Conductivity / TDS / Salinity
CON500 Benchtop Meter

25.0 ATC °C
6.90 mS
DARD

CLEAN

MODE ESC | CAL INFO | MI
SET ▶ | ENT HOLD | MR ▼

CON500
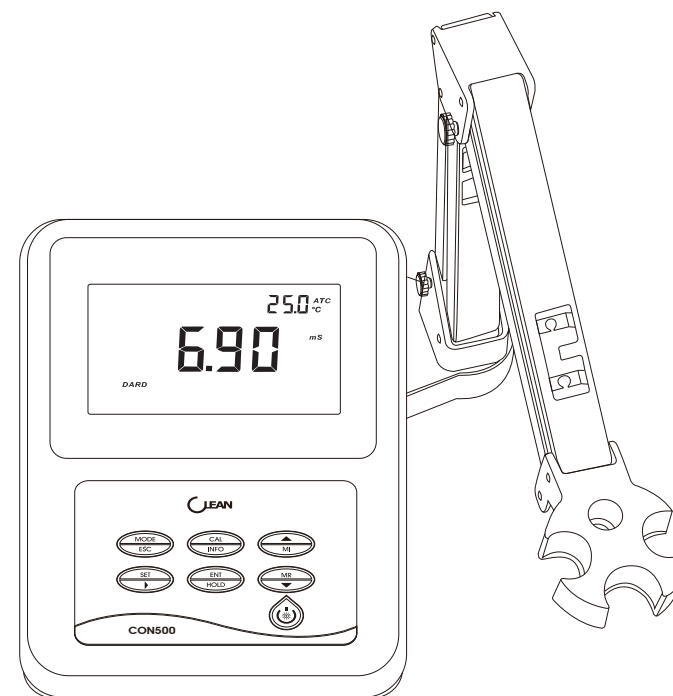
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CLEAN INSTRUMENTS
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TABLE OF CONTENTS

Thank you for selecting our premium quality mete. Before using the meter, relevant person must read and understand contents of this operation manual.

Besides the reasonable prices,our meters also have the following advantages:

-Simple operation. This operation manual provides you clear and easy operation guidance.
-Humanized design. Comfortable holding.
-Multiple accessories available, such as sensors, buffer solution etc.

Safety

-Never expose the meter in the explosive environment! Part of the shell case is not aittight and teh invasion of spark or the corrosion caused by the invasive gas may cause explosion.

-Please follow the operation manual and the laboratory safety regulations when use the chemicals and solutions.

Safety precautions

-Never split the shell case
-Only the OEM maintenance staff is allowed to maintain the meter.
-Following environment effect should be avoided:
Violent vibration
Expose to sunlight for a long time
Atmospheric humidity more than 95%
Corrosive gas
Ambient temperature below than -10℃ or more than 60℃
Strong electric or magnetic field

Conductivity sensor measuring range:

Cell Constant	Range	Resolution
K=0.01 cm	0.000~4.000μS/cm	0.001μS/cm
	0.00~40.00 μS/cm	0.01 μS/cm
	0.0~400.0 μS/cm	0.1 μS/cm
K=0.1 cm	0.00~40 .00 μS/cm	0.01 μS/cm
	0.0~400.0 μS/cm	0.1 μS/cm
	0~4000 μS/cm	1 μS/cm
K=1 cm	0.0~400.0 μS/cm	0.1 μS/cm
	0~4000 μS/cm	1 μS/cm
	0~40.00 mS/cm	0.01 mS/cm
K=10 cm	0~4000 μS/cm	1 μS/cm
	0~40.00 mS/cm	0.01 mS/cm
	0~400.0 mS/cm	0.1 mS/cm

Factory defaults

| Itemll	Measurement Range	Initial value
Cell constant type	0.01、0.1、1、10	1.0
Temperature Base	15.0~35.0 ℃	25.0 ℃
Conductivity variance ratio per temperature	0.00~10.00%	2.00%
TDS factor	0.40~1.00	0.50
Salinity factor	0.48~0.65	0.6
Manual temperature setting value	0.0~100.0℃	25℃
Temperature bias	±10 ℃ of the indicated temperature	0.0 ℃
Auto Lock function	OFF or ON	OFF
Auto Power off function	ON or OFF	ON

