Lakewood Controllers

Price List

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Placing an Order

Orders may be placed with our Customer Service Department (CSD) by fax, e-mail, or mail. A Purchase Order (PO) or Visa, MasterCard, or Discover may be used to purchase items. To use a PO an established account is required and the PO must be on company letterhead. To establish an account you will need to fill out a credit application. Payment terms with accounts are net 30 days. Contact us for more details.

Contact us at:

1-610-365-7928 phone/fax
sales@yamathosupply.com

Visit our website at www.yamathosupply.com to download manuals, cutsheets, and the pricelist/catalog in .PDF format.

Cancellations and Returns

Order cancellations will not be accepted for items requiring special engineering, custom assembly, or special buy-out parts after order acceptance. Orders for special order pH sensors requiring other than standard glass cannot be canceled after receipt of order because of loss of product due to storage life limitations.

Standard products can be returned for re-stocking subject to a 20% re -stocking charge. All returned goods must be less than one year old, in good condition, and unused. Acceptance of return is subject to inspection and final acceptance by the Quality Control Department. Customs and specials will not be accepted for return.

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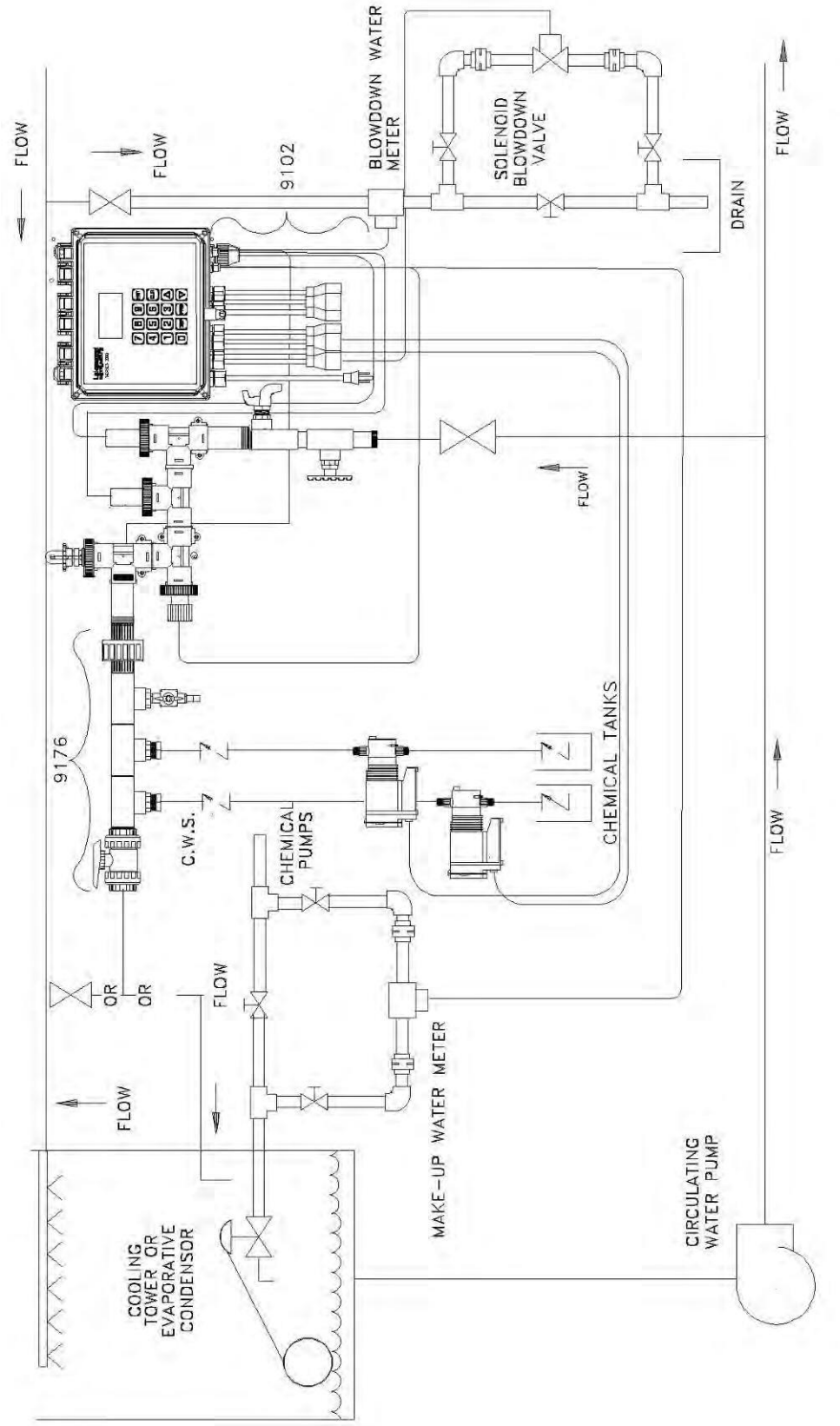


LAKEWOOD INSTRUMENTS
MODEL 140
WATER TREATMENT CONTROLLER

The Model 140 uses the latest in microprocessor capability, giving the user a high level of application flexibility. Multiple inputs and very easy setup characterize this new technology. Water meters, sensors and plumbing assemblies are purchased separately.

PART NUMBER 1239597 SHOWN
Cooling Tower Water Treatment Controller W/Sensor and Flow Switch Plumbing on a Mounting Plate

FEATURES

- Use this Controller for cooling towers.
- Removable power cord and receptacles for simple conduit installations.
- Scheduled feed, which can use two relays for biocides or other chemicals.
- One (1) water meter input, conductivity input, flow switch input, and 4-20 mA output are all standard features.
- Designed with a single circuit board for better reliability and lower cost.
- Large open shallow enclosure for easy wiring.
- The enclosure is rated NEMA 4X.
- Power selector switch for 115 or 230 vac operation.
- Heavy-duty stainless steel domed numeric keypad and illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.
- LED indicators for power, alarm and relay status.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Single circuit board design improves reliability.
- No add-on options. 4-20 mA output and biocide features are standard.
- Multiple methods of chemical feed for application flexibility.

SPECIFICATIONS

Conductivity range	0-10,000 µS
Conductivity sensor	2 electrode
Conductivity Resolution	± 10 µS
Temperature comp.	500 ohm NTC
Accuracy & repeatability	± 1.0%
Deadband/Setpoint	Adjustable
Auto/Manual outputs	Menu selectable
Keypad	16 tactile push-buttons
Display	16 X 2 Character
Water meter input	Contact head, paddle wheel or turbine
Timer	Max. blowdown time exceeded, relay time exceeded

Output Signal	One 4 – 20 mA, isolated or non-isolated optionally powered
Output relays	2 selectable use, 1 blowdown
Relay ratings	3A each, 10A total
Power	120/240 VAC 50/60 Hz
Ambient	32° - 120°F (0 - 49°C)
Enclosure	NEMA 4X, ETL

Intertek

Sensors/Plumbing	Cooling Tower
Max Pressure	140 psi (9.65 bar)@ 100 °F
Max Temp	140°F (60°C)
Min flow	1 gpm (3.785 Lpm)

ORDERING OPTIONS

Controller Options

1239594 Cooling Tower Water Treatment Controller Only. (No Sensor or Plumbing).

1239595 Cooling Tower Water Treatment Controller, Including Sensor Tee and Conductivity Sensor.

1239596 Cooling Tower Water Treatment Controller, Including Left Exit Flow Switch Plumbing and Conductivity Sensor.

1269226 Cooling Tower Water Treatment Controller, Including Right Exit Flow Switch Plumbing and Conductivity Sensor.

1239597 Cooling Tower Water Treatment Controller, Including Left Exit Flow Switch Plumbing and Conductivity Sensor on a Mounting Plate (12 X 18).

1269418 Cooling Tower Water Treatment Controller, Including Right Exit Flow Switch Plumbing and Conductivity Sensor on a Mounting Plate (12 X 18).

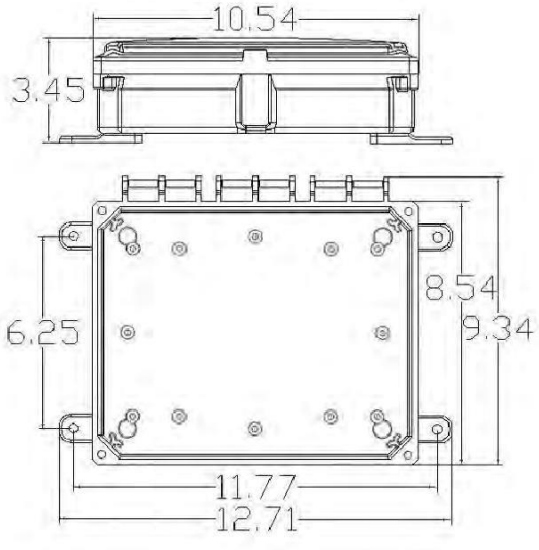
Cooling Tower Options

1107003 Cooling Tower Flow Switch Plumbing

1167214 Cooling Tower Sensor Tee

1167158 Cooling Tower Sensor with 20 ft cable

PART # 1269418 with Right Exit Plumbing Assembly



PART NO.	CONDUCTIVITY COOLING TOWER CONTROLLER ONLY	LIST	CD
1239594	140 controller only, no sensor or plumbing	$762	W

