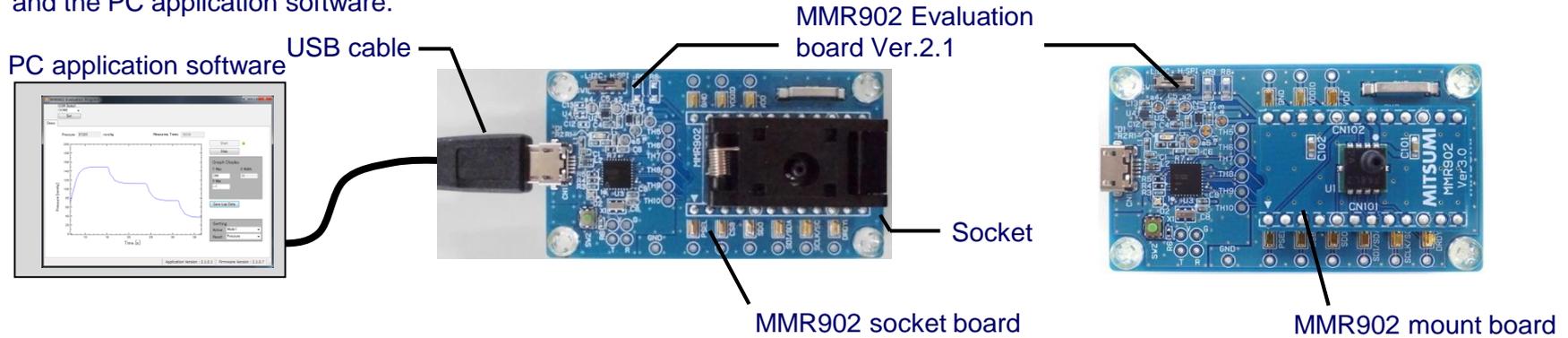


Digital Output Gage Pressure Sensor **MMR902 Evaluation Kit Manual**

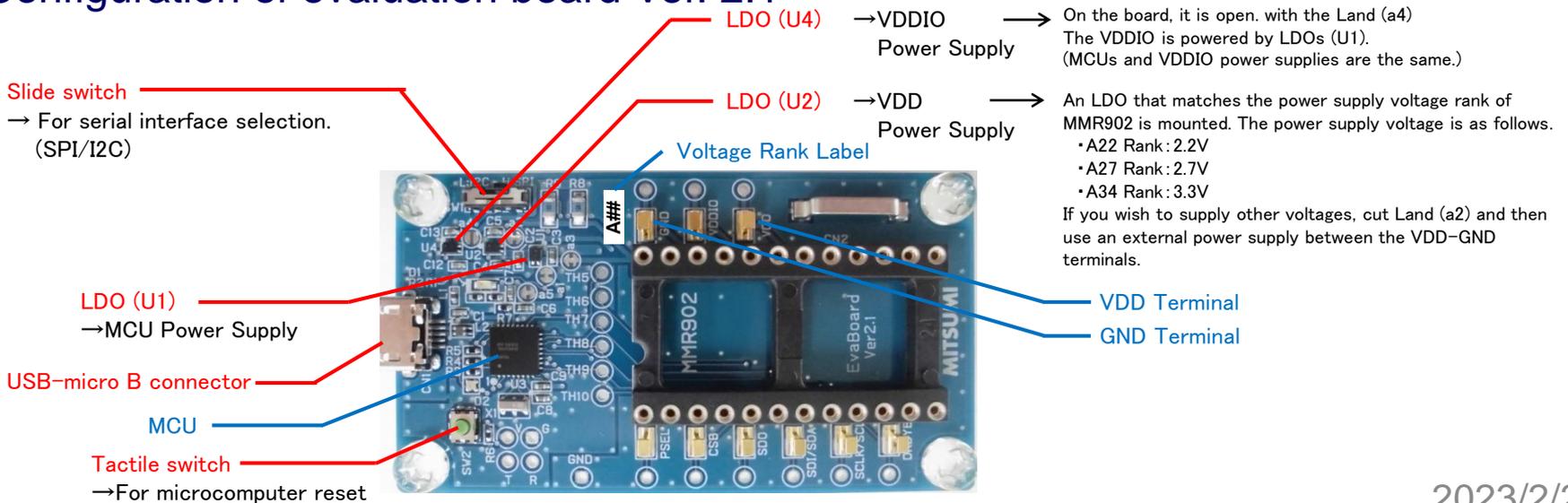
Rev.3.1

Evaluation kit consists

This evaluation kit consists of the MMR902 evaluation board Ver. 2.1, the MMR902 socket board (or MMR902 mount board), and the PC application software.



