

120×120×25 mm

San Ace 120 9S type Silent Fan 



General Specifications

- Material Frame: Plastic (Flammability: UL 94V-0), Impeller: Plastic (Flammability: UL 94V-1)
- Expected life See the table below. (L10 life: 90% survival rate for continuous operation in free air at 60°C, rated voltage)
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 547.
- Dielectric strength 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ or more with a 500 VDC megger (between lead wire conductors and frame)
- Sound pressure level (SPL) At 1 m away from the air inlet
- Storage temperature -30 to +70°C (Non-condensing)
- Lead wire ⊕Red ⊖Black (Sensor) Yellow
- Mass 140 g

Specifications

The models listed below **have ribs and pulse sensors**. For models without ribs, append "1" to the end of model numbers.

Model no.	Rated voltage [V]	Operating voltage range [V]	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]
9S1212H411	12	5.0 to 13.2	0.39	4.68	2700	2.45 86.5	45.2 0.18	36	-10 to +60	40000/60°C
9S1212F401		5.0 to 13.8	0.19	2.28	2200	2.0 70.6	30.0 0.12	30		
9S1212M401		6.0 to 13.8	0.13	1.56	1850	1.66 58.6	22.7 0.09	24		
9S1212L401		7.0 to 13.8	0.08	0.96	1500	1.36 48.1	14.9 0.06	17		
9S1224M401	24	14 to 26.4	0.06	1.44	1850	1.66 58.6	22.7 0.09	24		

The following sensor and control options are available for selection.

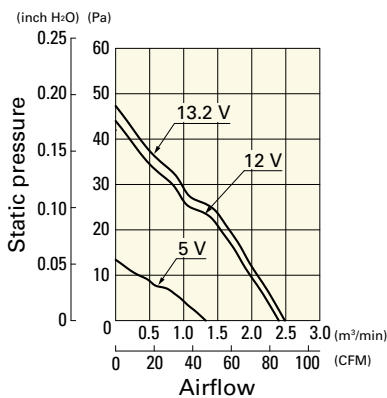
Available for all models. **Without sensor**

Differs according to the model. Refer to the table on p. 578. **Lock sensor** **PWM control**

