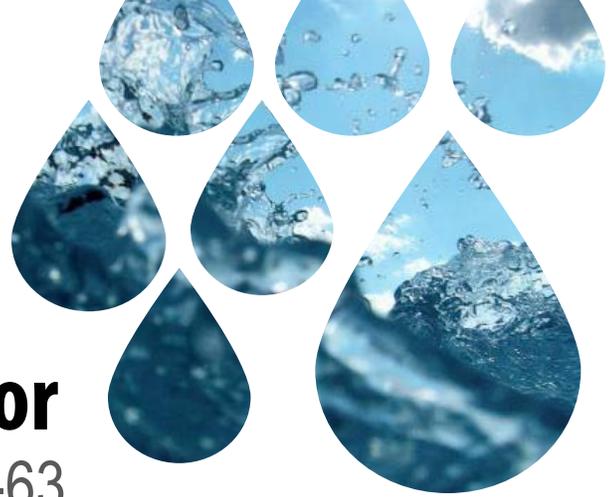


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# ResidualChlorineMonitor

## Q46H / 62-63



Q46H Flowcell Style Sensor

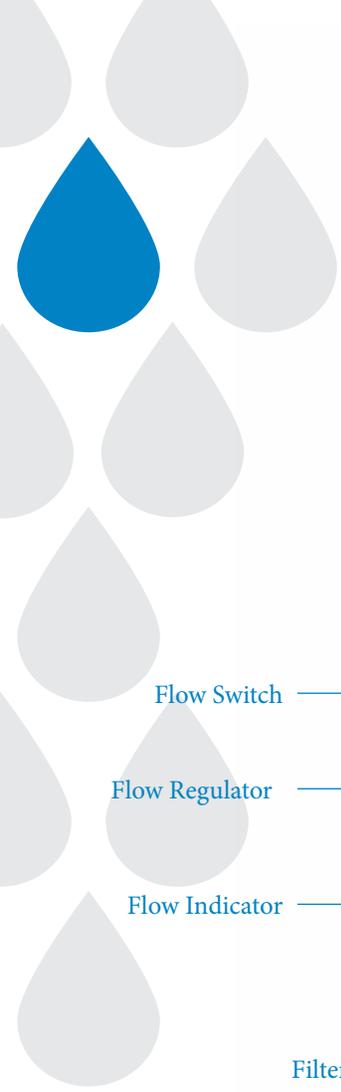
**ATI's Model Q46H** Chlorine Monitor is an upgraded version of our proven Q45H system for continuous monitoring of free or combined chlorine. Monitor capabilities have been expanded to include options for a 3rd analog output or for adding additional low power relay outputs. Digital communication options for Profibus, Modbus, or Ethernet have been added, as well.

The Q46H system uses a polarographic membraned sensor to measure chlorine directly, without the need for chemical reagents. When needed, automatic pH compensation may be added for highest free chlorine measurement accuracy. Systems are available to provide 4-20 mA outputs for chlorine, pH, and temperature to allow easy CT calculations.

Q46H systems are economical to purchase, economical to maintain, and provide long term accuracy and reliability for your chlorine monitoring needs.

MONITOR YOUR CHLORINE ...*Reagent Free*





## EASY INSTALL.

*Want to simplify installation?*

ATI can supply the Q46H complete with sample flow controls mounted to a PVC back plate ready to mount. Connect power, water sample, and analog/relay outputs and you're ready to go. Systems are available with or without a flow switch for remote indication of loss of sample.

pH Sensor

Constant-Head Flowcell

Chlorine Sensor

Flow Switch

Flow Regulator

Flow Indicator

Filter

Ball Valve

Inlet (¼" O.D. Tube)

## FEATURES.

**Free or Combined Chlorine.** Q46H Monitors are factory set for either Free or Combined Chlorine measurement, but can easily be converted from one to the other in the field.

**Economical Operation.** Reagent-less operation and low parts cost makes the Q46H your best choice for chlorine monitoring applications in potable water, wastewater, cooling water, or high purity water systems.

**Automatic pH Compensation.** For free chlorine monitoring under widely varying pH conditions, automatic pH compensation may be added to maintain the highest measurement accuracy at pH levels up to 9.5.

**Dual Chlorine/pH Monitoring.** Even when pH correction is not required, adding a pH sensor to the system converts the monitor to a dual analyzer, providing 4-20 mA outputs for both chlorine and pH.

**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 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 chlorine and pH.

