JNC Copper Sensor

CU485

[Product Description]

- The IoT cu sensor features both RS-485 and Wi-Fi web interfaces, allowing for remote or local mobile monitoring. It requires no meter head or app and is compatible with any meter head or software globally, providing accurate and stable CU values.
- Automatic Cleaning Function (Optional): Includes a miniature air pump, adjustable cleaning schedule, self-cleaning hold last reading, and adjustable stabilization time, easily extending maintenance intervals.
- Smart Calibration Function via Mobile Web Interface: On-site standard solution bottle replacement with protective cap; convenient mobile web interface guides the calibration process.
- Smart AI Function: Calibration/automatic cleaning status notifications; self-assessment of electrode dirt or aging levels.

[Features]

- Integrated design with built-in IoT transmitters and sensors; ready to operate upon power-up, all functions are built-in.
- P68 submersible type, corrosion-resistant material, can be directly immersed in water without protective sheathing.
- High-strength insulated cable, ready for direct use, stable signal, surge protection for power supply and IoT signals.
- Temperature compensation and measurement method complies with EPA Automatic Monitoring Facilities Act NIEA W218.51C.
- Employs ion-selective electrode method to measure the concentration of free copper ions (Cu^{2+}) in water, not the total copper content.
- Smart design, can store calibration parameters, and can be directly installed on-site after calibration.
- Features three-point calibration, which can be performed using standard solutions or samples of known concentrations.
- During calibration and automatic cleaning, it retains the last reading to avoid malfunctions, and displays the status (calibrating/automatic cleaning/stabilizing/maintaining).
- The latest three calibration records (date/slope/calibration point) can be queried via Web and RS-485.

[Applications] Sewage, groundwater, aquaculture, rivers and lakes detection system.

Code 2: Quick connector

Code 2:Cable head

[Cu Optional code]

CU485 – Code 1 – Code 2 – Code 3

Code 1	Function	Code 2	Sensing end connector	Code 3	Line length
N	No automatic cleaning	C	Quick connector	N	3M
				C	3 meters + quick connector
A	Auto-cleaning (Including standard 12VDC air pump and nozzle)	F	Cable head	Value N	Line length
A24	Auto-cleaning (Including 24VDC air pump and nozzle)			Value C	Line length +quick connector

[Calibration Instructions]※Optional model "Sample-CU" available for on-site sample-based calibration, based on field requirements.

The Cu2+ measurement is based on the Ion-Selective Electrode (ISE) method, which is the most cost-effective solution requiring no additional reagent costs,enabling continuous online monitoring. Each electrode is factory-calibrated with standard solutions following ISO 9001 procedures by JNC prior to shipment.

To eliminate background interference during use, it is recommended to first collect a water sample on-site and verify the concentration using the colorimetric method. Then proceed with on-site sample-based calibration to achieve more accurate readings.JNC offers (optional) on-site colorimetric sample calibration. During actual execution, on-site water samples will be diluted by 10x and 100x for calibration. The complete calibration process includes three points: low (100x dilution)medium (10x dilution), and high (undiluted on-site sample).

Product name	Model
Cu colorimetric water sample calibration	Sample-CU

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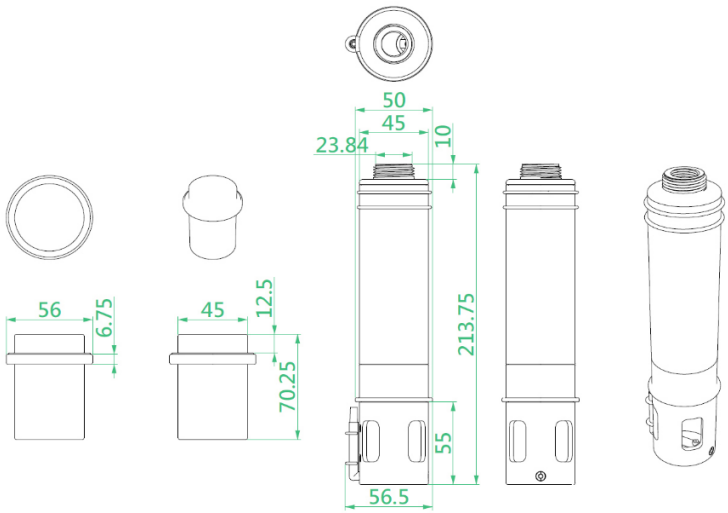
[Technical specification]

- RS-485 Modbus RTU, Wi-Fi Modbus TCP, web page free of APP, mobile phone direct operation.
- Data resolution: 16 bits (0.001%F.S)
- Surge protection: 8000VDC
- Protection: polarity, overload, short circuit
- Measurement principle: Use the sensing front-end material to sense Cu potential changes, convert the potential difference into concentration, and correct various compensations to provide accurate data.
- Installation method: submersible type, three-way type, intubation type.

[Cu Specification]

Cu Specification		Temperature Specification	
Measuring range	0~10000mg/L (or customized higher concentration) Slope reading 70~130%	Temperature principle	NTC30K
		Measuring range	-10~120°C(ATC)
		Accuracy	±0.2°C
Accuracy	±5% of reading ±0.5mg/L	Resolution	0.1°C
Resolution	0.01 mg/L	Reproducibility	0.1°C
Reproducibility	±3% of reading ±0.5 mg/L	Other Specification	
Working parameters	Working temperature: 5~50 ℃	Link above	3/4" NPT
		Link below	M42
Reaction time	T90 ≤120 sec	Housing material	Polypropylene (PP), anti-acid and alkali/food grade/zero dissolution
		Electrode material	PVC
		Dimension	ø50*L213.9mm
Communication	RS-485Modbus RTU Web browser direct reading (192.168.1.80)	Weight	≤340g
		Power supply	Automatic cleaning: 12 or 24VDC (optional) No automatic cleaning: 9～36VDC
		Power consumption	Automatic cleaning: 6.8W No automatic cleaning: 0.8W
Safety certification	CE、FCC	Waterproof level	IP68

[Dimensions] mm



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