



Upgrade to the Model FX-CLv2 Touch Screen Operated Chlorine Residual Analyzer

Turn This FX-1000p:



Into This: The FX-CLv2



Retire your screw driver, simply tap the glass touch screen keypad to calibrate in 5 minutes instead of 45 minutes.

Upgrade your old analyzer!

*FX-1000P:
\$2,520.00*

*FX-1000P-B:
\$2,256.00*

Return the analyzer & we'll install the new electronics, touch screen, new 24VDC motors, Quick Clamp pump, re-mount the positive electrode, install a new PM kit. You get a virtually new, easier to use instrument.

Does not include positive electrode replacement.

Contact:
800-874-0590 or
sales@foxcroft.com and
request an RMA



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Why use bare electrodes? Because your water may not allow you to use a membrane covered chlorine sensor.

We've combined our proven rugged bare measuring electrodes with a feature packed digital electronics platform for a reliable, easy to use chlorine residual analyzer with expansion capability to grow with your changing needs.

- *Designed to work in potable water or any water, including waste, with elevated levels of iron, suspended solids, calcium and manganese that fouls and clogs membrane covered chlorine sensors*
- *Vinegar pH buffered or bufferless models*
- *4.3" full color glass touch screen display and interface with clarity and instant response similar to your smart phone.*
- *Tap the touch screen keypad to calibrate and configure without complex, deep menus*
- *Calibration hold maintains your last measurement output during calibration to prevent control and monitoring disruption.*
- *Cool running 24VDC stirring and pump motors*
- *Low maintenance, easy change Quick Clamp buffer feed pump*
- *User adjustable variable speed buffer feed motor*
- *Improved positive electrode is more stable, sensitive and leak proof*
- *Optical No Flow switch protects against positive electrode damage from overheating and stops the motor and buffer feed in no flow conditions.*
- *(2) 4-20mA output (ppm & temp), up to (4) available. Diode protected up to 50VDC*
- *(3) Alarm relays (high, low, no flow) with adjustable delay*
- *All inputs and outputs include both power & signal over voltage protection*
- *Microprocessor based electronics made in the USA. Incorporating sound circuit design, signal and power protection, diagnostic LED's, high quality components throughout.*

