ELECTRO-CHEMICAL DEVICES

DC-80 De-Chlorination Analyzer

The DC-80 De-chlorination Analyzer provides continuous, online measurement to support de-chlorination control and water quality monitoring. Designed for municpal and industrial water applications, the DC-80 delivers reliable performance, flexible integration, and stable operation in demanding process environments.

ECD's DC-80 Analyzer is engineered for long-term operation with a robust industrial design that simplifies and reduces maintainance requirements. This versatile, easy to use analyzer is a panel-mounted unit that integrates seemlessly into a wide range of monitoring and control systems.

Features & Benefits

Zero Shift Method (0.00 ppm to 20.00 ppm)

- Chlorine metered into flow cell, subtracted from measurement

Automatic pH Compensation

- No Expensive Reagents

Automatic Flow Control

- Eliminates Pressure Regulators and Rotameters

T80 Transmitter Capability

- Dual Measurements
- (2) 4-20 mA outputs
- (3) Alarm Relays
- 24 VDC
- or 110 / 220 VAC Power
- Auto Clean option

pH Measurement for Added Process Information

- Complete System, Easily Installation, Ready to Use

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

Description

The Model DC-80 is a panel mounted, ready to use De-Chlorination Analyzer.

Since amperometric chlorine sensors are unstable when measuring near zero amounts of chlorine, the DC-80 Analyzers uses the "Zero Shifted" strategy to make the measurement.

A TC80 Total Chlorine Analyzer is fitted with a chlorine dosing pump that feeds a metered amount of chlorine into the outfall of the Constant Head Flow Controller.

An "Offset" feature allows the zero point to be shifted by the amount of chlorine that is added.

The Total Chlorine sensor is now measuring 3 - 5 ppm of total chlorine which provides for a stable and reliable mesurement and the analyzer displays the concentration of Total Chlorine present in the sample.

Calibrations are accomplished by DPD comparison.

The TCA Sensor is a three electrode amperometric sensor with a:

- Gold Cathode
- Silver Halilde Anode
- 304 SS Counter Electrode

The counter electrode provides a stable base potential that minimizes drift. The TCA sensor has a microporous membrane that allows ions to diffuse in and out of the sensor.

The pH Sensor provides accurate compensation for samples between 4 pH and 12 pH, and eliminates the need for an expensive sample conditioning system.

The iodine is reduced at the cathode back to iodide and the current flow between the cathode and silver iodide anode is proportional to the Total Chlorine.

The various chlorine species in the measured solution diffuse into the sensor and react with acidic potassium iodide electrolyte to form iodine.

The T80 Transmitter graphically displays both the Total Chlorine and pH, allowing easy trend analysis.

Amperometric Chlorine Sensors are flow sensitive. The **minimum flow required** by the sensor is **0.5 ft/sec**; above this value, the output is virtually flow indepenant.

A "Constant Head" flow controller maintains the optimum flow by the sensor over a wide range of incomming sample flow rates.

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

The Auto Clean option includes a:

- Solenoid Actuated Spray Cleaner

Utilizing either 30 psi process water or compressed air to clean the electrode surfaces.

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

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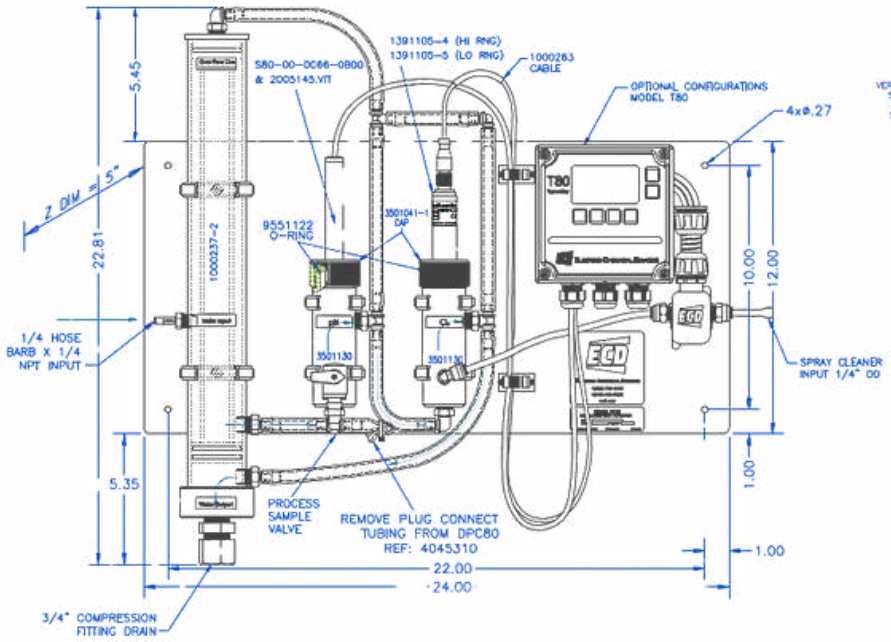
Specifications

