

INSTRUCTION MANUAL

CONDUCTIVITY-METER

MODEL CC-01

CONTECH

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CHAPTER 1

INTRODUCTION

Contech CC-01 measures Conductivity, Total Dissolved Solids(TDS) and temperature of liquids. It can be used in a variety of fields such as industrial, agriculture, environmental studies and scientific research laboratory.

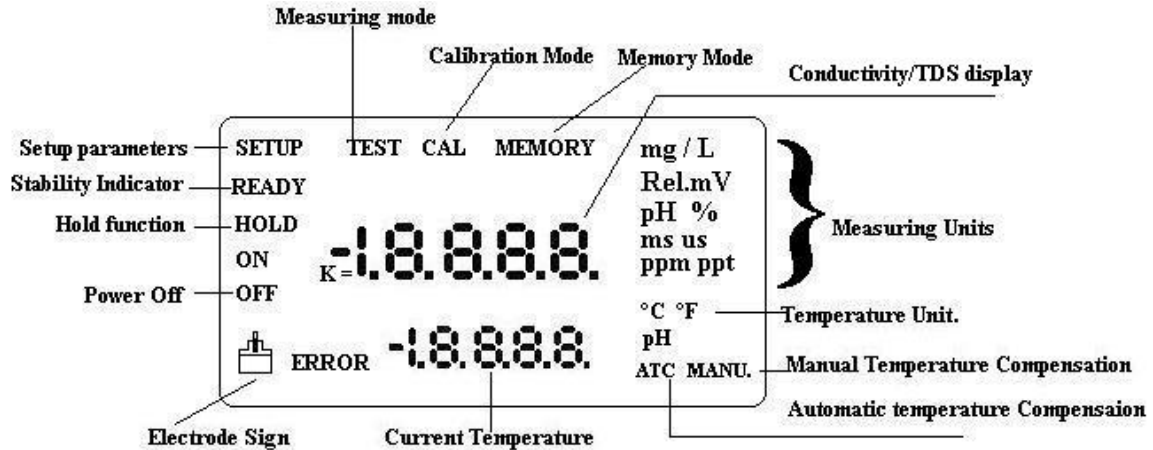
ABOUT CC-01 MODEL.

Conductivity meter, Model CC-01, is a microprocessor based instrument, which measures Conductivity, Total Dissolved Solids(TDS) and temperature of a liquid under test. Meter supports ATC (Automatic temperature compensation) feature which corrects the electrode output changes due to temperature variation of the sample being tested. There is also an option to enter the temperature of measuring solution manually. The following are the salient features of CC-01 meter.

- Advanced Microprocessor based design.
- Conductivity and TDS modes.
- Automatic and Manual temperature Compensation
- Auto ranging.
- 0-20 μ S/cm, 20-200 μ S/cm, 200-2000 μ S/cm, 2 – 20 mS/cm, 20-200 mS/cm
- Single or Multi point calibration.
- TDS Conversion factor from 0.40 to 1.00
- Cell Constant adjustable from 0.1 to 10.0
- Temperature Coefficient adjustable from 0 to 10%/°C
- Normalisation temperature adjustable from 15 to 30 °C.
- Bi directional RS232 interface. Baud rate selectable from 1200,2400,4800 and 9600.
- Single and continuous print out of Conductivity.
- Multiple Printout types. Combinations selectable from Sr. No., Cond/TDS, Date, time and temperature.
- Real Time Clock.
- Temperature setting (Manual temperature compensation).
- Calibration report as per GLP requirements.
- LCD display with Backlight.
- Memory storage of 100 measurements.
- Data logging facility up to 500 results. Data logging interval selectable from 5S, 10S, 20S, 30S, 1M, 2M and 5M.
- Temperature calibration.