5.7 Calibration Parameter and Setting Parameter
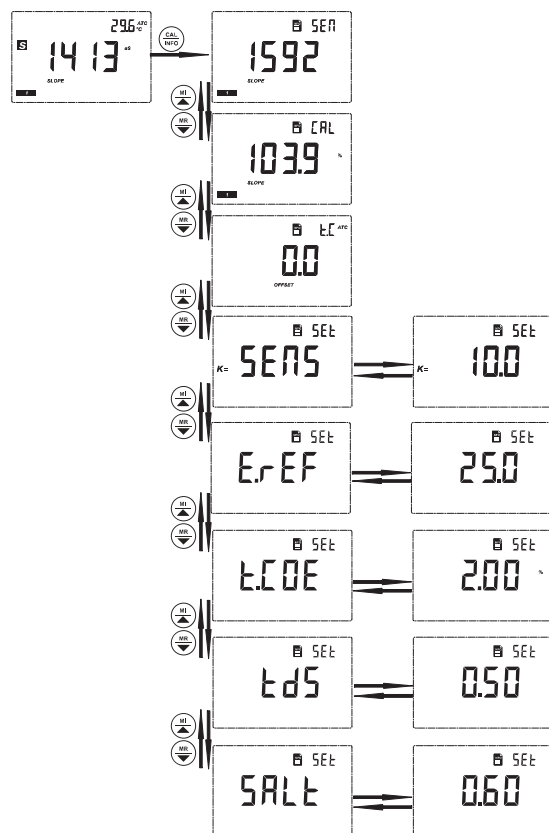
1. Long press " (CAL INFO) " to enter into Setting parameter when in measurement mode.
Press " (HI ▲) " or " (MR ▼) " to check through all the Calibration parameters and Setting parameter.
2. Press " (MODE ESC) " to quit and go back to measurement mode.

2. Basic Operation

Electrode Installation

You can refer to the Electrode operation manual for use and maintenance. The direction of the red dot marker on the Electrode and the salient point on the unit should be the same when install the electrode to the unit. Remove the electrode by pulling out the clamp on the electrode.
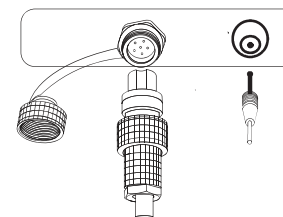
Shell

If the meter accidentally touches water or other fluids, please wipe it clean immediately. The meter function is not affected usually. But if affected and cannot use, please contact our company or local customer service center. They will be very glad to help you.

Power on/off and Backlight

Power on:
Short press power on/off key to start the meter. The whole screen displayed within 1 second.
Power off:
Long press the power on/off key to power off the meter.
Auto power off in 10 minutes if without any operation.
LCD backlight:
Short press power on/off key to control if turn on the backlight or not

Key instruction

Short press: Short press means release the key once after pressing.
(If there is no mark out below, default it as Short press)
Long press: Long press means press the key for 3 seconds and release.
Hold: Hold means not release the key; used in adjusting data and accelerate after a certain time.
Not release the key until the value is set as needed.

Key function

Key	Description
(power)	Power on ON/OFF backlight Long press to Power off
MODE ESC	Exit from current mode operation Mode switch
SET	Right shift data if press this button when setting Data setting
CAL INFO	Enter into calibration mode Long press to enter into parameter browsing
ENT HOLD	Freeze or unlock the displayed value Press to unlock in measurement mode
MI ▲	Store the displayed value into memory Increment values or scroll through the next options available Press to browse the saved data in measurement mode
MR ▼	Recall stored values from the memory Decrement values or scroll through the next options available Press to browse the saved data in measurement mode

Storage of measuring data

1.If you need to save the measuring data once it is stabilized, press "(MI)" , the "💾" will be shown on the upper of the screen and the Lot no. will be shown on the upper left of the screen.
Press "(ENT HOLD)" to save the data. You can also press "(MODE ESC)" to not save. The meter will automatically go back to measurement mode after the data saved. The unit at most can save 256 sets data. The screen will show ''OVER" if more than 256 sets reminds you the memory card is full.
2.Enter into setting mode P-06 if you need to delete the saved data forever.
You con refer to P-06 Clearing memory function.

