



KANOMAX
The Ultimate Measurements

Air Flow Transducer

Model 6333

User's Manual

List of Components

■ Standard

Item	Model	Qty	Function
Main unit	6333-0G	1	Measured value displaying, Analog output
User's Manual	-	1	This Book
Terminal block (3P)	-	1	For RS485 communication
Terminal block (3P)	-	1	For analog output and power supply

■ Options

Item	Model	Function
Uni-directional air velocity probe (Flat)	0972-00	Digital output of air velocity values
Uni-directional air velocity probe (φ9)	0973-00	Digital output of air velocity values
Omni-directional air velocity probe (Needle)	0975-00	Digital output of air velocity values
Omni-directional air velocity probe (100 mm)	0975-09	Digital output of air velocity values
Omni-directional air velocity probe (410 mm)	0975-10	Digital output of air velocity values
Heat-resistant air velocity probe (Mini, straight type)	0976-03	Digital output of air velocity values
Heat-resistant air velocity probe (Mini, articulating type)	0976-04	Digital output of air velocity values
Heat-resistant air velocity probe (Mini, straight, temperature-compensation sensor independent type)	0976-07	Digital output of air velocity values
Heat-resistant air velocity probe VT (Mini, straight, temperature-compensation sensor independent type)	0976-05	Digital output of air velocity value and temperature
Air velocity probe (Mini, straight type)	0976-13	Digital output of air velocity values
Air velocity probe (Mini, articulating type)	0976-14	Digital output of air velocity values
Air velocity probe (Mini, straight, temperature-compensation sensor independent type)	0976-17	Digital output of air velocity values
Air velocity probe VT (Mini, straight, temperature-compensation sensor independent type)	0976-15	Digital output of air velocity value and temperature
Omni-directional air velocity probe VT	0975-21	Digital output of air velocity value and temperature
Omni-directional air velocity probe VTH	0975-31	Digital output of air velocity value, temperature, and humidity
Standard cable (0.5 m)	1580-30	For 6333 probe-to-probe connection

Standard cable (2.0 m)	1580-31	For 6333 probe-to-probe connection
Standard cable (5.0 m)	1580-32	For 6333 probe-to-probe connection
Standard cable (10.0 m)	1580-33	For 6333 probe-to-probe connection
Standard cable (20.0 m)	1580-34	For 6333 probe-to-probe connection
Standard cable (40.0 m)	1580-35	For 6333 probe-to-probe connection
Probe fixing jig	1580-90	Anchoring the probe (20 sets)
Double stick tape	1580-92	Mounting 0976-05, 0976-07, 0976-15, 0976-17, 10 sheets (20 pcs per sheet)
AC adapter	6333-10	Power supplying equipment
DIN rail fixing base	6333-70	Anchor to the DIN rail
Measurement software CD	6333-40	Describes real time display of measurement data, measurement data saving, and measurement software.

Important Safety Information

The symbols for the warnings used in this manual are defined below.

Description of Symbols



Warning: To Prevent Serious Injury or Death

Warnings in this classification indicate risks that may result in serious injury or death if not observed.



CAUTION: To Prevent Damage to the Product

Warnings in this classification indicate risks that may result in damage to the product and which may void the product warranty if not observed.

Description of Symbols



△ Symbol indicates a condition that requires caution (including warning). The subject of each caution is illustrated inside the triangle. (E.g. the high temperature caution symbol is shown on the left.)



⊘ Symbol indicates a prohibition. Do not take the prohibited action shown inside or near this symbol. (E.g. the disassembly prohibition symbol is shown on the left.)



● Symbol indicates a mandatory action. A specific action is given near the symbol.



Warning



Forbidden

Always keep the probe away from areas where flammable gas is present.

Failure to do so may cause fire and/or explosion because the air velocity sensor is heating.



Do Not Touch

Never touch the air velocity sensor.

Direct touch to the heated air velocity sensor could cause burn injuries.



High Temperature

Touching to the air velocity sensor may also cause damage to the sensor itself. Never touch the sensor.



Forbidden

Operate the instrument only on the specified supply voltage.

Failure to do so may cause electric shock, fire, or sensor damage.



Caution



Forbidden

Do not use the instrument in areas where vapor is present.

Touching a water droplet to the air velocity sensor can affect the amount of the heat dissipation. This may cause inaccurate measurement and/or damage to the air velocity sensor.



Forbidden

This instrument is designed to be used in the clean air flow without dusts and/or foreign substances.

Touching or hitting the air velocity sensor with a foreign substance may cause damage to the sensor.

Dust and/or foreign substances adhered to the air velocity sensor can hinder accurate measurement.



Forbidden

Do not apply any excessive force to the air velocity sensor.

If the air velocity sensor is deformed, not only maintaining the accuracy is impossible but also the element may be broken.



Forbidden

Do not use or keep the instrument in hot, humid, or dusty environment. Do not expose the instrument to direct sunlight for a prolonged period of time.

The instrument may not function properly out of the specified operational temperature range.



Forbidden

Do not subject the instrument and/or the probe to strong shocks.

Dropping or hitting the instrument and/or the probe may cause damage and malfunction.



Do not disassemble

Do not disassemble, modify, or attempt to repair the instrument.

Failure to observe the above may result in a short circuit or a malfunction.



Forbidden

Do not hold the probe cable to carry the instrument.

Failure to observe the above may cause damage or wire disconnection.



Forbidden

Do not use volatile solvents such as thinner or benzene to clean the instrument.

The case of the instrument may be damaged by organic solvents. Use a soft dry cloth to remove any dirt. If this is not effective, the user may soak the cloth in neutral detergent or water and wipe the instrument with the cloth.



Forbidden

Do not allow static electrical discharge to the air velocity sensor.

Failure to observe the above may affect measurement values and cause damage to the instrument circuit.



Electrostatic-sensitive devices



Forbidden

Regularly check that the tip of the probe is clean.

Dust and/or foreign substances adhered to the air velocity sensor can hinder accurate measurement.

To remove dust, blow it off with a blower brush for cameras or lightly rinse with water and dry it well.

※Be sure to turn the power off to the main unit before cleaning the air velocity sensor.

※Never dry the probe by heat. (Failure to observe this may cause damage to the air velocity sensor.)



Prober Handling



Forbidden

If the instrument and the probe have been stored in a cold place, do not bring the instrument to a warm place to avoid a sudden temperature change.

Even when the instrument is used in the specified operating temperature and humidity, a sudden temperature change may cause condensation. Condensation on the air velocity sensor may cause inaccurate measurement. If condensation occurs on the metal part, it becomes rusty which may cause damage to the probe.



Forbidden

Do not push the display indicator with a sharp-pointed object or with any excessive force.

It may cause distortion of the screen or a malfunction. A rapid temperature change may cause a malfunction of the display indicator.



Proper Handling

When storing the instrument, keep it in a place with an ambient temperature of -20 to 70°C and no condensation.



Forbidden

Do not dispose of the instrument as household waste.

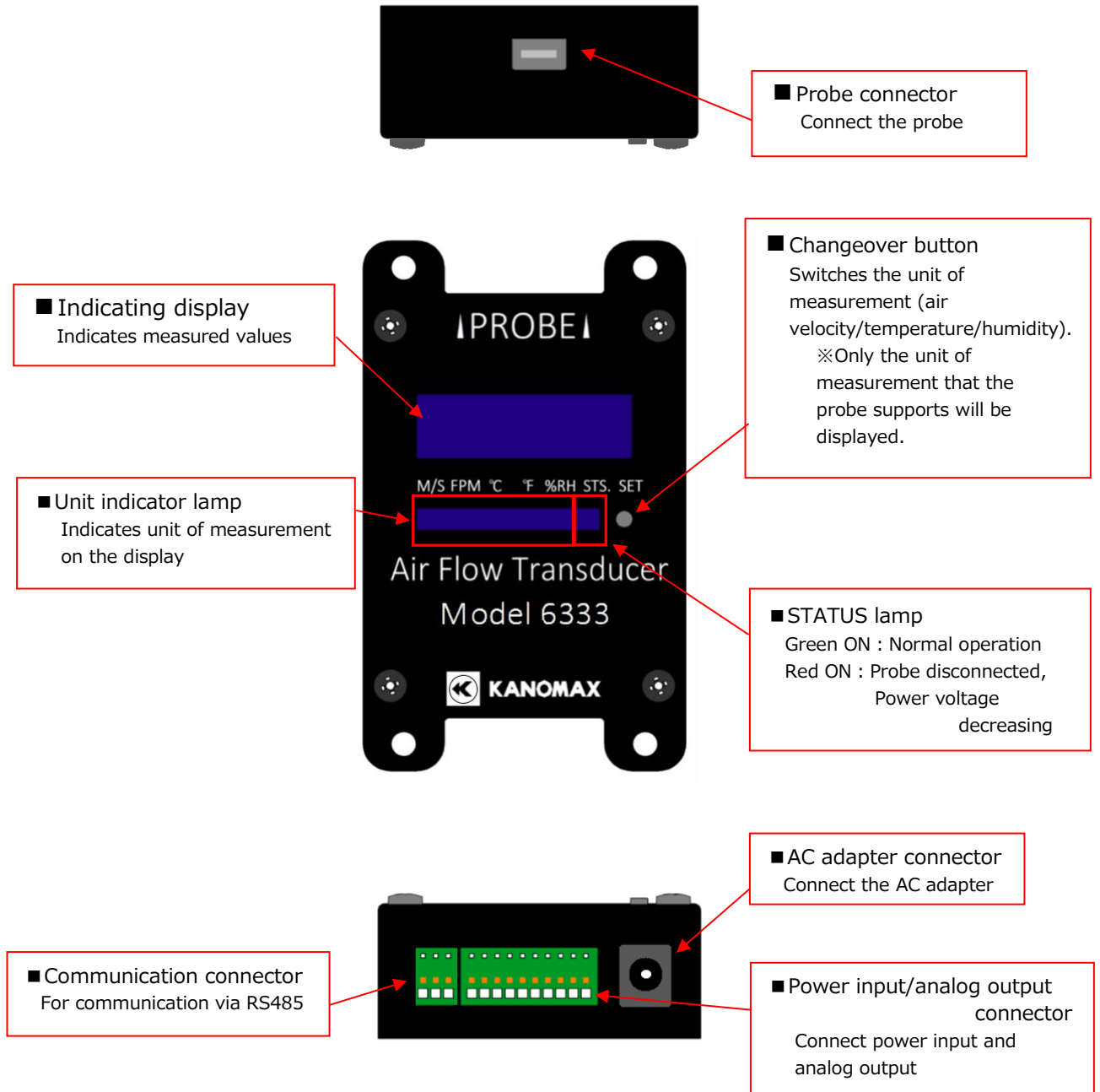
Please note that the disposal of the instrument should be in line with your local or national legislations.