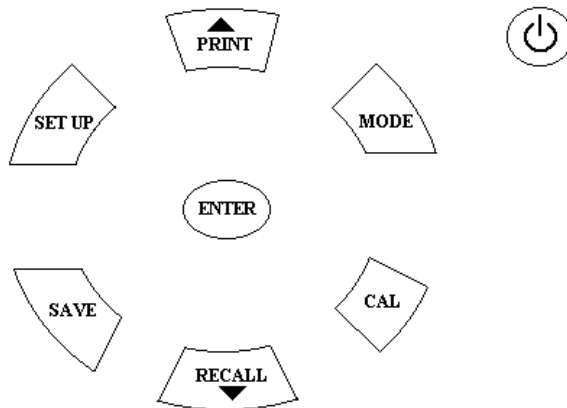
CHAPTER 2

CONDUCTIVITY METER DISPLAY



CONDUCTIVITY METER DISPLAY

CONDUCTIVITY METER KEYBOARD



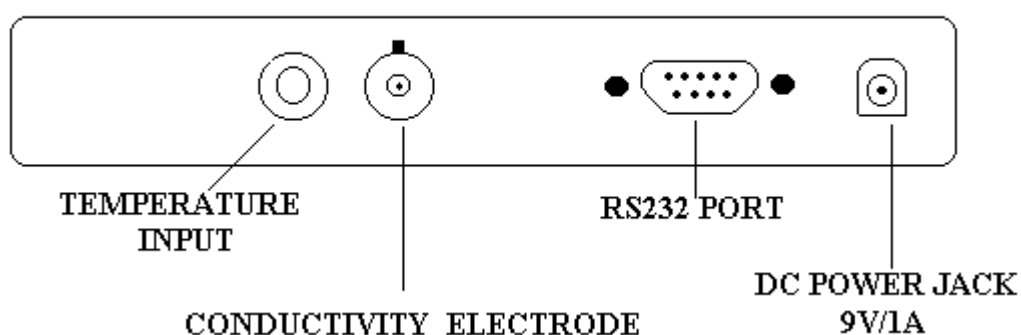
CHAPTER 3

BASIC OPERATION AND SETUP PARAMETERS

3.1 POWER AND INSTALLATION REQUIREMENTS

The meter requires good stable power. Meter is supplied with a 9V/1A switching adapter. Connect the adaptor to the instrument to the power jack located at the rear side of the meter. Connect the adapter to an AC power outlet. Meter is supplied with a probe. Connect the electrode to the BNC connector provided at the rear side. Connect the temperature probe to the temperature input connector.

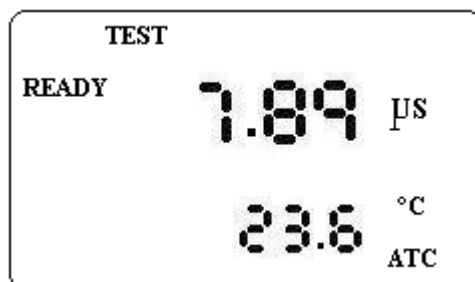
REAR PANEL



3.2 STARTING THE METER

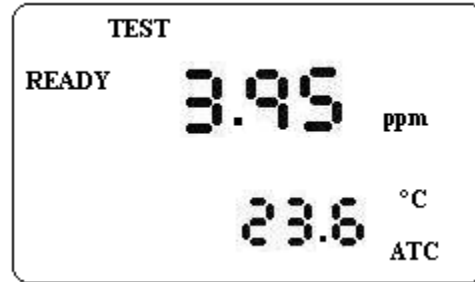
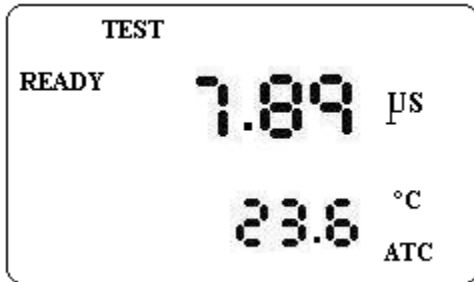


Switch on the meter by pressing the  key. Instrument goes through self-tests and subsequently display the measured conductivity say 7.89 uS/cm



3.3 CHANGING MODES.


Use  to change between CONDUCTIVITY and TDS modes.



3.4 SETUP PARAMETERS

3.4.1 SETTING DATE AND TIME.


Meter has an inbuilt Real Time clock. Hence there is no need to change or update date and time. However it is possible to change date and time.

Press  key. The Meter displays
and subsequently displays

set
up
baud

Press  or  key till it displays

date

Press  key. Meter displays current date say 07. Follow the instructions below for changing date, month and year.


