



The GF 4630 Free Chlorine Analyzer System is an integrated all-in-one system designed to measure free chlorine. The 3-4630 Free Chlorine Analyzer with pH sensor is used to accurately calculate free chlorine in applications that have varying pH values ( $\pm 0.20$  pH units).

The advanced 9950-X Chlorine Controller includes a new feature called the "Chemical Guard" relay control. Because free chlorine concentration is pH dependent, the Chemical Guard feature interrupts/disables the relay that is assigned to the oxidant chemical (such as sodium hypochlorite) until the pH of the application is corrected. The 4630 series also comes complete with a flow switch that will disable the mechanical relays to the dosing pumps when the system is off or flow is interrupted to the flow cell.

The unique integrated clear flow cell accommodates the free chlorine and pH electrode, flow regulator, filter and variable area flow indicator in one compact unit. An integrated flow regulator with removable filter accepts inlet pressures of 1 to 8 bar (15 to 120 psi), while maintaining constant flow and minimal pressure to the sensors.

Water flow is controlled and directed vertically into the sensor tips eliminating the build up of air bubbles that can cause inaccurate measurement. The flow cell is also designed to maintain a minimum amount of water to ensure sensors stay submerged, even when the system and flow is turned off.

The 4630 Free Chlorine Analyzer System comes complete with everything needed to support chlorine monitoring for 1 full year of operation. Panel design allows quick and easy installation and comes complete with four 4 to 20 mA outputs, flow switch with relay interrupt, four binary inputs and two mechanical relays. The 9950-X can also be used with the optional 3-9950.395-M (159 001 905) Modbus Module.

## Features

- EPA 334.0 Compliant
- Reagent free measuring
- Chemical Guard prevents over dosing of oxidants chemicals
- Built in flow switch
- Chlorine and pH electrode performance data
- Automatic time stamp after successful calibration
- Customer enabled alarm feature for recalibration
- Complete panel system allows for quick and easy installation
- Built-in flow regulator maintains constant flow and pressure to the sensors regardless of inlet pressure
- Automatic pH compensation



## Applications

### Residual Chlorine Monitoring:

- Water Distribution
- Ground Water
- Surface Water
- HVAC Applications (cooling water)
- Food and Beverage
- Swimming Pools
- Water Parks

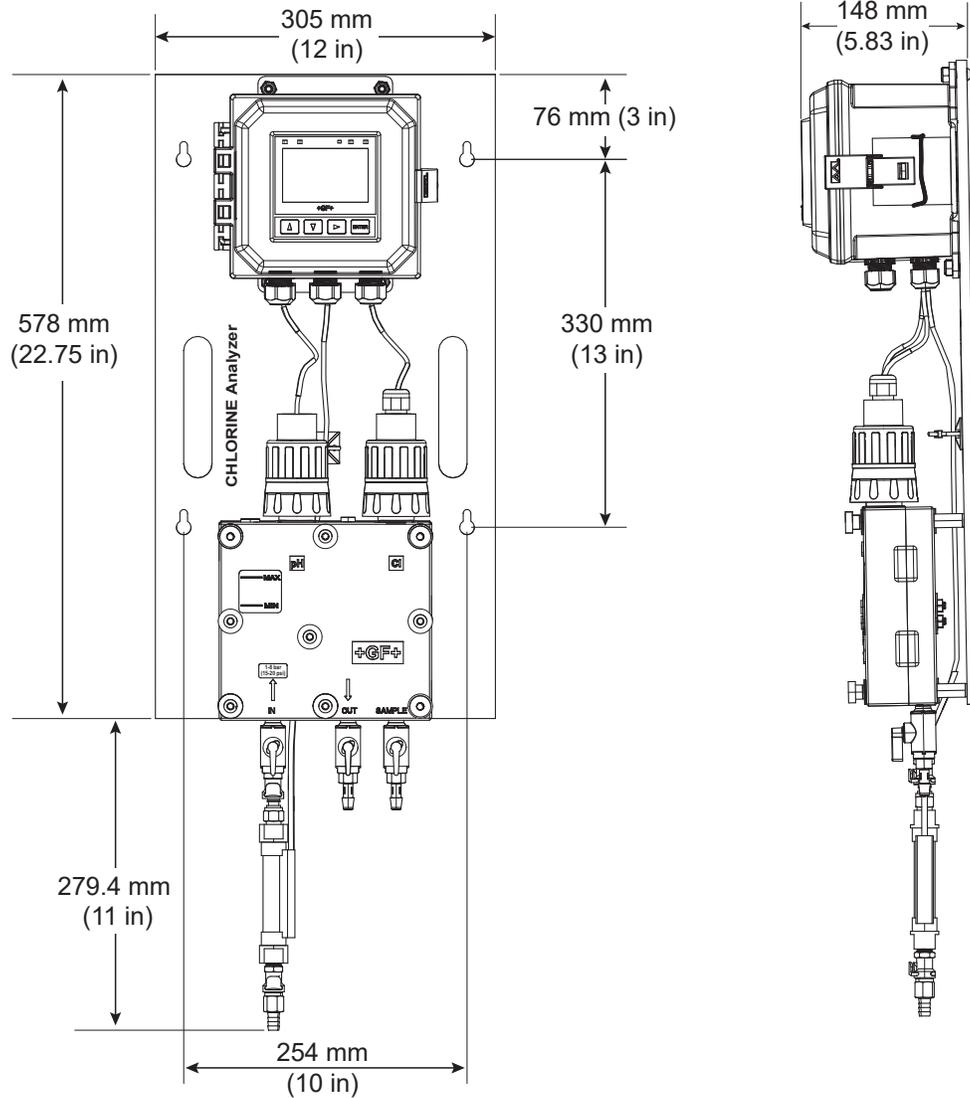
### EPA Compliant According to Method 334.0

