Model 2122 Cooling Tower Control System

ELECTRO-CHEMICAL DEVICES

Features	Benefits
• Dual input design, pH and Conductivity sensors	• Conductivity controls the Blow Down and the pH controls the acid or base feed
• Control Logic and Failsafe Interlocks	• Reduces cost and waste by inhibiting excess chemical feed
• Biocide feed Timer	• Ease of Maintenance
• C22 Analyzer Capability	• Local Display, 4-20 mA output, Alarm Relays, XY Graphical Plot, PID, Logic Functions

Model 2122
Cooling Tower Control System

Description

The Model 2122 Cooling Tower Control System from ECD is an integrated system designed to control acid feed, blowdown and inhibitor feed in cooling processes. Acid feed is controlled via pH, blowdown is controlled via Conductivity (TDS) and inhibitor is fed on a user selectable timed basis. Both the interval and dose time are easily configured by the user.

The Model 2122 Cooling Tower Control System features a timer based overfeed function that locks out the blowdown cycle or acid/base feed function and triggers an alarm if the acid feed or blowdown cycle proceed longer than the predetermined time. The Lockout Timer Alarm is reset with a simple push button switch that resets all timers allowing a second interval to pass. If the control parameter is corrected the relays will return to the normal state. If not then the timer will initiate another alarm.

The standard outputs include two isolated 4-20 mA outputs, one for the pH signal, one for the conductivity signal and four SPDT 230 VAC 5A relays, (1) acid/base feed, (2) blowdown control, (3) biocide feed and (4) system alarm.

The standard system includes a Model C22 Cooling Tower Controller, a Model PHS10 pH sensor and a Model CS10 conductivity sensor. The sensors are an easily serviced insertable design with signal conditioned outputs for a noise free signal to the C-22 analyzer. Electrode cartridges for both pH and Conductivity are field replaceable. The S10 housings and guards are 316 stainless steel.

The C-22 analyzer is available with an optional digital input card that can be configured with a flow switch to Alarm in a no flow condition. The Model 2122 can be ordered as separate components, a complete system or as an assembled rack mounted system that is prewired and tested. The junction box facilitates wiring with easily accessed large labelled terminal strips.

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Specifications

Sensors

pH Model #

PHS10-C22-CBL-EG-75pp

Contacting Conductivity Model #

CS10-C22-CBL-2mS-75pp (500µS - 5 mS)
CS10-C22-CBL-5mS-75pp (2 mS - 10 mS)
CS10-C22-CBL-10mS-75pp (4 mS - 20 mS)

Measurement Range

pH: 0 to 14 pH
0 - 80˚C
0 - 100 psig

Conductivity:
500 us to 20ms
0 - 80˚C
0 - 100 psig

Temperature:
0˚ - 100˚ C

Wetted Materials

PHS10
316 SS, PES, Teflon, Glass, Viton

CS10
316 SS, PVDF, Viton

Process Fittings
¾" Compression Fitting, PP, Viton
1" NPT Pipe Tee Flow Cell, slip fitting, PVC

Rack Mounted System

Ready to use plumb and play system. Plumbed with ¾" pipe, slip fittings, in and out. C-22 Analyzer, (2) sensors, pH flow cell, conductivity flow cell, optional Flow switch, Junction Box with reset button are rack mounted using 1⅝"x 1⅝" Uni-Strut rail.
Dimensions:36"length x 20" high
System Pressure & Temperature rating: 50 psig @ 60˚C

C22 Analyzer

Measurements

pH, Conductivity, Temperature

Display

2.5" X 1.75" backlit LCD, 4 lines for Text & Graphical

Enclosure

NEMA 4X, LxWxD: 5.7" x 5.7" x 7

Input Power

110/220 VAC @ 50/60 Hz
Optional 24 VDC (12 to 36 VDC) @ 0.6A

Outputs

(2) 4-20 mA 800 Ωmax. load, Internally Powered, isolated

pH	0 - 14 pH
Conductivity	0 - 10 mS
Temperature	0˚ - 100˚C (optional Output Card)
PID control	2 channels (optional Output Card)

Alarm Relay Ratings

(4) SPDT 230 VAC/5A or 30 VDC/5A resistive max.
#1 pH control, acid/base feed, overfeed protection, alarm
#2 Blowdown control, overfeed protection, alarm
#3 Biocide feed, overfeed protection, Blowdown lock out timer to prevent biocide waste, alarm
#4 System Alarm

Digital Input

Push button Alarm Reset Switch
Flow switch, Alarms on No/Low Flow condition (requires an optional input card)

Shipping Weight

C-22 Analyzer	4.8 lbs.
PHS10 or CS10	2.5 lbs.
Panel Mounted	27 lbs.

Part#	Model / Description
16CAA420.41GO	C-22 CTCS Analyzer, Base Model (2) 4-20, (4) relays, 110/220 VAC+ Reset Switch
16CAB420.41GO	C-22 CTCS Analyzer, Base Model + Reset Switch + Flow Switch
1290210-1, -2 or -3	Rack Mounted C-22 CTCS Analyzer, Base Model, pH/Cond+ Reset Switch
1290211-1, -2 or -3	Rack Mounted C-22 CTCS Analyzer, Base Model + Reset Switch + Flow Switch, pH, Cond
140806J.3000	PHS10-C22-CBL-EG-75, pH sensor with signal conditioner, 316 SS body, 10 ft cable
131010J.0000	CS10-C22-CBL-2mS-75, Cond. sensor with signal conditioner, 316 SS body, 10 ft cable (see range above)
131011J.0000	CS10-C22-CBL-5mS-75, Cond. sensor with signal conditioner, 316 SS body, 10 ft cable (see range above)
131012J.0000	CS10-C22-CBL-10mS-75, Cond. sensor with signal conditioner, 316 SS body, 10 ft cable (see range above)
1000250	Flow cell, for pH or Conductivity, 1" NPT slip fitting, with Compression fitting
2005145.VIT	pH replacement electrode cartridge
2007104 (-3 version)	Conductivity cartridge, 2 mS
2007103 (-2 version)	Conductivity cartridge, 5 mS
2007102 (-1 version)	Conductivity cartridge, 10 mS

Specifications subject to change without notice.

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CERTIFIED ISO9001 QUALITY SYSTEM