Conductivity controller

Committed to process automation solutions

Datasheet

SUP-TDS210-B

Add : 5th floor, Building 4, Singapore Hangzhou Science Technology Park, Hangzhou Economic Development Area, 310018, Hangzhou, China

The model SUP-TDS210-B is used for the conductive measurement/control of electrolytic conductivity, resistivity or the TDS 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.

4 Electrode cells （K=0.01,0.1,1.0 and 10.0）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.

Features

- Direct change over to
  - Conductivity (μS/cm)
  - Resistivity (MΩ x 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

Applications

- Reverse Osmosis
- Process Control
- Seawater Desalination
- Waste Treatment
- Food Processing
- Plating
- Power Plants
- Laboratories
- Printing
- Aquaculture
- Agriculture
- Environmental Studies
- Medical
- Boilers
- Cooling Towers

Benefits

- Affordable
- Ease of Operation
- Low Maintenance
- Ensures Product Quality

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Parameter

Screen size	2.8 inch
Dimension	Overall dimension: 100mm*100mm*150mm(H*W*D) Cutout dimension：92.5mm*92.5mm(H*W)
Weight	0.65Kg
Ingress protection	IP54
Measure variables	EC/ TDS/ Resistivity
Measure range	0.01electrode：0.02 ~ 20.00μS/cm 0.1electrode：0.20 ~ 200.0μS/cm 1.0electrode：2.00 ~ 2000μS/cm 10.0electrode：0.02 ~ 20.00mS/cm Measure range for extended range controller： 0.01electrode：0.20 ~ 200.0μS/cm 0.1electrode：2.00 ~ 2000μS/cm 0.1electrode：0.02 ~ 20.0mS/cm 10.0electrode：0.20 ~ 200.0mS/cm Temperature range:-10 ~130℃
Temperature compensation	NTC10K/PT1000 Temperature compensation：manual/automatic
Accuracy	EC/TDS/Resistivity: ±1%FS NTC10K： (-10~5℃) ±2℃；(5~60℃) ±0.2℃；(60~130℃) ±2℃ PT1000： (-10~5℃) ±2℃；(5~130℃) ±0.2℃
Output	Isolated 4-20mA output maximum loop is 750Ω,±0.2%FS
Communication protocol	MODBUS-RTU RS485
Alarm relay	Pickup/Breakaway AC250V/3A
Relative humidity	10 ~ 85%RH(No condensation)
Operating temperature	0 ~ 60℃
Power supply	220VAC/110VAC±10% 50Hz/60Hz
Storage conditions	Temperature：-15 ~ 65℃ Relative humidity：5 ~ 95%RH(No condensation)

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Electrode




K=0.01 electrode	K=0.1 electrode	K=1.0 electrode	K=10.0 electrode
Suitable for pure water ultrapure water testing	Suitable for drinking water testing	Suitable for rive raw water testing	Suitable for sewage waste testing

The device offers a far wider dynamic range on the input side, the range must be matched to the operating range of the cell

Cell constant (K)	Material	Length	Diameter	Hole size	Thread	Recommended/practical measuring span(depending on the conductivity cell)
0.01	Stainless steel	77mm	13mm	6mm		0.02 ~ 20 μs/cm
0.1	Stainless steel	59mm	13mm	6mm		0.20 ~ 200.0μs/cm
1.0	Stainless steel	59mm	13.5mm	6mm		2.00 ~ 2000μs/cm
10.0	Polysulfone	60.5mm	23.3mm	6mm		0.10 ~ 20 ms/cm

Example

A measurement is to be carried out in the 10 μS/cm to 10 μS/cm range. A conductivity cell with the cell constant K = 0.1 1 is chosen.

