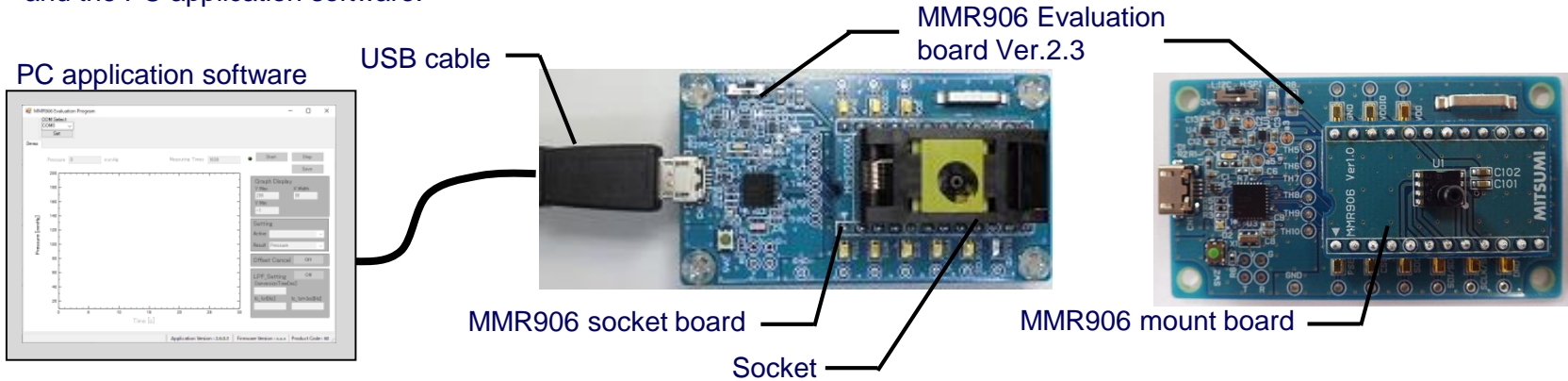


# *Digital Output Gage Pressure Sensor* **MMR906 Evaluation Kit Manual**

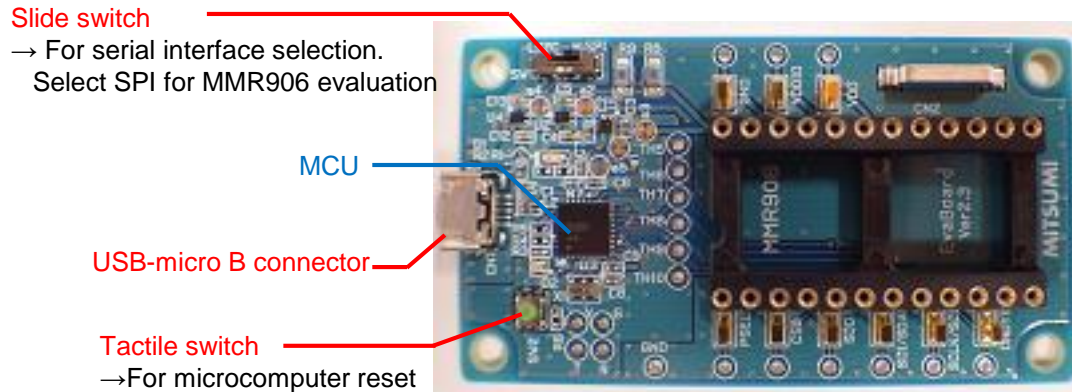
Rev.3.1

## Evaluation kit consists

This evaluation kit consists of the MMR906 evaluation board Ver. 2.3, the MMR906 socket board (or MMR906 mount board), and the PC application software.



## Configuration of evaluation board Ver. 2.3



## Evaluation Application

When the “MMR906\_EvaluationProgram\_Ver2.x.x.x\_ProductCode60.zip” file is unzipped, the file structure is as follows.

\* Do not change the file structure.

