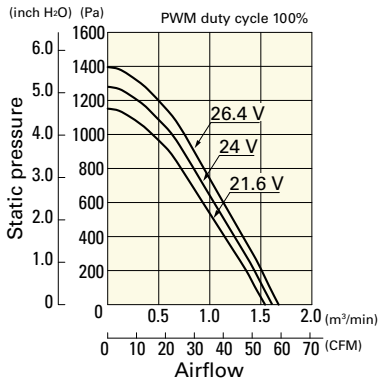



### 9BMB24P2K01 With pulse sensor with PWM control function

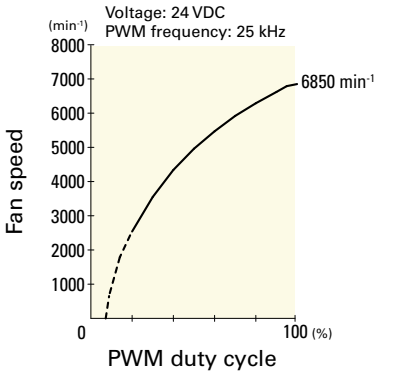
PWM duty cycle




Operating voltage range

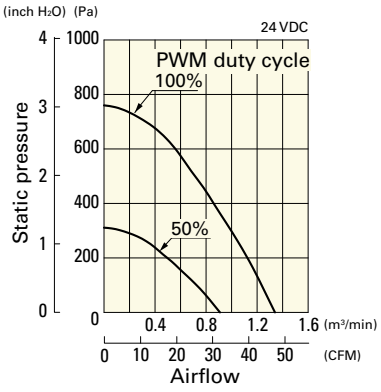



PWM duty - Speed characteristics example

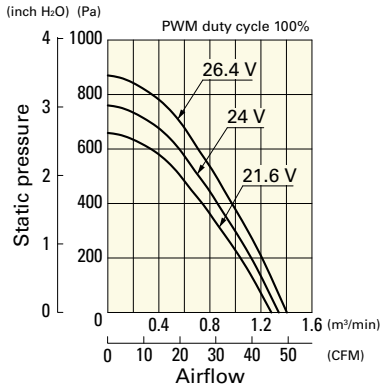



### 9BMB24P2G01 With pulse sensor with PWM control function

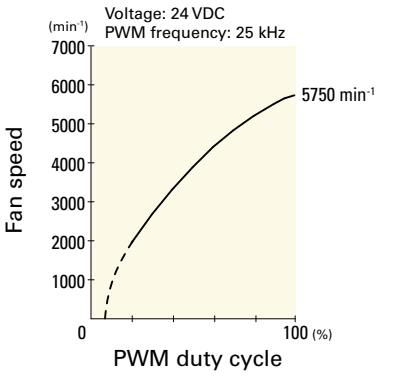
PWM duty cycle




Operating voltage range

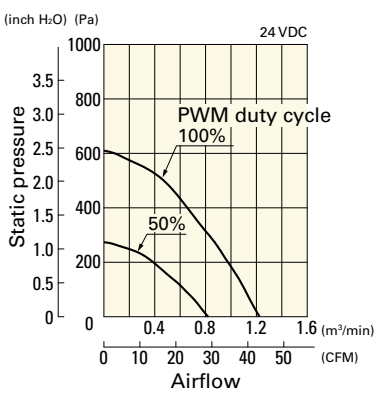



PWM duty - Speed characteristics example

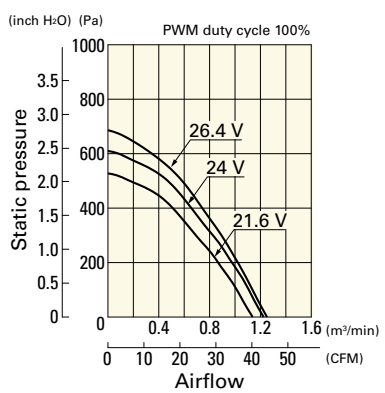



### 9BMB24P2S01 With pulse sensor with PWM control function

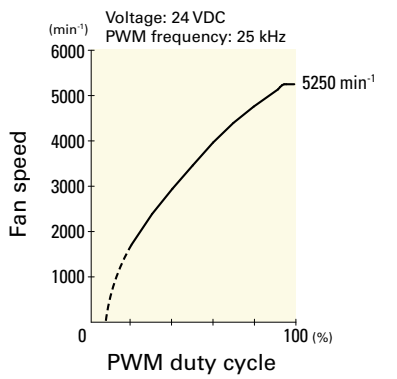
PWM duty cycle




Operating voltage range



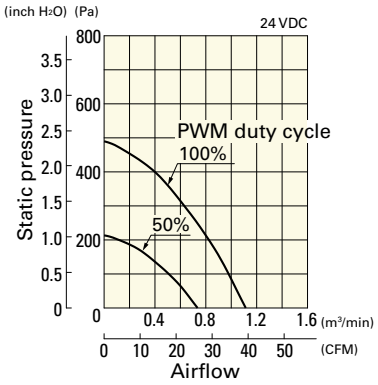

PWM duty - Speed characteristics example



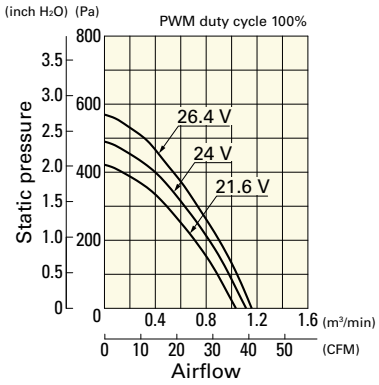
## Airflow - Static Pressure Characteristics / PWM Duty - Speed Characteristics Example