TO CHANGE DATE


07
DATE

 PRINT To change

 RECALL To change

 ENTER To save

 SET UP To discard

 CAL To make zero


TO CHANGE MONTH


08
MON

 PRINT To change

 RECALL To change

 ENTER To save

 SET UP To discard

 CAL To make zero


TO CHANGE YEAR


11
YEAR

 PRINT To change

 RECALL To change


 ENTER To save

 SET UP To discard

 CAL To make zero

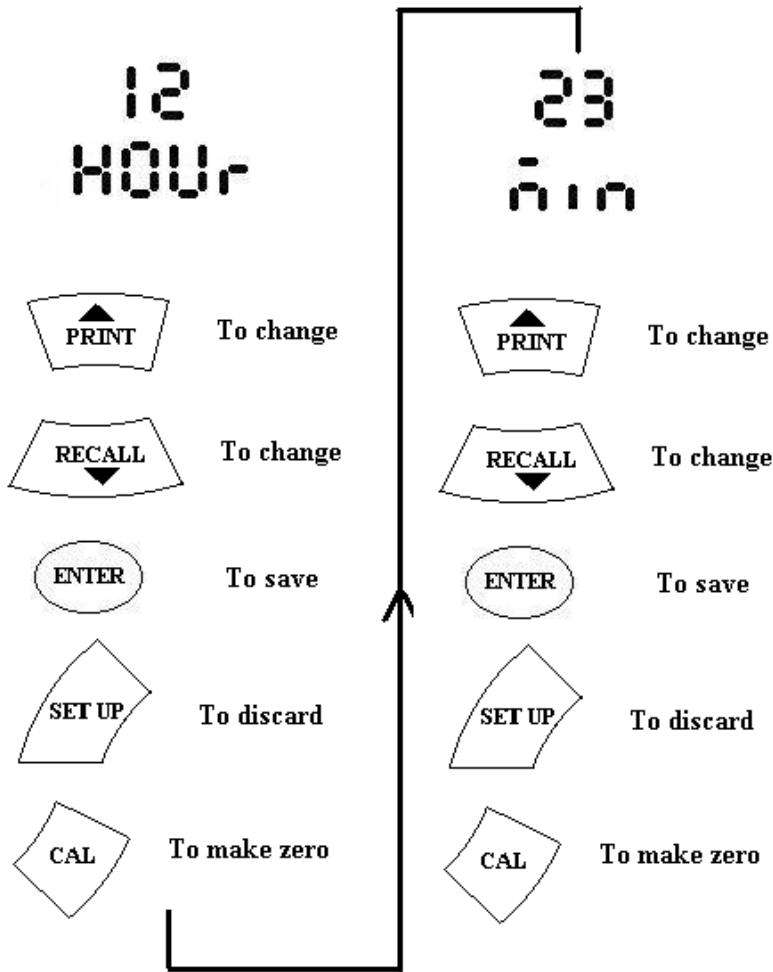
12.23.
45.

Meter Displays the current time, say 12.23.45


Press  SET UP key to change hour. Follow the instructions below for changing Hour and Minute

TO CHANGE HOUR

TO CHANGE MINUTE



3.4.2 TO SET BAUD RATE

Press  key. The Meter displays




SEt
UP


and subsequently displays

bAud


Press  key. Meter displays the set baud rate say 9600.

bd
9600

Press  or  key to change between 1200, 2400, 4800 and 9600 and press  key to save.

Press  key to quit without saving

3.4.3 TO SET TEMPERATURE (For Manual Temperature Compensation)

Press  key. The Meter displays and subsequently displays

```
Set
UP
bAud
```




Press  or  key till it displays


```
tEMP
Set
```

Press  key.


Meter shows the set or default temperature (25°C)

```
25.0
tEMP
```

Press  or  key to change temperature and press  key to save.


Press  key to quit without saving

3.4.4 TO SET READING SERIAL NUMBER




Press  key. The Meter displays and subsequently displays


```
Set
UP
bAud
```



Press  or  key till it displays

Press  key. Meter shows the current serial number.

ser
0003


Press  or  key to change the serial number and press  key to save.

Press  key to quit without saving


Press  key to make the reading 0000.

3.4.5 TO SET PRINT OPTION

There are 2 options : **One** and **ALL**

One - Press  key to print current Cond/TDS through RS232 port.

ALL - Continuous data transfer to computer/printer through RS232 port.

Press  key. The Meter displays
and subsequently displays

set
up
baud

Press  or  key till it displays

Print

Press  key. Meter displays the current mode, say One

One

Use  or  keys to change between

One and **ALL** and Press  key to save.



Press key to discard changes and quit.

3.4.6 TO SET PRINT FORMAT.

There are 6 print formats available in the meter.

- Prf1 - ONLY Cond/TDS
- Prf2 - SERIAL NO, Cond/TDS
- Prf3 - SERIAL NO, DATE, Cond/TDS
- Prf4 - SERIAL NO, TIME, Cond/TDS
- Prf5 - SERIAL NO, DATE, TIME, Cond/TDS
- Prf6 - SERIAL NO, Cond/TDS, TEMPERATURE

To change the format,



Press key. The Meter displays and subsequently displays

Set
UP
bAud
Prnt
Fnt



Press or key till it displays



Press key. Meter displays the current mode



Use or keys to change between PRF-1 to PRF-6 and press key to save.



Press key to discard changes and quit.

3.4.7. TO SET PRINT TYPE.


Meter can be set to print the results in Horizontal and vertical form

A Typical printout in the horizontal form appears as below.

