Datasheet

Conductivity Meter

SUP-TDS210-B

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Conductivity Meter
SUP-TDS210-B

Conductivity controller is widely used in thermal power, chemical fertilizer, metallurgy, environmental protection, pharmaceutical, biochemical, food and tap water industries, etc. The controller mainly continuously monitors the conductivity/total dissolved solids/resistivity and temperature in the solution.

Applications

- thermal power
- chemical fertilizer
- Metallurgy
- Environmental protection
- Pharmaceutical
- Biochemical
- food and tap water industries

Conductivity meter

Features

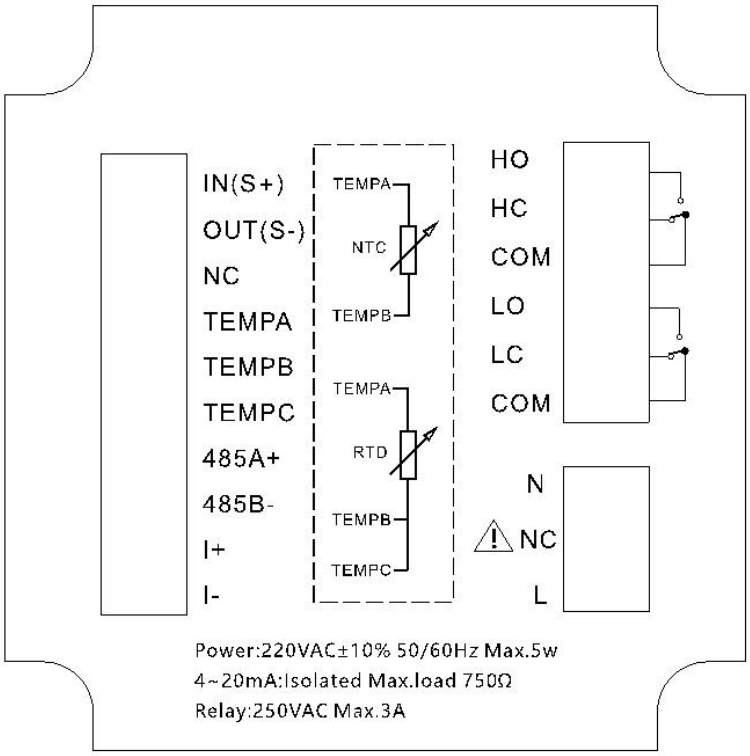
- The place where the environment temperature exceeds 60℃ during the operation.
- The place where the environment humidity exceeds 85% during the work.
- The vicinity of the electromagnetic occurring sources.
- The sites with strong mechanical vibration.
- The site where the temperature is changed a lot and the moisture condensation is easily formed.
- Places with lots of lampblack, steam, moisture, dust and corrosive gas.

Principle

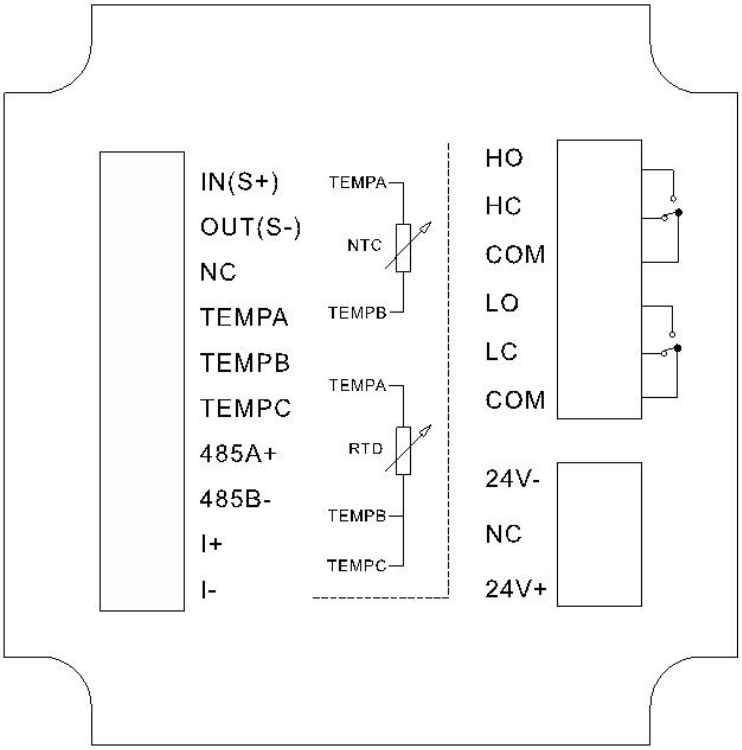
A conductivity meter works based on the conductivity of ions in a solution. It has two electrodes inserted into the solution and applies an alternating voltage across them to avoid polarization. By measuring the resulting current and using Ohm's law, it calculates the conductance. The conductivity is then determined considering the electrode geometry. Since temperature impacts conductivity, a built-in temperature sensor measures the solution's temperature, and a compensation mechanism adjusts the measured conductivity to a standard temperature value, typically 25°C, to provide an accurate and consistent measurement of the solution's conductivity.