PART NO.	CONDUCTIVITY COOLING TOWER CONTROLLER SYSTEMS	LIST	CD
	The Following Systems Include Sensor and Plumbing Assemblies		
1239595	140 with cooling tower sensor tee and sensor	$905	W
1239596	140 with cooling tower Left Exit flowswitch and sensor	975	W
1269226	140 with cooling tower Right Exit flowswitch and sensor	975	W
1239597	140 with cooling tower Left Exit FS and sensor on mounting plate	1,136	W
1269418	140 with cooling tower Right Exit FS and sensor on mounting plate	1,136	W

PART NO.	COOLING TOWER COMPONENTS	LIST	CD
1167158	Sensor, Conductivity 2 elec w/20 ft Cable	$257	W
1167157	Sensor, Conductivity 2 elec w/2 ft Cable	221	W
1169207	Sensor, Conductivity, 2 elec 4ft body	289	W
1167214	Plumbing, tee, 3/4 inch NPT	100	R
1107003	Plumbing, with 20' FS, remote plumbing Left Exit	204	R
1230562	Plumbing, with 20' FS, remote plumbing Right Exit	204	R

PART NO.	REPLACEMENT PARTS	LIST	CD
1166418	O-Ring, for sensor and/or flow sight, set of 10	$10	R
1169740	Red Ring replacement Kit set of two	60	R
1107004	Reed Switch w/20 ft of cable	55	R
1167266	Flow Sight set of five	80	R
1167234	Flow Float set of five	90	R
1107003	Plumbing, with 20' FS, remote plumbing Left Exit	204	R
1230562	Plumbing, with 20' FS, remote plumbing Right Exit	204	R

LAKEWOOD INSTRUMENTS
MODEL 1512e
WATER TREATMENT CONTROLLER

The Model 1512e uses the latest in microprocessor capability, giving the user a high level of application flexibility. The user in the field can configure this controller to operate as a pH and conductivity or as an ORP and conductivity controller. A large illuminated graphics screen, multiple inputs, and very easy setup characterize this new technology. The Model 1512e is ETL approved.

PART NUMBER 1268960 SHOWN
Cooling Tower Water Treatment Controller, Including Flow Switch Plumbing, pH Sensor And Conductivity Sensor On A Mounting Plate

FEATURES

- Removable power cord and receptacles for simple conduit installations.
- Scheduled feed, which can use three relays for biocides or other chemicals.
- Two (2) water meter inputs, two (2) drum switch inputs, conductivity input, pH or ORP input, flow switch input, two 4-20 mA outputs, and remote conductivity and pH/ORP input via 4-20 mA, and seven relay outputs are all standard features.
- Designed with a single circuit board for better reliability and lower cost.
- Large open shallow enclosure for easy wiring.
- Ball valve delay feature allows accurate control of motorized ball valves.
- Heavy-duty stainless steel domed numeric keypad and illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.
- LED indicators for power, flow, alarm, and relay status.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Single circuit board design improves reliability.
- No add-on options. Two 4-20 mA outputs and feed schedule clock features are standard.

SPECIFICATIONS

Conductivity range	50-10,000 µS
Conductivity sensor	2 electrode
Conductivity Resolution	± 10 µS (conductivity <5000 µS) ±100 µS(conductivity > 5000 µS)
pH range	2-12 pH
ORP range	-1000 to +1000 mV
Resolution	± .10 pH or 1 mV
Sensor Types	Solution ground, Signal differential, or Single ended
Temperature comp.	Automatic
Accuracy & repeatability	± 1.0%
Deadband/Setpoint	Programmable
Auto/Manual outputs	Menu selectable
Keypad	16 tactile push-buttons
Display	illuminated 128x64 pixel LCD
Drum Switch Inputs	2 digital contact inputs
Water meter inputs (2)	Contact head, paddle wheel or turbine
Timers	Max. blowdown time exceeded and relay run time exceeded
Output Signal	Two 4 – 20 mA, isolated or non-isolated optionally powered output for conductivity and pH/ORP
Output relays	7, 6 selectable use, 1 blowdown
Relay ratings	3A each, 12A total
Input Signal	Two 4-20 mA, non-isolated internally powered input for conductivity and pH/ORP
Power	120 VAC 50/60 Hz
Ambient	32° - 120°F (0 - 49°C)
Enclosure	NEMA 4X, ETL

Sensors/Plumbing	Cooling Tower
Max Pressure	140 psi (9.65 bar)@ 100 °F
Max Temp	140°F (60°C)
Min flow	1 gpm (3.785 Lpm)

ORDERING OPTIONS

Controller Options

1268957 Model 1512e Controller Only. Including Isolation Kit. (No Sensors or Plumbing).

1268958 Model 1512e Cooling Tower Water Treatment Controller, Including pH and Conductivity Sensors, Flowswitch Plumbing Assembly, and Isolation Kit

1268959 Model 1512e Cooling Tower Water Treatment Controller, Including ORP and Conductivity Sensors, Flowswitch Plumbing Assembly, and Isolation Kit

1268960 Model 1512e Cooling Tower Water Treatment Controller, Including pH and Conductivity Sensors, Flowswitch Plumbing Assembly, and Isolation Kit on a Mounting Plate (12 X 21 in.).

1268961 Model 1512e Cooling Tower Water Treatment Controller, Including ORP and Conductivity Sensors, Flowswitch Plumbing Assembly, and Isolation Kit on a Mounting Plate (12 X 21 in.).

1269290 Kit, Isolation, with enclosure for model 1512e pH or ORP. (Required)

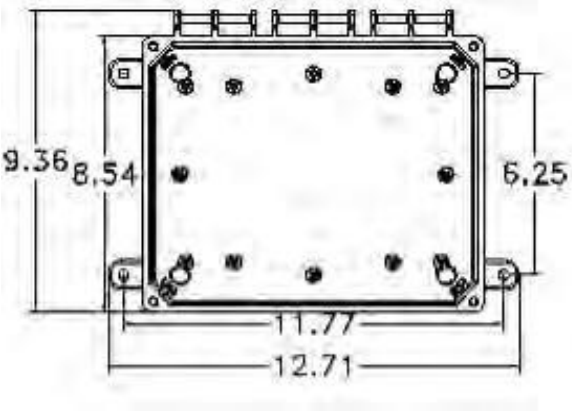
Cooling Tower Options

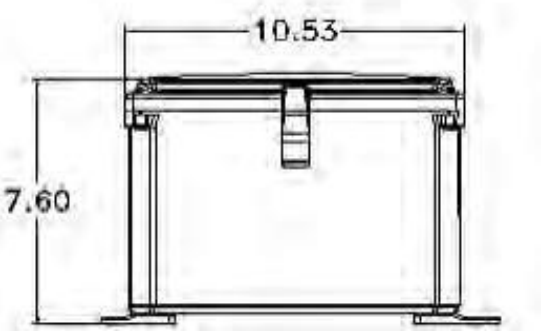
1268640 Cooling Tower Flow Switch Plumbing

1240472 Cooling Tower pH sensor w/15 ft cable

1240473 Cooling Tower ORP sensor w/15 ft cable

1167158 Cooling Tower cond sensor w/20 ft cable





MODEL 1512e

PART NO.	pH/ORP and CONDUCTIVITY CONTROLLER ONLY	LIST	CD
1268957	1512e controller only, no sensors	$2,106	W

PART NO.	pH and CONDUCTIVITY CONTROLLER SYSTEMS	LIST	CD
1268958	1512e with cond and pH sensors, and FS plumbing	$3,039	W
1268960	1512e with cond and pH sensors on mounting plate	3,164	W

PART NO.	ORP and CONDUCTIVITY CONTROLLER SYSTEMS	LIST	CD
1268959	1512e with cond and ORP sensors, and FS plumbing	$3,039	W
1268961	1512e with cond and ORP sensors on mounting plate	3,164	W

PART NO.	COOLING TOWER COMPONENTS	LIST	CD
1167158	Sensor, Conductivity 2 elec w/20 ft Cable	$257	W
1169207	Sensor, Conductivity, 2 elec 4ft body	289	W
1240472	Sensor, pH 1520e, 2350e, 2412e w/15 ft of cable	459	W
1240473	Sensor, ORP 1530e, 2330e, 2430e w/15 ft of cable	459	W
1268640	Plumbing, 1512e/2412e/2430e/2812e/2830e	250	R
1269290	Kit, Isolation with Enclosure	684	R

PART NO.	REPLACEMENT PARTS	LIST	CD
1166418	O-Ring, for sensor and/or flow sight, set of 10	$10	R
1169740	Red Ring replacement Kit set of two	60	R
1107004	Reed Switch w/20 ft of cable	55	R
1167266	Flow Sight set of five	80	R
1167234	Flow Float set of five	90	R
1268640	Plumbing, 1512e/2412e/2430e/2812e/2830e	250	R

LAKEWOOD INSTRUMENTS
MODEL 1520/30e
pH or ORP WATER TREATMENT CONTROLLER

The Model 1520/30e uses the latest in microprocessor capability, giving the user a high level of application flexibility in pH or ORP control. The user in the field can configure this controller to operate as a pH or an ORP controller. A large illuminated graphics screen, multiple inputs, and very easy setup characterize this new technology. Water meters, sensors and plumbing assemblies are purchased separately.

PART NUMBER 1240518 SHOWN
Cooling Tower Water Treatment Controller With Flow Switch Plumbing And Ph Sensor On A PVC Mounting Plate.