Note

When electrode works with SUP-TDS210-B (0-20,000us/cm)
Measuring span = 20,000 μs/cm x cell constant (K)

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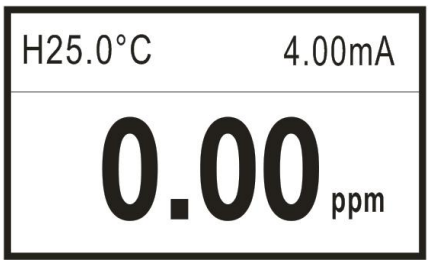
Display

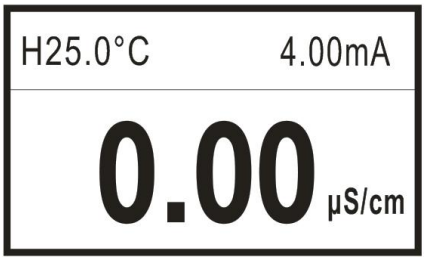
SUP-TDS210-B conductivity controller

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

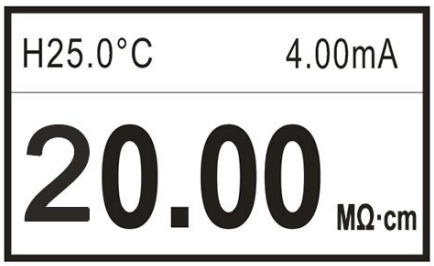
◆ TDS monitor page



◆ EC monitor page



◆ Resistivity monitor page



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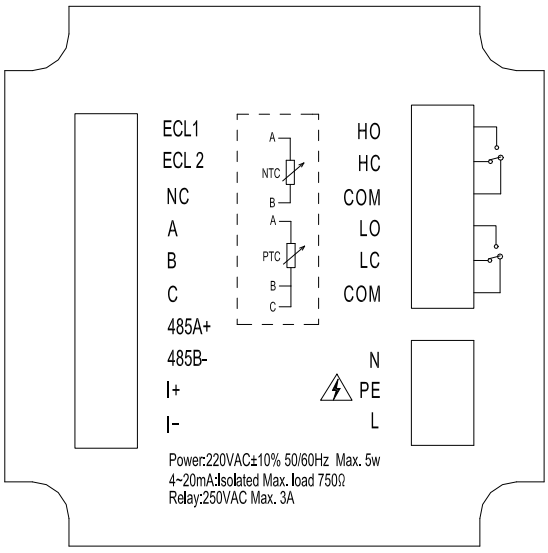
Sign		Name of the key	Function description
1.	MENU	MENU	Enter the MENU on the “monitoring page” Exit the MENU on the “menu page”
2.	ESC	EXIT	Check related warning status on the “monitoring page”; Return to previous level page in the up& down level page linked to “menu page”
3.	▶	RIGHT	Enter the menu under “monitoring interface” Exit the menu under “monitoring interface”
	▼	DOWN	Relevant menu is selected under the “menu interface” Relevant numerical value is modified under the setup status
4.	ENT	ENTER	Enter the sub-menu or confirm modification on the “menu Page”

Wiring



- 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
- C：Temperature compensation terminal C, PT1000 three-wire temperature grounding,

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PT1000 two-wire need to be short-connected to TEMPB, not NTC10K.

- 485A+：RS485 communication interface A+
- 485B-：RS485 communication interface B-
- 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
- L：Low alarm normally closed relay
- COM：low alarm common
- N：AC220V neutral wire
- PE：earth wire
- L：AC220V live wire

Ordering Code

Conductivity controller							
SUP-TDS210-B	Model						Description
Range	R1						0-2000 μS/cm
	R2						0-20000 μS/cm
Cell constant		K1					K=0.01 0.02 ~ 20.00μS/cm
		K2					K=0.1 0.20 ~ 200.0μS/cm
		K3					K=1.0 2.00 ~ 2000μS/cm
		K4					K=10.0 0.02 ~ 20.00mS/cm
Cable length			L1				5M
			L2				10M
			L3				15M
			L4				20M
			L5				Other Length
Signal output				S1			4-20mA RS485
Relay					A1		Two (high and low)
Power supply						V1	220VAC
						V2	110VAC

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