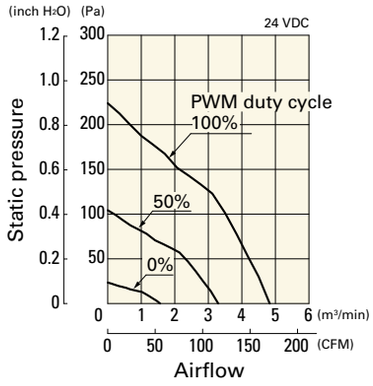
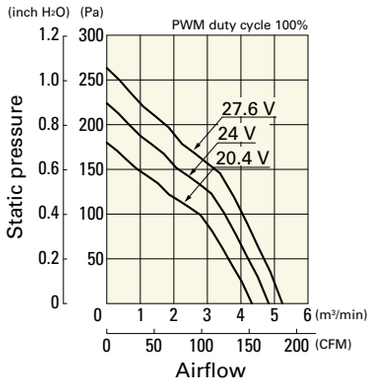
## 9GV1224P4G01 With pulse sensor with PWM control

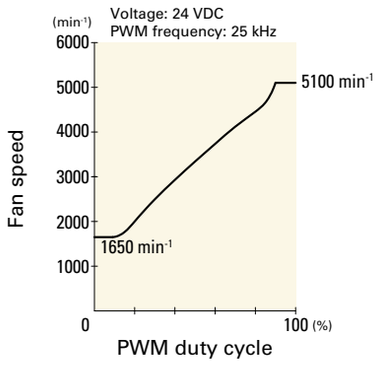
PWM duty cycle




Operating voltage range

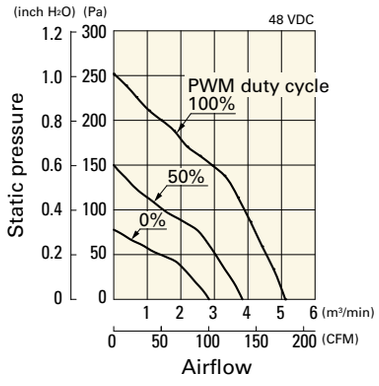



PWM duty - Speed characteristics example

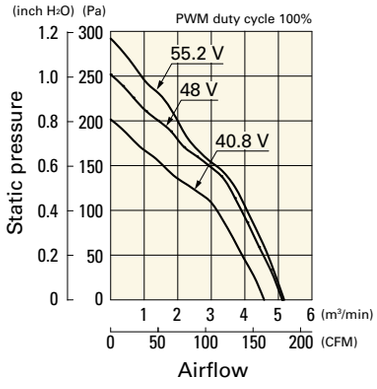



## 9GV1248P4J01 With pulse sensor with PWM control

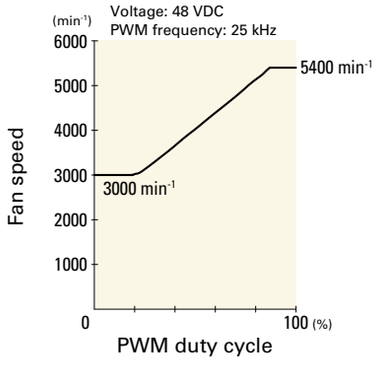
PWM duty cycle




Operating voltage range

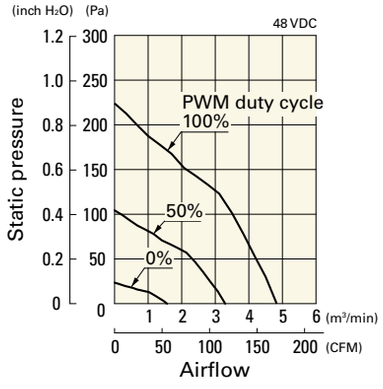



PWM duty - Speed characteristics example

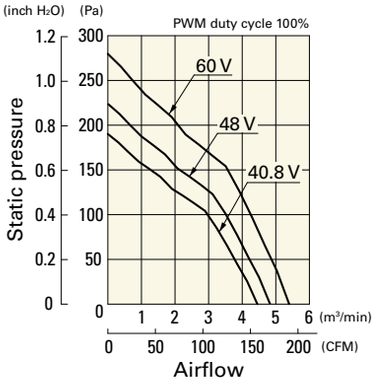



## 9GV1248P4G01 With pulse sensor with PWM control

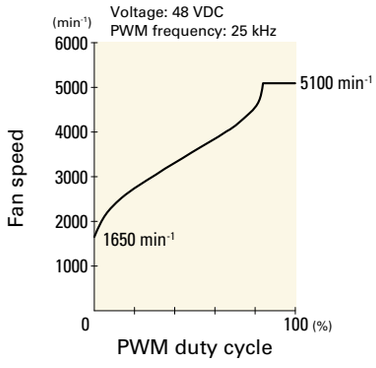
PWM duty cycle




Operating voltage range

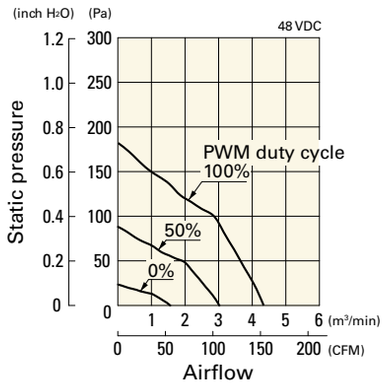



PWM duty - Speed characteristics example

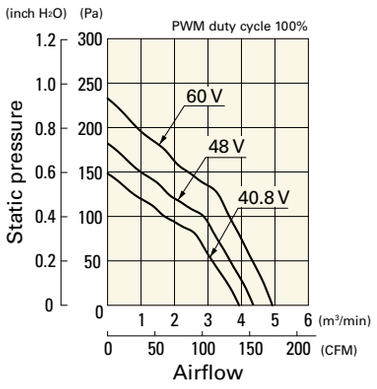



## 9GV1248P4H01 With pulse sensor with PWM control

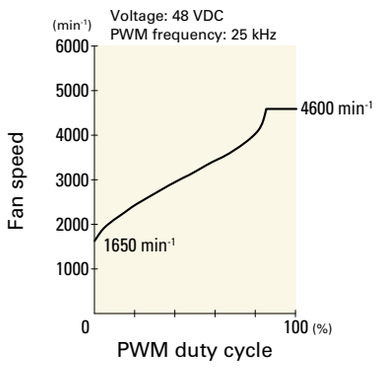
PWM duty cycle

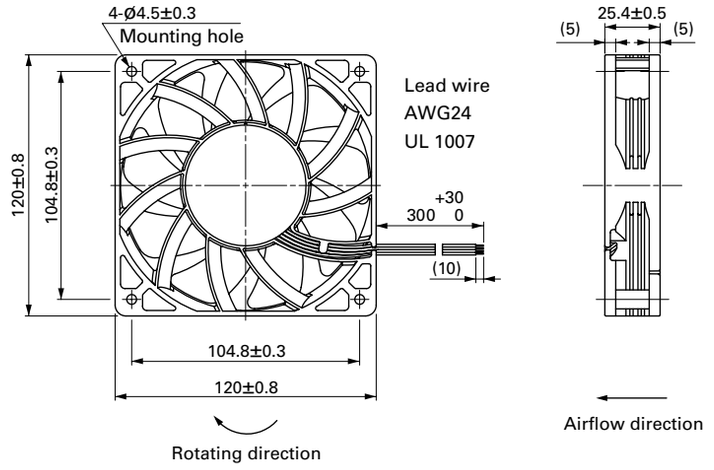



Operating voltage range

