How to install and measure (1)

**CONSTRUCTION.**
- **Mainbody** (including Constant current source, vander pauw law system)
- **Magnet set** (including Low temp measurement system)
- **Software program.**
- **Accessories** (including sample board, copper wire, InSn compound soldering, wax paper, standard sample, cables and etc)

* POWER ON.
- Pls power on.
- Photo shown on left is back panel of mainbody.

*POWER CORD*
How to install and measure (2)

POWER CORD CABLE
- Pls plug in the power cord cable.

USB CABLE
- Pls plug in USB cable.
  But, if you want to use RS232, you do not need to plug in USB.
  Either of them is o.k.
How to install and measure (3)

<table>
<thead>
<tr>
<th>RS232 CABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pls plug in RS232 cable. But, if you want to use USB cable, you do not need to plug in RS232. Either of them is o.k.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SELECT S/W</th>
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<tbody>
<tr>
<td>Select switch, as per cable connection of RS232 or USB.</td>
</tr>
</tbody>
</table>
How to install and measure (4)

MEASUREMENT CABLE.

Plug in measurement cable.

Connect measurement cable into the lid of sample holder as shown.
# How to install and measure (5)

<table>
<thead>
<tr>
<th>Confirm connection success.</th>
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</thead>
<tbody>
<tr>
<td>Plug sample board into sample holder.</td>
</tr>
<tr>
<td>As shown left photo, please cover sample holder(lid) onto below kit. And , at this time, take care of sample not to be damaged. Winding teflon tape might be good way to protect sample from being damaged, in a process of taking sample into and out of cryostat.</td>
</tr>
</tbody>
</table>
How to install and measure (6)

Sample holder must be put on correctly as shown left. Confirm if “N” is matched between above and below.

It is the status of correctly being connected, on the back panel of main body system.

Main screen shot.
- Fill on “INPUT VALUE” part on this page.
- And, click “MEASUREMENT” button. It will right go ahead.
How to install and measure (7)

You will meet “Insert magnet N > S” message.

Insert magnet , as shown in left.
And, at this moment, you have to check if magnet is correctly standing.
After inserting magnet, And then, click “enter” button on PC keyboard.

And, then you meet “Insert magnet S > N” message.
How to install and measure (8)

Insert magnet from the other side to “N” shown left. And, then click “enter” button on your PC keyboard.

Measurement was successfully finished. Click “o.k.” button.

Click “Go To I/V curve” so that you can confirm ohmic contact, or see “IV, IR” curve.

First of all, fill on “INITIAL”, “FINAL” and “STEP”.

“INITIAL”, “FINAL” is range of applying input current. And “STEP” means stage, ranging from “INITIAL” to “FINAL”.
Help and contact info.

1. IF IT SHOWS “ CONNECTION FAIL ”, PLEASE CHECK BELOW.

- Please check if “COMPORT” set up is correct.
- If you are using RS232 cable, “COM PORT” should be COM1, or COM2.
- And, if you are using “USB CABLE”, “COM PORT” should be set up to one of ranging from COM3 ~ COM8.
- Please check if you correctly selected RS232 or USB on the back panel of mainbody.
- Pls check if RS232 CABLE or USB CALBE is correctly connected.
- When USB cable is used, you have to check if USB DRIVER was installed successfully.

2. IF IT SHOWS “ CONTACT FAIL ”, PLEASE CHECK BELOW.

- Pls check if “sample board” is correctly connected into sample holder.
- Pls check if connection is successful, between probing tip (or copper wire) and soldering on sample board.
- Applying “INPUT CURRENT” should be available for measuring. Please change applying input current, ranging from 1nA to 20mA.
- It might be come from bad “OHMIC CONTACT”. Pls try to use sort of other “electrical conductivity soldering”, such as silver paste, silver epoxy, carbon paste and etc. in order to improve “OHMIC CONTACT”. Or, please check if the sample was annealed correctly.
- Very high sheet resistance sample is not available for measuring. Please try to measure sheet resistance of sample with DVM or somethings, and check whether it is in product specs or not.
- If the ratio of vertical and horizontal, on sheet resistance of sample, is much big, it might make it difficult to bring good test results.
- The sample should be doped with uniformity.
- It is better that sample cutting close to regular square.
- It is better that the soldering on 4point close to 4point edge.

* If you have questions, pls do not hesitate to contact us as below.

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