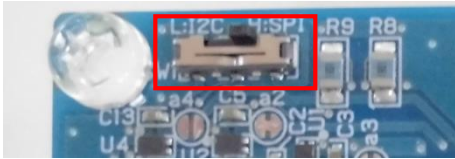
```
MMR906_EvaluationProgram_Ver2.x.x.x_ProductCode60
└─ MMR906_EvaluationProgram_Ver2.x.x.x_ProductCode60
    └─ MMR906_EvaluationProgram_Ver2.x.x.x
        ├── MMR920_EvaluationProgram.exe : : Application
        ├── NPlot.dll : Library for drawing graphs
        └─ cdc_inf : : USB driver storage folder (not used in Windows 10).
```

\* “.NET Framework 3.5” is required.

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

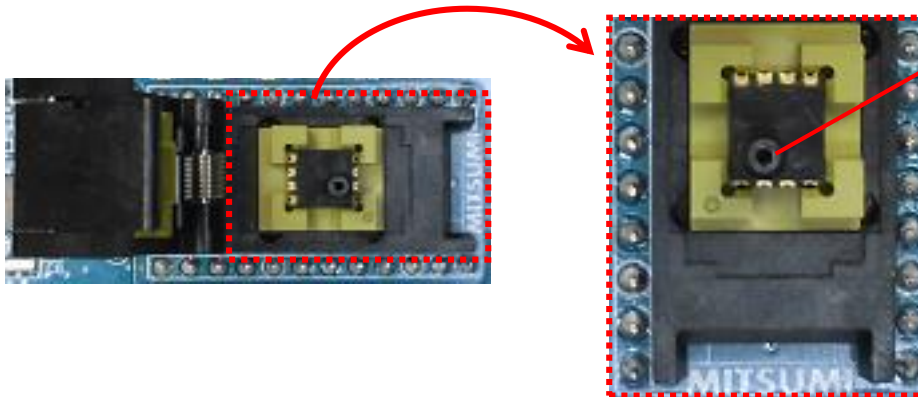
## Evaluation procedure

1. Select the communication protocol "SPI" in the slide-switch SW1 of the evaluation board.



2. When using the socket board, insert the MMR906 into the socket.  
Pay attention to the orientation of the device.

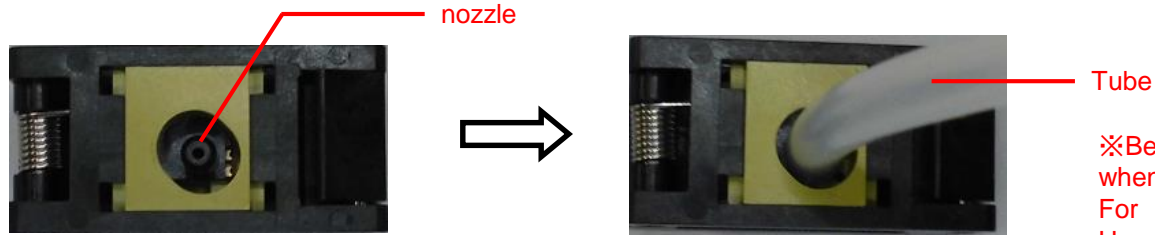
When the "MITSUMI" logo printed under evaluation board is viewed in front, the MMR906 nozzles are positioned at the lower left.



## Evaluation procedure

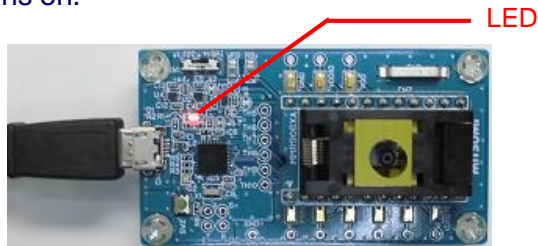
3. Close the lid of the socket.

The MMR906 nozzle can be seen through the holes in the lids of the socket,  
Connect a tube to apply air pressure.