FEATURES

- Removable power cord and receptacles for simple conduit installations.
- Scheduled feed, which can use three relays for biocides or other chemicals.
- Two (2) water meter inputs, two (2) drum switch inputs, pH or ORP input, flow switch input, and 4-20 mA output are all standard features.
- Designed with a single circuit board for better reliability and lower cost.
- Large open shallow enclosure for easy wiring.
- Heavy-duty stainless steel domed numeric keypad and illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.
- LED indicators for power, alarm and relay status.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Controller can be removed from a cooling tower and be placed in another type of application when used with the appropriate pH or ORP sensor.
- Single circuit board design improves reliability.
- No add-on options. 4-20 mA output and biocide features are standard.

SPECIFICATIONS

pH range	2-12 pH
ORP range	-1000 to +1000 mV
Sensor Types	Solution ground, Signal differential, or Single-Ended
Resolution	± .10 pH or 1 mV
Accuracy & repeatability	± 1.0%
Deadband/Setpoint	Adjustable
Auto/Manual outputs	Menu selectable
Keypad	16 tactile push-buttons
Display	Illuminated 128x64 pixel LCD
Drum Switch Inputs	2 digital contact inputs
Water meter inputs (2)	Contact head, paddle wheel or turbine

Timer	Relay run time exceeded
Output Signal	One 4 – 20 mA, non-isolated isolated powered output
Output relays	4 selectable use
Relay ratings	3A each, 10A total
Power	120/240 VAC 50/60 Hz
Ambient	32° - 120°F (0 - 49°C)
Power	120/240 VAC 50/60 Hz
Ambient	32° - 120°F (0 - 49°C)
Enclosure	NEMA 4X, ETL

Sensors/Plumbing	Cooling Tower
Max Pressure	140 psi (9.65 bar)@ 100 °F
Max Temp	140°F (60°C)
Min flow	1 gpm (3.785 Lpm)

ORDERING OPTIONS

Controller Options

1240475 Model 1520/30e Controller Only. (No Sensor or Plumbing).

1240476 Model 1520e Cooling Tower Water Treatment pH Controller, Including pH Sensor and Flowswitch Plumbing Assembly.

1240518 Model 1520e Cooling Tower Water Treatment pH Controller, Including pH Sensor and Flowswitch Plumbing Assembly on a Mounting Plate (12 X 18).

1263418 Model 1530e Cooling Tower Water Treatment ORP Controller, Including ORP Sensor and Flowswitch Plumbing Assembly.

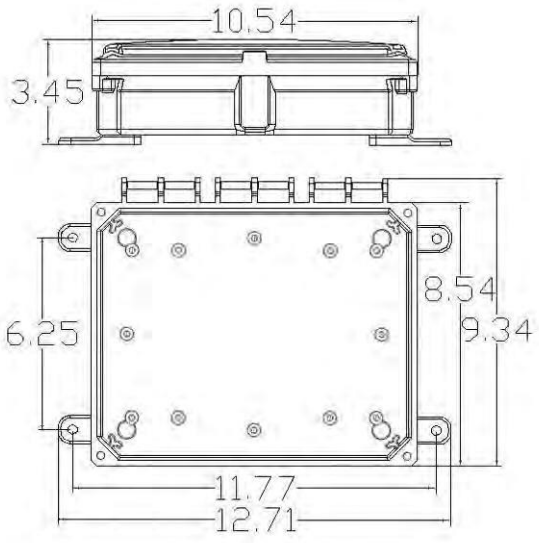
1240519 Model 1530e Cooling Tower Water Treatment ORP Controller, Including ORP Sensor and Flowswitch Plumbing Assembly on a Mounting Plate (12 X 18).

Cooling Tower Options

1240477 Cooling Tower Flow Switch Plumbing Assembly

1240472 Cooling Tower pH Sensor With 15 Ft Cable

1240473 Cooling Tower ORP Sensor With 15 Ft Cable



MODEL 1520/30e

PART NO.	pH/ORP COOLING TOWER CONTROLLER ONLY	LIST	CD
1240475	1520/30e controller only, no sensor or plumbing	**$1,201**	**W**

PART NO.	pH COOLING TOWER CONTROLLER SYSTEMS	LIST	CD
	The Following Systems Include Sensor and Plumbing Assemblies		
1240476	1520e with cooling tower flowswitch and pH sensor	$1,840	W
1240518	1520e with cooling tower FS and pH sensor on mounting plate	1,965	W

PART NO.	ORP COOLING TOWER CONTROLLER SYSTEMS	LIST	CD
	The Following Systems Include Sensor and Plumbing Assemblies		
1263418	1530e with cooling tower flowswitch and ORP sensor	$1,840	W
1240519	1530e with cooling tower FS and ORP sensor on mounting plate	1,965	W

PART NO.	pH and ORP COOLING TOWER COMPONENTS	LIST	CD
1240472	Sensor, pH 1520e, 2350e, 2412e w/15 ft of cable	$459	W
1240473	Sensor, ORP 1530e, 2330e, 2430e w/15 ft of cable	459	W
1240477	Plumbing, 1520/30e, 2330e, 2350e w/ 20ft flow switch	212	R
1269193	pH/ORP transmitter	360	R

PART NO.	REPLACEMENT PARTS	LIST	CD
1166418	O-Ring, for sensor and/or flow sight, set of 10	$10	R
1169740	Red Ring replacement Kit set of two.....	60	R
1107004	Reed Switch w/20 ft of cable	55	R
1167266	Flow Sight set of five	80	R
1167234	Flow Float set of five	90	R
1240477	Plumbing, 1520/30e, 2330e, 2350e w/ 20ft flow switch	212	R

LAKEWOOD INSTRUMENTS
MODEL 1575e
WATER TREATMENT CONTROLLER

The Model 1575e uses the latest in microprocessor capability, giving the user a high level of application flexibility. A large illuminated graphics screen, multiple inputs, and very easy setup characterize this new technology. The Model 1575e is ETL approved.

PART NUMBER 1229242 SHOWN
Cooling Tower Water Treatment Controller, Including Flow Switch Plumbing And Conductivity Sensor On A Mounting Plate

FEATURES

- Removable power cord and receptacles for simple conduit installations.
- Scheduled feed, which can use three relays for biocides or other chemicals.
- Two (2) water meter inputs, two (2) drum switch inputs, conductivity input, a flow switch input, a 4-20 mA output, and a 4-20 mA input are all standard features.
- The 4-20 mA input can be used with a transmitter for one of the following: remote conductivity, makeup conductivity, pH, ORP, percent, pressure, milliamps, flow rates, or traced chemistry control. This transmitter can be added in the field.
- Designed with a single circuit board for better reliability and lower cost.
- Large open shallow enclosure for easy wiring.
- Ball valve delay feature allows accurate control of motorized ball valves.
- Heavy-duty stainless steel domed numeric keypad and illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.
- LED indicators for power, alarm and relay status.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Controller can be used in boiler, cooling tower, or condensate applications when used with the appropriate conductivity sensor.
- Single circuit board design improves reliability.
- No add-on options. 4-20 mA output and feed schedule clock features are standard.

SPECIFICATIONS

Conductivity range	50-10,000 µS
Conductivity sensor	2 electrode
Conductivity Resolution	± 10 µS (conductivity <5000 µS) ±100 µS(conductivity > 5000 µS)
Temperature comp.	500NTC, NONE
Accuracy & repeatability	± 1.0%
Deadband/Setpoint	Programmable
Auto/Manual outputs	Menu selectable
Keypad	16 tactile push-buttons
Display	illuminated 128x64 pixel LCD
Drum Switch Inputs	2 digital contact inputs
Water meter inputs (2)	Contact head, paddle wheel, or turbine
Timers	Max. blowdown time exceeded and relay run time exceeded
Output Signal	One 4 – 20 mA, isolated or non-isolated optionally powered output for conductivity
Input Signal	One 4-20 mA, non- isolated internally powered input for conductivity
Output relays	4, 3 selectable use, 1 blowdown
Relay ratings	3A each, 10A total
Power	120/240 VAC 50/60 Hz
Ambient	32° - 120°F (0 - 49°C)
Enclosure	NEMA 4X, ETL

Intertek

Sensors/Plumbing	Cooling Tower
Max Pressure	140 psi (9.65 bar)@ 100 °F
Max Temp	140°F (60°C)
Min flow	1 gpm (3.785 Lpm)

ORDERING OPTIONS

Controller Options

1229239 Model 1575e Conductivity Controller Only. (No Sensor or Plumbing).

1229240 Model 1575e Cooling Tower Water Treatment Conductivity Controller, Including Conductivity Sensor and Sensor Tee.

1229241 Model 1575e Cooling Tower Water Treatment Conductivity Controller, Including Conductivity Sensor and Left Exit Flowswitch Plumbing Assembly.

1230563 Model 1575e Cooling Tower Water Treatment Conductivity Controller, Including Conductivity Sensor and Flowswitch Plumbing Assembly.

1229242 Model 1575e Cooling Tower Water Treatment Conductivity Controller, Including Conductivity Sensor and Left Exit Flowswitch Plumbing Assembly on a Mounting Plate (12 X 18 in.).

1269417 Model 1575e Cooling Tower Water Treatment Conductivity Controller, Including Conductivity Sensor and Right Exit Flowswitch Plumbing Assembly on a Mounting Plate (12 X 18 in.).

