

# San Ace 40 9CRH type

## Counter Rotating Fan

### Features

#### High Static Pressure

The maximum static pressure has increased by 62% compared with our current model\*. It provides effective cooling especially for high density equipment.

#### High Energy Efficiency and Low Noise

Power consumption and noise level have been reduced by approximately 10% and 3 dB(A), respectively, compared with our current model\*. Furthermore, the PWM control function enables the external control of fan speed, contributing to even lower noise and higher energy efficiency of devices.

\* Current model: San Ace 40 9CRV type 40 x 40 x 56 mm Counter Rotating Fan, model no. 9CRV0412P5J201.



**40x40x56 mm**

### Specifications

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

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle *	Rated current [A]	Rated input [W]	Rated speed [min <sup>-1</sup> ]		Max. airflow [m <sup>3</sup> /min] [CFM]		Max. static pressure [Pa] [inchH <sub>2</sub> O]		SPL [dB(A)]	Operating temperature [°C]	Expected life [h]
			[%]			Inlet	Outlet	Max.	Min.	Max.	Min.			
9CRH0412P5J001	12	10.8 to 12.6	100	2.52	30.24	29500	25500	0.93	32.9	1700	6.83	70	-20 to +70	30000/60°C
			20	0.06	0.72	3000	2600	0.08	2.8	17	0.07	20		

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

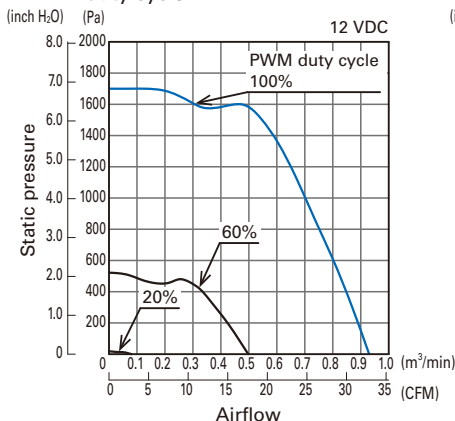
Models with the following sensor specifications are also available as options: **Without sensor** **Lock sensor**

### Common Specifications

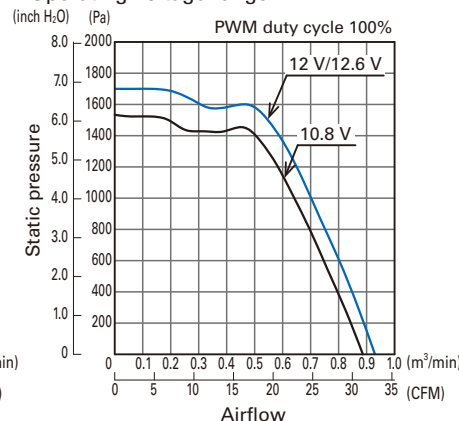
- Material ..... Frame: Plastics (Flammability: UL 94V-0), Impeller: Plastics (Flammability: UL 94V-0)
- Expected life ..... Refer to specifications  
(L10: Survival rate: 90% at 60°C, rated voltage, and continuously run in a free air state)
- Motor protection system ..... Current blocking function and 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 to +70°C (Non-condensing)
- Lead wire ..... Inlet: ⊕ Red ⊖ Black Sensor: Yellow Control: Brown  
Outlet: ⊕ Orange ⊖ Gray Sensor: Purple Control: White
- Mass ..... Approx. 110 g