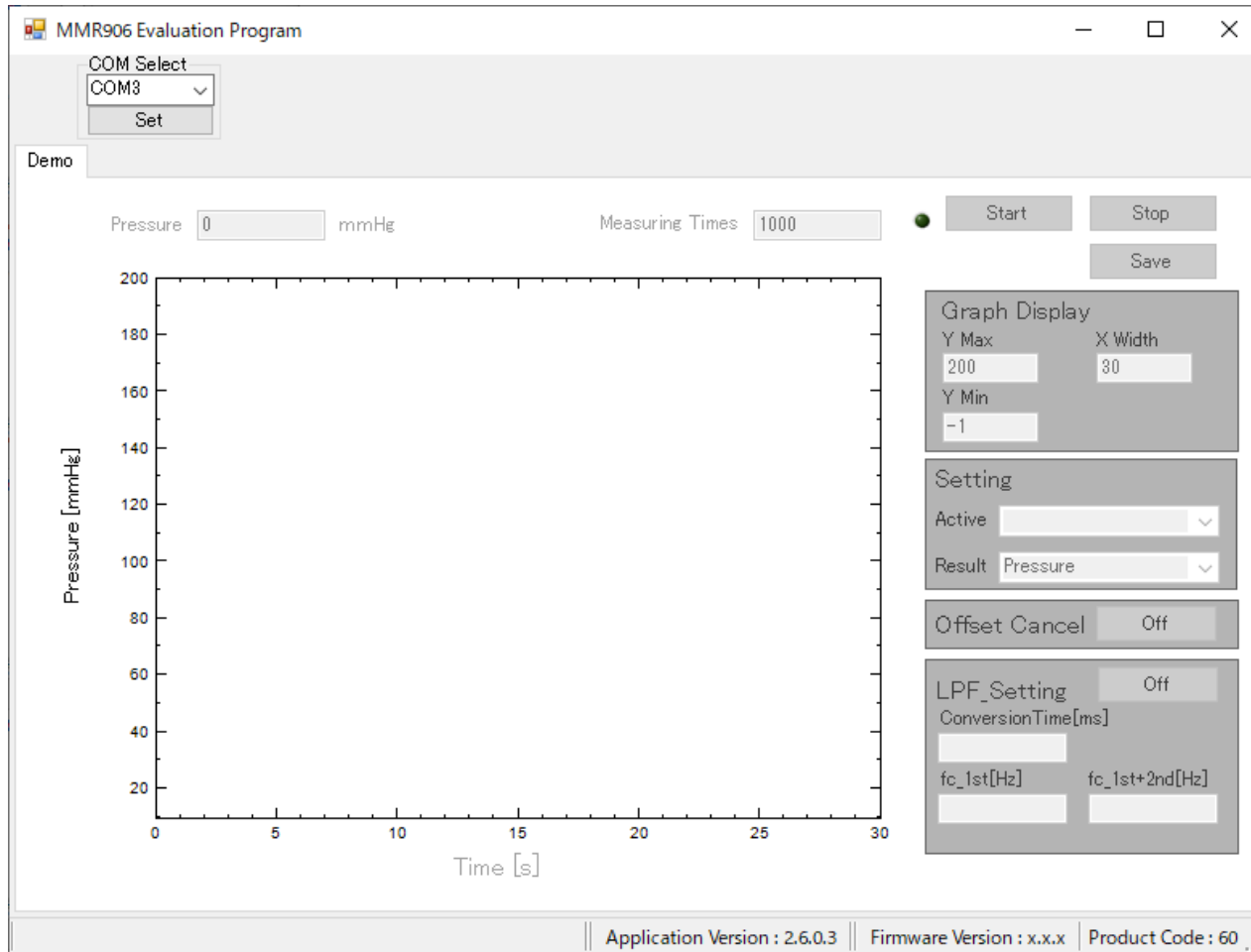
※Be careful not to generate static electricity  
when handling the tube.  
For details, refer to "Notes on Tube  
Handling" on page 13.

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



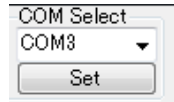
## Evaluation procedure

5. Start the evaluation application MMR 906\_EvaluationProgram.exe.  
The following window opens.



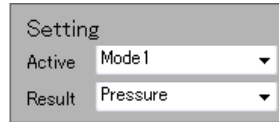
## Evaluation procedure

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



COM Select  
COM3  
Set

7. Select the Active Mode from the dropdown.
8. Select the object to be measured (Pressure or Temperature) from the Result drop-down shown below.



