TITLE: OPERATION AND CALIBRATION TDS/CONDUCTIVITY ANALYSER

1.0 PURPOSE:

To describe the Operation and Calibration of TDS/CONDUCTIVITY Analyser

2.0 SCOPE:

This procedure is applicable to the TDS/CONDUCTIVITY Analyzer of Laboratory.

Make : Polmon

Model : CM-540

ID No. : DIPL/QC/INS/TDS/001

3.0 RESPONSIBILITY:

3.1 Analyst-QC is responsible to follow this SOP.

3.2 Head-QC/Designee is responsible for ensuring implementation of this SOP.

3.3 Head-QA/Designee is responsible for monitoring overall compliance of this SOP.

4.0 DEFINITIONS:

Nil

5.0 PROCEDURE:

5.1 **OPERATION:**

5.1.1 Clean the instrument keep the area neat and clean.

5.1.2 Switch on the main power supply.

5.1.3 Press **PRG/CAL** key to enter into program mode PASSWORD menu is displayed**.**

PASSWORD
XXX

5.1.4 Using ↑ or↓ keys to set PASS WORD (100) and use OK Key

PRG
1. Calib

display shows.

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Sign & Date			
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Department	Quality Control	Quality Control	Quality Assurance

5.1.5 To determine the **TDS of the** sample select **PRG 2. Option**

5.1.6 Using ↑ or↓ keys and use OK Key display shows. **OPTION** **PRG 1. READ**

5.1.7 To select the MEASURE **MODE press OK** Key the display shows.

Measure TDS or **Measure Cond**

5.1.8 Use ↑ Key between **TDS** or **CONDUCTIVITY**

5.1.9 Select **Measure TDS** then press **OK** key

5.1.10 The display **TDS Fact 0.00** shows then set TDS factor 0.7 by using ↑ or↓ keys.

5.1.11 Press **OK** key the display shows. **Option 2:T.Comp**

5.1.12 Press **OK** Key the display **Temp Com ON** **Temp Com OFF** shows. By using ↑ key.

5.1.13 Select **Temp Com ON**

5.1.14 Press OK key the display **Temp Auto** **Temp Man** shows .By using ↑ key.

5.1.15 Select **Temp Auto**

5.1.16 Press OK Key the display shows then set temperature coefficient to

T. Coeff 1% 1% by Using ↑ or ↓ or keys

5.1.17 Press OK key the display shows **Option 3:Cell**

5.1.18 Then press OK key the display shows **Cell 1.000** adjust the cell constant given on the electrode **(Cell constant 1.02)** using ↓ or↑ keys. Then press **OK** key.

5.1.19 Press **PGR/CAL** key. Now instrument is ready for measuring **TDS.**

5.1.20 Dip the electrode/electrode assembly into **the** sample .Wait for completion analysis.

5.1.21 After completion the reading will display.

5.1.22 To determine the CONDUCTIVITY of the sample select Using ↑ or↓ key and press **OK** display shows **OPTION** menu.

5.1.23 To select the **MEASURE MODE** press OK key the display shows.

Measure TDS	or	**Measure Cond**

Use ↓ or ↑ key between **TDS** or **CONDUCTIVITY.**

5.1.24 Select **Measure Cond** then press OK key. The display shows **Option 2:T.Comp**

5.1.25 Press **OK** Key the display shows. **Temp Com ON** **Temp Com OFF**

By using ↑ key

Select **Temp Com ON**

5.1.26 Press OK key the display **Temp Auto** **Temp Man** shows .By using ↑ key

Select **Temp Auto**

5.1.27 Press OK Key the display **T. Coeff 1%** shows then set temperature coefficient to 1% by Using ↑ or ↓ or keys

5.1.28 Press OK key the display **Option 3:Cell** shows

5.1.29 Then press OK key the display shows **Cell 1.000** adjust the cell constant given on the electrode **(Cell constant 1.02)** using ↓ or↑ keys. Then press **OK** key.

5.1.30 Press **PGR/CAL** key. Now instrument is ready for measuring **CONDUCTIVITY.**

5.1.31 Dip the electrode in to the water.

5.1.32 Select the AUTO RANGE by using MODE key the display **Range Auto** shows then press OK Key

5.1.33 Remove the electrode from the beaker wash with distilled water and wipe with tissue paper to remove the water droplets on the surface of the electrode.

5.1.34 Immerse the electrode and solution whose **CONDUCTIVITY** to be measured

5.1.35 Record the **CONDUCTIVITY**. Value in the equipment log book.

5.2 **CALIBRATION:**

5.2.1 **PREPARATION OF STANDARD KCL SOLUTION:**

Preparation of 0.1 N KCl Solution:

Weigh accurately about 0.7492 gr of KCl into 100 ml volumetric Flask dissolve in distilled water up to the mark with the same solvent.

Preparation of 0.001 N KCl Solutions:

Pipette out exactly 1ml of 0.01N KCl solution into a 100 ml Volumetric flask dissolve in distilled water make up to the mark with the same solvent.

5.2.2 Press **PRG/CAL** key to enter into program mode PASSWORD menu is displayed**.**

PASSWORD XXX

5.2.3 Using ↑ or ↓ keys to set PASS WORD (100) and use **OK** Key display

PRG **1. Calib**

shows.

5.2.4 To calibrate the Instrument press **OK** key the display shows

Sensor **Cal**

5.2.5 Press OK key the display shows scrolling massage

Dip Cell in STD Solu.

5.2.6 At this stage immerse the electrode in the known conductivity solution and press **OK** key the display

Wait

shows

5.2.7 After reading the stabilized **TDS/CONDUCTAVITY** segment display shows the measured value as shows below

xxx

5.2.8 The LCD display shows

XX.X0C **A** **Do Calib**

5.2.9 The LED lamp(ppm/µs or ppt/ms)glows as per the sample **TDS/CONDUCTAVITY**

5.2.10 The measured value shows in segment play can adjusted to the required **STD** value as mentioned in the Table 1 by using ↑ and ↓ keys. This will automatically update cell constant.

5.2.11 Press **OK** keys to save the calibrated value. The display shows **Save Y** or **Save N** by using ↓ or ↑ keys to toggle between **Y or N**

5.2.12 Then press **OK** keys to select the option

5.2.13 Acceptance Criteria

Grams KCL/Kg of solution	K $1N\Omega^{-1}Cm^{-1}$	Acceptance Criteria
0.001N	146.9µ	±0.5 µ

5.2.14 **Calibration Schedule**: Calibration shall be done every day.

6.0 FORMATS / ANNEXURE(S):

S.No	Details	Format No. (Current version)
1.	Instrument Usage log book	
2.	TDS Analyser Calibration record	

7.0 CHANGE HISTORY:

Revision No.	Effective Date	Details of Revision	Ref CCF No.
00	01.06.2007	New SOP Calibration of Equipments is introduced across all the API manufacturing facilities of Discovery.	--
01	01.08.2009	Formats changed more clear and clarity	--
02		Formats are the part of SOP. So prepared Separately.	--
03	01.01.2017		

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