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}] Inlet	Outlet	Max. airflow [m^3/min]	[CFM]	Max. static pressure [Pa]	[inchH$_2$O]	SPL [dB(A)]	Operating temperature [℃]	Expected life [h]
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 ℃
			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		

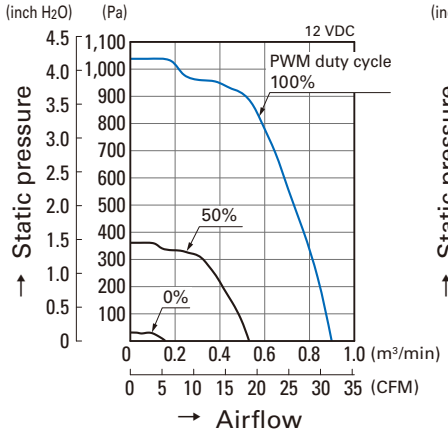
Note PWM frequency: 25 kHz

Common Specifications

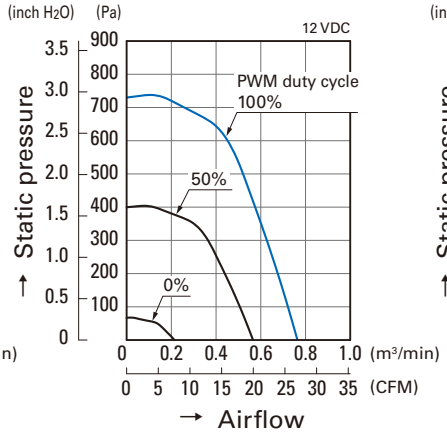
- ☐ Material ····· Frame, Impeller: Plastics (Flammability: UL94V-0)
- ☐ Expected life ····· Refer to specifications
  (L10: Survival rate: 90% at 60 ℃, rated voltage, and continuously run in a free air state)
- ☐ Motor protection system ····· Current blocking function and Reverse polarity protection
- ☐ 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 ℃ to +70 ℃ (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



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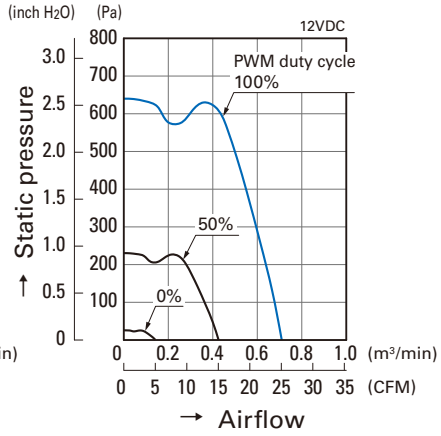
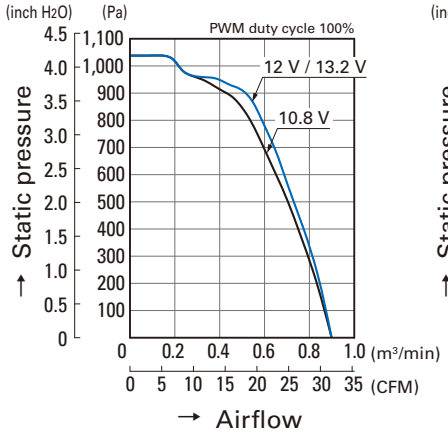


9CRB0412P5J201

- Operating voltage range



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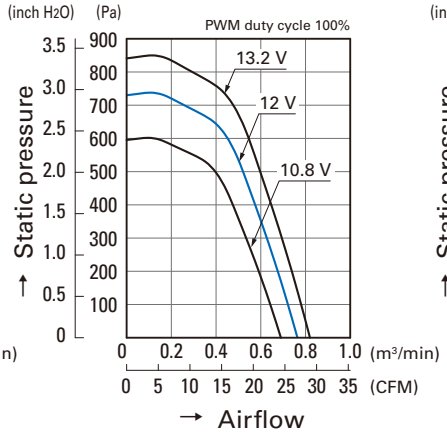