The 3-4630 Free Chlorine Analyzer System can be used for reporting chlorine residuals in accordance with EPA Method 334.0

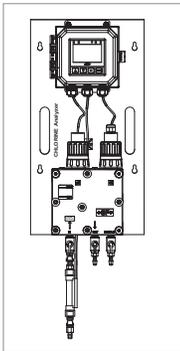
# Specifications

General		
Compatible	3-2630-1 Free Chlorine Electrode, 0.02 to 2 ppm / 3-2650-7 Amperometric Electronics	
	3-2630-2 Free Chlorine Electrode, 0.05 to 5 ppm / 3-2650-7 Amperometric Electronics	
	3-2630-3 Free Chlorine Electrode, 0.1 to 20 ppm / 3-2650-7 Amperometric Electronics	
	3-2724-00 Flat pH Electrode, 0 to 14 pH / 3-2751-7 pH Sensor Electronics	
Materials		
Panel	Black Acrylic	
Flow Cell	Acrylic	
Wiring Enclosure	Polycarbonate	
Wetted Materials		
Flow Cell		
Flow Cell, Spacer Rings	Acrylic	
Flow Regulator Housing	Polycarbonate	
Strainer, E-clip, Regulator Spring, Float	Stainless Steel	
Valves, Vent	Polypropylene	
Flow Cell O-rings, Diaphragm	EPR (EPDM), FKM	
Chlorine Electrode	PVC, PTFE, FKM, Nylon, Silicone	
pH Electrode	PPS, Glass, UHMWPE, FKM	
Flow Switch	Polypropylene	
Sealing Tape on Valves, Plug and Vent	PTFE	
Plug	Polyethylene	
Max. Temperature/Pressure Rating		
System Inlet Pressure Rating	1 to 8 bar	15 to 120 psi
Pressure Regulator	< 0.69 bar (10 psi) variation over all ranges of flow and pressure	
Flow Tolerance	± 15% or rated specification above	
Flow Rate Limits	30.24 to 45.36 LPH	8 to 12 gph (US)
Storage Temperature	0 °C to 65 °C	32 °F to 149 °F
Operating Temperature	0 °C to 45 °C	32 °F to 113 °F
pH Range	5.0 to 8.2 pH	
Power Requirements		
DC Input (3-9950-3)	24 VDC nominal (12 to 32 VDC, ± 10% regulated), UL 60950-1 or UL 61010-1	
AC input (9950-4)	100 to 240 VAC. 50 to 60 Hz. 24 VA	
3-9950-X Relay Mode	Current draw up to 500 mA	
Current Loop	12 to 32 VDC, ±10% regulated, 4 to 20 mA (30 mA max.)	
Oversvoltage Protection	Protection 48 Volt Transient Protection Device. Current limiting for circuit protection.Reverse-voltage protection.	
Environmental		
Relative Humidity	0 to 95%	
Maximum Altitude	4000 m (13,123 ft)	
Enclosure	NEMA 4X (with output wire glands sealed)	
Shipping Weight		
	10 kg	22 lb
Standards and Approvals		
	CE, FCC, UL, CUL, WEEE	
	China RoHS	
	Manufactured under ISO 9001, ISO 14001, and ISO 45001	

