

FC80 Free Chlorine Analyzer

The FC80 Free Chlorine Analyzer provides continuous, online measurement of free chlorine to support disinfection control and water quality monitoring. Designed for municipal and industrial water applications, the FC80 delivers reliable performance, flexible integration, and stable operation for process and compliance needs.

ECD's intelligent FC80 Analyzer eliminates consumables, simplifies installation and reduces maintenance with a self-cleaning design to lower the total cost of instrument ownership over its long life. This versatile, easy-to-use analyzer is a panel-mounted unit that is ready-to-go right out of the box. It is also fully compliant with the U.S. Environmental Protection Agency's (EPA) Method 334.0.



Features & Benefits

▶▶ Panel Mounted System Plug and Play Design

- Complete System, Easy Installation, Ready to Use

▶▶ Automatic pH Compensation

- No Expensive Reagents

▶▶ Automatic Flow Control

- Eliminates Pressure Regulators and Rotameters

▶▶ T80 Transmitter Capability

- Dual Measurements
- Single Parameter
- or Dual Parameter Displays
- MODBUS RTU
- Spray Cleaner (optional for fouling applications)

▶▶ Compliant with EPA Method 334.0

Consult our Technical Support staff for additional configuration options at +1-714-695-0051 or email: sales@ecdi.com

Description

The **Model FC80** is a panel mounted, ready to use Free Chlorine Analyzer. It is designed to monitor free chlorine in drinking water, rinse water, cooling water or other fresh water samples from:

- **0.05 – 20 ppm Cl** (Standard Range)
- **0.01 – 5.00 ppm Cl** (Low Range Sensor)

The FC80 Free Chlorine Analyzer is compliant with EPA method 334.0

The FC80 features a plug and play design that incorporates the following:

- **Constant Head Flow Device**
- **pH Sensor**
- **Chlorine Sensor**

and the **T80 Transmitter** that is conveniently mounted on a PVC Panel. Connect the sample and drain lines, connect the power and outputs, and it is ready to use.

Calibration is accomplished by DPD comparison.

Free Chlorine exists in solution as a pH dependent ratio of hypochlorous acid (~100% at pH 5) and hypochlorite ion (~100% at pH 10).

The free chlorine sensor measures only the hypochlorous acid component of the free chlorine and the analyzer calculates the balance using either the measured pH or a user defined fixed value.

The use of the pH sensor provides accurate compensation for samples between 6 pH and 9 pH, eliminating the need for expensive sample conditioning systems to control the pH of the solution.

The **T80** is 110-240 VAC or 24 VDC powered and allows either parameter to be graphically displayed with user defined graphs such as:

- **Line**
- **Bar**
- **Gauge**

The standard configuration has (2) 4-20 mA outputs, (3) alarm relays and MODBUS RTU.

Amperometric Chlorine Sensors are flow sensitive. The **minimum required flow** by the sensor is **0.5 ft/sec**.

Value above this output is virtually flow independent. A "Constant Head" Flow control device (CFD), maintains the optimum flow past the sensor over a wide range of incoming sample flow rates.

The **minimum flow required** for the CFD is **10 gal/hr** and the **maximum flow is 80 gal/hr**, with the sample going to drain at atmospheric pressure.

The **Auto Clean Option**, includes a solenoid actuated spray cleaner that uses either 30 psi process water or air.

An easily adjusted timer controls the period and duration of the cleaning cycle.

