San Ace 60W 9WPA type
Splash Proof Fan

Features

High Airflow and High Static Pressure
This fan delivers a maximum airflow of 1.52 m^3/min and a maximum static pressure of 357 Pa.
Compared with the current models,(1) the maximum airflow has increased by 2 times and maximum static pressure has increased by 4 times.

Water and Dust Resistance
These fans have IP68-rated(2) water and dust protection. They maintain stable operation even in harsh environments.

Low Noise and High Energy Efficiency
The PWM control function enables the control of fan speed, contributing to lowering noise and improving energy efficiency of devices.



Image depicts product without ribs.

(1) Current models: *San Ace 60* 9WP type 60 × 60 × 25 mm DC Fan
(model nos. 9WP0612G401, 9WP0624G401).

(2) The degree of protection (IP code) is defined by IEC 60529 (International Electrotechnical Commission).
IP68:
Completely protected against dust
Protected against submersion in water

IPX8 Requirements
When the power is off, the fan is submerged in water pressurized to the equivalent of 2 meters for 60 minutes. Then it's run for 15 minutes at the rated voltage in free-air. During the test, there shall be no reduction in dielectric strength or fan characteristics.

60 × 60 × 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]
9WPA0612P4G001	12	10.8 to 13.2	100	0.93	11.16	12000	1.52	53.7	357	1.44	56	-20 to +70	40000/60°C (70000/40°C)
			20	0.09	1.08	3500	0.41	14.5	31	0.13	22		
9WPA0624P4G001	24	21.6 to 26.4	100	0.46	11.04	12000	1.52	53.7	357	1.44	56		
			20	0.05	1.2	3500	0.41	14.5	31	0.13	22		

* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

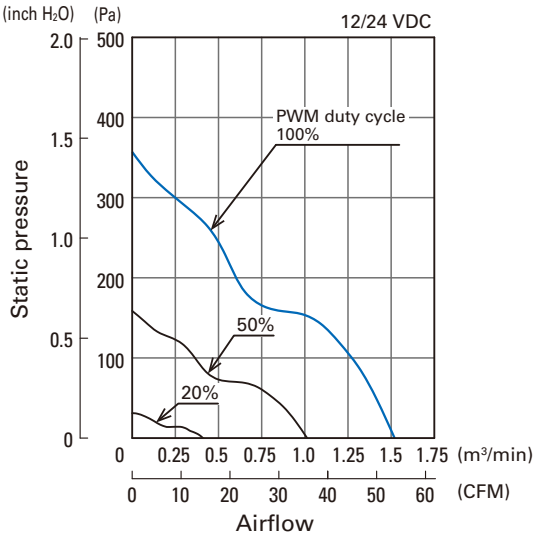
Models with the following sensor specifications are also available as options: Without sensor Lock sensor

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 or more with a 500 VDC megger (between lead wire conductors and frame)
- ☐ 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
- ☐ Mass ····· 110 g
- ☐ Ingress protection ····· IP68

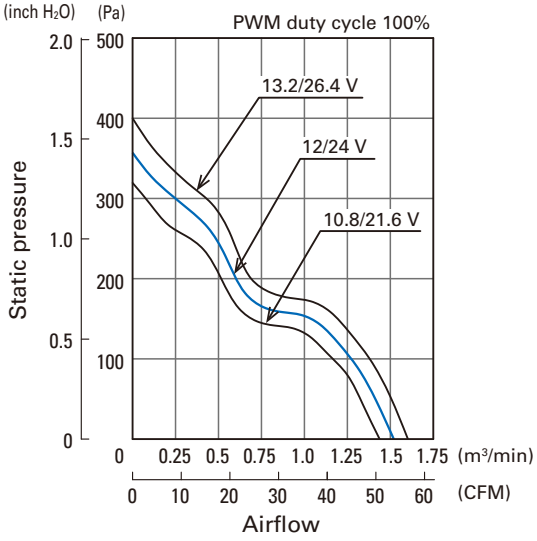
Airflow - Static Pressure Characteristics

・ PWM duty cycle



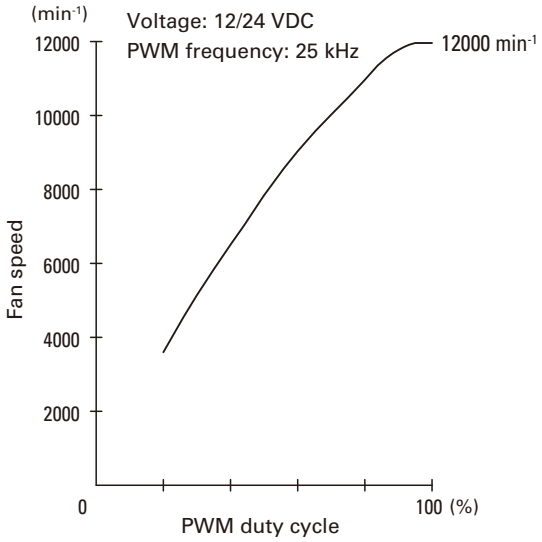
9WPA0612P4G001
9WPA0624P4G001

・ Operating voltage range



9WPA0612P4G001
9WPA0624P4G001

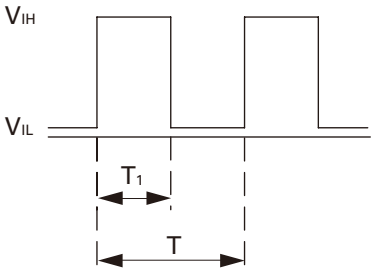
PWM Duty - Speed Characteristics Example