Configuration of evaluation board Ver. 2.1



Evaluation Application

When the “MMR902_EvaluationProgram_ver2.x.x.x.zip” file is unzipped, the file structure is as follows.

* Do not change the file structure.

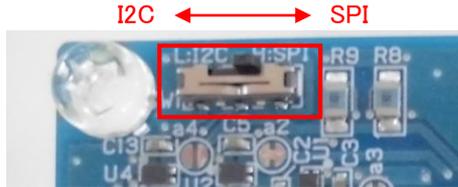
```
MMR902_EvaluationProgram_ver2.x.x.x
└─ MMR902_EvaluationProgram_ver2.x.x.x
    │   MMR902_EvaluationProgram.exe : Application
    │   NPlot.dll : Library for drawing graphs
    │   UserData : Data storage folder
    └─ cdc_inf : USB driver storage folder (Windows 10 does not require driver installation)
```

* “.NET Framework 3.5” is required.

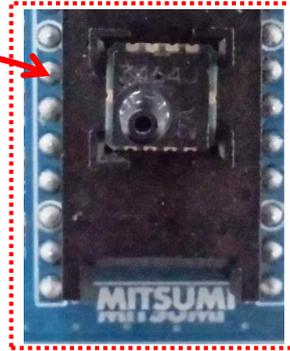
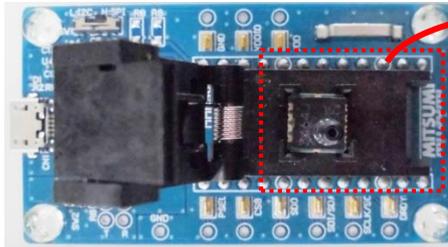
If it is not installed, download the file from Microsoft website and install it.

Evaluation procedure

1. Select "SPI" or "I2C" as the communication protocol with slide switch SW1 on the evaluation board.

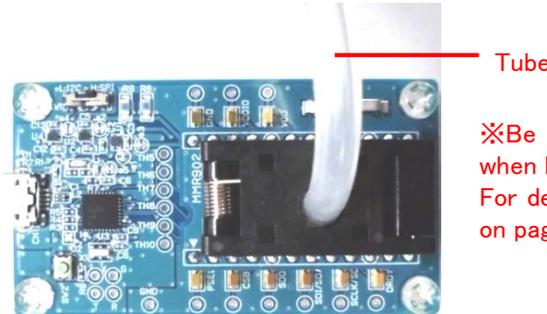
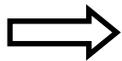
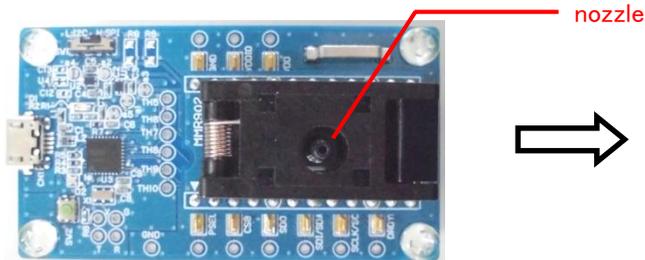


2. When using the socket board, insert the MMR902 into the socket. Pay attention to the orientation of the device.



When the "MITSUMI" logo printed under evaluation board is viewed in front, the MMR902 nozzles are positioned at the lower left.

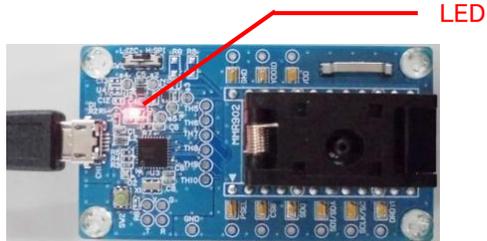
3. Close the lid of the socket. The MMR902 nozzle can be seen through the holes in the lids of the socket, Connect a tube to apply air pressure.



