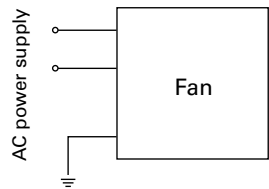
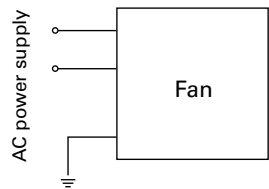


Standard

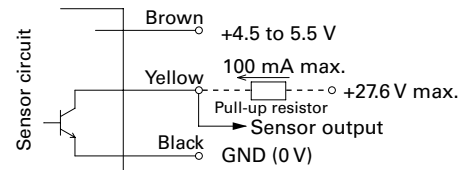


with Sensor

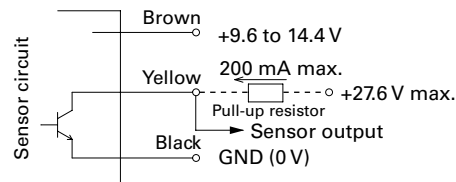
For fan power supply



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. 599

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

Resin finger guards page: p. 605

Model no.: 109-1000G

Resin filter kits page: p. 606

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

Plug cord page: p. 609 to 610

PSE compatible models  
Model no.: 489-016-L10, 489-016-L21  
UL/CSA certified models  
Model no.: 489-047-L10, 489-047-L21

# 120×120×38 mm

San Ace 120



Certifications vary by model no. See the Specifications below.



## 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 G terminal)
- Dielectric strength (with sensor) ..... 50/60 Hz 1500 VAC 1 minute (between AC input terminal and G terminal)  
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 ..... 550 g/580 g (with Sensor)

## Specifications

### Standard

Standard conformity: UL, CSA, TÜV, CE, UKCA, and PSE

| Model no.   | Rated voltage [V] | Frequency [Hz] | Input [W] | Current [A] | Locked rotor current [A] | Rated speed [min <sup>-1</sup> ] | Max. airflow [m³/min] [CFM] | Max. static pressure [Pa] [inchH <sub>2</sub> O] | SPL [dB (A)]          | Operating temperature [°C] | Expected life [h]          |       |
|-------------|-------------------|----------------|-----------|-------------|--------------------------|----------------------------------|-----------------------------|--------------------------------------------------|-----------------------|----------------------------|----------------------------|-------|
| 109S075UL   | 100               | 50/60          | 18/16     | 0.24/0.21   | 0.32/0.28                | 2700/3100                        | 2.5 /2.9 88.3/102.5         | 57.9/68.7 0.233/0.276                            | 42/45                 | -30 to +60                 | 25000/60°C<br>(56000/40°C) |       |
| 109S074UL   | 115               |                |           | 0.21/0.18   | 0.27/0.24                |                                  |                             |                                                  |                       |                            |                            |       |
| 109S078UL   | 200               |                |           | 0.12/0.1    | 0.16/0.14                |                                  |                             |                                                  |                       |                            |                            |       |
| 109S072UL   | 230               |                |           | 0.11/0.09   | 0.14/0.13                |                                  |                             |                                                  |                       |                            |                            |       |
| 109S005UL   | 100               |                | 14/12     | 0.18/0.16   | 0.25/0.22                | 2700/3100                        | 2.35/2.7 83 / 95.4          | 55.9/65.7 0.224/0.264                            | 40/43                 |                            |                            |       |
| 109S024UL   | 115               |                |           | 0.16/0.14   | 0.21/0.18                |                                  |                             |                                                  |                       |                            |                            |       |
| 109S008UL   | 200               |                |           | 0.09/0.08   | 0.13/0.11                |                                  |                             |                                                  |                       |                            |                            |       |
| 109S025UL   | 230               |                |           | 0.08/0.07   | 0.11/0.09                |                                  |                             |                                                  |                       |                            |                            |       |
| 109S029UL   | 100               |                | 14/12     | 0.18/0.16   | 0.23/0.21                | 2450/2700                        | 2.15/2.35 76 / 83           | 44.1/49.0 0.177/0.197                            | 38/40                 |                            |                            |       |
| 109S013UL   |                   |                | 13/11     | 0.16/0.14   | 0.16/0.15                | 1800/2000                        | 1.55/1.75 54.8/ 60.8        | 23.5/26.4 0.094/0.106                            | 30/32                 |                            |                            |       |
| 109S006UL * |                   |                | 7/7       | 0.1 /0.09   | 0.1 /0.09                | 1650/1700                        | 1.45/1.5 51.2/ 53           | 17.6/17.6 0.071/0.071                            | 28/28                 |                            |                            |       |
|             |                   |                | 115       | 10/10       | 0.13/0.11                | 0.13/0.11                        | 1800/1900                   | 1.56/1.64 55 / 57.9                              | 20 /20.6 0.08 /0.083  |                            |                            | 30/31 |
| 109S010UL * |                   |                | 200       | 7/7         | 0.05/0.04                | 0.05/0.04                        | 1650/1700                   | 1.45/1.5 51.2/ 53                                | 17.6/17.6 0.071/0.071 |                            |                            | 28/28 |
|             |                   |                | 240       | 11/11       | 0.06/0.05                | 0.06/0.05                        | 1800/1950                   | 1.58/1.68 55.8/ 59.3                             | 20.6/21.6 0.083/0.087 |                            |                            | 30/32 |

