Datasheet

Residual Chlorine Electrode

AI-ERC40

Arka Instruments LLP

Datasheet

Residual Chlorine Electrode
AI-ERC40

The built-in chlorine sensor has the characteristics of high measurement accuracy, fast response time and low maintenance cost. The analyzer outputs one (4~20)mA standard signal and one RS485 signal, which can be connected with various regulators, such as two regulators, time-proportional regulators, nonlinear regulators and classical PID regulators according to customer requirements, to combine all kinds of residual chlorine control systems.

Applications

- Water industry
- Filling industry
- Drinking water monitoring
- Industrial process water
- swimming pools

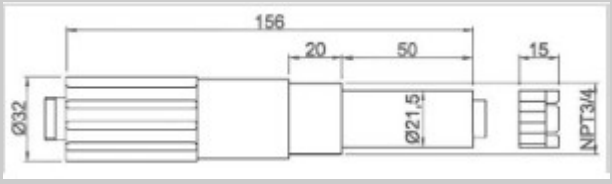
Residual Chlorine Electrode

Features

- The electrode measurement is accurate and the response speed is fast
- LCD with backlight, easy and intuitive operation
- With automatic temperature compensation, pH manual compensation function
- Restore factory function to avoid data loss by misoperation
- Isolated 4-20mA standard signal can realize signal remote transmission
- Range can be switched manually
- A variety of calibration methods are convenient for on-site adjustment

Principle

The residual chlorine electrode utilizes electrochemical reactions to generate a measurable current, which is used to detect the concentration of residual chlorine in water. When residual chlorine in the water reacts with specific substances on the electrode surface, a measurable current signal is produced. This signal is directly proportional to the concentration of residual chlorine in the water. By measuring the magnitude of this signal, the concentration of residual chlorine in the water can be accurately calculated.

Parameters	
Measurement content	HClO、ClO_2
Measurement system	Microelectronic MEMS technology, special membrane structure
Accuracy	When (0~0.1)mg/L， absolute error ±0.01mg/L； When (0.1~2)mg/L， ±5% or ±0.03mg/L of measured value(Whichever is greater)； When (2~5)mg/L，±5% of ±0.25mg/L of measured value(Whichever is greater)；
Resolution ratio	0.01
Polarization time	When it is used for the first time, chlorine containing water is first supplied with water for 2 hours and then supplied with electricity for half an hour.
Response time	<30s
Conductivity	＞100μS/cm
Working temperature	(0.1~40) ℃ (No condensed water)
Temperature compensation	Pt1000, built in integrated automatic compensation
Max.working pressure	4bar
Recommended flow rate	≥0.03m/s，in flow cell
pH range	(5~9)pH
Maximum chlorine concentration	≥5ppm
Supply Voltage	Standard (24 ± 2V) DC Optional (12V ± 2)V DC
Power consumption	1.56W
Communication	MODBUS RS485
Cable length	3m (standard), others can be customized
Probe weight	210g
Thread size	NPT 3/4
Connection type	5-core waterproof aviation plug
Moisture proof material	PVC and VitonO-ring seal
Dimensions (Unit：mm)	

Wiring

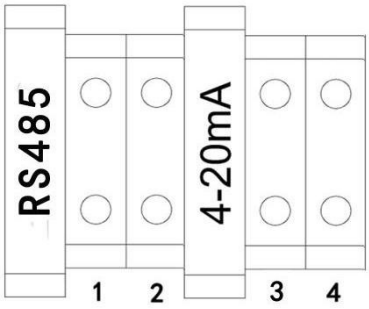
Analyzer power supply wiring

The analyzer can use 220V AC power supply. Connect cables strictly according to the related instructions. Three power plugs have been connected before delivery, which can be used directly.