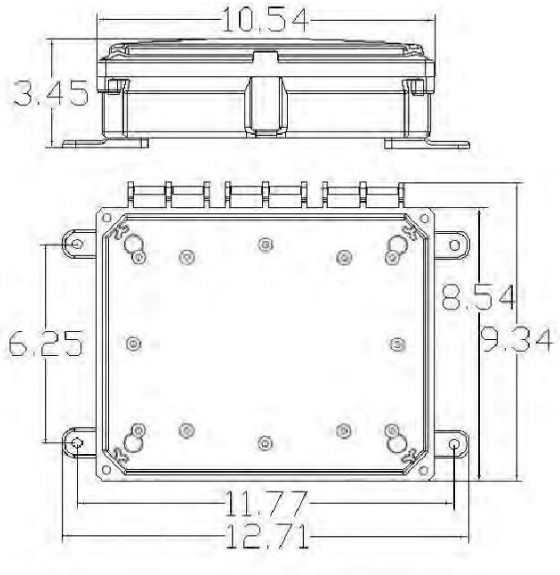
Cooling Tower Options

1107003 Cooling Tower Flow Switch Plumbing

1167214 Cooling Tower Plumbing Tee

1167158 Cooling Tower sensor With 20 ft cable

PART # 1269417 with Right Exit Plumbing Assembly



PART NO.	CONDUCTIVITY COOLING TOWER CONTROLLER ONLY	LIST	CD
1229239	1575e controller only, no sensor or plumbing	$1,054	W

PART NO.	CONDUCTIVITY COOLING TOWER CONTROLLER SYSTEMS	LIST	CD
	The Following Systems Include Sensor and Plumbing Assemblies		
1229240	1575e with cooling tower sensor tee and sensor	$1,381	W
1229241	1575e with cooling tower Left Exit flowswitch and sensor	1,466	W
1230563	1575e with cooling tower Right Exit flowswitch and sensor	1,466	W
1229242	1575e with cooling tower Left Exit FS and sensor on mounting plate	1,591	W
1269417	1575e with cooling tower Right Exit FS and sensor on mounting plate	1,591	W
1269338	1575e with cooling tower sensor, flow switch, and Trace Sensor Kit On a mounting plate	4,990	W

PART NO.	CONDUCTIVITY COOLING TOWER COMPONENTS	LIST	CD
1167158	Sensor, Conductivity 2 elec w/20 ft Cable	$257	W
1167157	Sensor, Conductivity 2 elec w/2 ft Cable	221	W
1169207	Sensor, Conductivity, 2 elec 4ft body	289	W
1167214	Plumbing, tee, 3/4 inch NPT	100	R
1107003	Plumbing, with 20' FS, remote plumbing Left Exit	204	R
1230562	Plumbing, with 20' FS, remote plumbing Right Exit	204	R
1269378	Kit, pH, Retrofit, includes isolation kit, pH sensor, and tee	1,087	R
1269387	Kit, ORP, Retrofit, includes isolation kit, ORP sensor, and tee	1,087	R

PART NO.	REPLACEMENT PARTS	LIST	CD
1166418	O-Ring, for sensor and/or flow sight, set of 10	$10	R
1169740	Red Ring replacement Kit set of two	60	R
1107004	Reed Switch w/20 ft of cable	55	R
1167266	Flow Sight set of five	80	R
1167234	Flow Float set of five	90	R
1107003	Plumbing, with 20' FS, remote plumbing Left Exit	204	R
1230562	Plumbing, with 20' FS, remote plumbing Right Exit	204	R

LAKEWOOD INSTRUMENTS
MODEL 1575e
CONTROLLER SYSTEMS

The Model 1575e uses the latest in microprocessor capability, giving the user a high level of application flexibility. A large illuminated graphics screen, multiple inputs, and very easy setup characterize this new technology. One of these inputs is the 4 -20mA input that can be used with a transmitter for trace chemistry control, as a pH input, or as makeup conductivity for cycles of concentration control.

1575e with Trace Sensor Kit Includes the model 1575e controller with cooling tower conductivity sensor and flowswitch plumbing assembly on a mounting plate, and an Inline Fluorometer with Trace Connection / Isolation Kit, an Inline Tee, and a Calibration Cell.

1269338……...$4,990 W

1575e with pH or ORP Sensor Kit
Includes the model 1575e controller with cooling tower conductivity, flowswitch plumbing assembly, and pH or ORP Sensor Kit on a mounting plate.

1269333 pH and cond……..$2,780 W
1269409 ORP and cond…….. $2,780 W
1269378 Retrofit Kit, pH,…... ……. 1,087 R
1269387 Retrofit Kit, ORP……..… 1,087 R

1575e with Cycles of Concentration
Includes the model 1575e controller with cooling tower conductivity sensor and flowswitch plumbing assembly on a mounting plate, and the Cycles of Concentration Kit.

1269339 1575e w/cycles..... $2,725 W
1269426 Retrofit kit C of C ..... $1,134 R

LAKEWOOD INSTRUMENTS
TRACE SENSOR KIT

Trace Mounted Sensor Kit shown with a Model 1575e Cooling Tower Water Treatment Controller on A Mounting Plate

The Trace Sensor Kit is used for additional Trace Chemistry control to the Lakewood Instruments model 1575e and model 2000e series cooling tower controllers. The Trace Mounted Sensor Kit includes an Inline Fluorometer, an inline tee, a pre-wired isolator, a power supply, and a calibration cell.

The Inline Fluorometer is a low cost, compact fluorometer designed for monitoring of fluorescent dyes in industrial water systems. Integration of the inline Fluorometer into your 1575e automation system enables monitoring of fluorescent trends in real time for better control of your cooling water chemistry. The fluorometer is designed as a rugged, 24/7 device providing maximum performance, minimal maintenance and solid-state reliability.

PART NUMBER 1269338 SHOWN

FEATURES

- Includes a single-channel fluorometer that provides a 4-20 mA analog signal output that is directly proportional to the concentration of your traced chemistry.
- Solid-state LED/Photodiode technology, no moving parts
- A low maintenance design to provide trouble-free performance.
- Includes a pre-wired isolator to eliminate power supply interference.
- Includes an in-line tee for use in light industrial environments.
- Includes a second tee to be used for calibration purposes without having to remove the in-line tee.
- Works with PTSA fluorescent dye
- Probe output is pre-calibrated (base and slope) at 200 ppb trace @20mA. Using a 1 to1000 PTSA mix equates to 100 ppb of trace equaling 100 ppm of chemical in system.

BENEFITS

- Easy to add to the Lakewood Instruments Model 1575e and the 2000e Series cooling tower controllers in the field. Firmware upgrade allows older 1575e units to accept this new technology. Note: Signal Conditioning is not available when used with the 2000e Series of controllers.
- Easy to transition to Trace Chemistry Control using Lakewood Instruments control schemes.
- Installs into your process flow with a PVC tee.
- Comes preset and aligned at the factory.

SPECIFICATIONS

Material	PVC Type 1	Range (Calibrated)	0 – 200 ppb (Trace)
Threading	1 Inch NPTF	Output Signal	4-20 mA
Max Pressure	100 psi	Input Voltage	8 TO 30 vdc
Max Temperature	140°f (60°C)		

ORDERING INFORMATION

PN 1269324

PN 1269325

PN 1269326

PN 1269327

PN 1269301

PN 1269329

1269324	**1575e Trace Sensor Kit** Includes Inline Fluorometer, the 1575e Trace Connection/Isolation Kit, an Inline Tee, and a Calibration Cell.
1269325	**2000e Series Trace Sensor Kit** Includes Inline Fluorometer, the 2000e Trace Connection Kit, an Inline Tee, and a Calibration Cell.
1269326	**1575e Trace Connection Kit** Includes Isolator and Power Supply (NOTE: Fluorometer and Tee not included)
1269327	**2000e Series Trace Connection Kit** Includes a N420I and a Power Supply. (NOTE: Fluorometer and Tee not included, the 2000e Series controller must have the –NIN option installed.)
1269301	Inline Fluorometer.
1269328	In-Line Tee
1269329	Calibration Cell
1269330	PTSA, 1 gallon, 10%

PART NO.	TRACE SENSOR SYSTEMS	LIST	CD
1269324	1575e Trace Sensor Kit	**3399**	**R**
1269325	2000e Trace Sensor Kit	**3779**	**R**
1269326	1575e Trace Connection Kit	**330**	**R**
1269327	2000e Trace Connection Kit	**710**	**R**
1269301	Inline Fluorometer	**3069**	**R**
1269328	In-Line Tee	**120**	**R**
1269329	Calibration Cell	**150**	**R**
1269330	PTSA, 1 Gallon, 10%	**200**	**R**

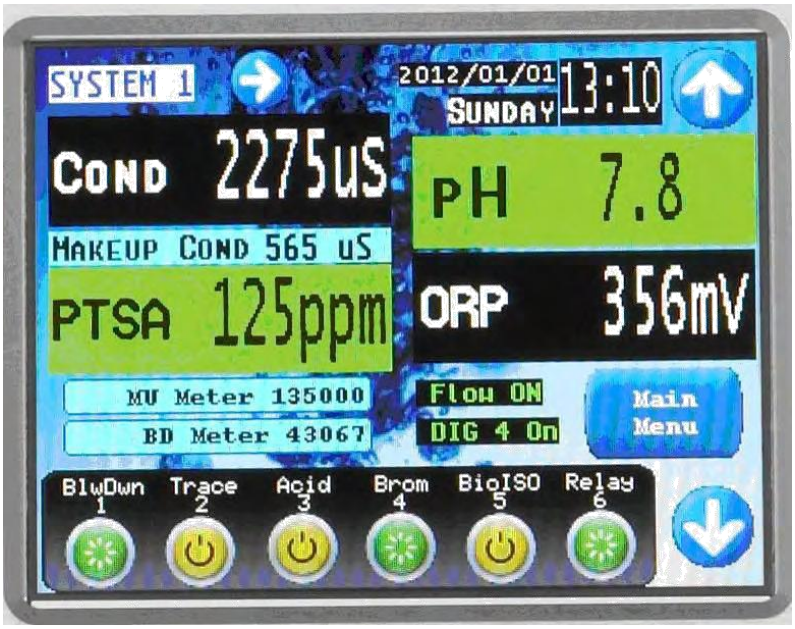
NexSys™ Control System

The **NexSys**™ control system is the latest in a long line of reliable, easy to use controllers from Lakewood Instruments. The **NexSys** ™ control system uses the latest in microprocessor technology with a 5.7" **Color Touch Screen** interface for a high level of application flexibility.

