

# San Ace 133W 9W2TJ type

## Splash Proof Centrifugal Fan

### ■ Features

#### Water and Dust Protection

Its IP68-rated<sup>(1)</sup> water and dust protection, which is improved compared with that of our current model,<sup>(2)</sup> ensures stable fan operation even in harsh environments.

#### High Airflow and High Static Pressure

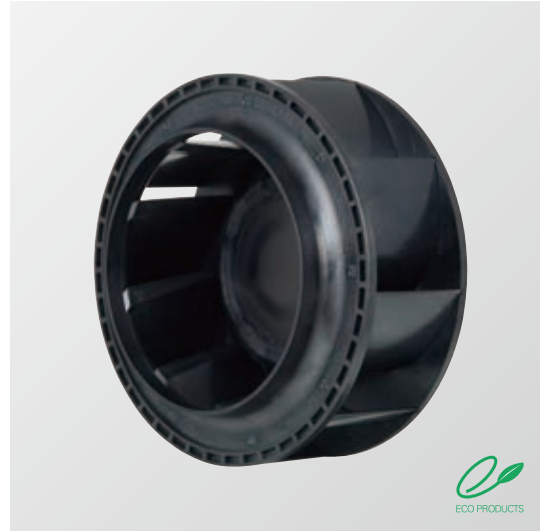
This fan delivers a maximum airflow of 6.39 m<sup>3</sup>/min and a maximum static pressure of 395 Pa.

#### Low Noise and Energy Saving

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

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

(2) Current model: \*133 x 91 mm San Ace 133W9W1TJ type Splash Proof Centrifugal Fan



∅133 x 91 mm

### ■ Specifications When the optional inlet nozzle (109-1069H) is mounted.

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 <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]
9W2TJ24P0H001	24	20.4 to 27.6	100	1.2	28.8	4150	6.39 225	395 1.59	61	-20 to +70	40000/60°C (70000/40°C)
			20	0.09	2.16	1150	1.7 60	32 0.13	35		
9W2TJ48P0H001	48	36 to 60	100	0.55	26.4	4150	6.39 225	395 1.59	61		
			20	0.08	3.84	1150	1.7 60	32 0.13	35		

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

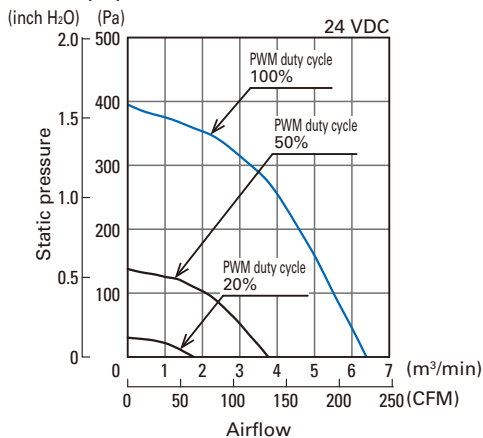
Note: Max input is 45 W at rated voltage.

### ■ Common Specifications

- Material ..... Motor case: 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, Reverse polarity protection
- Dielectric strength ..... 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and motor case)
- Insulation resistance ..... 10 MΩ or more with a 500 VDC megger (between lead wire conductors and motor case)
- 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 ..... 800 g
- Ingress protection ..... IP68

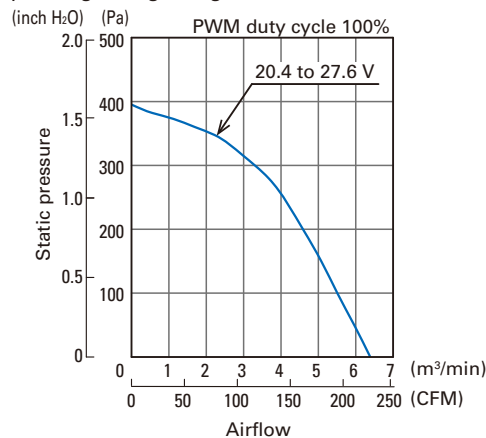
## Airflow - Static Pressure Characteristics