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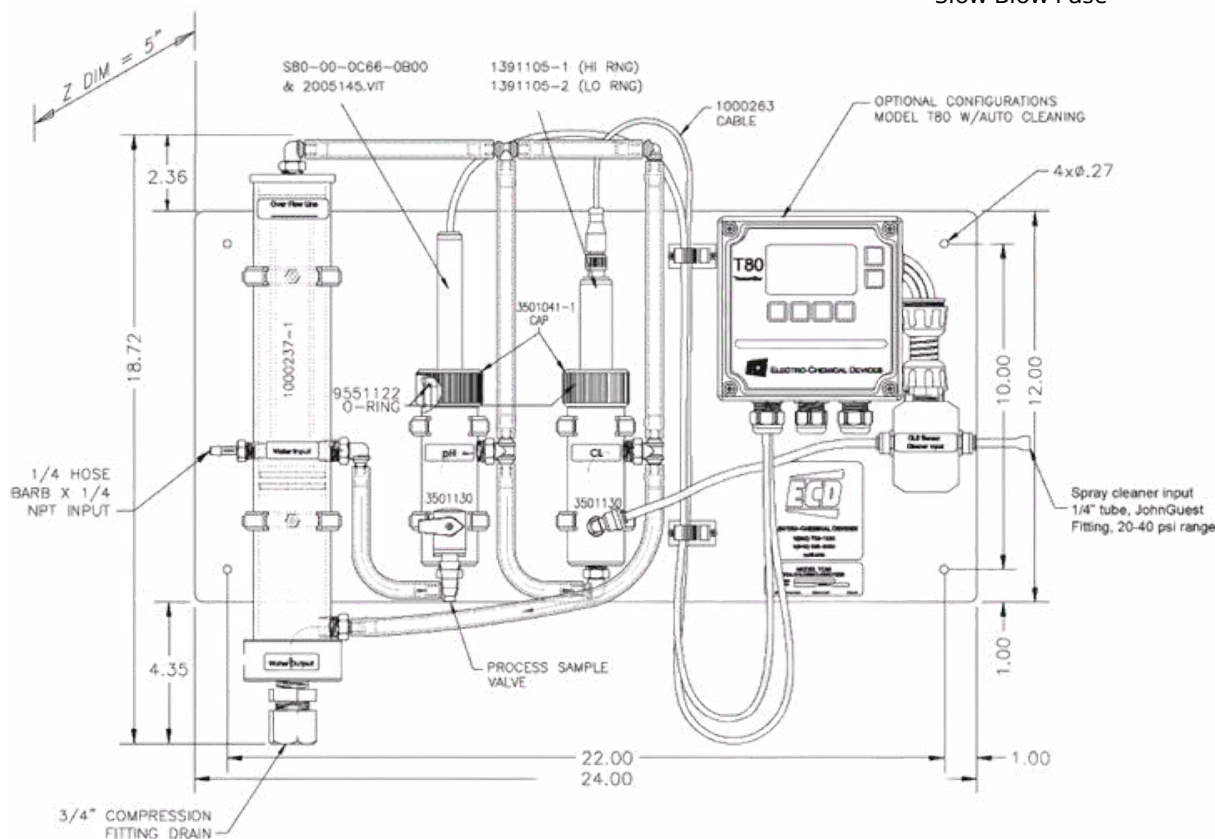
Specifications

Sensor and Flow Train

Sensor	• Polarographic • Gold • Silver • PTFE Membrane • Digital Communication
Measurement Range	Chlorine: 0.05 to 20 ppm (Standard Range) 0.01 to 5.00 ppm (Low Range) <i>*For range up to 200 ppm, refer to Model FC80 HR</i> pH: 0 to 14 pH
Operating Temperature	0°C to 50°C (32°F to 122°F)
Min / Max Flow	38 L/hr to 300 L/hr (10 gal/hr to 80 gal/hr)
Wetted Materials	• PVC • PP • PVDF • PTFE • Glass • 316 SS
Process Connections	Input: 1/4" Barb Fitting (1/4" FNPT) Drain: 3/4" FNPT Fitting
Electrolyte Life	Up to 6 months
Dimensions	

T80 Transmitter

Measurements	Chlorine: 000.0 to 999.9 ppb (ppm auto ranging) pH: 0 to 14 pH Temperature: 0°C to 100°C (32°F to 212°F)
pH Compensation	5 to 10 pH (accuracy degrades above 9 pH)
Display	128 x 64 Pixels (2.75" x 1.5") LCD, Black on Grey Background, Blue on White Background with LED Backlight
Enclosure	IP65, weatherproof 1/2 DIN, (LxWxD) 5.7" x 5.7" x 3.5"
Outputs	• (1) 4-20 mA for Free Chlorine (Set to Sensors Range) • (1) 4-20 mA for pH (Optional) (Set to 0-14 pH)
Alarm Relays Ratings	(3) SPDT, 1 Form C, 250 VAC, 10 Amp
Input Power	Code -1 • 24 VDC (18-36 VDC @ 250 mW min.) Code -2 • 110-240 VAC 50/60 Hz, 4W protected with 250v, 1A, Slow Blow Fuse



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Order Information

A	B	C	D	E	F	G	Sample Order
FC80	0	1	2	2	0	0	FC80-01-2200

(A) FC80 Analyzer	(F) No Spray Cleaner / Standard Constant Head Flow
(B) 0.05 to 20 ppm Free Chlorine	(G) Standard Panel Mount (No Enclosure)
(C) S80 pH Sensor with Flow Cell and 2 nd channel T80 Analyzer	
(D) 110-250 VAC	
(E) (2) 4-20 mA Output, 3 Configurable Relays (Modbus)	

A. Model FC80

Part No.

FC80 Free Chlorine Analyzer, Panel Mounted, Constant Head Flow Controller, Free Chlorine Sensor, Flow Cell pH Sensor, Flow Cell, (2) 4-20 mA, 3 Relays

B. Free Chlorine Sensor Type and Range

Part No.