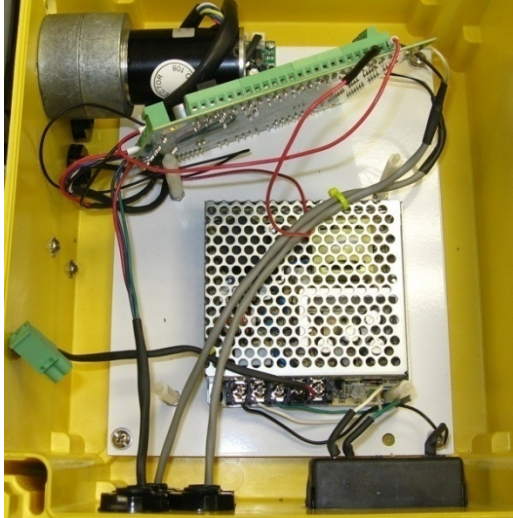


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General Specifications	
Product Description	Amperometric free or total chlorine residual analyzer
Intended Use	Continuous monitoring and control of chlorine residual prior to dechlorination
Measurement Method	Amperometric bare electrode galvanic cell, gold cathode, copper anode
Parameters Measured	Free residual chlorine, total residual chlorine
Available Operating Ranges	Field selectable from 0 - 1.00 through 0 – 20 mg/L standard; up to 0 – 60 mg/L (ppm) optionally
Temperature Measurement & Compensation	Standard
Mechanical	
Dimensions	15.25" W x 12.468" H x 6" D, bottle bracket 6.75" dia.
Weight Approx.	Net 15 lbs; Shipping weight 21 lbs.
Enclosure & Ingress Protection	Wall mount molded fiberglass, UV resistant, NEMA 4X, IP65 Equivalent
Ambient Temperature and Humidity	32°-120° F (0° -49° C); 0-95% relative humidity, non-condensing
Electrical	
Conduit Openings	2 for power & signal, plus 2 spare depending on configuration
Operating Power & Consumption	24 VDC; less than 10 watts
Power Supply	Input 88-264 Volts AC, 50/60 Hz. Single phase. 2.2A, 52.8W
Power Input Connection	External 6A fused module, IEC 320-C14 connector, with SPST switch, 2 meter detachable cord with IEC 60320 C13 & NEMA 5-15P connectors, meets RoHs
Input Fuse	6 amp, 125V, fast acting, 5 x 20 mm glass tube, Designed to UL/CSA 248-14
Electronics	Microprocessor based, non-volatile memory, RoHs compliant
Display	4.3" glass resistive full color LCD, LED backlight, 65,356 colors, screen resolution 480 x 272, RoHs compliant, minimum 1 million touches on one point
Inputs	(4) Digital, (4) 4-20mA available for optional sensors, auto reset fuse protected
Signal Output	4-20mA DC 750 ohm max load, (2) standard, (4) optionally, diode protected
Serial Output	(1) RS485 serial port, inactive as standard
Relays	1-amp single pole form C, (3) standard for high & low chlorine; no flow alarms. Up to (8) available. Each with red LED energized indicator. Configurable delay.
Motor, Mixing	Brushless 24 VDC, 0.8-1.0 full load amps, 24 watt max input, RoHs compliant
Motor, Buffer Feed Pump	Brushless 24 VDC variable speed, 0.4-0.5A full load , 12 watt max input, RoHs
Sample Requirements	
Sample Supply	Continuous flow, electrodes must be kept wet
Flow Rate	250ml to 1000ml/min, 500 ml/min (8 GPH) recommended
Sample Cell Use	120 ml/min fixed
Sample Pressure	5 psig, 15 psig maximum
Sample Temperature	32°-120° F (0° -49° C)
Sample pH Range	3 – 10 pH
Sample Alkalinity	0.05 – 350 mg/L (ppm) total
Sample Turbidity	250 NTU or less



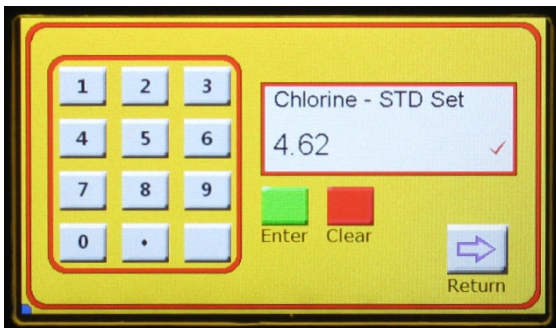
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Quick Clamp Pump Head With Variable Speed Drive



View Last Calibration Values & Live Readings During Calibration



Enter Your Calibration on the Keypad



Comparison of the Foxcroft FX-1000P & FX-CL Chlorine Analyzers

With the introduction of our series FX-CL residual analyzers one of the first questions to arise is “what’s the difference between our FX-1000P and the new model”?

The goal of the analyzer enhancement was to design a high quality, simple to operate instrument rather than a unit targeted for the lowest price segment of the market. Most of us have found that the satisfaction of buying a product at the lowest possible price is quickly forgotten upon realizing we’ve been saddled with limitations and difficulties using the “bargain” product.

While you’ll notice many obvious physical similarities, the differences between the two models are exponential from a performance and operational basis. This is primarily due to the switch from 110VAC analog electronics to a 24VDC digital microprocessor based platform and glass touch screen interface coupled with excess capacity for expansion. A chlorine analyzer purchased today can be upgraded at a later date to add a variety of functions including built-in single or compound loop PID control, various forms of communication and the addition of multiple chlorine or non-chlorine sensors.