Airflow - Static Pressure Characteristics

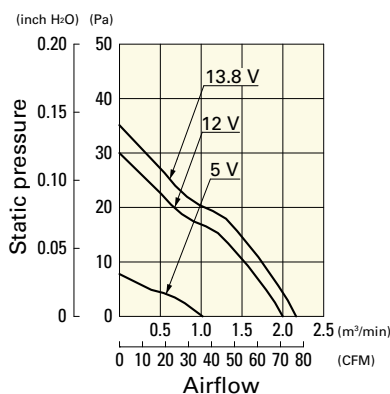
9S1212H411 With pulse sensor

Operating voltage range



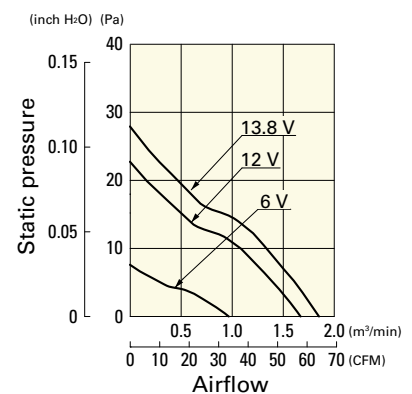
9S1212F401 With pulse sensor

Operating voltage range



9S1212M401 With pulse sensor

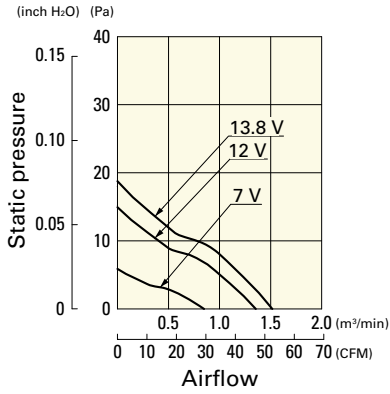
Operating voltage range



Airflow - Static Pressure Characteristics

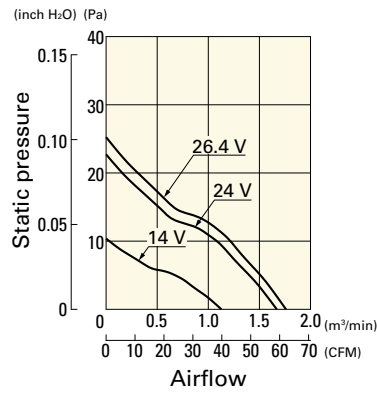
9S1212L401 With pulse sensor

Operating voltage range

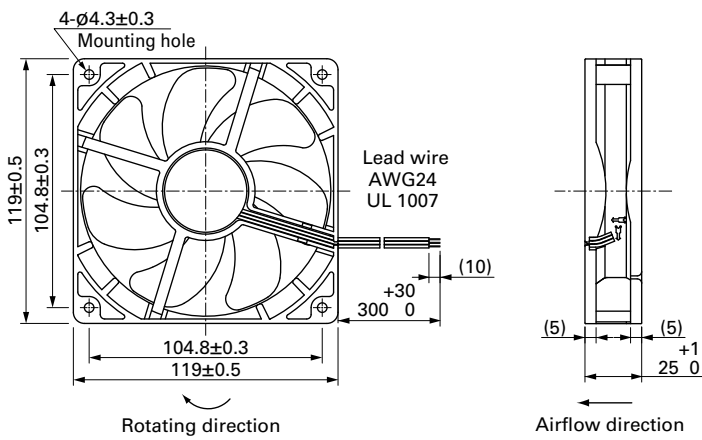


9S1224M401 With pulse sensor

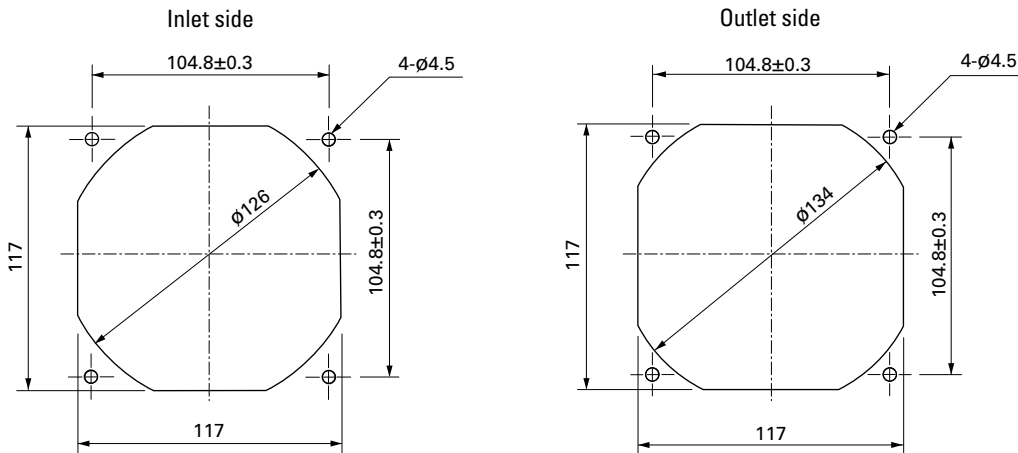
Operating voltage range



Dimensions (unit: mm) (With ribs)



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



Options

Finger guards

page: p. 533

Model no.: 109-019E, 109-019K, 109-019C, 109-019H

Resin finger guards

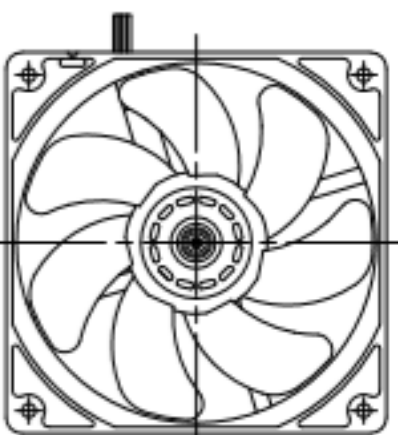
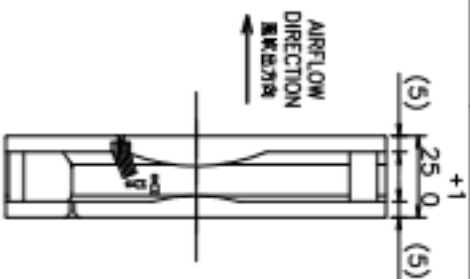
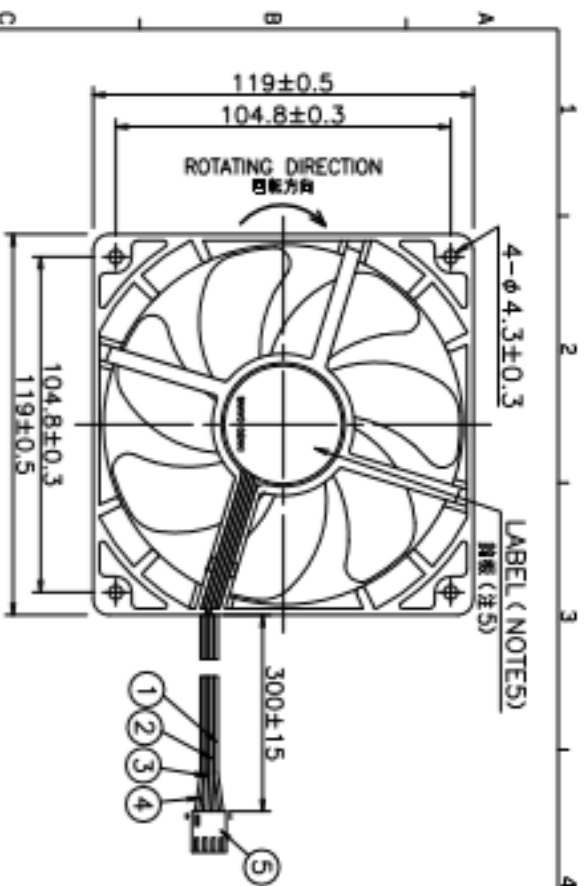
page: p. 539