Browse on data storage

1.Press "(MR)" to enter into the browse on the data storage. The Lot no. will be shown and data twinkling. Press"(MI)" or"(MR)" to check all the saved data. Press "(MODE ESC)" to go back to measuring mode. If showed "NONE" means no data is saved yet
2.If you quit and re-entering during checking the data, the meter will freeze in the last set of data.

5.5 Measurement Mode

1. You can first set the meter per your request. Otherwise, the setting will be factory defaults.
2. Use tap water or distilled water to clean the electrode, removing the adhesive impurities on the surface of electrode.
3. After power on, press " (MODE ESC) " to select the operation mode (Conductivity, TDS or Salinity).
4. Immerse the electrode in the solution and stir gently. The measuring mark will twinkle. You can read the value once the data is stabilized and shows the stable mark.

Note:

1. When the screen shows "ATC" means the temperature sensor is working and shows the actual temperature upper right corner. You can refer to the ''Temperature Offset setting" if a revision on the temperature is required. You can refer to P-01.
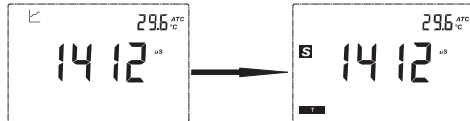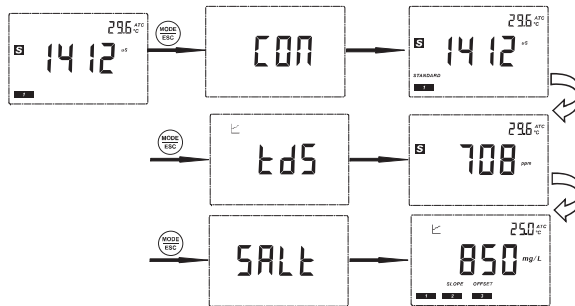2. If the "Manual" is shown below the screen means the temperature electrode is disconnected and is manual temperature compensation. Factory default is 25°C. You can refer to P-01.
3. The measuring value is stabilized when the screen showed " S " . The " HOLD " is showed if the Auto Lock Function is on. Press " (ENT HOLD) " to o unlock.

Exchange of the measuring mode

After power on, the meter will enter into measuring mode. Factory default is Conductivity measuring mode. Press" (MODE ESC) " to exchange between Conductivity measuring mode and TDS or Salinity measuring mode. Press " (SET ►) " to enter into parameter setting. Press " (CAL INFO) " to enter into electrode calibration mode.

4. Appearance

Display:
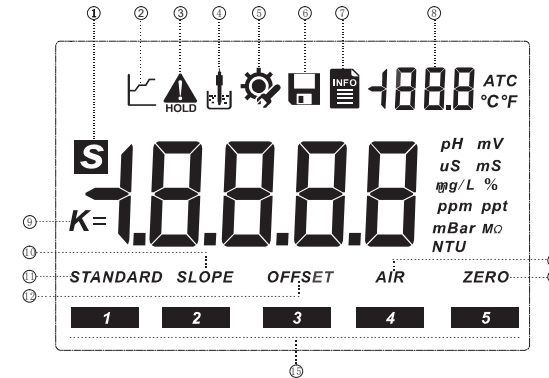
1 **S** Measuring Status-Stable Value
2 Measuring Status-Calculating
3 HOLD Auto lock
4 Electrode Calibration
5 Setup display
6 Memory
7 Parameter browse
8 188.8 ATC C°F Secondary dispiay area
9 K= Cell constant
10 **SLOPE-** Electrode Slope
11 **STANDARD-**Buffer solution
12 **OFFSET-**Electrode offset
13 **AIR-**Air Calibration
14 **ZERO-**Zero Calibration
15 Buffer solution marking
16 mV、PH、mA、% 、mS、μS、°C、mg/L、ppm、ppt、g/L、mBar - Unit of Measurement
17 **Auto/Manual-**Temperature Compensation

Display Character Table:

PH	pH	YES	YES
OrP	ORP	NO	NO
CON	CON	ON	on
tdS	TDS	OFF	off
SALt	Salinity	dEF	Factory defaults
dO.S	mg/L	d.CLr	Clear data
dO.P	%	A.OFF	Auto Power off
Err	Error	HOLd	Auto lock
SAUE	Save data	t.C	Temperature compensation
CLr	Clear data	t.OFS	Temperature offset
OUEr	Measuring Value Over	t.SEt	Manual temperature
UNdr	Measuring Value under	SENS	Sensor
OUr	Temperature Value Over	GLAS	pH glass sensor
Odr	Temperature Value under	ANtI	pH antimony sensor
d 123	Stored data item	bUFF	Buffer solution
NONE	no stored data	N ISt	Nist standard
FULL	Full data storage	USA	USA standard
SEN	Sensor	bArO	Barometric
CAL	Calilrate	t.rEF	Temperature base
SEt	Set Parameter	t.COE	Temperature coefficent
P -	menu item		

Note: Calibration must be done in the following three occasions:

1.Before using new sensors or new meter.
2.When the sensor been used for a long time and cause a wide measuring result.
3.When reference temperature or temperature factor need to be changed.

Calibration step

1.In measurement mode, press " CAL INFO " to enter calibration mode. Dip the electrode into standard solution.
2.After you get a stable current value or the " S " is showed, press " MI MR SEL "
to adjust the value figures to match with the standard solution. Adjustable range is ±30% of the stable current value.
3.Press " ENT HOLD " to save the new set conductivity value. The value of cell constant K indicates the status of the electrode. For example, the setting cell constant K=0.1, and now is displaying 95.0%, then the actual cell constant K=0.1X95.0%=0.095.
Then the meter will automatically quit the calibration mode and back to measurement mode.

5.3.9 P09 Clearing Memory Function

```
NO  →  SAVE

YES →  CLr
```
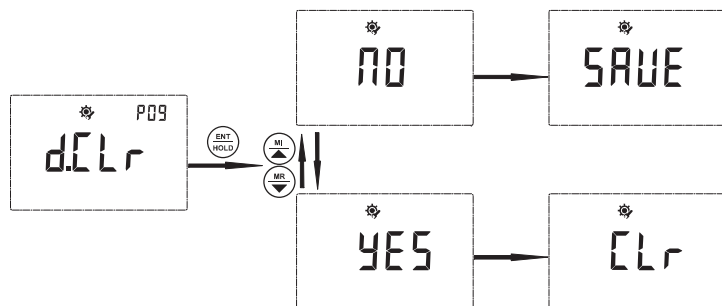
After entering P-09, you can select NO or YES to not clear or clear the data by pressing "▲" or "▼" keys. If select YES, the meter will clear all the saved data. You can press "MODE/ESC" key to quit and go back to measurement mode.
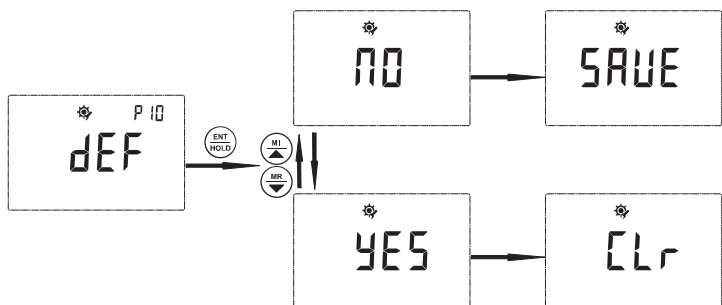
5.3.10 P10 Reverting to Factory Default Setting

```
NO  →  SAVE

YES →  CLr
```

After entering P-010, you can select NO or YES to not reverting or reverting to factory settings by pressing "▲" or "▼" keys. If select YES the meter will revert all the settings to factory defaults and all the settings will lost forever. The unit will restart at the same time.
You can press "MODE/ESC" key to quit and go back to measurement mode.

Conductivity / TDS / Salinity

Benchtop Meter

Brief and exquisite design, space saving, easy calibration with calibrated points displayed, optimum accuracy, simple operation comes with high luminant backlight. It is your reliable partner for routine applications in laboratories, productions plants and schools.