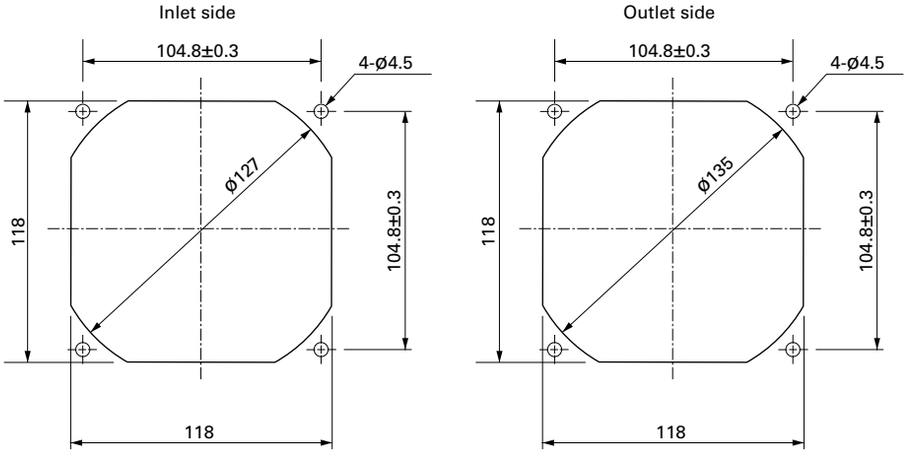



PWM duty - Speed characteristics example






## Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)




## Options

**Finger guards** page: p. 599

Model no.: 109-019E, 109-019K

**Resin filter kits** page: p. 606

Model no.: 109-1000F13 (13PPI), 109-1000F20 (20PPI),
109-1000F30 (30PPI), 109-1000F40 (40PPI)

**Resin finger guards** page: p. 605

Model no.: 109-1000G

# 120×120×25 mm

## San Ace 120 9RA type


## General Specifications

- Material ..... Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life ..... See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60˚C, rated voltage) Expected life at 40°C is for reference only.
- Motor protection function ..... Locked rotor burnout protection, Reverse polarity protection For details, please refer to p. 616.
- Dielectric strength ..... 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance ..... 10 MΩ min. at 500 VDC (between lead wire conductors and frame)
- Sound pressure level (SPL) ..... A-weighted 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, there is no speed control wiring.)