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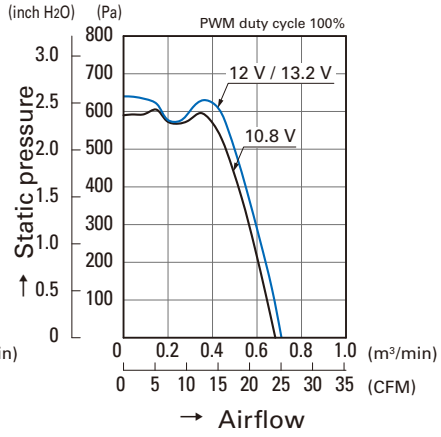

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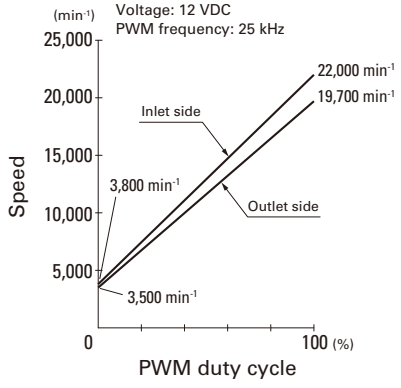
PWM Duty - Speed Characteristics Example



9CRB0412P5S201
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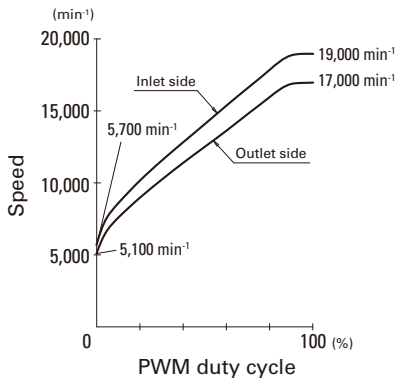

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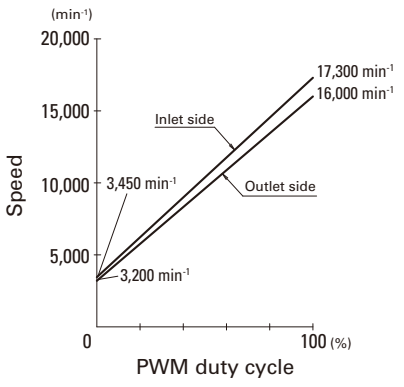

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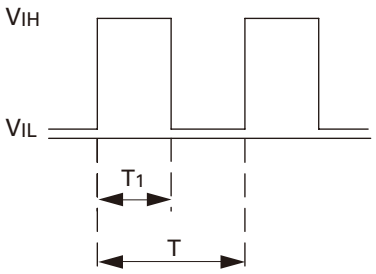
PWM Input Signal Example

Input signal waveform

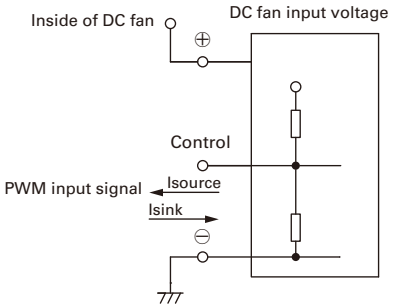


V_{IH}=4.75 V to 5.25 V, 2.8 V to 3.8 V (Model no.: 9CRB0412P5K001 only)
V_{IL}=0 V to 0.4 V
PWM duty cycle (%) = $\frac{T1}{T} \times 100$
PWM frequency 25 (kHz) = $\frac{1}{T}$
Source current (Isource): 5 mA max. at control voltage 0 V
10 mA max. at control voltage 0 V (Model no.: 9CRB0412P5K001 only)
Sink current (Isink): 5m A 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)

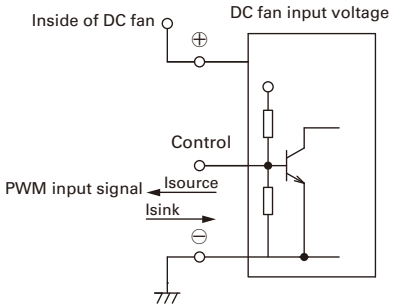
When the control lead wire is open,
the fan speed is the same as the one at a PWM duty cycle of 100%.

Either TTL input, open collector or open drain can be used for
PWM control input signal.

