

Water Quality Monitor

Q45C2 2E Resistivity Transmitter

OVERVIEW

The 2-Electrode Resistivity Transmitter provides reliable and accurate low-level measurements required for high-purity water systems. Monitors provide large, easy-to-read LCD displays with a second display line for indication of temperature or other operational information. For those applications where results in resistivity units are preferred, Q45C2 monitors can be programmed to display readings in Meg-ohm units instead of microSiemens.

The monitor employs 2-Electrode conductivity sensors with low cell constants to provide continuous measurements from 0...20 to 0...2,000 microSiemens. The 2-Electrode sensors are specifically designed for use in ultra-pure water and nonfouling applications. The sensors are available in several mounting configurations including 316SS compression fittings or sanitary style. These sensors may also be mounted submersion-style or in a hot-tap configuration.



Figure 1: Submersion sensor

APPLICATIONS

- Reverse osmosis systems
- Deionization systems
- Boiler feed water
- Return condensate
- Pharmaceutical water
- Semiconductor water
- Desalination Systems



FEATURES

- Display in conductivity or resistivity units
- Loop-powered or battery-operated
- External 5...17V DC version for solar power applications
- Accepts 0.05, 0.5 or 1.0K cell constant sensors
- Titanium or 316 SS electrodes for corrosion resistance
- Submersion sensor (Figure 1), inline sensor (Figure 2) or sanitary style sensor (Figure 3)
- Large, easy-to-read LCD display
- Total dissolved solids (TDS) on secondary display
- Clear, menu-driven user interface
- NEMA 4X (IP66) enclosure
- Wall or pipe mounting bracket standard
- Built-in PID controller



Figure 2: Inline sensor



Figure 3: 1-1/2 in. Sanitary style sensor

SPECIFICATIONS

Electronic Monitor

Display Range	Conductivity: 0...2,000, 0...20.00, 0...200.00 0...2000 μ S Resistivity: 0...20.00 M Ω , 0...200.0 k Ω
Accuracy	0.1% of selected range
Repeatability	0.1% 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	Two electrode, 0.05K, 0.5K or 1.0K cell constant
Temperature Input	Either Pt1000 or Pt100 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

Sensor

Sensor	Inline, 1-1/2 in. sanitary & submersible
Cell Constants	0.05K or 0.5K
Wetted Materials	Titanium electrodes, 316 SS fittings
Temperature Element	Pt1000 RTD
Sensor Cable	6 conductor plus 2 shields, HDPE jacket
Temperature Range	14...257° F (-10...125° C)
Pressure Range	0...100 psig
Max. Flow Rate	10 ft (3 m) per second
Max. Cable Length	60 ft (18.3 m)



ORDERING INFORMATION

Q0 A-B-C 2-Electrode Resistivity 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 Style

- WW None
- 21 0.05 Cell, Titanium, 1/2 in. NPT compression fitting
- 22 0.05 Cell, Titanium, 1/2 in. fitting, with connector (requires cable option QE)
- 23 0.50 Cell, Titanium, 1/2 in. fitting, with connector (requires cable option QE)
- 24 0.50 Cell, Titanium, 1/2 in. NPT compression fitting
- 25 0.50 Cell, 316 SS, 1-1/2 in. sanitary fitting
- 26 0.05 Cell, 316 SS, 1-1/2 in. sanitary fitting
- 27 0.05 Cell, Titanium, submersible
- 28 0.50 Cell, Titanium, submersible

Suffix C - Cable Length

- WW None
- AC Standard cable; 15 ft (4.6 m)
- QE Quick connect; 25 ft (7.6 m)
- AF Standard cable; 30 ft (9.1 m)

Accessories

07-0100	Universal junction box, NEMA 4X
31-0057	Sensor interconnect cable
03-0029	Sensor cable with connector (25 ft)
47-0005	2 in. U-bolt, 304 SS
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
51-0067	Conductivity standard - 10 μ S, pack of six 100 cc bottles
09-0047	Conductivity standard - 447 microSiemens, 500 mL
09-0048	Conductivity standard - 1,500 microSiemens, 500 mL

Notes

- All sensor cable lengths greater than 30 feet require a junction box (07-0100) and Sensor interconnect cable (31-0057).
- Pipe mount requires two 2 in. U-bolts (47-0005).
- Sensor styles 22 & 23 are not for use in extremely wet environments.
- Sensor styles 21 & 24 may be used with ball valve insertion assemblies.