## Dimensions



## Ordering Information



Mfr. Part No.	Code	Description
Chlorine System: Chlorine Panel, Free Chlorine Electrode with Sensor Electronics, and pH Electrode with Sensor Electronics		
3-4630-13	<b>159 001 949</b>	Chlorine panel, free chlorine sensor (0.02 to 2 ppm) with sensor electronics, pH sensor with electronics, DC power input
3-4630-14	<b>159 001 996</b>	Chlorine panel, free chlorine sensor (0.02 to 2 ppm) with sensor electronics, pH sensor with electronics, AC power input
3-4630-23	<b>159 001 950</b>	Chlorine panel, free chlorine sensor (0.05 to 5 ppm) with sensor electronics, pH sensor with electronics, DC power input
3-4630-24	<b>159 001 997</b>	Chlorine panel, free chlorine sensor (0.05 to 5 ppm) with sensor electronics, pH sensor with electronics, AC power input
3-4630-33	<b>159 001 951</b>	Chlorine panel, free chlorine sensor (0.1 to 20 ppm) with sensor electronics, pH sensor with electronics, DC power input
3-4630-34	<b>159 001 998</b>	Chlorine panel, free chlorine sensor (0.1 to 20 ppm) with sensor electronics, pH sensor with electronics, AC power input

## Accessories and Replacement Parts

Mfr. Part No.	Code	Description
3-9950-3	<b>159 001 954</b>	Chlorine Controller, DC power input
3-9950-4	<b>159 001 955</b>	Chlorine Controller, AC power input
3-9950-5	<b>159 001 956</b>	Chlorine Monitor, no relays or output modules, DC power input
3-9950.395-M	<b>159 001 905</b>	Modbus Module
3-2630-1	<b>159 001 746</b>	Free Chlorine Electrode, 0.02 to 2 ppm (mg/L)
3-2630-2	<b>159 001 662</b>	Free Chlorine Electrode, 0.05 to 5 ppm (mg/L)
3-2630-3	<b>159 001 747</b>	Free Chlorine Electrode, 0.01 to 20 ppm (mg/L)
3-2632-1	<b>159 001 767</b>	Chlorine Dioxide electrode, 0.02 to 2 ppm (mg/L)
3-2724-00	<b>159 001 545</b>	pH electrode, Flat Glass, Pt1000 Temp Element, 3/4 in. MNPT
3-2751-7	<b>159 001 957</b>	pH - Inline Electronics, Digital (S3L), 4.6 m (15 ft) cable
3-2650-7	<b>159 001 670</b>	Chlorine - In-line Amperometric Electronics, digital (S <sup>3</sup> L), 4.6 m (15 ft) cable
3-4630.390	<b>159 001 688</b>	Rebuild Kit: O-rings, Boots, Screws, 1 Filter Screen
3-4630.391	<b>159 001 689</b>	Pressure Regulator with 1 Spare Filter Screen
3-4630.392	<b>159 001 690</b>	Acrylic Flow Cell complete with all components and connections
3-4630.393	<b>159 310 162</b>	Flow Switch Kit, PP *
3-4630.395	<b>159 001 960</b>	Flow Switch Kit **
3-2630.391	<b>159 001 674</b>	Electrolyte Kit, 30 ml bottle with syringe and needle
3-2632.391	<b>159 310 160</b>	Chlorine Dioxide electrolyte, 30 mL (2)
3-2630.394	<b>159 310 164</b>	Free Chlorine and Chlorine Dioxide Replacement PTFE membrane (1)
3-2630.398	<b>159 310 166</b>	Free Chlorine Sensor Maintenance Kit - (2) electrolyte (2) PTFE membranes, (2) Silicone Bands, and polishing paper
3-2632.398	<b>159 310 165</b>	Chlorine Dioxide maintenance kit - (2) electrolyte, (2) PTFE membranes, (2) Silicone Bands, and Polishing Paper
1220-0021	<b>159 801 182</b>	O-ring FKM
3-0700.390	<b>198 864 403</b>	pH Buffer Kit (1 each 4, 7, 10 pH buffer in powder form, makes 50 mL of each)
3822-7004	<b>159 001 581</b>	pH 4.01 Buffer Solution, 1 pint (473 mL) bottle
3822-7007	<b>159 001 582</b>	pH 7.00 Buffer Solution, 1 pint (473 mL) bottle
3822-7010	<b>159 001 583</b>	pH 10.00 Buffer Solution, 1 pint (473 mL) bottle
3-2700.395	<b>159 001 605</b>	Calibration kit: included 3 polypropylene cups, box used as cup stand, 1 pint pH 4.01, 1 pint pH 7.00
3-2759	<b>159 000 762</b>	pH/ORP System Tester (adapter cable sold separately)
3-2759.391	<b>159 000 764</b>	2759 DryLoc Adapter Cable (for use with 2751-7)
3800-5000	<b>159 838 107</b>	3.0M KCl Storage Solution for pH and ORP, 1 pint (473 mL) bottle
3-2700.397	<b>159 001 870</b>	Protective Cap for pH/ORP electrodes, 5 pieces
3-2700.398	<b>159 001 886</b>	Lubricant Kit

\* Default wiring for production units prior to February 2022

\*\* Default wiring for production units after February 2022