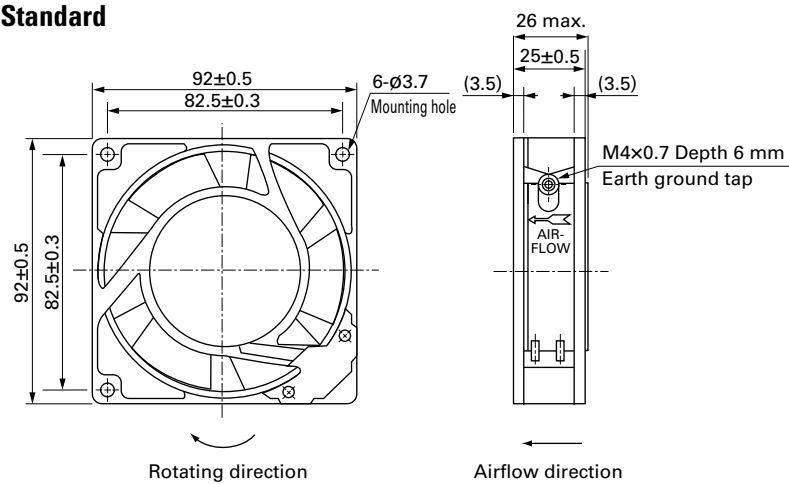
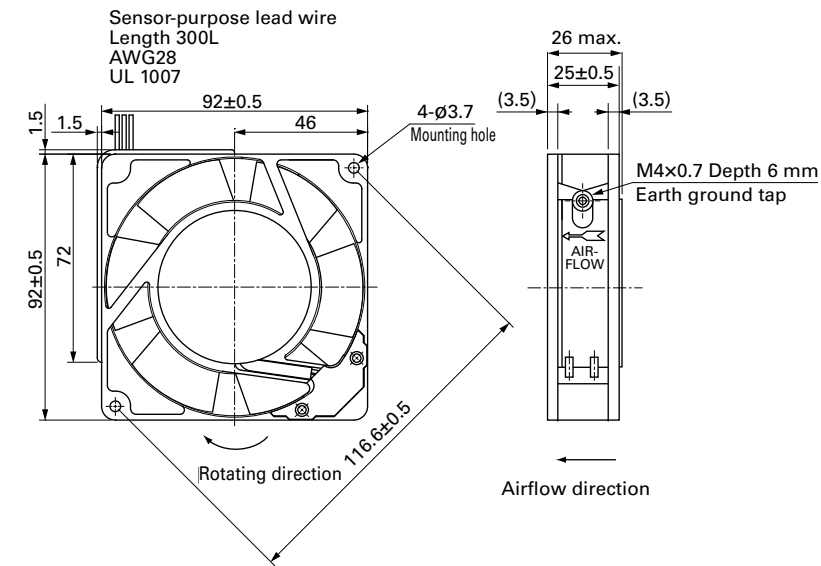