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1. Product Appearance

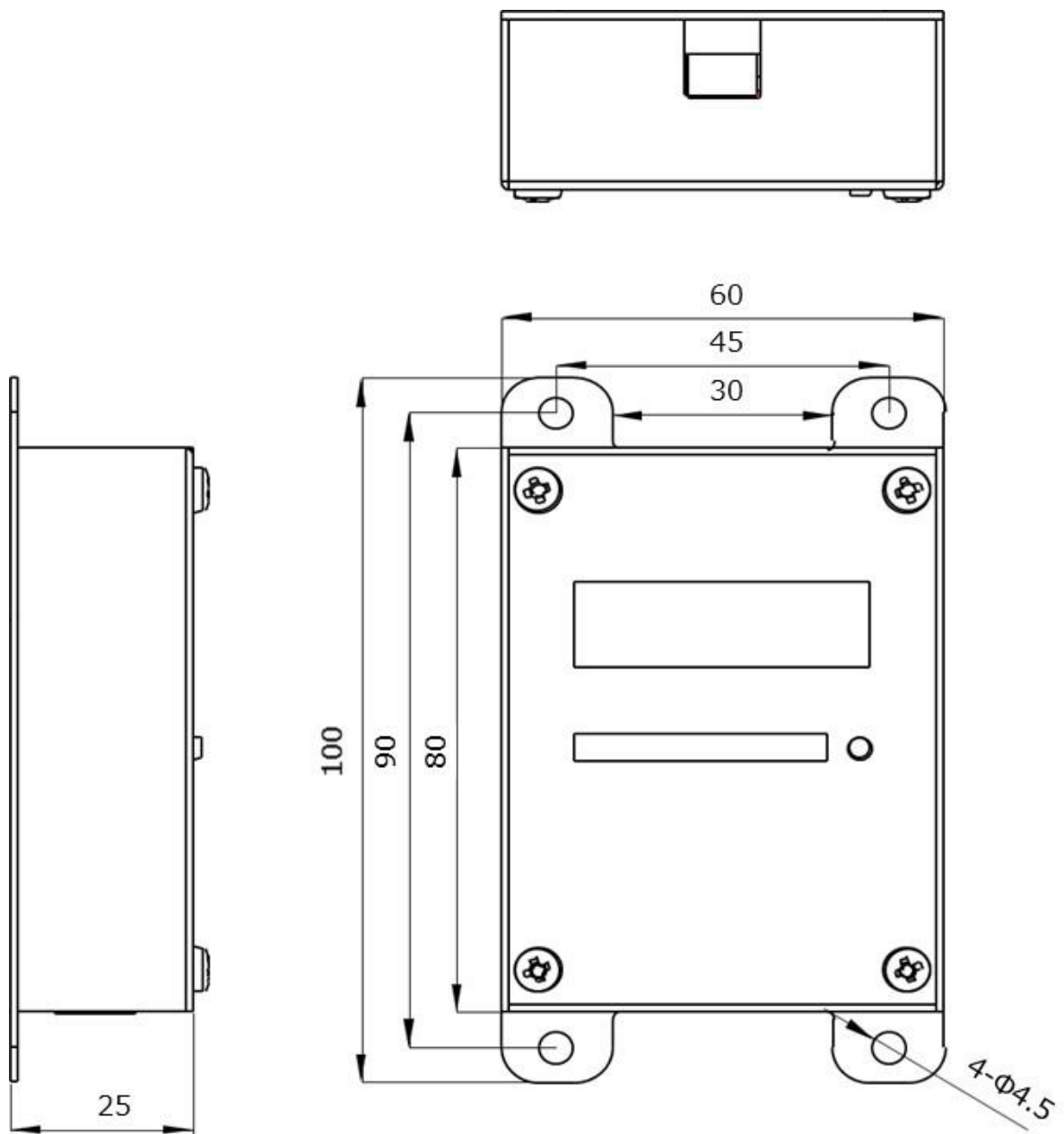
1-1. Part Names and Functions



※ The terminal block is attached to the main unit at the factory and shipped.

1-2. External Dimension

Unit : mm

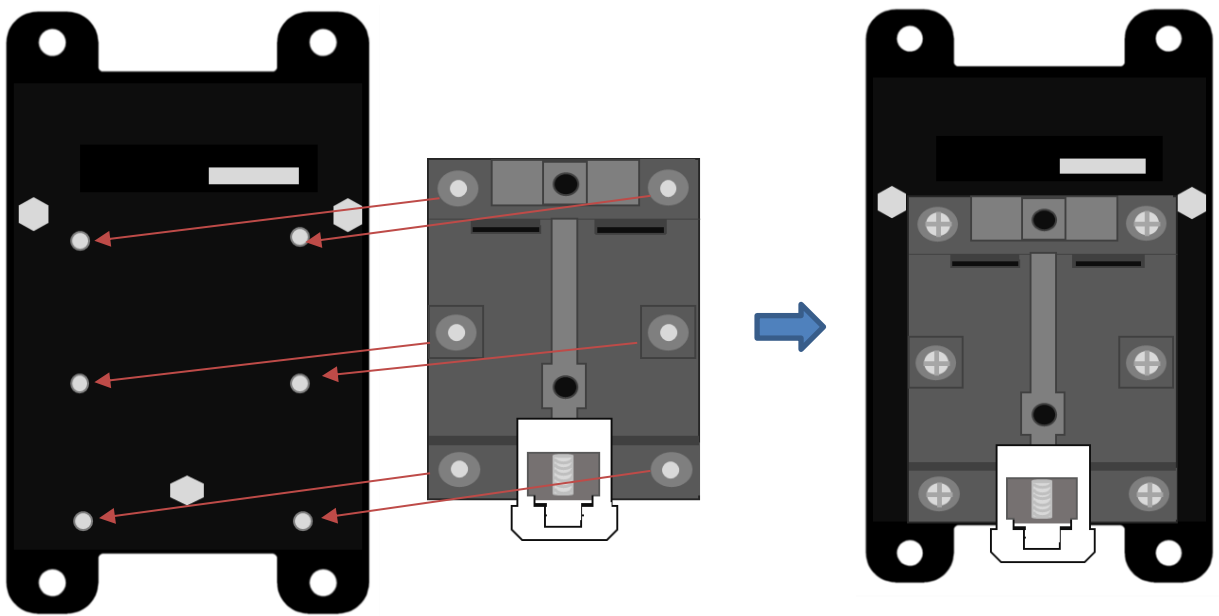


※The dividing terminal block is excluded.

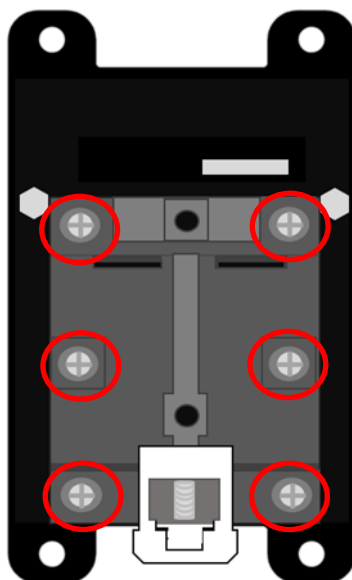
1-3. Mounting/Removing DIN Rail Fixing Base

To attach the Air Flow Transducer to the DIN rail, use the optional DIN rail fixing base. The mounting holes of the DIN rail fixing base are only for mounting the DIN base. DO NOT use the holes for anything except when mounting the base.

- Mount the DIN rail fixing base on the back face of the Air Flow Transducer with the 6 supplied dish head screws (M3, 10-mm-long screw).
※ Never use any longer screw than a 10-mm-long screw. A screw more than 10 mm length may break the circuit board inside the instrument.

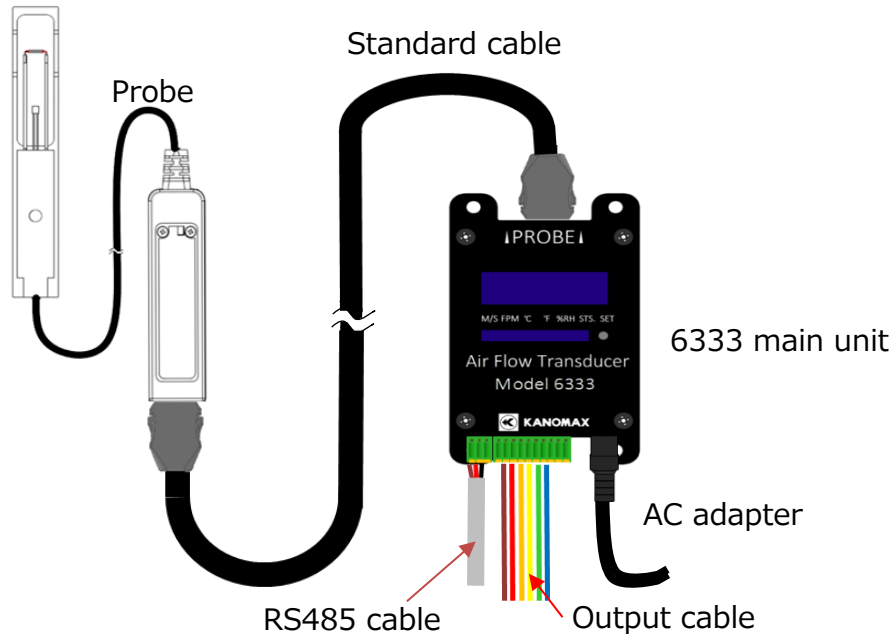


- To remove the DIN rail fixing base, remove all the screws (M3, 10-mm-long screw, 6 EA).



2. How to Use

2-1. Basic Usage



- Configure the instrument in the following sequence to use.
 1. Situate the probe in a measurement place and connect the probe to the instrument.
 2. Connect the AC adapter connector and the AC adapter.
 3. Insert the AC adapter into an outlet to power on, and the measured value will appear on the indicating display.
 - The unit indicator lamp shows the unit of the current measurement on the indicating display.
 - The changeover button enable to switch the unit of measurement item among air velocity/temperature/humidity.
(Only measurement unit that the probe supports can be selected.)
- Analog output

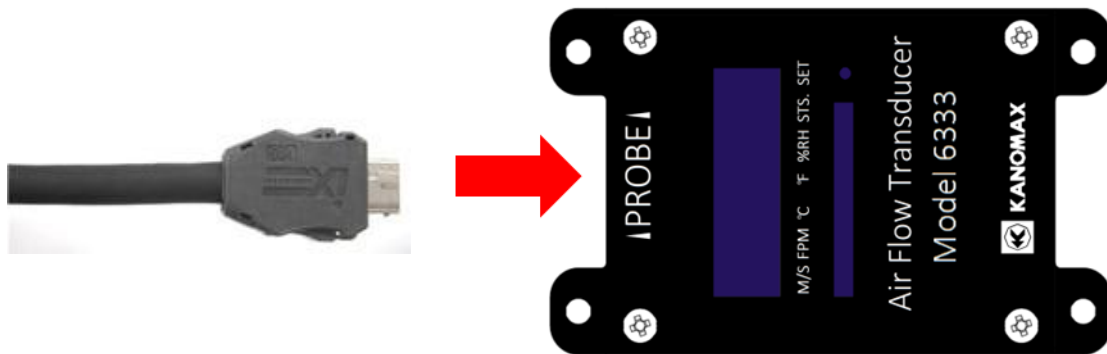
Once connecting the cable to the power input/analog output connector, the measurement value of temperature, humidity and air velocity can be extracted as voltage or current. For details, refer to **2-5. Connecting Analog Output.**
- Monitoring Measured Values via the measurement software

Once connecting the communication connector and the PC with the USB 485 conversion cable etc., monitoring measured values via the measurement software is enabled. For details, refer to **2-6. Connecting the Communication Connector** and the **User's Manual of Air Flow Transducer Measurement Software for Windows.**

- ! When the instrument is used in a high humidity environment for long hours or in the abrupt temperature variation environment, the instrument can show higher measured humidity value than the actual one. If condensation occurs, leave the probe in a place of 40%RH or lower for 24 hours to dry.

2-2. Mounting/Removing the Probe

To mount the probe, face the standard cable toward the instrument connector as shown below, insert the standard cable probe connector into the instrument.



- ! Before connecting, be sure to check that power supply is shut off.

To remove the probe, push and hold the release buttons of both sides of the standard cable, and pull out the cable.

