ScichemTech-USA

SCT-108.005.26

SCT-CL-MAXI
ScichemTech CL Maxi Controller
User/Operational Manual


SCT-CL-MAXI
MEAS
20.00
FAC
ScichemTech®

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I. MODEL AND INSTRUMENT TYPE

Thank you for purchasing and selecting Our SCT- Product Number: SCT-108.005.26
Model: SCT-CL-MAXI – The online CL Controller.
Once again we thank you for choosing our Model: SCT-CL-MAXI – The online CL Controller for your CL related field applications. We are pretty sure that you will be happy with our Instruments…Please feel free to contact our dealers /service team for any further assistance.

II: PRINCIPLE & OPERATIONS:

III: About the Product & Applications:

Our SCT- Product Number: ***108.005.26***

Model: ***SCT-MAXI CL Controller.***

Is a very reliable, accurate and consistent instrument you can always rely upon the Controller for all you Water CL control related applications within it's measuring range.

Salient Features:

● SCT-CL (Chlorine) MAXI CONTROLLERS are designed with creativeness to get the elegance and produced with proper quality, and meets the specifications for the Water related applications with high level performance

● SCT-CL(Chlorine) MAXI controllers are an industrial instrument used for online analysis and monitoring.

● SCT-CL (Chlorine) MAXI CONTROLLERS are made in a attractive pleasant color with a Large and Clear blue white LCD Display

● SCT-CL (Chlorine) MAXI CONTROLLERS has Microprocessor based controllers, which gives stable and accurate readings.

● SCT-CL (Chlorine) MAXI CONTROLLERS has Low power consumption and produces less internal heat.

● SCT-CL (Chlorine) MAXI CONTROLLER S has an isolated 4-20 mA current output

● SCT-CL (Chlorine) MAXI CONTROLLERS has a RS 485 communication interface

● SCT-CL (Chlorine) MAXI CONTROLLERS has an automated sensor cleaning control output.

● SCT-CL (Chlorine) MAXI CONTROLLERS has a diaphragm polagraphic electrodes. The electrode consists of cathode, anode, electrolyte and a layer of gas permeability diaphragm on the cathode. The measured residual chlorine diffuses to the cathode through diaphragm. The proper polarization voltage between the cathode and the anode, which can deoxidize the residual chlorine on the cathode. These chemical actions proportional to the residual chlorine which is in the measured medium which gives reliable measurements.

● SCT-CL-(Chlorine) MAXI CONTROLLERS are panel mount type of controllers.

● SCT-CL-(Chlorine) MAXI CONTROLLERS proved to work continuously in any harsh environmental conditions for the in line measurement and control of accurate CHLORINE value.

● SCT-CL-(Chlorine) MAXI CONTROLLERS has a major advantage that, no reagents are used.it has the direct measurement and readings.

Applications of SCT-MINI CL Vertical Controller.

SCT-MAXI CL Controllers are designed for the measurement and control of industrial on-line CL, widely used in the RO (Reverse Osmosis) Panels for the measurement and control of the water. In the Water purification plants, Production plants of pure water in Pharmaceutical industries, chemical industry, electronic industry, foodstuffs, beverage and etc.

However, SCT-108.005.26 can be used in many other fields & applications too.

III. TECHNICAL SPECIFICATIONS

Of Our SCT- Product Number: SCT-108.005.26
Model: SCT-CL-MAXI – The online CL Controller has the following Specifications

Measurement range:	0.00 ~ 19.99mg / L
Accuracy:	0.01mg /L
Display mode:	3½ bit LCD with backlit
CL calibration method:	2.00mg / L
CL temperature compensation:	0 ~ 45 C (automatic or manual)
Output current:	Isolate the active output of 4~20mA.
Output control:	Dual-contact output with both higher and lower limits (normally-open and normally-close respectively)
Contact capacity:	7A/250V AC (resistive load)
Length of the cable:	10m or an agreed length of ___m
Screw size:	3/4" pipe thread
Requirements on water samples:	pressure: ≤0.3MPa Flow rate: ≤3 m/s
Power supply:	AC 220V±10%; 50Hz
Environnemental conditions:	Température: 0~50℃ Humidity: ≤85%RH
Overall dimension:	96x96x120mm (Height x Width x Depth)
Dimension of the hole:	92x92mm
Installation method:	panel-mounted

