

## Overview

Walchem's WBL Series controllers keep boiler water at the correct conductivity by automatically blowing down water at high solids levels and adding low conductivity make-up water.

Simultaneous control of chemical feed inhibits corrosion, solids precipitation and scale build-up. Intermittent sampling is available to facilitate inexpensive operating costs on small boilers.

The WBL controller features four methods of chemical feed via the program menu. The WBL300 is a lower cost controller with one feed/alarm output. The WBL310 has four feed/alarm outputs, giving the ultimate flexibility for your chemical feed program.

The WCM Series Condensate Monitors control the conductivity of a boiler's condensate. When conductivity of the condensate exceeds an operator-adjustable set point, the unit initiates the opening of a diverter valve to prevent contaminated condensate from returning to the boiler or sets off an alarm, or both.

WBL boiler controllers and WCM condensate monitors are low cost, microprocessor-based, menu-driven industrial controllers. Exceptionally versatile, WBL and WCM units are easily customized on site.



## WBL/WCM Series

### Boiler Conductivity Controller & Condensate Monitor

#### Summary of Benefits

- Automatic temperature compensated conductivity ensures high accuracy.
- Unique time proportional blowdown method of intermittent sampling reduces water consumption.
- Rechecks conductivity after sample valve closes to eliminate flushing problems.
- Up to four chemical feed relay outputs when the WBL310 is specified.
- Choice of either a contact water meter or Hall Effect paddlewheel.

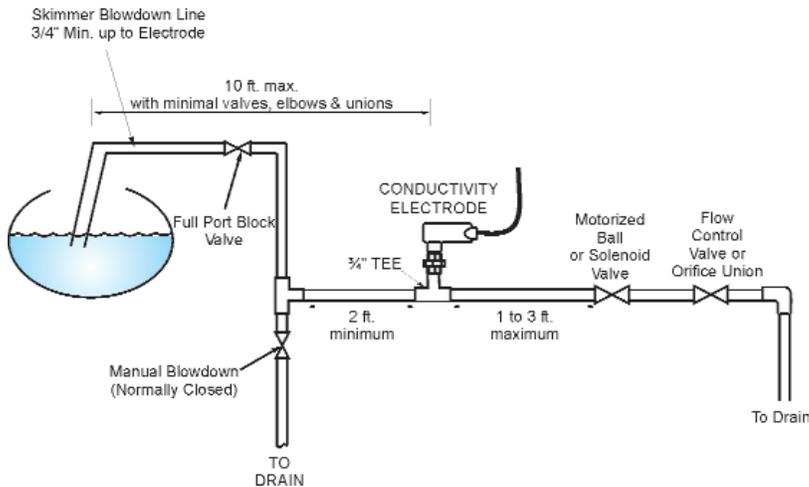
**W A L C H E M**



# WBL300 Series

## Boiler Conductivity Controller - Blowdown & Chemical Feed

### Recommended Intermittent Sampling



#### ■ Four chemical feed options

- Feed & blowdown simultaneously, with or without feed lockout timer
- Feed after blowdown has finished, as a percentage of blowdown time
- Feed as a percentage of time elapsed
- Feed as a percentage of make-up water

■ **Timed sample conductivity control.** Intermittent sampling rather than continuous sampling reduces operating costs on small boilers.

■ **Detects flashing during timed samples.** Rechecks the conductivity after the sample valve closes and reopens if the reading is now above set point.