1. 12.30.34 4.00 uS/cm
2. 12.30.45 4.01 uS/cm

While a printout in vertical mode is as shown below.


Sr.No. : 1
Time : 12.30.34
Value : 4.00 uS/cm
To set the mode,

Press  key. The Meter displays
and subsequently displays



```
SEt
UP
bAud
```

Press  or  key till it displays

```
Print
tYPE
```

Press  key. Meter displays the current mode,
say TYPE1


```
tYPE1
```


Press  or  key to change between

```
tYPE1
```

 (horizontal) and


```
tYPE2
```

 (Vertical) and press  key to save.

Press  key to discard changes and quit.

3.4.8. TO SET MACHINE ID.

Machine identification number can be assigned to the meter using this option.

Press  key. The Meter displays
and subsequently displays

```
SEt
UP
bAud
MACH
id
```

Press  or  key till it displays

Press  key. Follow the instructions given below for setting id.

MACHINE ID SETTINGS



TO MOVE THE BLINKING CHARACTER LEFT



TO SAVE MACHINE ID



TO MOVE THE BLINKING CHARACTER RIGHT



TO QUIT WITHOUT SAVING




OR




TO CHANGE THE CHARACTER




3.4.9. TO SET TEMPERATURE COEFFICIENT.


Press  key. The Meter displays
and subsequently displays

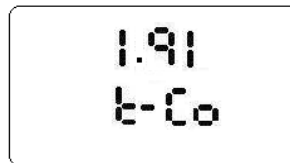
```
SEt
UP
bAud
TEMP
COEF
```

Press  or  key till it displays


Press  key. Meter will display the current value of coefficient say 2.00

Use  or  key to change and Press  to save.


Press  key to discard changes and quit.







3.4.10. TO SET TDS FACTOR.

Press  key. The Meter displays
and subsequently displays

Press  or  key till it displays

Press  key. Meter will display the current value of tds factor say 0.50


Use  or  key to change and Press  to save.

Press  key to discard changes and quit.



3.4.11. TO SET NORMALISATION TEMPERATURE.

Using Automatic temperature compensation, Meter compensates for temperature variations of a solution from the normalization temperature set. Default normalization temperature is 25°C. However it can be changed from 15 to 30°C, if required.


Press  key. The Meter displays







and subsequently displays

bAud
norā
tEAP

Press  or  key till it displays


Press  key. Meter will display the current value of temperature say 25

Use  or  key to change and Press  to save.

Press  key to discard changes and quit.


25.0
tEAP °C




3.4.12. TO SET CELL CONSTANT.


Press  key. The Meter displays
and subsequently displays

SEt
UP
bAud
CELL
Cons

Press  or  key till it displays

Press  key. Meter will display the current value of cell constant say 1.00

Use  or  key to change and Press  to save.

Press  key to discard changes and quit.

1.00
CELL

CHAPTER 4

CALIBRATION OF METER


CC-01 can be calibrated in both manual and auto modes. Automatic calibration can be done in Conductivity mode only. But Manual calibration can be performed for both Conductivity and TDS modes. Meter also allows Single and Multi point calibration.

In case of Single point calibration, when a calibration is performed in one Range, Calibration of all the 5 ranges will be changed. However in Multi point calibration, new calibration value will be the change in the range of the calibration solution only.

Always use fresh solution for calibration. For optimum results, choose calibration standards close to the values being measured. Use Single point calibration, if measurement is done in one single range. For measurements in different ranges, use multi point calibration. While Calibration solution of 1413 uS/cm takes care of the 0 –2000 us range, 84us/cm solution can be used for 0 – 200 us/cm or 12.88 mS/cm for 0 – 20 ms range. As a thumb rule use a calibration solution which is atleast 60 –70% of the range.

Calibrate the meter frequently atleast once a week for better results. There may be situations where the meter must be calibrated before use.

4.1 SETTING AUTO / MANUAL MODES.

Press  key. The Meter displays

SET
UP





and subsequently displays


bAud

Press  or  key till it displays


CAL
TYPE

Press  key. Meter will display the current calibration type.

Use  or  keys to change between  (Manual) and  (Auto)

Press  key to select the mode.

4.2 SETTING SINGLE / MULTI MODES.

Press  key. The Meter displays

Set
UP



and subsequently displays


bAud

Press  or  key till it displays

CAL
mode

Press  key. Meter will display the current calibration mode.

Use  or  keys to change between **sin** (Single) and **mult** (Multiple)

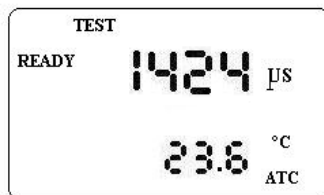
Press  key to select the mode.

