San Ace 120W 9WPA type
Splash Proof Fan

Features

High Static Pressure and High Airflow
This fan delivers a maximum static pressure of 210 Pa,(1) increasing by a factor of about 2.1 over our current model.(2)
The fan delivers a maximum airflow of 4.20 m^3/min,(1) improving by a factor of about 1.26 compared to the current model.(2)

Low Power Consumption
Power consumption has been reduced by 28%(1) compared to the current model(2) at equivalent performance.

Water and Dust Protection
This fan achieves excellent IP68(3) water and dust protection, maintaining stable operation in harsh environments.

Contribution to SDGs
This fan uses a lead-free brass material and is RoHS Directive-compliant.(4)
Using eco-friendly resources and technologies, it is certified as an Eco Product.(5)

(1) For a model 9WPA1212J4001.
(2) Current model: 120 × 120 × 38 mm *San Ace 120W* 9WP type Splash Proof Fan (model no. 9WP1224E101).
(3) The degree of protection (IP code) is defined by IEC 60529 (International Electrotechnical Commission) as follows.
The protection ratings of our fans only apply to electrical components (motor coils and electronic components) and do not cover mechanical components.
IP68 is defined as:
• Complete protection against dust
• Protection against submersion in water
(4) The RoHS (Restriction of Hazardous Substances) Directive restricts the use of certain hazardous substances in electrical and electronic equipment distributed within the European Union.
(5) Eco Products are eco-friendly products designed to reduce the environmental impact of the product and its packaging materials compared to our existing products and 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 CO_2 emissions, and those meeting our standards and higher standards qualify as Eco Products and Eco Products Plus, respectively.

120 × 120 × 25 mm

Specifications

The models listed below **have ribs and pulse sensors with PWM control function.** 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 [m^3/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH_2O]	SPL [dB(A)]	Operating temperature [°C]	Expected life [h]
9WPA1212P4J001	12	10.8 to 13.2	100	1.0	12.0	5400	4.20	148	210	0.84	53	-20 to +60	40000/60°C (70000/40°C)
			20	0.07	0.84	1600	1.24	43.8	24.0	0.10	25		
9WPA1212P4G001			100	0.50	6.0	4250	3.30	117	135	0.54	46	-20 to +70	
			20	0.06	0.72	1300	1.00	35.3	16.0	0.06	20		
9WPA1224P4J001	24	21.6 to 26.4	100	0.50	12.0	5400	4.20	148	210	0.84	53	-20 to +60	
			20	0.05	1.20	1600	1.24	43.8	24.0	0.10	25		
9WPA1224P4G001			100	0.25	6.0	4250	3.30	117	135	0.54	46	-20 to +70	
			20	0.04	0.96	1300	1.00	35.3	16.0	0.06	20		

* 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 pulse sensors.** 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 [m^3/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH_2O]	SPL [dB(A)]	Operating temperature [°C]	Expected life [h]
9WPA1212J4001	12	7 to 13.2	1.0	12.0	5400	4.20	148	210	0.84	53	-20 to +60	40000/60°C (70000/40°C)
9WPA1212G4001		7 to 13.8	0.50	6.00	4250	3.30	117	135	0.54	46	-20 to +70	
9WPA1212H4001		10.2 to 13.8	0.12	1.44	2400	1.85	65.0	47.0	0.19	30		
9WPA1224J4001	24	14 to 26.4	0.50	12.0	5400	4.20	148	210	0.84	53	-20 to +60	
9WPA1224G4001		14 to 27.6	0.25	6.00	4250	3.30	117	135	0.54	46	-20 to +70	
9WPA1224H4001		20.4 to 27.6	0.06	1.44	2400	1.85	65.0	47.0	0.19	30		

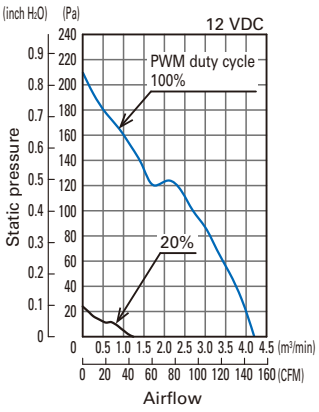
Models with the following sensor specifications are also available as options: Without sensor

Common Specifications

- ☐ Material ····· Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-0)
- ☐ Expected life ····· Refer to specifications
  (L10 life: 90% survival rate for continuous operation in indoor 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 ····· ⊕ Red ⊖ Black Sensor Yellow Control Brown
  (For models without PWM control function, there is no speed control wiring.)
- ☐ Mass ····· 240 g
- ☐ Ingress protection ····· IP68