IV: UN-PACKING & PRE-INSTALLATION REQUIREMENTS:

Follow these steps after receiving the instrument:

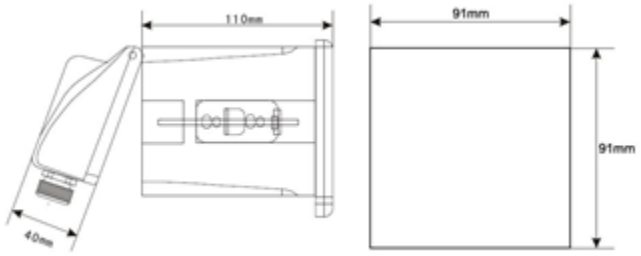
- Please check carefully the packaging box of the Controller before removing it in order to find out transportation damages.
- Should the packaging box be broken or have suffered any other damage, please contact the shipping agency before opening it.
- Once you have taken the instrument out of the box, check if damages can be observed. Should this be the case, please inform the dealer that has delivered you the equipment.

- Remove all packing straps, protectors and accessories used during transport. Recyclable materials are to be disposed in the containers provided therefore.
- Make sure to pre-warm or run the controller for 30-35 minutes prior to using and performing the calibration work
- Also, please make sure all the Electrical connections and the probes are connected properly.
- The meter should be installed in a clean, dry, well ventilated, vibration-free location around should be no corrosive gases.

Temperature changes in the measured liquid affect both the response of the measurement electrode to a given CL level, and the actual CL of the liquid. Temperature measurement devices can be inserted into the liquid, and the signals from those devices used to compensate for the effect of temperature on CL measurement, but this will only compensate for the measurement electrode's CL response, not the actual CL change of the process liquid!

V. INSTALLATION & METHOD OF OPERATIONS

- **5.1. Main installation**
- As we mentioned earlier, the meter should be installed in a clean, dry, well ventilated, vibration-free location around should be no corrosive gases. Make a rectangular cut out in the instrument cabinet or panel installation. Using the locking tools fix the Controller firmly into the Panel or Cabinet.



- **5.2. Electrode installation**
- Residual chlorine electrode, pH electrode loaded flow cell is shown in Fig. Such as the use of sinking into the (insertion) type installation, an electrode without the flow measuring chamber, directly, respectively, the residual chlorine electrode and pH electrode is connected to the connecting rod (water) to prevent the electrode cable can be fixed after inserted into the water, with the fixing bracket. Before installation, be sure to use the raw material with the (threaded Department) good waterproof closed. The measured media should be kept online monitoring and constant flow rate, the minimum flow rate of 15cm3/S.

5.3. INSTALLATION OF THE CL Controller

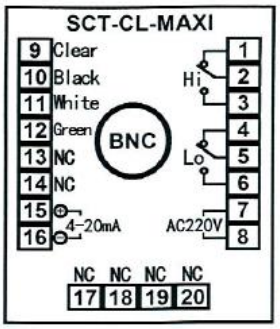
5.1 Front cover plate



The front cover plate

Front panel buttons
1. MENU key or a selection key
2. Left Arrow Key
3. Multiply Key
4. ENTER key

The rear panel wiring instructions:



1.NO： High point relay working	9. Clear
2.COM：High point relay common	10. Black
3.NC： High point normally closed	11. White
4.NO： Low point relay working	12. Green
5.COM：Low point relay common	13. NC
6.NC： Low point normally closed	14. NC
7.L ： 220V Fire wire	15. 4~20mA+
8.N ： 0V Zero line	16. 4~20mA-
17/18/19/20: NC	BNC : pH Sensor

