

San Ace 80 9CRHA type

Counter Rotating Fan

Features

High Static Pressure

This fan delivers a maximum static pressure of 2,700 Pa, achieving about a 38% increase compared to our current product.⁽¹⁾

Contribution to SDGs

Made with lead-free brass, this fan complies with the RoHS Directive.⁽²⁾ It is also certified as an Eco Product⁽³⁾ for its use of environmentally friendly resources and technologies.

(1) Current product: 80 x 80 x 80 mm San Ace 80 9CRH type Counter Rotating Fan

(2) The RoHS (Restriction of Hazardous Substances) Directive restricts the use of certain hazardous substances in electrical and electronic equipment distributed within the European Union.

(3) Eco Products are eco-friendly products designed to reduce the environmental impact of the product and its packaging materials compared to conventional products on the market. Our products are assessed over the product's life cycle against our own eco-design requirements including product size, weight, power consumption, and CO₂ emissions, and those meeting our standards and higher standards qualify as Eco Products and Eco Products Plus, respectively.



80 x 80 x 80 mm

Specifications

The models listed below have a pulse sensor with PWM control.

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]		Max. airflow		Max. static pressure		SPL [dB(A)]	Operating temperature [°C]	Expected life [h]
						Inlet	Outlet	[m ³ /min]	[CFM]	[Pa]	[inchH ₂ O]			
9CRHA0812P8J001	12	10.8 to 12.6	100	12.0	144	18500	19300	5.65	199	2700	10.8	85	-20 to +70	40000/60°C (70000/40°C)
			20	0.20	2.40	2300	2500	0.70	24.7	52.0	0.208	36		
9CRHA0848P8J001	48	40.8 to 60.0	100	2.8	135	18500	19300	5.65	199	2700	10.8	85		
			20	0.11	5.28	2300	2500	0.70	24.7	52.0	0.208	36		

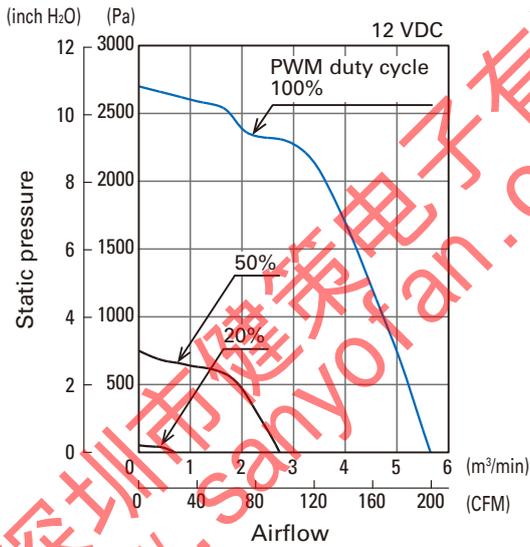
* PWM frequency is 25 kHz. Models without ratings for 0% PWM duty cycle have zero speed at 0%. When control terminal is open, speed is the same as at 100% duty cycle.

Common Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life Refer to specifications
(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
- 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.
- 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 430 g

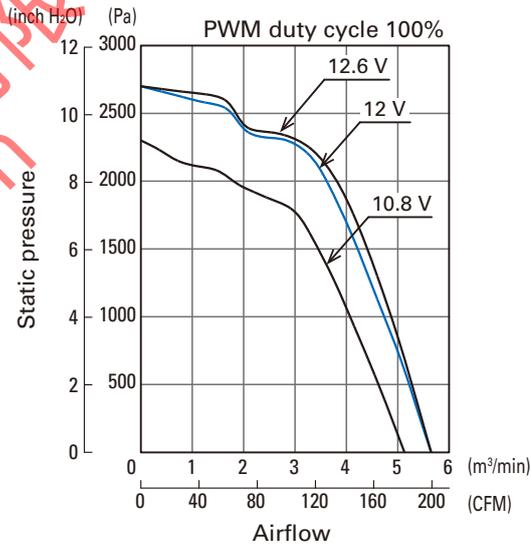
Airflow - Static Pressure Characteristics

