



CONDUCTIVITY METER

BMET-306

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1. Introduction

1.1 Introduction

BMET-306 Conductivity Meter can measure conductivity, TDS, resistivity and salinity in water solution, and can be widely used in universities, environmental protection, medicine, food, sanitation, geological prospecting, metallurgy, ocean exploration.

- General Features
- LCD display screen, 3.5 inches.
- Multi-reading feature allows auto-read, timed-read and continuous-read.
- Automatic/Manual temperature compensation ensures accurate results.
- Auto-hold feature senses and locks the measurement endpoint.
- Data capacity of up to 500 sets for each parameters (GLP-compliant).
- Support for USB communication.
- Auto-power off feature effectively extends the battery service life.
- Reset feature automatically resumes all settings back to factory default options.
- IP65 waterproof. The meter is fit to fields measurements and outdoor measurements.
- 1-3 points calibration automatically recognizes the standard solutions, including 12.88mS/cm, 1413 μ S/cm and 84 μ S/cm.
- Settable parameters, including cell constant, temperature compensation coefficient, and TDS factor.
- Temperature compensation type (none, linear, pure water).

1.2 Technical Specification

Instrument Specifications

Model		BMET-306
Conductivity	Range	0.000 μ S/cm~500mS/cm
	Resolution	0.001 μ S/cm, automatic switching according to the range
	Accuracy	\pm 1.0%(FS)
	Repeatability	0.33%(FS)
	Measurement Accuracy	\pm 1.50%(FS)
	Measurement Repeatability	0.50%(FS)
Resistivity	Range	5.00 Ω ·cm~20.00M Ω ·cm
	Resolution	0.01 Ω ·cm, automatic switching according to the range
	Accuracy	\pm 1.0%(FS)
TDS	Range	0.00 ppm~300 ppt
	Resolution	0.01 ppm, automatic switching according to the range
	Accuracy	\pm 1.0%(FS)

Salinity	Range	(0.00~8.00)%
	Resolution	0.01%
	Accuracy	±0.2%
	Measurement Accuracy	±0.4%
Temperature	Range	(-5.0~110.0)°C, (23.0 ~ 230) °F
	Resolution	0.1 °C
	Accuracy	±0.2°C
Temperature	Instrument indication error	±0.4°C (0°C~60°C), ± 1.0 °C (Else).
Work environment		Ambient temperature: (0~40) °C Relative humidity: not more than 85%
Dimensions (LxBxH), weight (kg).		80mm x225mmx35mm, 0.4kg
Power supply		Rechargeable lithium battery, power adapter (Input AC 100~240V, Output DC 5V)

Table 1

1.3 Function Introduction

Functions Specification

Features		Explanation
Basic Function	Backlight adjustment	•
	Automatic diagnostics	•
	Factory reset	•
	Default parameter	•
	Prompt sound	•
	Time settings	•
	Power failure protection	•
	Firmware upgrade	•
	Anti-interference automatic recovery	•
	Automatic shutdown	•
	Protection	IP65
Reading Function	Reading balance settings	•
	Auto-lock reading	•
	Reading Mode	•
	Sample ID	•

Data Management	Storage	500 sets of measurement parameters each
	View	•
	Delete	•
	GLP	•
Communications and external devices	Printer connection	•
	Content and format customization	•
	Connect to a PC for instrument control	•
Conductivity Measurement t	Conductivity	•
	Resistivity	•
	TDS	•
	Salinity	•
	Reference temperature	20.0°C, 25.0°C
	Multi-point calibration	3 points
	Automatic standard solutions recognition	12.88mS/cm, 1413µS/cm and 84µS/cm
	Cell constant set	•
	Temperature compensation coefficient set	•
	Compensation mode	Non-compensatory, linear, pure water
Temperature compensation	Automatic/Manual	
Temperature Measurement	Temperature units	°C, °F

Table 2

2. Safety Notices

Please read the entire contents of this manual carefully before use, and please keep this manual properly. The user MUST use the instrument following this manual to avoid damage to the user and equipment.

Before using the meter, READ the following notes:

- DO NOT disassemble the device for inspection or repair.
- To prevent electric shock or damage to the device, do not place cables and connectors in any liquid, wet or corrosive environment.
- Please use the defaulted power adapter, Do not use it if the power cord is damaged (the wire is exposed or broken).
- Do not use in flammable and explosive environments.
- Do not use if the user finds any abnormalities such as damage or deformation of the device.

The following identifier will be used in this manual.

3. Terms Explanation

- Cell Constant: Also known as the conductivity cell constant. The ratio of the distance to the area of the electrode sheet, expressed in cm^{-1} . Usually, there are conductivity electrodes with several cell constants such as 0.01, 0.1, 1.0, 10, etc. The conductivity electrode with a cell constant of 1.0 is the most used one and has a wide measurement range.
- Temperature Coefficient: The change in conductivity caused by a 1°C change in temperature is usually expressed in $\%/^\circ\text{C}$, and the default is 0.02, which is $2.00\%/^\circ\text{C}$.
- TDS Conversion Factor: The conversion factor between conductivity and TDS, which defaults to 0.5.

