

San Ace 120T 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.



120×120×38mm

Specifications

The following nos. have **PWM controls, pulse sensors**.

Model No.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle [max.: %]	Rated current [A]	Rated input [W]	Rated speed [min ⁻¹]	Max. Airflow [m ³ /min] [CFM]	Max. Static pressure [Pa] [inchH ₂ O]	SPL [dB(A)]	Operating temperature [°C]	Expected life [h]
9GT1212P1S001	12	9.0 to 13.8	100	2.2	26.4	5,600	6.00 211.8	270 1.08	58	-40 to +85	40,000 / 85°C
			35	0.48	5.76	2,900	3.00 106.0	85.6 0.34	41		
9GT1224P1S001	24	18.0 to 27.6	100	1.1	26.4	5,600	6.00 211.8	270 1.08	58		
			35	0.24	5.76	2,900	3.00 106.0	85.6 0.34	41		

Note1: PWM frequency: 25 kHz

Note2: Fans do not rotate when PWM duty cycle is 0%.

Available options: **Without sensor** **Lock sensor**

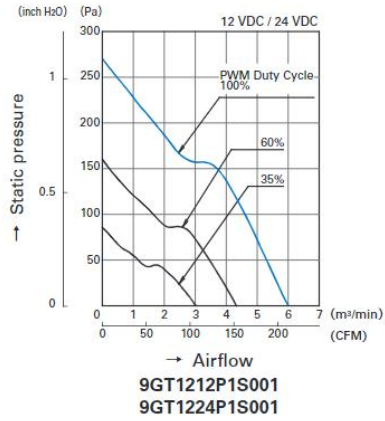
Common Specifications

- 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. 420 g

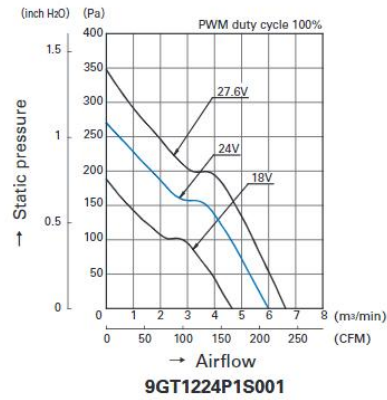
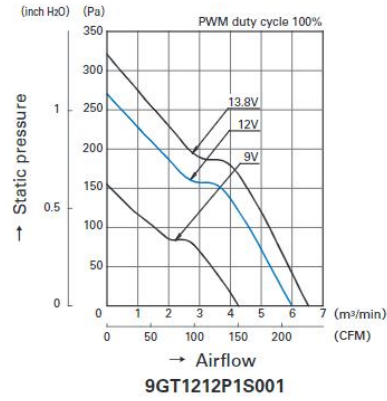
SanAce120T 9GT type

Airflow - Static Pressure Characteristics

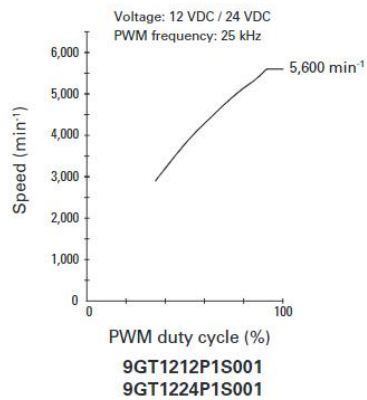
• PWM duty cycle



• Operating voltage range



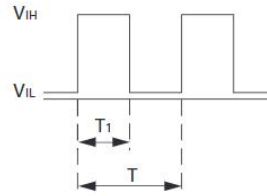
• PWM Duty - Speed Characteristics Example



120×120×38mm

■ PWM Input Signal Example

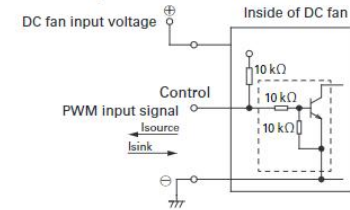
Input signal waveform



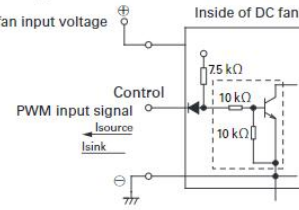
$V_{IH}=4.75\text{ V to }5.25\text{ V}$
 $V_{IL}=0\text{ V to }0.4\text{ V}$
 $\text{PWM duty cycle (\%)} = \frac{T_1}{T} \times 100$
 $\text{PWM frequency (kHz)} = \frac{1}{T}$
 Source current (I_{source}): 1 mA Max. at control voltage 0 V
 Sink current (I_{sink}): 1 mA Max. at control voltage 5.25 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.

■ Example of Connection Schematic

Rated voltage 12 V fan

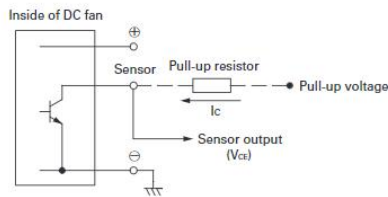


Rated voltage 24 V fan



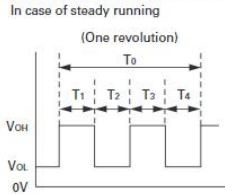
■ Specifications for Pulse Sensors

Output circuit: Open collector



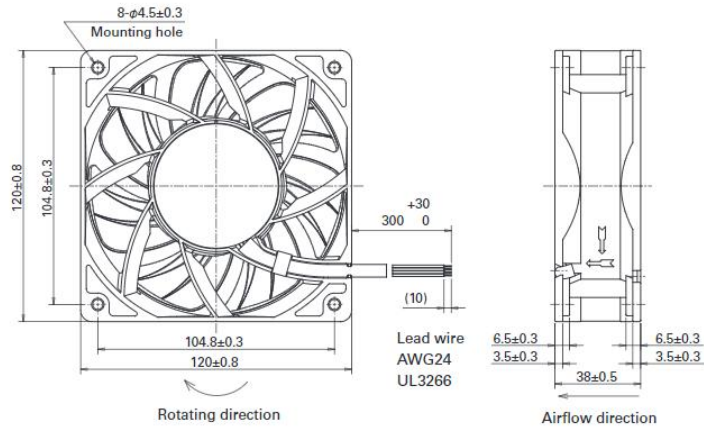
Rated voltage 12 V fan
 $V_{CE} = +30\text{ V MAX.}$
 $I_C = 10\text{ mA MAX. (VOL} = V_{CE} \text{ (SAT)} = 0.6\text{ V MAX.)}$
Rated voltage 24 V fan
 $V_{CE} = +30\text{ V MAX.}$
 $I_C = 10\text{ mA MAX. (VOL} = V_{CE} \text{ (SAT)} = 0.6\text{ V MAX.)}$

Output waveform (Need pull-up resistor)



$T_{1-4} \approx (1/4) T_0$
 $T_{1-4} \approx (1/4) T_0 = 60/4N \text{ (sec)}$
 $N = \text{Fan speed (min}^{-1}\text{)}$

■ Dimensions (unit: mm)



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