4.3 CONDUCTIVITY CALIBRATION.

Meter can be calibrated for Conductivity in Automatic and Manual Modes.

4.3.1 Automatic Conductivity calibration.

1. Select AUTO mode as per 4.1 above
2. Select conductivity mode.
3. Select SINGLE or MULTI mode as per 4.2 above
4. Rinse the electrode with distilled water to remove any residue of the previous measurement. Air it dry.
5. Rinse the electrode with the Calibration Solution.
6. Immerse the electrode in the Calibration solution. Ensure that the steel ring of the probe is immersed in the liquid. Stir the liquid gently for consistency.
7. Immerse the temperature probe also into the solution (If provided).
8. Wait for the Conductivity reading to stabilize. Say 1424 uS/cm

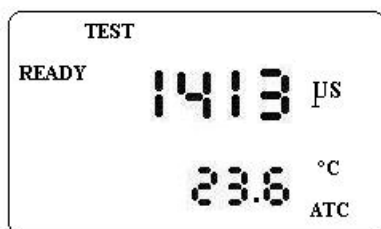


9. Press key.

Meter automatically recognizes the standard and displays



Press key. Meter calibrates to the new value and displays the results as below.

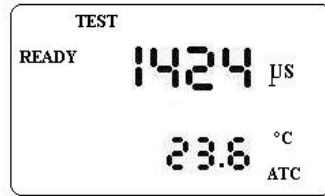



In SINGLE(SIN) mode calibration type, Calibration values of all the ranges will be Changed, while in MULTI(MULT) mode Calibration of only the current range (Range 200 – 2000uS/cm) will be changed.

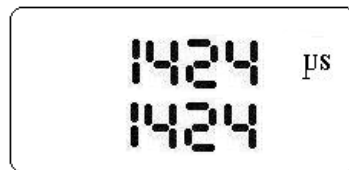
4.3.2 Manual Conductivity calibration.



1. Select MANUAL mode as per 4.1 above
2. Select conductivity mode.
3. Select SINGLE or MULTI mode as per 4.2 above
4. Rinse the electrode with distilled water to remove any residue of the previous measurement. Air it dry.
5. Rinse the electrode with the Calibration Solution.

6. Immerse the electrode in the Calibration solution. Ensure that the steel ring of the probe is immersed in the liquid. Stir the liquid gently for consistency.
7. Immerse the temperature probe also into the solution (If provided).
8. Wait for the Conductivity reading to stabilize. Say 1424 uS/cm




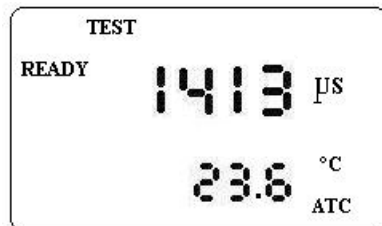
9. Press  key. Meter displays


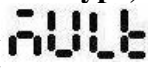


Use  or  key to change the value to the standard value, say 1413



Press  key. Meter calibrates to the new value and displays the results as below.



In SINGLE() mode calibration type, Calibration values of all the ranges will be Changed, while in MULTI() mode Calibration of only the current range (Range 200 – 2000uS/cm) will be changed.

4.4 TDS CALIBRATION.

Meter can be calibrated for TDS in Direct and Manual Modes.

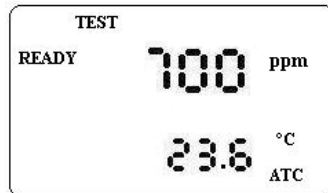
4.4.1 Direct Calibration


The TDS factor can be entered directly, if it is known. Refer section 3.4.10 for more details. TDS factor can be calculated as below.

$$\text{TDS FACTOR} = \text{ACTUAL TDS} / \text{CONDUCTIVITY at } 25 \text{ } ^\circ\text{C}$$



4.4.2 Manual tds calibration.

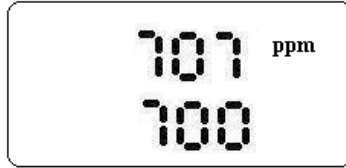
1. Select TDS measurement mode
2. Select SINGLE or MULTI mode as per 4.2 above
3. Rinse the electrode with distilled water to remove any residue of the previous measurement. Air it dry.
4. Rinse the electrode with the Calibration Solution.
5. Immerse the electrode in the Calibration solution. Ensure that the steel ring of the probe is immersed in the liquid. Stir the liquid gently for consistency.
6. Immerse the temperature probe also into the solution (If provided).
7. Wait for the TDS reading to stabilize. Say 700 ppm




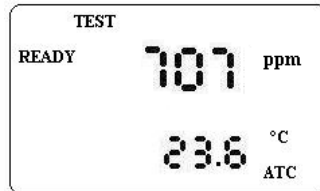
8. Press  key. Meter displays





Use  or  key to change the value to the standard value, say 707



Press  key. Meter calibrates to the new value and displays the results as below.