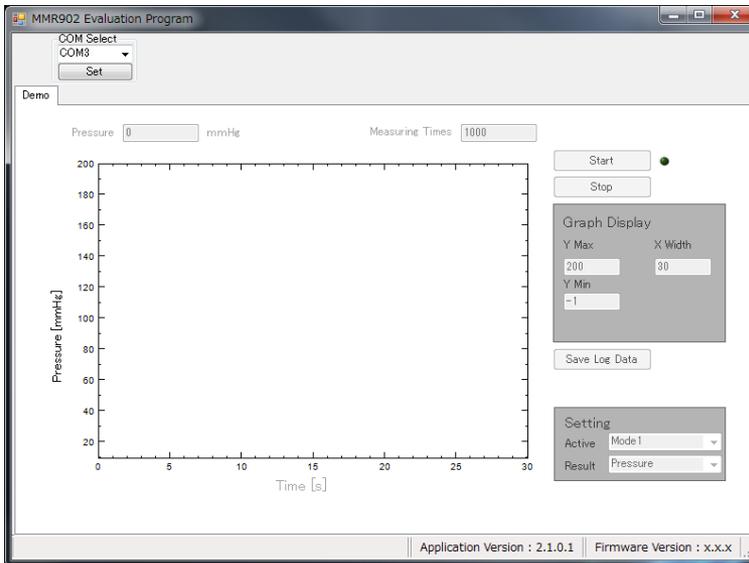
※Be careful not to generate static electricity when handling the tube.
For details, refer to "Notes on Tube Handling" on page 12.

Evaluation procedure

4. Connect the evaluation board to the PCs with USB micro B cables.
LED turns on.



5. Start the evaluation application MMR902_EvaluationProgram.exe.
The following window opens.



Evaluation procedure

- Select the COM port number of evaluation board from the dropdown.
 Click the "set" button to establish communication.

- Select the Active Mode from the dropdown.

- Specify the number of data to be measured in the Measuring Times boxes.
 (This is specified 1000 times when the evaluation application is started.)

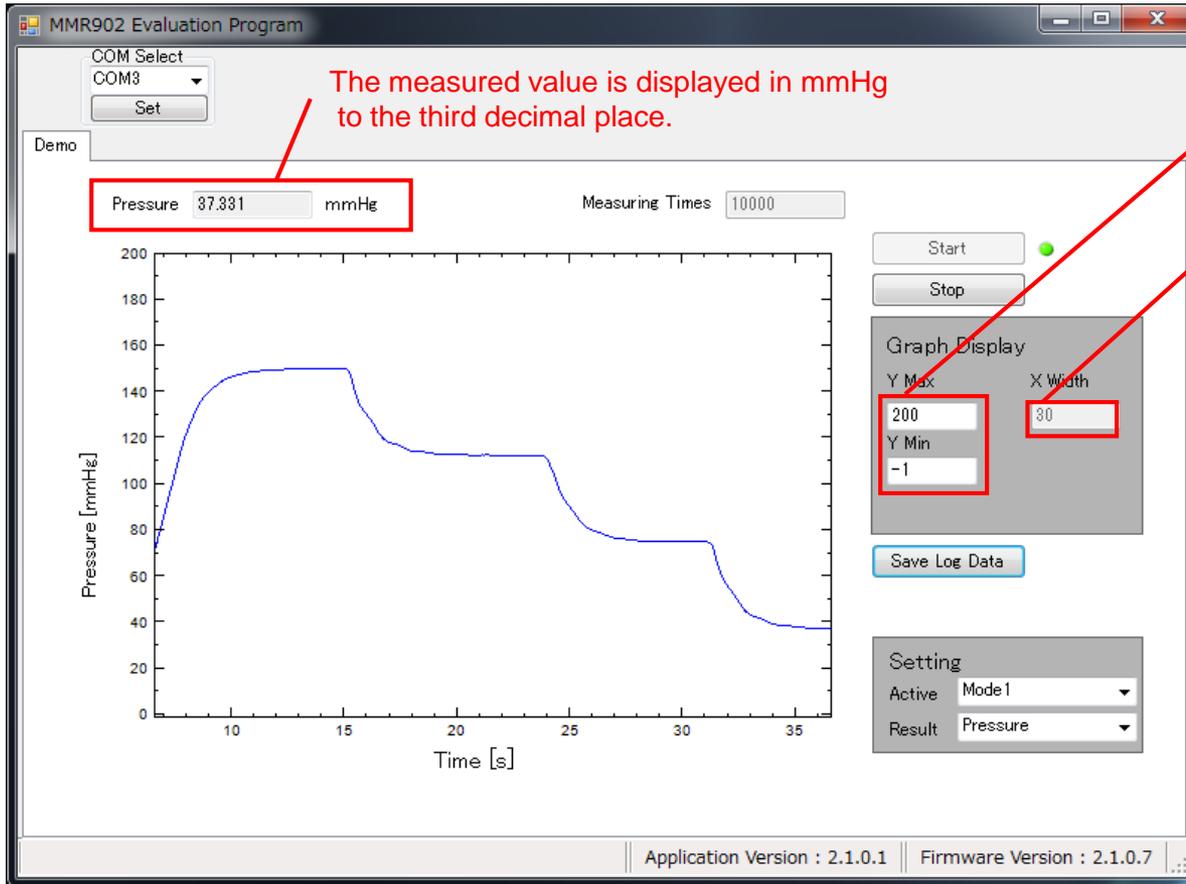
- Start measurement.
 Click Start.

