

San Ace 221W 9B1W2TP type Bracket-mounted Splash Proof Centrifugal Fan

Features

Maximizes Strengths of the Centrifugal Fan

To maximize fan performance, an air inlet needs to be precisely mounted to the fan. Bracket-mounted centrifugal fan has an air inlet and a mounting bracket integrated in one unit. The precise assembly at factory ensures the optimized balance, helping the fan perform at its maximum potential.

Easy Installation

Centrifugal fan comes equipped with an air inlet and a mounting bracket, making your installation work easy.

Water and Dust Resistance

Its IP56-rated* water and dust protection ensures stable fan operation even in harsh environments.

* The degree of protection (IP code) is defined by IEC 60529 (International Electrotechnical Commission).
IP56:
- Protection against a level of dust that could hinder operation or impair safety
- Protection against high pressure water jets



270 x 270 x 99 mm

Specifications

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

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] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating temperature [°C]	Expected life [h]
9B1W2TP24P0H001	24	16 to 36	100	3.35	80.4	3050	17.6 621	530 2.13	71.5	-25 to +70	40000/60°C (70000/40°C)
			15	0.4	9.6	1000	5.75 203	57.0 0.23	53.5		
9B1W2TP48P0S001	48	36 to 72	100	2.3	110.4	3400	19.6 692	659 2.65	73.5		
			15	0.2	9.6	1000	5.75 203	57.0 0.23	53.5		

* PWM input frequency is 25 kHz; models without specifications at 0% PWM duty cycle have zero fan speed at 0%.
Max input of 9B1W2TP24P0H001: 150 W, 9B1W2TP48P0S001: 210 W at rated voltage.

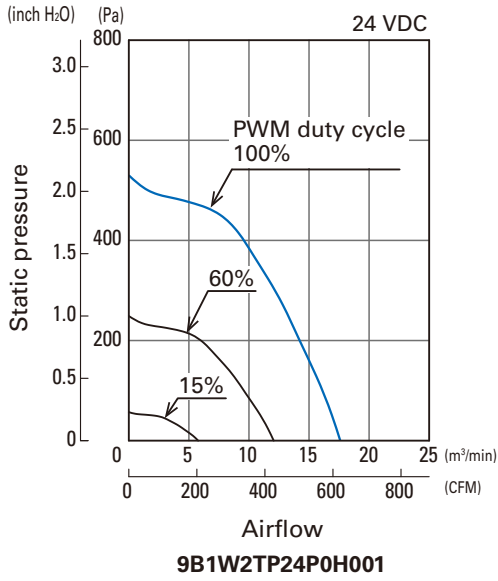
Models with the following sensor specifications are also available as options: Without sensor Lock sensor

Common Specifications

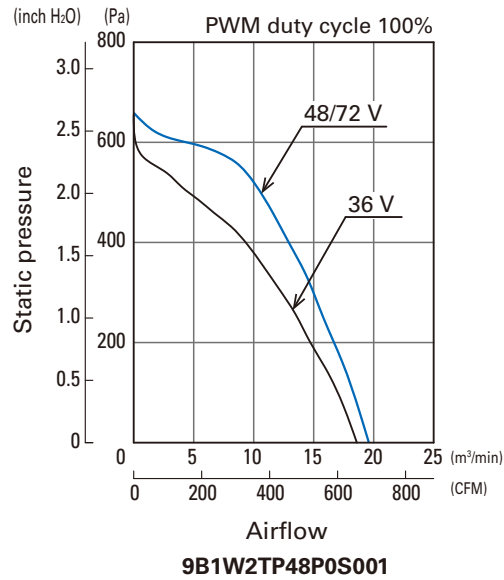
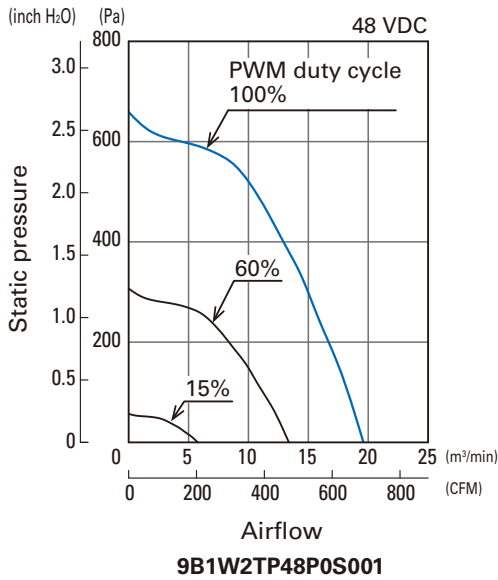
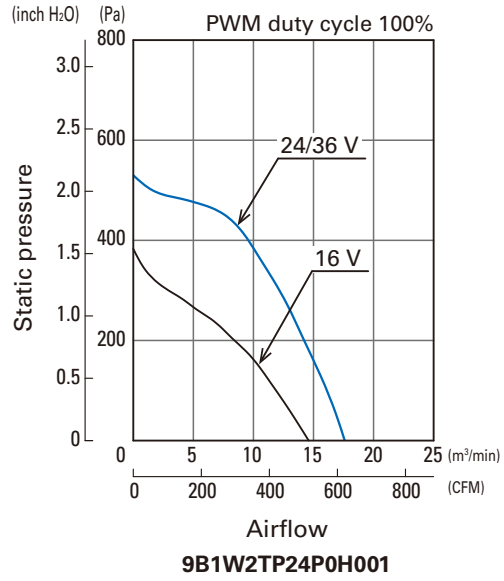
- Material Motor case: Aluminum (Black coating), Impeller: Plastic (Flammability: UL 94V-0)
Bracket: Aluminum (Black coating), Plastic (Flammability: UL94V-0)
- Expected life Refer to specifications
(L10 life: 90% survival rate for continuous operation in indoor free air at 60°C, rated voltage)
Expected 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 bracket)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and bracket)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black Sensor Yellow Control Brown
- Mass 1900 g
- Ingress protection IP56

