

San Ace 172AD

ACDC Fan

9AD type

Features

High Airflow and High Static Pressure

These fans deliver a maximum airflow of 6.7 m³/min and a maximum static pressure of 195 Pa.

Low Power Consumption

Power consumption has been reduced by approximately 32% compared with the current model.* Also, the PWM control function enables the control of fan speed, contributing to lowering noise and improving energy efficiency of devices.

Wide Operating Voltage Range

These fans have an input voltage range of 100 to 240 VAC, supporting both 100 and 200 VAC systems.

* For San Ace 172 AC Fan (Model 109S301)



∅172 × 150 × 51 mm

Specifications

Lead wire model

The models listed below **have pulse sensors with PWM control function.**

Model no.	Rated voltage [V]	Operating voltage range [V]	Frequency [Hz]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. airflow [m ³ /min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating temperature [°C]	Expected life [h]
9AD5701P5H003	100 to 240	90 to 264	50/60	100	0.3	17	3800	6.7 236	195 0.78	54	-20 to +70	40000/60°C (70000/40°C)
				0	0.08	3.2	1500	2.64 93	40 0.16	31		

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

Terminal model

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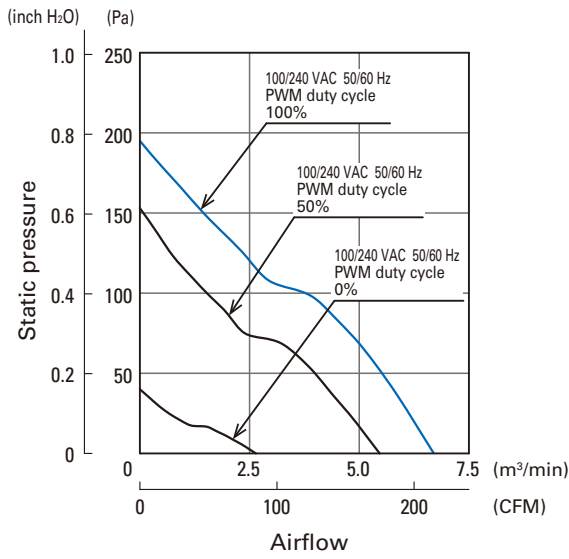
* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

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

Common Specifications

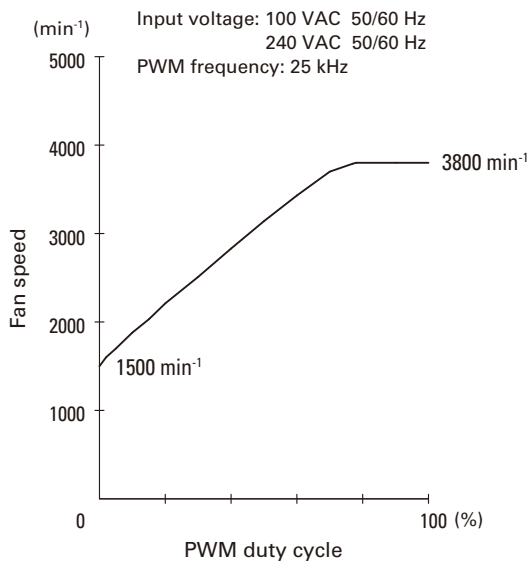
- Material Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life Refer to specifications
(L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
Expected life at 40°C is for reference only.
- Motor protection function Locked rotor burnout protection
- Dielectric strength 50/60 Hz, 1500 VAC, for 1 minute
(Lead wire model: between lead wire conductors and frame, Terminal model: between terminal and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger
(Lead wire model: between lead wire conductors and frame, Terminal model: between terminal 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 **AC power input** L: Orange N: Gray
Sensor Yellow **Control** Brown **GND** Black
- Mass 750 g

Airflow - Static Pressure Characteristics



9AD5701P5H003
9AD5701P5HT03

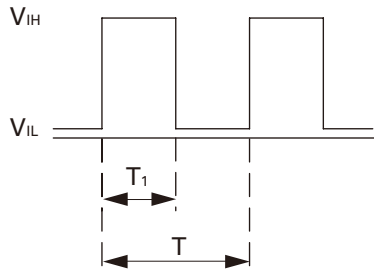
PWM Duty - Speed Characteristics Example



9AD5701P5H003
9AD5701P5HT03

PWM Input Signal Example

Input signal waveform



$$V_{IH} = 4.75 \text{ to } 5.25 \text{ V} \quad V_{IL} = 0 \text{ to } 0.4 \text{ V}$$

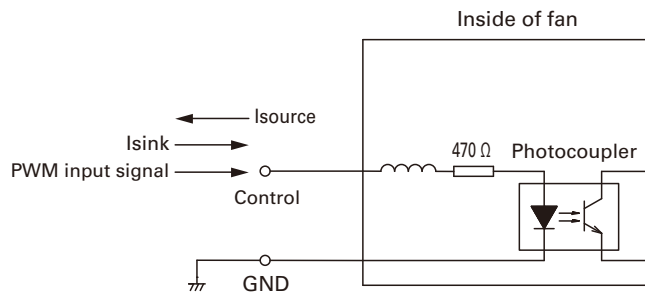
$$\text{PWM duty cycle (\%)} = \frac{T_1}{T} \times 100 \quad \text{PWM frequency } 25 \text{ (kHz)} = \frac{1}{T}$$

Current source (I_{source}) = 1.0 mA max. (when control voltage is 0 V)

Current sink (I_{sink}) = 10 mA max. (when control voltage is 5.25 V)

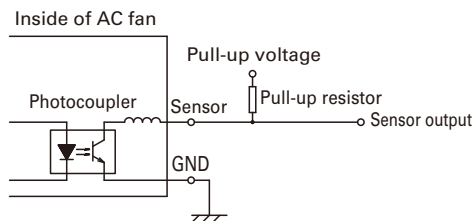
When the PWM control terminal is open, the fan speed is the same as the speed at 0% PWM duty cycle. A TTL input can be used for the PWM input signal.

