WDIS400 Series

Walchem's WDIS Series controller will reliably and economically control your water treatment disinfection process. The controller includes four standard sensor input options (free chlorine/bromine, chlorine dioxide, ozone, peracetic acid) or can be configured to use a variety of other types or ranges of Walchem disinfection sensors, such as hydrogen peroxide or total chlorine.

The WDIS Series controller takes the guesswork out of your disinfection process. The chemical concentration is continuously monitored and controlled to the precise range required for proper system control and regulatory compliance.

Designed to be flexible and versatile, the WDIS Series controller is the ideal solution for disinfection applications in cooling towers, food & beverage, drinking water, wastewater and swimming pools.

Integrated datalogging is available to validate system performance. A USB memory stick is all that's needed to extract data and event logs that include disinfection sensor measurements and relay status.

Summary of Key Benefits

Versatility for a Broad Range of Applications
Choose from four standard industrial grade sensors in one controller (chlorine/bromine, chlorine dioxide, ozone, peracetic acid) or configure the controller to use a variety of other disinfection sensors. Relays can be configured for Hi Alarm, Low Alarm, Out-of-Range Alarm, In-Range Output or Probe Wash, providing unmatched flexibility.

Economical and Simple to Use
WDIS controllers are economically priced and do not require any costly reagents. The rugged NEMA 4X enclosure and panel mounted flow assembly has only two process connections for quick and easy installation.

Built-in Safety Features
Programmable output limit timers prevent run-away chemical addition. Digital Interlock Input may be used from a flow switch or level input to prevent chemical addition based on a stagnant sample, or control of an empty batch tank. The alarm relay notifies plant personnel of alarm conditions as soon as they occur.

Simple, Integrated Data Collection
Download stored data from the controller to a USB stick. Use the data to simply and easily validate system performance, document compliance and reduce liability. The data and event logs show disinfection levels, as well as accumulated chemical feed and relay activation times.

W A L C H E M

IWAKI America Inc.

Features

Versatile relay configuration
- Control outputs can be set as high or low set points via keypad. Auxiliary outputs can be set as:
  - High alarm
  - In-range output
  - Out of range alarm
  - Low alarm
  - Probe wash

Probe wash feature
- For applications that require frequent electrode cleaning, automatic probe wash extends the time between maintenance interruptions

Programmable access code
- Secures set point parameters and prevents un-authorized use. Program any four digit access number or disable the code requirement.

Display status at a glance
- Look at any set point without interrupting control or entering an access code. Top level view:
  - Analog graph relative to set point
  - Disinfection sensor values
  - Status of alarms, outputs

Self diagnostics
- Software and electronics are constantly monitored without having to take the controller off-line. Any error messages are clearly displayed. A fifth relay is activated by any diagnostics failures.

USB Flashstick Support
- Standard for data logs, event/relay and reset logs, and user configuration file import/export

Standard Disinfection Sensors | Free Chlorine/Bromine • Chlorine Dioxide • Peracetic Acid • Ozone

- **Long-lasting amperometric electrode with rugged membrane**

- **Integrated temperature compensation**

- **Relatively insensitive to changes in sample flow rate**

- **Large openings in flow cell prevent clogging**

- **Excellent long-term stability**

Free Chlorine /Bromine
Chlorine and Bromine are the most common disinfectants used in water treatment. They're readily available, inexpensive, and typically used in drinking water, swimming pools, cooling towers and process water applications.

Chlorine Dioxide
Chlorine dioxide is a very strong oxidant that is often used for disinfection in drinking water, food & beverage, and cooling tower applications. It's preferred for some uses since it doesn't affect the taste and odor of the water being treated.

Peracetic Acid
Peracetic acid has been used for decades as a disinfectant in the food & beverage industry. Its use has grown to many other applications including bottling, CIP (Clean In Place), laundry, pulp & paper, and agriculture.