\* These are low-speed models.

Standard conformity: PSE

| Model no. | Rated voltage<br>[V] | Frequency<br>[Hz] | Input<br>[W] | Current<br>[A] | Locked rotor current<br>[A] | Rated speed<br>[min <sup>-1</sup> ] | Max. airflow<br>[m³/min] [CFM] | Max. static pressure<br>[Pa] [inchH <sub>2</sub> O] | SPL<br>[dB (A)] | Operating temperature<br>[°C] | Expected life<br>[h]       |
|-----------|----------------------|-------------------|--------------|----------------|-----------------------------|-------------------------------------|--------------------------------|-----------------------------------------------------|-----------------|-------------------------------|----------------------------|
| 109S005   | 100                  | 50/60             | 14/12        | 0.18/0.16      | 0.25/0.22                   | 2700/3100                           | 2.35/2.7    83 / 95.4          | 55.9/65.7    0.224/0.264                            | 40/43           | -30 to +60                    | 25000/60°C<br>(56000/40°C) |
| 109S024   | 120                  |                   |              | 0.16/0.14      | 0.21/0.18                   |                                     |                                |                                                     |                 |                               |                            |
| 109S008   | 200                  |                   |              | 0.09/0.08      | 0.13/0.11                   |                                     |                                |                                                     |                 |                               |                            |
| 109S025   | 230                  |                   |              | 0.08/0.07      | 0.11/0.09                   |                                     |                                |                                                     |                 |                               |                            |
| 109S013   | 100                  |                   | 13/11        | 0.16/0.14      | 0.16/0.15                   | 1800/2000                           | 1.55/1.75    54.8/ 60.8        | 23.5/26.4    0.094/0.106                            | 30/32           |                               |                            |
| 109S006*  |                      |                   | 7/7          | 0.1 /0.09      | 0.1 /0.09                   | 1650/1700                           | 1.45/1.5    51.2/ 53           | 17.6/17.6    0.071/0.071                            | 28/28           |                               |                            |
| 109S010*  | 200                  |                   |              | 0.05/0.04      | 0.05/0.04                   |                                     |                                |                                                     |                 |                               |                            |

\* These are low-speed models.

