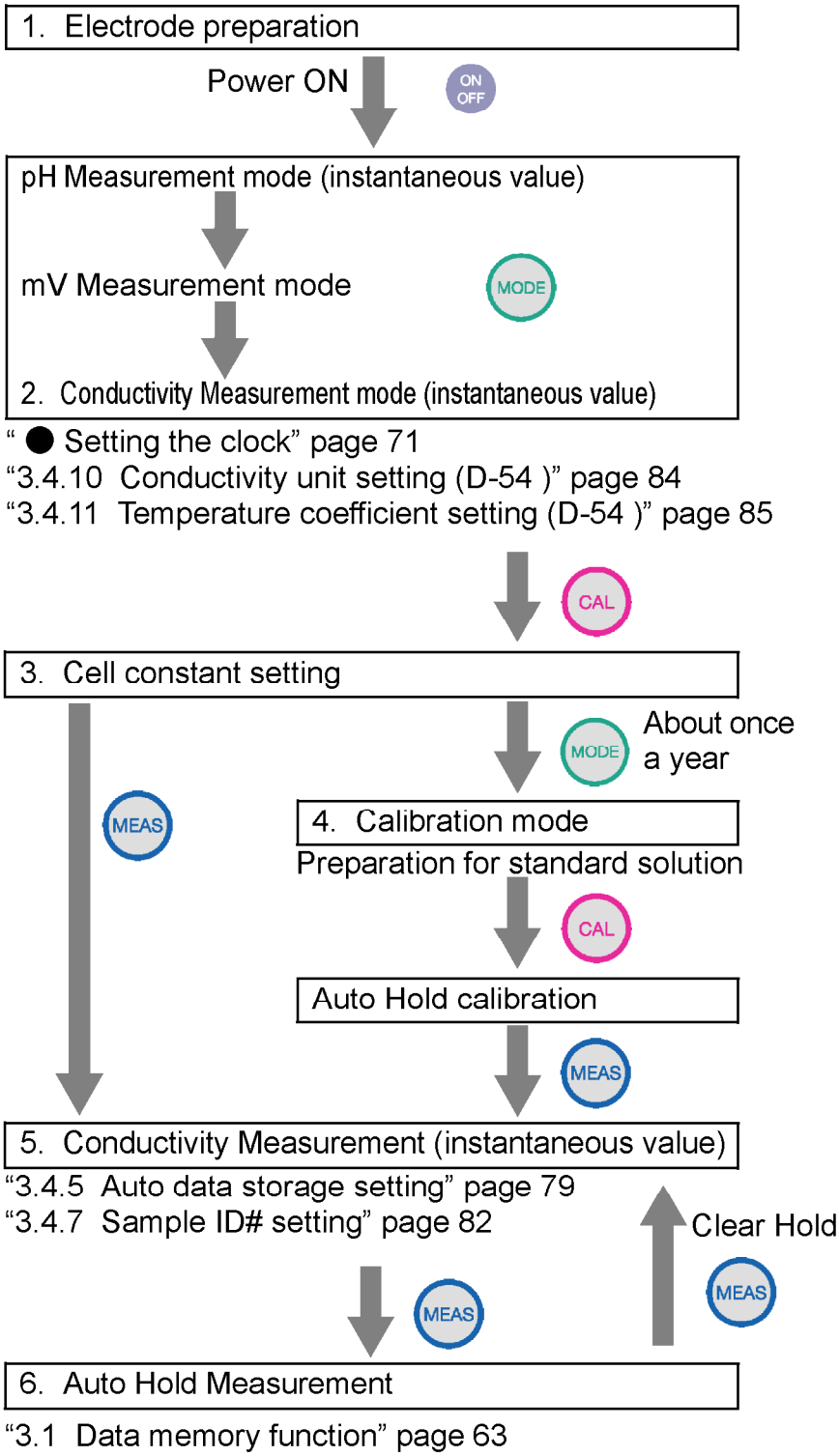
2.8 Conductivity measurement (D-54)

The following shows the operational flow for conductivity measurement.