-All-weather precise, Comfortable holding, Easy carrying , Simple Operation
-Large LCD with backlight for easy meter information reading
-IP65 rated
-Measuring range: 0.000 us/cm-400.0 ms/cm. Automatic range switching
-One key to check through all the settings, including: cell constant slope and all the settings
-Any one point calibration
-Auto lock function
-256 data sets memory stores and recalls
- Universal power adapter
-Detachable Electrode Stand organizes multiple electrodes neatly, easy installing at either left or right side and holds them firmly in place

5.1 Technical Specifications

|		
Conductivity	Range	0.000~400.0mS/cm
	Resolution	0.001μS/cm ~ 0.1mS/cm
	Accuracy	±0.5%FS
TDS	Range	0.0000ppm~200.0ppt(Conversion factoris 0.5)
	Resolution	0.001mg/L ~ 0.1mg/L
	Accuracy	±0.5%FS
Salinity	Range	0.000mg/L ~ 240.0g/L
	Resolution	0.1g/L
	Accuracy	±0.5%FS
	SAL factor	0.6
Temperature	Range	−10.0℃ ~ 110.0℃
	Resolution	0.1℃
	Accuracy	±0.2℃
Others	Power	Transformer 100~220V
	Environment	-5℃ ~ 60℃ ; Relative humidity < 90%
	Memory	256 stes
	Dimensions	150*200*60mm(W*L*H)
	Weight	650g

5.3.7 P07 Auto Lock Function setting
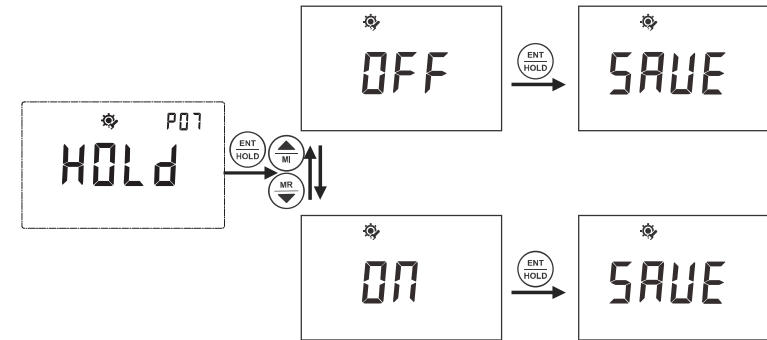
After entering P-07, you can select ON or OFF the Auto Lock Function by pressing "⬆" or "⬇" keys. If the Auto Lock Function is ON, the meter can lock the measured value after the reading had stabilized and display "🔒". Press "ENT HOLD" to unlock.

5.3.8 P08 Auto Power Off Setting
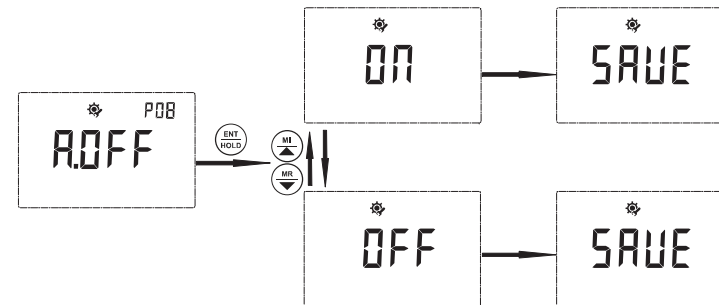
After entering P-08, you can select ON or OFF the Auto Power Off by pressing "⬆" or "⬇" keys. If the Auto Power Off is ON, the meter will power off if no operation in 10mins.

You can press "MODE ESC" key to quit and go back to measurement mode.

5.3.5 P05 TDS Factor

Press " ENT/HOLD " in P05. Then press " MI " or " MR " key to adjust the numerical value.
Press " SET " to move the cursor to adjust the numbers. Range of Conductivity
TDS Factor:0.40-1.00. Press " ENT/HOLD " to confirm.

5.3.6 P06 Salinity setting

Press " ENT/HOLD " in P06. Then press " MI " or " MR " key to adjust the numerical value.
Press " SET " to move the cursor to adjust the numbers. Range of salinity:0.48-0.65.
Press " ENT/HOLD " to confirm.