### 9BMB24P2H01 With pulse sensor with PWM control function

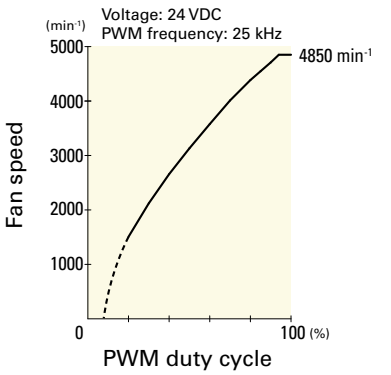
PWM duty cycle




Operating voltage range

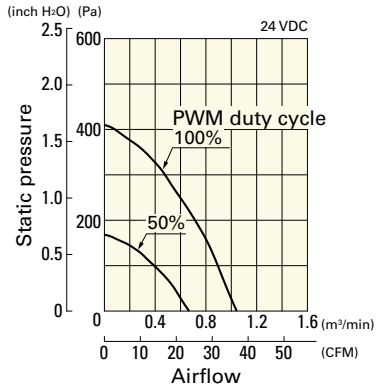



PWM duty - Speed characteristics example

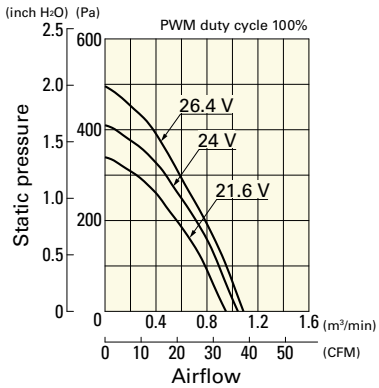



### 9BMB24P2F01 With pulse sensor with PWM control function

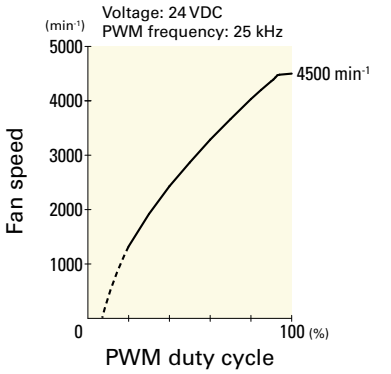
PWM duty cycle




Operating voltage range

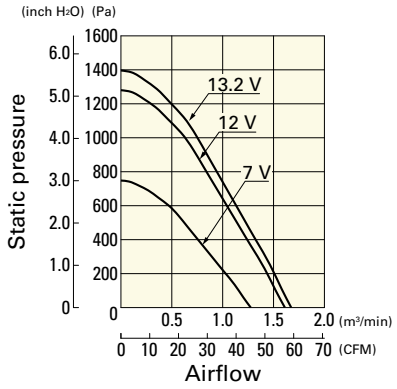



PWM duty - Speed characteristics example



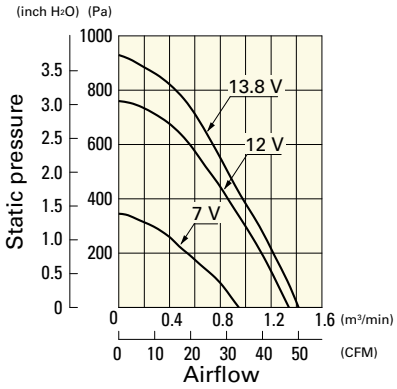