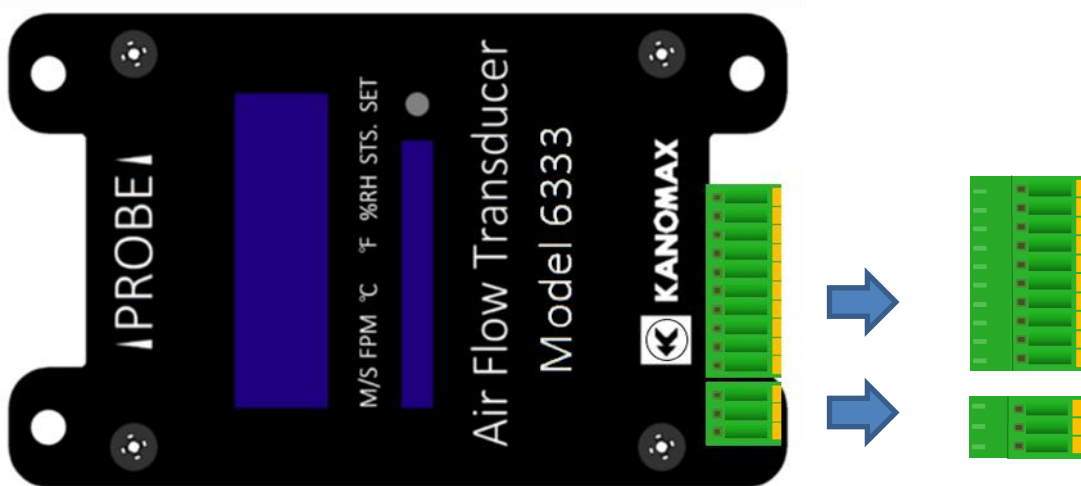


- ! Before disconnecting, be sure to check the power supply is shut off.
When removing the probe, cut power supply.

2-3. Connecting the Cable to the Terminal Block

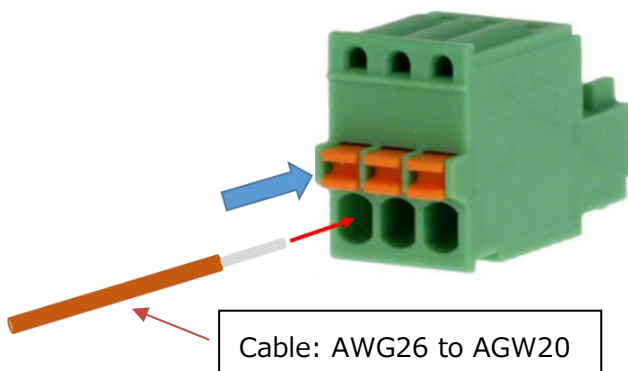
For easy cable connecting work, detach the supplied terminal block from the main unit.

- You can remove the terminal block with the fingers.
- This terminal block can be divided into two terminal blocks, 3P and 10P.



- To connect the cable to the terminal block, push and hold the orange button with a flat head screwdriver etc. and insert the cable into a terminal hole.
- The size of the connecting cable is AWG26 to AWG20.
- The length of an exposed wire is 8 mm.

※ For detailed specifications, please refer to the specifications etc. related to FK-MC 0,5/3-ST-2,5-1881338 by PHOENIX CONTACT.



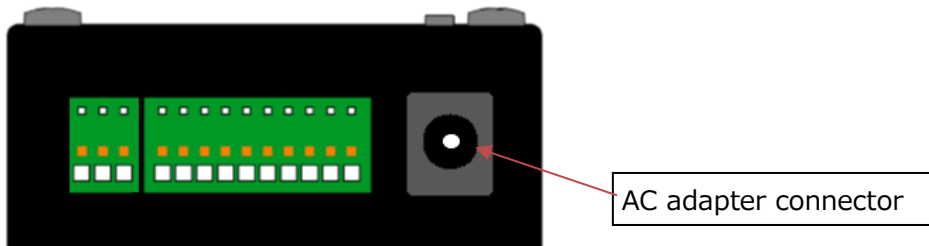
2-4. Connecting Power Source

There are two methods to supply power to the instrument.

1. Supply from the AC adapter

To supply power, connect the optional AC adapter to the AC adapter connector.

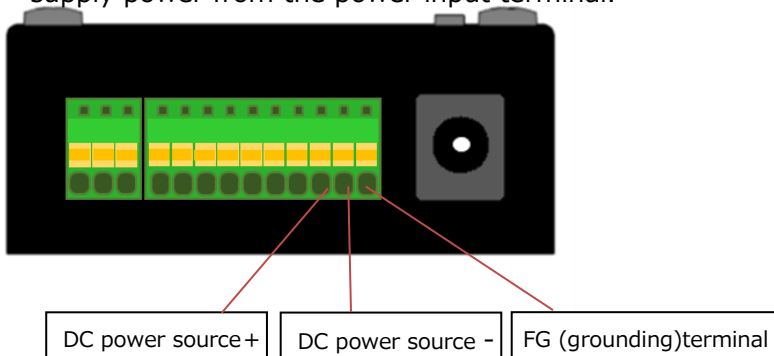
DO NOT use any AC adapters other than the optional AC adapter. Improper handling can cause a failure of the device.



- ! This instrument isn't equipped with the power switch. Hence, when power supply starts, operation starts simultaneously.
When connecting the input terminal to supply power, be sure to check that power supply from power source is stopped.
When supplying power from the AC adapter connector, be sure not to connect anything to the power input/analog output connector.

2. Supply from Power Source/Analog Output Connector

Insert the dividing terminal block into the power source/analog output connector to supply power from the power input terminal.

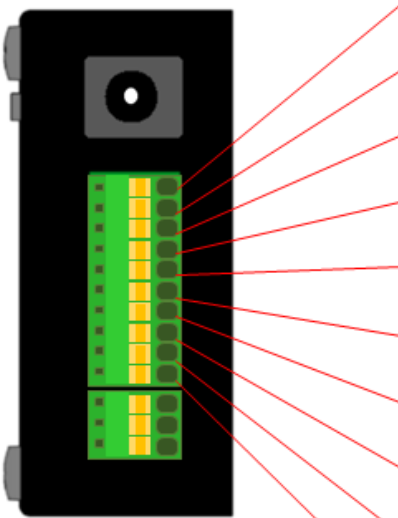


- ! This instrument isn't equipped with the power switch. Hence, when power supply starts, operation starts simultaneously.
When connecting the input terminal to supply power, be sure to check that power supply from power source is stopped.
When supplying power from the power source/analog output connector, be sure not to connect anything to the AC adapter connector.
Power supply voltage is specified at DC 12 to 24 V.

2-5. Connecting Analog Output

Insert the dividing terminal block into the power input/analog output connector to extract the analog output.

When the dividing terminal block is inserted, the function of each terminal is as follows.

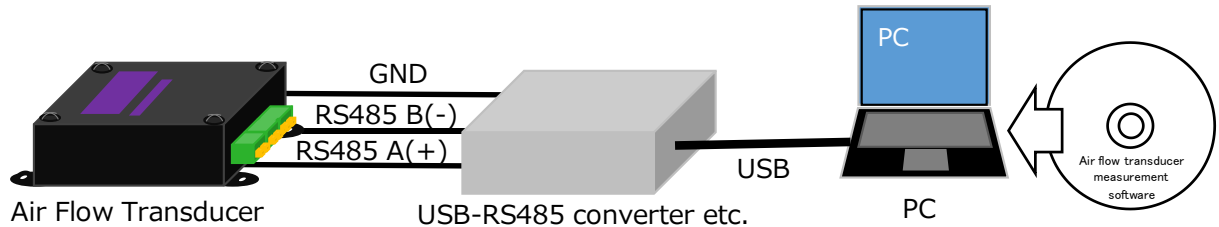


Terminal name	Description
FG(grounding) terminal	Connect to GND
DC Power(-)	Connect to DC negative (-) output Do not connect anything when using the
DC Power(+)	Connect to DC positive (+) output Do not connect anything when using the
Air velocity output(-)	negative (-) output of air velocity analog output
Air velocity output(+)	positive (+) output of air velocity analog output
Temperature output (-)	negative (-) output of temperature analog output
Temperature output (+)	positive (+) output of temperature analog output
Humidity output (-)	negative (-) output of humidity analog output
Humidity output (+)	positive (+) output of humidity analog output
NC	Unused terminal. Do not Connect anything

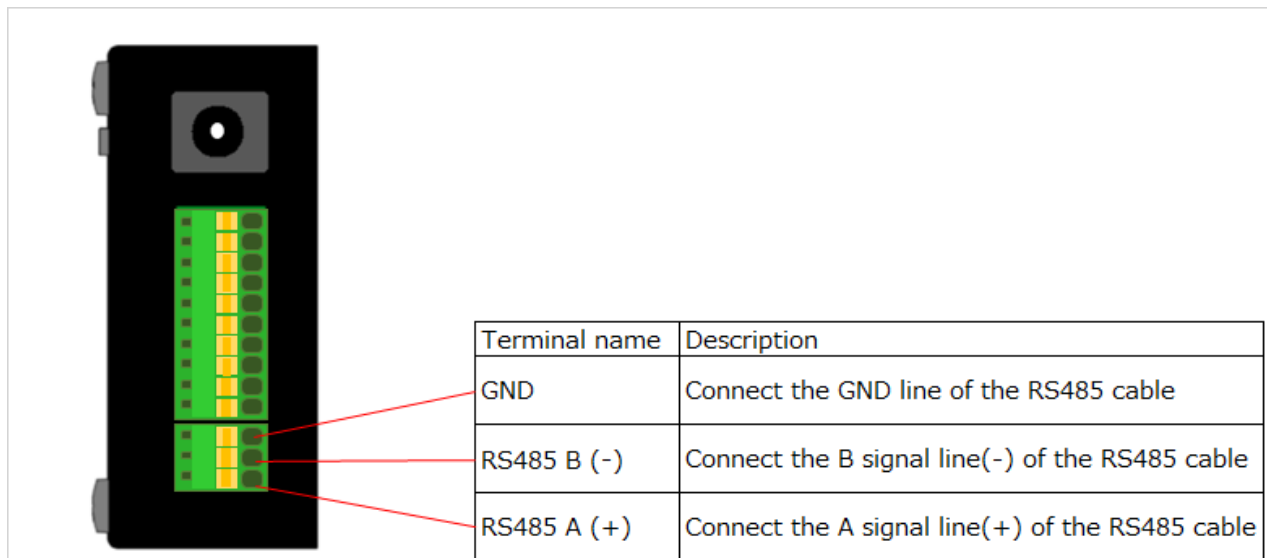
- ! While working for the analog output connection, be sure to shut off power. Make sure that polarities are correct. Power supply voltage is specified at DC 12 to 24 V. When also extracting the analog output, if power is supplied from the AD adapter connector, be sure not to connect anything to the power input terminal.

2-6. Connecting the Communication Connector

Connecting the PC using the communication connector is allowed to obtain measured values. Hence, real time monitoring becomes feasible with the optional **Air Flow Transducer Measurement Software**. Insert the dividing terminal block into the communication connector to connect to the PC. If the PC is not equipped with the RS485 port, connect to the PC with a cable such as a USB-RS485 conversion cable.



When the dividing terminal block is inserted, the function of each terminal is as follows.



