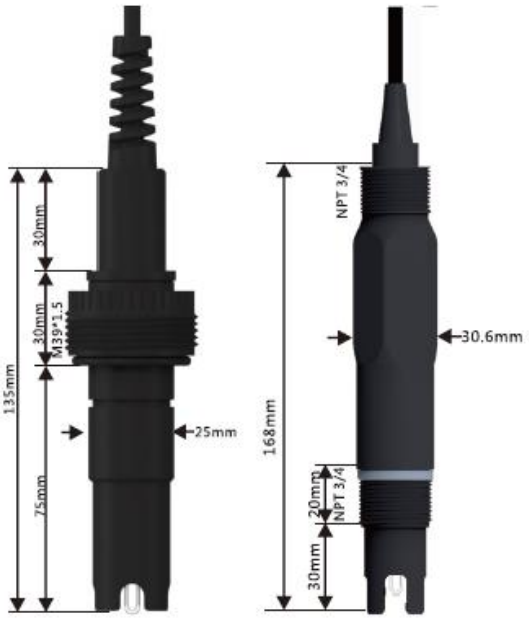
Water Electric Conductivity Sensor

WS102-EC

WS102-EC is a smart water quality analysis sensor for Electric Conductive, which can be used to detect and distinguish pure water, mountain spring water, mineralized water, purified water, tap water, sewage, etc.
At the same time built-in temperature detection, measuring range 0 ~ 80 ℃. Signal output mode supports RS485 (Modbus RTU) and 4~20mA. The Conductivity Electrode also supports M39x1.5 and G3/4 thread gauge for different installation.



Features & Benefits

System Parameter	
Power supply	DC10-30V(Recommend 12V)
Pressure range	0~400KPa (0 – 4 Bar)
Shell material	PC, PBT plastic
Cable length	5 meters (default)
Protection grade	IP68
Weight	0.5kg(Without packaging)
Inspection Parameter	
E.C. Measuring Range	1~2000μS/cm
E.C. Resolution	1 μS
E.C. Measuring Accuracy	±1 μS
Temperature Measuring Range	0~80.0 °C
Temperature Resolution	0.1 °C
Temperature Measuring Accuracy	±0.3°C
Temperature compensation	Automatic
Data Output	RS485(Modbus RTU); 4~20mA
Communication Protocol Basic Parameter	
Protocol	Modbus RTU
Baud Rate	9600bps, Non Parity Check, 8 Data bits, 1 stop bit, 1 CRC

Features & Benefits

Installation	
Thread Gauge	WS102-EC-N: NPT 3/4 Thread Gauge WS102-EC-M: M39x1.5 Thread Gauge