4. Overview and Installation

4.1 Overview

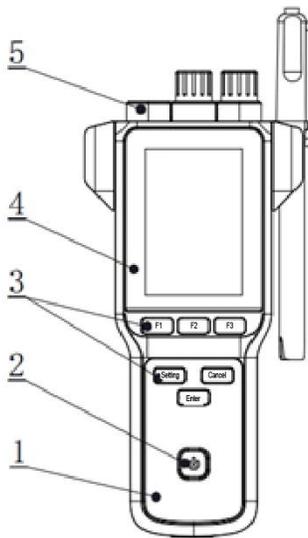


Figure 1
Overview-Front View
1 Meter Body
2 Power Key
3 Function Key
4 Display
5 Socket Cap

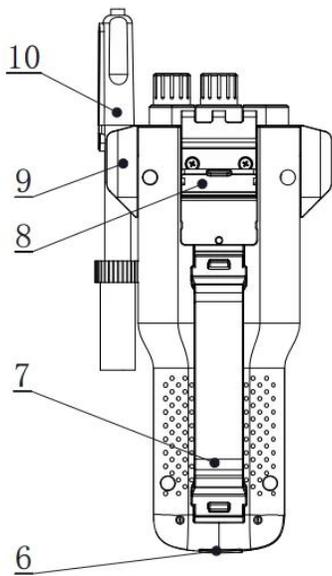


Figure 2
 Overview- Back View
 6 Power sockets
 7 Wristbands
 8 Flip Tilting Stand
 9 Electrode Holder
 10 Electrodes

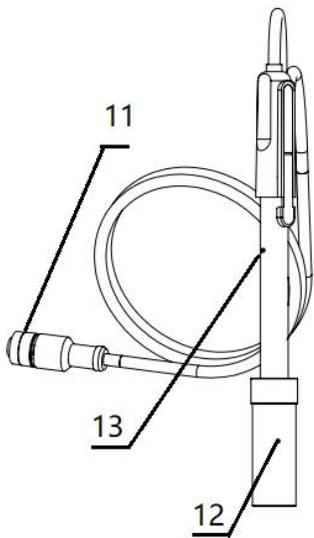


Figure 3
 Electrodes and connector
 11 5-pin aviation connectors
 12 Conductivity electrodes
 13 Conductivity electrode protection cap

Electrode type	Connector Specifications
Conductivity electrode	5-pin aviation

4.2 Instrument Installation

4.2.1 Wristband Installation



Figure 4
Wristband installation
Installation:

- 1) Pull the wristband switch at the head of the wrist so that its closed round hole opens.
- 2) Snap the opened round hole card slot into the shaft of the corresponding instrument housing and close the round hole.
- 3) The lower wristband card slot is also operated as above.

4.2.2 Electrodes Connection

Push the conductivity electrode into the electrode holder. Remove the protector cap of the conductivity electrode. Connect the conductivity electrode into the right socket. Combination conductivity probes integrated with ATC probe.

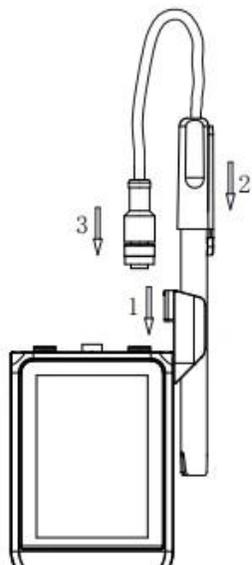


Figure 5

5. Instrument Operation

5.1 Switch On/Off

Press and release  to switch on the meter. The startup screen shows software version and other related information. After the self-test program, the screen turns to the homepage and the meter are ready to measure. If the meter does not turn on, charge the meter for 15 minutes. Otherwise, please contact the manufacturer for further assistance.

The meter equipped with 7 function keys. Users press and hold  the key for more than 3 seconds and release to shut down.

5.2 Screen Icons

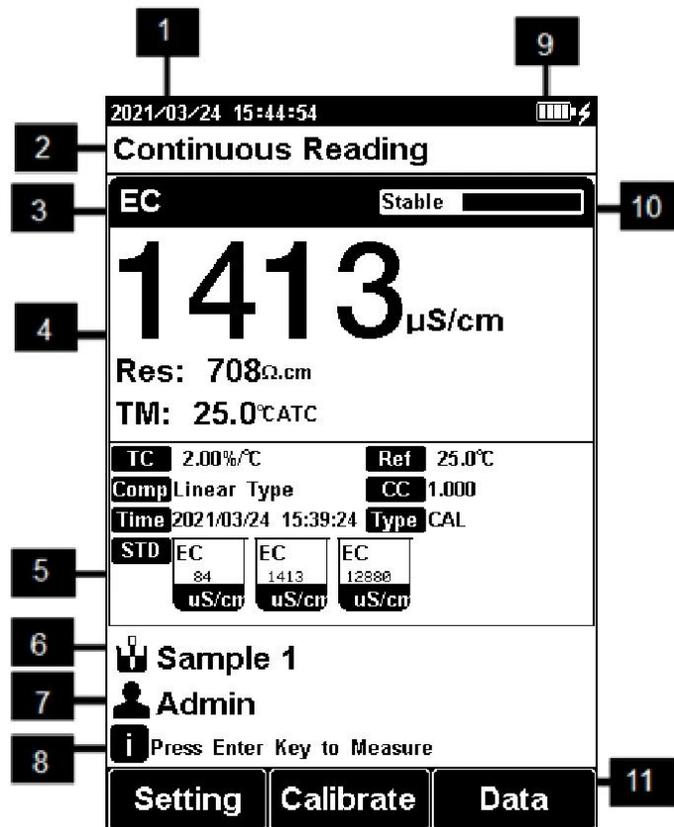


Figure 6

Screen icons explanation

1 System time. 2 Reading mode. 3 Measurement parameters. 4 Main measurement box. 5 Calibration information. 6 Sample ID. 7 User ID. 8 Operation tips. 9 Power information. 10 Reading states. 11 Soft

function keys.