5.4. CONTROLLER OPERATION

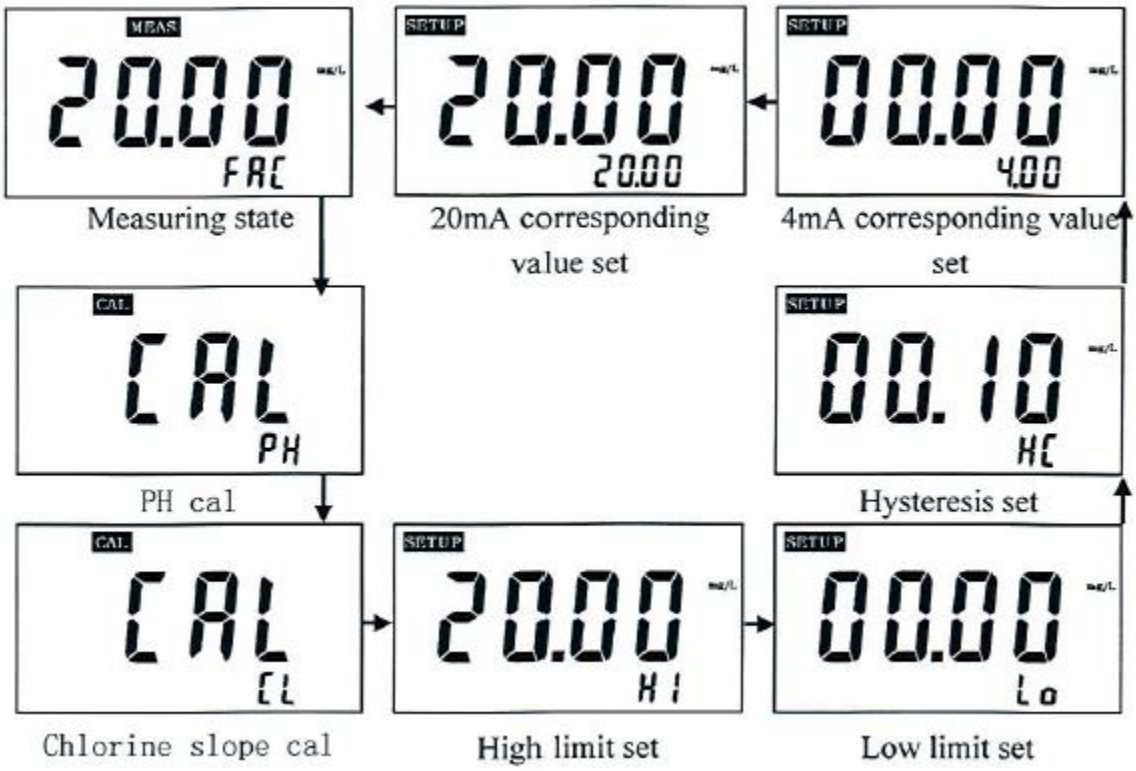
Under normal measurement mode the main instrument displays Residual Chlorine(FAC) value.
In the measurement mode press the ESC key to cycle through the following three states.

1) Residual Chlorine (FAC) value
2) Hypochlorous Acid (HOCL) value
3) pH and Temperature value

Please note the display value automatically changes and displays the Residual Chlorine value after 30 sec.

