

## Overview

WCT Series controllers maintain cooling tower water at correct conductivity by automatically bleeding water at high solids levels and adding low conductivity make-up water.

The WCT Series models are low cost, microprocessor-based, menu driven industrial controllers. Exceptionally versatile, units are easily customized on site.

This series offers models as simple bleed-and-feed controllers to units including fully programable 28-day dual biocide additions, lockout timer and flow switch. Intermittent sampling is available to facilitate inexpensive installation costs on small towers.



# WCT Series Cooling Tower Controllers

## Summary of Benefits

- Simultaneous control of chemical feed inhibits corrosion, solids precipitation, and scale build up.
- Automatic addition of biocide prevents growth of algae or dangerous bacteria.
- Four methods of chemical feed are available via the program menu, without mechanical switches, rewiring, or probing inside the instrument.
- One unit takes the place of four separate models, and addresses applications from the typical to the unusual.



## WCT300 Series

### Feed & Bleed Cooling Tower Controller

- **Four chemical feed options**
  - Feed & bleed, with or without feed lockout timer
  - Feed after bleed has finished, as a percentage of time
  - Feed as a percentage of time elapsed
  - Feed as a percentage of make-up water
- **Contact divider accumulates up to 100 pulses.** Accommodates a wide range of water meters.
- **Timed sample conductivity control.** Intermittent sampling reduces installation costs on evaporative cooler applications or small cooling towers.
- **At-a-glance status display.** Best of both worlds; bright backlit digital LCD display also acts as an analog bar graph for a continuous visual summary of measurement versus set point.
- **Direct or inverse set point operation.** For applications that require reverse set point capability, such as a closed loop chilled water cooler. Programmed via easy menu option, direction is indicated at all times on controller parameter displays.
- **Self-Diagnostics.** Software, electronics and sensor are constantly monitored without having to take the controller off line. Any error messages are displayed.
- **Programmable access code.** Secures set point parameters. Program any four digit access number or disable the code requirement.
- **Choice of output modes.** Each output may be set to run automatically or manually, or be shut off.



## WCT310 Series

### Feed & Bleed Cooling Tower Controller with Biocide Additions

The WCT310 Series offers all of the WCT300 features as well as:

- **Programmable biocide additions:**
  - Choice of 1, 7, 14, or 28-day cycles.
  - Able to: add a single biocide at any time or dual alternating biocides or dual independent biocides
- **Also able to add a biocide up to 10 times a day.** Ideal for bromination or towers with small volumes and large makeup demand.
- **Lockout timer.** Prevents waste of chemistry by preventing blowdown immediately after a biocide addition.
- **Flow totalizer.** If feeding is based on water meter/contacter, the volume of make-up water will be totalized. Especially important if the flow meter is inaccessible.
- **Conductivity based biocide prebleeds.** Ensure acceptable conductivity level prior to a biocide addition and lockout and is user programmable.
- **Powered alarm output relay.** Triggered by low conductivity, high conductivity or no flow condition, the relay will activate whatever alarm device has been installed.

#### Extended Capabilities

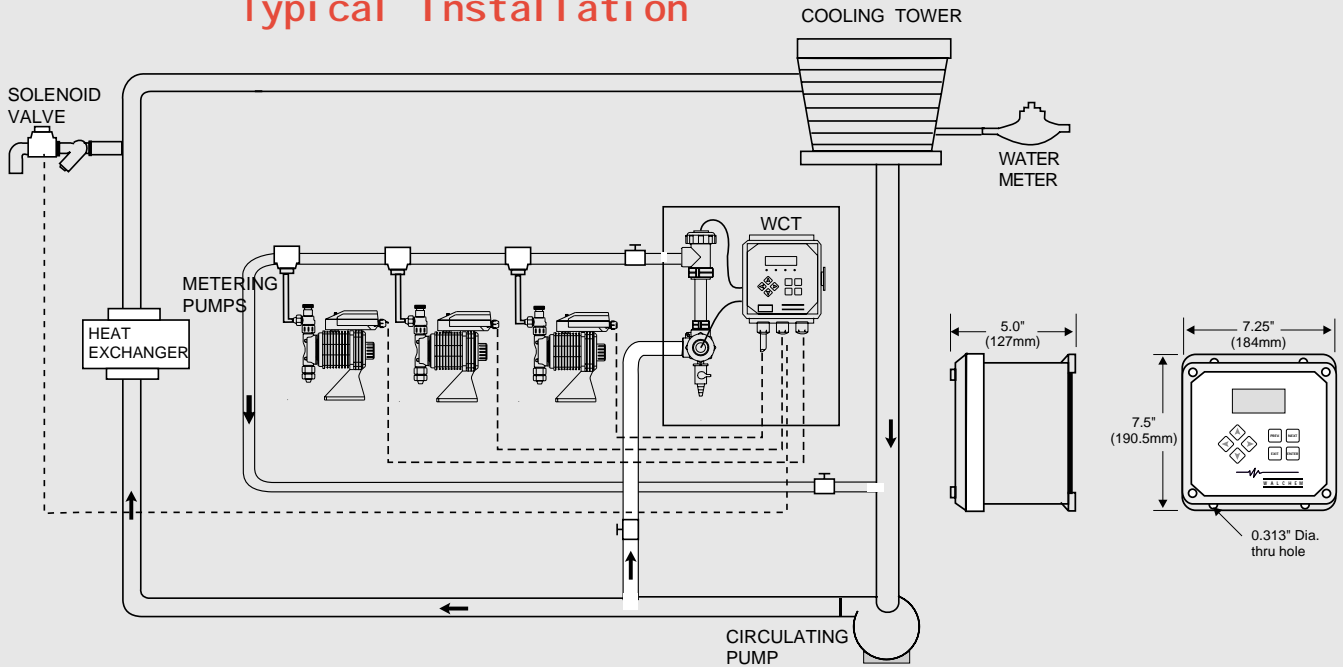
Conductivity electrodes are available in several mounting styles and pressure ratings.