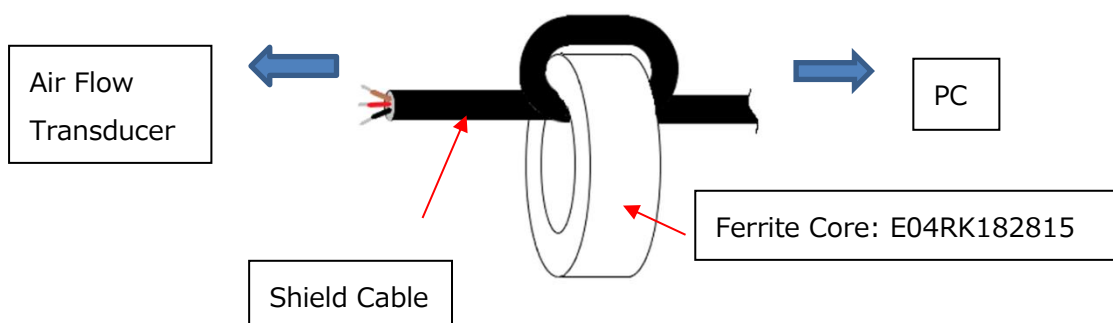
! While working for connecting the communication connector, be sure to shut off power supply.

Make sure that polarities are correct.

! Use a shield cable for RS485 cable.

Attach a ferrite core E04RK182815 (SEIWA ELECTRIC MFG CO., Ltd.) to the RS 485 cable. Be sure to use this ferrite core.

Wrap a single turn of the shield cable around the ferrite core and place the core within 10 cm of distance from the air flow transducer.



2-7. Connecting the Probe Fixing Jig (Accessory)

- This probe fixing jig is for Probe 0976-03 and 0976-04, 0976-13, 0976-14 only. Do not use this jig for any probe other than the two probes above. It may cause a malfunction or damage.

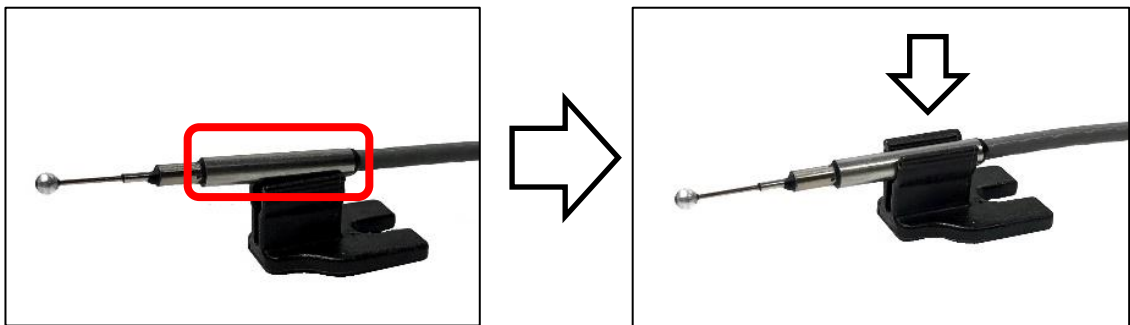
Follow the steps below to attach/remove the probe to/from the probe fixing jig.

When you attach or remove the probe, do not allow the air velocity sensor of the probe to touch the probe fixing jig or surrounding objects.

Do not touch the air velocity sensor of the probe with your hand. It may cause a malfunction or damage.

■ Attaching the Probe

Place a part of probe outlined in red line as shown in the figure below on the probe fixing jig and push the probe until it clicks.

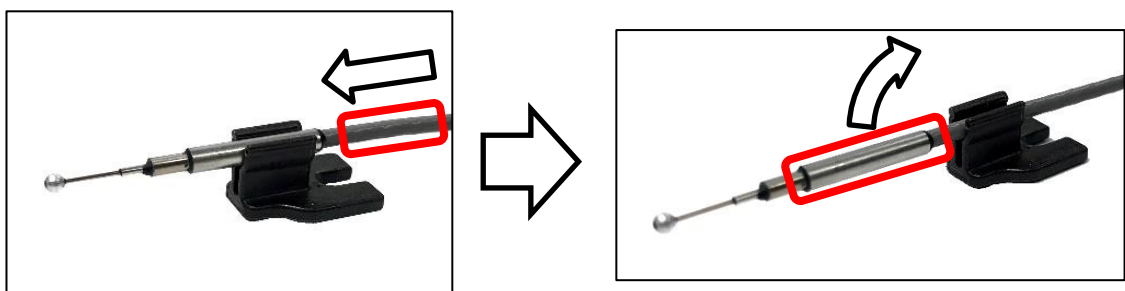


■ Removing the Probe

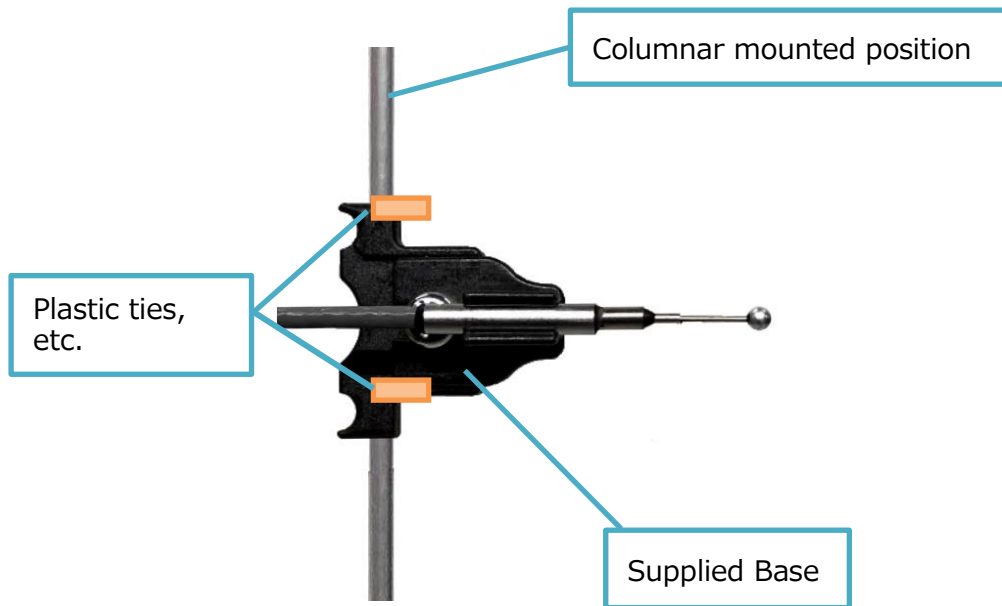
As the figure below shows, move the cable near the probe fixing jig to the direction of the air velocity sensor (left), and hold a part of probe outlined in red line and remove the probe. (right)

The mounting angle can change due to the probe tension.

If its angle changes, adjust the mounting angle if needed.



To set the probe fixing jig on a setting position, use a double-faced tape, etc.
As the figure below shows, to mount the probe fixing jig to a columnar mounted position, attach the supplied base to the probe fixing jig and fix them with plastic ties, etc.

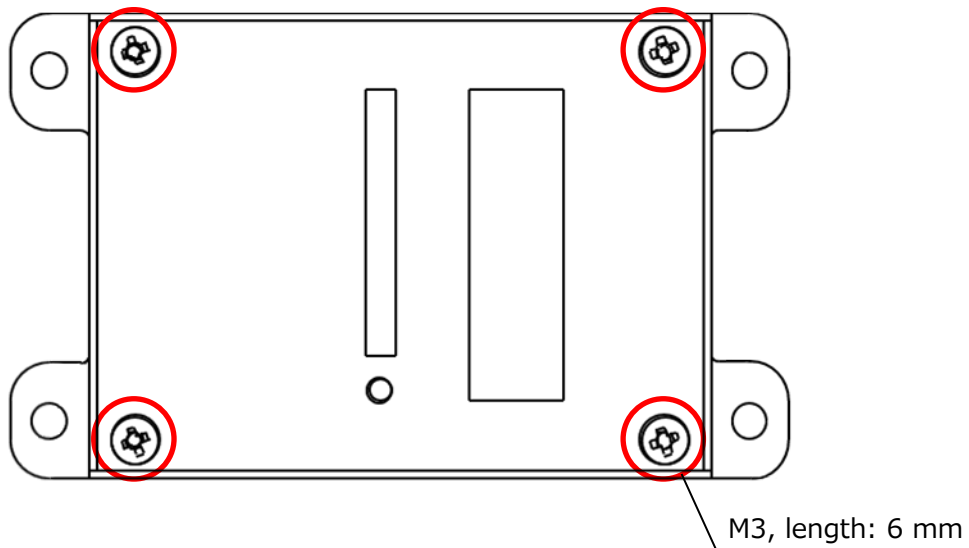


3. Various Settings

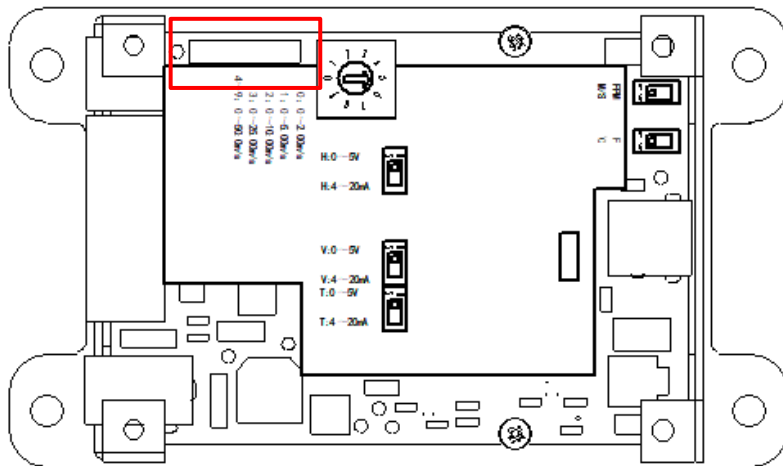
3-1. Removing the Case

Removing the case allows to change the units of air velocity/air temperature and analog output settings using the DIP switch on the printed board.

First of all, check the power is turned off. As the diagram shows below, unscrew 4 screws (M3, length: 6 mm) on the front panel of the device and remove the case slowly.



There is a wiring connecting between a part in a red frame and the case as the diagram shows below. With the utmost caution, remove the case slowly in order not to break the wire connecting.



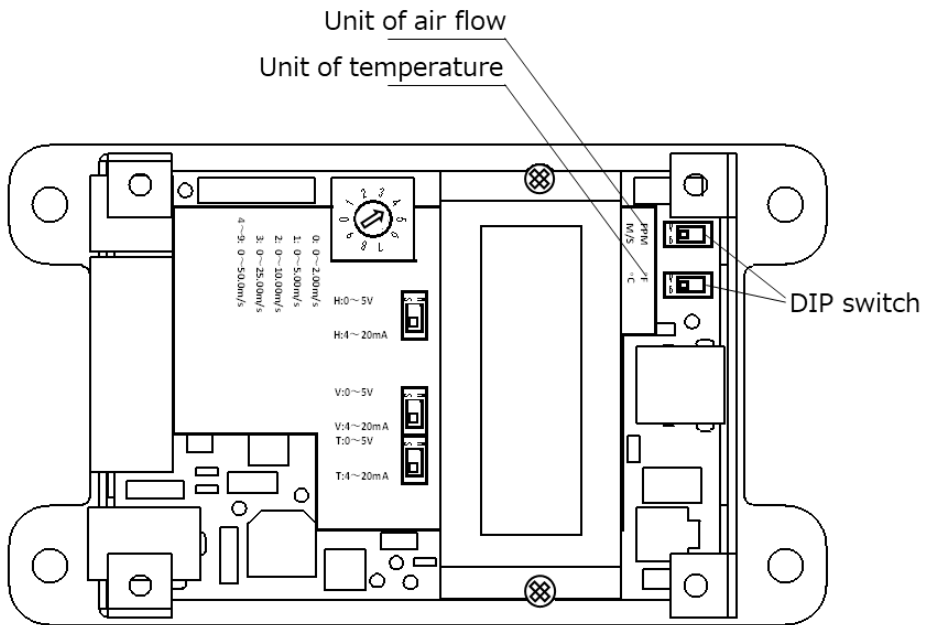
Prior to the case removing, check the power is turned off.