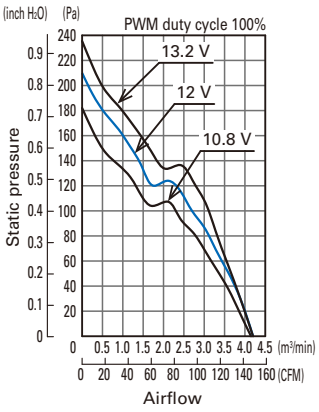
Airflow - Static Pressure Characteristics

PWM duty cycle



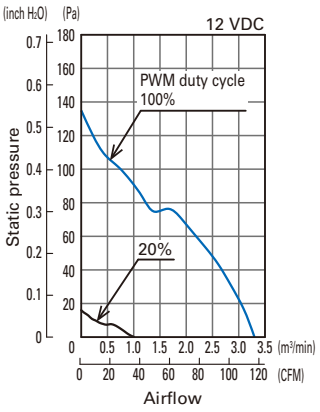
9WPA1212P4J001

Operating voltage range



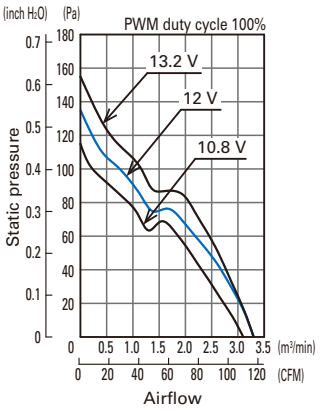
9WPA1212P4J001

PWM duty cycle



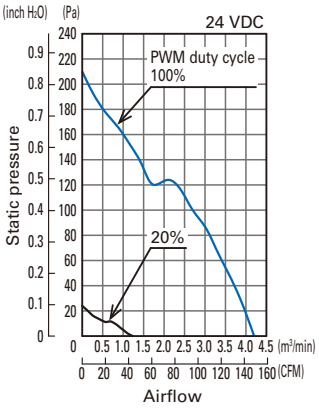
9WPA1212P4G001

Operating voltage range



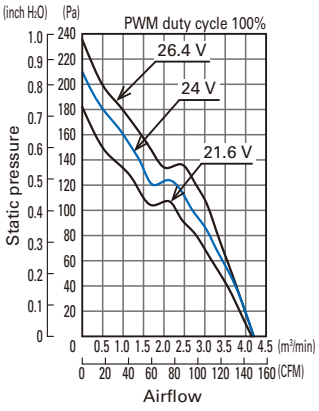
9WPA1212P4G001

PWM duty cycle



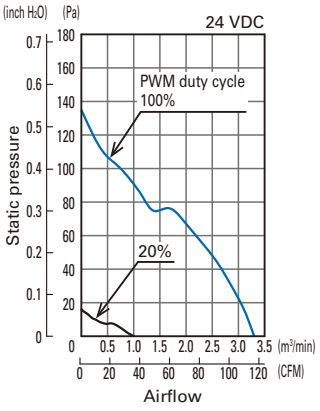
9WPA1224P4J001

Operating voltage range



9WPA1224P4J001

PWM duty cycle



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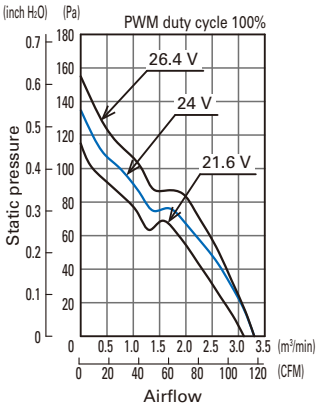
Operating voltage range



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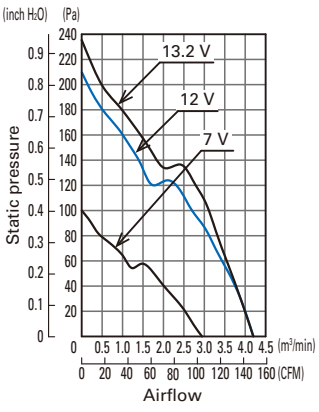
Operating voltage range



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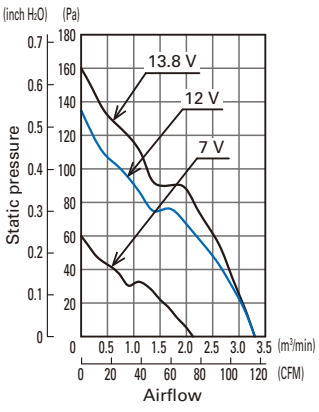

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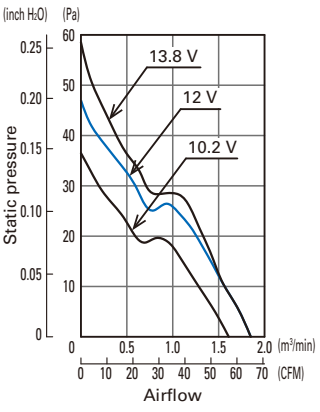

