WATER QUALITY / DATA SHEET

SS312-01-ANALOG-2

Suspended Solids Transmitter

Optical measurement of suspended solids and sludge concentration with temperature compensation and selectable analog output.



Overview

- Measures suspended inorganic and organic solids, sediment and microorganisms in water.
- Optical scattering measurement requires no chemical reagents.
- Analog output options: 4–20 mA, 0–5 V or 0–10 V.

Maximum Range	Resolution	Power Supply	Output
0–5000 mg/L	0.1 mg/L	DC 10–30 V*	Analog

Key Advantages

- Optical scattering measurement without reagents.
- Modulated light reduces visible-light interference.
- Automatic temperature compensation.
- 4–20 mA, 0–5 V or 0–10 V output; select one.
- IP68 probe and IP65 conversion module housing.

Application Scenarios

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

SYSTEM DATA

Technical Specifications

Item	Specification
Model	SS312-01-ANALOG-2
Measurement principle	Optical scattering
Range options	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 10–30 V; 0–10 V output requires DC 24 V
Power consumption	≤0.8 W
Analog output	4–20 mA / 0–5 V / 0–10 V; select one
Probe operating temperature	0–40 °C
Housing environment	−40 to +60 °C; 0–95% RH, non-condensing
Ingress protection	Probe: IP68; transmitter housing: IP65
Probe pressure limit	<0.6 MPa
Probe cable	5 m standard; customizable
Housing material	Corrosion-resistant plastic
Maintenance / calibration interval	3 months recommended

Item	Specification
Housing dimensions	117 × 87 × 43 mm maximum
Probe dimensions / thread	137 mm dimension shown; Ø30 mm; NPT 3/4

MEASUREMENT DATA

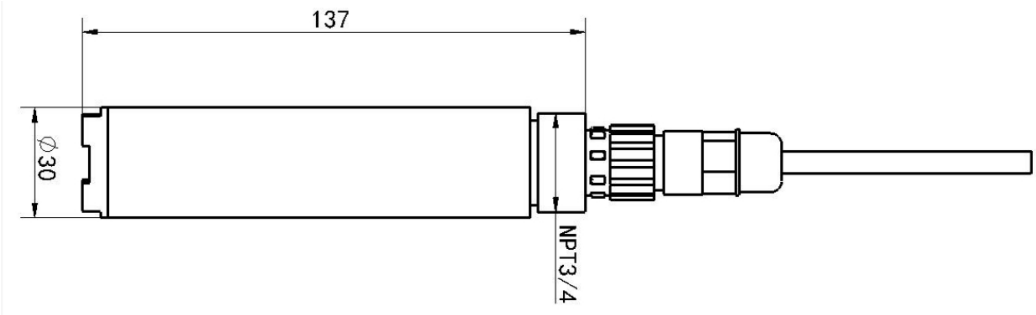
Calibration and Range Selection

Calibration condition	Requirement
Factory reference	Diatomaceous earth standard, selected for the optical scattering 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-ANALOG-2. Specify the required 5000, 1000 or 200 mg/L full-scale range, analog output and cable length. Supplied system includes the optical probe and wall-mounted analog conversion module. *The 0–10 V output version requires DC 24 V.

MECHANICAL DATA

Dimensions and Installation



Dimensions in millimetres: probe Ø30 mm, 137 mm as shown and 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.

Install the probe in slow-flowing, bubble-free water. Maintain 5 cm clearance from surrounding walls and keep the 7 cm space beneath the probe free of obstructions. Route the cable through a waterproof support pipe and attach using the NPT 3/4 thread.

ELECTRICAL CONNECTION

Power and Analog Signal Wiring

Wire colour	Connection
Brown	Power positive: DC 10–30 V; DC 24 V for 0–10 V output
Black	Power negative
Blue	Analog signal positive
Yellow or green	Analog signal negative

The standard output cable has four bare wires. Connect power and analog signal according to the wire colours above. Use DC 10–30 V for 4–20 mA or 0–5 V versions; use DC 24 V for the 0–10 V version. Keep cable connectors out of water until fully locked.

ANALOG OUTPUT DATA

Signal Conversion and Measurement Examples

For the selected zero-based concentration range, let C be concentration in mg/L and R the full-scale range in mg/L. Scale the receiving instrument to the ordered range and output type. The analog signal represents suspended solids concentration.

4–20 mA output: C = (I − 4) × R / 16, with I in mA. For R = 5000 mg/L and I = 12 mA, C = 2500 mg/L. 0–5 V output: C = V × R / 5. 0–10 V output: C = V × R / 10, with V in volts. For R = 5000 mg/L and V = 5 V on the 0–10 V version, C = 2500 mg/L.

CALIBRATION & MAINTENANCE

Probe Cleaning and Calibration

Remove the black rubber protective cover before measurement. Clean probe deposits approximately every 30 days, adjusting frequency to the operating environment. Rinse with flowing water and wipe remaining dirt with a soft damp cloth. Avoid scratching the optical light-guiding surfaces.

Calibrate before each use and approximately every 3 months for long-term operation, adjusting for fouling and chemical deposits. Factory calibration uses diatomaceous earth; use a standard prepared from sludge representative of the installation environment for site calibration. Keep cable connectors out of water until fully locked. Contact technical support if a clear fault occurs.

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 suspended solids transmitter, one analog conversion module, 5 m cable, 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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