All features, parameters, settings, and functional requirements to operate, program, and monitor the **NexSys**™ control system are accessible from the touch screen and DO NOT require the use of an external input, PC or device to operate or access. The **NexSys**™ control system even includes On-Board Help Screens with wiring, programming, and maintenance instructions.

The **NexSys**™ control system comes **standard** with the following system interfaces and DMX outputs: LON EIA 709 FTT10, BACnet IP, and MODbus TCP. The unit comes from the factory ready to integrate readings into a BAS, including: The state of any installed relay (On/Off) , Water meter readings, Conductivity readings, Additional sensor readings (ph, ORP), sensor alarms, Additional 4-20mA input readings, Flow condition, and other digital inputs.

The **NexSys**™ control system comes standard with Ethernet capability through a browser (HTML5) interface that allows 100% access to all features and control parameters of the controller.



The **NexSys**™ control system has an astounding array of built-in features such as:

- LonWorks, MODbus, and BACnet communications interface
- Ethernet capability through an HTML interface
- The capability to send E-service reports to a subscribed service
- The ability to display operating values with time and date stamps on color coded graphs with zoom and scroll features
- Up to eight active sensor inputs: 2 tower cond, 2 M/U cond, pH and ORP
- Trace chemistry capable with user definable correction factors as part of the programming
- Two water meter inputs with field expansion capability to four
- Enclosure is NEMA 4X rated
- Two flow switch inputs configurable to any relay output
- Ability to add up to eight 4-20mA input readings
- Ability to add four digital inputs
- Ability to mount every sensor/input up to 400 meters away from the controller via 4-wire twisted pair
- Ability to control the chemistry in two towers at the same time
- Six relay outputs expandable to ten relay outputs for user configurable operations such as:
  - Feed by Percent of Blowdown Time
  - Feed by Setpoint with Percent of Time Feature as Part of Spaced Feed
  - Trace Chemistry Control
  - By Makeup Totalized Gallons
  - By Blowdown Totalized Gallons
  - By Percent On-Time
  - By Scheduled Feed by Day and Time
  - As an Alarm Relay by User Selectable Alarms
- On-board Help Screens with wiring, programming, and maintenance instructions

Specifications

Touch Screen Interface:
- 5.7” diagonal viewing area
- Display size: 115X86 mm
- Pixel: 320X240
- Color: TFT 65536
- Backlight: LED or CCFL

Power: 120/240 VAC 50/60 Hz

Relay ratings:
- 120VAC 3A per relay 15A total

Enclosure: NEMA 4X

NexSys™ The Next Generation in Reliable Controllers

NexSys™ System Config (draft)	Price $	Type	S or D	–	1, 2 or X	1, 2 or X	1, 2 or X	1, 2 or X	–	S or D	–	1, 2 or X	S, D or X	–	4, 8 or X	4, 8 or X	–	S, L or X	–	1, 2 or X	–	XX
		NXC		–					–		–			–			–		–		–	
Cooling Tower																						
Systems (S=single D=Dual)	S = $3,068 D = $3,171																					
Main Conductivity (1-2)	1 = $708 2 = $1,416																					
Main pH (1-2)	1 = $722 2 = $1,444																					
Main ORP (1-2)	1 = $722 2 = $1,444																					
Make-up Conductivity (1-2)	1 = $855 2 = $1,710																					
Relays (S= 6 or D= 10)	S = INCL D = $495																					
Flowswitch (1 or 2)	1 = INCL 2 = INCL																					
Water Meter Inputs (S=2 D=4)	S = INCL D = $374																					
4-20MA Input (4 or 8)	4 = $478 8 = $956																					
4-20mA Output (4 or 8)	CONSULT FACTORY																					
2nd Remote Display (S=5.7" L=15")	S = $1,269 L = $3,000																					
Mounting Plate (1 or 2)	1 = $144 2 = $288																					
Custom Designator (-XX)	TBD																					

X=no Option needed

All items are code W except 2nd remote display which is a code D

Example

Single cooling tower controller with Conductivty and pH sensors, and plumbing with flowswitch	**$4,498**	**NXC**	**S**	**-**	**1**	**1**	**X**	**X**	**-**	**S**	**-**	**1**	**S**	**-**	**X**	**X**	**-**	**X**	**-**	**X**	**-**	**XX**
			$3,068		$708	$722	$0	$0		$0		$0	$0		$0	$0		$0		$0		$0

INTRODUCTION TO THE LAKEWOOD INSTRUMENTS 2000e SERIES

The 2000e series cooling tower controllers consist of the following models and functions:

2175e Conductivity controller
2330e ORP controller
2350e pH controller
2412e pH and conductivity controller
2430e ORP and conductivity controller
2875e Conductivity controller with eight relays
2812e pH and conductivity controller with eight relays
2830e ORP and conductivity controller with eight relays
2832e pH and ORP and conductivity controller with eight relays

All of the above are available as “controller only”, or as complete systems. “Controller only” means that the sensors and plumbing are **NOT** included.

Complete systems include:

The appropriate cooling tower sensors (Conductivity, pH, and/or ORP).
The appropriate cooling tower plumbing assembly with flow switch.
Four relay outputs with drop cords. (The model 2800e series includes eight.)
Two water meter inputs.
Biocide feed capability by day and time.
Three security levels (technician, operator, and view only).
A NEMA 4X enclosure.
Multiple feed schemes (setpoint, by water meter, percent of bleed, percent of time, feed schedule, and as an alarm).
English and Spanish menus.

The following options are able to be added to all of the above controllers:

RS2L RS232 option card.
WEBNode IP/TCP connection device.
EZWEB Wireless communications.
2KIN LonWorks communications option.
35L Two 4-20 mA output channels.

And with the addition of the NIN option card the following options can be added:

NRLY Relay Node with 4 additional relay outputs each. (Add up to two. The 2800e series already includes one.)
N420I Four channels of 4-20 mA input each. (Add up to two.)
NDIG Four channels of digital input each. (Add up to two.)
NpH pH or ORP sensor input.
NCON Conductivity sensor input.

A total of five sensor nodes can be added;
1 makeup conductivity and any combination of 4 NpH or NCON total.

Please refer to the 2000e series Capabilities sheet for an illustrated example.

Model #	Cond	pH	ORP	COM RS232	4-20mA Outputs	4-20 Ma Inputs	2KIN Lon-Works	Network/ Internet Interface	Broadband Internet	Relays
2175e-RTC	X			( )	( )	( ) ( )	( )	( )	( )	4 + ( ) ( )
2875e-BASIC	X			( )	( )	( ) ( )	( )	( )	( )	8 + ( )
2875e-DELUXE	X			X	( )	( ) ( )	( )	( )	( )	8 + ( )
2875e-WEB	X			X	( )	4 + ( )	( )	X	( )	8 + ( )
2875e-EZWEB	X			X	( )	4 + ( )	( )	X	X	8 + ( )
2330e-RTC			X	( )	( )	( ) ( )	( )	( )	( )	4 + ( ) ( )
2350e-RTC		X		( )	( )	( ) ( )	( )	( )	( )	4 + ( ) ( )
2412e-RTC	X	X		( )	( )	( ) ( )	( )	( )	( )	4 + ( ) ( )
2812e-BASIC	X	X		( )	( )	( ) ( )	( )	( )	( )	8 + ( )
2812e-DELUXE	X	X		X	( )	4 + ( )	( )	( )	( )	8 + ( )
2812e-WEB	X	X		X	( )	4 + ( )	( )	X	( )	8 + ( )
2812e-EZWEB	X	X		X	( )	4 + ( )	( )	X	X	8 + ( )
2430e-RTC	X		X	( )	( )	( ) ( )	( )	( )	( )	4 + ( ) ( )
2830e-BASIC	X		X	( )	( )	( ) ( )	( )	( )	( )	8 + ( )
2830e-DELUXE	X		X	X	( )	4 + ( )	( )	( )	( )	8 + ( )
2830e-WEB	X		X	X	( )	4 + ( )	( )	X	( )	8 + ( )
2830e-EZWEB	X		X	X	( )	4 + ( )	( )	X	X	8 + ( )
2832e-BASIC	X	X	X	( )	( )	( ) ( )	( )	( )	( )	8 + ( )
2832e-DELUXE	X	X	X	X	( )	4 + ( )	( )	( )	( )	8 + ( )
2832e-WEB	X	X	X	X	( )	4 + ( )	( )	X	( )	8 + ( )
2832e-EZWEB	X	X	X	X	( )	4 + ( )	( )	X	X	8 + ( )
				RS2L	35L	N420I	2KIN	WEBNode	EZWEB Wireless	NRLY

RS2L-
RS232 communications output card. Used with WEBNode, Modem and direct connect to computer.

