

Water Quality Monitor

Q45C4 4E Conductivity Transmitter

OVERVIEW

The 4-Electrode Conductivity Transmitter is the answer for monitoring almost any water-based process. Drinking water, plating bath solutions, cooling water, process wash water or virtually any other aqueous system can be monitored accurately and reliably. The unique drive/control scheme used in the 4-Electrode system allows a single sensor configuration to be used in conductivity ranges from 0...200 μ S to as high as 0...2,000 mS (0...2 S).

The "auto-ranging" feature enables the monitor to display the actual conductivity value during "overshoot" conditions. For chemical mixing applications, a concentration display can be selected for a limited number of acids and bases. If your application involves very low conductivity/resistivity measurement, we can provide the Q45C2 system that is used in process waters with conductivities below 200 μ S.



Figure 1: Sanitary sensor

APPLICATIONS

- | | |
|----------------------|------------------------|
| • Cooling towers | • Chemical processing |
| • Plating baths | • Fish farms |
| • Potable water | • Wastewater |
| • Streams and rivers | • Salt water intrusion |



FEATURES

- Measurement from 0...200 μ S to 0...2,000 S.
- Option for NaCl, NaOH, or HCl concentration display
- Loop-powered or battery-operated
- External 5...17V DC version for solar power applications
- 4-electrode sensor design for fouling compensation
- Titanium or 316 SS electrodes for corrosion resistance
- Sanitary sensor (Figure 1), convertible sensor (Figure 2) or insertion sensor (Figure 3)
- Large, easy-to-read LCD display
- Clear, menu-driven user interface
- NEMA 4X (IP66) enclosure
- Wall or pipe mounting bracket standard
- Built-in PID controller



Figure 2: Convertible sensor



Figure 3: Insertion sensor

SPECIFICATIONS

Electronic Monitor

Display Range	0...2000 μ S 0...2.000, 0...20.00, 0...200.0, 0...2000 mS 0...2.000 S
Accuracy	$\pm$ 0.5% of selected range
Repeatability	0.2% of selected range
Sensitivity	0.05% of selected range
Linearity	0.1% of selected range
Temperature Drift	0.1% of span/ $^{\circ}$ C
Sensor Type	Q25C4 4-electrode
Temperature Input	Pt1000 in sensor for temperature compensation
Power	2-wire unit: 17...30V DC, 25 mA maximum Battery unit: Two AA alkaline batteries External DC: 5...17V DC, 10 mA maximum
Analog Outputs	2-wire unit: Single 4...20 mA DC, 450 Ω maximum Battery unit: Two 0...2.5V DC, 50K Ω minimum External DC: Two 0...2.5V DC, 50K Ω minimum
Output Isolation	600V galvanic isolation
Enclosure	NEMA 4X (IP66) polycarbonate, V-0 flammability
Mounting Options	Wall or pipe mounting bracket supplied
Conduit Entries	Two PG9 cord grips, 0.16...0.31 in. diameter cable
Ambient Temperature	Operating: -40° ... 140° F (-40° ... 60° C) Storage: -40° ... 158° F (-40° ... 70° C)
Ambient Humidity	0...95%, non-condensing
Size	4.4 (H) $\times$ 4.4 (W) $\times$ 3.5 (D) in. (111 $\times$ 111 $\times$ 90 mm)
Weight	2-wire or External DC unit: 1 lb (0.45 kg) Battery unit: 2 lb (0.9 kg)
Certifications	CE marked to BS EN 61326-1:2006 standard UL and CSA general purpose



ORDERING INFORMATION

Q1-A-BB-CC 4-Electrode Conductivity Transmitter

Suffix A - Power	
5	24V DC, 2-wire (single output only)
6	Battery-operated with two 0...2.5V DC outputs
7	External 5...17V DC with two 0...2.5V DC outputs

Suffix B - Sensor Type

C1	Convertible, PEEK body
C2	Insertion, 316 SS body
C3	Sanitary style, 1-1/2 in., 316 SS body
C4	Sanitary style, 2 in., 316 SS body
C5	Convertible, PEEK body with connector (See "Notes" 3 and 4)
C6	Flow type sensor with connector, noryl, for sealed flow cell 00-1522 (See "Notes" 3 and 4)
WW	None

Suffix C - Cable Length

AC	15 ft (4.6 m)
AF	30 ft (9.1 m)
WW	None

Accessories

07-0100	Universal junction box, NEMA 4X
31-0057	Sensor interconnect cable
03-0029	Sensor cable with connector (25 ft)
00-0628	Mounting bracket kit for submersible sensor
00-1522	Sealed flow cell
47-0005	2 in. U-bolt, 304 SS
07-0209	1 in. NPT tee, CPVC
07-0210	2 in. NPT union/tee mount, CPVC (uses existing 2 in. tee)
07-0221	1-1/2 in. NPT union/tee mount, CPVC (uses existing 1-1/2 in. tee)
07-0203	Sensor insertion assembly without assist, 1-1/4 in. NPT, 316 SS
07-0228	Sensor insertion assembly with assist, 1-1/4 in. NPT, 316 SS
07-0223	Insertion assembly without assist, 1-1/4 in. NPT, 316 SS
09-0047	Conductivity standard - 447 microSiemens, 500 mL
09-0048	Conductivity standard - 1,500 microSiemens, 500 mL
09-0049	Conductivity standard - 8,974 microSiemens, 500 mL
09-0050	Conductivity standard - 80,000 microSiemens, 500 mL

Notes

1. All sensor cable lengths greater than 30 feet require a junction box (07-0100) and sensor interconnect cable (31-0057).
2. Pipe mount requires two 2 in. U-bolts (47-0005).
3. Connector is not waterproof. Use only in protected areas.
4. Suffix B, Options C5 and C6 require sensor cable 03-0029.