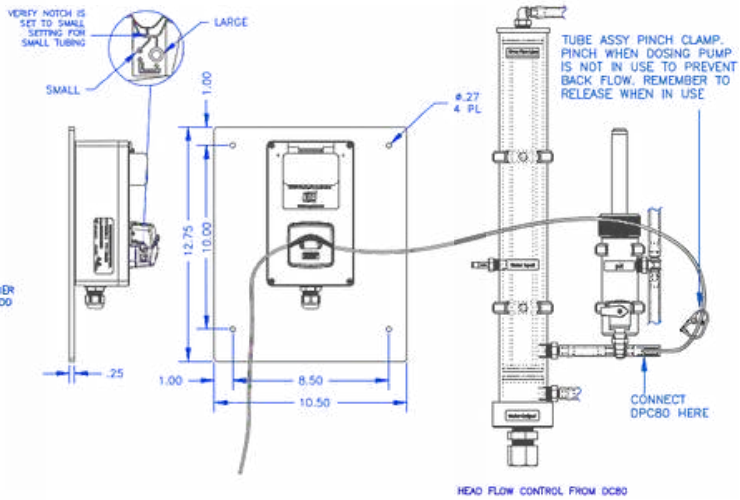
Sensor and Flow Train

Sensor	• Digital • Gold-Cathode • Amperometric • Silver-Halide Anode • Three Electrode • 304 SS Counter Electrode
Measurement Range	**Chlorine Zero Shift:** 0.00 - 20.00 ppm and < 0.00 ppm **Chlorine:** 0.05 to 20.00 ppm **pH:** 4 to 12 pH
Operating Temperature	0°C to 45°C (32°F to 113°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:** ¼" Barb Fitting (¼" FNPT) **Drain:** ¾" FNPT Fitting
Response Time	T90 approximately 2 minutes
Electrode Life	**Total Chlorine Sensor:** Refill electrolyte every 6 months **pH Sensor:** Replace Yearly
Dimensions	

T80 Transmitter

Measurements	**Chlorine:** 000.0 to 999.9 ppb **pH:** 0 to 14 pH **Temperature:** 0°C to 100°C (32°F to 212°F)
pH Compensation	4 - 12 pH
Display	2.5" x 1.75" Backlit LCD 4 Lines for Text & Graphical
Enclosure	NEMA 4X (LxWxD: 5.7" x 5.7" x 3.5")
Outputs	(1) 4 - 20 mA for Total Chlorine (Set 0 - 20 ppm) (1) 4 - 20 mA for pH (Set 0 - 14 pH)
Alarm Relays Ratings	(3) SPDT 230 VAC/5A
Input Power	110/220 VAC @ 50/60 Hz Optional: 24 VDC (12 to 50 VDC) @ 0.25A
Chlorine Dosing Pump	Peristaltic 110/220 VAC, 50/60 Hz, 10 ft (3 m) Tubing





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Order Information

A	B	C	D	E	F	G	Sample Order
DC80	0	1	2	2	1	1	DC80-01-2211

Ⓐ DC80 Analyzer
Ⓑ 0.05 to 20 ppm Total Chlorine (Standard)
Ⓒ S80 pH Sensor with Flow Cell and 2nd Channel T80 Analyzer
Ⓓ 110-250 VAC
Ⓔ (2) 4-20 mA Output, 3 Configurable Relays (Modbus)
Ⓕ 110/VAC Spray Cleaner on Chlorine Flow Cell (Solenoid Wired and Tubing Plumbed)
Ⓖ Dosing Pump Controller

A. Model DC80

Part No.