In SINGLE() mode calibration type, Calibration values of all the ranges will be Changed, while in MULTI() mode Calibration of only the current range (Range 100 – 1000 ppm) will be changed.

4.5 TEMPERATURE CALIBRATION

To calibrate the temperature sensor, Keep the meter in Conductivity measurement mode.


Immerse the temperature probe in to a solution with known temperature.

Press the  key. The meter displays

CAL

and subsequently starts displaying the conductivity value.






Keep the  key pressed , till meter displays



Subsequently meter displays



Upper display shows the measured temperature and lower display shows the temperature to be set.

Press  or  key to change the temperature to the known value and press  key to save the new temperature calibration. Meter will start displaying the new value.

CHAPTER 5

CONDUCTIVITY MEASUREMENT

CC-01 measures conductivity of a solution in 5 measurement ranges, 0.00 – 20.00uS/cm, 20.0 – 200.0 uS/cm, 200 – 2000 uS/cm, 2.00 – 20.00 mS/cm, 20.0 – 200.0 mS/cm. Meter shifts the range automatically whenever measured value crosses the limits.

Meter is also provided with Automatic Temperature compensation(ATC) feature, where in it corrects the variation of conductivity due to temperature changes. Meter is switched to ATC mode automatically when a Pt-100 temperature probe is attached to it. It measures the liquid temperature and applies necessary correction to the readings.

Temperature Coefficient:

Temperature compensation factor or Temperature Coefficient is factory set to a temperature coefficient of 2.00 % per °C. This is good enough for majority of the applications. However, it can be changed if required. Refer to section 3.4.9 for details.

Temperature coefficient can also be calculated by using the following formula.

$$\frac{(C2 - C1)}{C1(T2-25) - C2(T1-25)} \times 100$$

C1 = Conductivity of a solution at T1 °C

C2 = Conductivity of a solution at T2 °C

If the meter does not detect the temperature probe, meter switches to Manual temperature compensation mode. There is a provision to manually enter the liquid temperature, if required. Refer to section, 3.4.3 for changing the temperature.

Normalisation Temperature:

Using Automatic temperature compensation, Meter compensates for temperature variations of a solution from the normalization temperature set. Default normalization temperature is 25°C. However it can be changed from 15 to 30°C, if required. Refer to section 3.4.11 for details.

Cell Constant:

Meter is supplied with an electrode of Cell constant 1.00. However, it can be changed to suit a particular electrode. Refer to section 3.4.12 for more details.

Conductivity Electrode:

CC-01 meter is supplied with a Conductivity/TDS electrode with a cell constant of 1.00. It has a SS ring, which should be fully immersed in the liquid under test. The electrode consists of Pt plate coated with Pt black enclosed in Glass housing for high accuracy and good repeatability.

To ensure accurate and reliable analytical measurements, a routine care and maintenance regime should be adopted. In addition to giving the correct measurement result, correct care and maintenance of electrodes will result in improved electrode performance and prolonged working life. It also reduces the necessity for corrective intervention, thus saving time and money.

Always keep the Conductivity/TDS electrodes clean. While taking the measurements, always shake the probe gently in the measuring solution. After measurements, probe can be wiped with soft tissues or can be cleaned by soft detergent solutions. Always keep the electrode immersed in distilled or deionised water, when not in use. Do not let the electrode head to run dry.

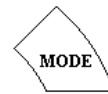
The sensitive glass bulb in front of the combination electrode should not touch hard substances. Before and after measuring electrode should be washed with pure water for better accuracy. It should be washed thoroughly to remove any sample stuck on it during measurement.

During use the following points should be borne in mind:

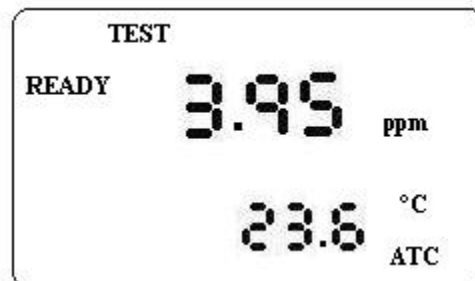
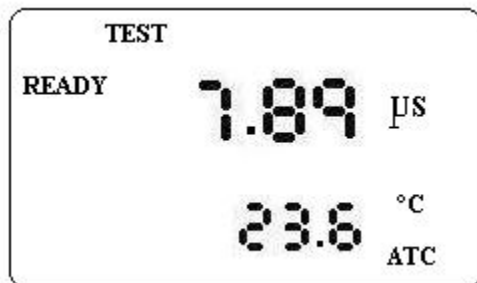
- Electrodes should be calibrated using calibration buffers that bracket the expected value of the sample. Calibration should be performed on a daily basis or more frequently if sample throughput is high.
- Stirring the sample during measurement is recommended but is not essential. But same procedure must be followed for both calibration and measurement.
- The electrode should be rinsed with a wash bottle of purified water between measurements.
- Keep the electrical parts of the electrode (the cable and connector) dry at all times.
- After a measurement is completed, remove the electrode from the sample.