Ozone
Ozone is the strongest oxidant used in water treatment. it is commonly used in drinking water (disinfection, oxidation, taste and odor control), food & beverage, swimming pools (therapy pools), zoos and aquariums.
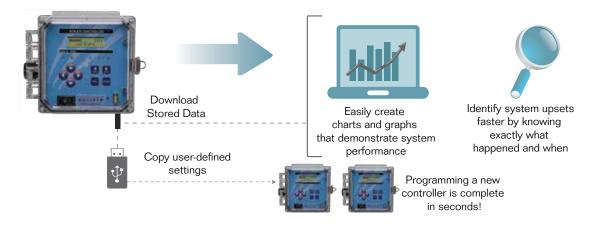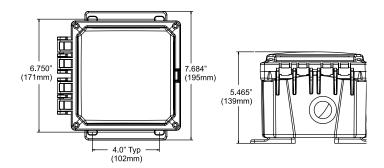
USB Features

Integrated datalogging collects analytical measurements at 10 minute intervals and captures all relay activations.

Download Stored Data

Copy user-defined settings

Easily create charts and graphs that demonstrate system performance

Identify system upsets faster by knowing exactly what happened and when

Use stored data to validate system performance

Programming a new controller is complete in seconds!

Mechanical (controller)

Enclosure	Polycarbonate
NEMA Rating	NEMA 4X (IP65)
Display	2 x 16 character backlit liquid crystal
Ambient Temperature	32 to 122°F (0 to 50°C)
Shipping weight	26 lbs (11.8 kg) (approximately)

Inputs

Input Power:
100-240 VAC, 50/60 Hz, 8A
Fuse: 1.0 ampere, 5 x 20 mm

Input Signals:
Sensor   ±2000 mV
Interlock (Optional) Isolated, dry contact closure required(i.e. flow, level)

Outputs

Control 1, Control 2 (On/Off):
Two internally powered relays, 6A (resistive), 1/8 HP
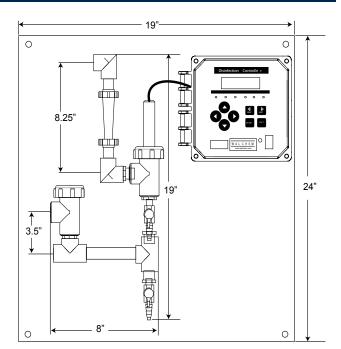All relays are fused together as one group, total current for this group must not exceed 6A

Control 3, Control 4, Alarm:
Dry contact relays, 6A (resistive), 1/8 HP

4-20 mA 1 or 2: Internally powered, Fully isolated
(optional) 600 Ohm max resistive load
Resolution .001% of span
Accuracy ± 1% of reading
Sensor Power: ±5VDC, 5 mA

Sensor Specifications

Mechanical

Operating Temperature Chlorine Dioxide, Ozone:
5 to 50°C (41 to 122°F)
Chlorine/Bromine, Peracetic Acid:
5 to 45°C (41 to 113°F)
Operating pressure 0 to 1 atm (0 to 14.7 psi)
Storage
Sensor: Frost-protected, dry and without electrolyte no limit at >5 to <40°C (>41 to <104 °F)
Membrane cap: Used membrane caps can not be stored!
Electrolyte: in original bottle protected from sunlight min. 1 year at >5 to <25°C (>41 to <77°F)
Flow cell inlet 1/4" NPTF
Flow cell outlet 3/4" NPTF

Materials of Construction

Sensor Body PVC, Polycarbonate,Silicone Rubber, PTFE, SS, PEEK
Flow cell body Isoplast
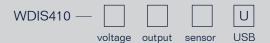**O-ring** FKM

Electrical

Power requirements ±5 VDC, 5 mA maximum
Signal 0 to -2000 mVDC
Max cable length 305 m (1000 ft)
Cable required 2 twisted pair, 24 AWG shielded,

