

San Ace 40 9CRB type

Counter Rotating Fan

Features

Energy-saving

Power consumption is reduced by approx. 25% compared with our conventional fan*1,2,3.

*1 40 x 40 x 56 mm thick. San Ace 40, Model no. 9CRD0412P5J03.

*2 Specification of Model no. 9CRB0412P5J201.

*3 When air flow and static pressure is almost identical.



40 × 40 × 56 mm

Specifications

The following nos. have **PWM controls and pulse sensors.**

| Model no. | Rated voltage [V] | Operating voltage range [V] | PWM duty cycle (Note) [%] | Rated current [A] | Rated input [W] | Rated speed [min ⁻¹] | | Max. airflow [m ³ /min] [CFM] | | Max. static pressure [Pa] [inchH ₂ O] | | SPL [dB(A)] | Operating temperature [°C] | Expected life [h] |
|----------------|-------------------|-----------------------------|---------------------------|-------------------|-----------------|----------------------------------|--------|--|-------|--|-------|-------------|----------------------------|-------------------|
| | | | | | | Inlet | Outlet | | | | | | | |
| 9CRB0412P5S201 | 12 | 10.8 to 13.2 | 100 | 1.4 | 16.8 | 22,000 | 19,700 | 0.9 | 31.8 | 1,045 | 4.197 | 68 | -20 to +70 | 40,000 / 60 °C |
| | | | 0 | 0.09 | 1.08 | 3,800 | 3,500 | 0.15 | 5.3 | 31 | 0.124 | 26 | | |
| 9CRB0412P5S301 | | | 100 | 1.4 | 16.8 | 22,000 | 19,700 | 0.9 | 31.8 | 1,045 | 4.197 | 68 | | |
| | | | 0 | 0.09 | 1.08 | 3,800 | 3,500 | 0.15 | 5.3 | 31 | 0.124 | 26 | | |
| 9CRB0412P5K001 | | | 100 | 0.88 | 10.56 | 19,000 | 17,000 | 0.76 | 26.83 | 730 | 2.93 | 62 | | |
| | | | 0 | 0.11 | 1.32 | 5,700 | 5,100 | 0.21 | 7.41 | 67 | 0.26 | 33 | | |
| 9CRB0412P5J201 | | | 100 | 0.72 | 8.64 | 17,300 | 16,000 | 0.71 | 25.1 | 650 | 2.61 | 61 | | |
| | | | 0 | 0.07 | 0.84 | 3,450 | 3,200 | 0.13 | 4.59 | 26 | 0.10 | 24 | | |

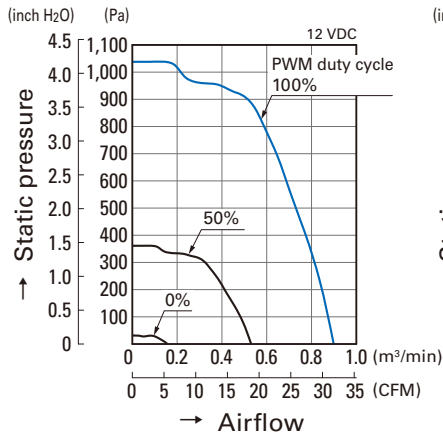
Note PWM frequency: 25 kHz

Common Specifications

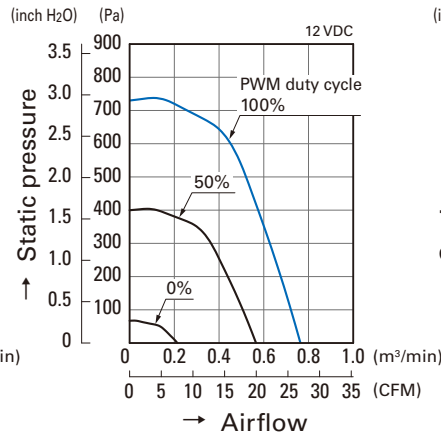
- Material Frame, Impeller: Plastics (Flammability: UL94V-0)
- Expected life Refer to specifications
(L10: Survival rate: 90% at 60 °C, rated voltage, and continuously run in a free air state)
- Motor protection system Current blocking function and Reverse polarity protection
- Dielectric strength 50/60 Hz, 500 VAC, 1 minute (between lead conductor and frame)
- Sound pressure level (SPL) Expressed as the value at 1 m from air inlet side
- Operating temperature Refer to specifications (Non-condensing)
- Storage temperature -30 °C to +70 °C (Non-Condensing)
- Lead wire Inlet: ⊕Red ⊖Black Sensor: Yellow Control: Brown
Outlet: ⊕Orange ⊖Gray Sensor: Purple Control: White
- Mass Approx. 100 g