PWM duty cycle



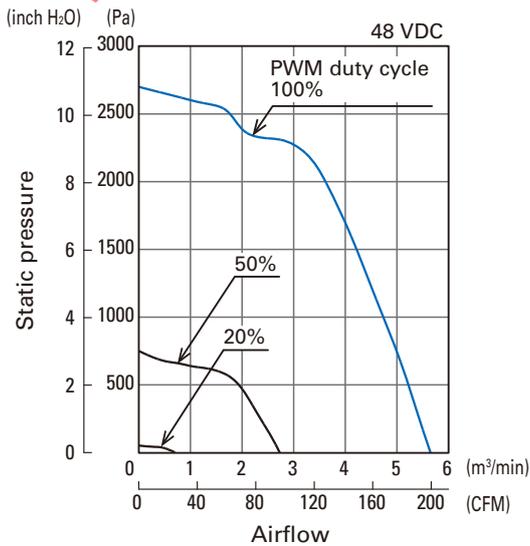
9CRHA0812P8J001

Operating voltage range



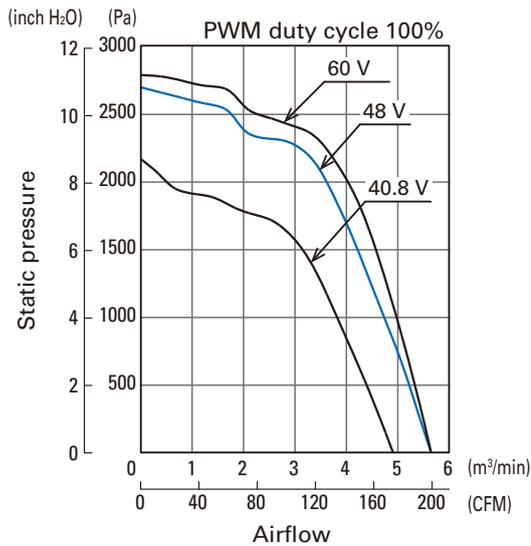
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PWM duty cycle



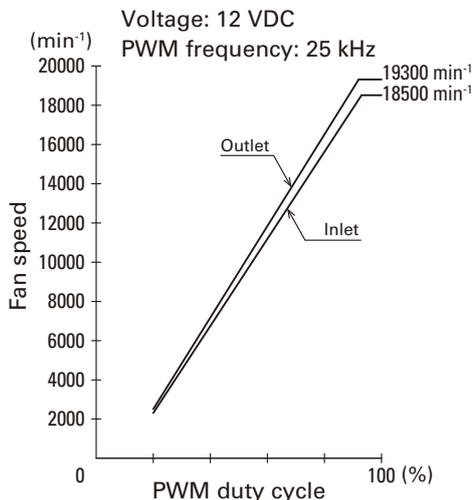
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Operating voltage range

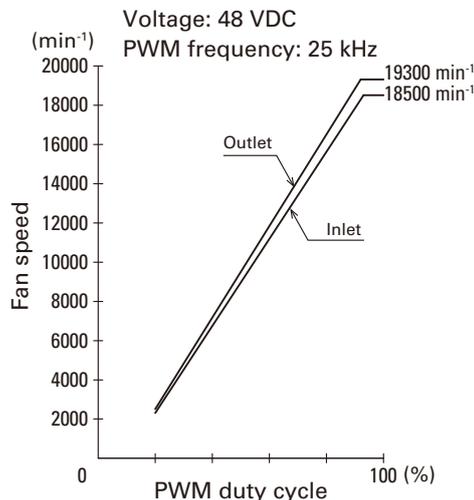


9CRHA0848P8J001

PWM Duty - Speed Characteristics Example



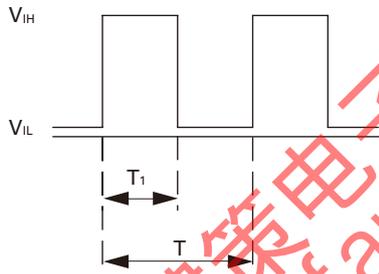
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9CRHA0848P8J001

PWM Input Signal Example

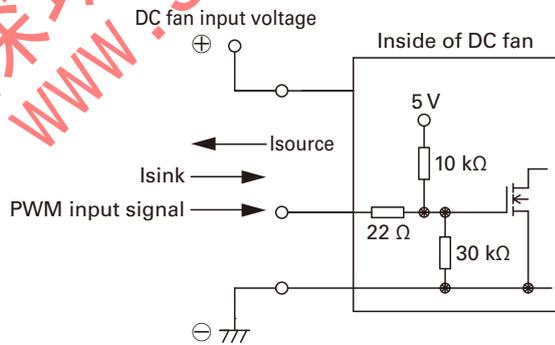
Input signal waveform



$V_{IH} = 4.75 \text{ to } 5.25 \text{ V}$ $V_{IL} = 0 \text{ to } 0.4 \text{ V}$
 PWM duty cycle (%) = $\frac{T_1}{T} \times 100$ PWM frequency 25 (kHz) = $\frac{1}{T}$
 Current source (I_{source}) = 5.0 mA max. (when control voltage is 0 V)
 Current sink (I_{sink}) = 5.0 mA max. (when control voltage is 5.25 V)

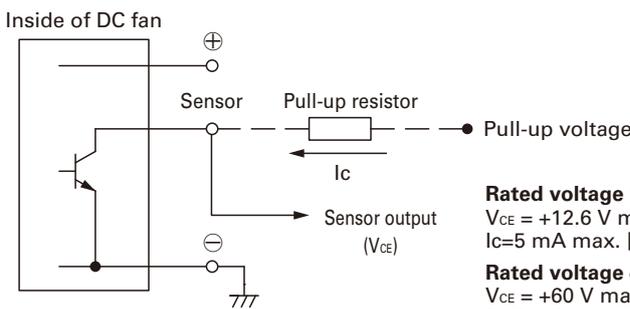
When the PWM control terminal is open, the fan speed is the same as the speed at 100% PWM duty cycle.
 The PWM signal can be used with open collector or drain input.
 Note that when using an open collector or drain input, or inputting a different voltage or frequency, the speed relative to the PWM duty cycle may differ from this specification.

