

COD WATER QUALITY MONITORING / DATA SHEET

SS306-01-N01

Self-Cleaning COD Transmitter

RS485 COD transmitter for continuous UV-absorption measurement, automatic cleaning and reliable water-quality monitoring.

Overview

- SS306-01-N01 measures chemical oxygen demand (COD) using dual-wavelength ultraviolet absorption without chemical reagents.
- The integrated self-cleaning system reduces biofouling, with automatic temperature and turbidity compensation for field stability.
- Measured COD, turbidity and temperature data are available over RS485 Modbus-RTU for PLC, SCADA and data-acquisition integration.



COD Range 0–500 mg/L	Turbidity 0–200 NTU	Protection IP68	Interface RS485
Key Advantages • Reagent-free dual-wavelength UV absorption. • Integrated self-cleaning against biofouling. • Automatic turbidity and temperature compensation. • Wide 9–30 VDC supply and configurable RS485 communication.		Application Scenarios • Wastewater treatment. • Aquaculture water monitoring. • Environmental water-quality networks. • Industrial process-water monitoring.	

MEASUREMENT PRINCIPLE

Measurement Principle

OPTICAL MEASUREMENT

Dual-wavelength ultraviolet absorption with a modulated optical signal, automatic turbidity compensation, temperature compensation and integrated self-cleaning. The COD range is specified as 0–500 mg/L equiv. KHP.

SYSTEM DATA

Technical Specifications

Item	Specification
Power Supply	DC 9–30 V
Typical Power Consumption	≤0.8 W normal; ≤1.5 W during self-cleaning
Communication Interface	RS485; standard Modbus-RTU protocol
Baud Rate	4800 bit/s default; 1200–115200 bit/s configurable
Measurement Principle	Dual-wavelength ultraviolet absorption
COD Measurement Range	0–500 mg/L equiv. KHP
Turbidity Measurement Range	0–200 NTU
Measured Channels	COD, turbidity and temperature; TOC register available

Item	Specification
COD Measurement Accuracy	±5% FS equiv. KHP at 25 °C
Turbidity Accuracy	±5% FS at 25 °C
COD Resolution	0.1 mg/L
Turbidity Resolution	0.1 NTU
Temperature Resolution	0.1 °C
Temperature Accuracy	±0.5 °C
Repeatability	±1% FS equiv. KHP at 25 °C
Response Time	≤20 s
Operating Conditions	0–40 °C
Ingress Protection	IP68
Flow Velocity	<3 m/s
Probe Pressure Resistance	<0.1 MPa
Cable Length	5 m by default; custom length available
Housing Material	Corrosion-resistant plastic and stainless steel
Recommended Calibration / Maintenance	Every 3 months
Self-cleaning System Life	About 18 months; depends on cleaning frequency

RS485 / MODBUS-RTU

RS485 / Modbus-RTU Communication

The RS485 interface uses the standard Modbus-RTU protocol. The device address and baud rate are configurable with the 485 parameter tool. The factory defaults are address 0x01 and 4800 bit/s; use the register map for measurement, calibration and self-cleaning parameters.

Parameter	Source-specified setting
Interface	RS485
Protocol	Modbus-RTU
Baud rate	1200, 2400, 4800, 9600, 19200, 38400, 57600 or 115200 bit/s; default 4800
Device address	1–254; default 0x01
Data format	8 data bits, no parity, 1 stop bit, CRC error check
Registers	COD, turbidity, temperature, TOC, calibration and cleaning parameters

Product Selection

Code	Description
SS306-01-N01	Product model
N01	RS485 / Modbus-RTU interface
2 / 2S	Composite or stainless-steel housing
C500	COD range 0–500 mg/L equiv. KHP
T200	Turbidity range 0–200 NTU
5M	5 m cable, default length
S18	Self-cleaning system, about 18-month service life

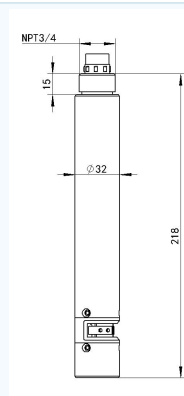
MECHANICAL DATA

Dimensions and Installation

The compact probe is available in corrosion-resistant composite or stainless-steel housing. It uses an NPT3/4 threaded connection and is designed for submerged installation.



Composite or stainless-steel probe housing



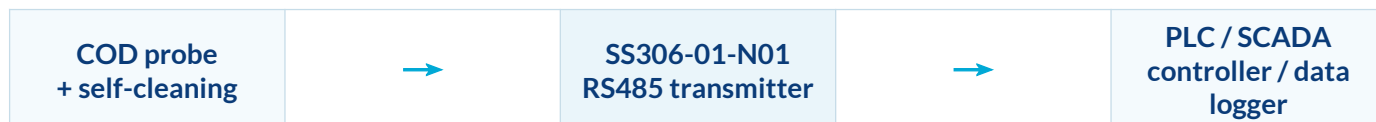
Probe: 218 mm length; Ø32 mm; NPT3/4

INSTALLATION NOTE

Install the probe in water without bubbles; horizontal placement is preferred. Keep the probe no more than 2 m below the water surface and at least 0.3 m below the minimum water level. Avoid impact, excessive flow and cable tension.

COMMUNICATION

RS485 / Modbus-RTU Communication Path



The RS485 path provides direct integration with PLCs, SCADA systems, controllers and data loggers. Use the configured address and baud rate on the receiving device.

INSTALLATION & OPERATION

Installation and Maintenance Notes

- Connect a stable 9–30 VDC supply and allow 1–3 minutes for the probe to stabilize before checking measurements.
- Fix the probe and cable so that water flow cannot cause impact; protect the connection from mechanical stress and direct sunlight.
- Keep the optical window free of bubbles, oil film and scale. Rinse with tap water and wipe only with a soft, wet cloth; do not scratch or touch the window.
- Check the self-cleaning brush regularly. Do not force the brush shaft; return the unit for moving-seal service after about 18 months, adjusted for actual cleaning frequency.
- Calibrate turbidity before COD. Calibrate before use; a three-month interval is recommended and may be adjusted for the application environment. Use gloves when preparing KHP standards.
- Connect the four-core cable by color: brown power +, black power –, yellow RS485-A and blue RS485-B. Lock the cable connector before placing the probe in water.

RS485 Integration

- Use the N01 RS485 / Modbus-RTU option.
- Default address 0x01 and baud rate 4800 bit/s.
- Connect brown/black power and yellow/blue RS485 conductors.

Service & Support

- 12-month warranty under normal use.
- Lifetime repair service.
- Support for Modbus-RTU integration, calibration and maintenance.

CONTACT / SUPPORT

SpeSense Technologies Inc.

Add: No. 9 Yuhe Road, Guitang Subdistrict, Yuhua District, Changsha City

Tel: +86-15386478166

Email: info@spesense.com

Web: www.spesense.com



WhatsApp / WeChat