- 0** 0.05 to 20 ppm Free Chlorine (Standard)
- 1 0.01 to 5.00 ppm Free Chlorine
- 2 0.05 to 20 ppm Free Chlorine (Seawater)
- 3 0.005 to 5.00 ppm Free Chlorine (Seawater)
- 4 0 to 200 ppm Free Chlorine
- 5 0 to 200 ppm Free Chlorine (Seawater)

C. pH Sensor

Part No.

- 1** S80 pH Sensor with Flow Cell and 2nd channel T80 Analyzer
- 2 S80 pH Sensor (Titanium) with Flow Cell (Seawater)

D. Power Supply

Part No.

- 1 24 VDC
- 2** 110-250 VAC (Standard)

E. Outputs

Part No.

- 2** (2) 4-20 mA output, 3 configurable relays (Modbus)
- 3 (2) 4-20 mA output, 3 configurable relays (HART)

F. Spray Cleaner / Constant Head Flow

Part No.

- 0** No Spray Cleaner / Standard Constant Head Flow
- 1 110 VAC Spray Cleaner on Chloride Sensor / Standard Constant Head Flow
- 2 No Spray Cleaner / High Constant Head Flow
- 3 110 VAC Spray Cleaner on Chloride Sensor / High Constant Head Flow
- 4 240 VAC Spray Cleaner on Chloride Sensor / Standard Constant Head Flow
- 5 240 VAC Spray Cleaner on Chloride Sensor / High Constant Head Flow

G. Enclosure

Part No.

- 0** Standard Panel Mount (No Enclosure)
- 1 Fiberglass-reinforced Polyester NEMA 4x Enclosure, 24" x 24" x 7", Drain and Tubing holes on bottom panel, Clear Door (Standard Head Flow)
- 2 Fiberglass-reinforced Polyester NEMA 4x Enclosure, 24" x 24" x 7", Drain and Tubing holes on bottom panel, Opaque Door (Standard Head Flow)

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Equipment and Specifications may be updated periodically to enhance performance and reliability.



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FC80 Instruments, Parts & Accessories

Part No.

Accessories

1000350-1	Enclosure, Fiberglass, 24" x 24" x 7", Clear Lid
1000350-2	Enclosure, Fiberglass, 24" x 24" x 7", Opaque Lid
1000183-X	Junction Box w/ Spray Cleaner Solenoid on Panel (X = Specify Voltage)
1000300-1	4-20 mA USB Data Logger

Sensor Spare Parts

1390918-1	Free Chlorine Sensor, Standard Range, 0.05 – 20.0 ppm HOCl/OCL
1390918-2	Free Chlorine Sensor, Low Range, 0.01 – 5.00 ppm HOCl/OCL
1391110-1	Free Chlorine Sensor, High Range, 0 – 200 ppm
1391110-3	Free Chlorine Sensor, High Range, 0 – 200 ppm (Seawater)
1000238	Membrane Replacement Kit (2 Cap, 50 mL Electrolyte) (0-5 / 0-20 ppm)
1000245-3	Membrane Replacement, 0 – 200 ppm
1000245-4	Membrane Replacement, 0 – 200 ppm (Seawater)
1000246-3	Electrolyte Refill, 0 – 200 ppm
1000248-5	Membrane / Electrolyte Kit, 0 – 200 ppm
1000248-6	Membrane / Electrolyte Kit, 0 – 200 ppm (Seawater)
9520073	Membrane Cap Replacement (0-5 / 0-20 ppm)
9272519	Electrolyte Refill, 50 mL bottle (0-5 / 0-20 ppm)
S80-00-0C66-0B00-001	S80 Flanged Style pH Sensor Complete, Includes (2005145.VIT) pH Electrode
2005145.VIT	pH Replacement Electrode for S80 pH Sensor

Spare Parts

T80-11-212-00	Free Chlorine Analyzer (FC80), Instrument Only, (2) 4-20 mA Output, 3 Relays, 110-250 VAC
9370048	Sample Spigot

Tubing

1000237-3	Constant Head Flow Controller with Fittings
1000237-4	Constant Head Flow Controller, High Flow with Fittings
2000120	Tube Fitting Set, Complete Set (9) 3/8" Fittings, (1) 1/4" Fitting
2000107-3	Kit, Tubing 3/8" PVC
2000107-4	Kit, Tubing 3/8" PVC with Spray Cleaner Tube

Calibration

1000040-1	Kit, Photometer Tester HCA-2, Free & Total Chlorine
1000040-2	Kit, Photometer Tester HCA-2, Free Chlorine
1000040-3	Kit, Photometer Tester HCA-2, Free Chlorine, 0 – 200 ppm
9260100	Test Strip Reagent, Free Chlorine (100 Test Strips)
9260103	Test Strip Reagent, Free Chlorine (50 Test Strips), 0 – 200 ppm

Represented By:



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