

Water Quality Monitor

Q45/84 Hydrogen Peroxide Transmitter

OVERVIEW

The Q45/84 Hydrogen Peroxide (H_2O_2) transmitter is an extremely strong oxidizer that is widely used in bleaching applications in the paper industry and is sometimes added to water systems for the purpose of disinfection. In addition, it is used in wastewater collection systems to remove hydrogen sulfide that destroys concrete pipe and manhole structures. Peroxide applications in aqueous systems, like most chemical treatment processes, function most efficiently with accurate measurement and control.

In order to facilitate the control of aqueous hydrogen peroxide feed systems, Badger Meter has developed an online monitor capable of providing real-time measurement of low levels of dissolved H_2O_2 in solution. The dissolved hydrogen peroxide monitor uses a direct sensing polarographic probe mounted in a flow cell to measure H_2O_2 in a flowing water stream. A peroxide permeable diffusion membrane isolates the sensing electrodes from the measured sample, providing long-term stability without electrode fouling problems. The measurement is selective for peroxide and does not respond to most other chemicals in solution.

APPLICATIONS

- Food wash water
- Iron oxidation systems
- Free chlorine removal
- Bleaching systems
- Cooling towers
- Potable water treatment
- Odor scrubbers

FEATURES

- Low maintenance membraned sensor
- Loop-powered or battery-operated
- External 5...17V DC version for solar power applications
- Interference-free measurement
- Measurement from 0...2 ppm to 0...200 ppm or mg/L
- Sealed flow cell option for recirculation systems
- Constant-head flow cell simplifies operation
- Large, easy-to-read LCD display
- Clear, menu-driven user interface
- NEMA 4X (IP-66) enclosure
- Wall or pipe mounting bracket standard
- Built-in PID controller



ORDERING INFORMATION

Q4-A-B Hydrogen Peroxide 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	
1A	Sensor with constant head flow cell and 25 foot cable
5A	Sensor with sealed flow cell
WW	None

Accessories

07-0100	Universal junction box, NEMA 4X
31-0038	Sensor interconnect cable, maximum 100 ft
00-0572	Sensor polarizer, flow cell style
47-0005	2 in. U-bolt, 304 SS
55-0057	Fixed flow regulator, 400 cc/min., 1/4 in. inlet & outlet, Viton

Notes

1. All systems are supplied with one package of membranes, one 120 cc bottle of electrolyte, and one spare parts kit containing three (3) each of all O-rings and special screws.
2. Flow cell for the H_2O_2 system should be kept within 25 feet of the monitor.
3. Pipe mount requires two 2 inch U-bolts (47-0005).

SPECIFICATIONS

Electronic Transmitter

Display Range	0...2.000, 0...20.00, 0...200.0 ppm or mg/l
Accuracy	0.5% of selected range or 0.01 ppm
Repeatability	0.3% of selected range or 0.01 ppm
Sensitivity	0.5% of selected range
Linearity	0.1% of selected range
Temperature Drift	0.01% of span/°C
Sensor Type	3E Amperometric (Polarographic) membraned sensor
Temperature Input	Pt100 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 (IP-66) polycarbonate, V-0 flammability
Mounting Options	Wall or pipe mounting bracket supplied
Conduit Entries	Two PG-9 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) x 4.4 (W) x 3.5 (D) in. (111 x 111 x 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 & Flow Cell

Peroxide Sensor	Membrane-covered Amperometric (Polarographic)
Materials	PVC
Response Time	90% in 60 seconds
Temperature Limits	32...122° F (0...50° C)
Pressure Limit	0...50 psig
Sensor Cable	25 ft (7.5 m) standard
Sensor Flow Cell	Clear acrylic constant-head overflow or sealed acrylic flow cell
Sample Flow Rate	7...15 gph (0.5...1.0 lpm)

Sensor & Flow Cell Options



Figure 1: Sealed flow cell



Figure 2: Constant-head flow cell



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