PWM duty cycle

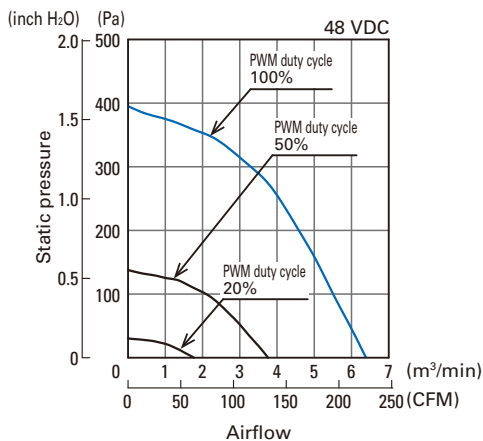


9W2TJ24P0H001

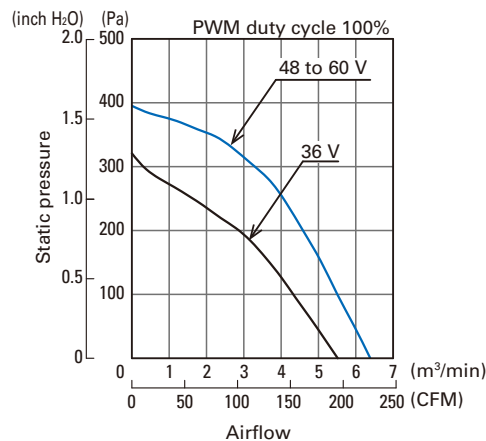
Operating voltage range



9W2TJ24P0H001

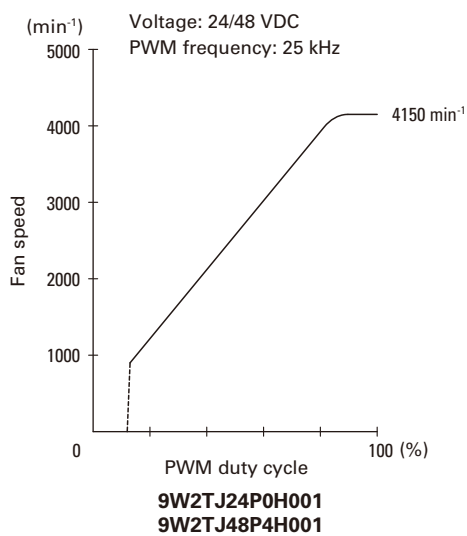


9W2TJ48P0H001



9W2TJ48P0H001

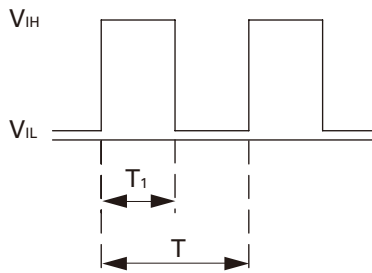
## PWM Duty - Speed Characteristics Example



9W2TJ24P0H001  
9W2TJ48P4H001

### 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 ( $I_{source}$ ) = 2 mA max. (when control voltage is 0 V)

Current sink ( $I_{sink}$ ) = 1 mA max. (when control voltage is 5.25 V)

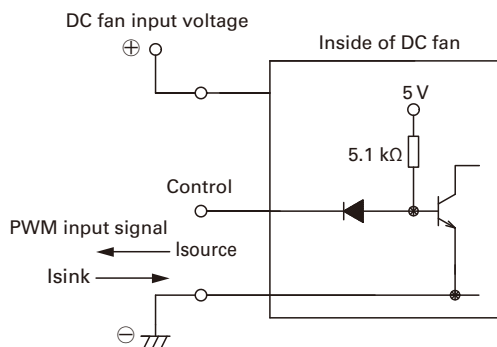
Control terminal voltage = 10 V max. (when control terminal is open)

When the PWM control terminal is open,

the fan speed is the same as the speed at 100% PWM duty cycle.

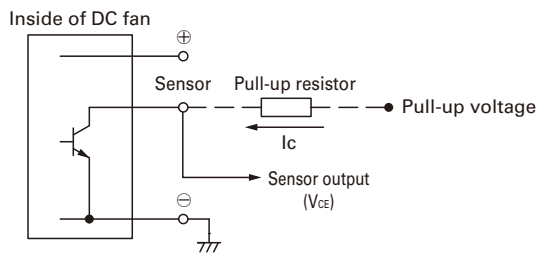
Either a TTL input or open collector/drain input can be used for the PWM input signal.