- Mass ..... 210 g

## Specifications

The models listed below **have ribs and a pulse sensor with PWM control.** For models without ribs, append "1" to the end of model numbers.

| 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] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **9RA1212P4G001** | 12 | 10.8 to 13.2 | 100 | 0.55 | 6.6 | 4500 | 3.68 | 130 | 120 | 0.48 | 47 | -20 to +70 | 60000/60˚C (90000/40˚C) |
| | | | 20 | 0.06 | 0.72 | 1250 | 1.02 | 36 | 9.2 | 0.037 | 15 | | |
| **9RA1224P4G001** | 24 | 21.6 to 26.4 | 100 | 0.28 | 6.72 | 4500 | 3.68 | 130 | 120 | 0.48 | 47 | | |
| | | | 20 | 0.05 | 1.2 | 1750 | 1.43 | 50.5 | 18.1 | 0.073 | 22 | | |
| **9RA1248P4G001** | 48 | 43.2 to 52.8 | 100 | 0.15 | 7.2 | 4500 | 3.68 | 130 | 120 | 0.48 | 47 | | |
| | | | 20 | 0.03 | 1.44 | 1650 | 1.34 | 47.3 | 16.1 | 0.065 | 21 | | |

* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

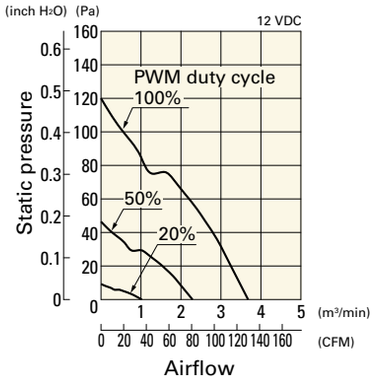
The models listed below **have ribs and a pulse sensor.** For models without ribs, append "1" to the end of model numbers.