35L-
4-20 mA output card includes 2 channels of 4-20 mA output. Maximum of one -35L card allowed.

N420I-
4-20 mA Input Node includes 4 channels of 4-20 mA input. Maximum of two N420I nodes allowed. Requires -NIN option card.

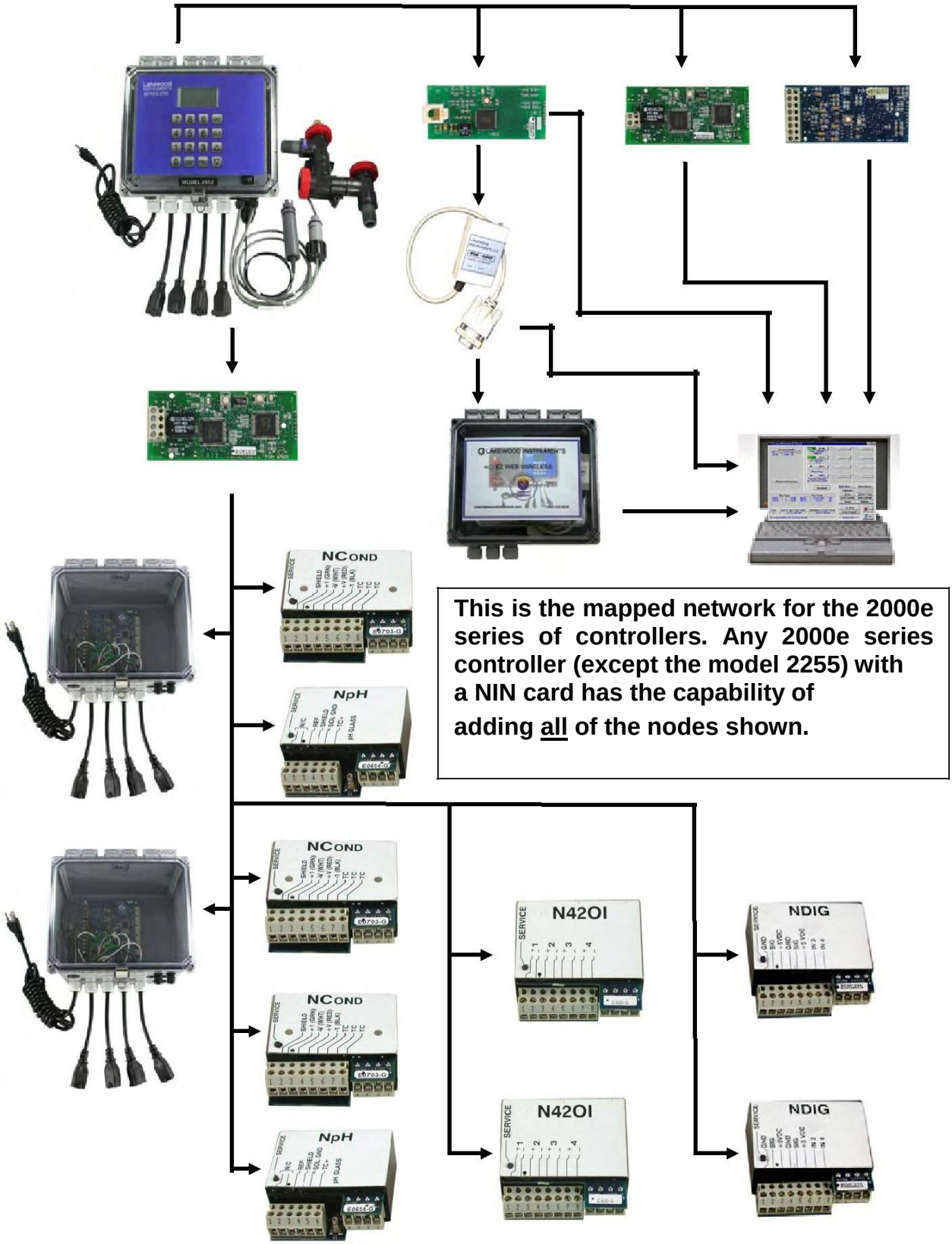
2KIN
LonWorks twisted pair network option card for one-way communications from the controller to a building automation system.

NRLY-
4 additional relay outputs. Maximum of 12 relays allowed.

EZWEB Wireless
Broadband Internet interface, consists of HUB/Router and an EVDO Rev A (3G) wireless connection. Requires RS2L option card and WEBNode.

WEBNode-
Connects Rs2L card to Ethernet networks using the IP Protocol family and Transmission Control Protocol (TCP). Requires RS2L option card.

2000e SERIES CAPABILITIES



This is the mapped network for the 2000e series of controllers. Any 2000e series controller (except the model 2255) with a NIN card has the capability of adding <u>all</u> of the nodes shown.

LAKEWOOD INSTRUMENTS
MODEL 2175e MICROPROCESSOR-BASED
CONDUCTIVITY COOLING TOWER CONTROLLER

LONWORKS® Technology is the latest in microprocessor capability that gives the user the highest level of application flexibility. A large graphic screen, multiple inputs and very easy setup with easy field upgrade characterize this new technology

Power cord, plug outlets and detached plumbing make installation easy. There is plenty of protected room inside the enclosure for electrician wiring.

FEATURES

- Two water meter inputs, conductivity input with 4-electrode conductivity sensor with 20 ft cable, flow switch input, four relay outputs, and Power On/Off switch are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes four relays for bleed, chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Expandable in the field with the use of the Nodes for additional inputs, such as chiller loop monitor and cycles of concentration based on incoming makeup water or additional outputs such as 4-20 mA and remote communications.
- Able to feed chemicals by multiple feed schemes including biocide addition, setpoint control, percent of blowdown, percent of time, and by water meter.
- Able to bleed based on setpoint or by water meter.
- Includes sensor fouling compensation and alarm.

SPECIFICATIONS

Inputs	
Power	120/240 VAC 50/60 Hz
Sensor	4 electrode Conductivity 304 S.S. electrodes
Temperature comp.	Automatic
Flow switch	Dry contact
Water Meter Inputs	Contacting head, Paddle Wheel, or Turbine.
Outputs	
Relays	Four, 3 Amps @ 120 VAC
4-20 mA	Two isolated or non-isolated w/-35L option

Controller	
Conductivity Range	0-5,000 µS (other ranges optional)
Conductivity Accuracy	± 40 µS
Conductivity Resolution	10 µS
Deadband	Adjustable
Setpoints	Direct or Reverse (config in the field)
Feed timer	Adjustable
Keypad	16 tactile push-buttons
Display	Illuminated 128x64 pixel LCD
Ambient Temperature	32-158°F (0-70°C)
Enclosure	NEMA 4X, ETL

Sensors/Plumbing	Cooling Tower
Max Pressure	140 psi (9.65 bar)@ 100 °F
Max Temp	140°F (60°C)
Min flow	1 gpm (3.785 Lpm)

LonWorks is a registered trademark of Echelon Corporation

ORDERING INFORMATION

2175e LON**W**ORKS® Technology-based conductivity and water meter actuated chemical feed controller. The 2175e has built -in options for feed on conductivity, by feed schedule, blowdown or makeup. Totalizing of makeup and blowdown, and three security levels are standard features. Conductivity range is 0-5,000 µS.

CONTROLLER OPTIONS (optional, select one or more)

+24 volt power supply required for 3 or more nodes.
Communications node with LRWS program.
Two 4-20 mA output configurable for remote data acquisition of conductivity.
Network interface node. Allows 2 NRLY, 1 Makeup NCON, 4 sensor nodes (NpH or NCON), 2 N420I and or 2 NDIG to be added.
Card to connect controller to LON based systems or gateways.

-PS -
RS2L
-35L -
NIN
2KIN-V1

LANGUAGE OPTIONS (optional, choose one, English and Spanish Standard)

-EF English and French.
-EG English and German.

REMOTE NODE OPTIONS (optional, MUST have -NIN Option)

NRLY Four additional relays with enclosure (2 per 2000 Series Controller), also available with receptacles and power cord
NpH pH/ORP node for a pH or ORP sensor.
N420I 4-20 ma input node for up to four 4-20 ma inputs.
NDIG Digital input node for up to four digital inputs.
NCON Conductivity node for makeup water or closed loop control (node only).
NCKT Conductivity node for makeup water or closed loop control with PVC sensor, tee and enclosure. Maximum water pressure and temperature is 140 psi @ 100°F (9.7 bar @ 38°C).

NOTE: <u>NOT</u> FOR USE WITH MULTIPLE COOLING TOWERS.

MOUNTING OPTIONS (optional)

MP Mounting Plate (12 X 21 in.)

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.
WEBNode IP/TCP device for use with 2000 Series controllers.
EZWeb Wireless internet interface for use with WEBNode and 2000 Series controllers.