Analyzer output signal wiring

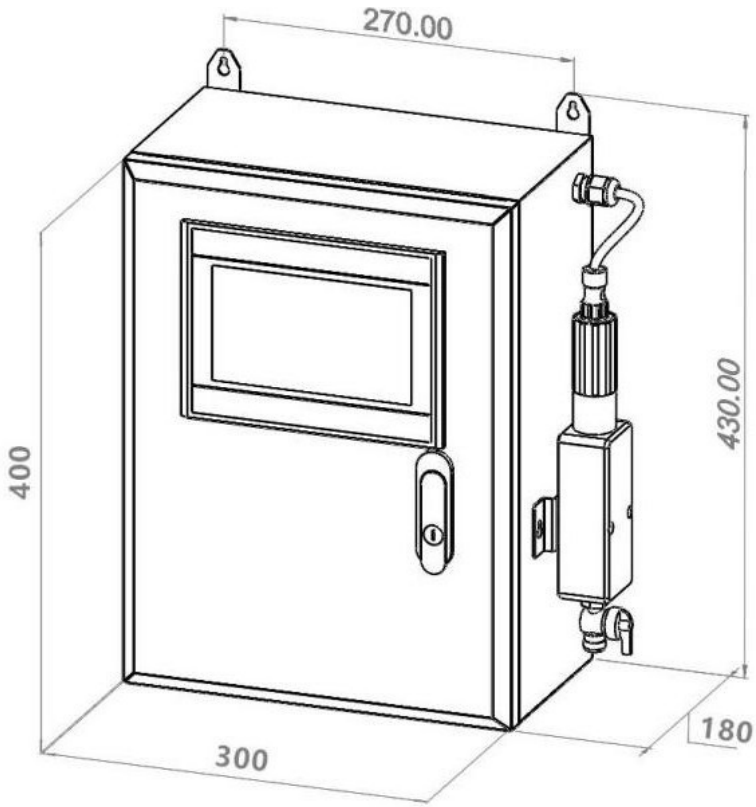
Fig.3 shows the preview of analyzer output wiring and wiring definition. The user can correctly connect according to the connection information.

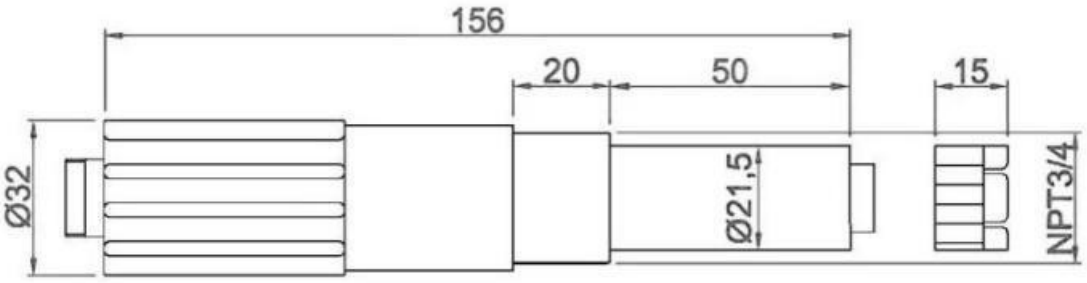
1. **--- RS485A**
2. **--- RS485B**
3. **--- 4~20 mA +**
4. **--- 4~20 mA –**



Analyzer wiring

Dimensions





Unit：mm

Installation

Installation

Installation location

The installation position of the analyzer shall meet the following conditions:

- Indoor installation is recommended ;
- Clean, dry ;
- There is no high-power motor operation equipment nearby ;
- Ambient temperature range is 0~40℃.

Installation of protective box

The protective box integrates touch screen, power supply and electrode, which has the characteristics of easy installation and superior protective performance. The dimensions of the protective box are shown in Fig.1. During installation, install M6-M8 expansion screws on the wall according to the spacing between the mounting feet, and then fix the box. Connect the water inlet and outlet respectively with 2 PE pipes. If there is no leakage, the water test can be carried out and the next operation can be carried out.

