San Ace 172
Counter Rotating Fan

**Features**

**High Air Flow and Static Pressure**
- Excellence in delivering high airflow and static pressure made possible by our industry's first counter rotating fan that has a φ172 mm diameter.
- Its cooling performance is more than that of four standard fans* (φ172 × 150 × 51 mm).

Just one unit powerfully cools your equipment, greatly helping downsize the equipment.

* : Two sets of two tandem-placed “San Ace 172” φ172 × 150 × 51 mm; Model No. 9GV5748P6H03

**Specifications**

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<td>9CR5748P9G001</td>
<td>48</td>
<td>36 to 72</td>
<td>100</td>
<td>5.5</td>
<td>264</td>
<td>7,300</td>
<td>6,400</td>
<td>18</td>
<td>636</td>
<td>1400</td>
<td>5.62</td>
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<td></td>
<td></td>
<td></td>
<td>0</td>
<td>0.5</td>
<td>24</td>
<td>2,400</td>
<td>1,900</td>
<td>5.5</td>
<td>194.3</td>
<td>152</td>
<td>0.61</td>
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Note: PWM Frequency : 25kHz

**Common Specifications**

- **Material**: Frame : Aluminum, Impeller : Plastics (Flammability: UL94V-0)
- **Expected Life**: Varies for each model
  (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, 500VAC, 1 minute (between lead conductor and frame)
- **Sound Pressure Level (SPL)**: Expressed as the value at 1m from air inlet side
- **Operating Temperature**: Varies for each model (Non-condensing)
- **Storage Temperature**: −30°C to +70°C (Non-Condensing)
- **Lead Wire**: Inlet : Red, Black, Sensor: Yellow, Control: Brown
  Outlet : Orange, Gray, Sensor: Purple, Control: White
- **Mass**: Approx. 1,600g
**SanAce172**

### Air Flow - Static Pressure Characteristics

- **PWM Duty Cycle**

  (inch H₂O) (Pa)

  ![Graph of PWM Duty Cycle and Static Pressure](image1.png)

- **Operating Voltage Range**

  (inch H₂O) (Pa)

  ![Graph of Operating Voltage Range](image2.png)

### PWM Duty - Speed Characteristics Example

- **Voltage**: DC48V
- **PWM Frequency**: 25kHz

  ![Graph of PWM Duty Cycle and Speed](image3.png)
### PWM Input Signal Example

- **Input Signal Wave Form**
  - $V_{IH}$
  - $V_{IL}$

- **Voltage Levels**
  - $V_{IH} = 4.75V$ to $5.25V$
  - $V_{IL} = 0V$ to $0.4V$

- **PWM Duty Cycle**
  - $\% = \frac{T_1}{T} \times 100$
  - **PWM Frequency** $25$ $(kHz) = \frac{1}{T}$

- **Current Specifications**
  - Source Current ($i_{source}$) : $1mA$ Max. at control voltage $0V$
  - Sink Current ($i_{sink}$) : $1mA$ Max. at control voltage $5.25V$

- **Control Terminal Voltage**
  - $5.25V$ Max. (Open Circuit)

- **When the control lead wire is open,**
  - speed is same as one at $100\%$ PWM duty cycle.

- **This fan speed should be controlled by PWM input signal of either TTL input or open collector, drain input.**

### Connection Schematic

DC fan input voltage

Inside of DC fan

- PWM Input Signal
  - $i_{source}$
  - $i_{sink}$

Control

### Specifications for Pulse Sensors

**Output circuit : Open collector**

- **Output Voltage**
  - $V_{CE} = +72V$ MAX.
  - $Ic = 10mA$ MAX. [$V_{OL}$=$V_{CE} (SAT) = 0.6V$ MAX.]

- **Output Waveform (Need pull-up resistor)**
  - **In case of steady running**
    - (One revolution)
    - $T_1 \approx (1/4)T_0$
    - $T_1 \approx (1/4)T_0 = 60/4N$ (sec)
    - $N =$ Fan speed $(min^{-1})$

- **Sensor & Pull-up Resistor**
  - $V_{OH}$
  - $V_{OL}$
  - $0V$
### High Air Flow and Static Pressure

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Its cooling performance is more than that of four standard fans* (П 172 x 150 x 51 mm). Just one unit powerfully cools your equipment, greatly helping downsize the equipment.

*Two sets of two tandem-placed San Ace 172 П 172 ᵃ 150 ᵃ 51 mm; Model No. 9GV5748P5H03 CR type

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### Specifications

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The products shown in the 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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