The instrument displays symbol identification that has the following functional implications:

Symbol explanation

No.	Symbol	Explanation
1		Reading status, display the measurement status of reading, stable, locked each indicates that the processing, stable, and reading completed.
2	ATC	Automatic temperature compensation
3	MTC	Manual temperature compensation
4	STD	Standard solution
5		Standard solution for conductivity calibration
6	CC Ref	Cell constant
7	Ref	The reference temperature in EC measuring
8	TC	Temperature coefficient
9	Comp	EC compensation mode
10	Type	Type of cell constant calibration
11	Time	Calibration time
12	TDSF	TDS factor
13	AP	Air pressure compensation in DO measuring
14	SALT	Salinity compensation in DO measuring
15		User ID
16		Sample ID
17		Operation Tips
18	Res	Resistivity, Unit $M\Omega \cdot cm$, $k\Omega \cdot cm$, $\Omega \cdot cm$
19	TM	Temperature, unit $^{\circ}C$
20		Power information

21		Charging
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Table 3

5.3 Function Key

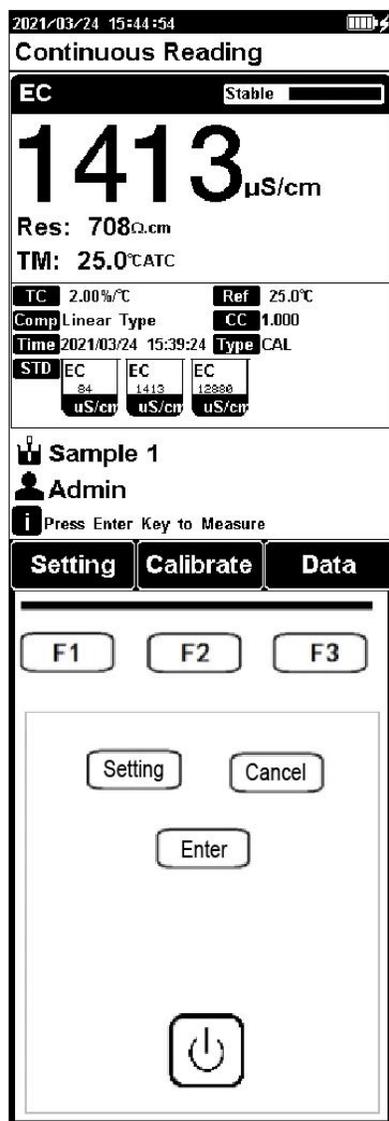


Figure 7
Function keys explanation

No.	Key	Explanation	Note
1		Power	Press to switch on/off
2		Setting	Set the parameters and settings
3		Cancel	Cancel the operation

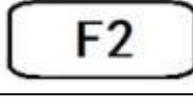
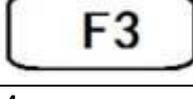
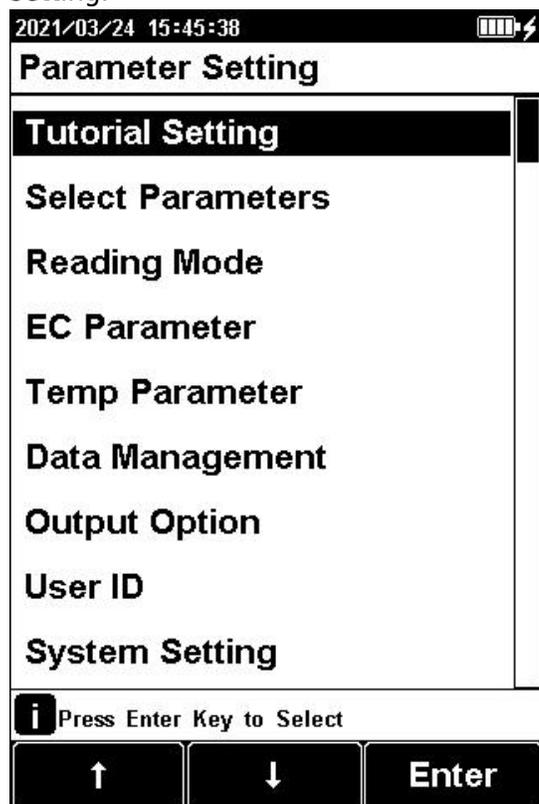
4		Enter	Confirm the option
5		F1	Function key, Corresponds to the function options on the screen
6		F2	Function key, Corresponds to the function options on the screen
7		F3	Function key, Corresponds to the function options on the screen

Table 4

5.4 Parameter Settings

When the meter is in the standby status or measuring status, press "Setting" to reset the instrument setting.



Figure

8 Instrument settings

5.4.1 Tutorial setting

For the first use, please follow the guide to settings the measurement parameters. After all the settings, press the "Enter" to return to the previous page.

5.4.2 Select parameters

Press "Setting"- "Select parameter" to select a parameter to calibrate and measure. It could select one measurement parameter from conductivity, TDS, salinity and resistivity every test.

5.4.3 Reading Mode Settings

The meter provides three reading modes, including continuous readings, auto readings, and timed readings.