Airflow - Static Pressure Characteristics

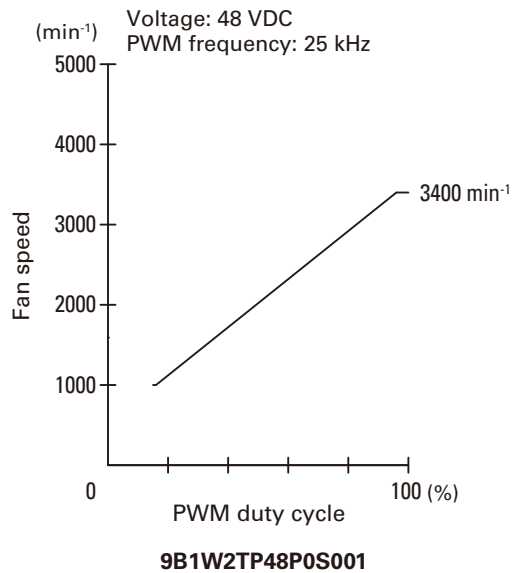
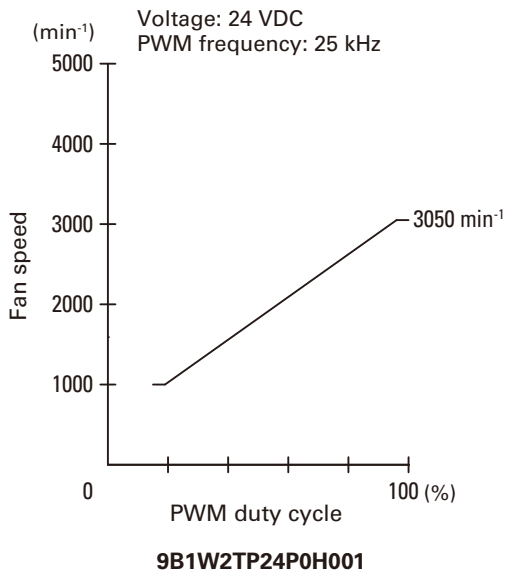
- PWM duty cycle



- Operating voltage range

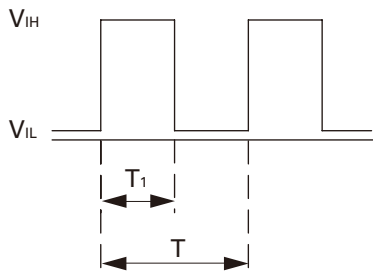


PWM Duty - Speed Characteristics Example



PWM Input Signal Example

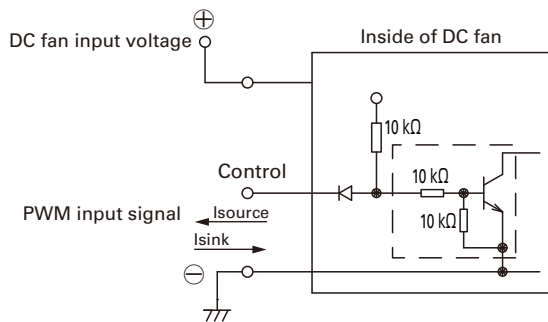
Input signal waveform



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

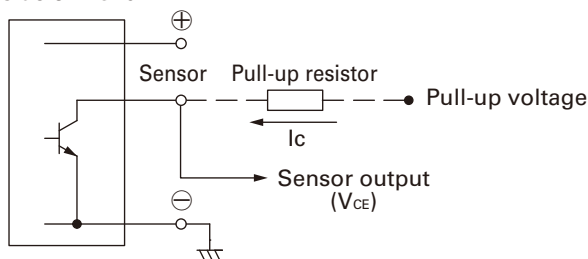
Example of Connection Schematic



Specifications for Pulse Sensors

Output circuit: Open collector

Inside of DC fan



Rated Voltage 24 V Fan

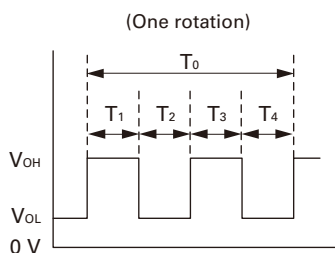
$V_{CE} = +36 \text{ V max.}$
 $I_c = 10 \text{ mA max. [} V_{OL} = V_{CE} \text{ (SAT)} = 1 \text{ V max.]}$

