San Ace 92T 9GT type
Wide Temperature Range Fan

Features

Wide Operating Temperature Range
These products operate in a wide temperature range of -40°C to +85°C. They can be safely used in both low-temperature and high-temperature applications ranging from refrigerators and freezers to heat-generating lighting devices. With these new products, the San Ace lineup can now serve in conventional applications such as communications devices, PV inverters, and rapid EV charging stations in even more demanding environments.

92×92×38mm

Specifications

The following nos. have PWM controls, pulse sensors.

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<tbody>
<tr>
<td>9GT0912P1M001</td>
<td>12</td>
<td>10.2 to 13.6</td>
<td>100</td>
<td>1.50</td>
<td>18.0</td>
<td>8,100</td>
<td>3.30</td>
<td>116.6</td>
<td>315</td>
<td>1.26</td>
<td>58</td>
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<td>30</td>
<td>0.30</td>
<td>3.6</td>
<td>3,750</td>
<td>1.50</td>
<td>53.0</td>
<td>72.0</td>
<td>0.29</td>
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<td>9GT0924P1M001</td>
<td>24</td>
<td>20.4 to 27.6</td>
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<td>0.75</td>
<td>18.0</td>
<td>8,100</td>
<td>3.30</td>
<td>116.6</td>
<td>315</td>
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Note1: PWM frequency: 25 kHz
Note2: Fans do not rotate when PWM duty cycle is 0%.
Available options: Without sensor, Lock sensor

Common Specifications

- Material: Frame: Aluminum, Impeller: Plastics (Flammability: UL94V-1)
- Expected life: Refer to specifications (L10: Survival rate: 90% at 85 °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 frame)
- Sound pressure level (SPL): Expressed as the value at 1 m from air inlet side
- Operating temperature: Refer to specifications (Non-condensing)
- Storage temperature: -40 °C to +85 °C (Non-condensing)
- Lead wire: Red, Black Sensor: Yellow Control: Brown
- Mass: Approx. 270 g
Airflow - Static Pressure Characteristics

- PWM duty cycle

![Airflow - Static Pressure Characteristics](image)

- Operating voltage range

![Operating voltage range](image)

PWM Duty - Speed Characteristics Example

- Voltage: 12 VDC / 24 VDC
- PWM frequency: 25 kHz

![PWM Duty - Speed Characteristics Example](image)
PWM Input Signal Example

Input signal waveform

\[ V_{IL} = 0 \text{ V to } 0.4 \text{ V} \]
\[ V_{IH} = 4.75 \text{ V to } 5.25 \text{ V} \]

PWM duty cycle (\%) = \( \frac{T_1}{T_0} \times 100 \)

PWM frequency 25 [kHz] = \( \frac{1}{T_0} \)

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.

Example of Connection Schematic

Rated voltage 12 V fan

DC fan input voltage

Inside of DC fan

5V
10kΩ

220Ω
39kΩ

PWM input signal
\( I_{source} \)
\( I_{sink} \)

Control

Rated voltage 24 V fan

DC fan input voltage

Inside of DC fan

6V
10kΩ

39kΩ

PWM input signal
\( I_{source} \)
\( I_{sink} \)

Control

Specifications for Pulse Sensors

Output circuit: Open collector

Rated voltage 12 V fan

\( V_{CE} = +13.8 \text{ V MAX.} \]
\( I_C = 5 \text{ mA MAX.} \) \( [V_{OL} = V_{CE (SAT)} = 0.6 \text{ V MAX.}] \)

Rated voltage 24 V fan

\( V_{CE} = +30 \text{ V MAX.} \]
\( I_C = 10 \text{ mA MAX.} \) \( [V_{OL} = V_{CE (SAT)} = 0.6 \text{ V MAX.}] \)

Output waveform (Need pull-up resistor)

In case of steady running

\( T_1 \approx \frac{1}{4} T_0 \)

\( T_1 \approx \frac{1}{4} T_0 = \frac{60}{4N} \text{ (sec)} \)

\( N = \text{Fan speed (min}^{-1}) \)
Dimensions (unit: mm)

[Diagram of fan with dimensions]

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

[Diagram of mounting holes and vent opening]

Notice

- Please read the “Safety Instructions” on our website once you have decided on a product for use.
- The products shown in this catalog are subject to Japanese Export Control Law. Diversion contrary to the law of exporting country is prohibited.
- To protect against electrolytic corrosion that may occur in locations with strong electromagnetic noise, we provide fans that are unaffected by electrolytic corrosion.

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