

## Model C22 Controller



Measure pH, ORP, Specific Ion, Dissolved Oxygen, Turbidity, Chlorine, Conductivity and Resistivity with S10, S17, TR6 or various Chlorine Sensors



**ELECTRO-CHEMICAL DEVICES**

# Model C22 Controller

## Features

- Choice of multiple measurement parameters
- Multi-Channel Capability
- SENTINEL Diagnostics
- Isolated Outputs
- Auto Buffer Calibration
- Dual Channel Comparisons
- Graphical Display
- Multiple Mounting Configurations

## Benefits

- Measure pH, ORP, pIon, Conductivity, Resistivity, Dissolved Oxygen, Turbidity
- Lower cost with multi sensor operation
- Predictive “insitu” sensor diagnostics reduces down time and maintenance
- Protects system inputs and outputs
- Ease of Maintenance
- Improved Accuracy and Data
- Allows Viewing of Historical Data
- Pipe, Wall, Handrail, or Panel Installation choices

## Description

The Model C22 multi-channel controller/monitor provides simplicity in a powerful package. The Model C22 allows for incredible flexibility in the selection of inputs and outputs. From a simple single input design with one output to a multiple input system with linear outputs, PID control outputs and relays for alarm or control functions.

The Multi-Bus Architecture allows up to four sensor inputs, six outputs and eight relays to be configured into the C22 Controller. The choice of process measurements includes pH, ORP, pION, Dissolved Oxygen, Conductivity including % Concentration and Resistivity. External analog inputs and other events can also be integrated into the C22’s measurement parameters.

The Graphical Display mode allows any of the resident parameters, inputs, outputs, control or temperature to be displayed with user defined ranges of sensitivity and time. In addition to the enhanced visualization of the process or control dynamics, the graphical display also facilitates reliable calibrations and diagnostic capabilities.



**Multi-Channel and Sensor Options**

pH, ORP, pION



**SENTINEL**  
“pre-pHault”  
Sensor Diagnostics

## Model C22 Controller

The SENTINEL is a “next generation” sensor technology. By utilizing the SENTINEL reference electrode diagnostic the user can visually monitor the reference electrode’s degradation due to depletion of electrolyte or process contamination. The Pre-pHault indication is clearly displayed as a bar graph on the main menu. The bar increases in size as the electrode degrades and begins flashing when the sensor needs replacing. This feature allows the electrode to be replaced before it fails eliminating any unforeseen downtime.

**Multi-Channel Comparison** of measurements or inputs can improve the accuracy or usability of the measured parameter. Many ions are affected by changes in the pH of a solution, chlorine and fluoride are two commonly measured examples. Accurate measurements are only possible if both parameters are measured and the appropriate compensation algorithms are processed. Differential conductivity measurements are also common in filtration and reverse osmosis applications, with % rejection across the membrane being the desired output. The Model C22’s processing power can easily handle these or other custom measurements.

The **2.5”X 1.75” Backlit LCD Home Menu** displays the measured parameter, engineering units, % output and temperature for each measurement. Four menus provide access to all of the C22’s functions. The Buffer menu provides for calibration and sensor standardization. The Set Up menu allows access to the setpoints, ranges and other channel related features. The Status menu displays raw sensor input data. The Configuration menu assigns parameters to the relays, 4-20 outputs and control functions. Each menu can be password protected.

The **Model C22** is a line powered instrument, 110/220 VAC, and can also be powered with 24 VDC. The polycarbonate NEMA 4X enclosure is the convenient ½ DIN size that can be panel mounted, pipe or handrail mounted. The 4-20 mA outputs are isolated; up to four of the outputs can be current outputs with two as PID control outputs. The field configurable SPDT relays are rated for 230VAC/5A or 30VDC/5A resistive maximum.

pH	7.00
_ 50.0%	23.8°C
Cond	750.0 µS
25.0%	24.1°C

### Isolated Outputs

Up to 4 independent  
4 to 20 mA signals  
and 2 PID outputs

#### Assignable to:

PV #1 or PV #2

Temperature

SENTINEL Diagnostic

Differential

Average

Ratio



### Relays

Up to (8) SPDT relays  
with Clocks and Timers  
Pulse Width Modulation  
230VAC/30VDC/5A

