



# 160×160×51 mm

**San Ace 160** Only standard fans (without sensors) have acquired CSA certification.

## General Specifications

- Material ..... Frame: Aluminum, 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 structure ..... Capacitor motor
- Motor protection function ..... Locked rotor burnout protection, Reverse polarity protection  
For details, please refer to p. 529.
- Dielectric strength ..... 50/60 Hz, 1500 VAC, for 1 minute (between input terminal and frame)
- Dielectric strength (with sensor) ..... Between AC input and DC input (Sensor output): 50/60 Hz 1000 VAC 1 minute  
Between AC input and G: 50/60 Hz 1500 VAC 1 minute  
Between G and DC input (Sensor output): 50/60 Hz 1000 VAC 1 minute
- Insulation resistance ..... 10 MΩ or more with a 500 VDC megger
- Sound pressure level (SPL) ..... At 1 m away from the air inlet
- Operating voltage range ..... Voltage of each model ±10%
- Storage temperature ..... -30 to +70°C (Non-condensing)
- Sensor-Purpose lead wire ..... ⊕Brown ⊖Black (Sensor) Yellow
- Mass ..... 1100 g

## Specifications

### Standard

Model no.	Rated voltage [V]	Frequency [Hz]	Input [W]	Current [A]	Locked rotor current [A]	Rated speed [min <sup>-1</sup> ]	Max. airflow [m <sup>3</sup> /min] [CFM]	Max. static pressure [Pa] [inchH <sub>2</sub> O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
<b>109-601</b>	100	50/60	37.5/33	0.43/0.35	0.72/0.7	2850/3350	7.2/8.5 254.4/300.4	156.8/166.6 0.63/0.669	56/60	-30 to +60	25000/60°C
<b>109-604</b>	115			0.39/0.31	0.62/0.61						
<b>109-602</b>	200			0.23/0.18	0.36/0.35						
<b>109-603</b>	230			0.21/0.16	0.32/0.31						

### with Sensor

For sensor specifications, please refer to p. 531. Sensor specification differs depending on the fan's speed specification.

For a 5 V sensor power supply (ITEM-20), please append "-20" to the end of model number. E.g. 109-641-20

For a 12 V sensor power supply (ITEM-30), please append "-30" to the end of model number. E.g. 109-641-30

Model no.	Rated voltage [V]	Frequency [Hz]	Input [W]	Current [A]	Locked rotor current [A]	Rated speed [min <sup>-1</sup> ]	Max. airflow [m <sup>3</sup> /min] [CFM]	Max. static pressure [Pa] [inchH <sub>2</sub> O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
<b>109-641</b>	100	50/60	37.5/33	0.43/0.35	0.72/0.7	2850/3350	7.2/8.5 254.4/300.4	156.8/166.6 0.63/0.669	56/60	-10 to +60	25000/60°C
<b>109-644</b>	115			0.39/0.31	0.62/0.61						
<b>109-642</b>	200			0.23/0.18	0.36/0.35						
<b>109-643</b>	230			0.21/0.16	0.32/0.31						

## Set Models

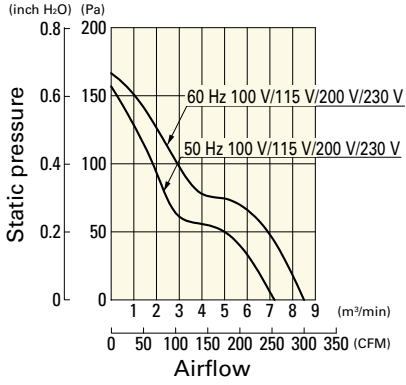
Fan, finger guard, plug cord, screws, etc. can be purchased in one package. For details, please refer to p. 574.

Order no.	Set items					
	Fan	Voltage	Low-speed sensor	Plug cord	Finger guards	Mounting screws
<b>ST1-109-601</b>	109-601	100 V		489-1618-L10	109-619E	M5×20 mm (4 screws)
<b>ST1-109-604</b>	109-604	115 V		489-1618-L10	109-619E	
<b>ST1-109-602</b>	109-602	200 V		489-1618-L10	109-619E	
<b>ST1-109-603</b>	109-603	230 V		489-1618-L10	109-619E	
<b>ST1-109-641-20</b>	109-641-20	100 V	○ (5 V)	489-1618-L10	109-619E	
<b>ST1-109-641-30</b>	109-641-30		○ (12 V)	489-1618-L10	109-619E	
<b>ST1-109-644-20</b>	109-644-20	115 V	○ (5 V)	489-1618-L10	109-619E	
<b>ST1-109-644-30</b>	109-644-30		○ (12 V)	489-1618-L10	109-619E	
<b>ST1-109-642-20</b>	109-642-20	200 V	○ (5 V)	489-1618-L10	109-619E	
<b>ST1-109-642-30</b>	109-642-30		○ (12 V)	489-1618-L10	109-619E	
<b>ST1-109-643-20</b>	109-643-20	230 V	○ (5 V)	489-1618-L10	109-619E	
<b>ST1-109-643-30</b>	109-643-30		○ (12 V)	489-1618-L10	109-619E	