### 9BMB12K201 With pulse sensor

Operating voltage range



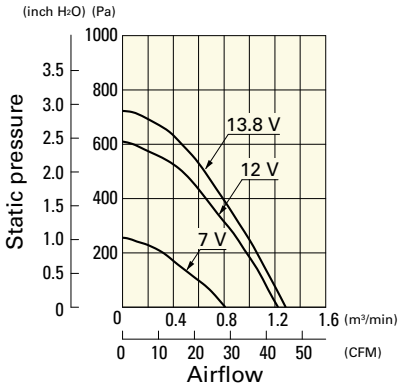

### 9BMB12G201 With pulse sensor

Operating voltage range



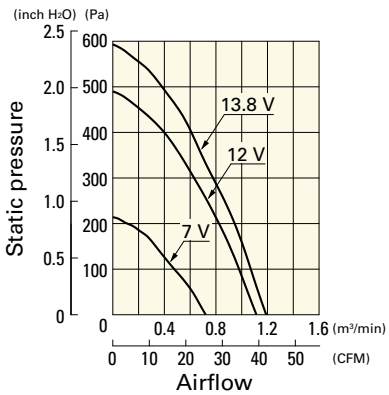

### 9BMB12S201 With pulse sensor

Operating voltage range



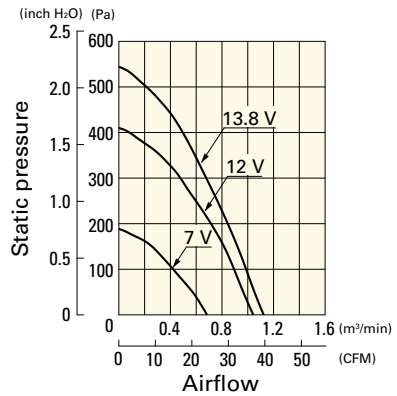

### 9BMB12H201 With pulse sensor

Operating voltage range



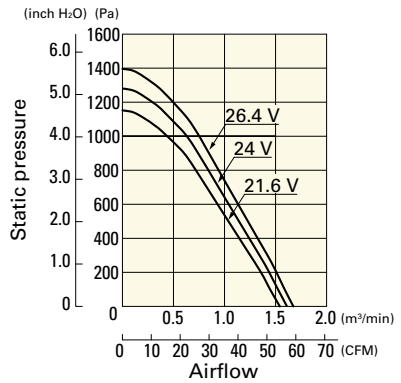

### 9BMB12F201 With pulse sensor

Operating voltage range




### 9BMB24K201 With pulse sensor

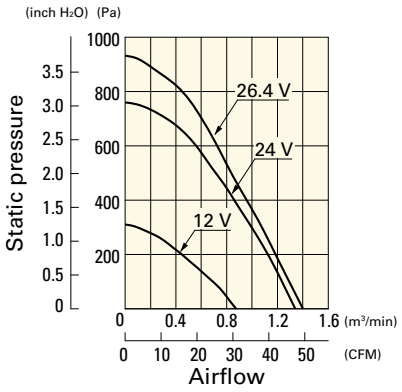
