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Hydrogen Peroxide Monitor

Model Q46/84



Hydrogen peroxide (H_2O_2) is an extremely strong oxidizer widely used in bleaching applications in the paper industry. It has also been used in a variety of applications including disinfection, odor control, oxygenation, and cyanide oxidation. It is frequently used in wastewater collection systems to remove hydrogen sulfide that destroys concrete pipes and manhole structures. Peroxide applications in aqueous systems, like most chemical treatment processes, function most efficiently with accurate measurement and control.

ATI's Model Q46/84 Hydrogen Peroxide Monitor is designed to continuously measure the concentration of H_2O_2 in aqueous systems. Using a direct peroxide sensor, the unit responds rapidly to changes in concentration, enabling operators to control chemical feed to maintain specific targets. With both digital and analog communications available, the Q46 is adaptable to a wide variety of peroxide monitoring applications.

*The Simple Solution
to Peroxide Control!*



SENSOR OPERATION

Hydrogen Peroxide sensors are amperimetric devices isolated from the water by a peroxide permeable membrane. As peroxide diffuses through this membrane, it comes in contact with an active electrode and is oxidized on the surface. The net effect is that the sensor generates a current proportional to H_2O_2 concentration. An integral RTD in the sensor provides for automatic temperature compensation, allowing the sensor to operate accurately over a range of 0-50°C.

Peroxide sensors are capable of operating over a fairly broad concentration range, from a low range of 0-2 PPM up to a high range of 0-200 PPM. Systems will operate with good sensitivity down to 0.05 PPM and respond to changes in concentration within about 60 seconds, making them useful for automatic control.



H_2O_2 Sensor

APPLICATIONS



Cooling Water



Aquarium



Food & Beverage



Potable Water Treatment



Odor Control

FEATURES

Flexibility. Programmable range options from 0-2 PPM up to 0-200 PPM provide maximum application flexibility.

AC or DC Power Options. Power options include universal 90-260 VAC or 12-24 VDC.

Analog Output Options. Two isolated 4-20 mA outputs are standard, with an option for a third output if required. Default setting provides analog outputs for H_2O_2 and temperature.

PID Output. Standard PID control function assignable to one analog output.

Digital Communications. Available in either Profibus-DP, Modbus-RTU, Modbus-TCP/IP, or Ethernet-IP.

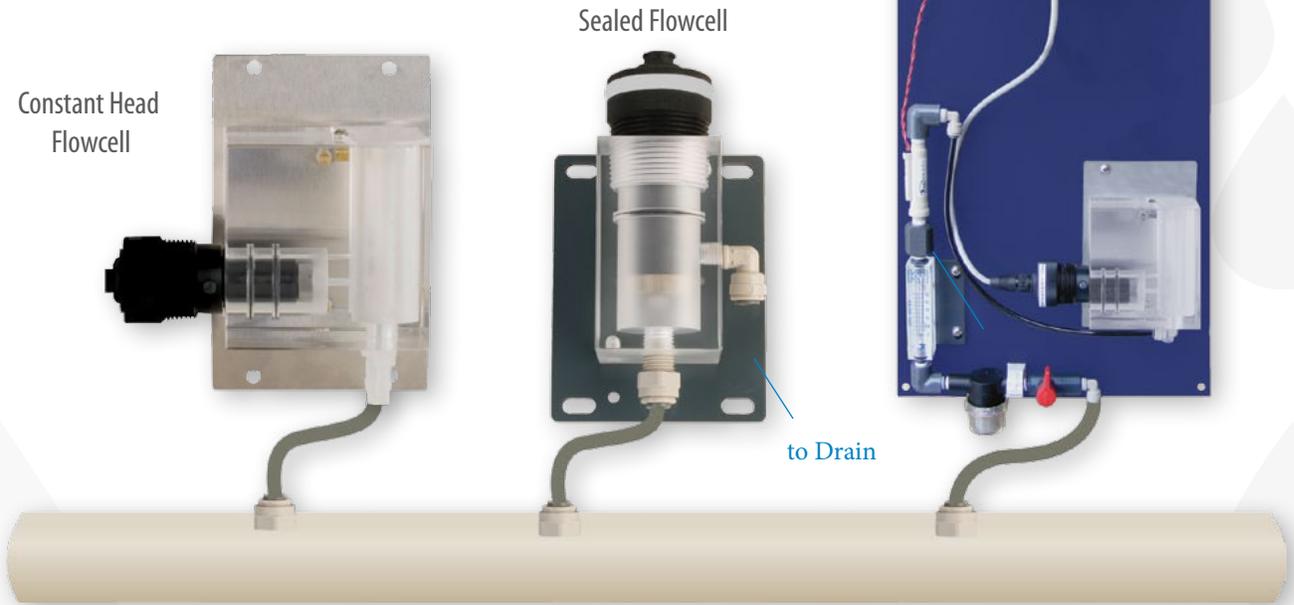
Relay Outputs. Three SPDT relays are standard, with relay functions programmable for alarm, control, or trouble indication. Three additional low power relays available as an option.