| 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] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **9RA1212G4001** | 12 | 7 to 13.8 | 0.55 | 6.6 | 4500 | 3.68 | 130 | 120 | 0.48 | 47 | -20 to +70 | 60000/60˚C (90000/40˚C) |
| **9RA1212E4001** | | | 0.41 | 4.92 | 4000 | 3.3 | 116.5 | 96 | 0.386 | 45 | | |
| **9RA1212A4001** | | | 0.3 | 3.6 | 3500 | 2.86 | 101.1 | 73 | 0.293 | 42 | | |
| **9RA1212H4001** | | | 0.26 | 3.12 | 3200 | 2.62 | 92.4 | 61 | 0.245 | 39 | | |
| **9RA1212F4001** | | | 0.17 | 2.04 | 2700 | 2.2 | 77.6 | 43 | 0.172 | 35 | | |
| **9RA1212M4001** | | | 0.12 | 1.44 | 2200 | 1.8 | 63.5 | 29 | 0.116 | 28 | | |
| **9RA1224G4001** | 24 | 14 to 27.6 | 0.28 | 6.72 | 4500 | 3.68 | 130 | 120 | 0.48 | 47 | | |
| **9RA1224E4001** | | | 0.22 | 5.28 | 4000 | 3.3 | 116.5 | 96 | 0.386 | 45 | | |
| **9RA1224A4001** | | | 0.16 | 3.84 | 3500 | 2.86 | 101.1 | 73 | 0.293 | 42 | | |
| **9RA1224H4001** | | | 0.13 | 3.12 | 3200 | 2.62 | 92.4 | 61 | 0.245 | 39 | | |
| **9RA1224M4001** | | | 0.07 | 1.68 | 2200 | 1.8 | 63.5 | 29 | 0.116 | 28 | | |
| **9RA1248G4001** | 48 | 36 to 55.2 | 0.15 | 7.2 | 4500 | 3.68 | 130 | 120 | 0.48 | 47 | | |
| **9RA1248E4001** | | | 0.11 | 5.28 | 4000 | 3.3 | 116.5 | 96 | 0.386 | 45 | | |
| **9RA1248A4001** | | | 0.09 | 4.32 | 3500 | 2.86 | 101.1 | 73 | 0.293 | 42 | | |

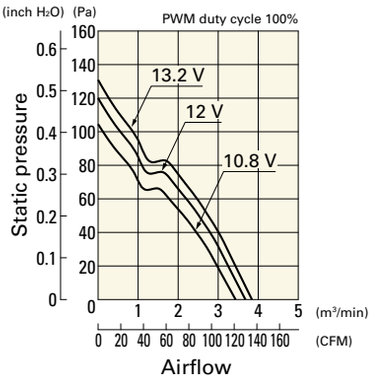
Note: Sensor and control options are available for selection. Refer to the table on p. 657 to 658.