Rather than simply changing the electronics platform, best practice circuitry design and components were emphasized to enhance product quality, usability and durability. Many improvements may not be evident at first glance; for example, power and signal protection on the sensor inputs prevents main circuit board damage by a short or improper wiring in the sensor power or signal cables. Moreover, the sensor input fuses reset automatically, the user does not have to reset or replace these fuses. New positive (measuring) electrode construction is impervious to water leakage and provides higher cell output with more sensitivity and stability. We’ve also included high voltage protection for all sensor inputs as well as the mA outputs to prevent damage if 24VDC power from an external device is applied to these outputs.

Following you’ll first find a comparison of the operation between the bare electrode model FX-CL and the traditional FX-1000. Secondly you’ll find a comparison of features and technical details.

A note for those who don’t operate the FX-1000P: In the operations comparison, all trimmers and switches referred to are located on the amplifier circuit board. Access to all trimmers beyond the Zero and Standard requires opening the enclosure and removing the internal cover plate that protects the circuit boards.

It’s important to note that during calibration of the FX-1000, trimmer adjustment results do not stabilize on the display immediately. For each trimmer adjustment it’s recommended to wait about 5 minutes to ensure the displayed value is correct and stabilized. If not, the intended value entered from your grab sample may be overshoot or under after stabilization. Due to the sensitivity of the trimmers it usually takes several adjustments, each with a 5 minute waiting period for stabilization, to tune in a particular reading.



Comparison of the Foxcroft FX-1000P & FX-CL Chlorine Analyzers

Comparison of Operation		
	FX-1000P (-B)	FX-CL
Interface	Onboard trimmers, Dip switch	4.3" glass touch screen, 1 million touches min. durability rating
Turning On Power	Set Dip switch to run, turn on 2 toggle switches	Push rocker switch on "computer style" power entry
Time To Calibrate	45 minutes to 1-2 hrs or more	5 Minutes to ½ hour (for wet cell acclimation)
How To Calibrate / Set Zero Point / Set Standard	Turn zero trimmer & standard trimmer, wait 5 minutes for adjustment to stabilize, check & re-adjust as needed since each trimmer affects the other. Sometime need to adjust trimmers # 3 Coarse adjustment & #4 Input range, and repeat full calibration (1-2 hrs more).	Touch "Calibration" from main menu. On the touch screen keypad press Clear, then enter value & press enter.
Set Coarse Adjustment	Trimmers VR2 & VR3	Unnecessary
Set /Adjust Input Range	Trimmers VR2, VR3, VR4, re-adjust calibration with VR2	Unnecessary
Change Measuring Range	Remove white electrode wire, Set 4 Dip switches, turn trimmer VR7, decimal point shift requires moving jumper. Recalibrate, reset alarm trip points	Go to "Range" screen, touch "Edit", "Clear", enter value on keypad & "Enter" (<15 seconds), Recalibrate after changing range
Check Operating Range	Remove white electrode wire, turn Trimmers VR1 & VR7, multi-meter required if limit unknown.	Touch "Menu", touch "Range" & read value
Adjusting 4-20ma Output	Remove white electrode wire, connect mA meter in series with current loop or to terminals on power supply board, turn Trimmers VR1, VR7, (& VR11 to adjust display if needed)	Set automatically when the operating range is set or changed. Output is accurate to about 1 micro amp, so trimming the output is unnecessary
Set Alarm Trip Points	Set 4 Dip switches, turn trimmers VR8 & VR9	Set automatically to 10% & 90% of range when operating range is set. To change touch "Menu", "Alarms", "Edit" for High, enter value on keypad, press enter. Repeat for low.
Change Decimal Point	Open enclosure, move jumper	Automatically when range is set



