FC80 Free Chlorine Analyzer

ELECTRO-CHEMICAL DEVICES

Features

- **Panel Mounted System Plumb and Play Design**
- **Automatic pH Compensation**
- **Automatic Flow Control**
- **T80 Transmitter Capability**
- **Compliant with EPA Method 334.0**

Benefits

- **Complete System, Easy Installation, Ready to Use**
- **No Expensive Reagents**
- **Eliminates Pressure Regulators and Rotameters**
- **Dual Measurements, Single parameter or Dual parameter Displays, MODBUS RTU, Spray Cleaner (optional for fouling applications)**

Model FC80
Free Chlorine Analyzer

Description

The 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 chlorine as the standard range or 0.01 - 5.00 ppm with the low range sensor. The FC80 is compliant with EPA method 334.0 for measuring drinking water.

The FC80 features a plug and play design that incorporates a constant head flow control device, a pH sensor, a chlorine sensor and the T80 analyzer/ transmitter 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 pH 6 and pH 9 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 Line, Bar or Guage style graphs. 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, above this value the 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 solinoid 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.

FC80 Free Chlorine Analyzer

Specifications

Sensor and Flow Train

Sensor

Polarographic, Gold/Silver, PTFE membrane, Digital communiucation

Measurement Range

Chlorine: 0.05 to 20 ppm (High Range)
0.01 to 5.00 ppm (Low Range)
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 ¼" barb fitting (¼"FNPT), Drain ¾" FNPT

Response Time

T90 in 2 minutes

Electrolyte Life

Up to 12 months

T80 Analyzer/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

pH 5 - 10 (accuracy degrades rapidly 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, ½ DIN, (L x W x D) 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 0-14 pH

Alarm Relay Ratings

Three (3) SPDT, 1 form C, 250 VAC, 10 Amp

Input Power

Code -1 24 VDC (18-36 VDC @ 250 mW minimum)
Code -2 100-240 VAC, 50/60 Hz, 4W, protected with 250V, 1A, Slow Blow fuse

CE

Part No.	Model and Product Description
FC80-01-2200	Free Chlorine Analyzer (FC80), complete, 0.05-20.00 ppm, 100-240 VAC
FC80-01-2210	Free Chlorine Analyzer (FC80), complete, 0.05-20.00 ppm, with spray cleaner, 100-240 VAC
FC80-11-2200	Free Chlorine Analyzer (FC80), complete, 0.01-5.00 ppm, 100-240 VAC
FC80-11-2210	Free Chlorine Analyzer (FC80), complete, 0.01-5.00 ppm, with spray cleaner, 100-240 VAC

Part No.	Spare Parts and Accessories Description
1390918-1	Free Chlorine Sensor, Standard Range, 0.05-20 ppm
1390918-2	Free Chlorine Sensor, Low Range, 0.01-5.00 ppm
1000238	Membrane Replacement Kit with electrolyte
S80-00-0C66-0B00	pH Sensor, 316L SS body with Flange, 4' cable
2005145.VIT	Replacement pH Cartridge
3501131	Chlorine Flow Cell
3501130	pH Flow Cell
3501041-1	Flow Cell Threaded Cap