- Continuous reading: The instrument displays real-time measurement results. User can end the measurement at any time and save the last result.
- Auto-reading: The measurement reached the balance, and the meter locked the reading result. The meter offers "Fast", "Medium", "Strict" and "Custom" four options for endpoint detection conditions.
- Time reading method: Timed Reading contains two kinds of timed reading methods: "Interval measurement" and "Timed measurement". "Interval Measurement" provides measurement results at interval time and timed reading provide measurement result after a set time.

Reading parameters settings

Stability Type		Conductivity
Fast	Stable time	5s
	Fluctuation	1.0%
Medium	Stable time	8s
	Fluctuation	0.4%
Strict	Stable time	15s
	Fluctuation	0.1%
Custom (Recommended value)	Stable time	1 to 30s
	Fluctuation	0.1~2%

Table 5

5.4.4 Conductivity Parameter Settings

5.4.4.1 EC calibration type

EC calibration type: Cal by Standards and input manually.

Cal by Standards: Cell constant is calibrated with standard conductivity standard solution.

Input manually: It allows user to set the cell constant.

5.4.4.2 Manual standard recognition

For neighboring standards, please choose the customization to perform calibration.

5.4.4.3 Conductivity electrode type

Conductivity electrode: Four conductivity cell constant 0.01, 0.1, 1, 10. The defaulted conductivity cell constant is 1. Users need to enter the cell constant value on the label of conductivity electrode for accurate measurement.

5.4.4.4 EC Reference temperature

Conductivity reference temperature: The conductivity of the solution is greatly affected by temperature, to make the conductivity measurement results at different temperatures comparable, the conductivity and temperature values at the time of measurement are usually recorded and converted into the conductivity value at a certain temperature through temperature compensation, which is the reference temperature.

When measurement parameter is conductivity, TDS or resistivity, the meter allows settings of 20.0°C, 25.0 °C reference temperatures; the default reference temperature is 25 °C.

When measurement parameter is salinity, the default reference temperature is 18 °C and cannot change.

5.4.4.5 Conductivity Compensation

EC Compensation Mode: Three different compensation modes can be used for various applications. The meter supports linear type, DI water type and Non-comp type.

1) Linear type: Linear compensation is usually used for the measurement of medium and high conductivity solutions. With linear compensation, you can set the temperature compensation coefficient, which defaults to 2.00%/°C (approximately the temperature compensation coefficient of a sodium chloride solution at 25°C). It allows user to set the temperature coefficient.

2) DI water type: DI water compensation is usually used for the measurement of pure water and ultrapure hydropower conductivity below 5µS/cm. It allows user to set the temperature coefficient.

3) Non-comp type: Non compensation is usually used to obtain the true conductivity value at the measured temperature.

5.4.4.6 TDS Parameter

The TDSF calibration type can be calibrated by standard solution or setting the TDS Factor. The TDS factor can be adjustable, and the default is 0.500. It allows user to calibrate the TDS Factor.

5.4.4.7 Salinity parameter

The meter supports both default salinity and seawater salinity measurement types.

Sea salinity mode: it indicates the nominal salinity value used to measure seawater salinity correction.

The standard seawater salinity concentration adopted here is 3.500%, also written as 35 psu.

Default Salinity Mode: the salinity of common sample, which can be used to approximate the salinity of the measured solution.

5.4.5 Temperature Parameter Settings

The temperature unit of the meter is selectable in °C and °F.

Temperature compensation mode: ATC and MTC.

ATC means automatic compensation. Combination conductivity probes integrated with ATC probe.

MTC means manual compensation. It allows user to input the temperature.

5.4.6 Data Management Settings

5.4.6.1 Sample ID type

The instrument supports three setting methods of Sample ID: number order, time order, and manual.

- Number order: The sample ID No. is increasing with series number.
- Time order: The sample ID No. is increasing with sample measuring time. Format: Year/Y, Month/M, Day/D, Hour/H, Minutes/M, Second/S
- Manual: Manually set the sample ID No. It allows samples to manually enter the sample ID when saving or printing data.

5.4.6.2 Result Auto save

When this function is enabled, the meter saves the results when the reading is stable in the auto-reading and interval timed reading mode.

5.4.6.3 Data Overwrite

The meter provides 1000 sets of measurement results storage space. When this function is enabled, the results data that exceeds capacity will overwrite the old results data.

5.4.7 Output option

The data formats are GLP, STD Format, and Custom. It could select one data format to output the result.

5.4.8 User ID Settings

Set the user ID.

5.4.9 System Parameter Settings

5.4.9.1 System Date & Time

Settings of system date and time.

5.4.9.2 Buzzer setting

Users can set the key sound by this setting.

5.4.9.3 Brightness setting

Users can adjust the screen brightness by this setting.

5.4.9.4 Auto Power off

The meter provides auto shutdown function. When the meter is not using, the meter switches off automatically.

5.4.9.5 Restore Default

The meter supports "Restore Default" and "Restore Parameters".

"Restoring Default" will restore all meter parameters to the factory state. "Restoring parameters" will restore the measurement parameters to the factory state.

5.4.9.6 Software version

Users can find the software version information on the general setting page.

5.5 Conductivity Measurement

5.5.1 Cell Constant Input

Conductivity electrodes are precisely calibrated at the time of manufacture and marked with the exact cell constant. Before the measurement, press "Setting"- "EC Parameter"- "Electrode Constant" to enter the electrode cell constant.