It will end when the specified number of measurements is reached or when the stop button is clicked.

The specifications of each active mode of MMR902 are as follows.

	Data output rate[msec]
Mode1	15.625
Mode2	7.81
Mode3	3.91
Mode4 High Resolution Mode	250

Pressure measurement



The measured value is displayed in mmHg to the third decimal place.

Y-axis width adjustment

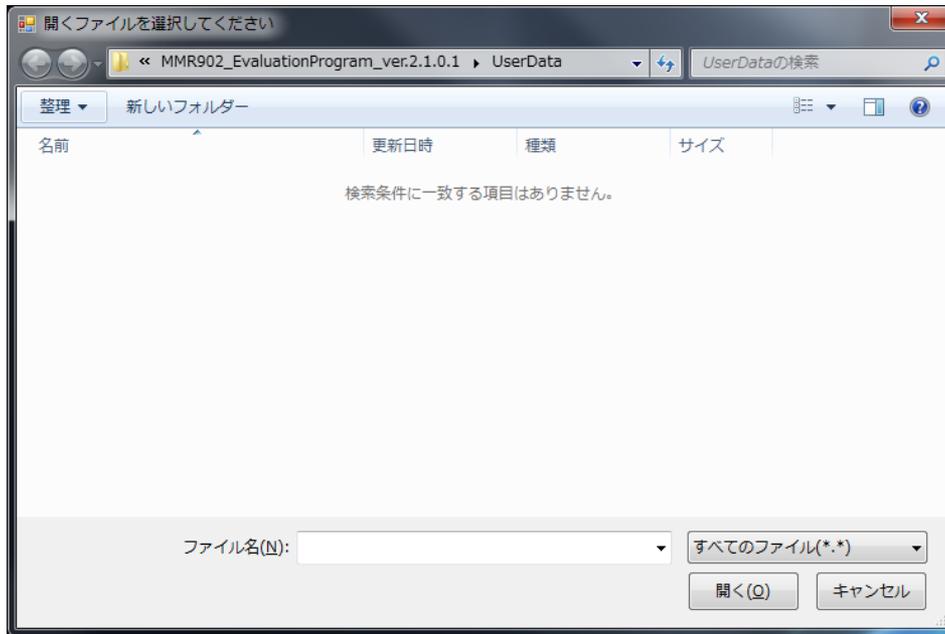
X-axis width adjustment
(Adjustable only when measurement stops)

Saving measurement data

Click save button to save the measured data.