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. 109S405UL-20  
For a 12 V sensor power supply (ITEM-30), please append "-30" to the end of model number. E.g. 109S405UL-30

| Model no.   | Rated voltage<br>[V] | Frequency<br>[Hz] | Input<br>[W] | Current<br>[A] | Locked rotor current<br>[A] | Rated speed<br>[min <sup>-1</sup> ] | Max. airflow<br>[m³/min]    [CFM] | Max. static pressure<br>[Pa]        [inchH <sub>2</sub> O] | SPL<br>[dB (A)] | Operating temperature<br>[°C] | Expected life<br>[h]       |
|-------------|----------------------|-------------------|--------------|----------------|-----------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|-----------------|-------------------------------|----------------------------|
| 109S405UL   | 100                  | 50/60             | 14/12        | 0.18/0.16      | 0.25/0.22                   | 2700/3100                           | 2.35/2.7    83 / 95.4             | 55.9/65.7    0.224/0.264                                   | 40/43           | -10 to +60                    | 25000/60°C<br>(56000/40°C) |
| 109S424UL   | 115                  |                   |              | 0.16/0.14      | 0.21/0.18                   |                                     |                                   |                                                            |                 |                               |                            |
| 109S408UL   | 200                  |                   |              | 0.09/0.08      | 0.13/0.11                   |                                     |                                   |                                                            |                 |                               |                            |
| 109S425UL   | 230                  |                   |              | 0.08/0.07      | 0.11/0.09                   |                                     |                                   |                                                            |                 |                               |                            |
| 109S429UL   | 100                  |                   |              | 0.18/0.16      | 0.23/0.21                   |                                     |                                   |                                                            |                 |                               |                            |
| 109S406UL * |                      |                   | 7/6          | 0.09/0.08      | 0.1 /0.09                   | 1650/1700                           | 1.45/1.5    51 / 53               | 17.7/17.7    0.071/0.071                                   | 28/28           |                               |                            |
| 109S475UL   | 100                  |                   | 18/16        | 0.24/0.21      | 0.32/0.28                   | 2700/3100                           | 2.5 /2.9    88.3/102.4            | 57.9/68.7    0.233/0.276                                   | 42/45           |                               |                            |
| 109S474UL   | 115                  |                   |              | 0.21/0.18      | 0.27/0.24                   |                                     |                                   |                                                            |                 |                               |                            |
| 109S478UL   | 200                  |                   |              | 0.12/0.1       | 0.16/0.14                   |                                     |                                   |                                                            |                 |                               |                            |
| 109S472UL   | 230                  |                   |              | 0.11/0.09      | 0.14/0.13                   |                                     |                                   |                                                            |                 |                               |                            |

\* These are low-speed models.