To put the case back on, use the screws (M3, length: 6mm) taken when the cover has been removed.

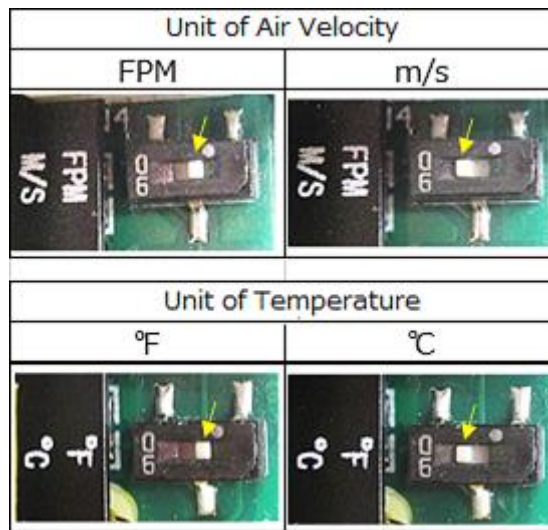
Never use any longer screw than a 6-mm-long screw. A screw more than 6 mm length may break the circuit board inside the instrument.

3-2. Displayed Unit Setting

The DIP switch enables to change between the unit of air velocity and air temperature.



As the figure shows below, check prints located on the left side of the DIP switch to select.



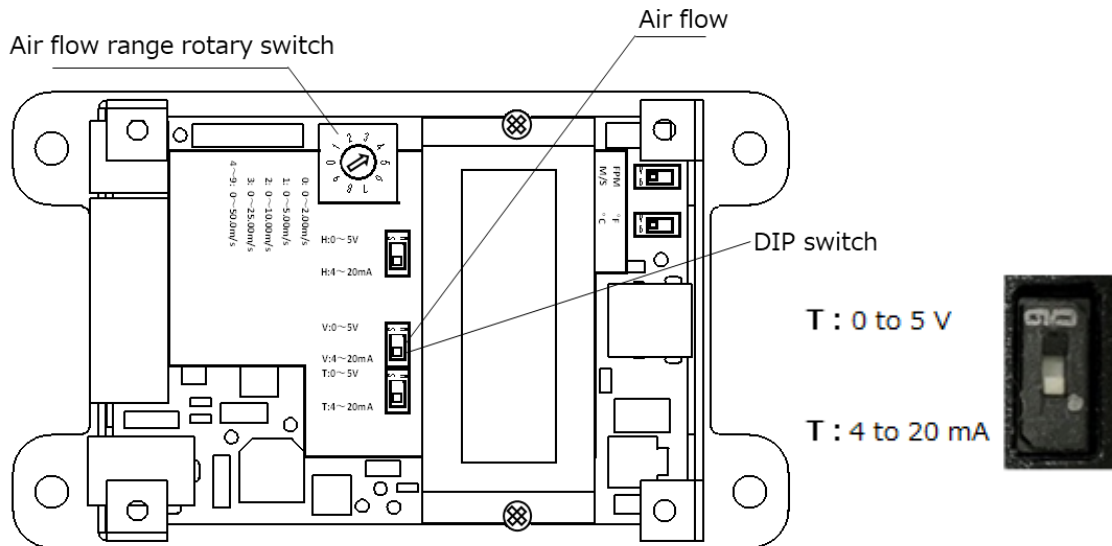
 While changing the output setting, be sure to shut off power supply.

3-3. Air Velocity Analog Output Setting

The output can be selected from the current output (4 to 20 mA) and the voltage output (0 to 5 V). To change output, use the DIP switch of air velocity

The range of air velocity is also selectable.

The factory setting is: DIP Switch setting 4; air velocity (0 to 50.0 m/s); and current output.

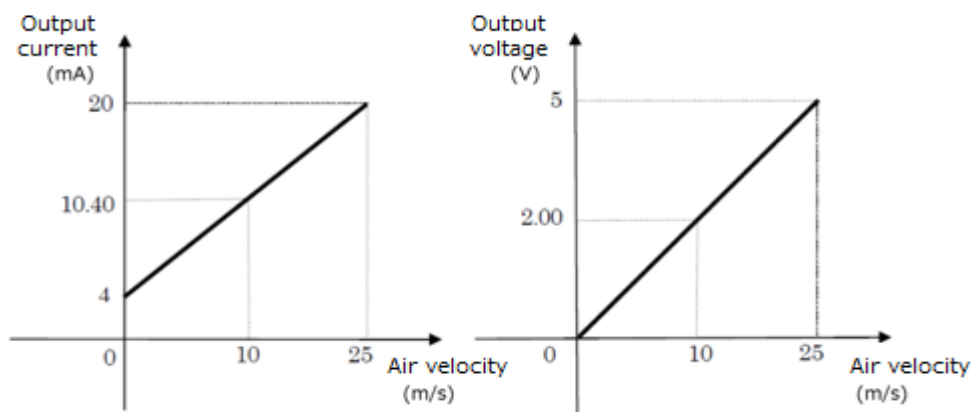


To change the air velocity range, use the rotary switch. Select the air velocity range from 5 ranges as the table shows below.

The factory setting is No. 4 (air velocity range: 0 to 50.00 m/s, current output: 4 to 20 mA).

No.	Air velocity range [m/s]	Current output range [mA]	Voltage output range [V]
0	0 to 2.00	4 to 20	0 to 5
1	0 to 5.00	4 to 20	0 to 5
2	0 to 10.00	4 to 20	0 to 5
3	0 to 25.00	4 to 20	0 to 5
4 to 9	0 to 50.00	4 to 20	0 to 5

Example: For the probe 0975-31, air velocity 10.0 m/s, DIP Switch 3 (Range: 25.0 m/s)

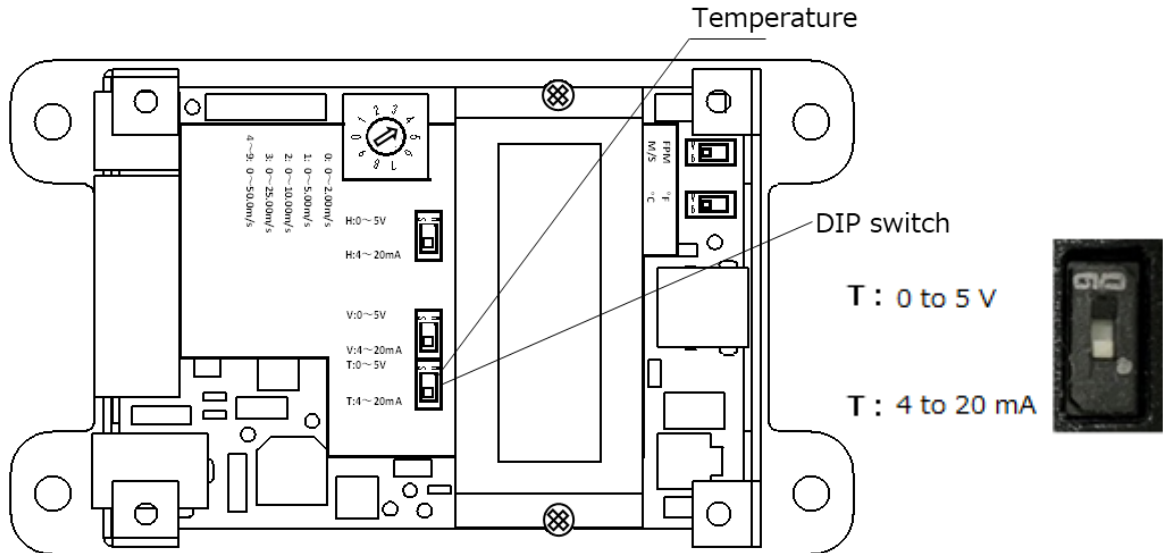


! While changing the output setting, be sure to shut off power supply.

3-4. Air Temperature Analog Output Setting

The output can be selected from the current output (4 to 20 mA) or the voltage output (0 to 5 V). To change output, use the temperature DIP switch.

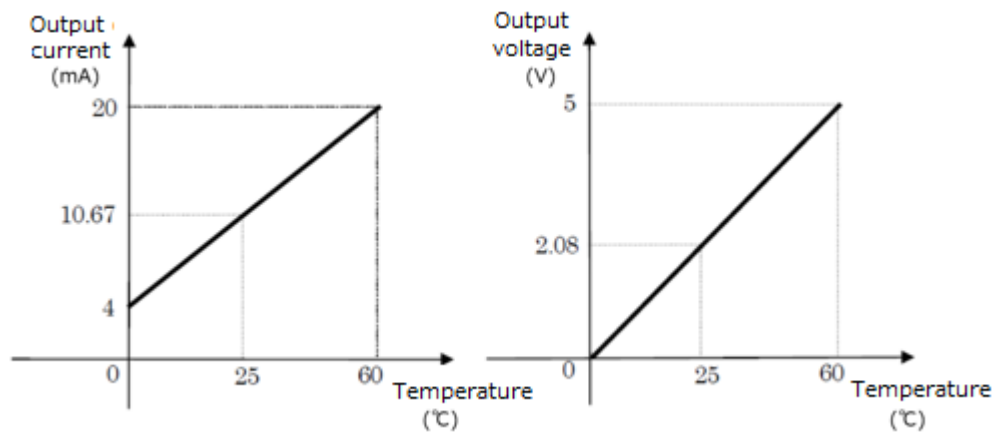
The factory setting is current output.



The below list shows temperature range, voltage and current output for each connected probe.

Connected probe	Temperature range [°C]	Current output range [mA]	Voltage output range [V]
0975-31	0 to 60	4 to 20	0 to 5
0975-21	0 to 100	4 to 20	0 to 5
0976-05	0 to 120	4 to 20	0 to 5

Example: For the probe 0975-31, temperature 25°C

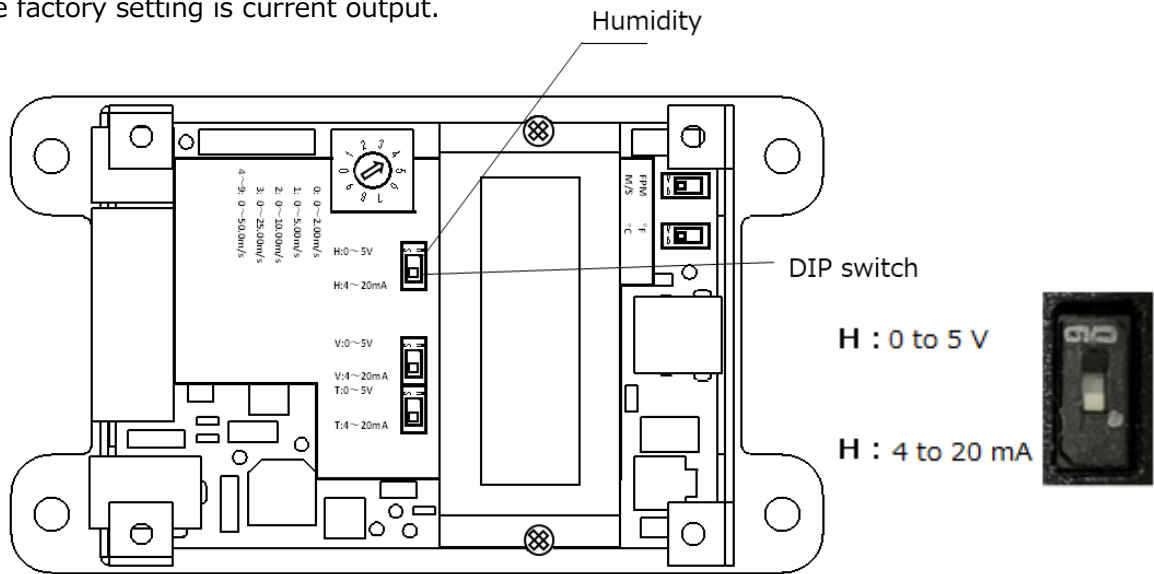


! While changing the output setting, be sure to snut off power supply.