● Measuring conductivity: basic operational flow



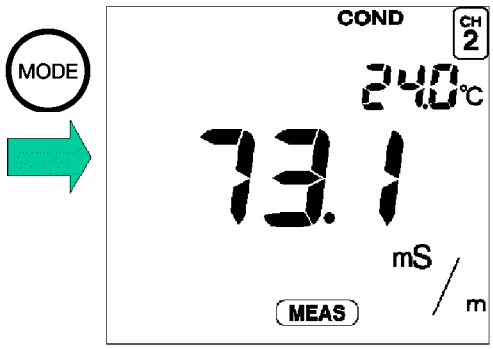
● Electrode preparation

Refer to the electrode instruction manual and make sure you have the correct electrode.

● Entering the Conductivity Measurement mode

1. Remove the electrode protective cap from the electrode.
2. Immerse the electrode in pure (de-ionized) water.
3. Select the Conductivity Measurement mode when the pH Instantaneous Value Measurement screen is displayed by pressing the MODE key.

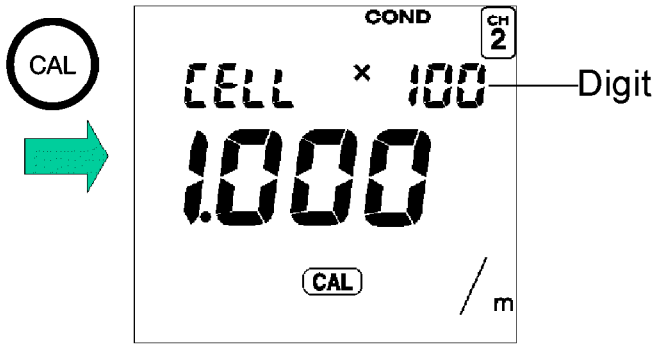
   The Conductivity Instantaneous Value Measurement screen will appear.



● CELL SET mode (Setting cell constant)

Set the cell constant the first time an electrode is connected to the main unit of the meter.

1. To enter the CELL SET mode, press the CAL key while in the Measurement mode.



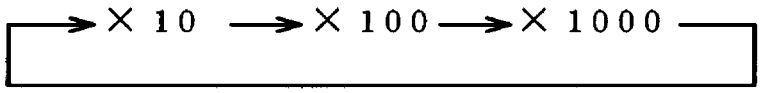
2. Change the digit number using the ENTER key.

3. Press the ▲ and ▼ keys to set the cell constant written on the electrode label.

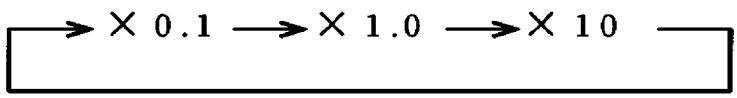
Setting range: 0.700 – 1.300

To change the coefficient, use the following procedure.

When the SI unit system (m^{-1}) is set:



When the former unit system (cm^{-1}) is set:



Note

Temperature coefficient

The default value of the temperature coefficient is set at 2.00%/ºC.

To change this setting, refer to “3.4.11 Temperature coefficient setting (D-54)” page 85.

Unit Setting

The default value of unit is S/m (SI unit system).

To change this setting to the former unit system S/cm, refer to “3.4.10 Conductivity unit setting (D-54)” page 84.