# Model C22 Controller

## Specifications

### Measurement Range

pH:	-2 to 14.5 pH
ORP:	-1000 to 1000 mV
Specific Ion:	0.1 to 1000 ppb, ppm, ppt
Dissolved O2:	0 to 40 ppm, mg/l or % saturation
Conductivity:	0 to 2 Siemens
Resistivity:	0 to 2 meg-ohms 0 to 20 meg-ohms
Turbidity:	0 to 250 NTU 0 to 500 NTU 0 to 1000 NTU 0 to 4000 NTU

### Display

Menu driven 2.5" X 1.75" backlit Super-twist LCD, The main menu displays ;

- (1) Process Variable Identity,
- (2) Process Value and Engineering Units,
- (3) Percent 4-20 mA Output,
- (4) Temperature in °C or °F

### Operating Temperature

-20° C to 70° C (-4° F to 158° F)

### Temperature Compensation

Automatic with RTD, -30°C to 140°C (-22°F to 284°F) Accuracy within +/- 0.1° C from 0° to 100°C (32°F to 212°F).

### Outputs

4-20 mA or 20-4 mA, linear and expandable. Up to a maximum of four outputs and two PID outputs.

RS232, RS485

Optional USB Datalogger

### Input Power

110/220 VAC @ 50-60Hz, Optional +24 VDC nominal @ 0.25A

### Relay Ratings (optional)

Up to (8) SPDT, 230VDC / 5A or 30 VDC/5A resistive maximum.

### Max Loop Impedance

800 ohms @ 24 VDC for 4-20 mA approximately 800 ohms on additional outputs.

### Accuracy

+/- 0.10% of full scale

### Linearity

+/- 0.05% of full scale

### Sensitivity

+/- 0.05% of full scale

### Repeatability

+/- 0.1%

### Response Time

T90 in 1 second

### Noise Rejection 50/60 Hz

Greater than 70 db

### Input / Output Isolation

Maximum 300 volts between process input and any 4-20 mA output. No Isolation between inputs on multiple channel instruments.

### Control Functions

PID, PWM, Timers and programmable AND/OR logic functions

### Enclosure

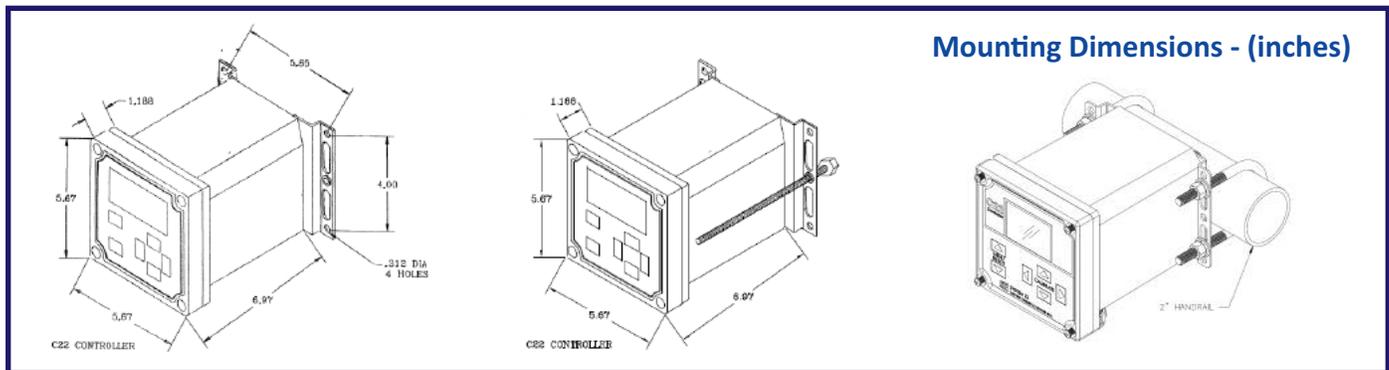
NEMA 4X, weatherproof, ½ DIN,

(L x W x D) 5.7" X 5.7" X 7.0"

(14.4cm X 14.4cm X 17.8cm)

### Shipping Weight

4 lbs (1.85kg)



Specifications subject to change without notice.

### Represented by:

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