San Ace 92 W 9WL type  
Splash Proof Fan

**Features**

Splash Proof and Dust Resistant  
IP68** protection rating water and dust resistance.

Longest-Lasting Lifespan  
These fans have an expected lifespan of 180,000 hours (approximately 20 years), about 4.5 times that of our conventional splash proof fan,** making them ideal for equipment that must operate without maintenance for extended periods.

High Air Flow and High Static Pressure  
Maximum air flow increased by approximately 1.2 times and maximum static pressure increased by approximately 1.5 times compared with our conventional splash proof fan.**

Low Power Consumption  
The power consumption is approximately 21% lower than that of our conventional splash proof fan.**

*S1: Based on testing procedure for IEC (International Electrotechnical Commission) specification IEC 60529.  
*S2: Specification of Model No. 9WL0924P4H001. Our conventional splash proof fan is 92 x 92 x 25 mm “San Ace 92W”, Model No. 9WP0924G401.  
*S3: Specification of Model No. 9WL0912P4G001. At equivalent air flow performance. Our conventional splash proof fan is 92 x 92 x 25 mm “San Ace 92W”. Model No. 9WP0924G401.

92×92×25mm

**Specifications**

The following nos. have PWM controls, pulse sensors.

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<td>12</td>
<td>10.8 to 13.2</td>
<td>100</td>
<td>0.42</td>
<td>5.04</td>
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<td>2.64</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  
- Pulse Sensor  
- Lock Sensor

**Common Specifications**

- Material: Frame: Aluminum (Black coating), Impeller: Plastics (Flammability: UL94V-1)  
- Expected Life (L10: Survival rate: 90% at 60 ℃, 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: −30 ℃ to +70 ℃ (Non-condensing)

- Lead Wire: Red Black Sensor: Yellow Control: Brown

- Mass: Approx. 170 g
Air Flow - Static Pressure Characteristics

- **PWM Duty Cycle**
  - DC 12 V
  - DC 24 V

- **Operating Voltage Range**
  - Voltage: DC 12 V / 24 V
  - Voltage: DC 12 V / 24 V
  - Voltage: DC 12 V / 24 V

- **Operating Voltage Range (Alternatives)**
  - Voltage: 13.2 V / 26.4 V
  - Voltage: 12 V / 24 V
  - Voltage: 10.8 V / 21.6 V

- **Operating Voltage Range (T100)**
  - Voltage: 10.8 V / 21.6 V

- **Operating Voltage Range (100%)**
  - Voltage: 13.2 V / 26.4 V

- **Air Flow**
  - DC 12 V
  - DC 24 V

- **PWM Frequency**
  - 25 kHz

- **Source Current (Isource)**
  - 1 mA Max. at control voltage 0 V

- **Sink Current (Isink)**
  - 1 mA Max. at control voltage 5.25 V

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

- **PWM Control Input Signal**
  - Either TTL input, open collector or open drain can be used for the fan speed.

- **PWM Duty Cycle (%)**
  - PWM Frequency: 25 kHz

- **Operating Voltage Range**
  - 12 V / 24 V
  - 12 V / 24 V

- **Operating Voltage Range**
  - 13.2 V / 26.4 V
  - 12 V / 24 V
  - 10.8 V / 21.6 V

- **Operating Voltage Range**
  - Voltage: DC 12 V / 24 V

- **Operating Voltage Range**
  - Voltage: DC 12 V / 24 V

- **Operating Voltage Range**
  - Voltage: 13.2 V / 26.4 V

- **Operating Voltage Range**
  - Voltage: 12 V / 24 V

- **Operating Voltage Range**
  - Voltage: 10.8 V / 21.6 V

- **Operating Voltage Range**
  - Voltage: 12 V / 24 V

- **Operating Voltage Range**
  - Voltage: 10.8 V / 21.6 V

- **Operating Voltage Range**
  - Voltage: 13.2 V / 26.4 V

- **Operating Voltage Range**
  - Voltage: 12 V / 24 V

- **Operating Voltage Range**
  - Voltage: 10.8 V / 21.6 V

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- **Operating Voltage Range**
  - Voltage: 13.2 V / 26.4 V

- **Operating Voltage Range**
  - Voltage: 12 V / 24 V

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  - Voltage: 13.2 V / 26.4 V

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  - Voltage: 12 V / 24 V

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- **Operating Voltage Range**
  - Voltage: 13.2 V / 26.4 V

- **Operating Voltage Range**
  - Voltage: 12 V / 24 V

- **Operating Voltage Range**
  - Voltage: 10.8 V / 21.6 V

- **Operating Voltage Range**
  - Voltage: 12 V / 24 V

- **Operating Voltage Range**
  - Voltage: 10.8 V / 21.6 V
### PWM Duty - Speed Characteristics Example

- **9WL0912P4J001**
  - Voltage: DC 12 V
  - PWM Frequency: 25 kHz
  - Speed vs. PWM Duty Cycle

- **9WL0912P4G001**
  - Voltage: DC 12 V
  - PWM Frequency: 25 kHz
  - Speed vs. PWM Duty Cycle

- **9WL0912P4S001**
  - Voltage: DC 24 V
  - PWM Frequency: 25 kHz
  - Speed vs. PWM Duty Cycle

- **9WL0924P4H001**
  - Voltage: DC 12 V
  - PWM Frequency: 25 kHz
  - Speed vs. PWM Duty Cycle

- **9WL0924P4J001**
  - Voltage: DC 12 V
  - PWM Frequency: 25 kHz
  - Speed vs. PWM Duty Cycle

### PWM Input Signal Example

**Input Signal Waveform**

- **V_{IH}**
- **V_{IL}**

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

**PWM Duty Cycle (%)**
- $V_{IL} = 0 \text{ V to } 0.4 \text{ V}$
- $\text{PWM Duty Cycle (\%)} = \frac{T_1}{T} \times 100$

**PWM Frequency**
- $25 \text{ kHz}$
- $\text{PWM Frequency} = \frac{1}{T}$

**Source Current**
- $\text{Is}_{source} = 1 \text{ mA Max. at control voltage } 0 \text{ V}$

**Sink Current**
- $\text{Is}_{sink} = 1 \text{ mA Max. at control voltage } 5.25 \text{ V}$

**Control Terminal Voltage**
- $5.25 \text{ V Max. (Open Circuit)}$

**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.
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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Mouser Electronics

Authorized Distributor

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