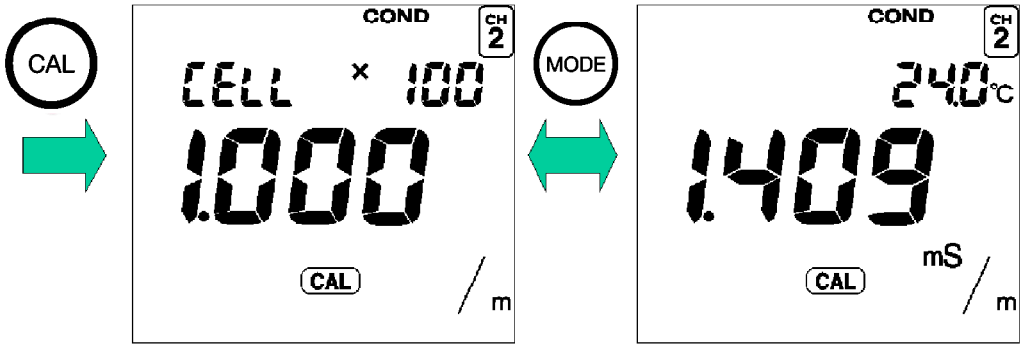
● Calibrating the cell constant

The cell constant of the electrode changes as the electrode is used. Calibrate the cell constant once a year or so.
Calibrating the cell constant will update it to match the condition of the current electrode.

Note

The cell constant is calibrated with a standard solution of potassium chloride.
To prepare a standard solution of potassium chloride, refer to “ ● Preparing potassium chloride standard solution” page 187.

1. Immerse the electrode in the standard solution of potassium chloride.
2. Enter the Calibration mode by pressing the MODE key in the CELL SET mode.



3. Enter the value of the standard solution used for calibration in the Calibration mode using the ▲ and ▼ keys.

Ref.

“ ● Conductivity and temperature coefficients for various solutions” page 192

Note

When the temperature conversion has been set to ON when setting the temperature coefficient, calibration is performed with the converted temperature.

4. Start the calibration by pressing the CAL key.

   HOLD is displayed and the calibration is completed.

   To redo the calibration, press the CAL key once more.

5. Press the MEAS key to enter the Measurement mode.

Note

If any calibration error occurs, take it as a indication that the electrode has gone bad. Replace the old electrode with a new one.

● Measuring conductivity

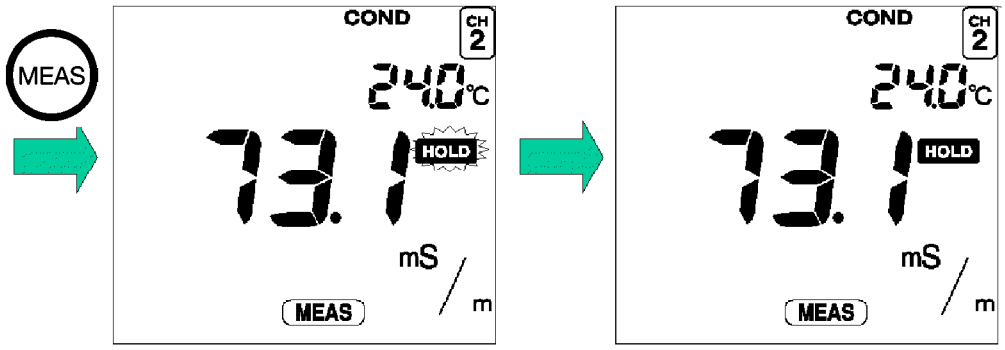
1. Immerse the electrode in the sample.

Note

Conductivity is greatly affected by temperature.
To measure with increased accuracy, use a temperature bath to keep the solutions at a constant temperature.

2. Press the MEAS key with the initial screeen displayed.

The measured value will be displayed, and "HOLD" will blink until the reading stabilizes. When the measured value stabilizes, "HOLD" will stop blinking and the measured value will remain displayed, and measurement will be completed.



Ref.

Refer to the " Criteria for judging stability" page 22 for the criteria for judging the stability of a readout.

Note

When the meter is in the Instantaneous Value Measurement mode or the measurement value is on HOLD in the Auto Hold Measurement mode, you can store the measurement data by pressing the ▲ key. "3.1 Data memory function" page 63.