

# San Ace 172AD

## ACDC Fan

9ADW type

### Features

#### High Airflow and High Static Pressure

These fans deliver a maximum airflow of 6.7 m<sup>3</sup>/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.<sup>(1)</sup>

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.

#### Water and Dust Protection

IP56-rated<sup>(2)</sup> water and dust protection ensures stable fan operation even in harsh environments.

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

(2) The degree of protection (IP code) is defined by IEC 60529 (International Electrotechnical Commission) as follows.



∅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 <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]
9ADW5701P5H003	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

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 <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]
9ADW5701P5HT03	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		

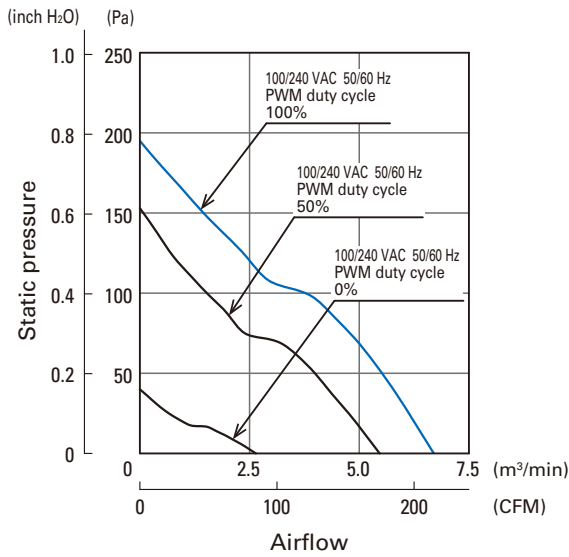
\* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.

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

### Common Specifications

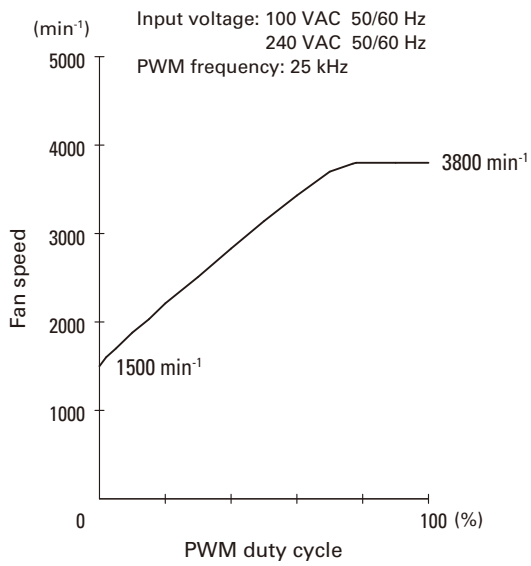
- Material ..... Frame: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-0)
- Expected life ..... Refer to specifications  
(L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage)  
Expected life at 40°C is for reference only.
- Motor protection 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 ..... 810 g
- Ingress protection ..... IP56

## Airflow - Static Pressure Characteristics



**9ADW5701P5H003**  
**9ADW5701P5HT03**

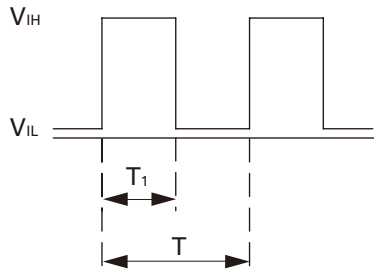
## PWM Duty - Speed Characteristics Example



**9ADW5701P5H003**  
**9ADW5701P5HT03**

### PWM Input Signal Example

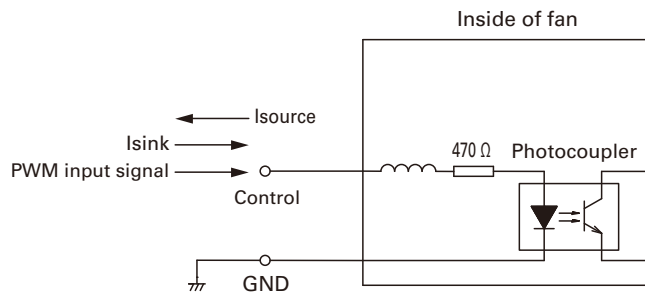
Input signal waveform



$V_{IH} = 4.75 \text{ to } 5.25 \text{ V}$     $V_{IL} = 0 \text{ to } 0.4 \text{ V}$   
 PWM duty cycle (%) =  $\frac{T_1}{T} \times 100$    PWM frequency 25 (kHz) =  $\frac{1}{T}$   
 Current source ( $I_{source}$ ) = 1.0 mA max. (when control voltage is 0 V)  
 Current sink ( $I_{sink}$ ) = 10 mA max. (when control voltage is 5.25 V)

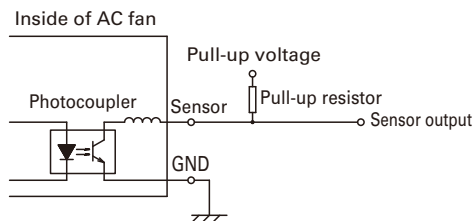
When the PWM control terminal is open, the fan speed is the same as the speed at 0% PWM duty cycle. A TTL input can be used for the PWM input signal.

