Conductivity, pH/ORP & Disinfection

W100P Series Controllers

The W100P series provide an economical and reliable way to keep your water treatment program under control.

TYPICAL APPLICATIONS

- Wastewater neutralization & disinfection
- Food and Beverage disinfection
- Potable water treatment
- Swimming pools & spas
- Cooling tower biocide control
- Metal finishing & printed circuit board
- Irrigation & fertigation
- RO Systems

KEY BENEFITS

- Large display with icon based programming makes setup easy
- Compact ¼ DIN panel mount enclosure
- Universal sensor input provides extraordinary flexibility; the same controller can be used with almost any type of sensor needed; conductivity (contacting and electrodeless), amplified pH/ORP/ISE, or disinfection
- Two pH/ORP/ISE models available for use with non-amplified electrodes with or without a BNC connector
- Multiple language support allows simple setup no matter where your business takes you
- Four control outputs allow the controller to be used in more places than other entry level models

Complete flexibility in the function of each relay

- On/Off Setpoint
- Time Proportional Control
- Pulse Proportional Control (when purchased with 4-20mA or pulse solid state opto outputs)
- In-range or Out-of-range activation
- Timer-based activation
- Activation based upon the state of a contact closure
- Timed activation triggered by a Water Contactor or Paddlewheel flow meter's accumulated total flow
- Activate with another output
- Alarm
- PID Control (when purchased with 4-20mA or pulse solid state opto outputs)

WALCHEM

IWAKI America Inc.

SPECIFICATIONS

MEASUREMENT PERFORMANCE

	Range	Resolution	Accuracy
0.01 Cell Contacting Conductivity	0-300 µS/cm	0.01 µS/cm, 0.0001 mS/cm, 0.001 mS/m, 0.0001 S/m, 0.01 ppm	± 1% of Reading or 0.01 µS/cm, whichever is greater
0.1 Cell Contacting Conductivity	0-3,000 µS/cm	0.1 µS/cm, 0.0001 mS/cm, 0.01 mS/m, 0.0001 S/m, 0.1 ppm	± 1% of Reading or 0.1 µS/cm, whichever is greater
1.0 Cell Contacting Conductivity	0-30,000 µS/cm	1 µS/cm, 0.001 mS/cm, 0.1 mS/m, 0.0001 S/m, 1 ppm	± 1% of Reading or 1 µS/cm, whichever is greater
10.0 Cell Contacting Conductivity	0-300,000 µS/cm	10 µS/cm, 0.01 mS/cm, 1 mS/m, 0.001 S/m, 10 ppm	± 1% of Reading or 10 µS/cm, whichever is greater
pH	-2 to 16 pH units	0.01 pH units	± 0.01% of Reading
ORP/Ion Selective Electrode	-1500 to 1500 mV	0.1 mV	± 1 mV
Disinfection Sensors	-2000 to 1500 mV	0.1 mV	± 1 mV
	0 - 2 ppm to 0 - 20,000 ppm	Varies with range and slope	Varies with range and slope
Electrodeless Conductivity	500 - 12,000 µS/cm	1 µS/cm, 0.01 mS/cm, 0.1 mS/m, 0.001 S/m, 1 ppm	± 1% of Reading
	3,000-40,000 µS/cm	1 µS/cm, 0.01 mS/cm, 0.1 mS/m, 0.001 S/m, 1 ppm	± 1% of Reading
	10,000-150,000 µS/cm	10 µS/cm, 0.1 mS/cm, 1 mS/m, 0.01 S/m, 10 ppm	± 1% of Reading
	50,000-500,000 µS/cm	10 µS/cm, 0.1 mS/cm, 1 mS/m, 0.01 S/m, 10 ppm	± 1% of Reading
	200,000-2,000,000 µS/cm	100 µS/cm, 0.1 mS/cm, 1 mS/m, 0.1 S/m, 100 ppm	± 1% of Reading
100Ω RTD Temperature	23 to 500°F (-5 to 260°C)	0.1°F (0.1°C)	± 1% of Reading or ± 1°C (whichever is greater)
1000Ω RTD Temperature	23 to 500°F (-5 to 260°C)	0.1°F (0.1°C)	± 1% of Reading or ± 0.3°C (whichever is greater)
10k or 100k Thermistor Temperature	23 to 194°F (-5 to 90°C)	0.1°F (0.1°C)	± 1% of Reading or ± 0.3°C (whichever is greater)
100Ω RTD Temperature	23 to 500°F (-5 to 260°C)	0.1°F (0.1°C)	± 1% of Reading or ± 1°C (whichever is greater)

Temperature °C	0	10	15	20	25	30	35	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
Range Multiplier %	181.3	139.9	124.2	111.1	100.0	90.6	82.5	75.5	64.3	55.6	48.9	43.5	39.2	35.7	32.8	30.4	28.5	26.9	25.5	24.4	23.6	22.9

Note: Conductivity ranges above apply at 25°C. At higher temperatures, the range is reduced per the range multiplier chart.