Model no.: 109-1000G

Resin filter kits

page: p. 540

Model no.: 109-1000F13 (13PPI), 109-1000F20 (20PPI),
109-1000F30 (30PPI), 109-1000F40 (40PPI)



LEAD WIRE
U-1線
UL1007 AWG26
⊕ RED
⊖ BLACK
● BROWN
■ YELLOW

PWM DUTY INPUT △PWM チャータイ-	100%	0%
RATED VOLTAGE 定格電圧	12 V DC	
OPERATING VOLTAGE 使用電圧範囲	RATED VOLTAGE ±10 % (10.8 V DC ~ 13.2 V DC)	
RATED CURRENT 定格電流	0.33 A AT 12 V DC (DC12 Wct)	0.06 A AT 12 V DC (DC12 Wct)
RATED SPEED 定格回転速度	2700 ± 270 min ⁻¹ AT 12 V DC (DC12 Wct)	1000 ± 300 min ⁻¹ AT 12 V DC (DC12 Wct)
INSULATION RESISTANCE 絶縁抵抗	10 MΩ MIN. AT 500 V DC (NOTE2)	DC500 V V _{AC} -ET-10 MΩ以上 (注2)
DIELECTRIC STRENGTH 絶縁耐圧	1 MINUTE AT 500 V AC, 50/60 Hz (NOTE2)	AC50/60 Hz, 500 Wct 1分絶縁電圧 (注2)
OPERATING TEMP. 使用温度範囲	-10 °C ~ +60 °C	
SOUND PRESSURE LEVEL 音圧レベル	36 dB(A) (NOI/MU) (NOTE1)	12 dB(A) (NOI/MU) (NOTE1)
質量	APPROX. 140 g (90個)	(注1)
MATERIAL 材質	FRAME/IMPELLER : PLASTICS フレーム、羽根 : 樹脂成形品	
BEARING SYSTEM 軸受	2 BALL BEARINGS ボールベアリング	
CONTROL TERMINAL コントロール端子	SINK CURRENT : 1 mA MAX AT CONTROL VOLTAGE 3.8 V シンク電流 : 1 mA (コントロール電圧 3.8 V) 以下	CONTROL TERMINAL VOLTAGE : 3.8 V MAX (OPEN CIRCUIT) RT (コントロール端子開放時)

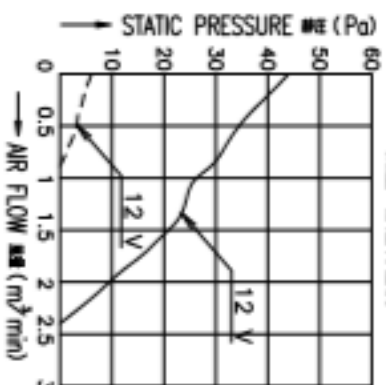
NOTE:1. THE SOUND PRESSURE LEVEL EXPRESSED AS THE VALUE AT 1 m FROM AIR INLET SIDE.