**Set Models** PSE (Japanese safety standard) compatible

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

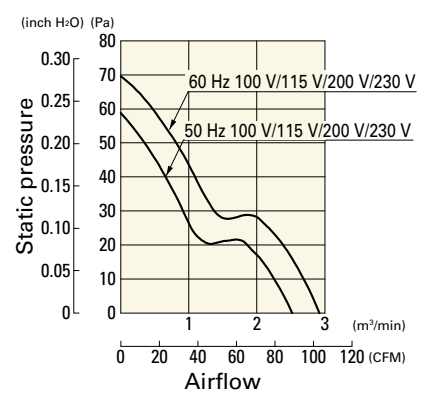
| Order no.        | Set items    |                |                  |                  |                     |                                |
|------------------|--------------|----------------|------------------|------------------|---------------------|--------------------------------|
|                  | Fan (1 pc)   | Voltage        | Low-speed sensor | Plug cord (1 pc) | Finger guard (1 pc) | Screws with hex nuts (4 pairs) |
| ST1-109S075UL    | 109S075UL    | 100 V          |                  | 489-037-L10*     | 109-019E            | M3×55 mm                       |
| ST1-109S074UL    | 109S074UL    | 115 V          |                  | 489-037-L10*     | 109-019E            |                                |
| ST1-109S078UL    | 109S078UL    | 200 V          |                  | 489-037-L10*     | 109-019E            |                                |
| ST1-109S072UL    | 109S072UL    | 230 V          |                  | 489-037-L10*     | 109-019E            |                                |
| ST1-109S005      | 109S005      | 100 V          |                  | 489-006-L10*     | 109-019E            |                                |
| ST1-109S005UL    | 109S005UL    |                |                  | 489-037-L10*     | 109-019E            |                                |
| ST1-109S024      | 109S024      | 120 V          |                  | 489-006-L10*     | 109-019E            |                                |
| ST1-109S024UL    | 109S024UL    | 115 V          |                  | 489-037-L10*     | 109-019E            |                                |
| ST1-109S008      | 109S008      | 200 V          |                  | 489-006-L10*     | 109-019E            |                                |
| ST1-109S008UL    | 109S008UL    |                |                  | 489-037-L10*     | 109-019E            |                                |
| ST1-109S025      | 109S025      | 230 V          |                  | 489-006-L10*     | 109-019E            |                                |
| ST1-109S025UL    | 109S025UL    |                |                  | 489-037-L10*     | 109-019E            |                                |
| ST1-109S029UL    | 109S029UL    | 100 V          |                  | 489-037-L10*     | 109-019E            |                                |
| ST1-109S013      | 109S013      |                |                  | 489-006-L10*     | 109-019E            |                                |
| ST1-109S013UL    | 109S013UL    |                |                  | 489-037-L10*     | 109-019E            |                                |
| ST1-109S006      | 109S006      |                |                  | 489-006-L10*     | 109-019E            |                                |
| ST1-109S006UL    | 109S006UL    | 100 V<br>115 V |                  | 489-037-L10*     | 109-019E            |                                |
| ST1-109S010      | 109S010      | 200 V          |                  | 489-006-L10*     | 109-019E            |                                |
| ST1-109S010UL    | 109S010UL    | 200 V<br>240 V |                  | 489-037-L10*     | 109-019E            |                                |
| ST1-109S405UL-20 | 109S405UL-20 | 100 V          | ○ (5 V)          | 489-037-L10*     | 109-019E            |                                |
| ST1-109S405UL-30 | 109S405UL-30 |                | ○ (12 V)         | 489-037-L10*     | 109-019E            |                                |
| ST1-109S424UL-20 | 109S424UL-20 | 115 V          | ○ (5 V)          | 489-037-L10*     | 109-019E            |                                |
| ST1-109S424UL-30 | 109S424UL-30 |                | ○ (12 V)         | 489-037-L10*     | 109-019E            |                                |
| ST1-109S408UL-20 | 109S408UL-20 | 200 V          | ○ (5 V)          | 489-037-L10*     | 109-019E            |                                |
| ST1-109S408UL-30 | 109S408UL-30 |                | ○ (12 V)         | 489-037-L10*     | 109-019E            |                                |
| ST1-109S425UL-20 | 109S425UL-20 | 230 V          | ○ (5 V)          | 489-037-L10*     | 109-019E            |                                |
| ST1-109S425UL-30 | 109S425UL-30 |                | ○ (12 V)         | 489-037-L10*     | 109-019E            |                                |
| ST1-109S429UL-20 | 109S429UL-20 | 100 V          | ○ (5 V)          | 489-037-L10*     | 109-019E            |                                |
| ST1-109S429UL-30 | 109S429UL-30 |                | ○ (12 V)         | 489-037-L10*     | 109-019E            |                                |
| ST1-109S406UL-20 | 109S406UL-20 | 100 V          | ○ (5 V)          | 489-037-L10*     | 109-019E            |                                |
| ST1-109S406UL-30 | 109S406UL-30 |                | ○ (12 V)         | 489-037-L10*     | 109-019E            |                                |
| ST1-109S475UL-20 | 109S475UL-20 | 100 V          | ○ (5 V)          | 489-037-L10*     | 109-019E            |                                |
| ST1-109S475UL-30 | 109S475UL-30 |                | ○ (12 V)         | 489-037-L10*     | 109-019E            |                                |
| ST1-109S474UL-20 | 109S474UL-20 | 115 V          | ○ (5 V)          | 489-037-L10*     | 109-019E            |                                |
| ST1-109S474UL-30 | 109S474UL-30 |                | ○ (12 V)         | 489-037-L10*     | 109-019E            |                                |
| ST1-109S478UL-20 | 109S478UL-20 | 200 V          | ○ (5 V)          | 489-037-L10*     | 109-019E            |                                |
| ST1-109S478UL-30 | 109S478UL-30 |                | ○ (12 V)         | 489-037-L10*     | 109-019E            |                                |
| ST1-109S472UL-20 | 109S472UL-20 | 230 V          | ○ (5 V)          | 489-037-L10*     | 109-019E            |                                |
| ST1-109S472UL-30 | 109S472UL-30 |                | ○ (12 V)         | 489-037-L10*     | 109-019E            |                                |