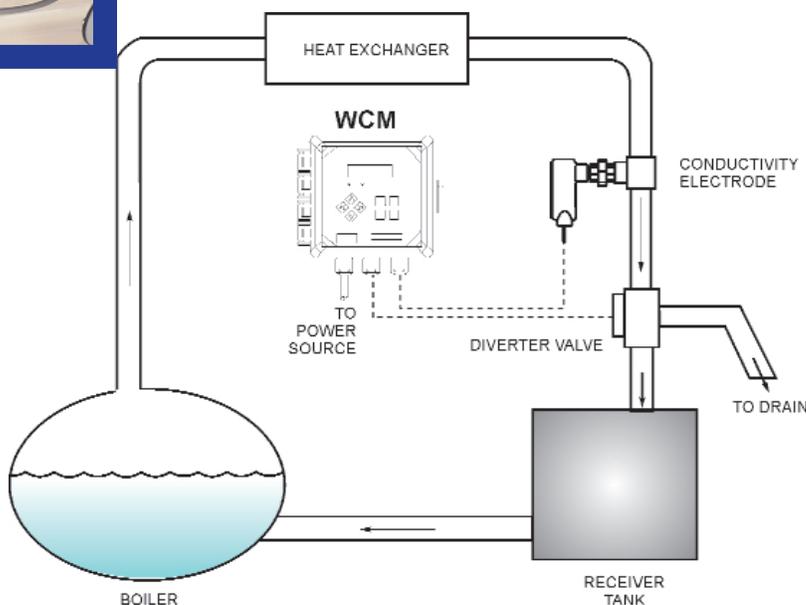
#### ■ Choices of blowdown modes for timed samples.

- In intermittent sampling, the blowdown valve is open until the set point conductivity is reached.
- In intermittent with timed blowdown, the blowdown valve opens for a set programmable time.
- In intermittence with time proportional blowdown, the blowdown valve opens for a variable time that is calculated based on the conductivity of the sample versus the set point.



# WCM300 Series

## Boiler Condensate Monitor



Typical Installation

■ **Choice of measurement units.** To customize your control or complement your calibration procedures, conductivity may be displayed as  $\mu\text{S}$  or PPM; temperature as  $^{\circ}\text{F}$  or  $^{\circ}\text{C}$ .

■ **Choice of output modes.** Each output may be programmed to run automatically, manually, or to be shut off entirely.

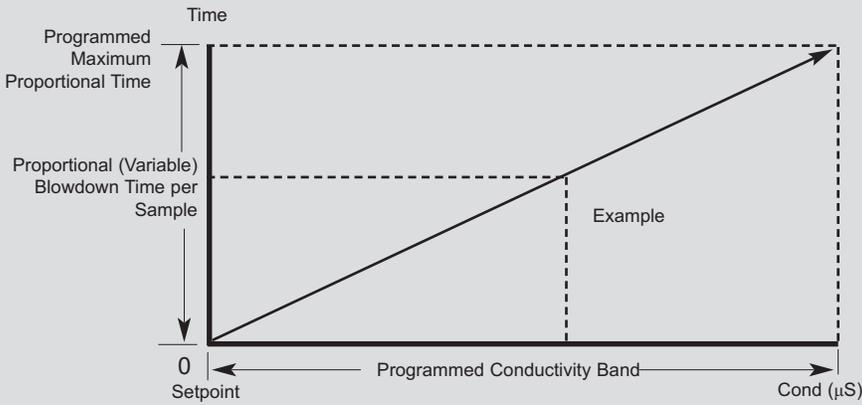
■ **At-a-glance status display.** Best of both worlds; bright backlit digital LCD display also acts as an analog bar graph for a continuous visual summary of measurement versus set point.

■ **Direct or inverse set point operation.** For applications that require reverse set point capability. Programmed with easy menu-option. Direction is indicated at all times on controller parameter displays.

■ **Programmable access code.** Secures set point parameters. Program any four digit access number or disable the code requirement entirely.

■ **Self diagnostics.** Software and electronics are constantly monitored, without having to take the controllers off-line. Any operator-action-needed messages are displayed.

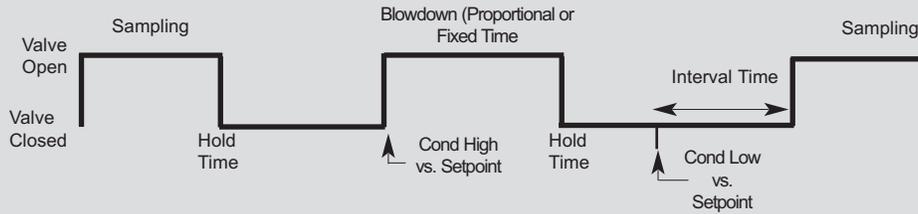
## Time Proportional Control:



Walchem offers a unique time proportional control algorithm for timed (intermittent) sampling. This algorithm allows the controller to measure the conductivity of the boiler water sample with the control valve closed (which eliminates flashing problems). After getting an accurate reading of the conductivity, the controller performs a timed blowdown that will vary in its duration, extending the blowdown time as the conductivity moves further from the setpoint.