3-5. Humidity Analog Output Setting

The output can be selected from the current output (4 to 20 mA) or the voltage output (0 to 5 V). To change output, use the humidity DIP switch.

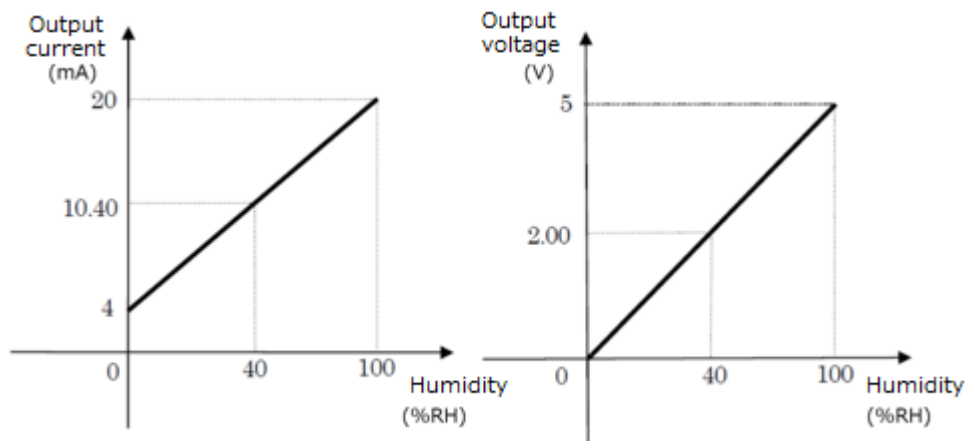
The factory setting is current output.



The below list shows temperature range, voltage and current output for each connected probe.

Connected probe	Humidity range [%RH]	Current output range [mA]	Voltage output range [V]
0975-31	0 to 100	4 to 20	0 to 5

Example: For the probe 0975-31, humidity 40%RH



! While changing the output setting, be sure to shut off power supply.

4. Specifications

Product name	Air Flow Transducer	
Model	6333-0G	
Air velocity measurement range	0.01 to 25 m/s (For connected probe: 0975-00, 0975-21, 0975-31)	
	0.01 to 30 m/s (For connected probe: 0976-03, 0976-04, 0976-05, 0976-07, 0976-13, 0976-14, 0976-15, 0976-17)	
	0.01 to 50 m/s (For connected probe: 0972-00, 0973-00, 0975-09, 0975-10)	
Temperature measurement range	0 to 60°C (For connected probe: 0975-31)	
	0 to 100°C (For connected probe: 0975-21)	
	0 to 120°C (For connected probe: 0975-05)	
Humidity measurement range	5 to 95% (For connected probe: 0975-31)	
Resolution	Air velocity: 0.01 m/s, Temperature: 0.1°C, Humidity: 0.1%RH	
Unit	m/s·FPM (Factory setting: m/s), °C·°F (Factory setting: °C), %RH The DIP switch enables to change between m/s and FPM, and °C and °F.	
Analog output	The output conversion DIP switch enables to change between voltage output and current output. Factory setting is current output. Current output: DC 4 to 20 mA (Maximum load: 250 Ω) Voltage output: DC 0 to 5 V	
Interface	RS485	
Power source	Power source is selectable from the AC adapter and external power source. AC adapter: 12V/2A, External power source (Terminal base): 12V/2A to 24V/1A	
Operating environment	Temperature	0 to 60°C (non-condensing)
	Humidity	2.0%RH to 98%RH
Storage environment	Temperature	-10 to 60°C (non-condensing)
	Humidity	2%RH to 95%RH
Dimensions	Approximately W100.0 × D60.0 × H25.0 mm	
Weight	Approximately 200 g	
Measurement software	Air Flow Transducer Measurement Software (optionally available)	
Standard accessories	User's manual: 1 copy, Terminal block: 1 EA	
Warranty period	One year from date of purchase	

5. Specifications for Options

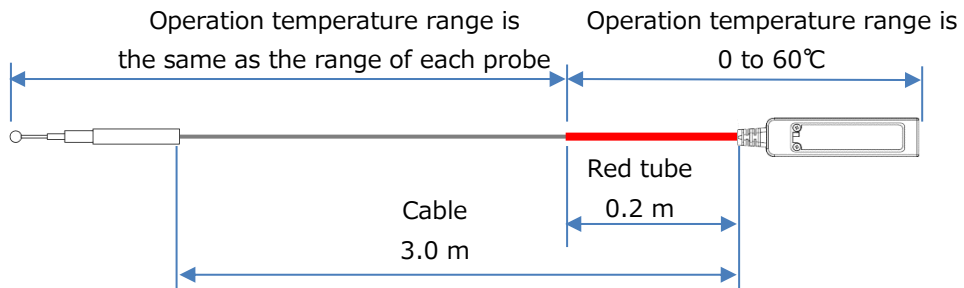
5-1. Probe Specifications

For all probes, warranty period is one year from date of purchase.

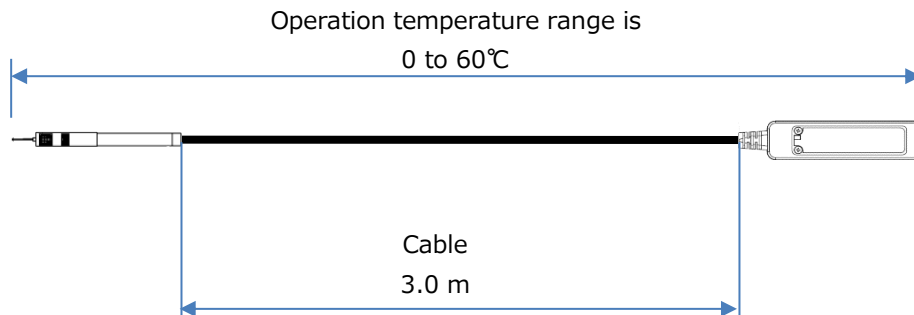
• Probe converter box

Operating environment	0 to 60°C, 5 to 95%RH with no condensation
Storage environment	-10 to 60°C, 0 to 90%RH with no condensation
Dimensions	W74.2mm × D20.2mm × H16mm
Cable length	3.0 m (including the 0.2m of the red tube)

- ※ The operation temperature ranges of the probe converter box and the red tube are up to 60°C. The range from the end of the red tube to the air velocity sensor is the same with the operation temperature range of each probe.
- ※ The operation temperature range of 0975-31 with the cable is up to 60°C, hence, there is no red tube.
 - The figure below shows the operation temperature range for 0972-00, 0973-00, 0975-00, 0975-09, 0975-10, 0976-03, 0976-04, 0976-05, 0976-07, 0976-13, 0976-14, 0976-15, 0976-17, and 0975-21.



