San Ace C270  9B1TS type
Bracket-mounted Centrifugal Fans

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.

270 x 270 x 119 mm

Specifications

The following nos. have PWM controls and pulse sensors.

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<tbody>
<tr>
<td>9B1TS48P0G001</td>
<td>48</td>
<td>36 to 72</td>
<td></td>
<td>100</td>
<td>3.65</td>
<td>175.2</td>
<td>3,550</td>
<td>28.1</td>
<td>992</td>
<td>861</td>
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<td>15</td>
<td>0.24</td>
<td>11.5</td>
<td>1,000</td>
<td>7.85</td>
<td>277</td>
<td>68.5</td>
<td>0.28</td>
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<td>9B1TS48P0H001</td>
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<td></td>
<td>100</td>
<td>2.08</td>
<td>99.8</td>
<td>2,900</td>
<td>22.7</td>
<td>802</td>
<td>590</td>
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<td>0.24</td>
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Note 1  PWM frequency: 25 kHz
Note 2  Fans do not rotate when PWM duty cycle is 0%.
Note 3  Max input of 9B1TS48P0G001: 380 W, 9B1TS48P0H001: 200 W at rated voltage.

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

Common Specifications

- Material  
  Motor case: Aluminum, Impeller: Plastics (Flammability: UL94V-0), 
  Bracket: Aluminum, Plastics (Flammability: UL94V-0)
- Expected life  
  Refer to specifications 
  (L10: Survival rate: 90% at 60 °C, rated voltage, and continuously run in a free air state)
- Motor protection system  
  Current blocking function and reverse polarity protection
- Dielectric strength  
  50 / 60 Hz, 500 VAC, 1 minute (between lead conductor and bracket)
- Sound pressure level (SPL)  
  Expressed as the value at 1 m from air inlet side
- Operating temperature  
  Refer to specifications (Non-condensing)
- Storage temperature  
  -30 °C to +70 °C (Non-condensing)
- Lead wire  
  Red ✱ Black ✱ Sensor: Yellow ✱ Control: Brown
- Mass  
  Approx. 1,920 g
Airflow - Static Pressure Characteristics

- **PWM duty cycle**
  - Voltage: 48 VDC
  - PWM frequency: 25 kHz

- **Operating voltage range**
  - Voltage: 48 VDC
  - PWM frequency: 25 kHz

PWM Duty - Speed Characteristics Example

- Voltage: 48 VDC
- PWM frequency: 25 kHz

- **Speed**
  - 3,550 min⁻¹

- **Speed**
  - 2,900 min⁻¹
Specifications for Pulse Sensors

Output circuit: Open collector

- **VCE** = 72 VDC max.
- **Ic** = 10 mA max. \([VCE(SAT)] = 1 \text{ V max.}\]

**Example of Connection Schematic**

- DC fan input voltage
- Inside of DC fan
- Control
- PWM input signal
- Pull-up resistor

**Specifications for Pulse Sensors**

- **Output waveform (Need pull-up resistor)**
  - In case of steady running
  - \(T_1 \div \frac{1}{4} T_0\)
  - \(T_1 \div \frac{1}{4} T_0 = 60/4N \text{ (sec)}\)
  - \(N = \text{Fan speed (min}^{-1}\))

- **PWM Input Signal Example**
  - **Input signal waveform**
  - \(V_{IH} = 4.75 \text{ V to 5.25 V}\)
  - \(V_{IL} = 0 \text{ V to 0.4 V}\)
  - \(\text{PWM duty cycle } (\%) = \frac{T_1}{T} \times 100\)
  - \(\text{PWM frequency } 25 \text{ (kHz)} = \frac{1}{T}\)

- **Source current** \((I_{source})\) : 1 mA max. at control voltage 0 V
- **Sink current** \((I_{sink})\) : 1 mA max. at control voltage 5.25 V
- **Control terminal voltage**: 5.25 V max. (Open circuit)

- When the control lead wire is open, the fan speed is the same as the one at a PWM duty cycle of 100%.
- Either TTL input, open collector or open drain can be used for PWM control input signal.
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For protecting fan bearings against electrolytic corrosion near strong electromagnetic noise sources,

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- Please read the “Safety Precautions” on our website before using the product.
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**Dimensions (unit: mm)**

**Fan**

- Finger guard (Model: 109-1146)
  - Surface treatment: Nickel-chrome plating (Color: silver)
  - Mass: 106 g

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

- Inlet side
  - Fan: 270.3 ± 0.5
  - Airflow direction
  - Airflow: 122.1
  - Rotating direction
- Inlet panel side
  - 270.1 ± 0.5
  - 9.3 ± 0.2
  - 247.5 ± 0.5
  - 65

**Reference Diagram for Mounting**

- Finger guard
  - Fan
  - Rotating direction

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