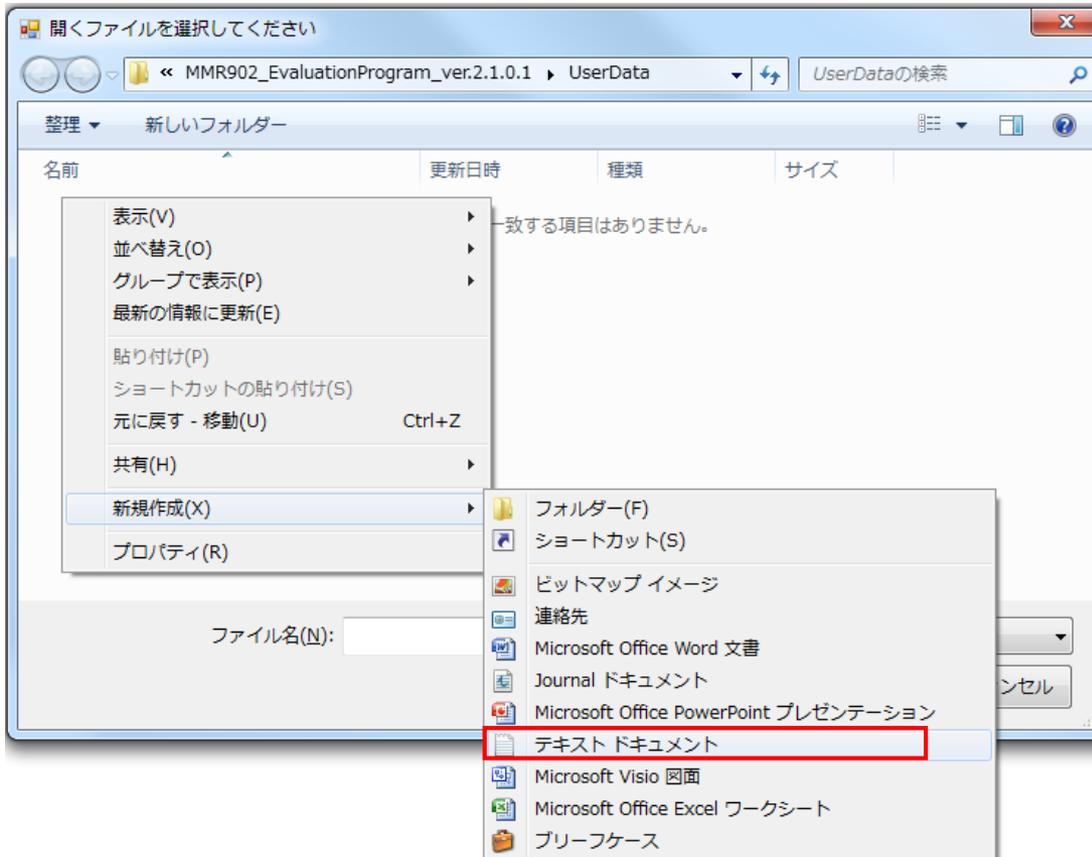
Save Log Data

The window shown below is displayed.



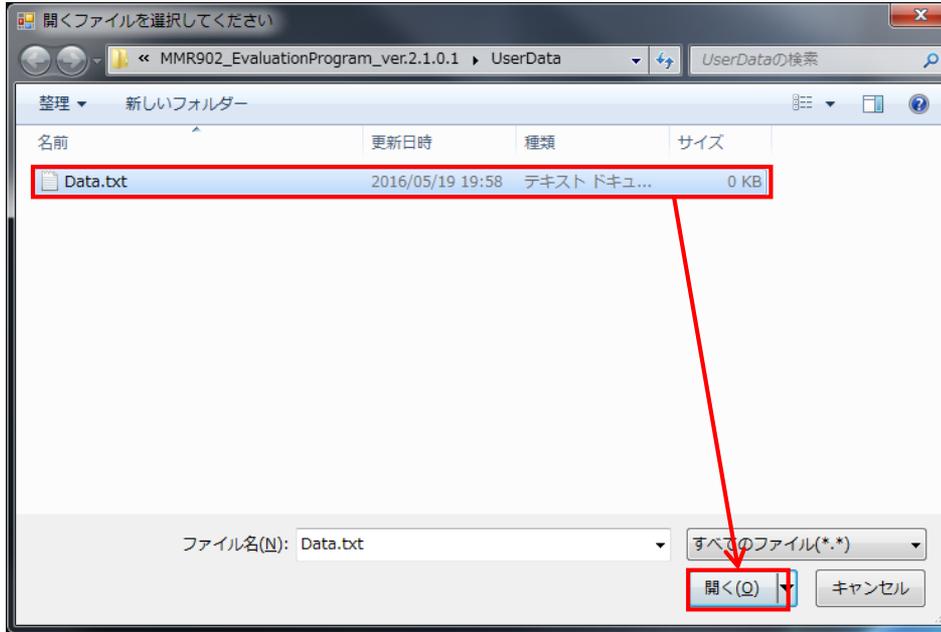
Saving measurement data

Create a new text document to save the measurement data.