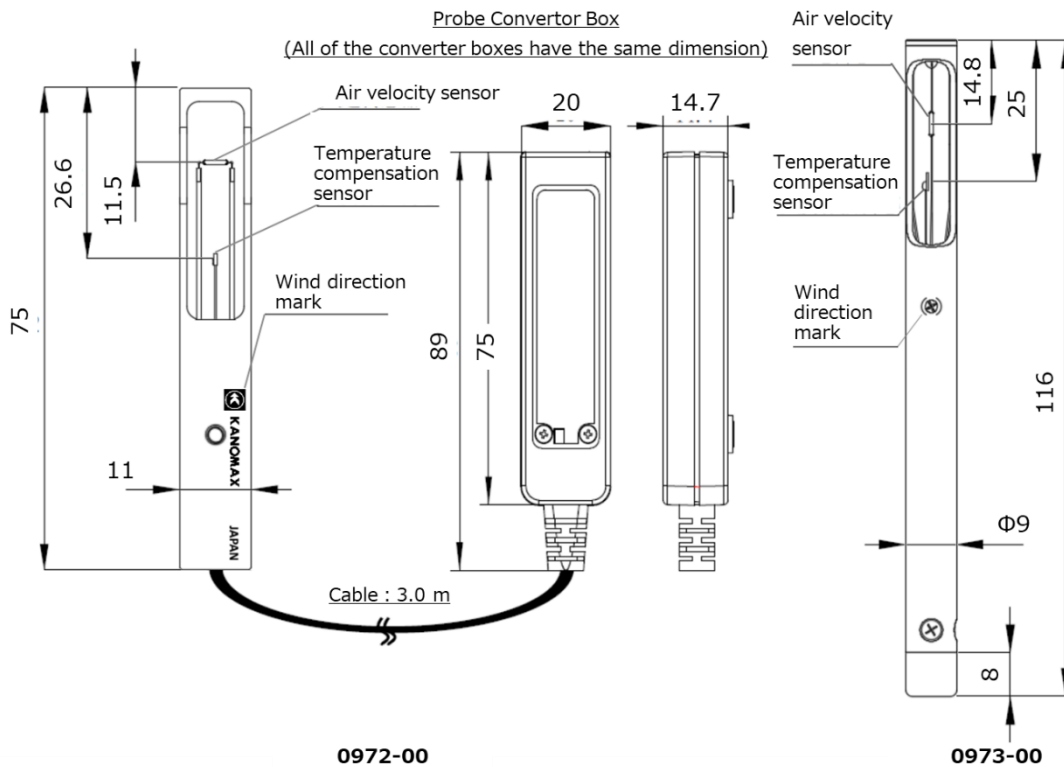
- For 0975-31



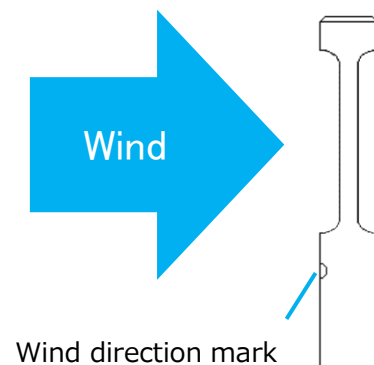
•Probe

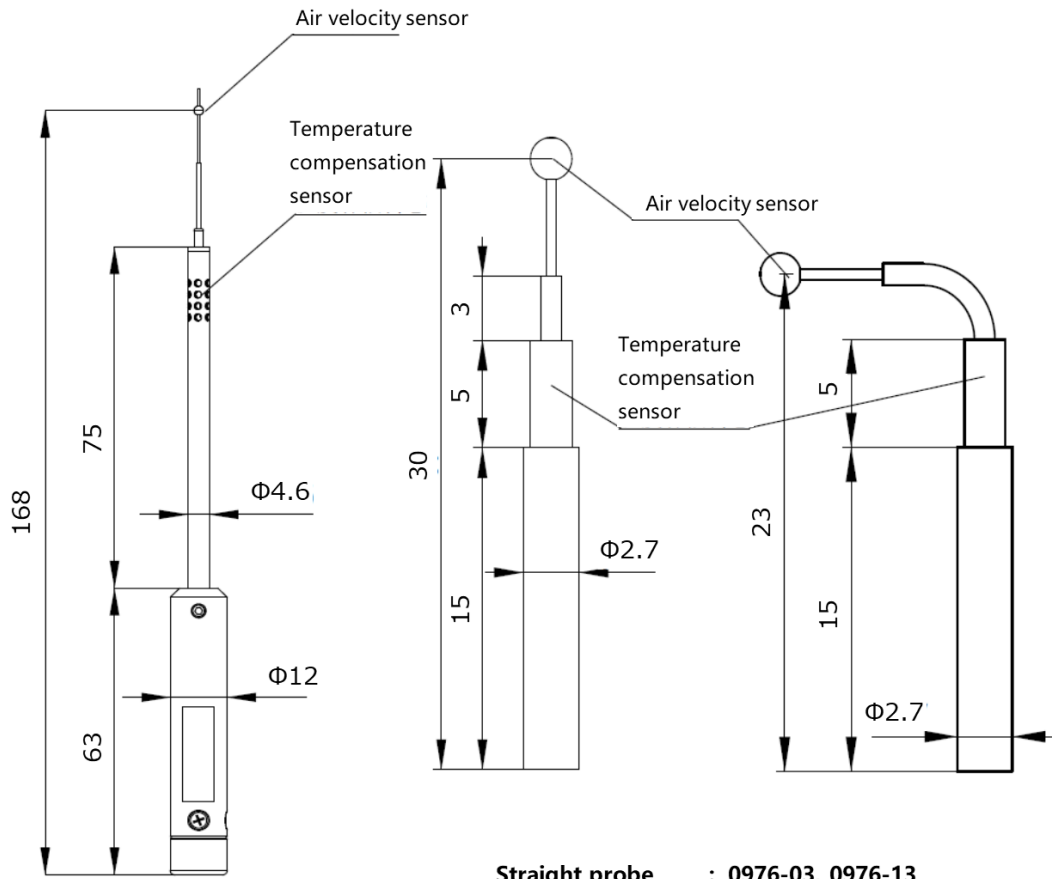
Model	Measurement range	Measurement accuracy	Operational temperature range	Temperature compensation range/accuracy
	Velocity/Temperature/Humidity	Velocity/Temperature/Humidity		
0972-00	0.01 to 50.0 [m/s]	(Velocity) ±2% of reading or ±0.02 m/s, whichever is the greater.	0 to 100°C	0 to 100°C ±5% of reading
0973-00				
0975-00	0.01 to 25.0 [m/s]			
0975-09	0.01 to 50.0 [m/s]			
0975-10				
0976-03	0.01 to 30.0 [m/s]	(Velocity) ±3% of reading or ±0.02 m/s, whichever is the greater.	0 to 120°C	0 to 120°C ±5% of reading
0976-04				
0976-07				
0976-13		(Velocity) ±2% of reading or ±0.02 m/s, whichever is the greater.	0 to 100°C	0 to 100°C ±5% of reading
0976-14				
0976-17				
0976-05	0.01 to 30.0 [m/s] 0 to 120 [°C]	(Velocity) ±3% of reading or ±0.02 m/s, whichever is the greater. (Temperature) ±0.5°C	0 to 120°C	0 to 120°C ±5% of reading
0976-15	0.01 to 30.0 [m/s] 0 to 100 [°C]	(Velocity) ±2% of reading or ±0.02 m/s, whichever is the greater. (Temperature) ±0.5°C	0 to 100°C	0 to 100°C ±5% of reading
0975-21	0.01 to 25.0 [m/s] 0 to 100 [°C]	(Velocity) ±2% of reading or ±0.02 m/s, whichever is the greater. (Temperature) ±0.5°C	0 to 100°C	0 to 100°C ±5% of reading

0975-31	0.01 to 25.0 [m/s] 0 to 60 [°C] 5 to 95 [%RH]	(Velocity) $\pm 2\%$ of reading or ± 0.02 m/s, whichever is the greater (Temperature) $\pm 0.5^\circ\text{C}$ (Humidity) 5 to 80%RH: $\pm 3\%$ RH 80 to 95%RH: $\pm 5\%$ RH	0 to 100°C	0 to 100°C $\pm 5\%$ of reading
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※ Model 0972-00/0973-00 probe is directional.
 Be sure to aim the direction mark at windward.
 If you are not able to find a correct airflow direction,
 slowly rotate the probe and select a direction where
 you have a maximum velocity reading, and perform
 measurement.

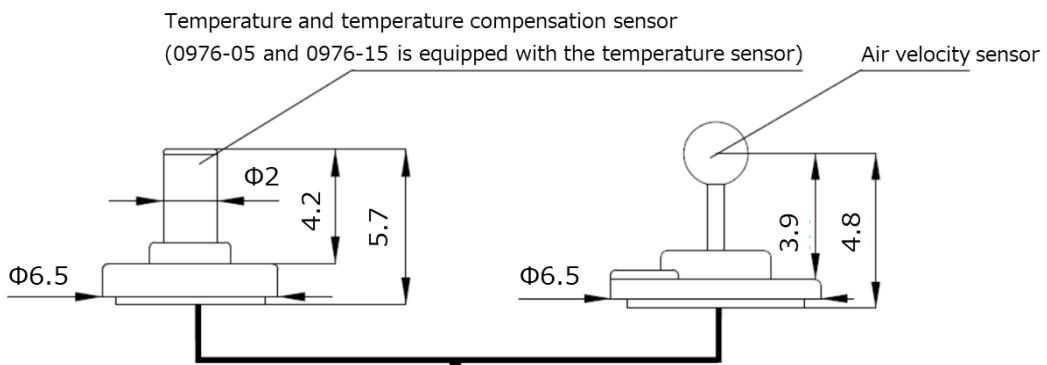




0975-00

Straight probe : 0976-03, 0976-13

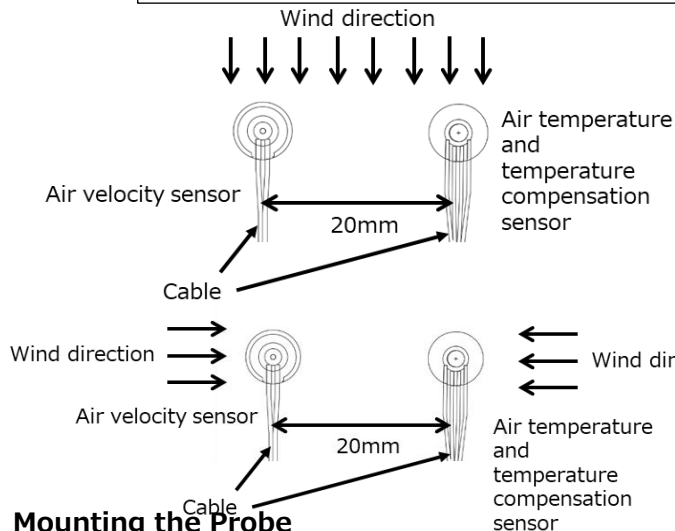
Articulating probe : 0976-04, 0976-14



Air velocity measurement only : 0976-07, 0976-17

Air velocity and temperature measurement : 0976-05, 0976-15

Setting, mounting and removing for Heat-resistant air velocity probe (Mini, straight, temperature-compensation sensor independent type) of 0976-05, 0976-07, 0976-15 and 0976-17



If the cable is located on the leeward side to the wind direction, more accurate measurement will be achieved.

Be sure to install the air velocity sensor and the temperature/temperature compensation sensor in parallel with a distance of at least 20 mm between them.

Do not arrange the probes in a straight line to the wind direction.

Mounting the Probe

Use the optional double stick tape (Model1580-92) to mount the probe with a base to a measuring point. Attach the double stick tapes on the bottom faces of the air velocity sensor and the temperature and temperature compensation sensor to mount the sensors to a measuring point. If a mounting surface is dusty or dirty, the adhesive strength may decrease. Before mounting the probe, clean a mounting surface of a measuring point. To firmly mount the probe, lightly press the base of the probe with a tool such as tweezers.



Mounting the probe



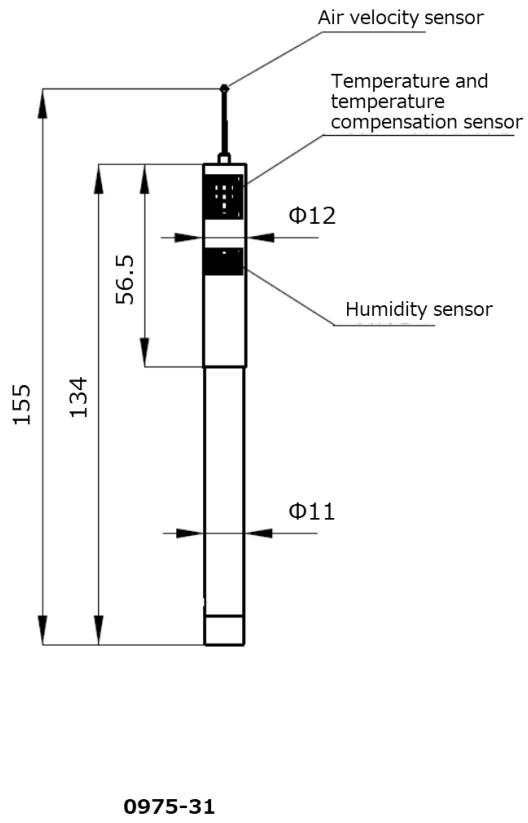
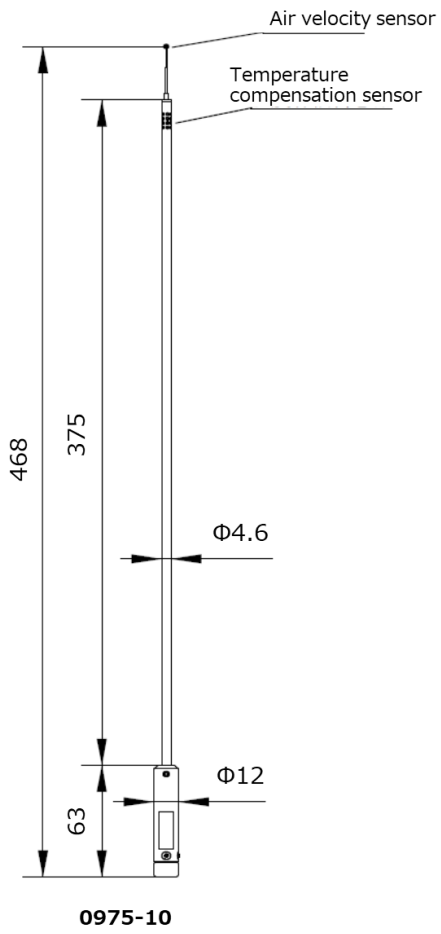
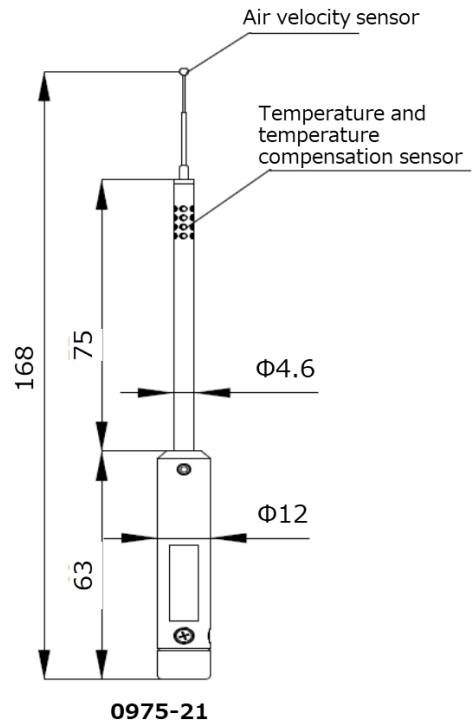
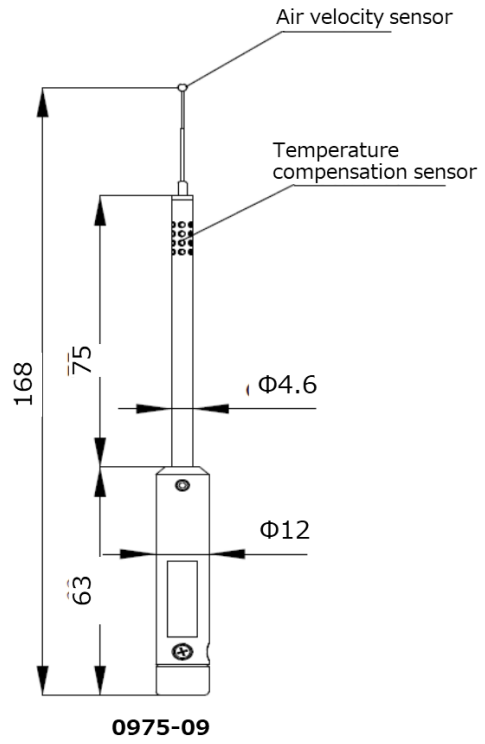
Removing the probe

Removing the Probe

To remove the probe, hold the wires between the thumb and index finger and insert a tool such as a flathead screwdriver between the probe base and a mounting surface. DO NOT pull the wires. If you pull the wires forcibly, a broken wire may occur. DO NOT touch the air velocity sensor (the metallic sphere) which is hot under energized conditions. After a measurement, remove the tapes. Use the new double stick tape for a new mounting. Do not reuse.