\* PSE compatible, but not UL compatible.

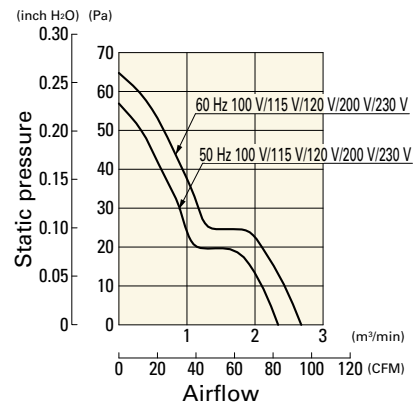
AC  
AC Fan 120 mm sq.

Standard

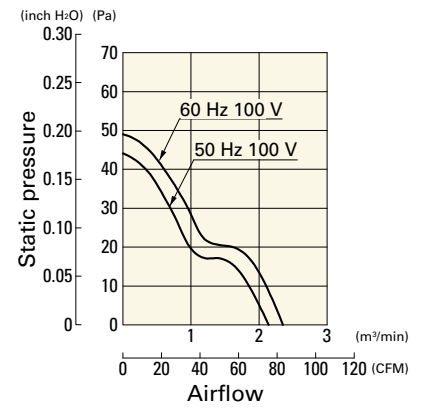
109S075UL, 109S074UL, 109S078UL, 109S072UL



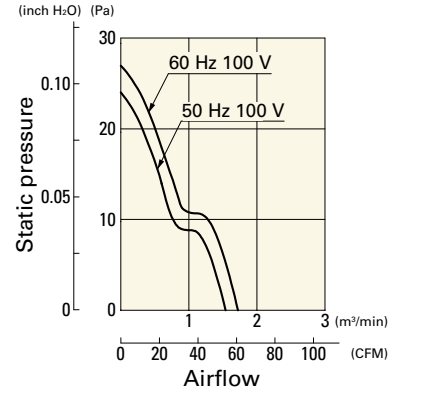
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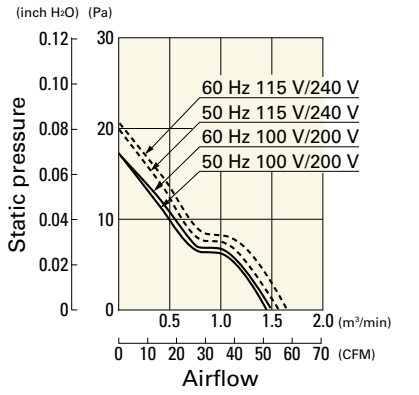
109S029UL



109S013, 109S013UL



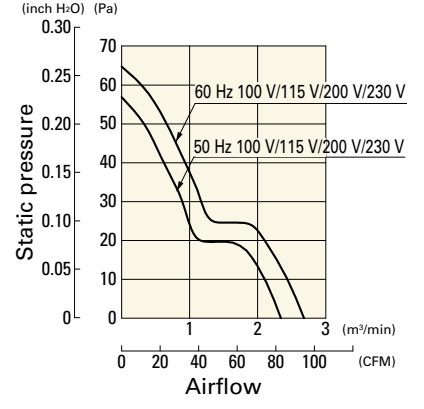
109S006, 109S006UL, 109S010, 109S010UL



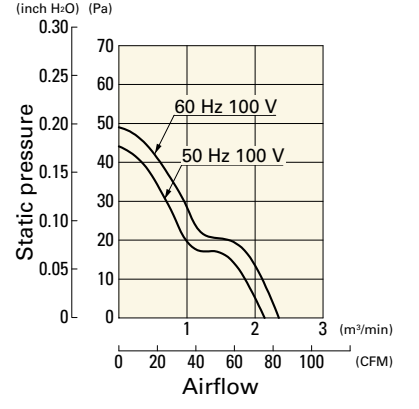
AC Fan 120 mm sq.

