

PH ANALOG TRANSMITTER / DATA SHEET

SS307-02-ANALOG

Industrial pH Analog Transmitter

A compact pH transmitter with selectable 4–20 mA, 0–5 V or 0–10 V outputs for water-quality monitoring and automatic or manual temperature compensation.

Overview

- SS307-02-ANALOG converts pH and optional temperature measurements into a stable analog output for controllers and data-acquisition systems.
- Select the output type during ordering; the 0–10 V option requires a DC 24 V supply.
- It is suited to industrial wastewater, domestic wastewater, agriculture, aquaculture and other weakly acidic or weakly alkaline liquids.



pH Range 0–14.00 pH	Output 4–20 mA 0–5 V / 0–10 V	Supply DC 10–30 V	Temperature 0–80 °C
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Key Advantages

- Selectable 4–20 mA, 0–5 V or 0–10 V outputs.
- 0–10 V version uses a DC 24 V supply; other versions use DC 10–30 V.
- Automatic or manual temperature compensation.
- Compact wall-mount enclosure with replaceable pH electrodes.

Application Scenarios

- Industrial and domestic wastewater.
- Agriculture and aquaculture water.
- PLC, display and data-logger integration.
- Weakly acidic or weakly alkaline, non-corrosive liquids.
- Sites requiring a direct analog signal.

MEASUREMENT & OUTPUT

Measurement and Analog Signal Path

END-TO-END DATA FLOW

The selected pH electrode and optional temperature element connect to the transmitter. The transmitter converts the electrochemical signal, applies automatic or manual temperature compensation and maps the measured pH value to the selected 4–20 mA, 0–5 V or 0–10 V output for a PLC, display, data logger or control system.

Function	Default / available setting
pH measurement	0–14.00 pH; 0.01 pH resolution
Analog outputs	4–20 mA, 0–5 V or 0–10 V selectable
Current mapping	4 mA = 0 pH; 20 mA = 14 pH for the 0–14 pH range
Voltage mapping	0 V = 0 pH; 5 V or 10 V = 14 pH for the selected span
0–10 V supply	DC 24 V required
Temperature compensation	Automatic with temperature element; manual default 25 °C
Signal wiring	Blue: analog +; yellow/green: analog –; brown/black: power

MEASUREMENT PRINCIPLE

pH and Temperature Measurement

ELECTROCHEMICAL MEASUREMENT

The pH electrode produces a potential related to hydrogen-ion activity. The transmitter converts this signal to a pH value and can use the installed temperature element for automatic compensation. In manual mode, the configured temperature is used; the default manual value is 25 °C.

SYSTEM DATA

Technical Specifications

Item	Specification
Model	SS307-02-ANALOG
Power Supply	DC 10–30 V; 0–10 V output requires DC 24 V
Power Consumption	1.2 W typical
Output Signal	4–20 mA; 0–5 V; 0–10 V
pH Measurement Range / Resolution	0–14.00 pH / 0.01 pH
pH Measurement Error	±0.15 pH
Repeatability Error	±0.02 pH
Transmitter Temperature / Humidity	–20–80 °C; 0–95% RH, non-condensing
Electrode Temperature	0–80 °C; flat desulfurization electrode: 0–60 °C
Electrode Pressure	0.6 MPa
Electrode Cable / Life	5 m default; 10/15/20 m customizable; approximately 6–12 months
Temperature Compensation	Automatic or manual; manual default 25 °C
Enclosure	Wall-mount enclosure; maximum 117 × 87 × 43 mm

PRODUCT SELECTION

Configuration Options

Option	Description
SS307-02-ANALOG	Industrial pH transmitter with selectable analog output
I20	4–20 mA current output
V05	0–5 V voltage output
V10	0–10 V voltage output; DC 24 V supply required
Electrode	201/201T, 202/202T, 203/203T, 204/204T, 205/205T or 206/206T
Display	OLED display optional; blank option means no display
Mounting	Wall, submerged or pipeline installation

SELECTION NOTE

Choose the analog output, electrode material, temperature option and OLED display option together. The standard package includes the transmitter, selected electrode, mounting hardware, pH buffer sachets and warranty materials.

