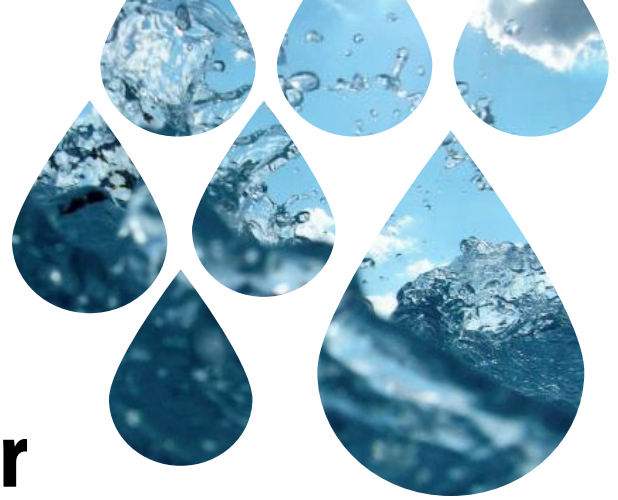


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# Chlorine Dioxide Monitor

## Model Q46H/65



Chlorine Dioxide is a powerful oxidizing agent used for disinfection of potable water, cooling towers, and food wash water. It is also widely used for the bleaching of pulp in paper mills. As a disinfectant,  $\text{ClO}_2$  has advantages over chlorine in that it does not react with ammonia and many organic compounds while proving more effective at controlling bacteria, spores, viruses, and cysts. It is particularly well suited for removing biofilms from the inside of piping systems.

ATI's Model Q46H/65 Chlorine Dioxide Monitor provides an economical and reliable measurement system for monitoring and controlling  $\text{ClO}_2$  treatment systems. With a variety of outputs including 4-20 mA analog, PID control and digital communications, the Q46H/65 is adaptable to any  $\text{ClO}_2$  application.

*Online Monitoring & Control*  
FOR  $\text{ClO}_2$  DISINFECTION SYSTEMS!



## INTERFERENCE-FREE ClO<sub>2</sub> MEASUREMENT

Q46H/65 monitors use a polarographic membraned sensor to accurately measure ClO<sub>2</sub> in water. The sensor operates much like a battery, generating current that is linearly proportional to the concentration of chlorine dioxide in solution. A ClO<sub>2</sub> permeable membrane isolates the sensor from the measured sample and insures that the measurement is interference free.

Two versions of the sensor are available, a sensor intended for installation in a flowcell and a sensor intended for submersion applications. Requiring minimal maintenance, sensors are easy to use and easy to maintain. An integral RTD provides temperature compensation and allows temperature to be displayed and transmitted from the monitor.



## SENSOR STABILIZATION

Chlorine Dioxide sensors require 2 to 4 hours of stabilization time when first installed or after membrane change. ATI offers a battery powered "polarizer" that can be used to stabilize a spare sensor so it is ready to run within a few minutes of installation. Polarizers simply plug into the sensor connector and require no adjustments.



## APPLICATIONS



Food Washing



Pulp & Paper Mill



Cooling Water



Potable Water Treatment

## FEATURES

**pH Input Option.** Enables monitor to measure both chlorine dioxide and pH. One analog output may be assigned to the pH measurement, allowing remote monitoring and recording of both variables.

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

**AC or DC Power Options.** Power options include universal 100-240 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 ClO<sub>2</sub> and temperature.