! Caution !

- !) When temperature is not uniform in a measuring place, place the air velocity and the temperature compensation sensor appropriately in order that temperature difference between them is small.
- !) Do not place the temperature compensation sensor on the windward side of the air velocity sensor. Air velocity values may be affected.
- !) If a distance between the temperature compensation sensor and the air velocity sensor is 20 mm or shorter (closer), air velocity values may be affected.



5-2. Specifications for Standard Cable, Probe Fixing Jig, AC Adapter, DIN Rail Fixing Base and PC Software

■ Standard Cable

Model	1580-30	1580-31	1580-32	1580-33	1580-34	1580-35
Length of cable ± tolerances	0.5 m +0.05,-0	2 m +0.1,-0	5 m +0.2,-0	10 m +0.3,-0	20 m +0.5,-0	40 m +1.0,-0
Operating environment	0 to 60°C, 5 to 95%RH (non-condensing)					
Storage environment	-10 to 60°C, 0 to 95%RH (non-condensing)					
Connector type	IX61G-A-10P HIROSE One-touch connector with lock					
Warranty period	One year from date of purchase					

※ As to accurate dimensions of the connectors, refer to the specification sheet IX-30G-A-10S-CV (7.0) by Hirose Electric Co., Ltd.

■ Probe Fixing Jig

Model	1580-90
Connectable Probe	Model 0976-03 (Miniature heat-resistant probe, straight type) Model 0976-04 (Miniature heat-resistant probe, articulating type) Model 0976-13 (Miniature probe, straight type) Model 0976-14 (Miniature probe, articulating type)
Operating environment	0 to 150°C (non-condensing)
Storage environment	-10 to 60°C, 0 to 90%RH (non-condensing)
Warranty period	One year from date of purchase

■ Double stick tape (for mounting the probe with a base)

Model	1580-92
Quantity	10 sheets (20 pcs per sheet)
Dimensions	φ 5 mm × 0.6 mm per pc.
Connectable probe	Model 0976-07: Heat-resistant air velocity probe (Mini, straight, temperature-compensation sensor independent type) Model 0976-05: Heat-resistant air velocity probe VT (Mini, straight, temperature-compensation sensor independent type) Model 0976-17: Air velocity probe (Mini, straight, temperature-compensation sensor independent type) Model 0976-15: Air velocity probe VT (Mini, straight, temperature-compensation sensor independent type)
Operating environment	-30 to 150°C (with no condensation)
Warranty period	One year from date of purchase

■ AC Adapter

Model	6333-10
Supply voltage	DC12V
Operating environment	5 to 40°C, 10 to 90%RH (non-condensing)
Storage environment	-20 to 80°C, 10 to 90%RH (non-condensing)
Warranty period	One year from date of purchase

■ DIN Rail Fixing Base

Model	6333-70
Dimensions	44 × 55.5 × 8.5 (mm)
Accessory	Dish head screws (M3, 10-mm-long screw, 6 EA)

■ PC Software

Model	6333-40
Recommended operating environment	OS: Windows 10 Memory: 1 GB or more

6. Troubleshooting

Before calling for service, please check items in this list.

Symptom	Possible cause(s)	Solution(s)
No output	Power to the main unit is shut off	Connect power supply to the main unit.
	Incorrect wiring	Wire correctly
	Incorrect connection of the probe or the cable	Turn off the power, check the probe or the cable for connection, and turn the power on again.
	Dirt on the output terminal	Clean the output terminal to remove dirt.
Output abnormally	Incorrect probe connection	Turn off the power, check the connection of the probe/cable, and turn on the power again.
	Probe is soiling	Follow the specified procedure clean the probe
	Measured value exceeds the range of measurement.	Check the measurement range along with the probe to be used.
	No grounding connection of FG (GND terminal)	Check the grounding connection of the FG (GND terminal).

Probe Cleaning

Dust such as fine/soot particles or machine oil adhered to the air flow element can change the heat dissipation (the amount of heat taken away). This can affect the reading of air velocity. Probes with a wire mesh or a filter cannot read accurate measurement value when they are clogged with dust etc.

Once the probe is used in a contaminated environment and the probe and the mesh became dirty, immediate cleaning of the probe and the mesh is recommended.

How to clean the probe

Clean the air flow sensor with an **ultrasonic cleaning machine for 10 to 20 seconds**. Soaking the probe element in the machine too long may cause the breakage of the coating on the element. Use normal water as cleaning liquid to clean the element.

Another method of cleaning the element is that pour neutral detergent diluted with water into a container and gently wave the element in the liquid.

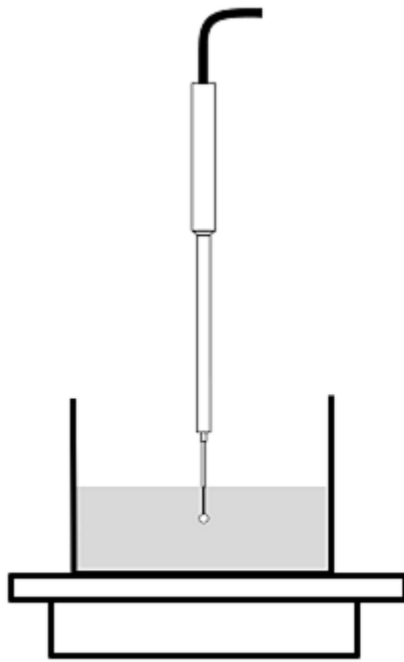
! Caution !

- !) No not connect anything to the communication terminal of the hub-to-hub unit while cleaning.
- !) After cleaning, dry the element completely. When it is dried out, connect to the hub unit.
- !) Do not clean the probe equipped with the temperature sensor (Model 0975-31) using alcohol. The temperature sensor is susceptible to an organic solvent including alcohol, thus the sensor is broken easily if it is exposed to the solvent. Do not use alcohol.

If the temperature sensor has been used in an alcohol atmosphere or soaked in alcohol, the sensor needs replacing.

Even if the sensor works, the replacement is necessary. If condensation forms on the sensor or the sensor touches water, leave the sensor under an atmosphere of 40%RH or less at least one day to dry the sensor completely.

- !) Do not clean the temperature sensor and the temperature compensation sensor.

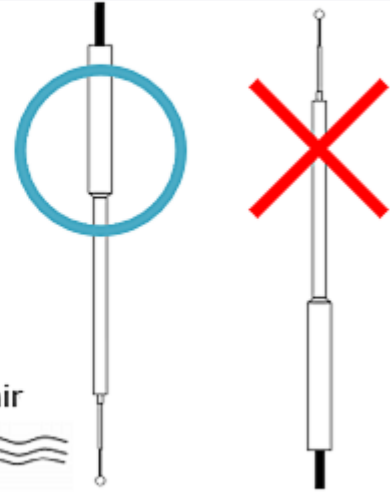


Clean the sensor part in an ultrasonic cleaning machine for 10 to 20 seconds.

Until the sensor is dried out, do not turn up the sensor. Failure to do so may cause damage to the sensor because water droplet comes into the sensor.



Dry with cold air



7. Warranty and After-Sales Services

The limited warranty set below is given by KANOMAX JAPAN, Inc. (hereafter referred to as "KJI") with respect to this instrument, its attachment parts including standard accessories (hereafter referred to as "PRODUCT") that you have purchased. PRODUCT you have purchased shall be the only one that the limited warranty stated herein applies to.

Your PRODUCT, when delivered to you in new condition in its original container, is warranted against defects in materials or workmanship as follows: for a period of two (2) years from the date of original purchase, defective parts or a defective PRODUCT returned to KJI, as applicable, and proven to be defective upon inspection, will be exchanged for a new or comparable rebuilt parts, or a refurbished PRODUCT as determined by KJI. Warranty for such replacements shall not extend the original warranty period of the defective PRODUCT.

To obtain service under this warranty, you must notify KJI on or before the expiration of the warranty period to obtain directions for returning the defective product. You are responsible for all return shipping charges to the authorized KANOMAX service center.

This limited warranty covers all defects encountered in normal use of the PRODUCT, and does not apply to the following cases:

- (1) Use of parts or supplies other than the PRODUCT sold by KJI, which cause damage to the PRODUCT or cause abnormally frequent service calls or service problems.
- (2) If any PRODUCT has its serial number or date altered or removed.
- (3) Loss or damage to the PRODUCT due to abuse, mishandling, improper packaging by the owner, alteration, accident, electrical current fluctuations, failure to follow operating, maintenance or environmental instructions prescribed in the PRODUCT's instruction manual provided by KJI, or service performed by other than KJI.

NO IMPLIED WARRANTY, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, APPLIES TO THE PRODUCT AFTER THE APPLICABLE PERIOD OF THE EXPRESS LIMITED WARRANTY STATED ABOVE, AND NO OTHER EXPRESS WARRANTY OR GUARANTY, EXCEPT AS MENTIONED ABOVE, GIVEN BY ANY PERSON OR ENTITY WITH RESPECT TO THE PRODUCT SHALL BIND KJI. KJI SHALL NOT BE LIABLE FOR LOSS OF STORAGE CHARGES, LOSS OR CORRUPTION OF DATA, OR ANY OTHER SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES CAUSED BY THE USE OR MISUSE OF, OR INABILITY TO USE, THE PRODUCT, REGARDLESS OF THE LEGAL THEORY ON WHICH THE CLAIM IS BASED, AND EVEN IF KJI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL RECOVERY OF ANY KIND AGAINST KJI BE GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT SOLD BY KJI AND CAUSING THE ALLEGED DAMAGE. WITHOUT LIMITING THE FOREGOING, THE OWNER ASSUMES ALL RISK AND LIABILITY FOR LOSS, DAMAGE OF, OR INJURY TO THE OWNER AND THE OWNER'S PROPERTY AND TO OTHERS AND THEIR PROPERTY ARISING OUT OF USE OR MISUSE OF, OR INABILITY TO USE, THE PRODUCT NOT CAUSED DIRECTLY BY THE NEGLIGENCE OF KJI. THIS LIMITED WARRANTY SHALL NOT EXTEND TO ANYONE OTHER THAN THE ORIGINAL PURCHASER OF THE PRODUCT, OR THE PERSON FOR WHOM IT WAS PURCHASED AS A GIFT, AND STATES THE PURCHASER'S EXCLUSIVE REMEDY.

8. Contact Information



If you have any questions or inquiries about this product, please check the contact information below, as it depends on the region where you purchased the product.

□ U.S.A.

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01001/2202



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