INPUTS

Power

100-240 VAC, 50 or 60 Hz, 12 VA

Digital Input Signals (1)

State-Type

Electrical: Optically-isolated input.
Provides isolated 9V power.
Current consumption when input is closed: 2.3 mA nominal.

Typical response time: <2 seconds

Devices supported: Any isolated dry contact (i.e. relay, reed switch)

Types: Interlock

Low Speed Counter-Type

Electrical: Optically-isolated input.
Provides isolated 9V power.
Current consumption when input is closed: 2.3 mA nominal.
0-10Hz, 50 msec minimum pulse width

Devices supported: Any device with isolated open drain, open collector, transistor or reed switch

Types: Contacting Flowmeter

High-Speed Counter-Type

Electrical: Optically-isolated input.
Provides isolated 9V power.
Current consumption when input is closed: 2.3 mA nominal.
0-500Hz, 1.00 msec minimum pulse width
Minimum pulse frequency for the rate to be displayed: 0.17 Hz

Devices supported: Any device with isolated open drain, open collector, transistor or reed switch

Types: Paddlewheel Flowmeter

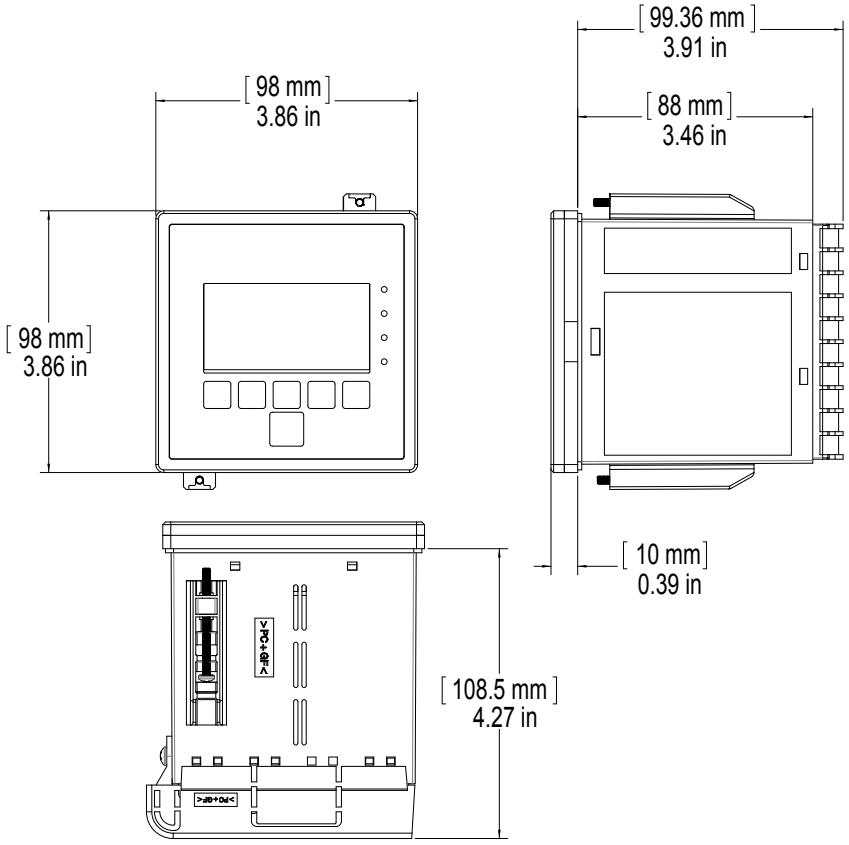
OUTPUTS

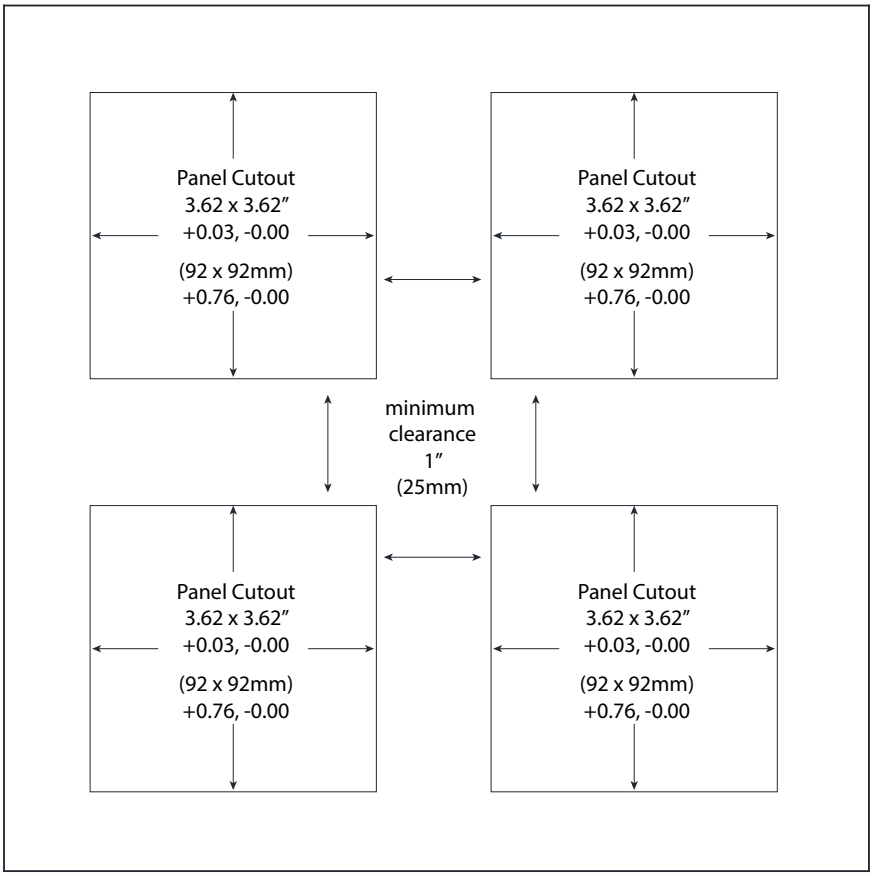
Dry contact mechanical relays (2 or 4 depending on model code
6 A (resistive), 1/8 HP (93W) per relay
Dry contact relays are not fuse protected.

Pulse Outputs (0 or 2 model code dependent)
Opto-isolated, solid-state relay, 200mA, 40V DC
VLOWMAX = 0.05V @ 18mA
Accuracy (0-10 Hz): ± 0.5% of Pulse Rate, (10-20 Hz): ± 1.0%, (20-40 Hz): ± 2.0%

4 - 20 mA (1)
Internally powered, Fully isolated
600 Ohm max resistive load, Resolution 0.0015% of span
Accuracy ± 0.5% of reading

DIMENSIONS


[99.36 mm]
3.91 in
[88 mm]
3.46 in
[98 mm]
3.86 in
[98 mm]
3.86 in