5.5.2 Calibration Preparation

In general, conductivity electrodes need few calibrations. When the user gets an unexpected result, an electrode calibration is considerable.

Usually, single standard solution is required for calibration. For accurate measurement of sample conductivity above 50mS/cm, a two-point calibration is required. Two standards are required, a low conductivity standard and a conductivity standard close to the sample.

The meter provides universal standard group to automatic recognition. And allows the user to prepare the customized Standard groups.

5.5.3 Conductivity Calibration



Figure 9

Electrode cell constant calibration information

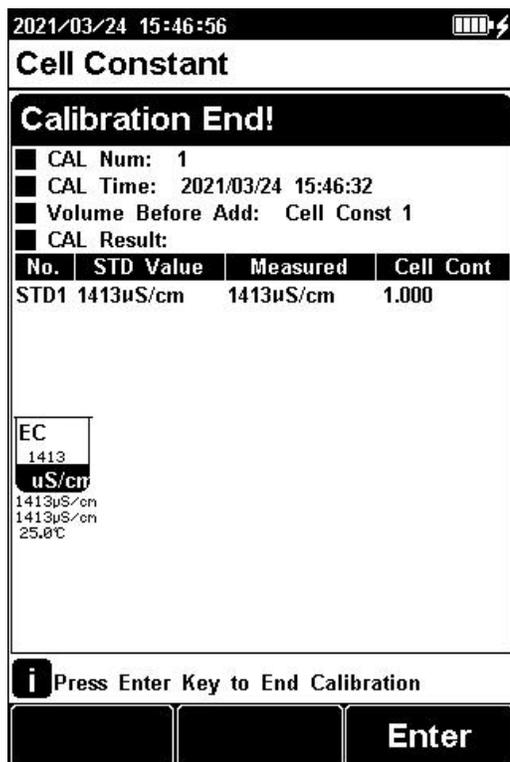


Figure 10

Electrode cell constant calibration result information

For conductivity electrodes with different cell constants, it is recommended to use the following conductivity standard solutions for calibration.

KCl standards to electrode cell constants

Cell constant (cm-1)	0.1	1	10
KCl solution Concentration (mol/L).	0.001	0.01 or 0.1	0.1 or 1

Table 6

The calibration process is as follows:

1. Press soft button F1 "Setting"- "EC Parameter".
2. Press the "Constant type" to select the "1".
3. Press "Cal. Type" to select the "Cal by Standards".
4. Prepare one or more standard conductivity solution (e.g.1413µS/cm conductivity solution).
5. Prepare a thermostatic bath, and set the temperature to (25.0±0.1) °C.
6. Place a standard conductivity solution in a thermostatic bath, and set the temperature to (25.0±0.1) °C.
7. Press the F2 "Calibrate" for one-parameter measurements or press the F2 "Calibrate"- "EC Calibration" for multi-parameter measurements.
8. Place the conductivity electrode into a standard solution.
9. When the conductivity and temperature reading (e.g.,1413µS/cm, 25.0°C) are stable, press the "Start".
10. If choosing one-point calibration, press "Enter" to end the calibration.
11. If choosing multi-points calibration (up to 3), press "Next Point" to calibrate the next standard solution.
12. The meter saves calibration data automatically.



The conductivity of the solution is greatly affected by temperature, it is recommended to use constant

temperature water for calibration. Automatic or manual temperature compensation can also be optional when there is no water bath.

5.5.4 Conductivity Measurement

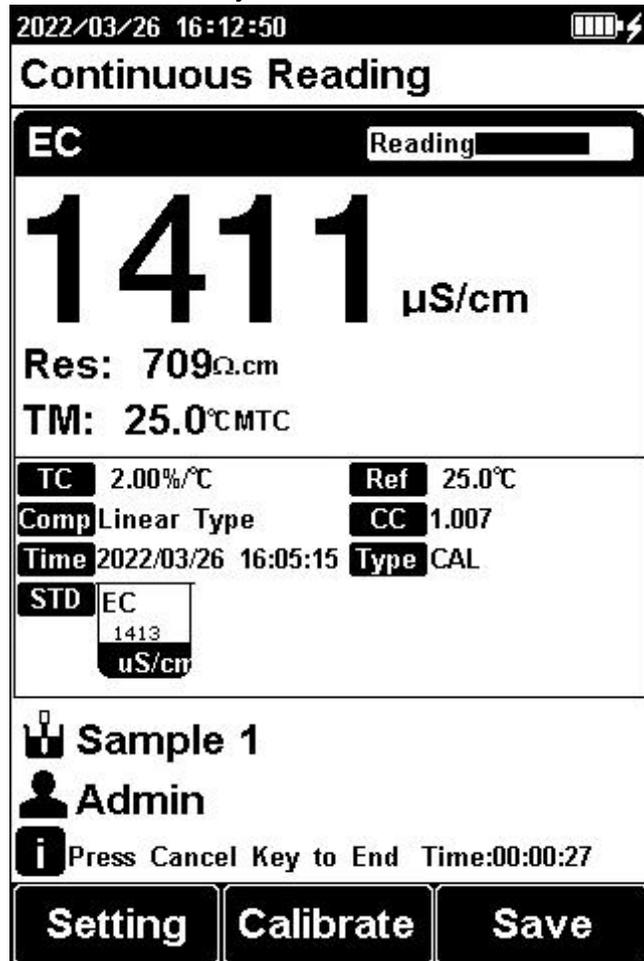


Figure 11

Conductivity measurement information

The measurement process is as follows:

1. Setting.
 - 1) Set the parameters (e.g. conductivity).
 - 2) Set the reading mode (e.g. continuous reading, auto-reading, or timed format).
 - 3) Set the temperature compensation (e.g. linear compensation, temperature compensation coefficient 2.00%/°C).
 - 4) Set the reference temperature (e.g. 25°C).
2. Rinse the conductivity electrode with DI water, dry out.
3. Put the measurement end of the electrode into the sample solution.
4. When the reading is stable, press "Enter" to enter into measurement status.
5. When the reading is stable, read the results.
6. During measurement, stored EC electrode in distilled or deionized water.
7. After measurement, rinse the EC electrode with deionized water thoroughly and put on the electrode protection cap.