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

**Digital Communications.** Available for either Profibus-DP, Modbus-RTU, or Ethernet-IP.

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

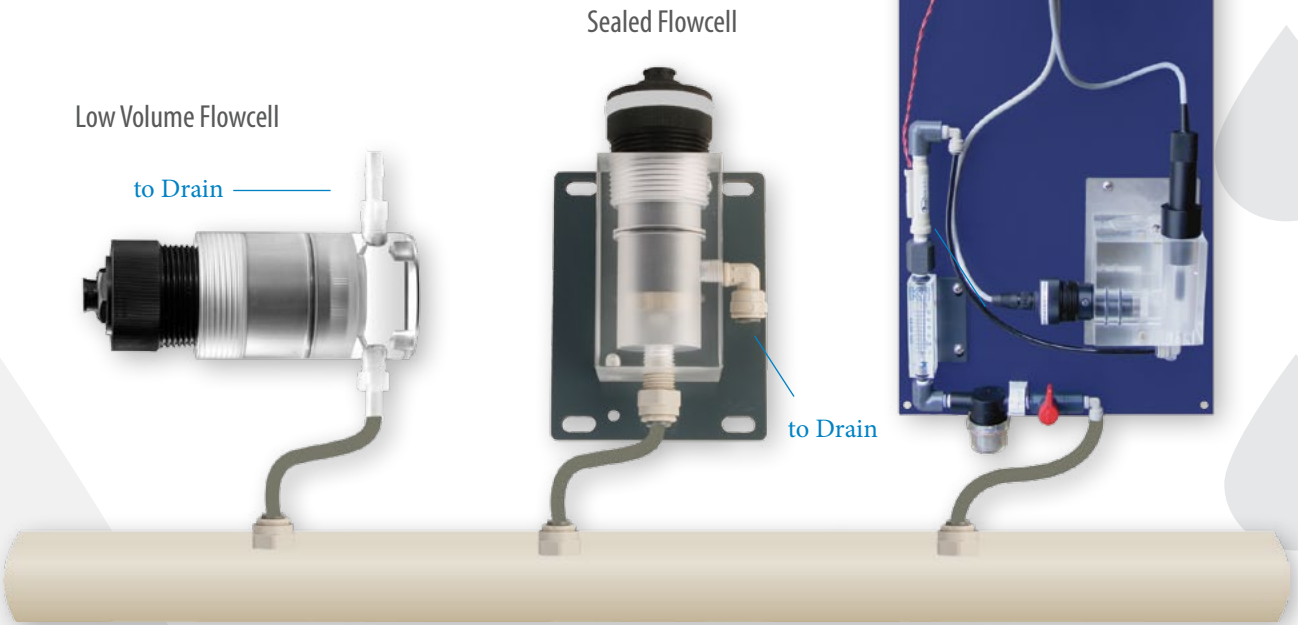
**Flexible Mounting.** NEMA 4X (IP-66) enclosure is suitable for wall, pipe, or panel mounting.

**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

Chlorine Dioxide sensors require a steady flow of sample across the membrane at the tip of the sensing assembly. ATI offers a number of options for flowcells, including the standard constant-head overflow system, a sealed flowcell for pressures up to 50 PSI, and a low-volume flowcell where low sample flow is important. A 1-1/2" flow tee is also available for in-line applications with reliable constant flow and pressure conditions. For simplicity of installation, complete flow control assemblies are available.

## ClO<sub>2</sub> Monitoring with *Direct Membrane Sensing!*



Constant Head Flowcell  
(Shown with pH sensor & complete flow system)

## YOUR SOURCE FOR ClO<sub>2</sub> MONITORING PRODUCTS

ATI also offers a loop-powered chlorine dioxide 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 ClO<sub>2</sub> system, ATI manufactures a variety of portable and fixed point gas detectors.