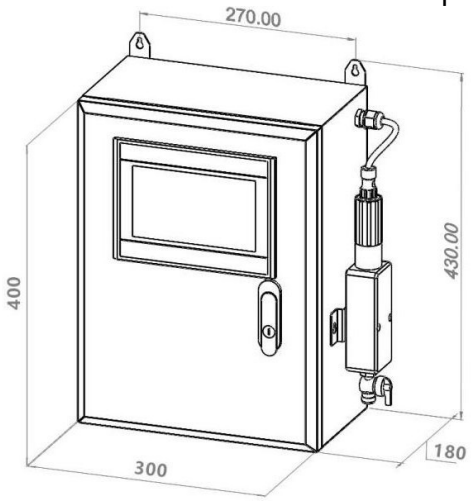


Fig.1 Protective box dimensions

Choose of sampling points

When choose the sampling point, consider the following factors:

- The chlorine stays in the water for a period of time (i. e., after the residual chlorine content in the tested water sample is relatively stable).
- The sampling point should be close to the measuring unit, and the residual chlorine concentration at the sampling point should be the same as in the water sample entering the measuring unit.
- Stay away from high-power mechanical and electrical equipment, such as working pump, frequency conversion cabinet, etc.
- With the electromagnetic flowmeter and other instruments, keep the spacing is not less than 3m.
- The height of the water intake point should be the same as the installation height of the circulation pool. When the temporary water cut off on site causes backflow, it can ensure a certain amount of water in the circulation pool to avoid electrode damage caused by long-term dry burning without water.

-

Installation of sensor flow cell

The specific installation steps are as follows:

(1) Fix the flow cell on the wall or panel with screws;

(2) Screw the residual chlorine sensor into the flow tank;

(3) 8mm water pipe is used to connect to the water inlet and outlet of the circulation tank.

(4) Refer to Fig. 2 for dimension drawing of flow cell

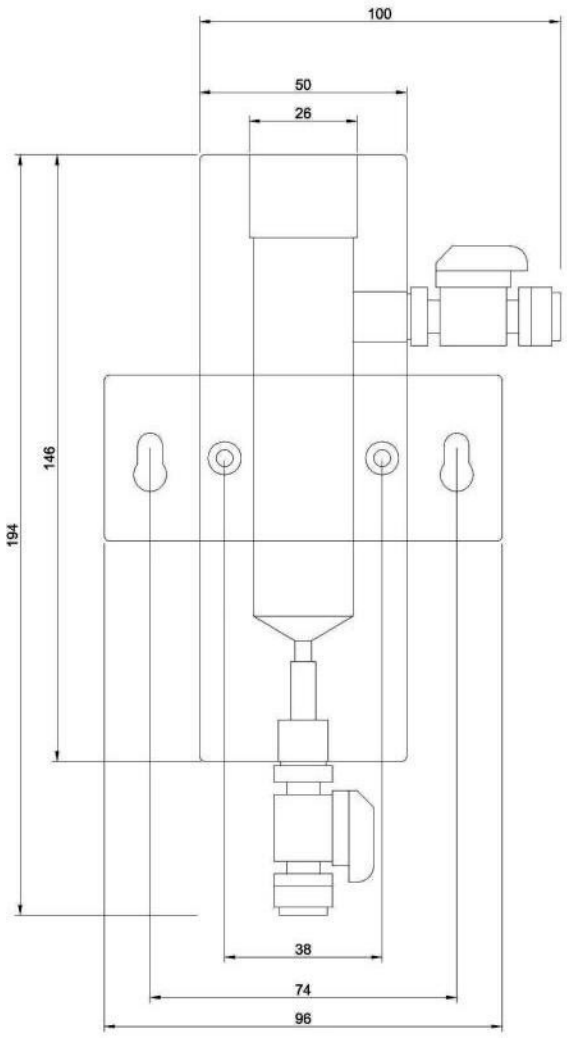


Fig.2 Flow cell dimensions

Ordering Code

AI-ERC40-WA-4-A5-A-B-03-N9							Description
AI-ERC40	-	-	-	-	-	-	
Measurement Range	WA						0-2mg/L
	WB						0-5mg/L
Temperature Compensation	Type	4					PT1000
Thread Type			A5				NPT3/4 Thread
Output				A			RS485
Power Supply					B		12VDC
					X		Others
Cable Length						03	3m
						XX	Others
Housing Material						N9	PVC

Arka Instruments LLP

Add: Hyderabad Office: H.no: 08-041/1, Plot no 132, N C L Enclave, Kompally, Hyderabad, Telangana, India - 500067
Land Line: +91 40359 00418
Mobile: +91 81438 12346
Email: admin@arkainstruments.com
Website: www.arkainstruments.com