[10 mm]
0.39 in
[108.5 mm]
4.27 in


Panel Cutout
3.62 x 3.62″
+0.03, -0.00
(92 x 92mm)
+0.76, -0.00
Panel Cutout
3.62 x 3.62″
+0.03, -0.00
(92 x 92mm)
+0.76, -0.00
minimum
clearance
1″
(25mm)
Panel Cutout
3.62 x 3.62″
+0.03, -0.00
(92 x 92mm)
+0.76, -0.00
Panel Cutout
3.62 x 3.62″
+0.03, -0.00
(92 x 92mm)
+0.76, -0.00

SPECIFICATIONS

MECHANICAL (CONTROLLER)

Enclosure	Polycarbonate 1/4 DIN
Enclosure Rating	NEMA 4X (IP65)
Display	128 x 64 graphic backlit display
Ambient Temperature	-4 to 131°F (-20 to 55°C)
Storage Temperature	-4 to 176°F (-20 to 80°C)
Shipping Weight	15.7 lbs (7.1 kg) (approximately) varies with model
Humidity	10 to 90% non-condensing

AGENCY CERTIFICATIONS

Safety:
UL 61010-1:2012, 3rd Edition+Rev:2016
CSA C22.2 No.61010-1:2012, 3rd Ed.+U1;U2
IEC 61010-1:2010 3rd Edition
EN 61010-1:2010 3rd Edition
BS EN 61010-1:2010+A1:2019

EMC:
IEC 61326-1:2012
EN 61326-1:2013
BS EN 61326-1:2013

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

ORDERING INFORMATION

WCNP (Conductivity, Amplified pH or ORP, Disinfection

WPHBP (Non-PreAmplified pH/ORP/ISE with BNC)

WPHNP (Non-PreAmplified pH/ORP/ISE without BNC)

Relays/Wiring | Analog Output - Sensors

Relays/Wiring
110 = 4 dry relays
120 = 2 pulse, 2 dry relay

Analog Output
A = One isolated analog (4-20 ma) output

Sensors
N = No sensor

Scan QR code with your smartphone camera for more details!

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: walchem.com.

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WALCHEM
IWAKI America Inc.

180624.H January 2022

Walchem, Iwaki America Inc.
Five Boynton Road Hopping Brook Park | Holliston, MA 01746 USA | Phone 508-429-1110 | walchem.com