Setting  
Active Mode1  
Result Pressure

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

Measuring Times

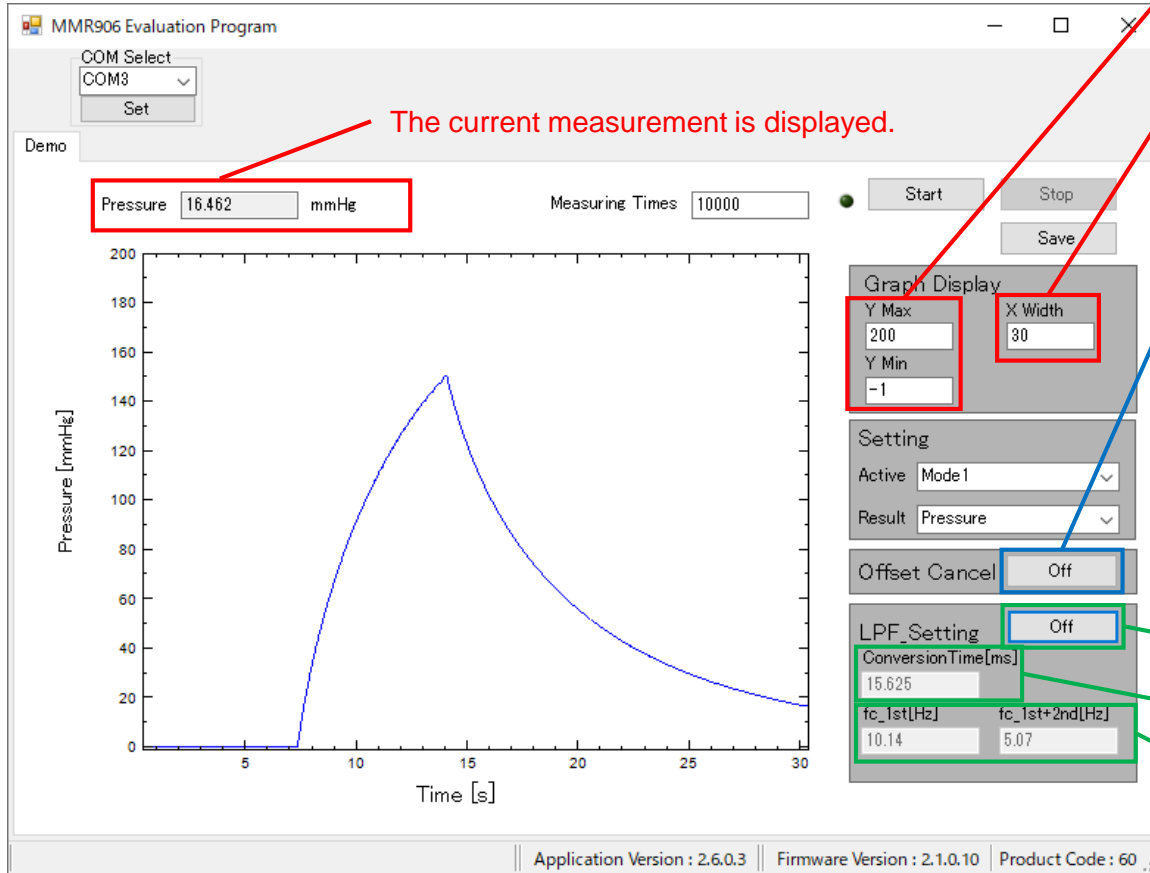
10. Start measurement.  
Click Start.

Start

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

Stop

# Measurement screen



Y-axis width adjustment

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

- **Offset Cancel is only applicable for pressure measurement.**

Offset Cancel ON/OFF button

The sensor output when clicking from OFF to ON is canceled as the offset. When turning the switch from off to on, make sure that 0mmHg is applied.

On: Enable offset cancel. The pressure value obtained by pressing the Start button is the pressure value after offset cancellation is applied.

Off: Disable offset cancel.

- **The filter is only applicable for pressure measurement.**

Filters ON/OFF buttons

Order : OFF→1st→1st+2nd

Typ conversion time

Filter cut-off frequency  
 (At Typ conversion time)