## 9RA1212P4G001 With pulse sensor with PWM control

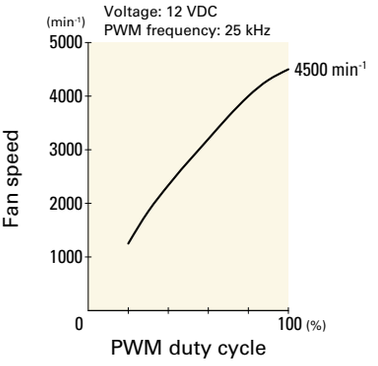
PWM duty cycle




Operating voltage range

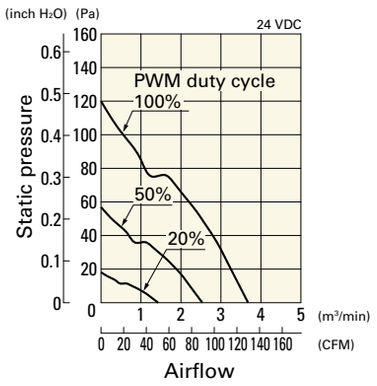



PWM duty - Speed characteristics example

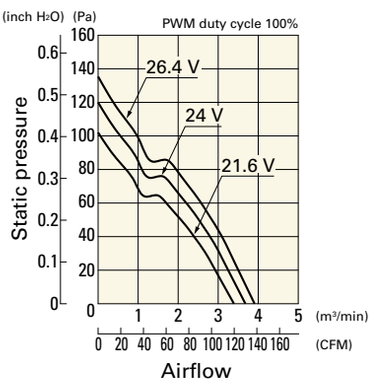



## 9RA1224P4G001 With pulse sensor with PWM control

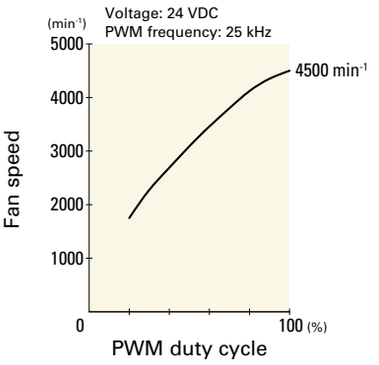
PWM duty cycle




Operating voltage range

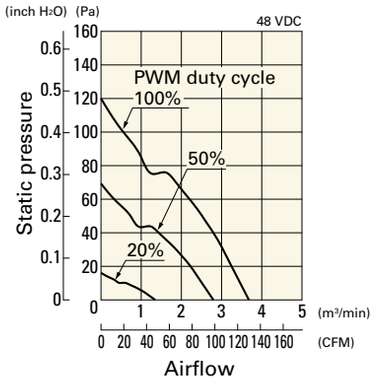



PWM duty - Speed characteristics example

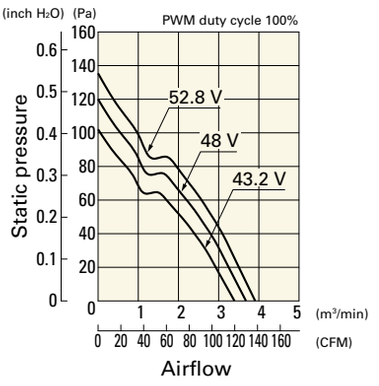



## 9RA1248P4G001 With pulse sensor with PWM control

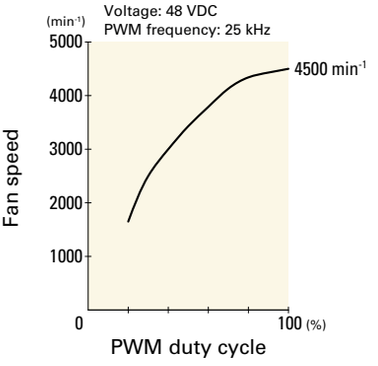
PWM duty cycle




Operating voltage range

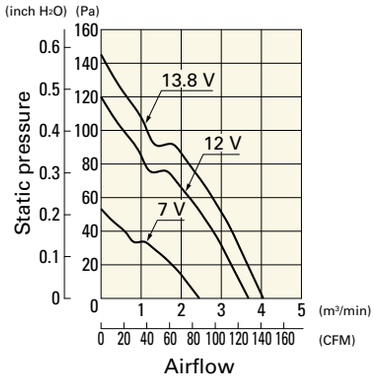



PWM duty - Speed characteristics example



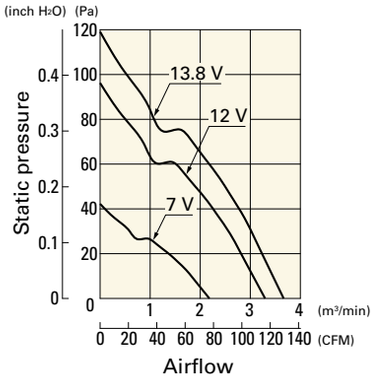
**9RA1212G4001** With pulse sensor

Operating voltage range



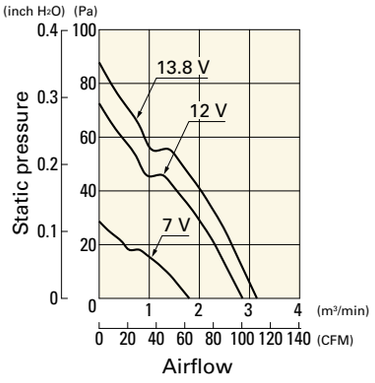

**9RA1212E4001** With pulse sensor

Operating voltage range