Operating voltage range



## Airflow - Static Pressure Characteristics

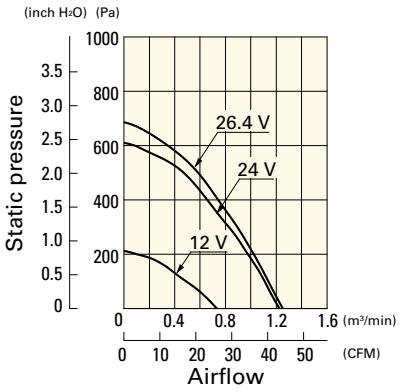
### 9BMB24G201 With pulse sensor

Operating voltage range



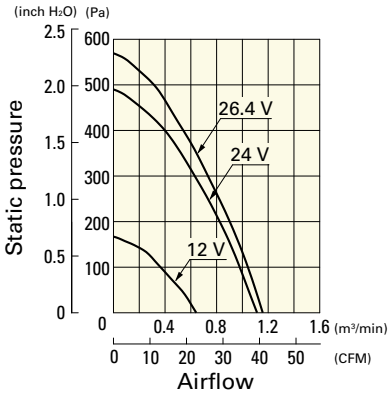

### 9BMB24S201 With pulse sensor

Operating voltage range



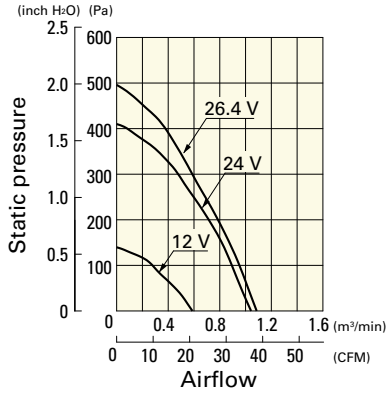

### 9BMB24H201 With pulse sensor

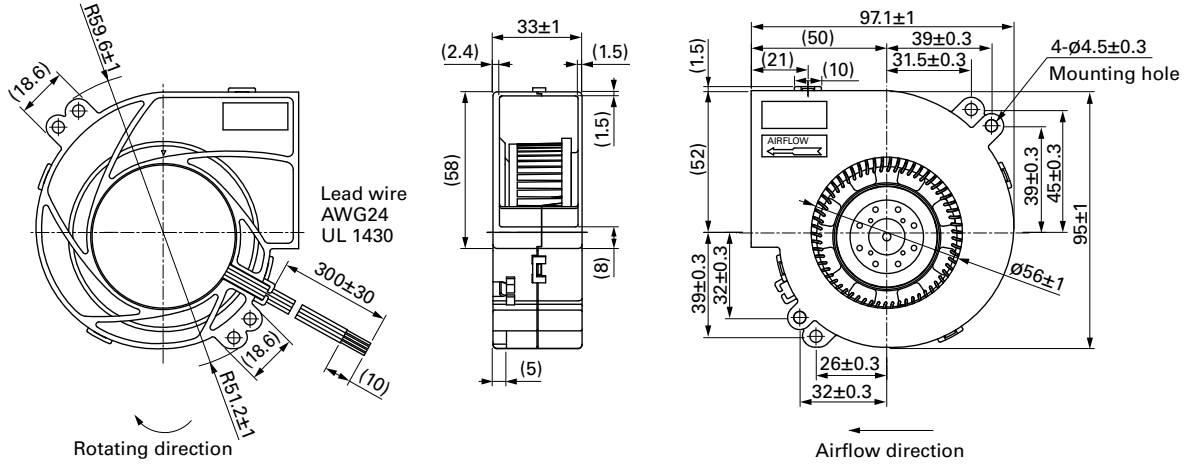
Operating voltage range




### 9BMB24F201 With pulse sensor

Operating voltage range




## Dimensions (unit: mm) (With pulse sensor with PWM control function)