



# Datasheet

## Conductivity controller

### TR-CO200

## Conductivity meter for water measurement TR- CO200 EC/TDS/ Resistivity

The model TR-CO200 is used for the conductive measurement/control of electrolytic conductivity, resistivity value. Conductivity is a function of ion concentration, ionic charge, and ion mobility. Ions in water conduct current when an electrical potential is applied across electrodes immersed in the solution. A controller system consists of a microprocessor-based controller and a conductivity probe.

3 Electrode cells (K=0.01, 0.1 and 1.0) can be connected to the device. Temperature serves as the second input variable, measured by a NTC10K/ PT1000 probe. Depending on the measured variable, it is therefore possible to implement specific, automatic temperature compensation.

All adjustments to the current outputs, alarm relays, and calibration of the conductivity and temperature inputs can be made using the controller's membrane keypad.

### Application

- Reverse Osmosis
- Process Control
- Seawater Desalination
- Waste Treatment
- Food Processing
- Plating
- Power Plants
- Laboratories



### Features

#### PROS

- Direct change over to
  - Conductivity ( $\mu\text{S}/\text{cm}$ )
  - TDS measurement (ppm)
- Automatic temperature compensation
- 4-20 mA Isolated Output
- Large LCD display with background lighting
- IP54 water resistant and corrosion proof enclosure
- Using the setup program: user-friendly programming
- RS485 communication
- Relay output

### Conductivity controller

#### Benefits

- Affordable
- Ease of operation
- Low maintenance
- Ensures product quality

## Parameters



### Power supply

Power supply	AC:220VAC $\pm$ 10% or 110VAC 50Hz/60Hz DC:24VDC $\pm$ 20% Input power $\geq$ 6W
--------------	---

### Range

Measure range:	0.00~2000 $\mu$ S/cm(max.20000 $\mu$ S/cm)
Temperature range:	-10~130 $^{\circ}$ C

### Communications

Serial communications	RS485
Output	Current (4-20 mA)

### Measurement Accuracy

EC/TDS/Resistivity:	$\pm$ 1%FS
NTC10K:	$\pm$ 0.3 $^{\circ}$ C
PT1000:	$\pm$ 0.3 $^{\circ}$ C

### Operating Environment

Relative humidity	5 ~ 95%RH(No condensation)
Operating temperature	0 $^{\circ}$ C~60 $^{\circ}$ C
Storage	-15 $^{\circ}$ C~ 65 $^{\circ}$ C

### Appearance

Screen size	2.8inch
Dimension	Overall dimension: 100mm*100mm*150mm(H*W*D) Cutout dimension: 92.5mm*92.5mm(H*W)
Weight	0.65Kg
Ingress protection	IP54

### Temperature compensation

Type:	NTC10K/PT1000
Model:	Manual/automatic

### Function

Output	Isolated 4-20mA output maximum loop is 750 $\Omega$ , $\pm$ 0.2%FS
Relay	2 relays AC250V/3A

## Parameters

### Electrode selection:TR-EL200

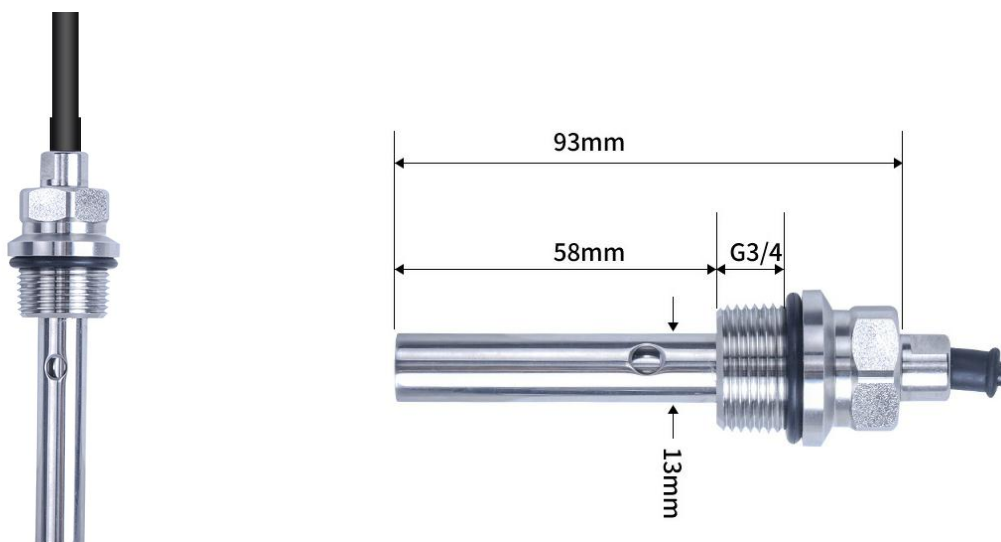
Cell constant	Corrosion Resistance
K=0.01	Suitable for pure water ultrapure water testing
K=0.1	Suitable for conventional water testing
K=1.0	Suitable for industrial water and recycling ring testing

The device offers a dynamic range on the input side, the range must be matched to the operating range of the cell.  
The standard temp range for TR-EL200:0°C~50°C ,the high temp range for TR-EL200:0°C~100°C

### Electrode selection

Cell constant	Material	Length	Diameter	Hole size	Thread	Recommended/practical measuring span(dependent on the conductivity cell)
0.01	SS316L	93mm	13mm	6mm	G3/4	0.01 ~ 20 $\mu\text{S/cm}$
0.1	SS316L	93mm	13mm	6mm	G3/4	0.1~ 200.0 $\mu\text{S/cm}$
1.0	SS316L	93mm	13mm	6mm	G3/4	1.00 ~ 2000 $\mu\text{S/cm}$






A measurement is to be carried out in the 0.01 $\mu\text{S/cm}$  to 1 $\mu\text{S/cm}$  range. A conductivity cell with the cell constant K = 0.01 0.1 1 is chosen.