Flexible Mounting. NEMA 4X (IP-66) enclosure is suitable for wall, pipe, or panel mounting.

Clear Display. Back-lit large LCD display provides clear visibility in any lighting conditions. A scrolling second line on the display provides additional information and programming prompts.

FLOW OPTIONS

Hydrogen Peroxide sensors require a steady flow of sample across the membrane at the tip of the sensing assembly. ATI offers options for flowcells, including the standard constant-head overflow system, and a sealed flowcell for pressures up to 50 PSI. For simplicity of installation, complete flow control assemblies are available. Panel assemblies are available with or without a flow switch and can greatly reduce installation time.



YOUR SOURCE FOR PEROXIDE MONITORING PRODUCTS

ATI also offers a loop-powered dissolved peroxide monitor for those applications where extra outputs and/or relays are not required. A battery powered portable unit is also available with an internal data logger for temporary monitoring applications. And for safety around your peroxide system, ATI manufactures a variety of portable and fixed point gas detectors.



Portable H₂O₂ Gas Detector



PQ45 Portable H₂O₂ Data Logger



H₂O₂ Loop-Powered Transmitter

Q46/84 SPECIFICATIONS

ELECTRONIC MONITOR

| | |
|------------------------------|---|
| Display Range | 0-2.000, 0-20.00, or 0-200.0 ppm |
| Accuracy | ± 0.1 PPM or 2% of full scale |
| Repeatability | ± 0.05 PPM |
| Non-Linearity | 0.1% of selected range |
| Temperature | 0.01% of span/°C |
| Power | 90-260 VAC, 50/60 Hz, 10 VA max.; 12-24 VDC, 500 mA max. |
| Analog Output | Two isolated 4-20 mA, 500 Ω load max. (3rd output optional) |
| Relays | Three SPDT, 6A@250 VAC, 5A @24 VDC (3 additional SPST non-isolated, 1A @30 VDC optional) |
| Display | 4 digit, 0.75" numeric LCD with 12 character second line, LED back light. |
| Enclosure | NEMA 4X (IP-66) Polycarbonate, V-0 flammability |
| Operating Temperature | -40 to 60°C |
| Weight | 6 lbs. (2.7 kg) with sensor, flowcell & accessories |
| Zero Drift | < 0.01 PPM/month |

SENSOR & FLOWCELL

| | |
|--|---|
| H₂O₂ Sensor | Membraned-Covered Polarographic |
| Materials | PVC |
| Response Time | 90% in 60 sec |
| Temperature Limits | 0 to 50°C |
| Pressure Limit | 0-50 PSIG |
| Sensor Cable | 25 ft (7.5 m) standard |
| Sensor Flowcell | Clear Acrylic Constant-Head Overflow standard Sealed Acrylic Flowcell optional |
| Sample Connections | 1/4" I.D. hose barb inlet, 1/2" I.D. hose barb drain for standard flowcell |
| Temperature Sensor | Internal Pt100 RTD |
| Sample Flow | 5-15 GPH (0.3 - 1.0 LPM) |

NOTES:

- 1 - All systems are supplied with one package of membranes, one 120 cc bottle of electrolyte, and one spare parts kit containing 3 each of all o-rings and special screws.
- 2 - Pipe mount requires two 2" U-bolts (47-0005)

ORDERING INFORMATION

Model Q46/84-A-B-C-D-E Hydrogen Peroxide

Suffix A - Power

- 1 - 100-240 VAC, +/-10%, 50/60 Hz
- 2 - 12-24 VDC, (requires 500 mA)

Suffix B - Sensor Style

- 1 - Sensor with constant head flowcell and 25 ft cable
- 2 - Sensor with sealed flowcell

Suffix C - Digital Output

- 1 - None
- 2 - Profibus-DP
- 3 - Modbus-RTU
- 4 - Ethernet-IP
- 5 - Modbus-TCP/IP

Suffix D - Optional output (select only one)

- 1 - None
- 2 - One additional 4-20 mA output
- 3 - Three additional low power relays (SPST, 0.5 A max.)

Suffix E - System Assembly

- 1 - None
- 2 - Panel with flow controls, without flow switch
- 3 - Panel with flow controls, with flow switch

ACCESSORIES

- 07-0100** NEMA 4X junction box
31-0038 7-c sensor interconnect cable, max. 100 ft
05-0094 Panel mount bracket kit
47-0005 2" U-bolt, 304SS
55-0057 Fixed flow regulator, 400 cc/min 1/4" inlet & outlet, viton

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