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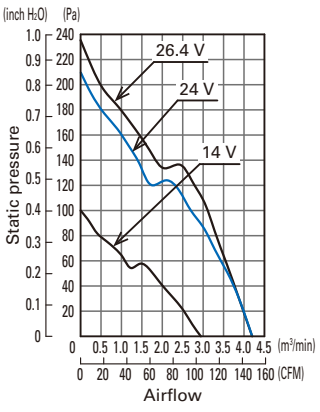
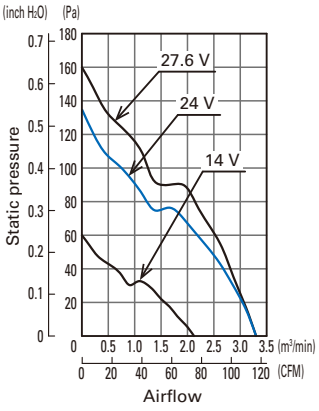
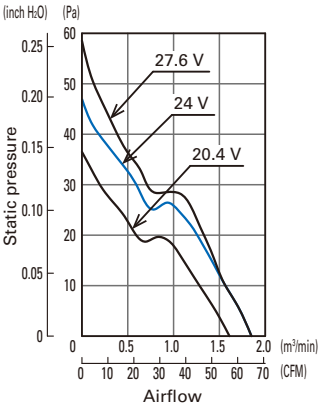


9WPA1224J4001

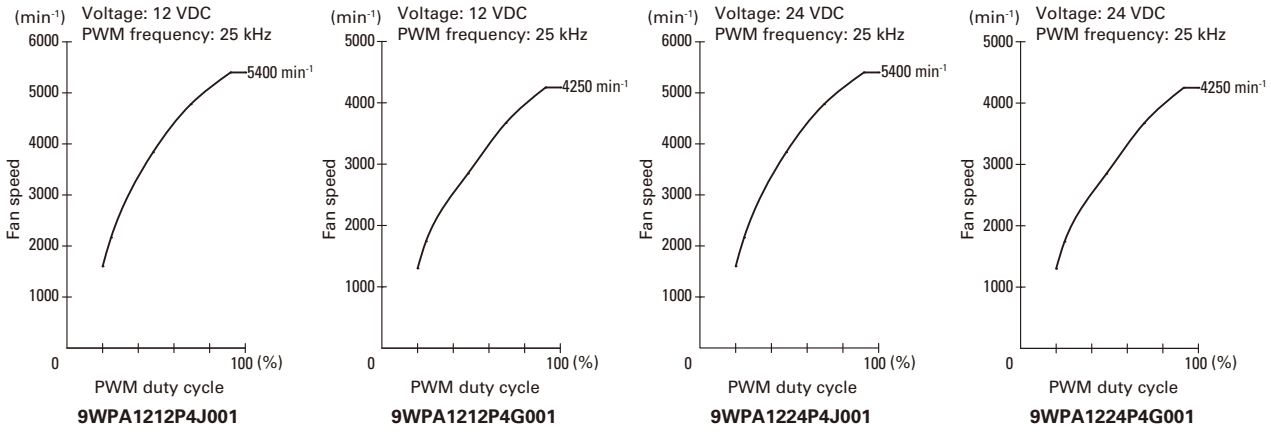


9WPA1224G4001



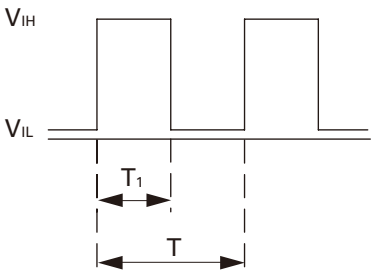
9WPA1224H4001

PWM Duty - Speed Characteristics Example



PWM Input Signal Example

Input signal waveform



V_{IH} = 4.75 to 5.25 V V_{IL} = 0 to 0.4 V

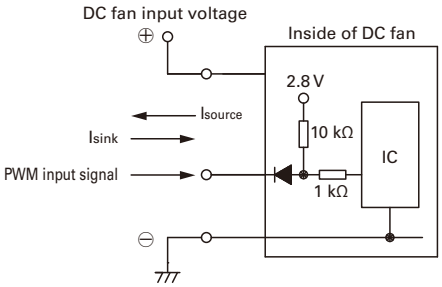
PWM duty cycle (%) = $\frac{T_1}{T} \times 100$ PWM frequency 25 (kHz) = $\frac{1}{T}$