5.2 Browse the parameter

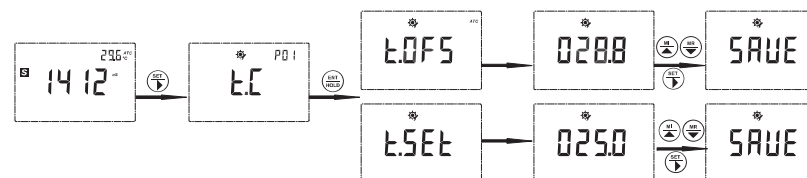Long press CAL/INFO for 3 seconds in measurement mode.
Then press MI or MR to browse the parameters

1. Electrode input signal
2. Electrode slope
3. Zero offset
4. Electrode kinds
5. Offset of temperature electrode

5.3 Set UP

5.3.1 P01 Temperature setting

After power-up, the unit will enter the measurement mode. Factory default is Conductivity
measuring mode. You can switch between the Conductivity measurement mode and
the TDS,Salinity measurement mode by pressing the " MODE/ESC " key. Press " SET "
to enter into parameter setting. Press " CAL/INFO " to enter into electrode calibration mode.
"ATC" will be displayed after the temperature when the meter is connected with
temperature electrode. If you need to correct the actual temperature measurement,
please do as following:
Press " SET " to enter P01, then press " ENT/HOLD " to display the actual temperature. Afterwards,
press " MI MR SET " keys to correct. Press " ENT/HOLD " to confirm. Screen display back to P01.
You can go to next parameter setting by pressing " MR " or " MI " keys or pressing
" MODE/ESC " key to quit and go back to measurement mode. Range of temperature
correction is 10℃.
Factory default is 25℃ when the meter is unconnected with temperature electrode.
You can also follow the above steps to set the manual temperature compensation.
Setting range: 0-100℃.
Note:
The meter will display "ERR" and go back to setting if the setting temperature is out of
range during setting temperature offset and manual temperature setting.

5.3.2 P02 Cell Constant(K)
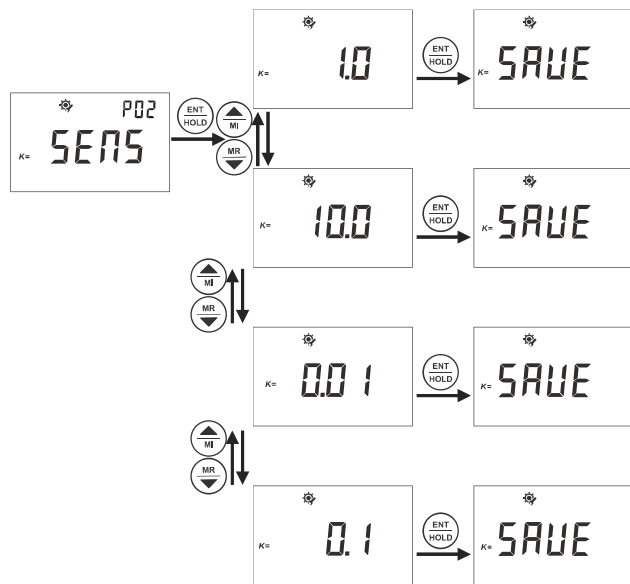
Press " ENT/HOLD " in P02. Then press " MI " or " MR " key to select cell constant K=1.0. K=10.0.K=0.01.and K=0.1. Press" ENT/HOLD " to confirm.
You can go to next parameter setting by pressing " MI " or " MR " keys or pressing " MODE/ESC " key to quit and go back to measurement mode.

cell constant K=1.0. suitable for middle range measuring
cell constant K=10.0. suitable for Wide range measuring
cell constant K=0.1.suitable for low range measuring
You can also refer to P18 for more details on the measuring range.
Factory default is cell constant K=1.0.

5.3.3 P03 Temperature Compensation Base

Press " ENT/HOLD " in P03. Then press " MI " or " MR " key to adjust the numerical value. Press " SET " to move the cursor to adjust the numbers. Range of Temperature Compensotion Base: 15.0-35.0°C. Press " ENT/HOLD " to confirm.

5.3.4 P04 Conductivity Temperature Factor

Press " ENT/HOLD " in P04. Then press " MI " or " MR " key to adjust the numerical value. Press " SET " to move the cursor to adjust the numbers. Range of Conductivity Temperature Factor: 0.00-10.00%. Press " ENT/HOLD " to confirm.