with Sensor

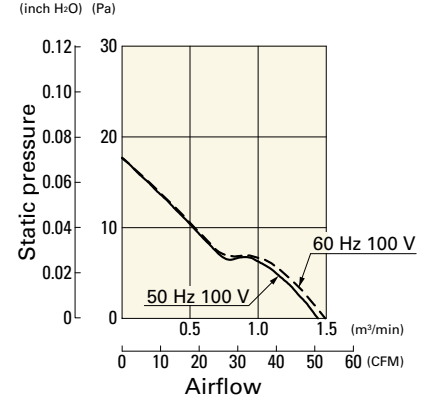
109S405UL, 109S424UL, 109S408UL, 109S425UL



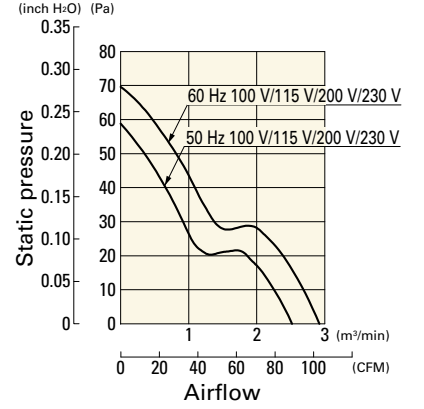
109S429UL



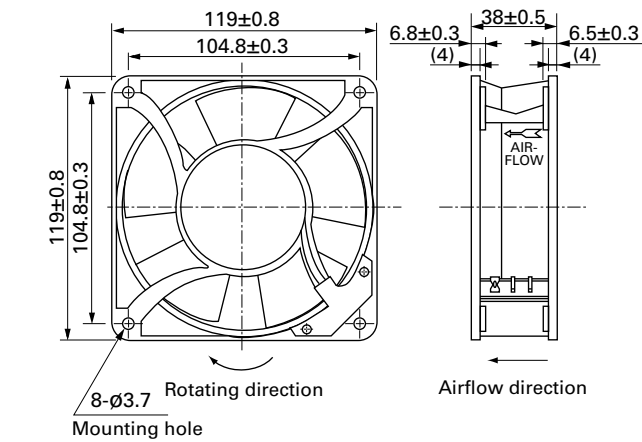
109S406UL



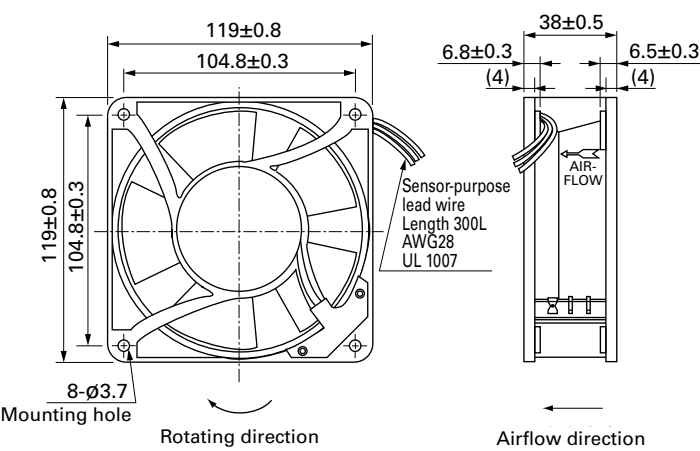
109S475UL, 109S474UL, 109S478UL, 109S472UL



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)