TDS MEASUREMENTS

TDS (Total dissolved solids) can be measured using the meter. Use



key to toggle between Conductivity and TDS modes.




While taking measurements,

- Rinse the electrode with distilled water to remove any residue of the previous measurement. Air it dry.
- Rinse the electrode with the measuring sample.
- Immerse the electrode in the measuring solution. Ensure that the steel ring of the probe is immersed in the liquid. Stir the liquid gently for consistency.
- Immerse the temperature probe also into the solution (If provided).
- Wait for the Conductivity/TDS reading to stabilize.
- Note down the Cond/TDS readings along with temperature.

CHAPTER 5 DATA LOGGING

Data logging is useful for studying the pattern of Conductivity/TDS change over time. Meter stores the Cond/TDS values along with temperature at a preset time interval. A maximum of 500 readings can be stored and recalled.


5.1 SET DATA LOGGING INTERVAL



Press  key. The Meter displays
and subsequently displays

```
SET  
UP  
bAud
```


Press  or  key till it displays

```
data  
LOG  
S  
SEC
```


Press  key. Meter displays the set baud rate say 5 seconds

Press  or  key to change between 5S, 10S, 20S, 30S, 60S, 120S, 300S


and press  key to save.

Press  key to quit without saving

5.2 START DATA LOGGING.

Press  key. The Meter displays

```
SET  
UP
```

Immediately press  key. Meter Displays
Meter starts storing the COND/TDS and temperature values at the set interval.

```
data  
LOG
```

— — — —


Meter displays — — — — every time it stores data.

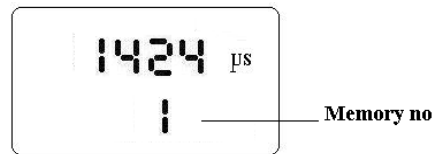
A maximum of 500 readings can be stored. When the data reaches 500, meter displays

FULL

and it stops saving further data.



5.3 DATA RECALL.


Press  key. Meter displays




and followed by



Press  or  key to scan through the saved data.

Press  to quit.

TO PRINT DATA

Press  key . A sample printout appears as below.


1. 1432 uS/cm 26.8 $^{\circ}$ C
2. 1434 uS/cm 26.9 $^{\circ}$ C
3. 1431 uS/cm 26.7 $^{\circ}$ C
4. 1428 uS/cm 26.8 $^{\circ}$ C
5. 1422 uS/cm 26.9 $^{\circ}$ C

CHAPTER 6

SAVE AND RECALL OF DATA

A maximum of 100 numbers of measurement data including Cond/TDS, Date, Time and temperature can be stored and recalled.

6.1 TO CLEAR MEMORY:

Press  key. The Meter displays


SEt
UP

and subsequently displays


bAud

Press  or  key till it displays

dAtA
CLr



Press  key. Meter displays

CLr


Press  key again, Meter displays

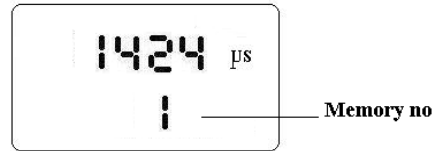
All the stored data will be cleared.

6.2 TO STORE DATA.

Press  key. Meter displays . The measurement data along with date, time and temperature will be stored in memory.

6.3 TO RECALL DATA:


Press  key. Meter displays




and followed by



Press  or  key to display saved data.

Press  to quit.

6.4 TO PRINT DATA

Press  key. Printout format can be selected by 3.4.6 and 3.4.7 in Chapter 3.

Selected Format Print output

- PrF1** - ONLY Cond/TDS
- PrF2** - SERIAL NO, Cond/TDS
- PrF3** - SERIAL NO, DATE, Cond/TDS
- PrF4** - SERIAL NO, TIME, Cond/TDS
- PrF5** - SERIAL NO, DATE, TIME, Cond/TDS
- PrF6** - SERIAL NO, Cond/TDS, TEMPERATURE

CHAPTER 7 DATA PRINT AND RS232 INTERFACE

7.1 BIDIRECTIONAL RS232 INTERFACE

Bi-directional RS-232 interface is provided in the meter to communicate with devices like computer, printer etc. The interface is provided through a nine pin D-type connector provided at the rear side. Connections are as below.