Portable ClO<sub>2</sub> Gas Detector



PQ45 Portable ClO<sub>2</sub> Data Logger



Fixed ClO<sub>2</sub> Gas Detector

# Q46H/65 SPECIFICATIONS

## ELECTRONIC MONITOR

<b>Display Range</b>	0-200 PPB; 0-2,000, 0-20.00 or 0-200.0 PPM
<b>Accuracy</b>	0.5% of selected range or 0.02 PPM
<b>Repeatability</b>	0.3% of selected range or 0.01 PPM
<b>Non-Linearity</b>	0.1% of selected range
<b>Temperature</b>	0.01% of span/°C
<b>Power</b>	100-240 VAC, +/-10%, 50/60 Hz, 10 VA max.; 12-24 VDC, 500 mA max.
<b>Analog Outputs</b>	Two isolated 4-20 mA, 500 Ω load max. (3rd output optional)
<b>Relays</b>	Three SPDT, 6A @250 VAC, 5A @24 VDC (3 additional SPST non-isolated, 1A @30 VDC optional)
<b>Display</b>	4 digit, 0.75" numeric LCD with 12 character second line, LED back light.
<b>Enclosure</b>	NEMA 4X (IP-66) Polycarbonate, V-0 flammability
<b>Operating Temperature</b>	-20 to 60°C (-4 to 140°F)
<b>Weight</b>	6 lbs. (2.7 kg) with sensor, flowcell & accessories
<b>Zero Drift</b>	< 0.01 PPM/month

## SENSOR & FLOWCELL

<b>Ozone Sensor</b>	Membraned-Covered Amperometric (Polarographic)
<b>Materials</b>	PVC & 316SS
<b>Response Time</b>	90% in 60 sec
<b>Temperature Limits</b>	0 to 50°C
<b>Pressure Limit</b>	0-50 PSIG
<b>Sensor Cable</b>	25 ft (7.5 m) standard
<b>Sensor Flowcell</b>	Clear Acrylic Constant-Head Overflow standard Sealed Acrylic Flowcell optional
<b>Sample Connections</b>	1/4" I.D. hose barb inlet, 1/2" I.D. hose barb drain for standard flowcell
<b>Temperature Sensor</b>	Internal Pt100 RTD

### 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 - Suffix C, 2, 3, or 4 allow Q46H to supply outputs for both ClO<sub>2</sub> & pH.
- 3 - Flowcell for ClO<sub>2</sub> / pH Combo system should be kept within 25 ft for monitor.
- 4 - Buffer packet for pH 4 & 7 supplied with options 2, 3 or 4, suffix C.
- 5 - Pipe mount requires two 2" U-bolts (47-0005)

## ORDERING INFORMATION

Model Q46H/65 - A - B - C - D - E - F Chlorine Dioxide Monitor

### Suffix A - Power

- 1 - 100-240 VAC, +/-10%, 50/60 Hz
- 2 - 12-24 VDC, (requires 300 mA)

### Suffix B - Sensor Style

- 1 - Sensor with constant head flowcell and 25 ft cable
- 2 - Submersible sensor with 25 ft cable
- 3 - Sensor with sealed low volume flowcell
- 4 - Sensor with 1-1/2" Flow "T"
- 5 - Sensor with sealed flowcell
- 6 - Flow sensor only, no flowcell (use with extreme caution)

### Suffix C - pH Sensor Input

- 1 - None
- 2 - Q22 pH Sensor with battery preamp, 25 ft cable
- 3 - Standard pH sensor with 25 ft cable & adapter for overflow cell
- 4 - Standard pH sensor with 25 ft cable & sealed flowcell

### Suffix D - Digital Output

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

### Suffix E - 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 F - 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
- 31-0001** 5-c sensor interconnect cable, max. 100 ft (ClO<sub>2</sub> only)
- 31-0038** 7-c sensor interconnect cable, max. 100 ft (ClO<sub>2</sub> / pH systems)
- 00-0628** Mounting bracket kit for submersible sensor
- 00-0930** Monitor pipe mounting bracket kit
- 00-0570** Chlorine Dioxide Polarizer, Flow Cell style
- 00-0571** Chlorine Dioxide Polarizer, Submersible Style
- 05-0094** Panel mount bracket kit
- 47-0005** 2" U-bolt, 304SS
- 55-0048** Fixed flow regulator, 400 cc/min 1/4" inlet & outlet, viton
- 03-0372** Fixed flow regulator assembly, 400cc/min., 1/4" inlet & outlet



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