Example of Connection Schematic



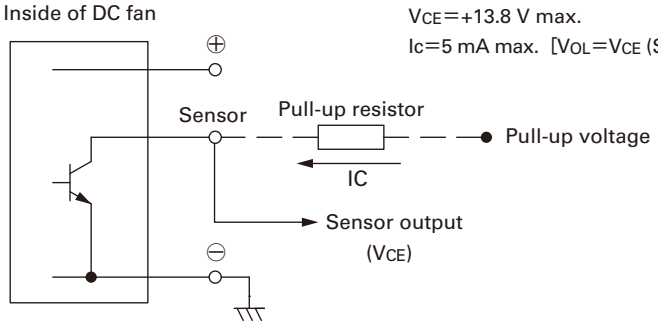
9CRB0412P5S201
9CRB0412P5S301
9CRB0412P5J201



9CRB0412P5K001

Specifications for Pulse Sensors

Output circuit : Open collector

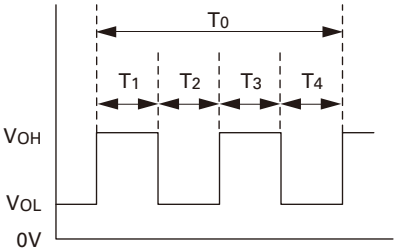


V_{CE}=+13.8 V max.
Ic=5 mA max. [V_{OL}=V_{CE} (SAT)=0.6 V max.]

Output waveform （Need pull-up resistor）

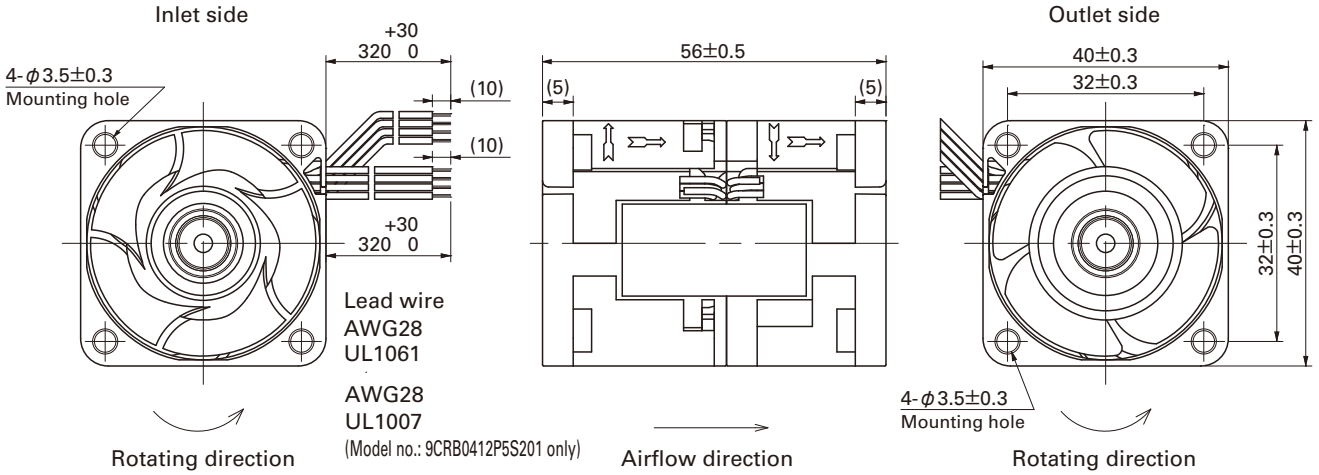
In case of steady running

(One revolution)



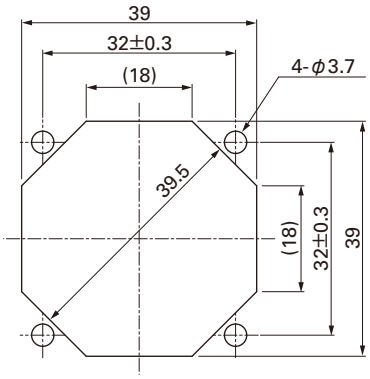
$T_{1\ to\ 4} \fallingdotseq$ (1/4) T_0
$T_{1\ to\ 4} \fallingdotseq$ (1/4) T_0=60/4N (sec)
N=Fan speed (min^{-1})

Dimensions (unit: mm)



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

Inlet side, Outlet side



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.

SANYO DENKI CO., LTD. 3-33-1 Minami-Otsuka, Toshima-ku, Tokyo 170-8451, Japan TEL: +81 3 5927 1020 http://www.sanyodenki.com

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