	Chlorine Dioxide	Peracetic Acid	Ozone	Free Chlorine/ Bromine	Free Chlorine/Bromine Extended pH Range
Range	0-16.75 mg/l	0-1675 mg/l	0-16.75 mg/l	0-13.25 mg/l	0-12.50 mg/l
Resolution	0.01 mg/l	1 mg/l	0.01 mg/l	0.01 mg/l	0.01 mg/l
Cross sensivity	Free chlorine (5%), Ozone		Free chlorine (5%)	Ozone, ClO2	Ozone, ClO2
Flow rate of sample	30 to 100 liters/hr (7.9 to 26.4 gallons/hr)				
pH range of sample	1.0 to 11.0	1.0 to 7.0	2.0 to 11.0	6.8 to 8.0	4.0 to 12.0
Conductivity range of sample	50 to 10,000 µS/cm			Up to 4% NaCl	50 to 10,000 µS/cm
Response time	30 seconds	3 minutes	30 seconds	30 seconds	2 minutes

WDIS410 — [ ] [ ] [ ] [U]
           voltage output sensor USB

VOLTAGE
1 = 120 VAC, prewired w/ USA power cord & 6" pigtails
5 = Hardwired, cable glands

OUTPUT
N = No data output
4 = One (1) Isolated 4-20 mA output
2 = Two (2) Isolated 4-20 mA outputs

SENSOR (consult factory for other sensor types & ranges)
N = No sensor
1 = Free chlorine/bromine sensor with flow cell & 20 ft. cable
2 = Chlorine dioxide sensor with flow cell & 20 ft. cable
3 = Ozone sensor with flow cell & 20 ft. cable
4 = Peracetic acid sensor with flow cell & 20 ft. cable
5 = Free chlorine/bromine sensor with flow manifold & 5 ft.
    cable on panel
6 = Chlorine dioxide sensor with flow manifold & 5 ft. cable
    on panel
7 = Ozone sensor with flow manifold & 5 ft. cable on panel
8 = Peracetic acid sensor with flow manifold & 5 ft. cable
    on panel
A = Free chlorine/bromine sensor, extended pH range
    with flow cell & 20 ft. cable
B = Free chlorine/bromine sensor, extended pH range
    with flow cell & 5 ft. cable on panel

USB FEATURES
U = Integrated datalogging, event/reset logging, and
    configuration file import/export

Note: Refer to the Disinfection Sensor brochure for
additional sensor options. Order the WDIS controller
with sensor option "N" then order the appropriate
sensor separately.

AGENCY CERTIFICATIONS
Safety   UL 61010-1:2012 3rd Ed.
         CSA C22.2 No. 61010-1:2012 3rd Ed.
         IEC 61010-1:2010 3rd Ed.
         EN 61010-1:2010 3rd Ed.
EMC   IEC 61326-1:2005
         EN 61326-1:2006

Note: For EN61000-4-6 & EN61000-4-3 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®ONE
WebMasterONE is the most advanced online cooling tower and
boiler controller in the water treatment industry. The flexible
multi-I/O platform allows you to control multiple cooling towers,
boilers, closed loops, and condensate lines with just one controller.
An extensive assortment of integrated communications and data
handling features are included that enable water treatment
professional to provide more effective water management services
to their customers.

Metering Pumps
The E-Class is the most innovative and comprehensive metering
pump product line in the world. Over 50 years of pump experience
and a commitment to superior mechanical design has led to
development of many industry firsts, including 360 stroke-per-
minute technology, IP67 waterproof construction, and the world's
highest capacity solenoid metering pumps.

WIND WebMaster® Industrial Water Controllers
Walchem's WebMaster Industrial (WIND) Controller sets a new
standard for Industrial Water Treatment Controllers. WIND has
a flexible multi-I/O platform, a wide range of analytical sensor
measurement capabilities, and an extensive assortment of
integrated communications and data handling features.

WebAlert® Remote Monitor
Walchem's WebAlert is the first stand alone remote monitoring
device that can web enable your installed equipment without
having to replace or upgrade it.

ABOUT US

Walchem integrates its advanced sensing, instrumentation, fluid
pumping and communications technologies to deliver reliable and
innovative solutions to the global water treatment market.
Our in-house engineering is driven by quality, technology and
innovation. For more information on the entire Walchem
product line, visit: www.walchem.com