2. MEASURED BETWEEN THE LEAD WIRES AND THE FRAME.

No.	PARTS	REMARKS
5	CONNECTOR コネクタ	MOLEX:39-00-0372 (2759T)
4	LEAD WIRE U-1線	UL1007 AWG26 BROWN PIN No.4
3	LEAD WIRE U-1線	UL1007 AWG26 YELLOW PIN No.3
2	LEAD WIRE U-1線	UL1007 AWG26 RED PIN No.2
1	LEAD WIRE U-1線	UL1007 AWG26 BLACK PIN No.1

- MOTOR IS PROTECTED FROM DAMAGE OF LOCKED ROTOR CONDITION AT THE OPERATING VOLTAGE. (注1)
ファンは定格電圧の範囲では、ロックロータ状態での動作は保護されません。
- FOR SENSOR SPEC., SEE 9D0001H179. THE SWITCHING BY PWM CONTROL MAY INFLUENCE THE SENSOR OUTPUT.
センサ仕様は、9D0001H179による。PWM制御によるスイッチングがセンサ出力に影響する場合があります。
- PRINT PRODUCT NAME, MODEL No., MANUFACTURER, AND MANUFACTURED DATE ETC. 品名、型名、製造会社名、及び製造年月日等を表示する。
- ALL VALUES OF EACH CHARACTERISTICS ARE AT ROOM TEMPERATURE AND NORMAL HUMIDITY. 特性値は室温、普通湿度での値。

PERFORMANCE CURVES
流量-静圧特性例



San Ace 120 (9S)
RIBBED/PULSE_SENSOR/PWM_CONTROL

9S1212P4H11 A

SANYODENKI

Approved by: M. MURATA 20-03-19
Checked by: Y. MURAKATSU 20-03-19
Designed by: J. OISHI 20-03-18

Order: D12 User: ED Page: 1/2

SENSOR SPECIFICATION FOR BRUSHLESS DC FAN

ブラシレスDCファン センサー仕様

1. OUTPUT CIRCUIT - OPEN COLLECTOR
出力回路-オープンコレクタ

(b) LOCKED ROTOR CONDITION
羽根ロック時

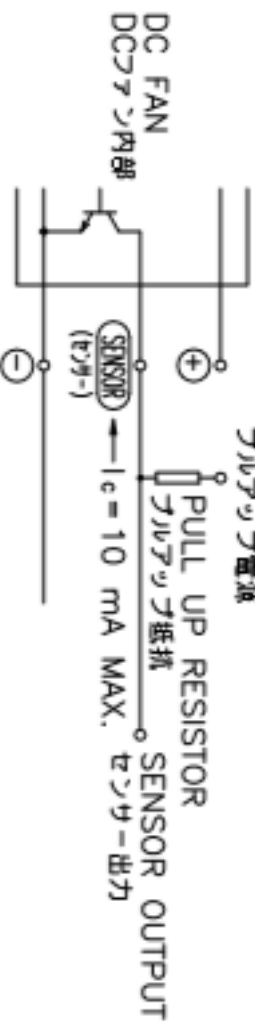
2. SPECIFICATION
仕様

$V_{CE} = +13.8 \text{ V DC MAX.}$

$I_C = 10 \text{ mA MAX. (} V_{CE}(\text{SAT}) = 1.0 \text{ V MAX.)}$

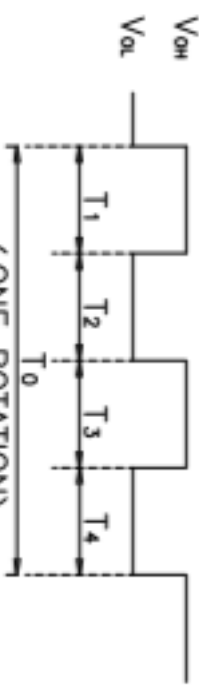
PULL UP VOLTAGE: +13.8 V DC MAX.
プルアップ電圧

PULL UP RESISTOR
プルアップ抵抗



3. WAVEFORM OF SENSOR OUTPUT
センサー出力波形

(a) RUNNING CONDITION
通常回転時



$T_{1,2} \approx (1/4) T_0 = 60/4 \text{ N (s)}$

$N = \text{FAN ROTATION SPEED (min}^{-1}\text{)}$
ファン回転速度

SENSOR OUTPUT IS FIXED EITHER
(b-1) OR (b-2) AT LOCKED ROTOR CONDITION.
下図のどちらかに固定される。

(b-1)

$V_{OH} = \underline{\hspace{2cm}}$
 $0V = \underline{\hspace{2cm}}$

(b-2)

$V_{OH} = \underline{\hspace{2cm}}$
 $0V = \underline{\hspace{2cm}}$

A	新製作成	日期	09-02-17	K 尺 SCALE	M M	B 尺 APPROVED BY	M. TAKAKUWA
B	品番	RESOLUTION	0	B 尺 DATE	09-02-17	C 尺 CHECKED BY	M. TAKAKUWA
C	山洋電機株式会社		SAIYO DENKI CO., LTD.		A3G-F1	D 尺 DESIGNED BY	M. TAKAKUWA
D	9D0001H179		A		7	E 尺 TITLE	PULSE SENSOR
E	08		100714021		8	F 尺 SENSOR SPECIFICATION	BLDCファン センサー仕様

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