5.6 TDS Measurements

TDS: Total dissolved solids refer to the total amount of all solutes in water, including the content of both inorganic and organic matter. In general, the higher the conductivity, the higher the salt, the higher the TDS.

5.6.1 TDS conversion factor

5.6.1.1 Low Concentration TDS Sample

For samples with relatively simple composition and low concentration, TDS of solution can be estimated by conductivity. Compared with weighing method, TDS estimation by conductivity is relatively simple and convenient with quite good accuracy. For potassium chloride and sodium chloride solutions below 5000 $\mu\text{S}/\text{cm}$, the TDS coefficient is approximately 0.5.

Therefore, 0.5 can be used as the TDS coefficient for approximate estimation in most situations.

The conversion factor adjustment process is as follows:

1. Press soft button F1 "Setting" - "TDS Parameter".
2. Select the TDSF CAL Type as the set TDS Factor.
3. Input the TDS factor as the desired TDS coefficient.

Conductivity to TDS Standard Solution

Conductivity $\mu\text{S}/\text{cm}$	TDS standards		
	KCl(ppm)	NaCl(ppm)	442(ppm)
23	11.6	10.7	14.74
84	40.38	38.04	50.5
447	225.6	215.5	300
1413	744.7	702.1	1000
1500	757.1	737.1	1050
2070	1045	1041	1500
2764	1382	1414.8	2062.7
8974	5101	4487	7608
12880	7447	7230	11367
15000	8759	8532	13455
80000	52168	48384	79688

Table 7

1, 442 indicated the solution contains 40% Na_2SO_4 , 40% NaHCO_3 , 20% NaCl .

2, The values listed in the table are values at 25°C.

For KCl and NaCl solutions below 5000 $\mu\text{S}/\text{cm}$, the TDS coefficient is about 0.5, so 0.5 can be used as an approximation in most cases.

5.6.1.2 High Concentrations TDS Sample Measurement

For samples with simple components and higher concentrations, such as high concentrations of NaCl solution, TDS factor re-calibration is needed.

For TDS measurements, the user may need to correct the TDS conversion factor by TDS standard.

The conversion factor calibration process is as follows:

1. Setting.

1) Set the parameters (e.g. TDS).

- 2) Press soft button F1 "Setting" -"TDS Parameter".
- 3) Select the TDSF CAL Type as the set Cal by STD.
- 4) Set the reference temperature (e.g. 25°C).
2. Prepare TDS Standard.
3. Place a standard conductivity solution in a thermostatic bath, and set the temperature to (25.0±0.1) °C.
4. Rinse the conductivity electrode with DI water, dry out.
5. Put the measurement end of the electrode into the sample solution.
6. Press the F2 "Calibrate"- "TDS Calibration".
7. Set the STD value as the sample STD value.
8. After the TDS and temperature reading (708ppm, 25.0°C) are stable, press the "Start".
9. If choosing one-point calibration, press "Enter" to end the calibration.
10. If choosing multi-points calibration (up to 3), press "Next Point" to repeat the operation.
11. The meter saves calibration data automatically.

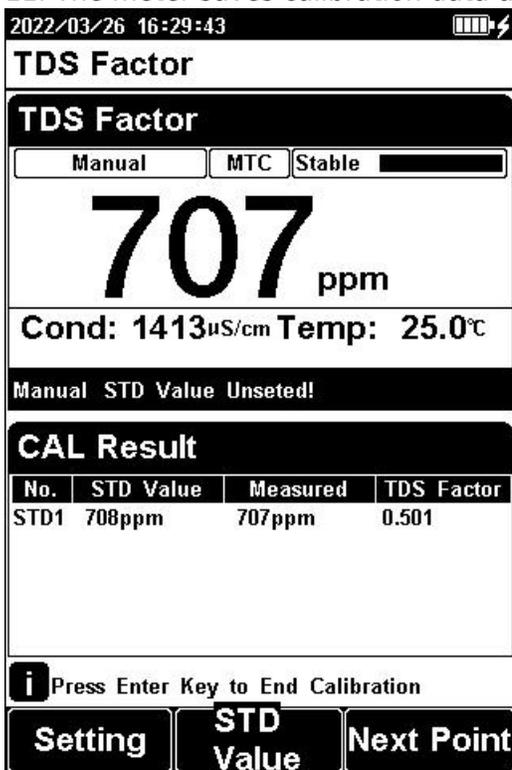


Figure 12

TDS coefficients calibration

5.6.1.3 Complex TDS Sample Measurement

For samples with complex compositions, the accuracy of TDS measurements can be improved by re-determination by laboratory methods and manual input of TDS coefficients. When the composition or concentration of the sample to be measured changes significantly, it is recommended to recalibrate the TDS coefficient.