Standard

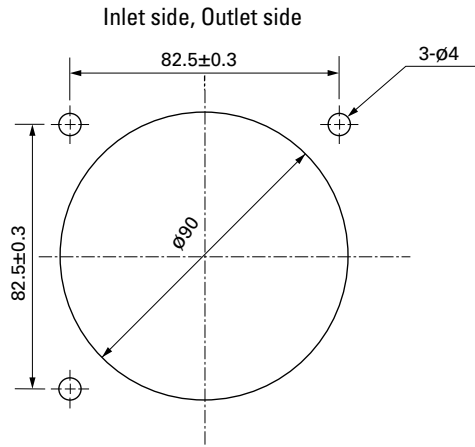


with Sensor

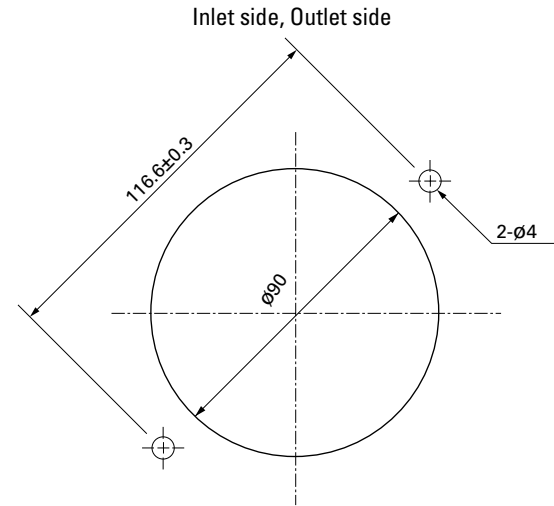


Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

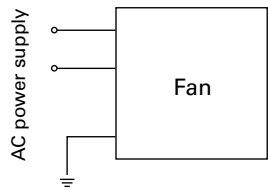
Standard



with Sensor

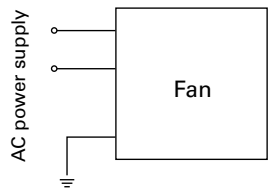


Standard

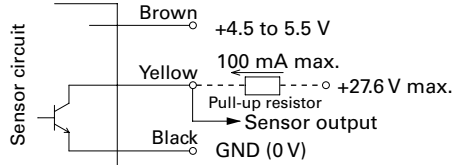


with Sensor

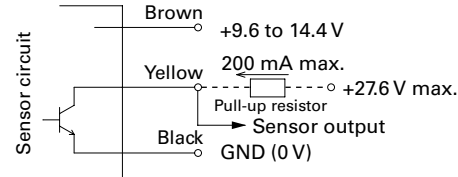
For fan power supply



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. 598	Resin finger guards	page: p. 605
Model no.: 109-099E, 109-099H		Model no.: 109-1001G	
Resin filter kits	page: p. 606	Plug cord	page: p. 609 to 610
Model no.: 109-1001F13 (13PPI), 109-1001F20 (20PPI), 109-1001F30 (30PPI), 109-1001F40 (40PPI)		PSE compatible models Model no.: 489-016-L10, 489-016-L21 UL/CSA certified models Model no.: 489-047-L10, 489-047-L21	

120×120×25 mm

San Ace 120  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)
Expected life at 40°C is for reference only.
- Motor structure Shaded coil motor
- Motor protection function Locked rotor burnout protection, Reverse polarity protection
For details, please refer to p. 616.
- Dielectric strength 50/60 Hz, 1500 VAC, for 1 minute (between input terminal and frame)
- Dielectric strength (with sensor) 50/60 Hz 1500 VAC 1 minute (between AC input terminal and frame)
50/60 Hz 1000 VAC 1 minute (between lead wire conductors and frame)
- Insulation resistance 10 MΩ min. at 500 VDC
- Sound pressure level (SPL) A-weighted 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 370 g/390 g (with Sensor)

Specifications

Standard

Model no.	Rated voltage [V]	Frequency [Hz]	Input [W]	Current [A]	Locked rotor current [A]	Rated speed [min ⁻¹]	Max. airflow [m³/min] [CFM]	Max. static pressure [Pa] [inchH ₂ O]	SPL [dB (A)]	Operating temperature [°C]	Expected life [h]
109S085	100	50/60	13.5/12	0.16/0.14	0.19/0.17	2500/2900	1.95/2.3 68.9/81.3	48 /51.9 0.193/0.207	38/41	-30 to +60	25000/60°C (56000/40°C)
109S084	115			0.14/0.12	0.16/0.15						
109S088	200			0.08/0.07	0.1 /0.09						
109S087	230			0.07/0.06	0.08/0.07						
109S081	100		9.5/8.5	0.11	0.11/0.1	2200/2350	1.7 /1.8 60.1/63.6	29.4/26.5 0.118/0.106	34/35		
109S083	115	0.1		0.1 /0.09							
109S082	200	0.07		0.07/0.06							
109S089	230	0.06		0.06/0.05							
109S086*	100		12/10	0.14/0.12	0.15/0.13	1400/1600	1.1 /1.25 38.9/44.2	14.7/18.6 0.059/0.075	24/27		

*These are low-speed models.

with Sensor

For sensor specifications, please refer to p. 622. 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. 109S485-20

For a 12 V sensor power supply (ITEM-30), please append "-30" to the end of model number. E.g. 109S485-30