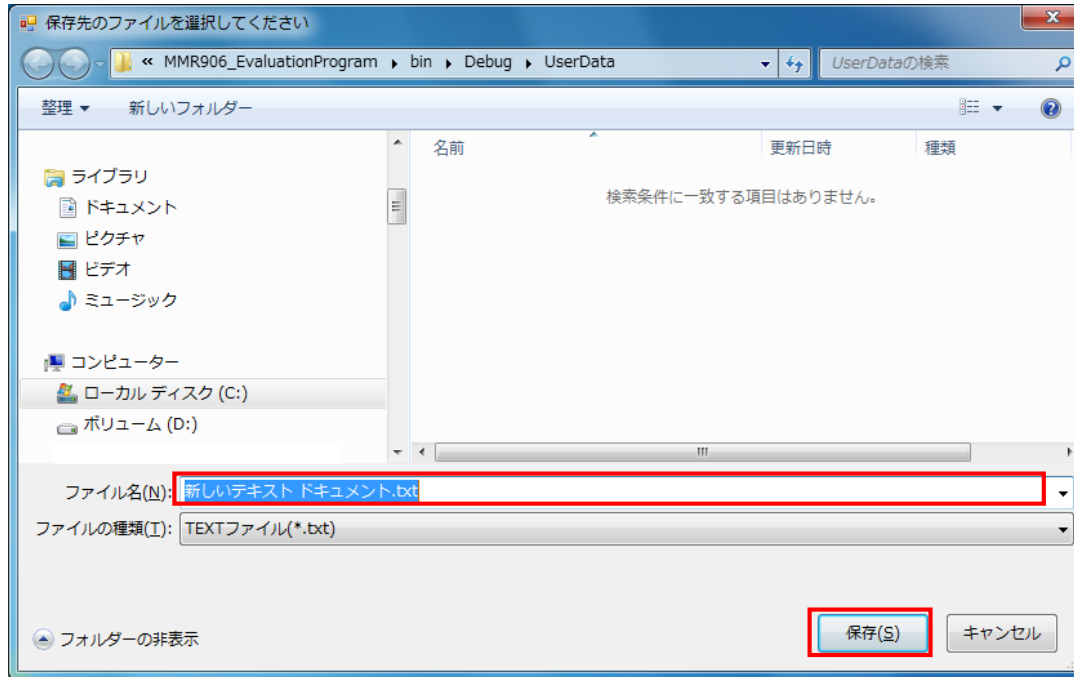


## Saving measurement data

Click save button to save the measured data.

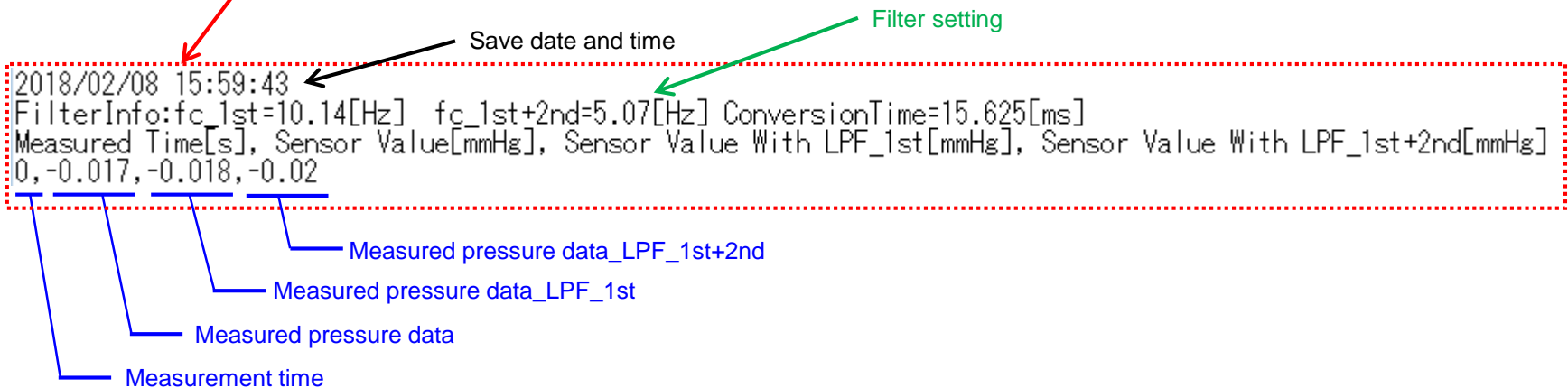
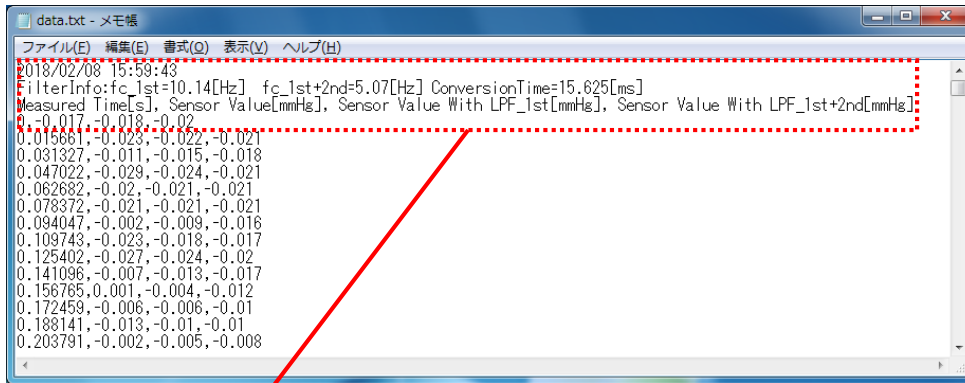


