

WATER QUALITY MONITORING / DATA SHEET

SS301-01

Industrial EC Transmitter

A configurable industrial conductivity transmitter for continuous water-quality monitoring, with temperature compensation, salinity and TDS conversion, and multiple wired or wireless communication options.

Overview

- Measures conductivity and temperature, with calculated salinity and TDS values.
- Supports 4-20 mA, 0-5 V, 0-10 V, RS485, Wi-Fi, 4G and LoRa variants.
- Uses a 10-30 V DC wide-voltage supply for field and panel installations.
- Suitable for surface-water monitoring, aquaculture, wastewater, food, pharmaceutical and municipal-water systems.



Measured EC + Temperature	Conversion Salinity / TDS	Supply 10-30 V DC	Housing IP65
Key Functions • Automatic compensation to a configured reference temperature. • Configurable acquisition and upload intervals. • Wide choice of output and wireless communication variants. • Optional local display for field viewing.		Applications • Surface-water and municipal-water monitoring. • Aquaculture and agricultural water management. • Wastewater treatment and environmental protection. • Food, pharmaceutical and process-water control.	

SYSTEM DATA

Technical Specifications

Item	Specification
Supply Voltage	DC 10-30 V; 24 V DC required for 0-10 V output
Power Consumption	0.4 W RS485; 0.6 W Wi-Fi/4G/LoRa; 1 W analog output
Conductivity Range	K=0.01: 0.01-20 μ S/cm; K=0.1: 0.1-200 μ S/cm; K=1: 1-2000 μ S/cm; K=10: 10-20000 μ S/cm
Conductivity Resolution	K=0.01: 0.001 μ S/cm; K=0.1: 0.01 μ S/cm; K=1: 0.1 μ S/cm; K=10: 1 μ S/cm
Conductivity Accuracy	$\pm 1\%$ FS
Temperature Range / Resolution	0-100 $^{\circ}$ C / 0.1 $^{\circ}$ C
Temperature Accuracy	± 0.5 $^{\circ}$ C
Temperature Compensation	0-80 $^{\circ}$ C; default reference temperature 25 $^{\circ}$ C; coefficient 0.02 default
Salinity Conversion	K=0.01: 0-10 ppm; K=0.1: 0-100 ppm; K=1: 0-1000 ppm; K=10: 0-11476 ppm
TDS Conversion	K=0.01: 0-10 ppm; K=0.1: 0-100 ppm; K=1: 0-1100 ppm; K=10: 0-13400 ppm
Housing Protection	IP65 for non-display variants; suitable for outdoor rain and snow exposure
Operating Environment	-20 to +80 $^{\circ}$ C; 0-95% RH, non-condensing
Cable Length	5 m default; 10 m, 15 m and 20 m options

MEASUREMENT

Measurement and Conversion

Parameter	Range	Method / Resolution	Accuracy
Conductivity	0.01-20000 μ S/cm	Four electrode constants: K=0.01 / 0.1 / 1 / 10	$\pm 1\%$ FS
Temperature	0-100 °C	0.1 °C resolution	± 0.5 °C
Salinity	0-11476 ppm	Calculated from conductivity and K value	—
TDS	0-13400 ppm	Calculated from conductivity and K value	—

HARDWARE

Transmitter and Probe Options



Wall-mount housing · 117 × 87 × 43 mm

Probe and Housing Choices

- Wall-mounted enclosure with optional local display window.
- Stainless-steel or plastic conductivity electrode with 3/4 in threaded connections.
- Choose K=0.01, K=0.1, K=1 or K=10 according to the target conductivity range.
- Cable, enclosure and probe combinations can be selected for the installation environment.

INSTALLATION

Installation Guidance

Installation	Guidance
Submerged	Route the cable through a waterproof tube and seal the 3/4 in thread; keep the sensing end fully immersed.
In-line / Pipe	Connect the 3/4 in probe thread to the process pipe using a suitable seal and maintain a stable flow.
Probe Position	Avoid trapped air bubbles and keep the sensing surfaces clear of sediment or heavy deposits.
Enclosure	Fix the 117 × 87 × 43 mm housing on a dry, stable surface; seal cable glands after wiring.

INTERFACES

Output and Communication Options

Variant	Interface	Function
Analog current	4-20 mA	Continuous conductivity output
Analog voltage	0-5 V / 0-10 V	0-10 V requires 24 V DC supply
RS485	Modbus-RTU	Configurable address and baud rate; default 4800 bit/s
Wi-Fi	802.11b/g/n	Local or wide-area network data transmission
4G	Cellular upload	Configurable upload interval; default 60 s
LoRa	Long-range wireless	Low-power transmission with strong interference resistance
Ethernet	RJ45 option	Wired network upload where specified

Variant	Interface	Function
Acquisition and Upload • Data acquisition interval: 2 s per measurement cycle. • Wi-Fi upload interval: 1-65535 s; 10 s default. • 4G upload interval: 1-65535 s; 60 s default.		Wi-Fi Security • 802.11b/g/n wireless network support. • Security options: WEP, WPA-PSK and WPA2-PSK. • Encryption options: WEP, TKIP and AES.

CONFIGURATION

Configuration Options

Option	Selection
Output	4-20 mA, 0-5 V, 0-10 V or RS485 Modbus-RTU
Wireless	Wi-Fi, 4G, LoRa or Ethernet according to selected variant
Electrode Constant	K=0.01, K=0.1, K=1 or K=10
Housing	Wall-mount enclosure, optional local display
Cable	5 m standard; 10 m, 15 m and 20 m options

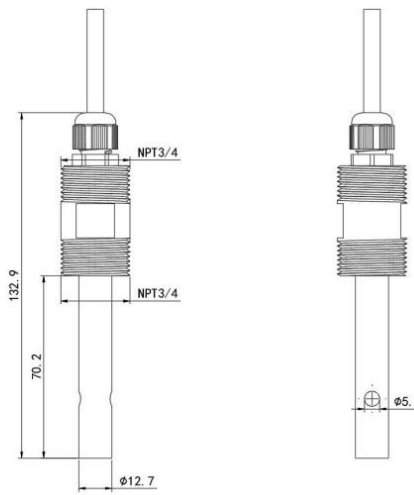
SERVICE

Calibration and Maintenance

Item	Guidance
Temperature compensation	Select automatic compensation or configure the reference temperature according to the process.
Before measurement	Rinse the electrode with clean or deionized water, remove bubbles and wait for a stable reading.
Conductivity cell	Clean organic deposits with warm detergent water or alcohol; use suitable chemical cleaning for mineral deposits.
Environment	Avoid strong acids, strong bases, aggressive oxidizers/reducers and deposits that cover the sensing surfaces.
Connector handling	Keep cable plugs dry until the connection is fully locked and sealed.

PROBE OPTIONS

Electrode Selection

 3/4 in threaded electrode options	
Selection Notes • Choose stainless-steel or plastic construction for the process medium. • Match K=0.01, K=0.1, K=1 or K=10 to the expected conductivity range. • Install the electrode fully immersed or in-line with a stable flow path.	

Use the SS301-01 only within the stated operating range and with the electrode constant matched to the measurement range. Review calibration and clean the sensing surfaces regularly in long-term installations.

CONTACT / SUPPORT

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