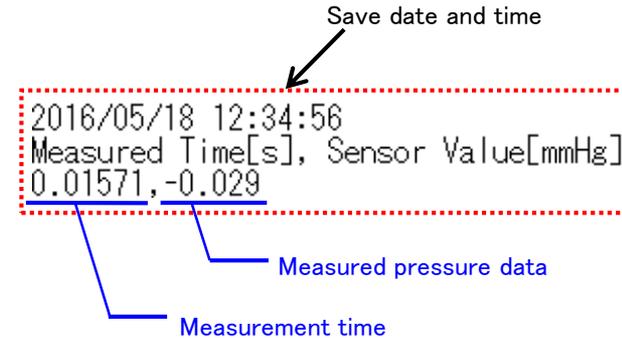
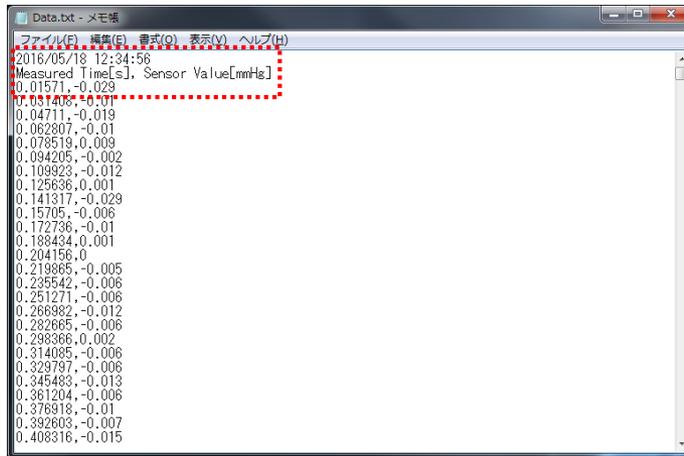
Saving measurement data

Select the created text document and click the “Open” button to complete the save.



Notes on measurement data

The file specified as the measurement data save destination is overwritten with new data. Please be careful.
The saved file is output with the following contents.



Precautions for handling tubes

Static electricity is generated by friction with the hand or nozzle when handling the tube for applying air pressure. If the tube is made of silicone, static electricity is likely to be generated. Handle the tube carefully. The static electricity generated is stored in the tube itself. The static electricity may affect the sensor characteristics.

Recommended action

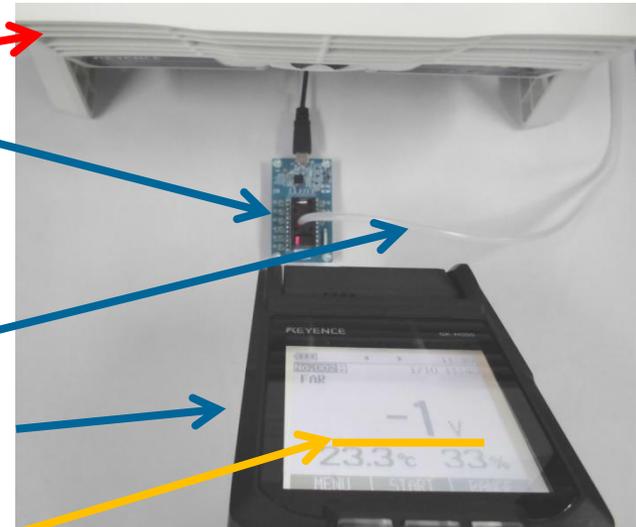
Use the ionizer to discharge static electricity generated during handling of the tube.

Example of Measurement Result of Charge Amount of Static Electricity during Tube Handling

When the ionizer is **not used**: **-3.92kV**



When the ionizer is **used**: **-1V**



Ionizer
Device
Tube
(Material: Silicon)
Static electricity
measuring instrument
Charge Measurement
Results

2023/2/2