The window shown below is displayed.  
Enter the file name and press the Save button.  
If you specify an existing file name, it is overwritten and saved.  
Please be careful.



## Save file (At the time of pressure measurement)

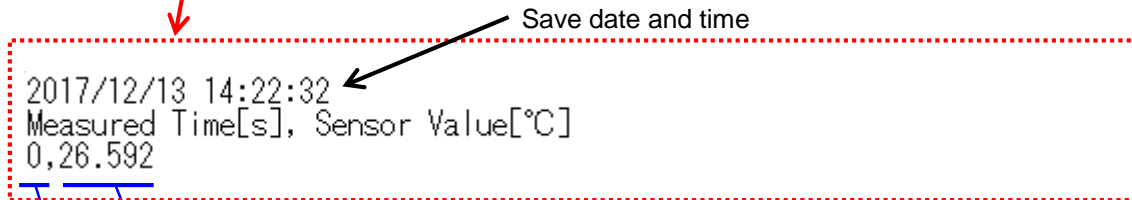
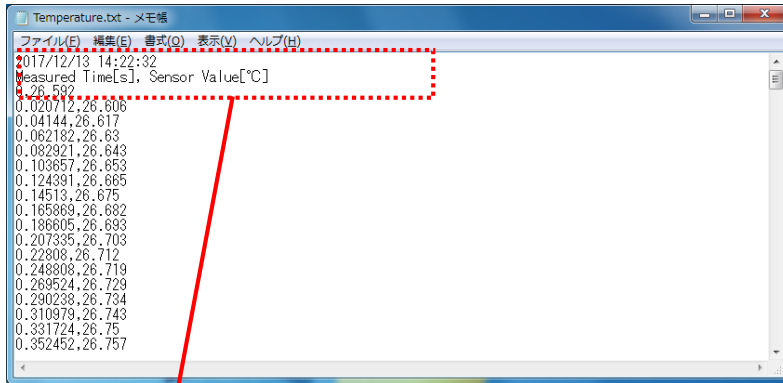
The saved file at the time of pressure measurement is output in the following rule.



\* Each measurement data is separated by a comma.

## Save file (At the time of temperature measurement)

The saved file at the time of temperature measurement is output in the following rule.