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

**Digital Communications.** Available in either Profibus, Modbus, or Ethernet.

**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.

## SENSOR & FLOWCELL OPTIONS.

Two types of chlorine sensors are available. One is designed for flowcell installation, and the other is for submersion applications. Free chlorine monitoring should always be done using a flowcell system. Good control of sample flow and pressure is important for accurate measurement. The standard constant-head flowcell should be used for most applications. A sealed flowcell and a low-volume flowcell are also available for special applications. Consult your ATI representative for application assistance.

Submersible combined chlorine sensors can sometimes be used for measuring total chlorine in wastewater effluent. Wastewater effluents containing more than 1 PPM of ammonia, often result in a chlorine residual that is more than 90% monochloramine. Direct measurement with a submersible sensor can provide a dependable monitor without all the sampling and chemicals associated with total chlorine measurement.



Submersion and Flowcell Sensors



Constant Head Flowcell



Sealed Flowcell

Say *Goodbye*  
to Buffers &  
DPD Reagents  
*...Forever!*

## SENSOR STABILIZATION.

Chlorine sensors, especially free chlorine, require up to 8 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.



Sensor Polarizer

## SYSTEM OPTIONS.

Standard Q46H Systems are AC powered (100-240 VAC, 50/60 Hz), or a DC powered (12-24 VDC) version is also available. The basic system includes two isolated 4-20 mA outputs and 3 SPDT alarm relays.

If pH correction is required, or if pH measurement is also desired, an optional pH sensor is available. With this sensor connected, the second analog output may be configured for pH instead of temperature to provide a dual chlorine/pH monitor system.

Q46H systems may also be supplied with an additional output board. This output board may contain **either** a third 4-20 mA output **or** three additional low power relays. Adding the third analog output is the most common as the system then provides isolated outputs for chlorine, pH, and temperature.

In addition to the analog output options, Q46H monitors may be supplied with digital communications. A Profibus DP interface is currently available, with Modbus and Ethernet options under development.

# Q46H/62-63 SPECIFICATIONS

## ELECTRONIC MONITOR

<b>Display Range</b>	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 Drift</b>	0.01% of span/°C
<b>Power</b>	90-260 VAC, 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 15 lbs (6.8 kg) assembled into panel
<b>Zero Drift</b>	< 0.01 PPM/month
<b>Operating Conditions</b>	0 to 50°C

## SENSOR & FLOWCELL

<b>Chlorine Sensor</b>	Membrane-Covered Amperometric (Polarographic)
<b>Optional pH Sensor</b>	Combination pH sensor, with or without preamplifier
<b>Materials</b>	PVC & 316SS
<b>Response Time</b>	90% in 60 sec
<b>Temperature Limits</b>	-5 to 55°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 Flowrate</b>	7-15 GPH (0.5-1.0 LPM)

### NOTES:

- 1 - All systems are supplied w/one package of membranes, one 120 cc bottle of electrolyte, & one spare parts kit containing 3 each of all o-rings & special screws.
- 2 - Suffix D, 2, 3, or 4 allow Q46H to supply outputs for both chlorine & pH.
- 3 - Flowcell for Cl<sub>2</sub> / pH combo systems should be kept within 25 ft of monitor.
- 4 - Buffer packet for pH 4 & 7 supplied with opt. 2, 3 or 4, suffix D.
- 5 - Pipe mount requires two 2" U-bolts (47-0005).

## ORDERING INFORMATION

Model Q46H-A-B-C-D-E-F-G Chlorine Monitor

### Suffix A - Measurement Type

- 62 - Free Chlorine
- 63 - Combined Chlorine

### Suffix B - Power

- 1 - 100-240 VAC, +/-10%, 50/60 Hz
- 2 - 12-24 VDC

### Suffix C - Sensor Style

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

### Suffix D - 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 E - Digital Output

- 1 - None
- 2 - Profibus
- 3 - Modbus
- 4 - Ethernet

### Suffix F - 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 G - 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** Sensor interconnect cable (max. 100 ft)
- 00-0628** Mounting bracket kit for submersible sensor
- 00-0259** CO<sub>2</sub> buffer injection system (for precipitation control)
- 55-0003** Rotameter for CO<sub>2</sub> buffer system
- 00-0570** Free Chlorine sensor polarizer (flow)
- 00-0572** Combined Chlorine sensor polarizer (flow)
- 00-0573** Combined Chlorine sensor polarizer (submersion)
- 47-0005** 2" U-bolt, 304SS
- 05-0094** Panel mount bracket kit



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