### Example of Connection Schematic



### Specifications for Pulse Sensors

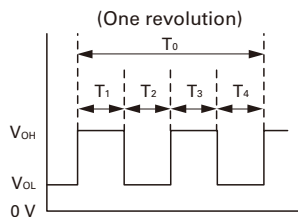
Output circuit: Open collector



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

Output waveform (Need pull-up resistor)

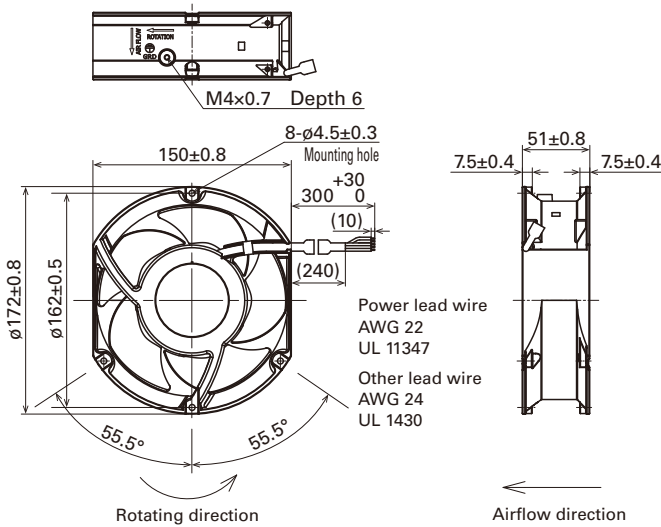
In case of steady running



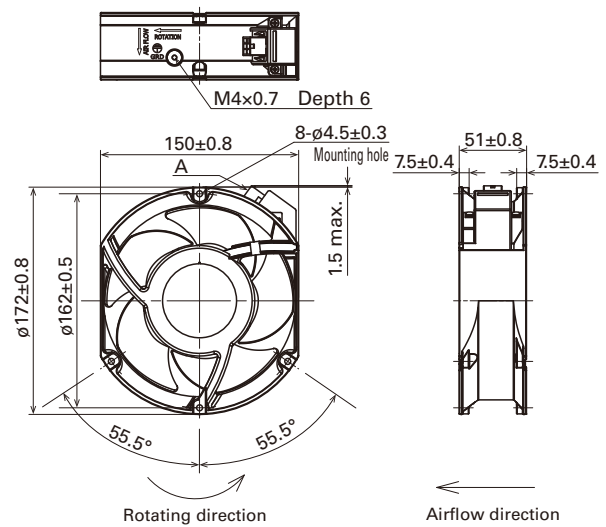
$T_{1 \text{ to } 4} \approx (1/4) T_0$   
 $T_{1 \text{ to } 4} \approx (1/4) T_0 = 60/4N \text{ (s)}$   
 $N = \text{Fan speed (min}^{-1}\text{)}$

## Dimensions (unit: mm)

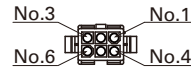
### Lead wire model



### Terminal model



A Connector contact

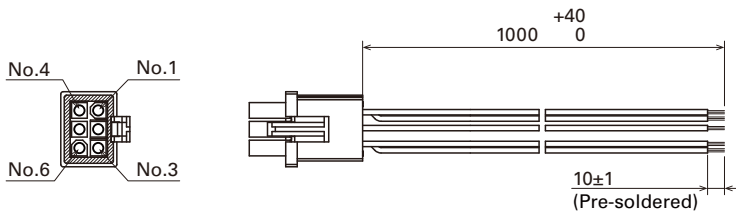


Pin arrangement  
Connector (Model no.: TE Connectivity: 794940-1)

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.: 489-1645 Mass: 27 g

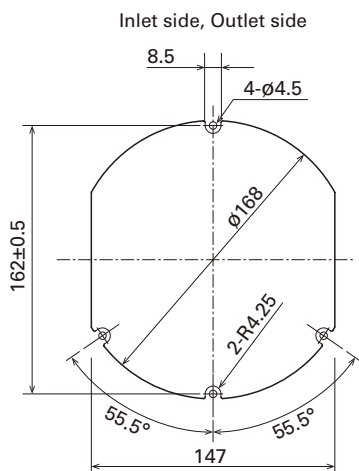


Connector Model no.: TE Connectivity: 794895-1

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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