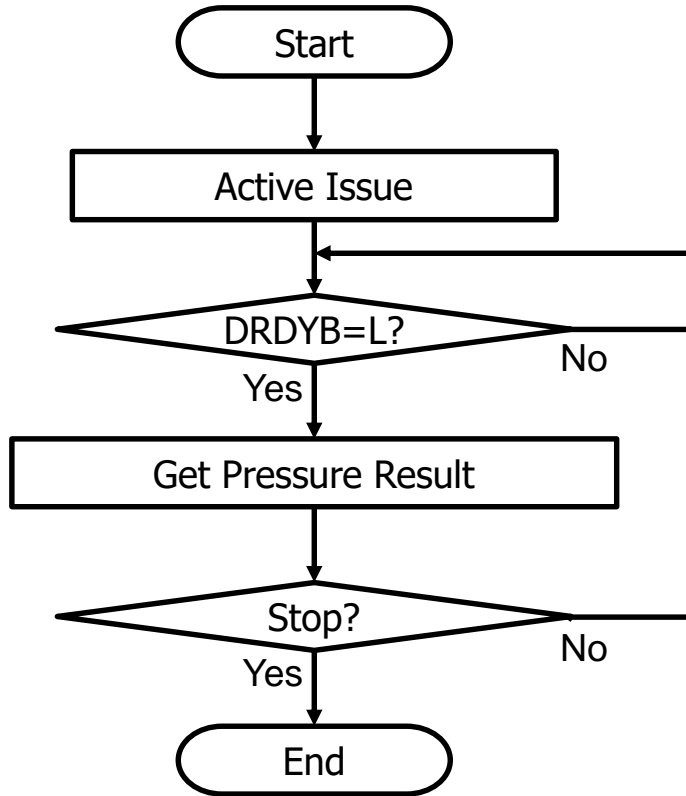


Measured temperature data  
Measurement time

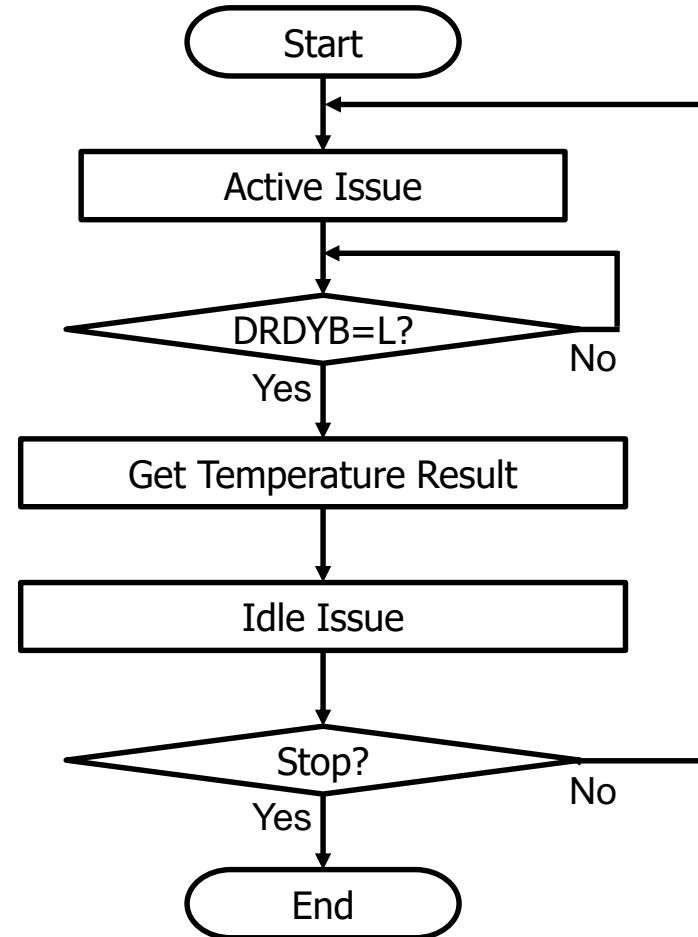
\* Each measurement data is separated by a comma.

## Operation flow

At the time of pressure measurement



At the time of temperature measurement



## 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

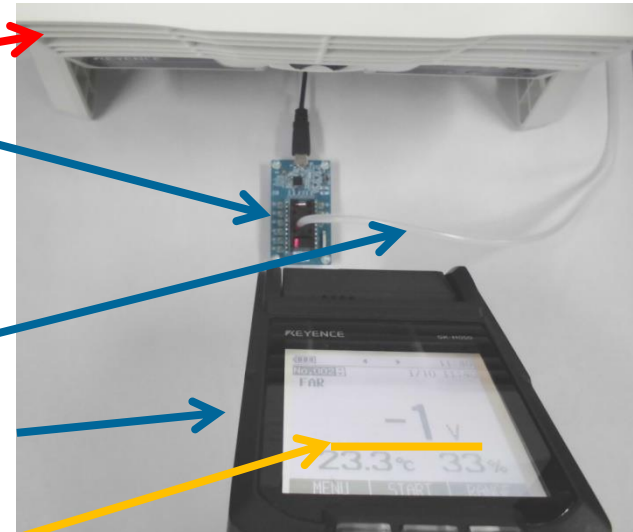
Use the ionizer to discharge static electricity generated during handling of the tube.

### 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