Airflow - Static Pressure Characteristics

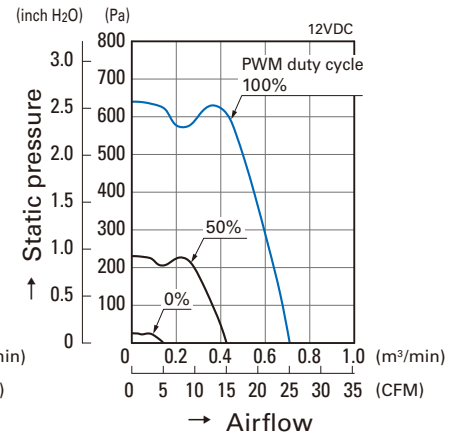
PWM duty cycle



9CRB0412P5S201
9CRB0412P5S301

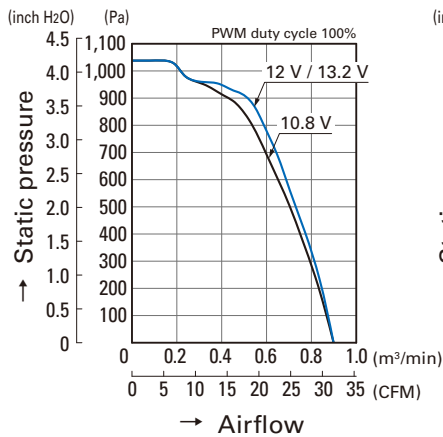


9CRB0412P5K001

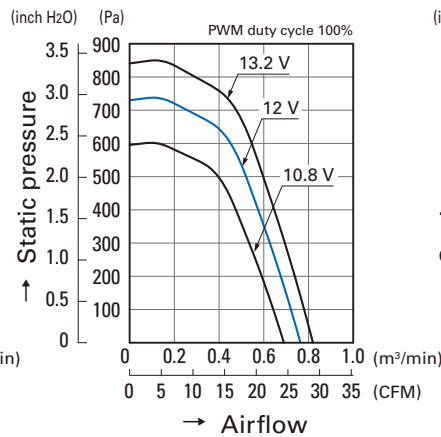


9CRB0412P5J201

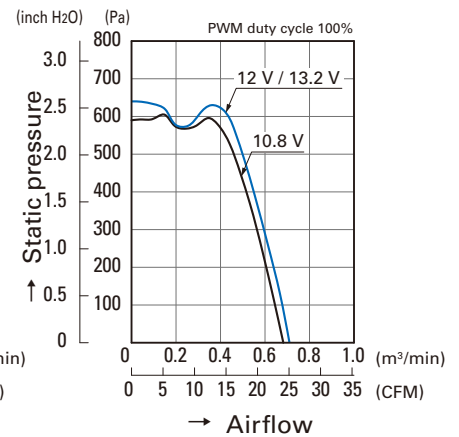
Operating voltage range



9CRB0412P5S201
9CRB0412P5S301

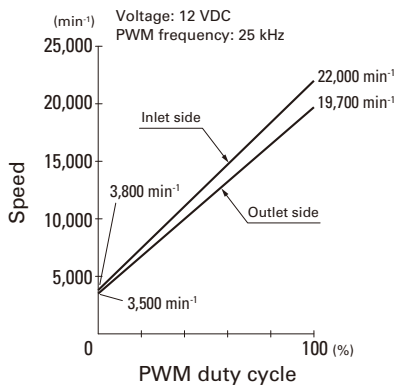


9CRB0412P5K001

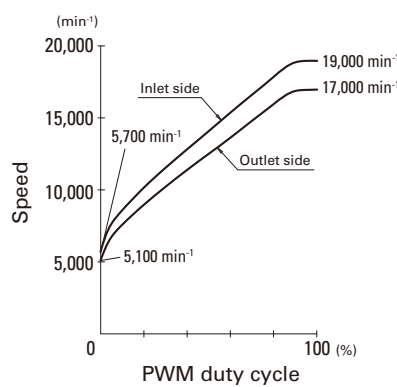


9CRB0412P5J201

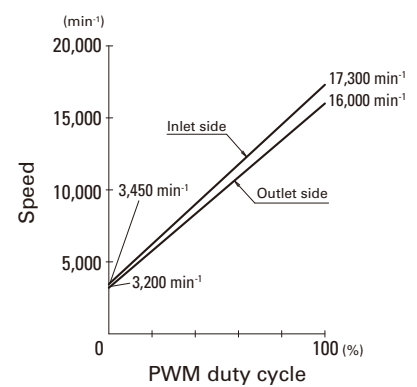
PWM Duty - Speed Characteristics Example



9CRB0412P5S201
9CRB0412P5S301



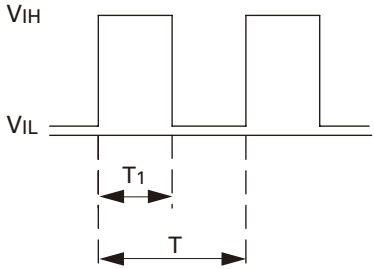
9CRB0412P5K001



9CRB0412P5J201

PWM Input Signal Example

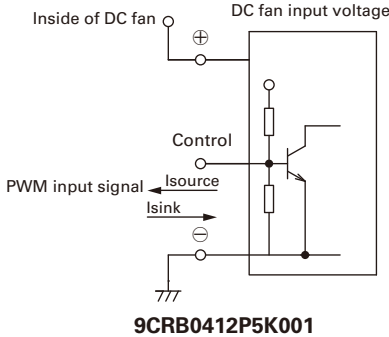
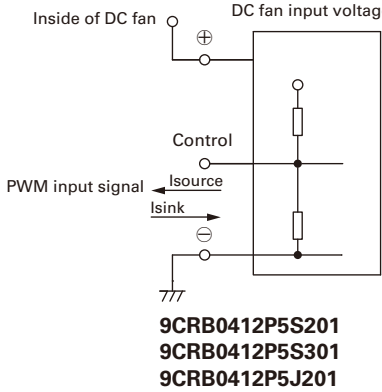
Input signal waveform