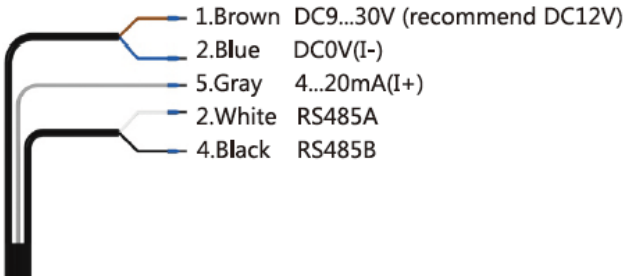
Address Description

Name	Reg. Add.	PLC Add.	Data Type	Length	R/W	Description
Conductivity Value	0x00 00	0x00 01	Float	2	R	Multiply by 1000 (Read value / 1000 = uS/cm)
Resistivity value	0x00 02	0x00 03	Float	2	R	Ohm .cm
Temperature	0x00 04	0x00 05	Float	2	R	Degree C
TDS	0x00 06	0x00 07	Float	2	R/W	ppm or mg/L
Salinity	0x00 08	0x00 09	Float	2	R/W	ppm or mg/L
Conductivity Constant	0x00 0A	0x00 0B	Float	2	R/W	
Compensation Coefficient	0x00 0C	0x00 0D	Float	2	R/W	
Manual compensation temperature	0x00 0E	0x00 0F	Float	2	R/W	
Temperature Offset	0x00 10	0x00 11	Float	2	R/W	
Baud Rate	0x00 12	0x00 13	Float	2	R/O	
Slave Address	0x00 14	0x00 15	Float	2	R/O	
Filtered Seconds	0x00 16	0x00 17	Float	2	R/O	
Electrode Sensitivity	0x00 18	0x00 19	Float	2	R/O	
Compensation mode	0x00 1A	0x00 1B	Float	2	R/O	
Model Compensation Type	0x00 1C	0x00 1D	Float	2	R/O	Pt1000 – 950.0 ; NTC10K – 950.1
Firmware version	0x00 1E	0x00 1F	Float	2	R/O	
4-20mA High Point Value	0x00 20	0x00 21	Float	2	R/O	
High Range Resistivity	0x00 22	0x00 23	Float	2	R/O	
Acquisition Cycle	0x00 24	0x00 25	Float	2	R/O	
Operating mode	0x00 26	0x00 27	Float	2	R/O	
Modify Baud Rate	0x0012	0x00 13	Integer	1	W	2400, 4800, 9600 (default), 19200, 38400, 43000, 57600
Modify Slave Address	0x00 14	0x00 15	Integer	1	W	1-254
Modify Filter Second	0x00 16	0x00 17	Integer	1	W	0:automatic, 1:Manual
Modify Compensation Mode	0x00 1A	0x00 1B	Integer	1	W	0: Positive ; 1:Negative
Adjust Float Order	0x00 32	0x00 33	Integer	1	W	0: Positive ; 1:Negative
Modify Temperature Compensation Type	0x00 33	0x0034	Integer	1	W	0:PT1000 ; 1:NTC10K
Restore Default	0x00 64	0x0065	Integer	1	W	
Restore Baud Rate and address	0x27 0F	0x27 10	Float	2	W	
Modify 4-20mA High Point Value	0x00 12	0x00 13	Float	2	W	
Modify High range resistivity	0x00 14	0x00 15	Float	2	W	
Modify the Sensor Acquisition Cycle	0x00 16	0x00 17	Float	2	W	
Modify Operating Mode	0x00 28	0x00 29	Integer	1	W	0: Periodic Acquisition 1 Trigger Acquisition
Modify 4-20mA Coefficient	0x00 20	0x00 21	Float	2	W	

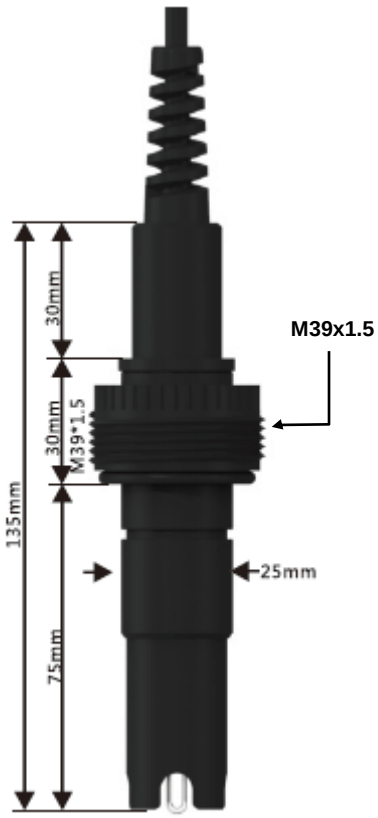
✓ Electrode wiring

- Please follow the instructions carefully , the wrong wiring will damage the product completely.
- Please carefully check all the wiring in the system and confirm that the wiring is complete right before switch on the power.
- **Note: RS485A line and RS485B line are strictly forbidden to contact with the power supply line, otherwise the communication of the electrode will be permanently damaged.**

Electrode Cable Outlet



✓ Dimension & Thread Gauge



Ordering Information

Model	Description
WS102-EC-N	E.C. Water Sensor, 0~2000uS/cm,0~80C , 5M Cable, RS-485, 4-20mA,10-30V,NPT3/4
WS102-EC-M	E.C. Water Sensor, 0~2000uS/cm,0~80C , 5M Cable, RS-485, 4-20mA,10-30V,M39x1.5
	Package List
	1 x Product Unit
	1 x QIG