Optional isolated 4-20mA output proportional to the conductivity reading.

Optional integral flow switch.

Accessories include flow meters, flow switches, solenoid valves, chart recorders, pumps and tanks.

# Typical Installation



Specifications

## INPUTS

Power	115VAC ±15% 50/60 Hz, 60mA	230VAC ±15% 50/60 Hz, 30mA
Signals	Flow meter- isolated, dry contact closure required (relay, reed switch or Hall Effect) 0 - 300 Hz Flow switch- isolated, dry contact closure required (reed switch) 0 -10 Hz	

## OUTPUTS

Mechanical relays	@ 115 VAC, 10A resistive, 1/8 HP @ 230 VAC, 6A resistive, 1/8 HP
For WCT300: For WCT310:	Two powered relays (bleed & feed) Five powered relays (bleed, feed, dual biocide & diagnostic alarm)
4-20mA (Optional)	Fully isolated, internally powered 600Ω max. resistive load. Resolution 0.001% of span, accuracy ± 1% of reading

## MEASUREMENT PERFORMANCE

Conductivity Range	0-10,000 µS/cm
Resolution	1 µS
Accuracy	10-10,000 µS/cm ±1% of reading 0-10 µS/cm ±20% of reading
Temperature Range	32 to 158°F ( 0 to 70°C)
Resolution	0.1 degree
Accuracy	±1% of reading

## MECHANICAL (controller)

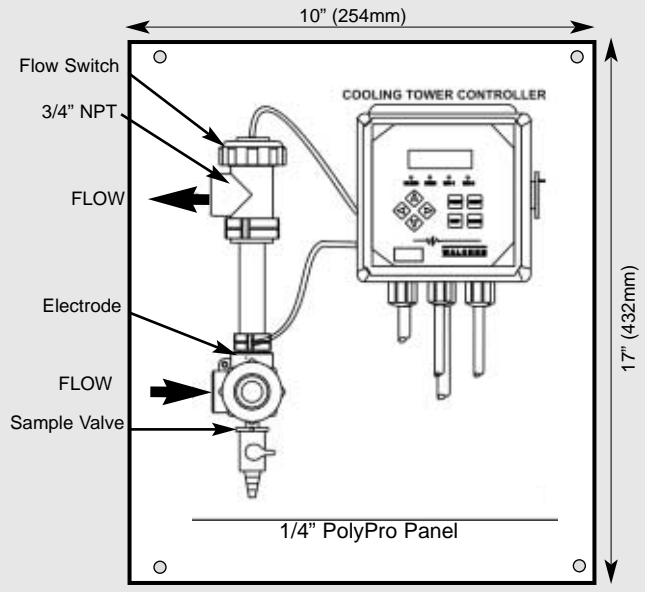
Enclosure	Fiberglass
NEMA rating	NEMA 4X (IP65)
Display	2 x 16 character backlit liquid crystal
Ambient temperature	32 to 158°F (0 to 70°C)
Shipping weight	10 lbs (4.5 kg) (approximately)

## FLOW SWITCH MANIFOLD & SENSOR SPECIFICATIONS

<b>Standard:</b>	
Process connections	3/4" NPTF
Temperature	140°F (60°C)
Pressure	150 psi up to 100°F 50 psi at 140°F

### High Pressure:

<i>Materials of construction</i>	
Standard electrode	GFRPP, Graphite, FKM
High pressure electrode	316SS, PVDF
Flow switch manifold	GFRPP, PVC, Isoplast, FKM
PP/Stainless steel electrode	GFRPP, 316SS, FKM
High pressure manifold	Carbon steel, Steel



## AGENCY CERTIFICATIONS

UL	UL508
CSA	C22.2#142
CE Safety	EN 61010-1
CE EMC	EN 61326 Annex A*

Note: For EN61000-4-3, the controller met performance criterion B.  
Note: For EN61000-4-5, the controller met performance criterion C.  
\*Class A equipment: Equipment suitable for use in establishments other than domestic and those directly connected to a low voltage (100-240VAC) power supply network which supplies buildings used for domestic purposes.

**WCT300 -  
or WCT310**

(Voltage)  (Output)  (Sensor)

**VOLTAGE**

- 1 = 115 VAC, prewired
- 4 = 115 VAC, conduit
- 5 = 230 VAC, conduit

**OUTPUT**

- N = No data output
- 4 = Isolated 4-20 mA output

**SENSOR**

- N = No electrode
- 1 = PP/Graphite electrode & tee, 20ft. (6.1m) cable (for in-line or submersion mounting)
- 2 = PP/Graphite electrode & flow switch manifold mounted on PP panel, 5 ft. (1.5m) cable
- 4 = High pressure electrode (up to 300 psi), 20 ft. (6.1m) cable
- 5 = High pressure electrode & flow switch manifold on PP panel, 5 ft. (1.5m) cable
- 6 = PP/SS electrode & tee, 20 ft. (6.1m) cable
- 7 = PP/SS electrode & flow switch manifold on PP panel, 5 ft. (1.5m) cable



WEBMASTER GENERAL INDUSTRIAL CONTROLLER



WEBMASTER COOLING TOWER AND BOILER CONTROLLER



METERING PUMPS AND ACCESSORIES



WEBALERT REMOTE MONITORING & DATALOGGING

Walchem designs and manufactures an integrated line of analytical control, sensing and feed devices.

Our in-house engineering is driven by quality, technology and innovation.

For more information on the entire Walchem product line,

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