

Overview

Walchem's WDB300 Series controllers feature dual conductivity input channels for use in control of boilers under 250 psi. The controller automates blowdown and chemical feed of two boilers within 500 feet of each other.

WDC300 Series monitor the condensate return of two nearby boilers and will automatically divert contaminated condensate.

Both WDB300 Series units offer precise conductivity monitoring and control to keep boiler water at the correct conductivity. Dual input is more cost effective than two single input models. Optional single or dual isolated 4-20 mA output is available.



WDB/WDC Series Dual Input Boiler Controllers & Condensate Monitors

Summary of Benefits

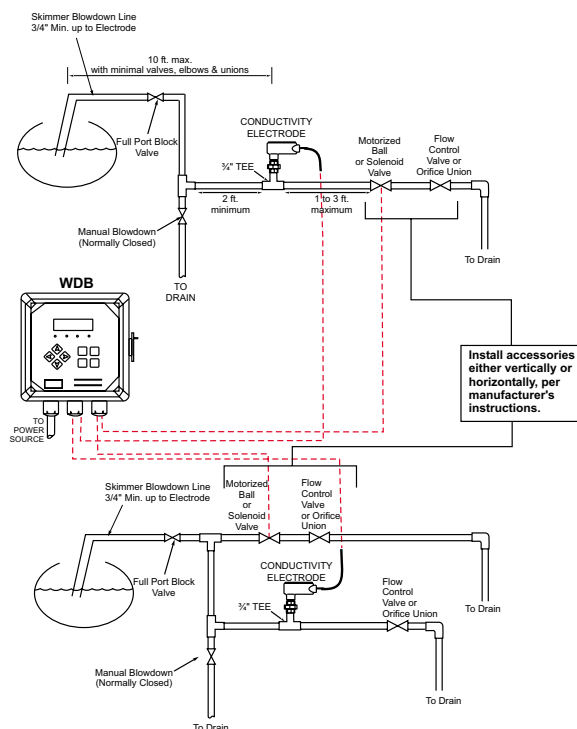
- Controls or monitors two boilers up to 500 feet apart.
- Automatic temperature compensated conductivity ensures high accuracy.
- Unique time proportional blowdown method of intermittent sampling reduces water consumption.
- Rechecks conductivity after sample valve closes to eliminate flashing problems.



WDB300 Series

Dual Input Boiler Conductivity Controller

Typical Installation



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 intermittment 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.



WDC300 Series

Dual Input Condensate Monitor

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

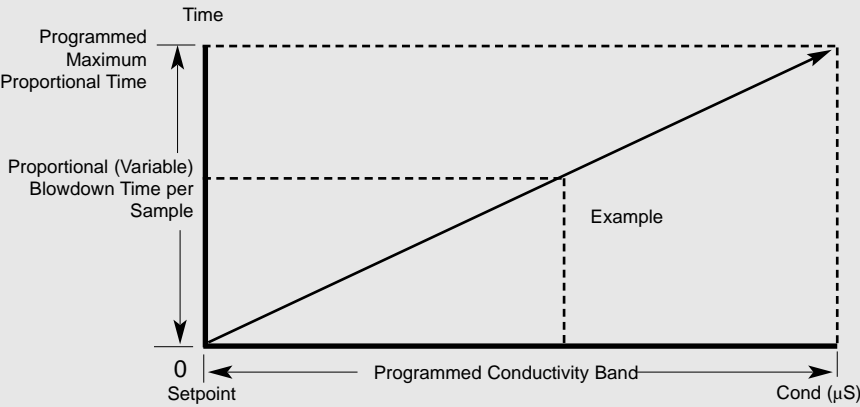
■ **Choice of output modes.** Each output may be programmed to run automatically, manually or to be shut off.

■ **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.

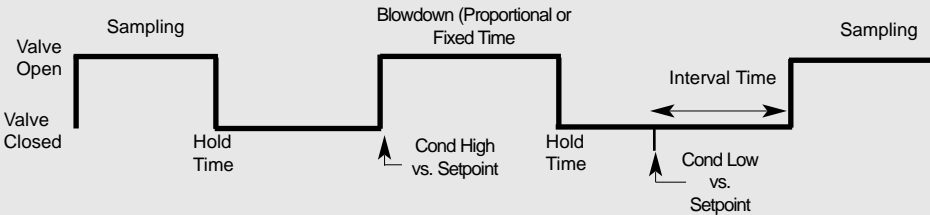
Time Proportional Control:



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	115VAC ±15% 50/60 Hz, 60mA	230VAC ±15% 50/60 HZ, 30mA
Signals	(Optional - WDB only) Flow meter- isolated, dry contact closure required (relay, reed switch)	

OUTPUTS

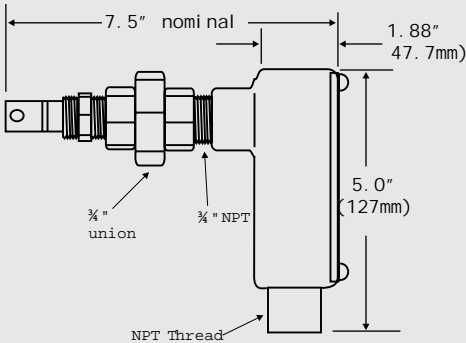
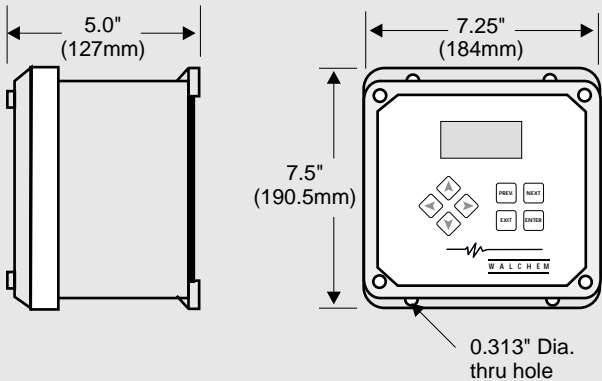
Mechanical relays	@ 115 VAC, 10A resistive, 1/8 HP @ 230 VAC, 6A resistive, 1/8 HP
4-20mA (Optional)	Fully isolated, internally powered 600Ω max. resistive load. Resolution 0.001% of span, accuracy ± 1% of reading

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	0.01 degree
Accuracy	±1% of reading

MECHANICAL

Enclosure	Thermoplastic
NEMA rating	NEMA 4X (IP65)
Display	2 x 16 character backlit liquid crystal
Ambient temperature	32 to 158°F (0 to 70°C)
Storage Temperature	-20 to 180°F (-29 to 80°C)
Shipping weight	10 lbs (4.54 kg) (approximately)
Electrode	3/4" NPTM thread 250 psi maximum pressure Pt 1000 temperature element



WDB300 - or WDC300

☐ ☐ ☐
 (Voltage) (Output) (Sensor)

VOLTAGE

1 = 115 VAC, prewired

4 = 115 VAC, conduit

5 = 230 VAC, conduit

OUTPUT

N = No data output

4 = Single Isolated 4-20 mA output

2 = Two Isolated 4-20 mA outputs

SENSOR

N = No electrode

5 = Standard electrodes (up to 250 psi)

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.



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, visit : www.walchem.com

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