Specifications

## Intermittent Sampling Sequence:



## INPUTS

Power	110-120 VAC 50/60 Hz, 60mA	220-240 VAC 50/60 HZ, 30mA
Signals	(Optional - WBL only) Flow meter- isolated, dry contact closure required (relay, reed switch or Hall Effect) 0-300 Hz	

## OUTPUTS

Mechanical relays	@ 120 VAC, 10A resistive, 1/8 HP @ 240 VAC, 6A resistive, 1/8 HP Internally powered w/line voltage
4-20mA (Optional)	Fully isolated, internally powered 600Ω max. resistive load Resolution 0.001% of span, accuracy ± 1% of reading

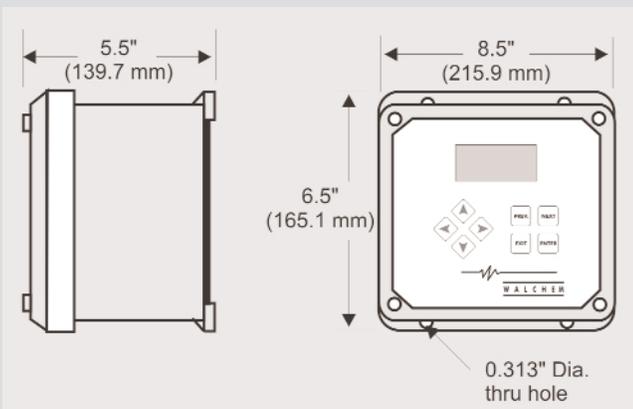
## MEASUREMENT PERFORMANCE

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 392°F (0 to 200°C)
Resolution	0.1 degree
Accuracy	±1% of reading

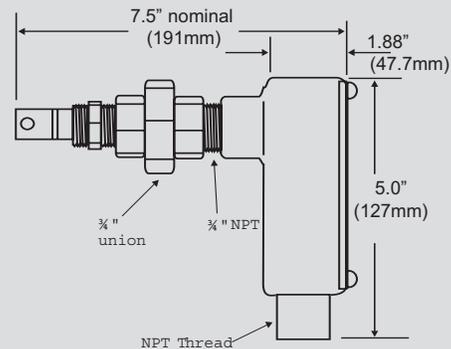
## MECHANICAL

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	7 lbs (3 kg) (approximately)

## Controller Dimensions



## Sensor Dimensions



<b>WBL3</b>	<input type="checkbox"/>	<b>0</b>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	(Control)			(Voltage)	(Output)	(Sensor)
<b>WCM300</b>	-	<input type="checkbox"/>				
		(Voltage)	(Output)	(Sensor)		

## CONTROL

- 0 = Two powered relays, one Blowdown & one Feed/Alarm
- 1 = Five powered relays, one Blowdown & four Feed/Alarm

## VOLTAGE

- 1 = 120 VAC, prewired
- 4 = 120 VAC, conduit
- 5 = 240 VAC, conduit

## OUTPUT

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

## SENSOR

- N = No electrode
- 5 = Standard electrode (up to 250 psi)

## AGENCY CERTIFICATIONS

UL	UL 61010-1, 2nd Edition
CSA	C22,2 No.61010-1 2nd Edition
CE Safety	EN 61010-1 2nd Edition
CE EMC	EN 61326 :1998 Annex A*

Note: For EN61000-4-6,3 the controller met performance criteria B.

\*Class A equipment: Equipment suitable for use in establishments other than domestic, and those directly connected to a low voltage (100-240 VAC) power supply network which supplies buildings used for domestic purposes.



WEBMASTER GENERAL INDUSTRIAL CONTROLLER



WEBMASTER COOLING OTTER 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, visit : [www.walchem.com](http://www.walchem.com)

# WALCHEM

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