Pin 2 – RXD – Receive Data
Pin 3 - TXD – Transmit Data
Pin 7 – Ground.

The Serial data transmitted and received are in standard ASCII mode (+/- 12V) - ASYNCHRONOUS , 8 BITS, NO PARITY, 1 STOP BIT.

Baud rate: Selectable from 1200, 2400 ,4800 and 9600.

The data format is

<+/->PPPPPP.PPb <bUU> <CR><LF> (15 characters)

where PPPPP.PP - Cond or TDS value

b – blank space - 20 hex

CR- Carriage Return – 0D hex

LF – Line feed - 0A hex

for example, a Conductivity of 15.10us/cm will be sent as

+bbbb15.10uS/cm <0D><0A>


Meter could be controlled by an external device like computer with the following commands.

P# - Number of times, a stable conductivity/TDS data is to be transmitted through the serial port.

can be any number from 1-9.


7.2 PRINT OPTIONS.

Meter can be attached to a serial printer for your printing needs. Print out can be programmed to suit most of the printing requirements. See sections 3.4.2, 3.4.4, 3.4.5, 3.4.6 and 3.4.7 for setting parameters required for printing.

Press  key to print data through the serial port.

Printing option and patterns are controlled by 3 SETUP parameters. They are

a) **Print**: There are 2 options : **ONE** and **ALL**

ONE - Press  key to print current Cond/TDS through RS232 port.

ALL - Continuous data transfer to computer/printer through RS232 port.

b) **Print**
FnE option:

- PrF1** - ONLY Cond/TDS
- PrF2** - SERIAL NO, Cond/TDS
- PrF3** - SERIAL NO, DATE, Cond/TDS
- PrF4** - SERIAL NO, TIME, Cond/TDS
- PrF5** - SERIAL NO, DATE, TIME, Cond/TDS
- PrF6** - SERIAL NO, Cond/TDS, TEMPERATURE

c) **Print**
TYPE Print type (Horizontal or Vertical)

i) **TYPE1** - Horizontal
Details will be printed horizontally.

A Typical printout in the horizontal form appears as below.

1. 12.30.34 4.00 uS/cm
2. 12.30.45 4.01 uS/cm


ii) **TYPE2** - Vertical
Details will be printed vertically in a slip form.

Sr.No. : 1
Time : 12.30.34
Value : 4.00 uS/cm

CHAPTER 8 ELECTRODE PERFORMANCE AND GLP

8.1 GLP CALIBRATION REPORT

Report of the last calibration done, is available as per GLP requirements.

Press  key. The Meter displays


SEt
UP

and subsequently displays

bAud

Press  or  key till it displays

CAL
rPt

Press  key. Meter Prints report of last calibration as below.

CONTECH
CONDUCTIVITY METER
MODEL : CC-01
MACHINE ID : ABCDEFGH
CAL. DATE :
CAL. TIME :
BUFFER :
1. 1413 uS/cm at 25 DEG C

SPECIFICATIONS

1. Model : CC-01
2. Conductivity Range : 0 to 20.00, 20-200.0, 200-2000 $\mu\text{S}/\text{cm}$; 0 to 20.00, 20.0 -200.0 mS/cm
3. TDS Range : 0 to 10.00, 100.0, 1000 ppm; 0 to 10.00, 100.0ppt
4. Auto ranging : Yes.
5. Resolution : 0.05 % Full Scale
6. Calibration Mode : Single or Multiple
7. Accuracy : $\pm 1\%$ Full Scale
8. Temperature compensation : Auto or Manual
9. Temperature range : 0 to 100°C in 0.1 deg increments
10. TDS conversion factor : 0.40 to 1.00 adjustable.
11. Cell Constant : 0.1 to 10.0 adjustable.
12. Temperature Coefficient : 0 to 10%/°C in 0.1% increments
13. Normalisation Temperature : 15 °C to 30 °C
14. Memory : 100 nos.
15. Data logging : 500 nos.
16. Power : +9V/1A power adapter (Input 100-260V AC, 50Hz)
17. Operating temperature : 15 to 45° c
18. Dimensions : 165(L) x 190(D) x 60(H)
19. Meter weight : 700g
20. Electrodes : 1. Glass Conductivity Electrode.
2. Temperature Probe.

Box Contents : Meter, Glass conductivity electrode, Temperature Probe, 9V adapter, Instruction manual, Electrode stand, Rod and holder.