ATO

An instruction manual

DWS-51 sodium ion meter

Please read this manual carefully and keep it properly so that it may be a reference for the day.

ATO

1 Overview

DWS-51 type sodium ion concentration meter is used to measure the content of sodium ion in aqueous solution and design, especially for highly pure water (such as steam, condensate water, boiler water quality monitoring etc.) is more suitable, but also can be used for higher education and research structure, petroleum chemical industry, microelectronics and other departments, the sodium ion concentration natural water, industrial water and drainage (or activity).

2 characteristics of the instrument

DWS-51 - type sodium ion concentration meter by production, the use of single-chip technology, make the operation simple and convenient, visual digital display correctly.

The instrument has a manual temperature compensation and automatic temperature compensation function (when the access instrument temperature electrode into the automatic temperature compensation, and display the current temperature; when the temperature not connected to the electrode, the instrument enters into the manual temperature compensation, temperature display instrument manual settings). Temperature electrode is the matching key, if the user needs to be in order to put forward.

The apparatus has a pNa value, also has the sodium ion concentration value of [Na+] display function.

The instrument has the beautiful and light appearance.

3 main technical parameters

3.1 measurement range:

PNa (0~ 9);

B) Na+ concentration value: 23u g/L ~ 23g/L.

MV (c) (-1800 ~ 1800) mV.

3.2 resolution: 0.01 pNa.

3.3 basic error of electronic unit: + 0.02pNa + 1 words.

3.4 instrument basic error: + / - 0.05pNa.

Ambient temperature (a) (5~40);

Relative humidity: no more than 80% b;

C) power supply: 220V 22V + AC; frequency 50 + 1HZ

D) in addition to the earth's magnetic field without other magnetic field interference;

E) no significant vibration.

4 instrument structure

Instrument appearance structure

L - instrument housing

2 - display

3 - operation keyboard

4 - electrode holder

5 - electrode

Instrument panel

6 - reference electrode 7 - measuring electrode socket

8 - temperature electrode socket 9 - power supply

5 use methods

5.1 instrument keyboard instructions:

Key	function
switch	Boot, shutdown.
menu	The instrument is operated by means of selecting measurement, correction and setting.
Switch / select	Switch / select measurement mode.
extract	Extract previously saved data.
confirm	"Confirm" key, press this key to confirm the last operation.
Preservation	Save the data required in the measurement
△	"Delta" key, the key to the numerical rising key, press the key "delta" for adjusting value rise.
▽	"At" key, the key to numerical drop key, press the key "at" for adjusting value decline.

5.2 operation steps:

Preparation before 5.2.1 boot

(a) insert the electrode holder into the display (take down the yellow hat on both sides) on the left or right of the instrument;

B) 7101 compound sodium electrode is installed on the electrode clip;

C) remove the protective liquid at the lower end of the 7101 sodium electrode.

D) with sodium free water cleaning electrode.

Calibration of 5.2.2 instrument

A instrument using two point calibration method, in order to adapt to the needs of a variety of pNa values, the use of a set of pNa value of different calibration solution, the user can choose according to the range of pNa value measurement.

Serial number	Calibration standard solution pNa value of 1	Calibration standard solution pNa value of 2
One	3.00pNa	1.00pNa

B A (0.00pNa) of the calibration solution) and calibration solution B (3.00pNa) respectively into the plastic beaker without sodium water clean, stir into the cup, the plastic beaker on the electromagnetic stirrer, slow stirring.

C) boot, select the "correction", will be selected into the electrode calibration solution (such as 0.00pNa), according to the "delta at" key to adjust the pNa value to 0.00pNa and press "confirm" key, "according to the set temperature, the temperature at the" key to set the temperature value of the calibration solution, and then click "confirm" key, the instrument calibration correction after the first press "confirm" button to enter the second calibration points, remove the electrode with no sodium water clean, into the standard solution of 3.00pNa, ibid operation, after the return to the menu. Select the menu bar "measurement" to indicate the status of the measurement.

Measurement of pNa 5.2.3 value

A) the solution can be measured by the calibrated instrument.

B) will be put into the liquid plastic beaker without sodium water clean, stir into the cup, the electrode for sodium free water rinse (after washing do not use surface water filter dry electrodes) into the tested solution, stirring the solution slowly.

C) displayed reading is for the tested pNa values.

Problems in measurement

The alkaline solution. Interference caused by H+ ion on the measurement of sodium glass electrode. Therefore, in the normal measurement, standard solution and test solution must be fully alkalization. The pH value of the solution should meet the pH > PNa3. For example: measuring the amount of sodium ion is 5.00pNa, the pH value of the solution should be adjusted to pH 5 + 3 > > 8. The lower the content of sodium ion, the pH value of the solution is more and more basic.

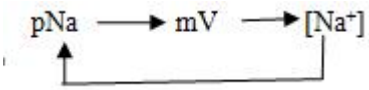
The regulation of alkaline reagent solution pH value, one of the two available isopropylamine, two methylamine, ethylamine and two ammonia reagent. Users can use pH test to check the effect of alkalization. General in the beaker and add 10 drops two drops of isopropylamine alkaline reagent can etc..

The pretreatment of sodium - glass electrode: when the sodium ion concentration measurement solution is not the same, the pretreatment method of sodium glass electrode is also different. When the measuring range is (1 ~ 5) pNa, the sodium glass electrode is immersed in NaCl 0.1mol/L solution, after a few hours, remove the rinse can be used.

The measurement range is pNa, 5pNa, sodium glass electrode after this treatment will also need sodium glass electrodes immersed in the solution of 1mg/L in NaCl + 10ml ammonia in the (2 ~ 3) day cycle (regular exchange solution).

When the sodium ion concentration of pNa solution was more than 5pNa, the time response measurement measurement of high concentration solution than slow. And the measurement of low concentration solution requires careful operation (its operation method, please refer to the operation procedures of each industry)

The function of the switch / select key is as follows:



6 instrument maintenance and precautions

6.1 instruments must be kept clean and dry, avoid contact with acid, alkali, salt solution, prevent damp, to ensure that the equipment insulation and high input impedance properties. When the instrument is not used, the Q9 short circuit plug is inserted into the socket of the measuring electrode to prevent dust and moisture from invading.

6.2 in the measurement of sodium content is low, the electrode and the container pollution is often caused by the main reason for the measurement error. Therefore, in normal before measuring, to rinse with high water (after washing do not use surface water filter paper blot electrode). Electrode in the sodium content of the test solution such as (0.1 ~ 1) NaCL mol/L solution, and then measured the sodium content of the lower solution (10-5 ~ 10-7) mol/L pure water, it is not easy to get the correct results. Electrodes must be soaked in NaCL 1mg/L alkaline solution for one day.

6.3 when the water temperature is below 20 DEG (especially lower than 10 DEG C), resistance of sodium glass electrode increased, response time is slower than normal, which is a normal phenomenon. At this time the reading time is relatively extended to ensure the accuracy of the measurement. Water temperature increases, the response time will be accelerated.

7 complete sets of equipment

DWS-51 type a sodium ion concentration meter 1 sets

B) 7101 compound sodium electrode 1

C) power cord 1

D) electrode holder 1

E) specification 1

F) certificate of qualification 1