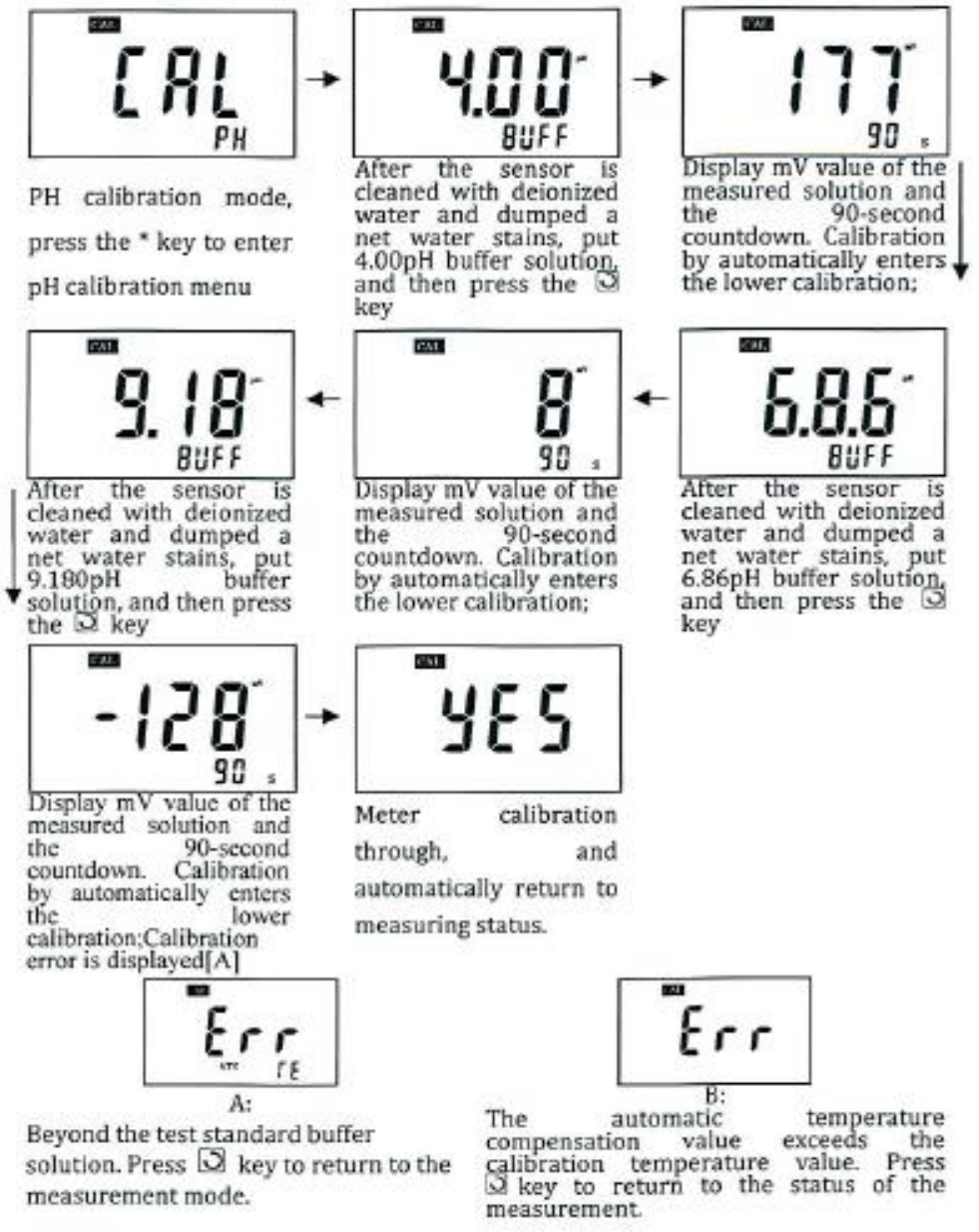


Chlorine Controller Menu:



CALIBRATION OF THE pH PROBE:

The PH electrode using two-point calibration: pH electrode (PH compensation using automatic way) and NTC thermistors have connected and instrumentation. Optional buffer 4.00,6.86 and 9.18PH (automatic identification). Press the MENU key to enter the main menu, press the arrow keys to select the PH calibration press ENTER to enter pH calibration interface,