INSTALLATION & OPERATION

Installation, Wiring and Operation

Connection	Function / guidance
Power +	Brown wire; connect to the positive terminal of a DC 10–30 V supply
Power –	Black wire; connect to the supply negative terminal
Analog +	Blue wire; connect to the analog input positive terminal
Analog –	Yellow or green wire; connect to the analog input negative terminal
PH– / PH+	pH electrode; black to PH– and transparent to PH+

Connection	Function / guidance
PT- / PT+	Temperature element; two temperature wires may be connected in either order when fitted

- Mount the transmitter in the selected position; keep the enclosure, cable gland and terminals above standing water.
- Confirm the output code before wiring. Use DC 24 V when the 0–10 V output option is selected.
- For 4–20 mA, calculate pH from the current span; for 0–5 V or 0–10 V, calculate pH from the corresponding voltage span.
- For two-point calibration, use suitable pH buffers such as 4.01 and 9.18; rinse the electrode with pure water between calibration points.
- Store the electrode in soaking solution and calibrate before use or at least every 3 months for long-term operation.
- Avoid liquids outside the selected electrode's compatibility range; protect the sensing element from impact and scratching.

INTEGRATION SUPPORT

The selectable analog output can connect directly to a PLC, display, data logger or control system. Match the receiving input type to the ordered output option and use the pH range and output span shown in the specifications.

SERVICE & WARRANTY

The transmitter is covered by a 24-month warranty under normal use and includes lifetime service support. The pH electrode is a consumable component; its service life is typically 6–12 months and it is not covered by the transmitter warranty.

MECHANICAL DATA

Transmitter Enclosure and Electrode Dimensions

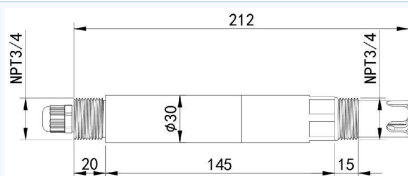


Wall-mount enclosure: maximum 117 × 87 × 43 mm

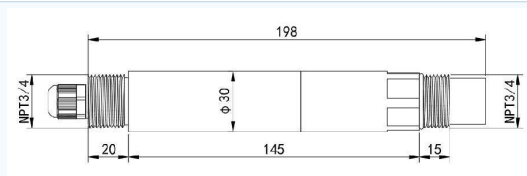
Mechanical notes

- Use the supplied expansion plugs and screws for wall mounting where suitable.
- NPT3/4 connection for most industrial electrode variants.
- PG13.5 connection for the glass variant.
- Keep cable connectors, the cable gland and analog terminals dry and locked.
- For submerged or pipeline installation, position the sensing end in the representative flow and avoid bubbles.

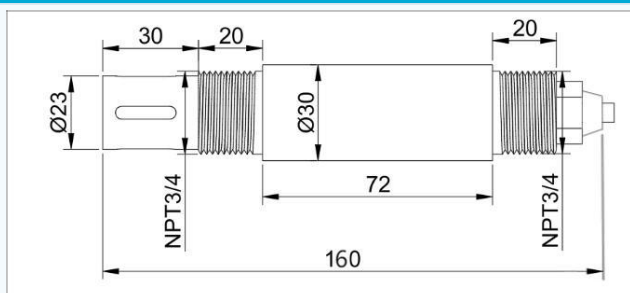
Representative electrode dimensions are shown below in millimetres. The final selected electrode determines the applicable drawing.



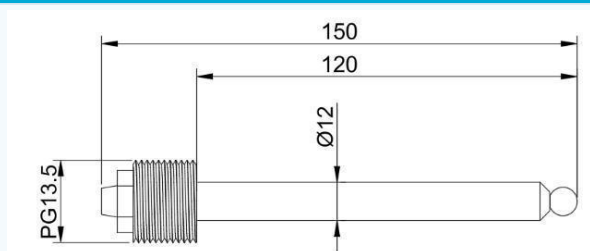
Composite, plating or antimony variants: 212 mm; Ø30; NPT3/4



Flat desulfurization variant: 198 mm; Ø30; NPT3/4



PTFE variant: 160 mm; Ø30; NPT3/4



Glass variant: 150 mm; Ø12; PG13.5

CONTACT / SUPPORT

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