Model no.	Rated voltage [V]	Frequency [Hz]	Input [W]	Current [A]	Locked rotor current [A]	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]
109S485	100	50/60	13.5/12	0.16/0.14	0.19/0.17	2500/2900	1.95/2.3 68.9/81.3	48 /51.9 0.193/0.207	38/41	-10 to +60	25000/60°C (56000/40°C)
109S484	115			0.14/0.12	0.16/0.15						
109S488	200			0.08/0.07	0.1 /0.09						
109S487	230			0.07/0.06	0.08/0.07						
109S486*	100		12/10	0.14/0.12	0.15/0.13	1400/1600	1.1 /1.25 38.9/44.2	14.7/18.6 0.059/0.075	24/27		

*These are low-speed models.

A set of a fan, finger guard, plug cord (PSE compatible), and screws. For details, please refer to p. 674.

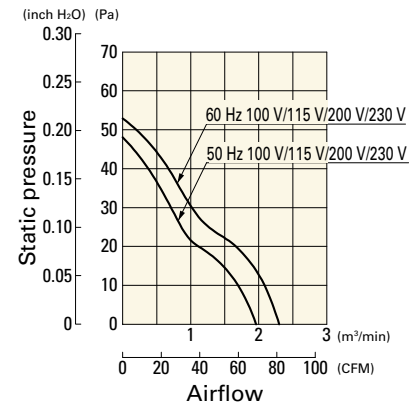
Order no.	Set items					
	Fan (1 pc)	Voltage	Low-speed sensor	Plug cord (1 pc)	Finger guard (1 pc)	Screws with hex nuts (4 pairs)
ST1-109S085	109S085	100 V		489-016-L10*	109-019E	M3×40 mm
ST1-109S084	109S084	115 V		489-016-L10*	109-019E	
ST1-109S088	109S088	200 V		489-016-L10*	109-019E	
ST1-109S087	109S087	230 V		489-016-L10*	109-019E	
ST1-109S081	109S081	100 V		489-016-L10*	109-019E	
ST1-109S083	109S083	115 V		489-016-L10*	109-019E	
ST1-109S082	109S082	200 V		489-016-L10*	109-019E	
ST1-109S089	109S089	230 V		489-016-L10*	109-019E	
ST1-109S086	109S086	100 V		489-016-L10*	109-019E	
ST1-109S485-20	109S485-20		○ (5 V)	489-016-L10*	109-019E	
ST1-109S485-30	109S485-30		○ (12 V)	489-016-L10*	109-019E	
ST1-109S484-20	109S484-20	115 V	○ (5 V)	489-016-L10*	109-019E	
ST1-109S484-30	109S484-30		○ (12 V)	489-016-L10*	109-019E	
ST1-109S488-20	109S488-20	200 V	○ (5 V)	489-016-L10*	109-019E	
ST1-109S488-30	109S488-30		○ (12 V)	489-016-L10*	109-019E	
ST1-109S487-20	109S487-20	230 V	○ (5 V)	489-016-L10*	109-019E	
ST1-109S487-30	109S487-30		○ (12 V)	489-016-L10*	109-019E	
ST1-109S486-20	109S486-20	100 V	○ (5 V)	489-016-L10*	109-019E	
ST1-109S486-30	109S486-30		○ (12 V)	489-016-L10*	109-019E	

* PSE compatible, but not UL compatible.

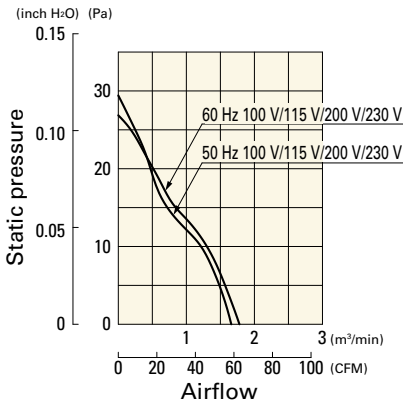
Airflow - Static Pressure Characteristics