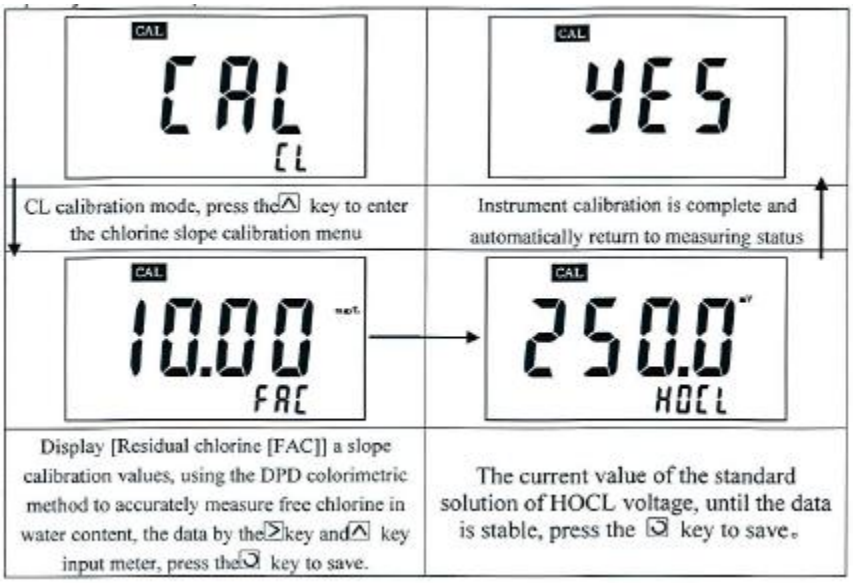


VI. CALIBRATION OF THE CL Controller

Calibration is to ensure accurate measurements from your CL Controller. The controller will need to be calibrated both before its first use and on an ongoing basis. This is usually done by dipping the probe into a buffer solution of a known CL and following the calibration steps based on our specific CL Controller.

To achieve high accuracy, the sensor should be measured in a 100% hypochlorous acid environment. Dilute sulfuric acid can be added to the standard to attain such environment.

1) Prior to calibrating the chlorine slope the controller power run is not less than 5 minutes.
2) By adding dilute sulfuric acid to adjust the pH value of the standard between 6-7 pH. By adjusting the standard solution of sodium hypochlorite chlorine value the calibration can be started. The standard value can be between 0.5-2 mg/l for the chlorine.
3) The calibration liquid must be flowing or the sensor should be lightly kept in a stirring position.

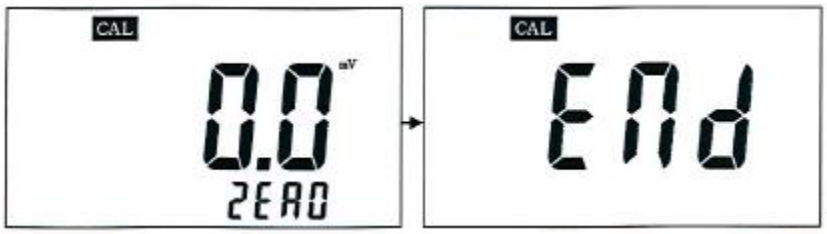


ZERO CHLORINE CALIBRATION:

Zero calibration must be performed using water sample which is non chlorinated such as distilled water or pure water. Dip the probe in the non-chlorinated water and stirrer the probe gently and start the zero calibration.

Press the menu key until the meter displays the following screen, after that release the menu key. Once the date is stable press the enter key to save the value.

Once the zero calibration is over the instrument will return back to the measurement mode.



VII: PRECAUTIONS & MAINTANANCE:

Maintenance:

1) The electrode cannot be stored in dry environment. When it is not in use, it is necessary to wash it with clean water and insert it in the liquid jacket filled with 1mo1KCL, or insert it in a container filled with 1mo1KCL.
2) The electrode should be cleaned on a regular basis. If the glass bulb of the electrode contacts and is contaminated by the polyfluortetraethylene liquid it should be cleaned with the following reagents.