## Display



1. Temperature: Compensation temperature
2. Analog output: Analog output
3. Measured value: Real-time measurements value
4. High alarm: High alarm
5. Low alarm: Low alarm

Sign		Name of the key	Function description
7		MENU	Enter the MENU on the “monitoring page” Exit the MENU on the “menu page”
6		EXIT	Check related warning status on the “monitoring page”; Return to previous level page in the up& down level page linked to “menu page”
8		RIGHT	Enter the menu under “monitoring interface” Exit the menu under “monitoring interface”
8		DOWN	Relevant menu is selected under the “menu interface” Relevant numerical value is modified under the setup status
ENTER			Enter the menu or confirm modification on the9 “menu Page”

---

**★ TDS monitor page**

H25.0°C	4.00mA
<b>0.00</b> ppm	

---

**★ EC monitor page**

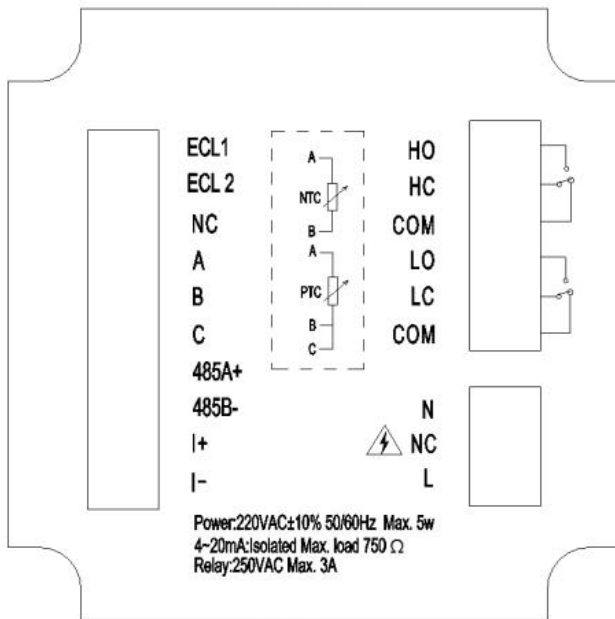
H25.0°C	4.00mA
<b>0.00</b> µS/cm	

---

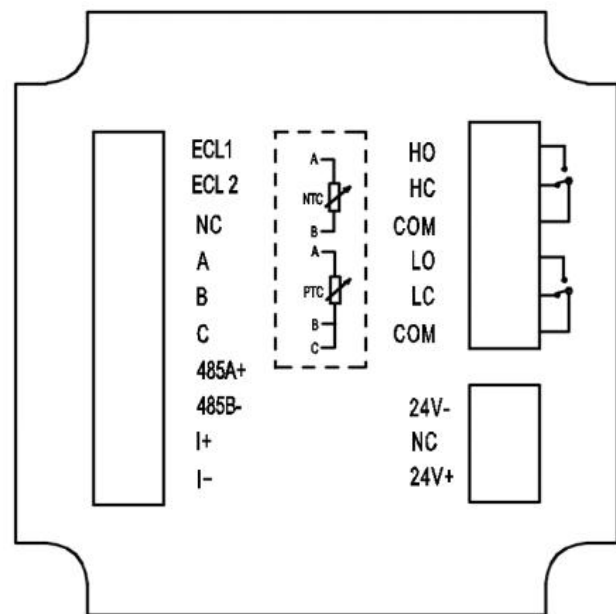
**★ Resistivity monitor page**

H25.0°C	4.00mA
<b>20.00</b> MΩ·cm	

---



220VAC wiring diagram



24VDC wiring diagram

- ECL1: Measuring terminal of the electrode
- ECL2: Reference terminal of the electrode
- NC: Unidentified
- A: Temperature compensation terminal A, NTC10K and PT1000 connect here
- B: Temperature compensation terminal B, NTC10K and PT1000 connect here
- I+: 4-20mA output end +
- I-: 4-20mA output end -
- HO: High alarm normally open relay
- HC: High alarm normally closed relay
- COM: high alarm common
- LO: Low alarm normally open relay
- C: Temperature compensation terminal C, PT1000 three-wire temperature grounding, PT1000 two-wire need to be short-connected to TEMPB, not NTC10K.
- 485A+: RS485 communication interface A+
- 485B-: RS485 communication interface B-
- LC: Low alarm normally closed relay
- COM: low alarm common
- N: AC220V/AC110V neutral wire
- L: AC220V/AC110V live wire
- 24V+: 24VDC +
- 24V-: 24VDC -

## Ordering code



TR-CO200-RT1-K1-O1-D1-A2-V1											Description
TR-CO200	-	-	-	-	-	-	-	-	-	-	0-2000 $\mu$ S/cm
Range	RT1										K=0.01~ 20.00 $\mu$ S/cm
Cell constant		K1									K=0.1~ 200 $\mu$ S/cm
		K2									K=1.0 ~ 2000 $\mu$ S/cm
		K3									
Transmit output			O1								4-20mA
Communication				D1							RS485
Relay output					A2						2 relay output
Power supply						V1					24VDC
						V2					220VAC
						V4					110VAC