Current source (Isource) = 1.0 mA max. (when control voltage is 0 V)

Current sink (Isink) = 1.0 mA max. (when control voltage is 5.25 V)

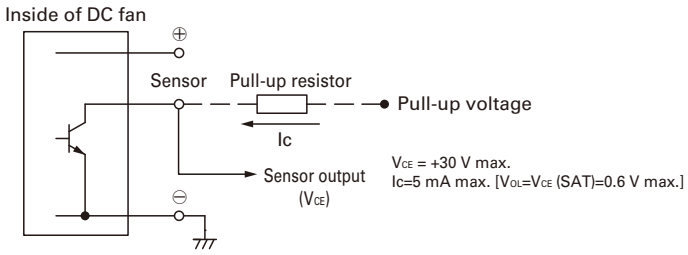
When the PWM control terminal is open,
the fan speed is the same as the speed at 100% PWM duty cycle.
The PWM signal can be used with open collector or drain input.
Note that when using an open collector or drain input,
or inputting a different voltage or frequency,
the speed relative to the PWM duty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

Example of Connection Schematic



Specifications for Pulse Sensors

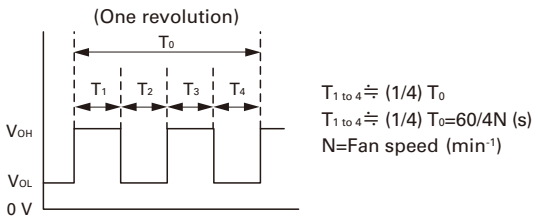
Output circuit: Open collector



VCE = +30 V max.
Ic=5 mA max. [VOL=VCE (SAT)=0.6 V max.]

Output waveform (Need pull-up resistor)

In case of steady running

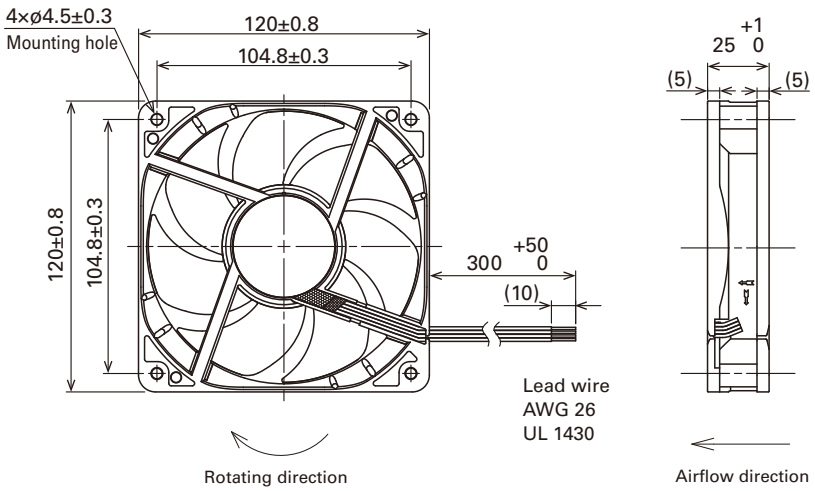


$T_{1\ to\ 4} \fallingdotseq (1/4)\ T_0$

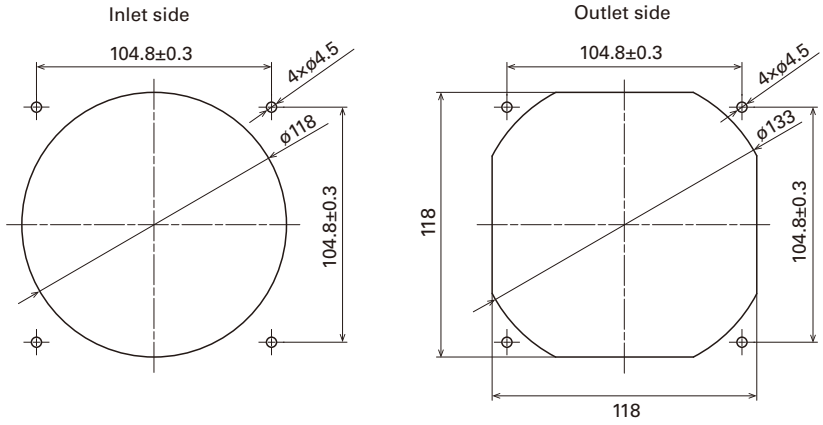
$T_{1\ to\ 4} \fallingdotseq (1/4)\ T_0 = 60/4N$ (s)

N=Fan speed (min-1)

Dimensions (unit: mm) (Ribbed frame with pulse sensor with PWM control)



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



Options

Finger guards

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

Resin finger guards

Model no.: 109-1000G

Resin filter kits

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

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