Parameters	
Display	2.8-inch monochrome LCD screen, resolution 128*64
Dimensions	TDS210-B: 100mm×100mm×150mm TDS210-C: 100mm×100mm×150.5mm
Hole Size	92.5mm×92.5mm
Weight	0.65kg
Measure variables	EC/TDS/ER
Measure range	0.01 electrode: (0~20.00)μS/cm or (0.05 ~20.00)MΩ*cm 0.1 electrode: (0.20~200.0)μS/cm 1.0 electrode: (2.00~2000)μS/cm, maximum 20000μS/cm 10.0 electrode: (0.02~20.00)mS/cm Temperature range: (-10~130)℃
Temperature compensation	NTC10K / Pt1000 Temperature compensation: manual/automatic
Accuracy	2%F.S
Basic error of electronic unit	EC/TDS/ER: ±1%FS NTC10K: ±0.3℃ Pt1000: ±0.3℃
Output	Isolated,(4 ~ 20)mA, maximum loop is 750Ω, ±0.2%FS
Communication protocol	Isolated, MODBUS-RTU RS485
Alarm	Normally open and normally closed, 2 channels, capacity AC250V/3A
Relative humidity	(10~85)% (No condensation)
Operating temperature	(0~60)℃
Power supply	AC: 220VAC±10% 50Hz/60Hz DC: 24VDC±20% Input power≥6W
Storage conditions	Temperature: (-15~65)℃ Relative humidity: 5~95% (No condensation)