9WPA0612P4G001
9WPA0624P4G001

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) = $\frac{1}{T}$

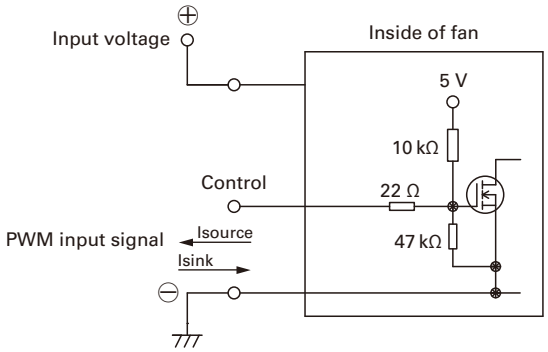
Current source (Isource) = 1 mA max. (when control voltage is 0 V)

Current sink (Isink) = 1 mA max. (when control voltage is 5.25 V)

Control terminal voltage = 5.25 V max. (when control terminal is open)

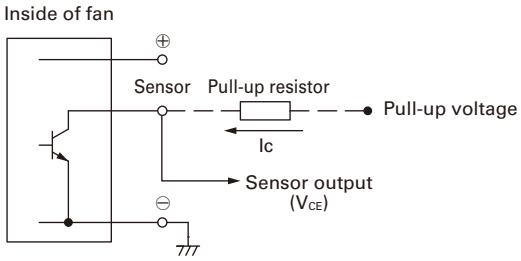
When the control terminal is open,
fan speed is the same as when PWM duty cycle is 100%.
Either TTL input, open collector or open drain can be used for
PWM control input signal.

Example of Connection Schematic



Specifications for Pulse Sensors

Output circuit: Open collector



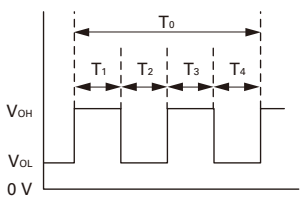
Rated voltage 12 V fan
V_{CE} = +13.2 V max.
Ic = 5 mA max. [V_{OL} = V_{CE} (SAT) = 0.8 V max.]

Rated voltage 24 V fan
V_{CE} = +26.4 V max.
Ic = 5 mA max. [V_{OL} = V_{CE} (SAT) = 0.8 V max.]

Output waveform (Need pull-up resistor)

In case of steady running

(One revolution)

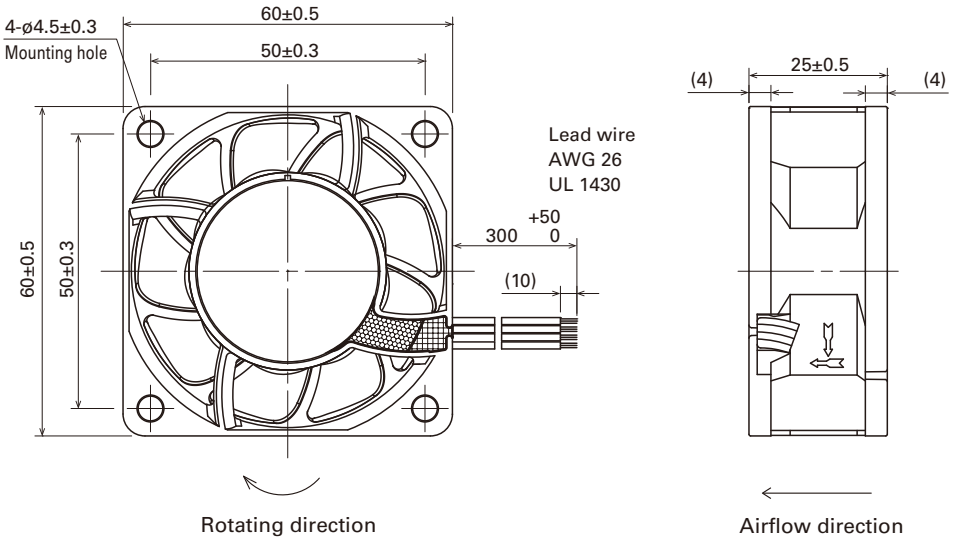


$T_{1\ to\ 4} \fallingdotseq (1/4)\ T_0$

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

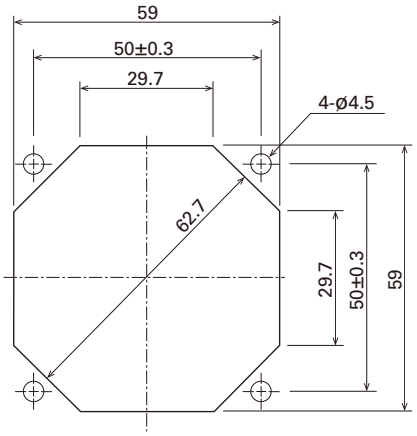
N = Fan speed (min^{-1})

Dimensions (unit: mm) (With ribs)



Reference Dimensions 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.

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9WP0624H401 SA1-9RFA1324P3G001 SA1-9WPA0824P4G001 109P0412G601 9L0412M301 9W1BM12P2H001 9WPA0624P4G001 SA1-DB14S422S 9GA0612L9001 9HV5724P5H001 9WF1224H101 103H5208-5240 9LG0824P4G001 9S0612H402 SA1-9ADW5701P5H003 SA1-9W1BM24P2H001 9GE0412P3J03 9RA0812G1001 109P0412H601 9TM24P4H01 9WF0424H7D01 9WPA0612P4G001 9WL0424P3G001 9A0912G401 9S1212L4011 9WP1212H1011 9G0624G102 9GA0612P7H01 9GA0712P1G001 9HV0812P1G001