PART NO.	CONDUCTIVITY COOLING TOWER CONTROLLER ONLY	LIST	CD
1268926	2175e controller only, no plumbing, no sensor.....	**$2100**	**W**

PART NO.	CONDUCTIVITY COOLING TOWER CONTROLLER SYSTEMS	LIST	CD
	The Following Systems Include Sensor and Plumbing Assemblies		
1268647	2175e-RTC	$2,469	W
1268759	2175e-RTC-35L	2,694	W
1268760	2175e-RTC-35L-NIN	2,919	W
1268761	2175e-RTC-NIN	2,694	W
1268762	2175e-RTC-RS2L	2,694	W
1268763	2175e-RTC-RS2L-35L	2,919	W
1268764	2175e-RTC-RS2L-NIN	2,919	W
1268765	2175e-RTC-RS2L-35L-NIN	3,144	W
	This controller model is available on a mounting plate.	144	W
	Call factory for part numbers		

PART NO.	REPLACEMENT PARTS	LIST	CD
1166418	O-Ring, for sensor and/or flow sight, set of 10	$10	R
1169740	Red Ring replacement Kit set of two	60	R
1107004	Reed Switch w/20 ft of cable	55	R
1167266	Flow Sight set of five	80	R
1167234	Flow Float set of five	90	R
1107003	Plumbing, with 20' FS, remote plumbing	204	R
1169202	Sensor, Conductivity 4 elec w/ 20 ft of cable	302	W
1107251	PS (+24VDC supply required for 3 or more nodes)	37	R

LAKEWOOD INSTRUMENTS
MODEL 2330e MICROPROCESSOR-BASED
ORP COOLING TOWER CONTROLLER

LONWORKS® Technology is the latest in microprocessor capability that gives the user the highest level of application flexibility. A large graphic screen, multiple inputs and very easy setup with easy field upgrade characterize this new technology

Power cord, plug outlets and detached plumbing make installation easy. There is plenty of protected room inside the enclosure for electrician wiring.

FEATURES

- Two water meter inputs, ORP input with sensor with 15 ft cable, flow switch input, four relay outputs, and Power On/Off switch are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes four relays for bleed, chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Expandable in the field with the use of the Nodes for additional inputs, such as chiller loop monitor and cycles of concentration based on incoming makeup water, or additional outputs such as 4-20 mA and remote communications.
- Able to feed chemicals by multiple feed schemes including biocide addition, setpoint control, percent of blowdown, percent of time, and by water meter.

SPECIFICATIONS

Inputs	
Power	120/240 VAC 50/60 Hz
Sensor	ORP Combination Glass Electrode
Temperature comp.	None
Flow switch	Dry contact
Water Meter Inputs	Contacting head, Paddle Wheel, or Turbine.
Outputs	
Relays	Four, 3 Amps @ 120 VAC
4-20 mA	Two isolated or non-isolated w/-35L option

Controller	
ORP Range	-1000 to +1000 mV
ORP Accuracy	± 5 mV
ORP Resolution	1 µS
Deadband	Adjustable
Setpoints	Direct or Reverse (config in the field)
Feed timer	Adjustable
Keypad	16 tactile push-buttons
Display	Illuminated 128x64 pixel LCD
Ambient Temperature	32-158°F (0-70°C)
Enclosure	NEMA 4X, ETL

Intertek

Sensors/Plumbing	Cooling Tower
Max Pressure	140 psi (9.65 bar)@ 100 °F
Max Temp	140°F (60°C)
Min flow	1 gpm (3.785 Lpm)

LonWorks is a registered trademark of Echelon Corporation

ORDERING INFORMATION

2330e LONWORKS Technology-based ORP controller with plumbing and flow switches. Four relays are integral to the system. The relays may be configured for ORP high or low setpoints and alarms. ORP range is -1000 to +1000 mV. Sensor has 15 ft. of cable.

CONTROLLER OPTIONS (optional, select one or more)

+24 volt power supply required for 3 or more nodes.
Communications node with LRWS program.
Two 4-20 mA output configurable for remote data acquisition of ORP.
Network interface node. Allows 2 NRLY, 1 Makeup NCON, 4 sensor nodes (NpH or NCON), 2 N420I and or 2 NDIG to be added.
Card to connect controller to LON based systems or gateways.

-PS -
RS2L
-35L -
NIN
2KIN-V1

LANGUAGE OPTIONS (optional, choose one, English and Spanish Standard)

-EF English and French.
-EG English and German.

REMOTE NODE OPTIONS (optional, MUST have -NIN Option)

NRLY Four additional relays with enclosure (2 per 2000 Series Controller), also available with receptacles and power cord
NpH pH/ORP node for a pH or ORP sensor.
N420I 4-20 ma input node for up to four 4-20 ma inputs.
NDIG Digital input node for up to four digital inputs.
NCON Conductivity node for makeup water or closed loop control (node only).
NCKT Conductivity node for makeup water or closed loop control with PVC sensor, tee and enclosure. Maximum water pressure and temperature is 140 psi @ 100°F (9.7 bar @ 38°C).

NOTE: <u>NOT</u> FOR USE WITH MULTIPLE COOLING TOWERS.

MOUNTING OPTIONS (optional)

MP Mounting Plate (12 X 21 in.).

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.
WEBNode IP/TCP device for use with 2000 Series controllers.
EZWeb Wireless internet interface for use with WEBNode and 2000 Series controllers.

PART NO.	ORP COOLING TOWER CONTROLLER ONLY	LIST	CD
1268965	2330e controller only, no plumbing, no sensor.....	**$2,200**	**W**

PART NO.	ORP COOLING TOWER CONTROLLER SYSTEMS	LIST	CD
	The Following Systems Include Sensor and Plumbing Assemblies		
1268657	2330e-RTC	$2,678	W
1268766	2330e-RTC-35L	2,903	W
1268767	2330e-RTC-35L-NIN	3,128	W
1268768	2330e-RTC-NIN	2,903	W
1268769	2330e-RTC-RS2L	2,903	W
1268770	2330e-RTC-RS2L-35L	3,128	W
1268771	2330e-RTC-RS2L-NIN	3,128	W
1268772	2330e-RTC-RS2L-35L-NIN	3,353	W
	This controller model is available on a mounting plate.	144	W
	Call factory for part numbers.		

PART NO.	REPLACEMENT PARTS	LIST	CD
1166418	O-Ring, for sensor and/or flow sight, set of 10	$10	R
1169740	Red Ring replacement Kit set of two	60	R
1107004	Reed Switch w/20 ft of cable	55	R
1167266	Flow Sight set of five	80	R
1167234	Flow Float set of five	90	R
1240473	Sensor, ORP 1530e, 2330e, 2430e, 2830e, 2832e w/15 ft of cable	459	W
1240477	Plumbing, 1520/30e, 2330e, 2350e w/ 20ft flow switch	212	R
1107251	PS (+24VDC supply required for 3 or more nodes)	37	R

LAKEWOOD INSTRUMENTS
MODEL 2350e MICROPROCESSOR-BASED
pH COOLING TOWER CONTROLLER

LONWORKS® Technology is the latest in microprocessor capability that gives the user the highest level of application flexibility. A large graphic screen, multiple inputs and very easy setup with easy field upgrade characterize this new technology

Power cord, plug outlets and detached plumbing make installation easy. There is plenty of protected room inside the enclosure for electrician wiring.

FEATURES

- Two water meter inputs, pH input with sensor with 15 ft cable, flow switch input, four relay outputs, and Power On/Off switch are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes four relays for bleed, chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Expandable in the field with the use of the Nodes for additional inputs, such as chiller loop monitor and cycles of concentration based on incoming makeup water, or additional outputs such as 4-20 mA and remote communications.
- Able to feed chemicals by multiple feed schemes including biocide addition, setpoint control, percent of blowdown, percent of time, and by water meter.

SPECIFICATIONS

Inputs	
Power	120/240 VAC 50/60 Hz
Sensor	pH Combination Glass Electrode
Temperature comp.	None
Flow switch	Dry contact
Water Meter Inputs	Contacting head, Paddle Wheel, or Turbine.
Outputs	
Relays	Four, 3 Amps @ 120 VAC
4-20 mA	Two isolated or non-isolated w/-35L option

Controller	
pH Range	2 to 12 pH
pH Accuracy	± 0.05 pH
pH Resolution	0.01 pH
Deadband	Adjustable
Setpoints	Direct or Reverse (config in the field)
Feed timer	Adjustable
Keypad	16 tactile push-buttons
Display	Illuminated 128x64 pixel LCD
Ambient Temperature	32-158°F (0-70°C)
Enclosure	NEMA 4X, ETL

Sensors/Plumbing	**Cooling Tower**
Max Pressure	140 psi (9.65 bar)@ 100 °F
Max Temp	140°F (60°C)
Min flow	1 gpm (3.785 Lpm)

LonWorks is a registered trademark of Echelon Corporation

ORDERING INFORMATION

2350e LONWORKS Technology-based pH controller with plumbing and flow switch. Four relays are integral to the system. The relays may be configured for pH high or low setpoints and alarms. pH range is 0-14 pH. Sensor has 15 ft. of cable.