### Airflow - Static Pressure Characteristics

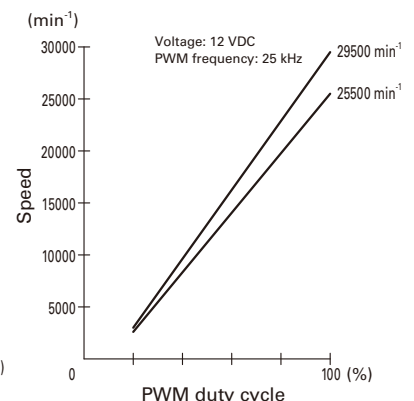
• PWM duty cycle



• Operating voltage range

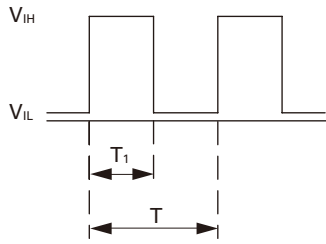


### PWM Duty - Speed Characteristics Example



## PWM Input Signal Example

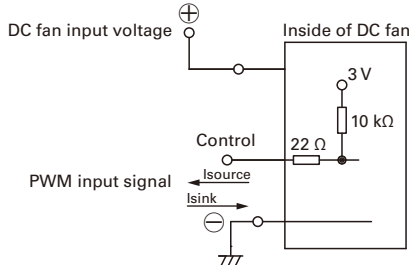
Input signal waveform



$V_{IH} = 2.8 \text{ to } 5.25 \text{ V}$   $V_{IL} = 0 \text{ to } 0.4 \text{ V}$   
 PWM duty cycle (%) =  $\frac{T_1}{T} \times 100$  PWM frequency 25 (kHz) =  $\frac{1}{T}$   
 Current source ( $I_{source}$ ) = 2 mA max. (when control voltage is 0 V)  
 Current sink ( $I_{sink}$ ) = 2 mA max. (when control voltage is 5.25 V)  
 Control terminal voltage = 5.25 V max. (when control terminal is open)

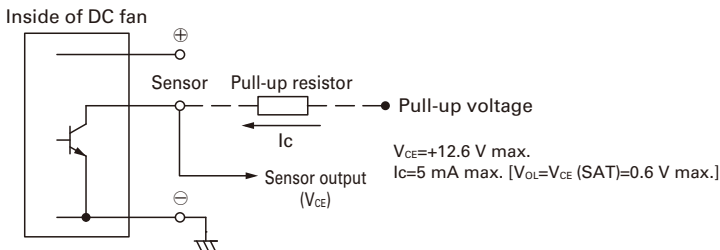
When the control terminal is open,  
 fan speed is the same as when PWM duty cycle is 100%.  
 Either TTL input, open collector or open drain can be used for  
 PWM control input signal.

## Example of Connection Schematic

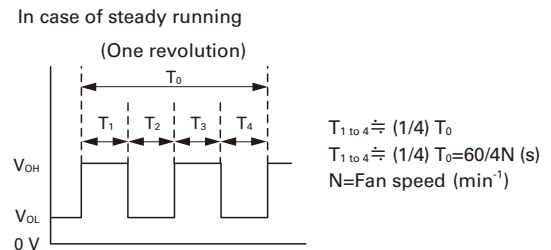


## Specifications for Pulse Sensors

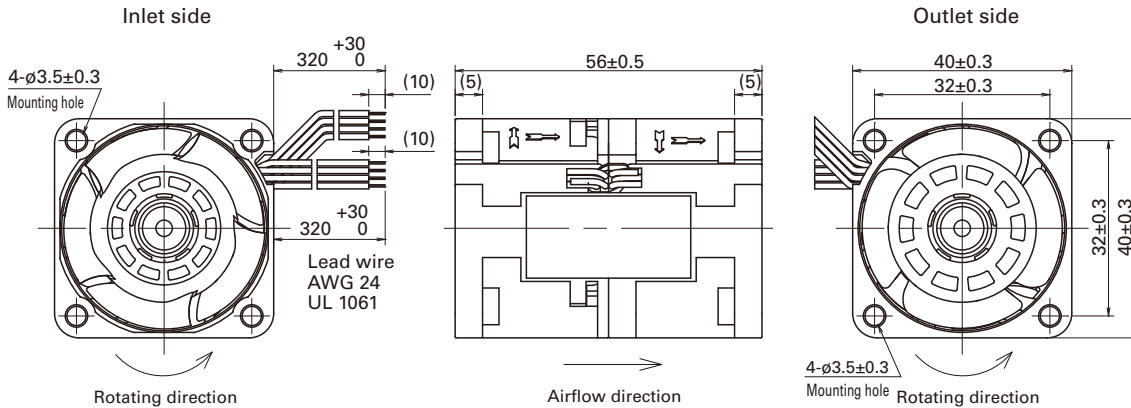
Output circuit: Open collector



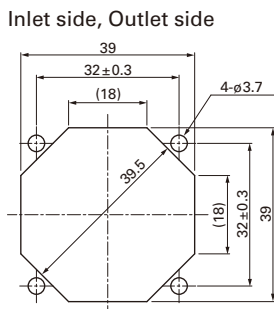
Output waveform (Need pull-up resistor)



## Dimensions (unit: mm)



## Reference Dimensions 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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