Standard

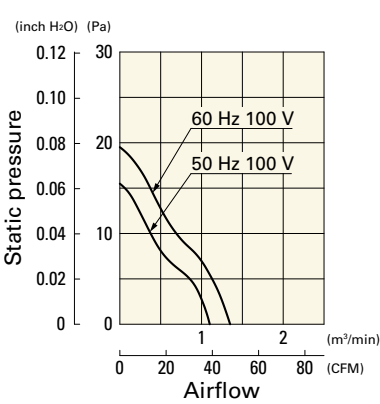
109S085, 109S084, 109S088, 109S087



109S081, 109S083, 109S082, 109S089

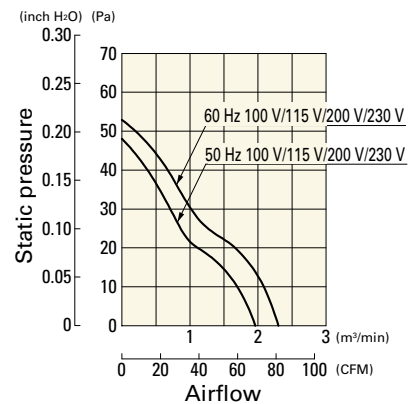


109S086

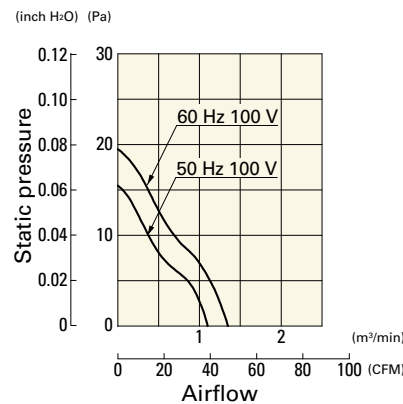


with Sensor

109S485, 109S484, 109S488, 109S487

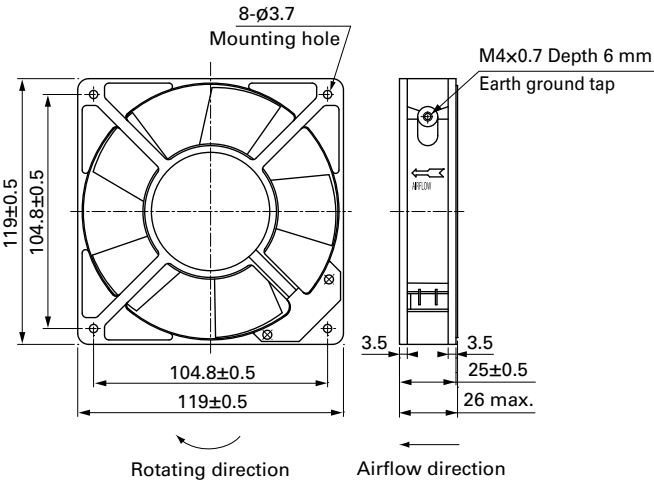


109S486



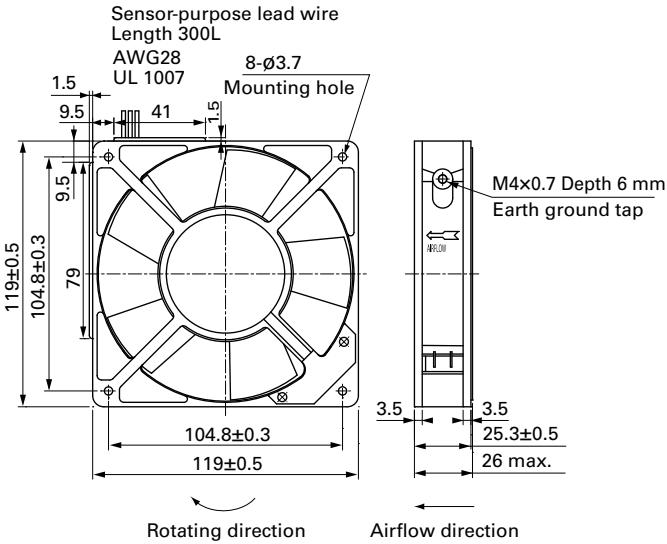
AC
AC Fan 120 mm sq.

Standard



with Sensor

When mounting the model with a sensor, please screw-mount through both flanges as it has a sensor box.



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