Example of Connection Schematic



Specifications for Pulse Sensors

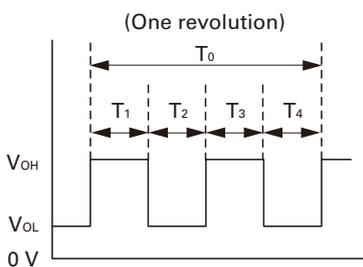
Output circuit: Open collector



Rated voltage 12 V fan
 $V_{CE} = +12.6 \text{ V max.}$
 $I_c = 5 \text{ mA max. [V}_{OL} = V_{CE} \text{ (SAT)} = 0.6 \text{ V max.}]$
Rated voltage 48 V fan
 $V_{CE} = +60 \text{ V max.}$
 $I_c = 5 \text{ mA max. [V}_{OL} = V_{CE} \text{ (SAT)} = 0.6 \text{ V max.}]$

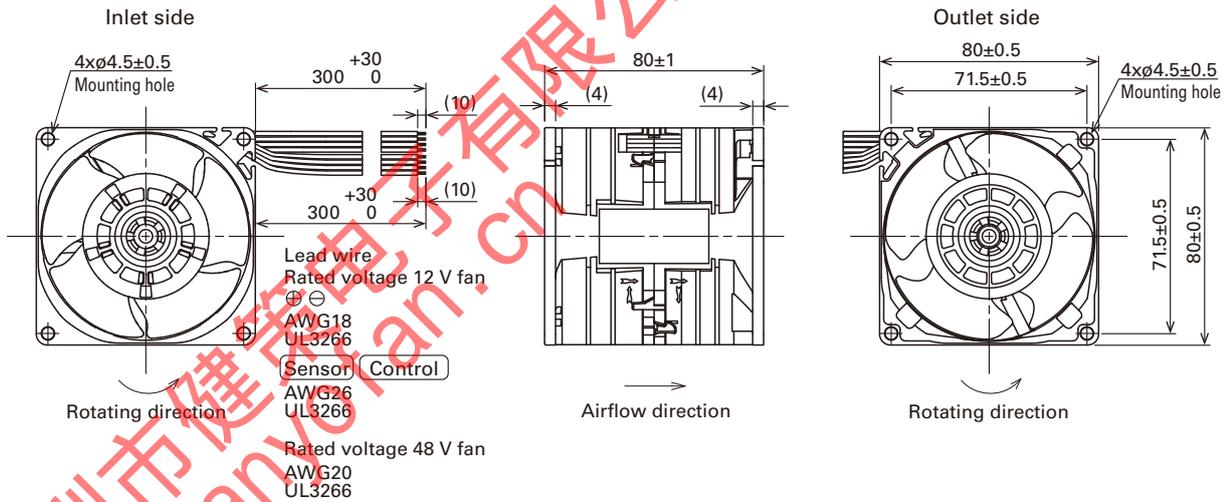
Output waveform (Need pull-up resistor)

In case of steady running

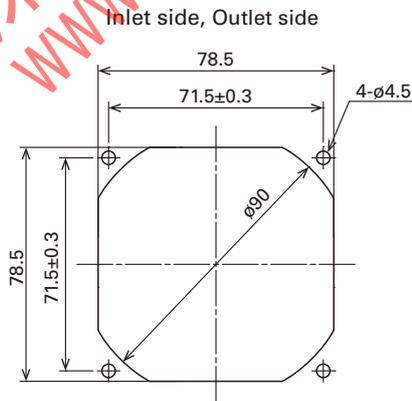


$T_{1 \text{ to } 4} \doteq (1/4) T_0$
 $T_{1 \text{ to } 4} \doteq (1/4) T_0 = 60/4N \text{ (s)}$
 $N = \text{Fan speed (min}^{-1}\text{)}$

Dimensions (unit: mm)



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



Options

Finger guards

Model no.: 109-049E, 109-049H

Resin finger guards

Model no.: 109-1002G

Resin filter kits

Model no.: 109-1002F13 (13PPI), 109-1002F20 (20PPI),
109-1002F30 (30PPI), 109-1002F40 (40PPI)

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.