- V_{IH}=4.75 V to 5.25 V, 2.8 V to 3.8 V (Model no.: 9CRB0412P5K001 only)
- V_{IL}=0 V to 0.4 V
- PWM duty cycle (%) = $\frac{T_1}{T} \times 100$
- PWM frequency 25 (kHz) = $\frac{1}{T}$
- Source current (I_{source}): 5 mA max. at control voltage 0 V
10 mA max. at control voltage 0 V (Model no.: 9CRB0412P5K001 only)
- Sink current (I_{sink}): 5mA max. at control voltage 5.25 V
10 mA max. at control voltage 3.8 V (Model no.: 9CRB0412P5K001 only)
- Control terminal voltage: 5.25 V max. (Open circuit)
3.8 V max. (Open circuit) (Model no.: 9CRB0412P5K001 only)

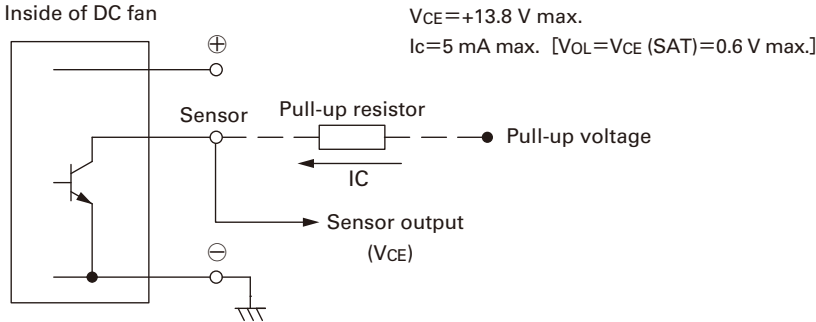
When the control lead wire is open, the fan speed is the same as the one at a PWM duty cycle of 100%.
Either TTL input, open collector or open drain can be used for PWM control input signal.