Example of Connection Schematic



Specifications for Pulse Sensors

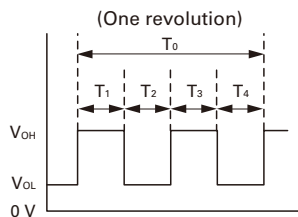
Output circuit: Open collector



$V_{CE} = +60 \text{ V max.}$
 $I_C = 10 \text{ mA max. [} V_{OL} = V_{CE} \text{ (SAT)} = 1.2 \text{ V max.]}$

Output waveform (Need pull-up resistor)

In case of steady running



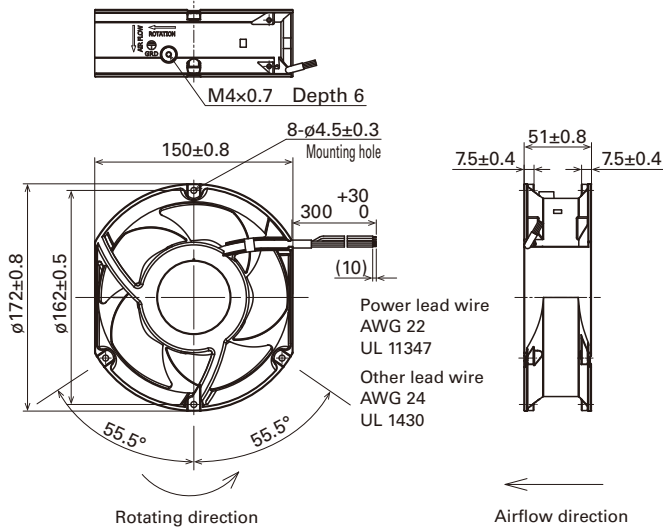
$$T_{1 \text{ to } 4} \approx (1/4) T_0$$

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

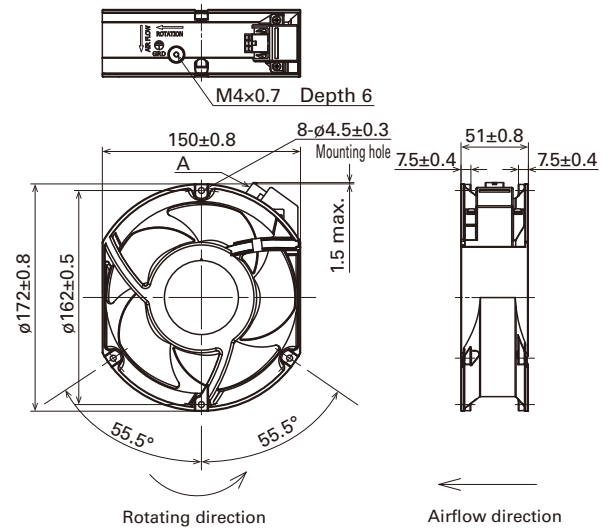
$$N = \text{Fan speed (min}^{-1}\text{)}$$

Dimensions (unit: mm)

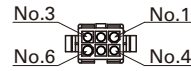
Lead wire model



Terminal model



A Connector contact



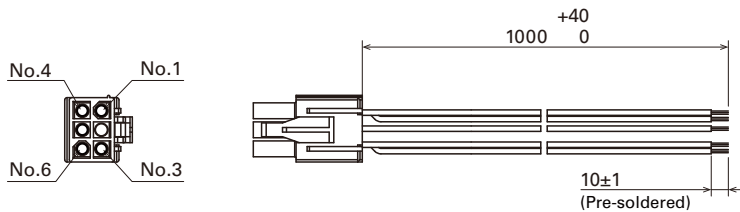
Pin arrangement

Connector (Model no.: TE Connectivity: 1-172160-9)

Pin No.	Function	Input
1	L	AC
2	No connection	-
3	N	AC
4	PWM	DC
5	GND	DC
6	Sensor	DC

Wiring harness

Model no.: 489-1647 Mass: 27 g

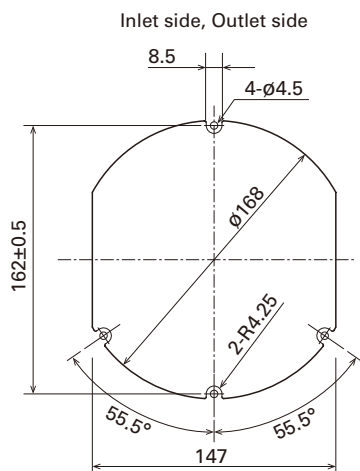


Connector Model no.: TE Connectivity: 1-172168-9

Power lead wire
AWG22 UL11347

Other lead wire
AWG24 UL3385

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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