## Airflow - Static Pressure Characteristics

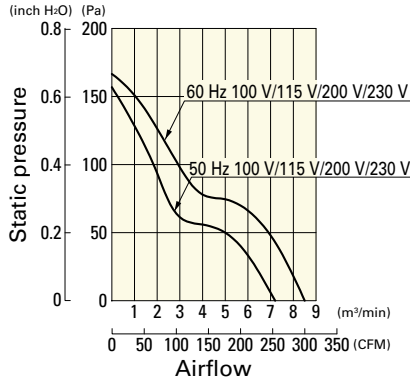
### Standard

109-601, 109-604, 109-602, 109-603



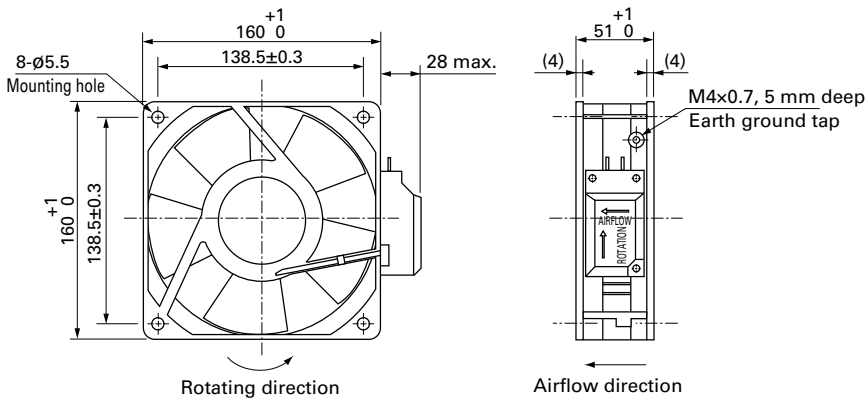
### with Sensor

109-641, 109-644, 109-642, 109-643

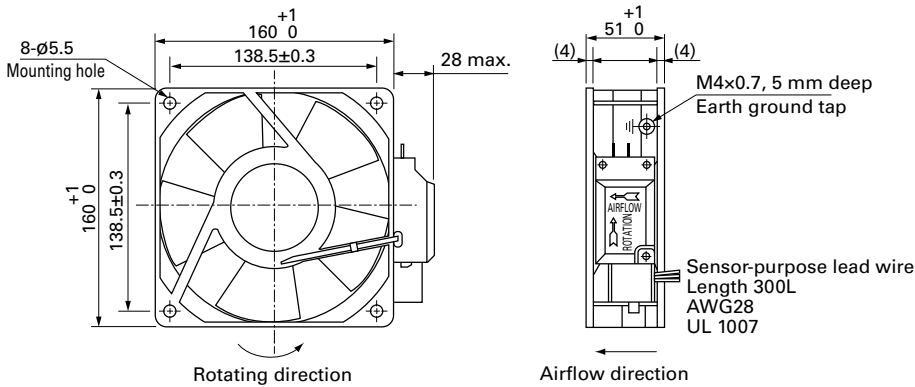


## Dimensions (unit: mm)

### Standard

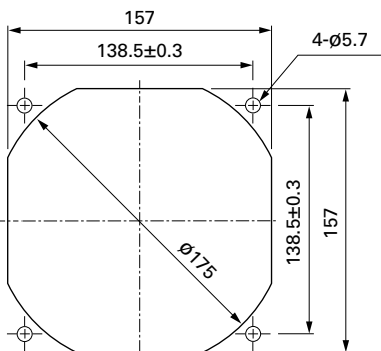


### with Sensor



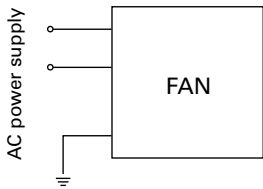
## Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

Inlet side, Outlet side



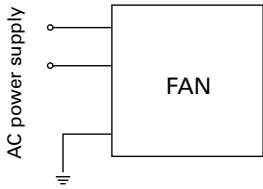
## Wiring Diagram

### Standard

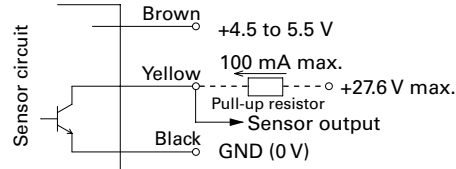


### with Sensor

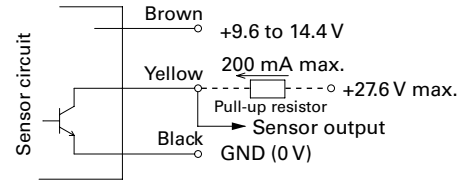
For fan power supply



For sensor circuit  
5 V (ITEM-20)



12 V (ITEM-30)



GND (Black) should be shared in case that power supply for sensor circuit (Brown) and that for sensor pull-up (Yellow) are separated.

## Options

### Finger guards

page: p. 514

Model no.: 109-619E, 109-619H, 109-620

### Plug cord

page: pp. 523 to 524

Model no.: 489-084-L10, 489-084-L21, 489-086-L10,  
489-086-L21, 489-1618-L10, 489-1618-L21,  
489-1618-L28, 489-1619-L10, 489-1619-L21

# Mouser Electronics

Authorized Distributor

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## Sanyo Denki:

[109-604](#) [109-601](#) [109-603](#) [109-602](#) [109-641-20](#) [109-641-30](#) [109-642-20](#) [109-644-20](#) [109-643-30](#) [109-643-20](#)  
[109-644-30](#) [109-642-30](#)