The conversion factor calibration process is as follows:

1. Rinse the electrode with DI water. Put the measurement end of the electrode into the sample solution and set the temperature at (25.0±0.1) °C.
2. Using weighing method to determine the TDS.
3. Calculate the TDS coefficient.
4. Press soft button F1 "Setting" - "TDS Parameter".
5. Select the TDSF CAL Type as the set TDS Factor.

6. Input the TDS factor as the desired TDS coefficient.

5.6.2 TDS Measurements

Users can switch the measurement parameter to TDS measurement by pressing Conductivity/TDS measurement box on the screen.

5.7 Salinity Measurement

The instrument can be used to determine the salinity of sodium chloride. The salinity of sodium chloride can be used to approximate the salinity of the solution being measured. By measuring the conductivity of the sample, the mass percentage of the corresponding sodium chloride solution can be calculated to convert the sodium chloride salinity.

Users can switch the measurement parameter to salinity measurement by pressing Conductivity/TDS measurement box on the screen. The detail refers to the measurement method of conductivity salinity measurement.

5.8 Resistivity Measurement

Resistivity and conductivity are reciprocal to each other, and conductivity can be measured at the same time when measuring resistivity.

Users can switch the measurement parameter to resistivity measurement by pressing Conductivity/TDS measurement box on the screen. The detail refers to the measurement method of conductivity measurement.

5.9 Data Management

Press "Data" to view the detail of results.

The meter stores the measurement results independently according to the measured parameters. The meter provides data Storage 500 sets for each parameter (EC/Resistivity/TDS/Salinity).

The user can press "Delete" into the delete menu. It allows users to select the parameter data or all data to delete.

The user can view the data filter by parameter, locate No. or stored date. By the filter setting, press "Enter" to look up the data. The filter data shows in a graph. Press "←" and "→" to choose data. User can choose one and press "Enter" key to see the detail result. Users can press "Operate" to the operation menu. In the operation menu, it allows to delete current result, output the current result, output matched result and output all result.