1. Surfactant can be used to clean oil, grease or oil-containing substance.
2. 10% diluted hydrochloric acid can be used to remove calcium deposit or metal hydroxides.
3.10% diluted hydrochloric acid can be used to remove sulclide precipitation. Protein attachment can be removed by a mixture of 10% diluted hydrochloric acid and pepsin.

In order to ensure that the results of the electrode measurement can reflect the actual situation, the electrode chamber should have no air bubble or stagnant water that may cause measurement errors. Install the measuring electrode according to the following diagram:

Note:

1. The measuring electrode should be installed at a location in the pipeline where the flow rate is stable and air bubbles will not gather easily.
2. The measuring electrode should go deep into the flowing water. The CL signal is a kind of feeble potential signal. The cables for collecting CL signals should be installed independently instead of being laid in the same protection tube with the power cable and the control cable, so as to prevent any possible disturbance.

7. CL ELECTRODE / PROBE MAINTENANCE

A system's CL electrodes require periodic maintenance to clean and calibrate them. The length of time between cleaning and calibration depends on process conditions and the user's accuracy and stability expectations. Overtime, electrical properties of the measuring and reference electrode change. Calibration in known-value CL solutions called buffers will correct for some of these changes. Cleaning of the measuring sensor and reference junction will also help. However, just as batteries have a limited life, a CL electrode's lifetime is also finite. Even in the "friendliest" environments, CL electrodes have to be replaced eventually.

1. As the measuring electrode is a kind of precision component, do not get it out from the measuring chamber frequently unless under necessary conditions. Wash CL electrode on a regular basis.
2. Only special-purpose cables can be used for the measurement and no other type of cable can be used for this purpose. Using unqualified cables for measuring purpose will result in large error.
3. If the measuring electrode is damaged or disabled, it is necessary to replace it with the same type of combined electrode. Then calibrate the newly replaced measuring electrode according to Chapter 5 of this instruction manual.
4. This instrument is an assembly of precision integrated circuit and electronic organs. Therefore, precautions should be taken to protect the instrument from any possible damage by humidity.

As a quality control procedure, before releasing the controller for sale. Our Quality control in the factory performed & assures the following conformity as per the standards.

CONFORMITY DECLARATION **Application of Council Directive** **Standards to Which Conformity is Declared:**	
Compliance Testing	• Vibration to EN 60945 - Section 8.7 • Dry Heat to EN 60945 – Section 8.2 • Damp Heat to Lloyds register Test Spec. No. 1 Section 14 • Low Temperature to EN 60945 – Section 8.4.2 • 22 Degree Tilt operation
Emissions & Immunity	Tested and passed: EN61326-1: 2006
Product Safety	Tested and passed: ETL (tested to ANSI/ UL61010-1-2004) Tested and passed ETL (tested to CAN/CSA C22.2 No.61010.1-2nd Edition, dated July 12, 2004)
I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive and Standard	

VIII. SCT-INTERNATIONAL WARRANTY & RETURN POLICIES

This SCT-CL-MAXI has been subject to thorough testing and quality control. In the unlikely event of any manufacturing faults occurring, our one-year warranty (from the date of delivery) covers SCT-CL-MAXI This warranty becomes void in case of incorrect operation, use of non-appropriate spare parts or accessories and non-authorized modification of the SCT-CL-MAXI. The warranty for the probes are generally for 6 months, based on the customer's use. Should you have any questions about SCT-CL-MAXI or require service, please contact the ScichemTech-USA through E-mail: service@scichemtech.com or ScichemTech's local service Dealer in your Country. Please have the unit's serial number (located on the back panel of the instrument) available when making the complaint. Do not send the unit for service without getting the repair authorization number. Should the SCT-CL-MAXI need service be sure to decontaminate it. The unit should be properly packed to avoid damage. Any damage resulting from improper packing shall be the responsibility of the user or the buyer.



CAUTION! SCT-CL-MAXI SHOULD BE OPERATED BY THE TECHNICAL STAFF AND MAINTAINED BY PROFESSIONAL ENGINEER.

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