Example of Connection Schematic

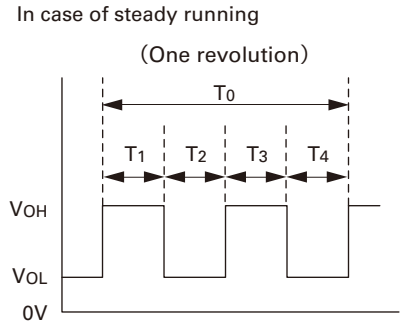


Specifications for Pulse Sensors

Output circuit : Open collector

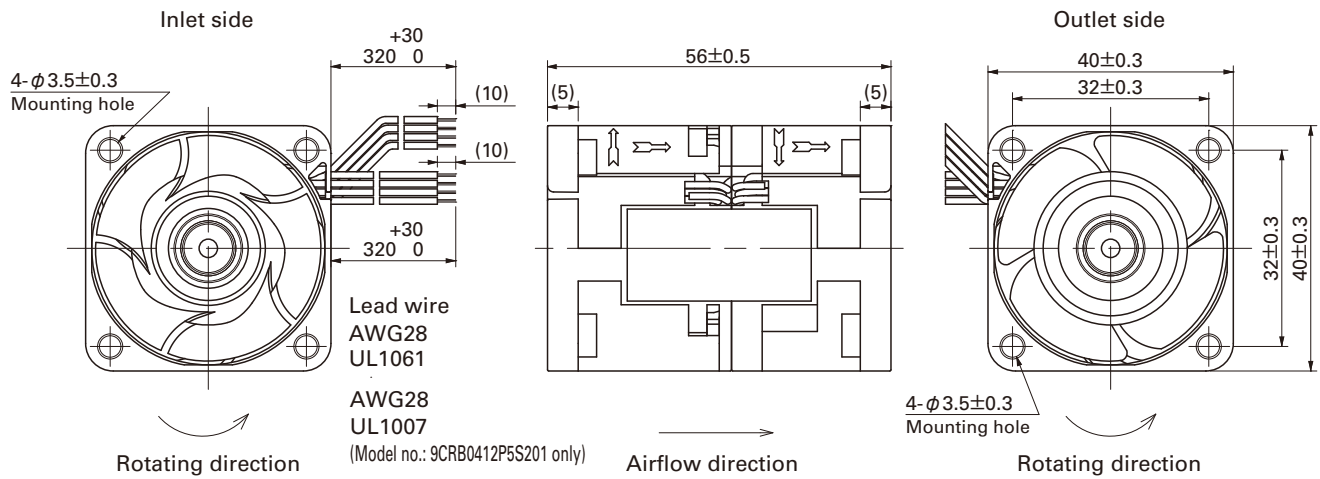


Output waveform (Need pull-up resistor)

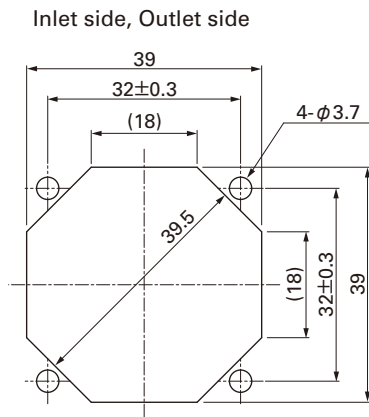


- T₁ to 4 ≐ (1/4) T₀
- T₁ to 4 ≐ (1/4) T₀=60/4N (sec)
- N=Fan speed (min⁻¹)

■ Dimensions (unit: mm)



■ Reference Dimension of Mounting Holes and Vent Opening (unit: mm)



Notice

- Please read the "Safety Precautions" on our website before using the product.
- The products shown in this catalog are subject to Japanese Export Control Law. Diversion contrary to the law of exporting country is prohibited.
- For protecting fan bearings against electrolytic corrosion near strong electromagnetic noise sources, we provide effective countermeasures such as Electrolytic Corrosion Proof Fans and EMC guards. Contact us for details.

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<http://www.sanyodenki.com>

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