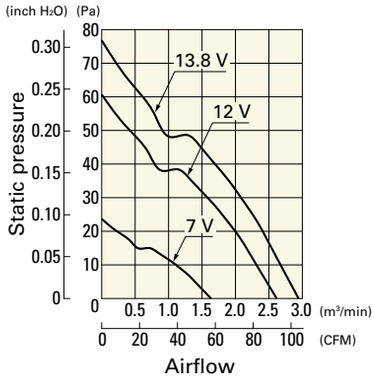

**9RA1212A4001** With pulse sensor

Operating voltage range



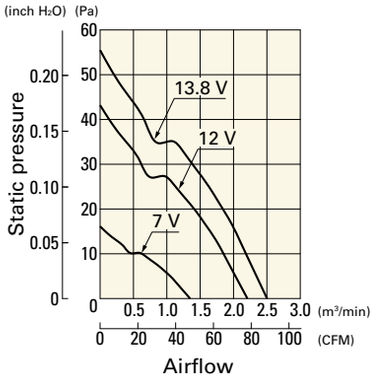

**9RA1212H4001** With pulse sensor

Operating voltage range



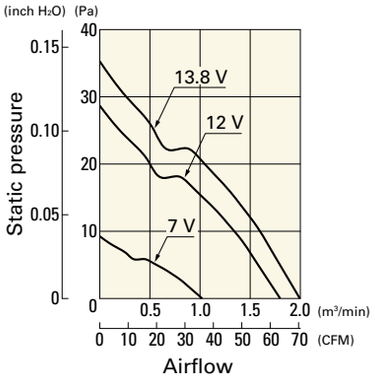

**9RA1212F4001** With pulse sensor

Operating voltage range



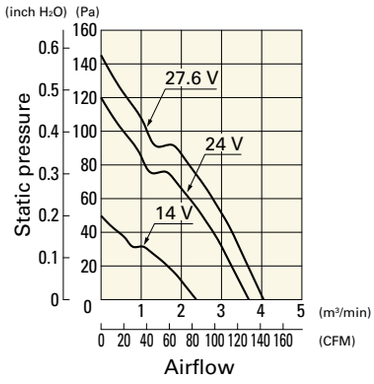

**9RA1212M4001** With pulse sensor

Operating voltage range



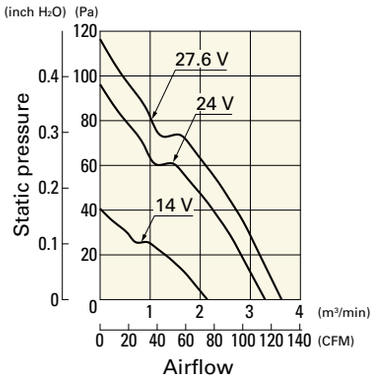

**9RA1224G4001** With pulse sensor

Operating voltage range



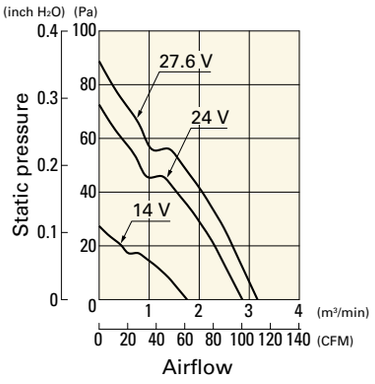

**9RA1224E4001** With pulse sensor

Operating voltage range



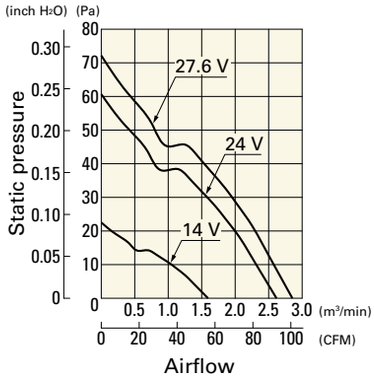

**9RA1224A4001** With pulse sensor

Operating voltage range



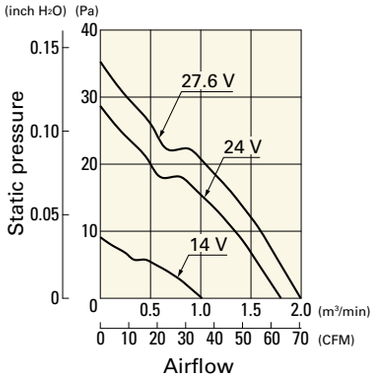

**9RA1224H4001** With pulse sensor

Operating voltage range




**9RA1224M4001** With pulse sensor

Operating voltage range




**9RA1248G4001** With pulse sensor

Operating voltage range