Wiring



220V wiring diagram

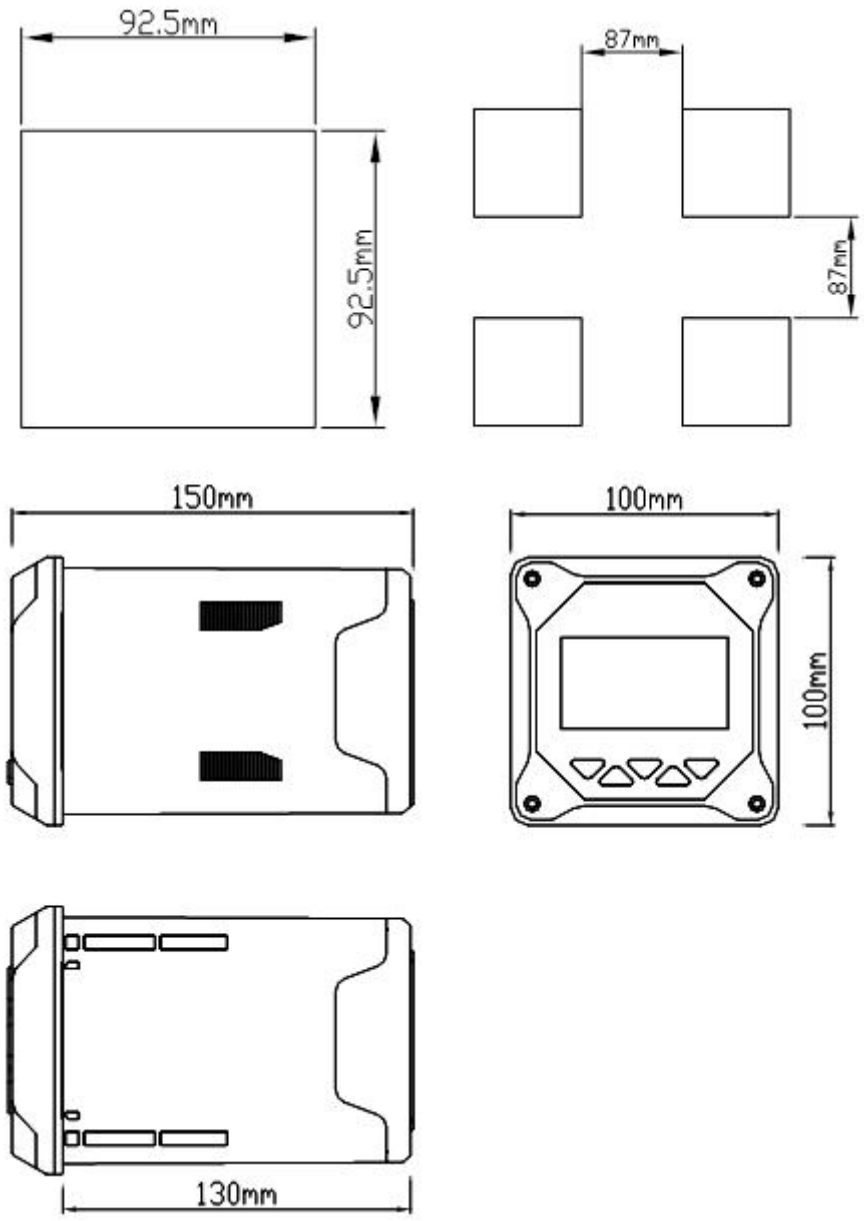


24V wiring diagram

Terminal assignment

- IN（S+）: Conductivity electrode IN（S+）
- OUT（S-）: Conductivity electrode OUT（S-）
- NC: Unidentified
- TEMPA: Temperature compensation terminal A,NTC10K or PT1000A
- TEMPB: Temperature compensation terminal B,NTC10K or PT1000B
- TEMPC: Temperature compensation terminal C, PT1000 three-wire temperature grounding, PT1000 two-wire need to be short-connected to TEMPB, When connected to NTC10K, C terminal is not connected.
- 485A + : RS485 communication interface A +
- 485B - : RS485 communication interface B -
- I + : (4~20)mA output +
- I - : (4~20)mA output -
- HO: High alarm normally open
- HC: High alarm normally closed
- COM: High alarm common terminal
- LO: Low alarm normally open
- LC: Low alarm normally closed
- COM: Low alarm common terminal
- N: AC220V neutral wire
- NC: Unidentified
- L: AC220V live wire
- 24V+：24VDC+
- 24V-：24VDC-

Dimension



Dimension of TDS210-B

Installation

Installation

Instrument installation

The installation location and method of the instrument are explained, the part shall be carefully read during the installation.

Notes for installation

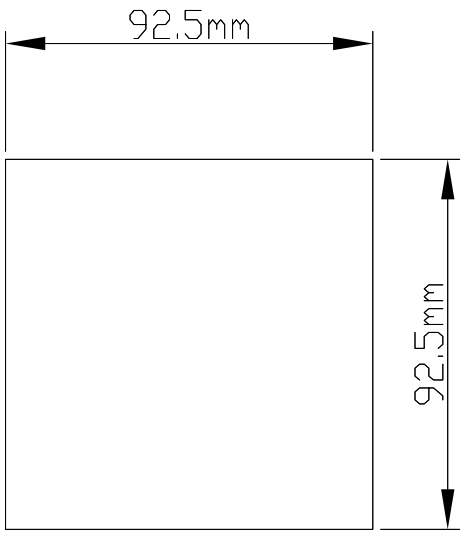
- The instrument is panel mounted.
- It shall be installed inside the building so as to avoid wind and rain as well as direct sunlight.
- Please install it at the place with good ventilation in order to prevent the internal temperature of the instrument from rising.
- Don't lean to left or right when the instrument is installed, horizontal installation shall be realized as possible.

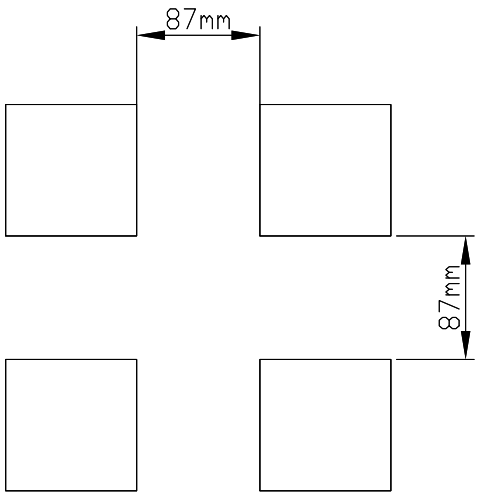
The following places shall be avoided during the installation

- The place where the environment temperature exceeds 60℃ during the operation.
- The place where the environment humidity exceeds 85% during the work.
- The vicinity of the electromagnetic occurring sources.
- The sites with strong mechanical vibration.
- The site where the temperature is changed a lot and the moisture condensation is easily formed.
- Places with lots of lampblack, steam, moisture, dust and corrosive gas.

