WATER QUALITY / DATA SHEET

SS312-01-4G-2

Suspended Solids Transmitter

Self-cleaning optical measurement of suspended solids and sludge concentration with 4G data upload.



Overview

- Measures suspended inorganic and organic solids, sediment and microorganisms in water.
- Optical absorption measurement requires no chemical reagents.
- Sends readings over 4G to a cloud platform or customer server for centralized monitoring.

Maximum Range	Resolution	Power Supply	Upload
0–20000 mg/L	0.1 mg/L	DC 12–30 V	4G

Key Advantages

- Integrated self-cleaning system reduces biofouling.
- Modulated light reduces visible-light interference.
- Automatic temperature compensation.
- 2 s acquisition; configurable upload interval.
- <25 MB monthly traffic at default upload interval.

Application Scenarios

- Water treatment.
- Aquaculture.
- Environmental monitoring.
- Online sludge concentration monitoring.

SYSTEM DATA

Technical Specifications

Item	Specification
Model	SS312-01-4G-2
Measurement principle	Optical absorption
Range options	0–20000 / 0–5000 / 0–1000 / 0–200 mg/L; select one
Measurement error	±5% FS; depends on sludge homogeneity
Resolution	0.1 mg/L
Response time	≤30 s
Supply voltage	DC 12–30 V
Power consumption	1.4 W normal; 4.7 W during self-cleaning
Data upload	4G
Probe operating temperature	0–40 °C
Housing environment	−40 to +60 °C; 0–95% RH, non-condensing
Ingress protection	Probe: IP68; transmitter housing: IP65
Flow velocity	<3 m/s
Probe pressure limit	<0.1 MPa
Data acquisition interval	2 s
Data upload interval	60 s default; configurable from 1 to 65535 s

Item	Specification
Probe cable	5 m standard; customizable
Housing material	Corrosion-resistant plastic and stainless steel
Maintenance / calibration interval	3 months recommended
Self-cleaning system service life	18 months; dynamic seal replacement required after continuous use
Housing dimensions	117 × 87 × 43 mm maximum
Probe dimensions / thread	247 mm dimension shown; 227 mm body dimension; Ø50 mm; NPT 3/4

MEASUREMENT DATA

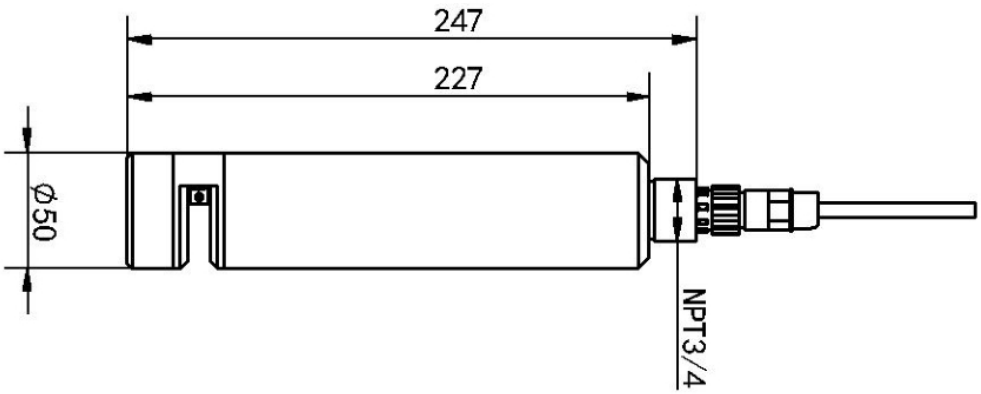
Calibration and Range Selection

Calibration condition	Requirement
Factory reference	Kaolin standard, selected for the optical transmission measurement method.
Site calibration	Use a standard prepared from sludge representative of the installation environment to ensure homogeneity and appropriate concentration calibration.

Ordering model: SS312-01-4G-2. Specify the required 20000, 5000, 1000 or 200 mg/L full-scale range and cable length. The wall-mounted housing and self-cleaning probe form the 4G monitoring system.

MECHANICAL DATA

Dimensions and Installation



Dimensions in millimetres: probe Ø50 mm, 247 mm and 227 mm dimensions as shown; NPT 3/4 thread. Housing: 117 × 87 × 43 mm maximum. Wall mounting spacing: 105 mm; use Ø5 mm holes with the supplied plugs and screws.

Horizontal probe placement is preferred to reduce sediment accumulation. Install in bubble-free water at a depth no greater than 2 m and at least 30 cm below the lowest water level. Prevent the suspended probe from striking walls or structures; secure it where flow is strong. Route the cable through a waterproof support pipe and attach using the NPT 3/4 thread.

ELECTRICAL CONNECTION

Power Connection and Start Up

Connection	Instruction
Supply voltage	DC 12–30 V; supplied adapter: 12 V
Start up	Connect the adapter to the power input, then energize
Data availability	Wait 1–3 minutes, then view readings at the platform or receiving server

Connect the supplied 12 V adapter to the power input and switch on. Allow 1–3 minutes before viewing readings on the monitoring platform or receiving server. Keep cable connectors out of water until fully locked.

COMMUNICATION DATA

4G Configuration and Data Upload

Use the supplied Android configuration app with Bluetooth enabled. Scan for 4GMOD followed by the device address code, connect with the default password 12345678, read current parameters, edit the required settings and download them. Read real-time data to check signal strength: values from 10 to 33 indicate weakest to strongest signal.

Set the target IP address or domain and receiving port (local software: 2404; cloud: 8020). Upload interval: 1–65535 s, default 60 s. The first network upload delay is configurable in seconds. Operation password: 1–8 numeric digits, default 12345678. Use the supplied development documentation for custom server integration.

Monitoring platforms: local software runs on a customer PC or server; the cloud option needs no customer server. Both offer web monitoring, limit alarms, email alerts, history export and permission management. Local SMS alerts require an additional SMS modem.

CALIBRATION & MAINTENANCE

Self Cleaning and Probe Maintenance

Inspect the measurement windows for deposits and scale. Rinse with tap water and wipe with a soft damp cloth; household detergent in water may be used for stubborn deposits. Do not touch or scratch the windows. Keep bubbles off the probe and measurement windows during measurement and calibration. Protect the probe from impact, direct sunlight, cable tension and mechanical stress.

Check the cleaning brush regularly for correct operation and damage. Do not force the brush shaft to rotate. After 18 months of continuous self-cleaning use, return the device for dynamic seal replacement; adjust the service interval to actual cleaning frequency. Calibrate before each use and approximately every 3 months for long-term operation, adjusting for fouling and chemical deposits. Check window cleanliness if readings are high, low or persistently unstable.

Do not use this device as a safety device or emergency stop device, or in applications where equipment failure could cause personal injury. Read the operating instructions before installation, use or servicing.

Package contents: one self-cleaning suspended solids transmitter, 5 m cable, one 12 V power adapter, two expansion plugs, two self-tapping screws, certificate and warranty card. Warranty: 12 months for verified defects in materials or workmanship under normal use and maintenance.

CONTACT / SUPPORT

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