Comparison of the Foxcroft FX-1000P & FX-CL Chlorine Analyzers

Comparison of Operation		
	FX-1000P (-B)	FX-CL
Disable Pump Motor	Disconnect (5) leads from circuit board	Touch pump motor on/off button
Change Buffer Feed Rate (Pump Motor Speed)	Replace the Fixed 4 RPM motor with special fixed RPM motor	Touch Pump Speed button, (variable speed pump motor)
Feature & Technical Comparison		
	FX-1000P (-B)	FX-CL
Disinfectants Measured	Free or Total Chlorine	Free or Total chlorine. With probes: Free or Total chlorine, chlorine dioxide, ozone, peracetic acid, hydrogen peroxide
Circuit Board Electronics	Analog	Digital microprocessor based
Circuit Boards	(2) Signal Amplifier & Power Supply	(1) Multi-purpose board
Circuit Board Status LED's	None	Processor, power, each relay
Operating Status Indicator	None	Onscreen & onboard LED
Operating Power & Power Supply	Board mounted transformers specified for either 110V 60 Hz or 220V 50 Hz unfiltered	Filtered 24 VDC, switching universal 88-264 VAC 50/60Hz input
Power Consumption	30 Watts (110VAC)	Less than 10 Watts
Circuitry Voltage Protection	5A fuse, soldered to circuit board	6A replaceable fuse in power entry module, (4) auto reset sensor input fuses & 50VDC diodes on all inputs/outputs
Power Wiring Connection	Direct to circuit board, shorting risk	Detachable IEC 60320 power cord, C13 plug into power entry module & NEMA 5-15P plug into wall outlet
Cable Connections	Bare stranded wire into terminals, shorting risk	Wiring ferrules into terminals, no cable strand shorting risk
Positive Electrode Connection	Open spade terminal	Covered "spark plug" type connector
Positive Electrode Construction	Pre-2013: less stable signal	More sensitive & stable signal, higher output, wider operating range
Display	LED non-adjustable brightness	Glass LCD adjustable brightness
Electrode/Sensor Power Input Protection	None	Power and reverse polarity protection, (4) auto reset fuses
Electrode / Sensor Signal Input Protection	None	Diode protection against high voltage on signal wire input



Comparison of the Foxcroft FX-1000P & FX-CL Chlorine Analyzers

Feature & Technical Comparison		
Mixing & Pump Motors	110VAC or 220VAC	24VDC brushless
	FX-1000P (-B)	FX-CL
Pump Motor Drive Transmission	Via coupling	Direct drive male-female connection
Mixing Motor Operating Temp.	60-90 degrees F above air temp.	Ambient Air Temperature
Electrode & Motor Overheat Protection, Buffer Loss Protection From Flow Stoppage	Not Available	Thermal protection, Motors stop via No Flow Alarm, auto re-start when flow resumes
Damage mA output by operating at negative range/readings	Yes, requires amplifier board repair or replacement	Not possible to operate in negative range
Sensor Inputs	(1) positive electrode	(4) digital, (4) 4-20mA
4-20mA Output	One, 600 Ohm max	(2) ppm & temp, 750 Ohm max
4-20mA Voltage Protection	None	50V input, 30 Amp peak
Serial Output	None	(1) RS485 (inactive as standard)
Alarm Relays, Form C	Two	(3) 1A std, up to (8) optionally
Alarm Actuation Delay	None	Adjustable up to 300 seconds
Water Temperature Display & Compensation	None	Standard
Optional pH Measurement	Not Available	Optional
Built-In PID Control	Not Available	Optional software upgrade
Additional Sensor Inputs	Not Available	Up to (7) optionally, plus pH
Switch Inputs	Not Available	Up to (8) available optionally
Mixing Motor Cover w/O-rings	None	Standard
Replacement Parts Cost 2016 (Partial Listing)		
Wet Cell Parts Note		Parts the same as FX-1000 except large block modified
PM Kit Parts: tubing, fittings, O-rings, mixer, negative cell, balls	\$454.00	\$400.50
Power Supply	New circuit board, \$597.00	Power supply about \$70.00
Total Circuit Board Replacement	NO LONGER POSSIBLE, was \$1,397.00	#400003 circuit board, \$898.00
Fuse Replacement	Return to factory for soldering, approx \$150.00	Field replaceable, about \$1.20
Mixing motor	\$322.00	\$190.00