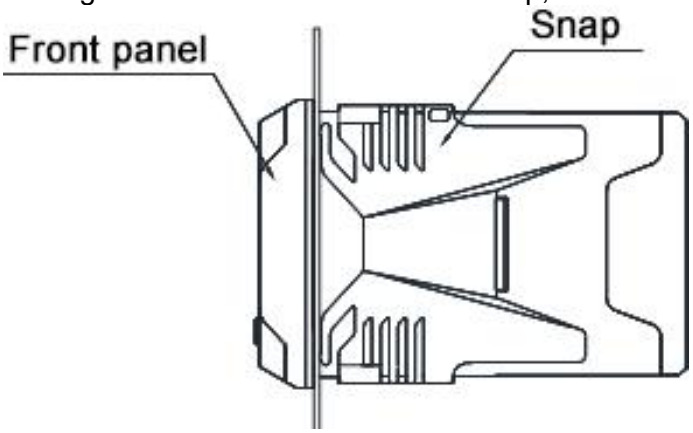
Installation

Install a 92.5 * 92.5 mounting hole on the instrument cabinet or mounting panel, The thickness of the installation panel is 1.5mm~13mm.



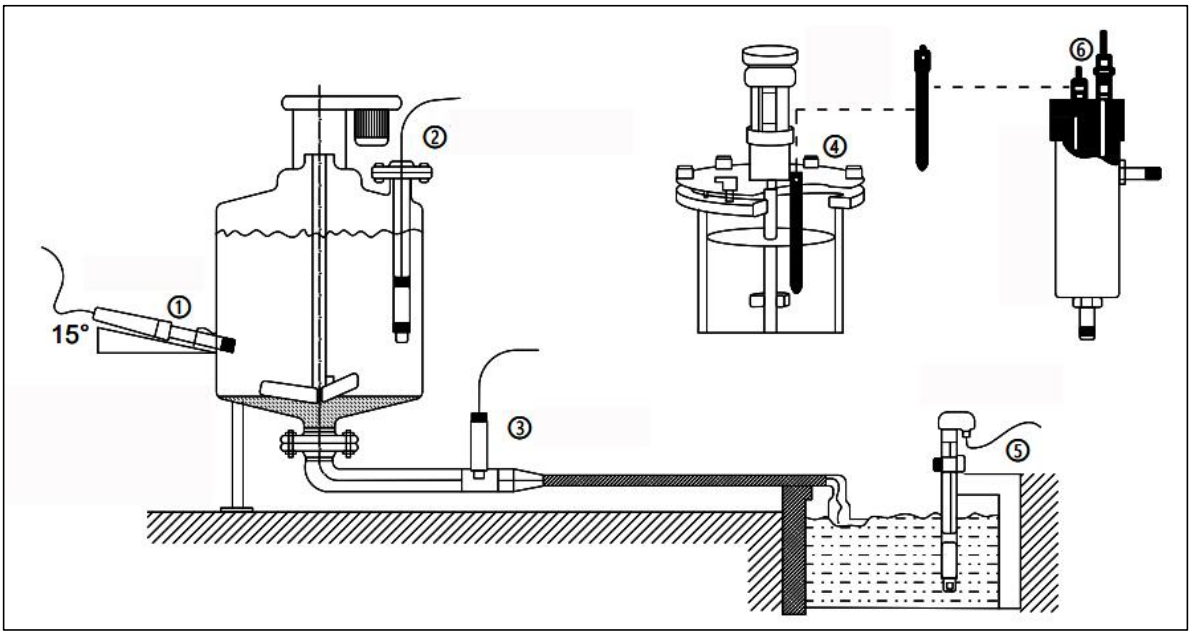


The instrument into the mounting hole and then buckle on the Snap, as shown below



TDS210-B

Electrode installation



Schematic diagram of common installation method

①Side wall installation ②Flange mounted at the top ③Pipe installation ④Top installation ⑤Submersible installation ⑥Flow-through installation

The interface must be in 15°oblique angle, or it will affect the normal test and use of the electrode. We won't be responsible for any results due to this.

Ordering code

SUP-TDS210-B-DK-B-4-1-C-P1							Description
SUP-TDS210-B	-	-	-	-	-	-	
Measurement Range	DK						0.00μS/cm-600mS/cm
Output		B					4-20mA+RS485
Alarm Output			4				2-channel SPDT
Electrical Interface				1			M16×1.5 cable gland×2+M12×1.5 cable gland
Power Supply					C		24VDC
					E		220VAC
					D		110VAC
Accessories						P1	304SS Back Panel Mounting Bracket