Rated Voltage 48 V Fan

$V_{CE} = +72 \text{ V max.}$
 $I_c = 10 \text{ mA max. [} V_{OL} = V_{CE} \text{ (SAT)} = 1 \text{ V max.]}$

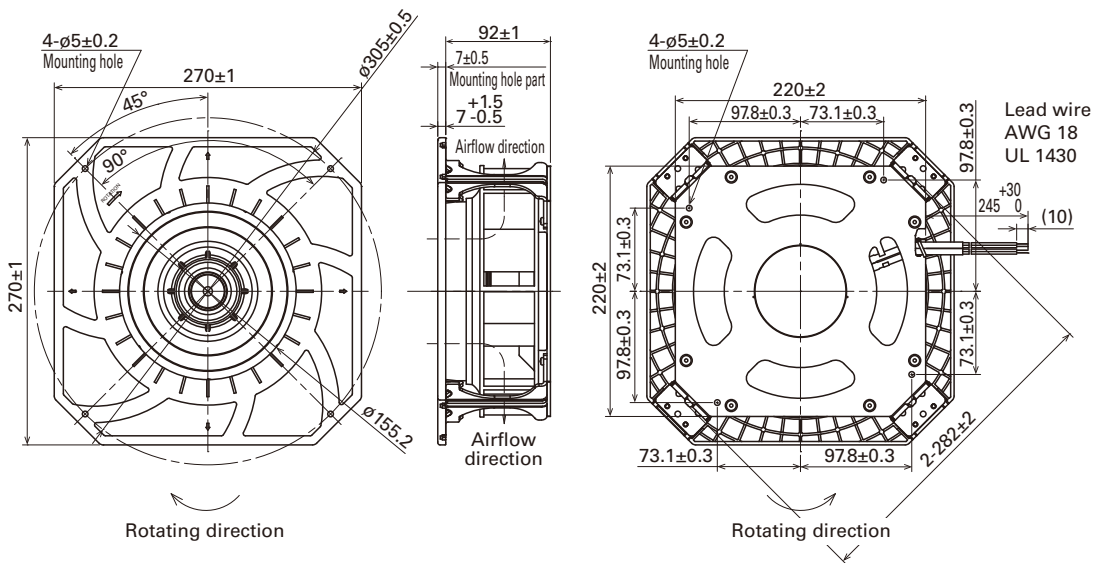
Output waveform (Need pull-up resistor)

In case of steady running

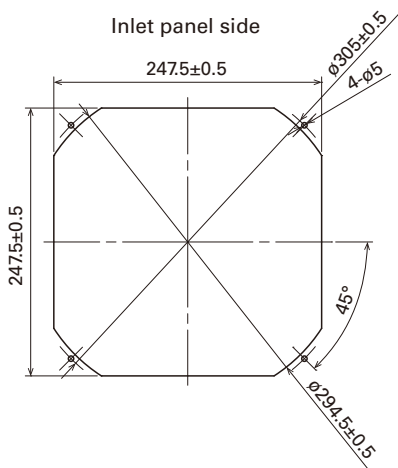


$T_{1 \text{ to } 4} \doteq (1/4) T_0$
 $T_{1 \text{ to } 4} \doteq (1/4) T_0 = 60/4N \text{ (s)}$
 $N = \text{Fan speed (min}^{-1}\text{)}$

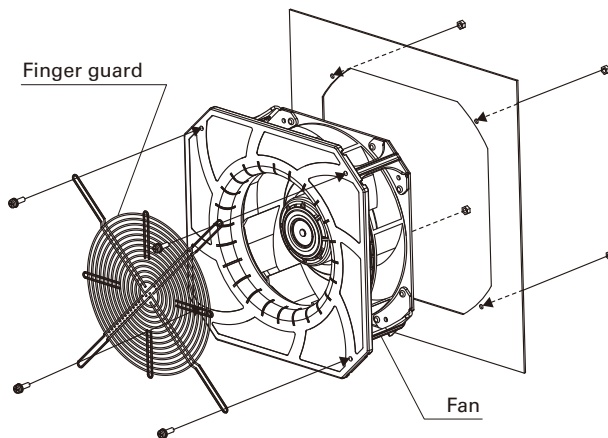
Dimensions (unit: mm)



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



Reference Diagram for Mounting



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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