DC80 — De-Chlorination Analyzer, Panel Mounted, Constant Head Flow Controller, Total Chlorine Sensor, Flow Cell pH Sensor, Flow Cell (2), 4-20 mA, 3 Relays

B. Sensor Type and Range

Part No.

0 — 0.05 to 20.00 ppm Total Chlorine (Standard)
2 — 0.05 to 20.00 ppm Total Chlorine (Seawater)

C. pH Sensor

Part No.

1 — S80 pH Sensor with Flow Cell and 2nd Channel T80 Analyzer

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
1 — 110 VAC Spray Cleaner on Chlorine Flow Cell (Solenoid Wired and Tubing Plumbed)
5 — 240 VAC Spray Cleaner on Chlorine Flow Cell (Solenoid Wired and Tubing Plumbed)

G. Dosing Pump

Part No.

1 — Dosing Pump Controller
2 — Dosing Pump Controller, Panel Mounted

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

Order Information

A	B	C	D	E	F	G	Sample Order
DC80 -	0	1	- 2	2	1	1	DC80-01-2211

- (A) DC80 Analyzer
- (B) 0.05 to 20 ppm Total Chlorine (Standard)
- (C) S80 pH Sensor with Flow Cell and 2nd Channel T80 Analyzer
- (D) 110-250 VAC
- (E) (2) 4-20 mA Output, 3 Configurable Relays (Modbus)
- (F) 110/VAC Spray Cleaner on Chlorine Flow Cell (Solenoid Wired and Tubing Plumbed)
- (G) Dosing Pump Controller

DC80 Instruments, Parts & Accessories

Part No.	
	Chlorine Sensor Parts
1391105-4	Total Chlorine Sensor (0.05 – 20.00 ppm (Standard Range)
1000345-1	Memebrane (0 - 2 / 0 - 20 ppm) (1391105-4 and 1391105-5 Sensor)
1000348-1	Kit, Membrane / Electroylte (0 - 2 / 0 - 20 ppm) (1391105-4 and 1391105-5 Sensor)
1000246-1	TCS Electrolyte Refill Kit
9550001	Silicone Band (Covers Bleed Hole in Membrane Cap) ***Standard**
9550002	Viton Band (Covers Bleed Hole in Memebrane Cap)
	pH Sensor Parts
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 - System
T80-11-212-00	De-Chlorination Analyzer (DC80), Instrument Only, (2) 4-20 mA outputs, 3 Relays, 110-250 VAC
T80-11-112-00	De-Chlorination Analzyer (DC80), Instrument Only, (2) 4-20 mA outputs, 3 Relays, 24 VDC
3501131	Chlorine Flow Cell with Spray Cleaner Port (No Cap / Fittings)
3501130	pH Flow Cell with Spray Cleaner Port (No Cap / Fittings)
9370048	Sample Spigot
9350025	Solenoid for Spray Cleaner (110 VAC)
2000197	Kit, O-Ring Constant Head Flow
	Tubing / Pump
1000237-4	Constant Head Flow Controller (High Flow with Fittings)
2000120	Tube Fitting Set, Complete Set (9) ⅜" Fittings (1) ¼" Fitting
2000107-1	Kit, Tubing ⅜" PVC
2000107-4	Kit, Tubing ⅜" PVC with Spray Cleaner Tube
2000205-1	Chlorine Dosing Pump Controller (DPC)
2000205-2	Chlorine Dosing Pump Controller (DPC) (Panel Mounted)
2000108	DPC Tubing and Fitting
	Data Logger
1000300-1	4-20 mA USB Data Logger
9130007	Spare Battery for USB Data Logger *Dangerous Goods
	Calibration
1000040-1	Kit, Photometer Tester HCA-2 (Free & Total Chlorine)
1000040-3	Kit, Photometer Tester HCA-2 (Total Chlorine)
9260100	Test Strip Reagent (Free Chlorine) (100 Test Strips)
9260101	Test Strip Reagent (Total Chlorine) (100 Test Strips)
2010128-1	Solution Chlorine Dosing (6.6 Gal) (25 L)

Represented By:

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