### Example of Connection Schematic



### Specifications for Pulse Sensors

Output circuit: Open collector



**Rated voltage 24 V fan**

$V_{CE} = +30 \text{ V max.}$

$I_C = 10 \text{ mA max. [} V_{OL} = V_{CE} \text{ (SAT)} = 0.6 \text{ V max.]}$

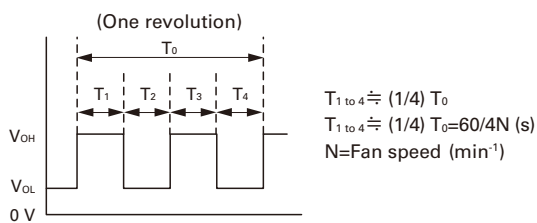
**Rated voltage 48 V fan**

$V_{CE} = +60 \text{ V max.}$

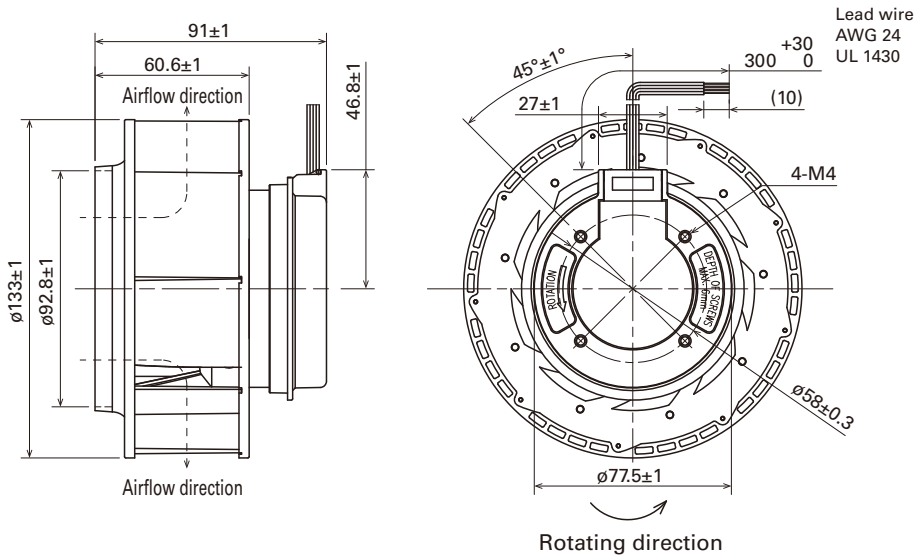
$I_C = 10 \text{ mA max. [} V_{OL} = V_{CE} \text{ (SAT)} = 0.6 \text{ V max.]}$

Output waveform (Need pull-up resistor)

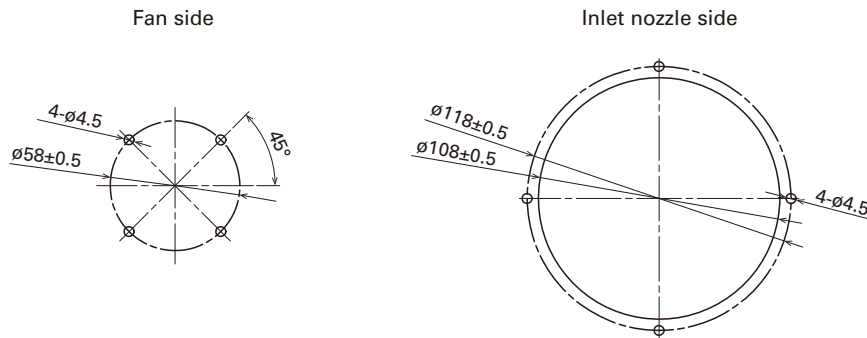
In case of steady running



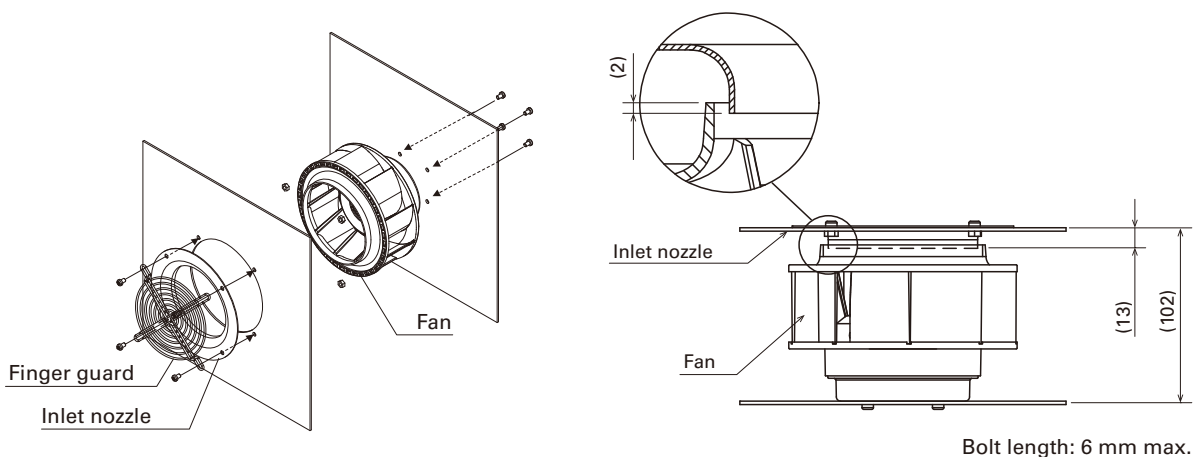
## Dimensions (unit: mm)



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



## Reference Diagram for Mounting (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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