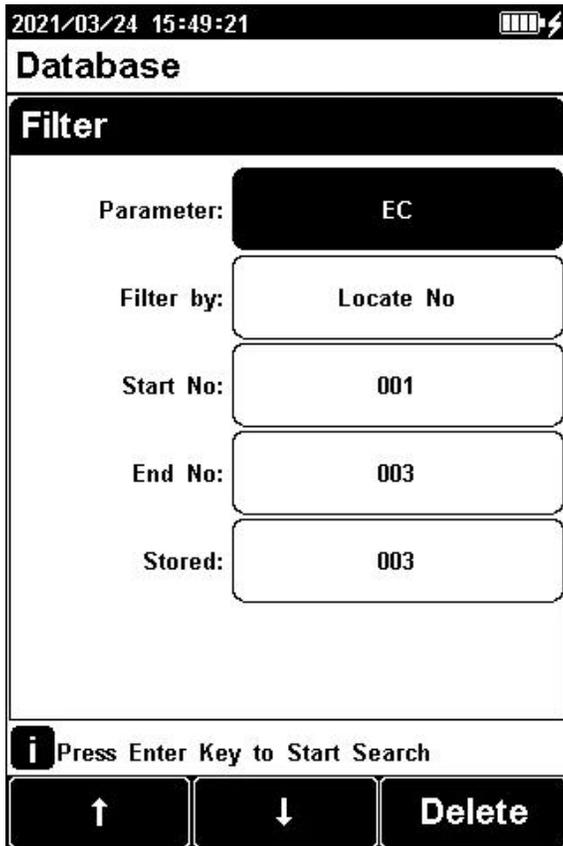


Figure 13
Results setting view

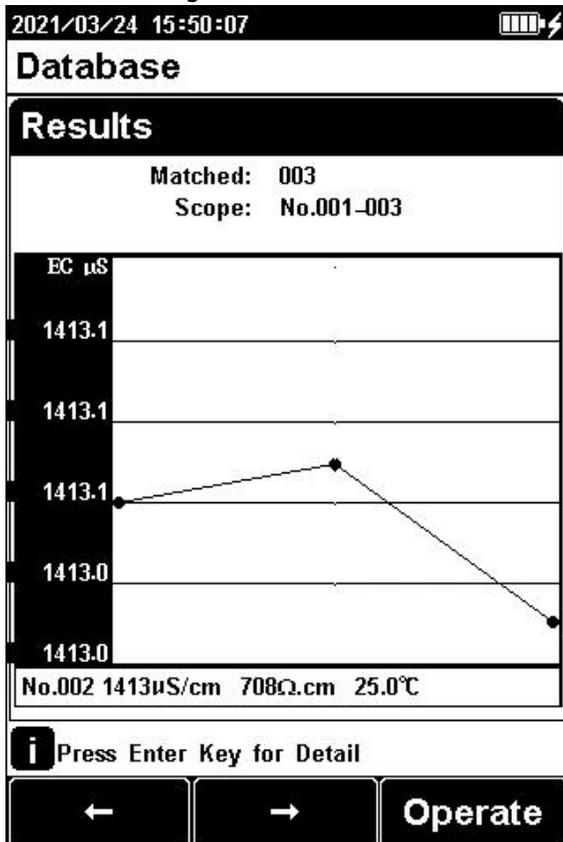


Figure 14
Results data graph

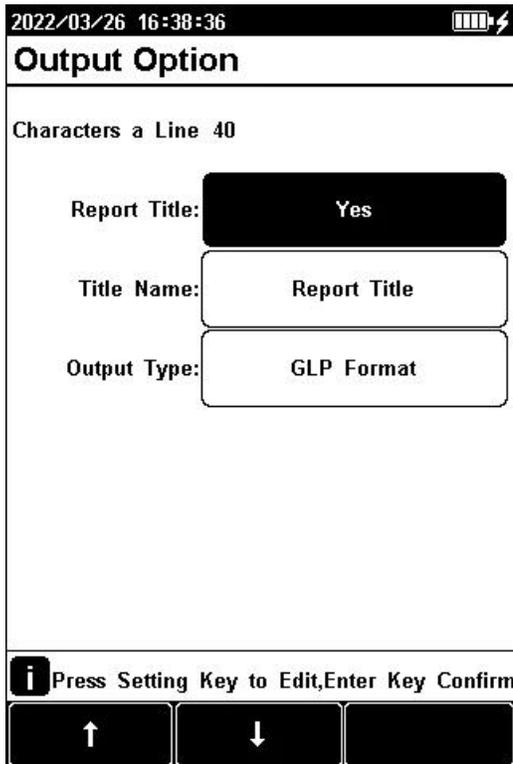


Figure 15
Measurement result output settings

The output format is followed:

Report Title

Measure Time:2021/01/31 16:12:16
 Operator: Operator 1
 Model: EC310F Conductivity Meter
 Serial Number:
 SW Version: Ver 1.00

.....SAMPLE INFO

Sample ID: Sample 1

.....ELECTRODE INFO

Cond EC ID: Cond Electrode

.....CALIB INFO

Calib Operator: REX Team

Calib Time: 2021/01/31 15:40:13

Calib Num: 3

.....CALIB RESULT

STD 1: 84uS/cm 84uS/cm 25.0c

STD 2: 1413uS/cm 1413uS/cm 25.0c

STD 3: 12.88mS/cm 12.88mS/cm 25.0c

Cell Constant 1: 1.000

Cell Constant 2: 1.000

Cell Constant 3: 1.000

.....BRIEF INFO

Reading Mode: Timed Reading

Stable Type: Medium

Temp Comp Type: ATC

Cond Comp Type: Linear

.....RESULT

Result: 0.000ppm

Signal Value: 0.000uS/cm

Temp Value: 25.0c

Signature:

6. Maintenance/Troubleshooting

6.1 Meter Maintenance

The correct use and maintenance of the instrument can ensure the accurate and reliable performance of the instrument. Additionally, exposure to chemicals or harsh use environments can affect performance.

- If the meter is not used for a long time, please disconnect the power supply.
- The electrode socket of the instrument must be kept clean and dry, and should not be in contact with acid, alkali, and salt solutions.
- Keep the meter and accessories clean and away from acids, alkalis, and any corrosive solutions/gases.
- Users can clean the meter surface with clean waters and detergent.
- When the meter is transported, please follow the instructions:
- Please remove all connected cables.
- Please remove the electrode holder.
- Please use original packaging in the long-distance transport to avoid damage.

6.2 Electrodes Maintenance

For more detailed information, please refer to the electrode instruction manual.

6.3 Battery Maintenance

The instrument uses a built-in lithium battery. The battery takes 4 hours to fully charge. Follow the below instruction to maintain battery:

- When the meter is turned on and not charged, the power light flashes four times when the power flashes once when the power is 25% and is 100%.
- When the meter switches off, the power light keeps the lighting for a full charge.

Precautions for the use of lithium batteries:

- Keep the meter away from the high-temperature environment.
- Keep away from water.
- Keep away from flammable and explosive substances.

- Please charge for 15 minutes if not in use for a long time.
- Please stop charging in time after fully charged.
- Continuous charging may result in decreased battery life.
- Please charge and discharge it every 3 months to extend the life of the lithium battery.

6.4 Troubleshooting

Phenomenon	Probable reasons	Solutions
1. No Display	Damage to the meter.	Replace or repair as required.
2. Incorrect conductivity measurement	1. The electrode is out of service life. 2. The electrodes are not calibrated or are calibrated incorrectly.	1. Replace the electrodes. 2. Recalibrate the electrode or replace the standard solution.

Table 8

If the meter still does not work, please contact your local dealer for further assistance.

7. Technical Supports

Accessories

Please refer to the accessories table for purchasing recommendations.

Meter accessories

Name	Description
DJS-1VTC conductivity electrode	Conductivity, TDS Measurement Probe
Conductivity solution 1413 $\mu\text{S}/\text{cm}$	Standard solution

Table 9

8. Appendixes

Appendix 1

Approximate concentrations of KCl solutions and their conductivity values relationship

T($^{\circ}\text{C}$)	84 $\mu\text{S}/\text{cm}$	1413 $\mu\text{S}/\text{cm}$	12.88 mS/cm
5	53.02	896	8.22
10	60.34	1020	9.33
15	67.61	1147	10.48

20	75.80	1278	11.67
25	84.00	1413	12.88
30	92,19	1552	14.12
35	100.92	1696	15.39

Table 10



Biolab Scientific Ltd.

Trillium Executive Center, East Tower, 675 Cochrane Dr, Markham, Ontario L3R 0B8, Canada
Email: info@biolabscientific.com | Website: www.biolabscientific.com