CONTROLLER OPTIONS (optional, select one or more)

+24 volt power supply required for 3 or more nodes.
Communications node with LRWS program.
Two 4-20 mA output configurable for remote data acquisition of pH.
Network interface node. Allows 2 NRLY, 1 Makeup NCON, 4 sensor nodes (NpH or NCON), 2 N420I and or 2 NDIG to be added.
Card to connect controller to LON based systems or gateways.

-PS -
RS2L
-35L -
NIN
2KIN-V1

LANGUAGE OPTIONS (optional, choose one, English and Spanish Standard)

-EF English and French.
-EG English and German.

REMOTE NODE OPTIONS (optional, MUST have -NIN Option)

NRLY Four additional relays with enclosure (2 per 2000 Series Controller), also available with receptacles and power cord
NpH pH/ORP node for a pH or ORP sensor.
N420I 4-20 ma input node for up to four 4-20 ma inputs.
NDIG Digital input node for up to four digital inputs.
NCON Conductivity node for makeup water or closed loop control (node only).
NCKT Conductivity node for makeup water or closed loop control with PVC sensor, tee and enclosure. Maximum water pressure and temperature is 140 psi @ 100°F (9.7 bar @ 38°C).

NOTE: <u>NOT</u> FOR USE WITH MULTIPLE COOLING TOWERS.

MOUNTING OPTIONS (optional)

MP Mounting Plate (12 X 21 in.)

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.
WEBNode IP/TCP device for use with 2000 Series controllers.
EZWeb Wireless internet interface for use with WEBNode and 2000 Series controllers.

PART NO.	pH COOLING TOWER CONTROLLER ONLY	LIST	CD
1268966	2350e controller only, no plumbing, no sensor.....	$2,200	W

PART NO.	pH COOLING TOWER CONTROLLER SYSTEMS	LIST	CD
	The Following Systems Include Sensor and Plumbing Assemblies		
1268659	2350e-RTC	$2,678	W
1268773	2350e-RTC-35L	2,903	W
1268774	2350e-RTC-35L-NIN	3,128	W
1268775	2350e-RTC-NIN	2,903	W
1268776	2350e-RTC-RS2L	2,903	W
1268777	2350e-RTC-RS2L-35L	3,128	W
1268778	2350e-RTC-RS2L-NIN	3,128	W
1268779	2350e-RTC-RS2L-35L-NIN	3,353	W
	This controller model is available on a mounting plate.	144	W
	Call factory for part numbers.		

PART NO.	REPLACEMENT PARTS	LIST	CD
1166418	O-Ring, for sensor and/or flow sight, set of 10	$10	R
1169740	Red Ring replacement Kit set of two	60	R
1107004	Reed Switch w/20 ft of cable	55	R
1167266	Flow Sight set of five	80	R
1167234	Flow Float set of five	90	R
1240472	Sensor, pH 1520e, 2350e, 2412e w/15 ft of cable.....	459	W
1240477	Plumbing, 1520/30e, 2330e, 2350e w/ 20ft flow switch	212	R
1107251	PS (+24VDC supply required for 3 or more nodes)	37	R

LAKEWOOD INSTRUMENTS
MODEL 2412e MICROPROCESSOR-BASED
pH & CONDUCTIVITY COOLING TOWER CONTROLLER

LONWORKS® Technology is the latest in microprocessor capability that gives the user the highest level of application flexibility. A large graphic screen, multiple inputs and very easy setup with easy field upgrade characterize this new technology

Power cord, plug outlets and detached plumbing make installation easy. There is plenty of protected room inside the enclosure for electrician wiring.

FEATURES

- Two water meter inputs, pH and conductivity inputs with sensors with 15 ft cable, flow switch input, four relay outputs, and Power On/Off switch are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes four relays for bleed, chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Expandable in the field with the use of the Nodes for additional inputs, such as chiller loop monitor and cycles of concentration based on incoming makeup water, or additional outputs such as 4-20 mA and remote communications.
- Able to feed chemicals by multiple feed schemes including biocide addition, setpoint control, percent of blowdown, percent of time, and by water meter.

SPECIFICATIONS

Inputs	
Power	120/240 VAC 50/60 Hz
Sensor	pH Combination Glass Electrode
Temperature comp.	None
Flow switch	Dry contact
Water Meter Inputs	Contacting head, Paddle Wheel, or Turbine.
Outputs	
Relays	Four, 3 Amps @ 120 VAC
4-20 mA	Two isolated or non-isolated w/-35L option
Controller	
pH Range	2 to 12 pH
pH Accuracy	± 0.05 pH
pH Resolution	0.01 pH
Conductivity Range	0-5000 µS (other ranges optional)
Conductivity Accuracy	± 40 µS
Conductivity Resolution	10 µS
Deadband	Adjustable
Setpoints	Direct or Reverse (config in the field)
Feed timer	Adjustable
Keypad	16 tactile push-buttons
Display	Illuminated 128x64 pixel LCD
Ambient Temperature	32-158°F (0-70°C)
Enclosure	NEMA 4X, ETL

Intertek

Sensors/Plumbing	Cooling Tower
Max Pressure	140 psi (9.65 bar)@ 100 °F
Max Temp	140°F (60°C)
Min flow	1 gpm (3.785 Lpm)

LonWorks is a registered trademark of Echelon Corporation

ORDERING INFORMATION

2412e LONWORKS® Technology-based pH and conductivity controller with plumbing and flow switch. Four relays are integral to the system. One is dedicated to blowdown. The others may be configured for pH (acid or caustic), inhibitor feed on conductivity, water meter, percent of time or schedule feed. pH range is 0-14 and conductivity range is 0-5,000 µS.

CONTROLLER OPTIONS (optional, select one or more)

+24 volt power supply required for 3 or more nodes.
Communications node with LRWS program.
Two 4-20 mA outputs configurable for data acquisition of conductivity and pH.
Network interface node. Allows 2 NRLY, 1 Makeup NCON, 4 sensor nodes (NpH or NCON), 2 N420I and or 2 NDIG to be added.
Card to connect controller to LON based systems or gateways.

-PS -
RS2L
-35L -
NIN
2KIN-V1

LANGUAGE OPTIONS (optional, choose one, English and Spanish Standard)

-EF English and French.
-EG English and German.

REMOTE NODE OPTIONS (optional, MUST have -NIN option)

NRLY Four additional relays with enclosure (2 per 2000 Series Controller), also available with receptacles and power cord
NpH pH/ORP node for a pH or ORP sensor.
N420I 4-20 ma input node for up to four 4-20 ma inputs.
NDIG Digital input node for up to four digital inputs.
NCON Conductivity node for makeup water or closed loop control (node only).
NCKT Conductivity node for makeup water or closed loop control with PVC sensor, tee and enclosure. Maximum water pressure and temperature is 140 psi @ 100°F (9.7 bar @ 38°C).

NOTE: NOT FOR USE WITH MULTIPLE COOLING TOWERS.

MOUNTING OPTIONS (optional)

MP Mounting Plate (12 X 21 in.).

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.
WEBNode IP/TCP device for use with 2000 Series controllers.
EZWeb Wireless internet interface for use with WEBNode and 2000 Series controllers.

PART NO.	pH and CONDUCTIVITY COOLING TOWER CONTROLLER ONLY	LIST	CD
1268967	2412e controller only, no plumbing, no sensors.....	$2,200	W

PART NO.	pH and CONDUCTIVITY COOLING TOWER CONTROLLER SYSTEMS	LIST	CD
	The Following Systems Include Sensor and Plumbing Assemblies		
1268649	2412e-RTC	$3,211	W
1268780	2412e-RTC-35L	3,436	W
1268781	2412e-RTC-35L-NIN	3,661	W
1268782	2412e-RTC-NIN	3,436	W
1268783	2412e-RTC-RS2L	3,436	W
1268784	2412e-RTC-RS2L-35L	3,661	W
1268785	2412e-RTC-RS2L-NIN	3,661	W
1268786	2412e-RTC-RS2L-35L-NIN	3,886	W
	This controller model is available on a mounting plate.	144	W
	Call factory for part numbers.		

PART NO.	REPLACEMENT PARTS	LIST	CD
1166418	O-Ring, for sensor and/or flow sight, set of 10	$10	R
1169740	Red Ring replacement Kit set of two	60	R
1107004	Reed Switch w/20 ft of cable	55	R
1167266	Flow Sight set of five	80	R
1167234	Flow Float set of five	90	R
1169202	Sensor, Conductivity 4 elec w/ 20 ft of cable	302	W
1240472	Sensor, pH 1520e, 2350e, 2412e, 2812e, 2832e w/ 15 ft of cable	459	W
1268640	Plumbing, 1512e/2412e/2430e/2812e/2830e	250	R
1107251	PS (+24VDC supply required for 3 or more nodes)	37	R

LAKEWOOD INSTRUMENTS
MODEL 2430e MICROPROCESSOR-BASED
ORP & CONDUCTIVITY COOLING TOWER CONTROLLER

LONWORKS® Technology is the latest in microprocessor capability that gives the user the highest level of application flexibility. A large graphic screen, multiple inputs and very easy setup with easy field upgrade characterize this new technology

Power cord, plug outlets and detached plumbing make installation easy. There is plenty of protected room inside the enclosure for electrician wiring.

FEATURES

- Two water meter inputs, ORP and conductivity inputs with sensors with 15 ft cable, flow switch input, four relay outputs, and Power On/Off switch are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes four relays for bleed, chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Expandable in the field with the use of the Nodes for additional inputs, such as chiller loop monitor and cycles of concentration based on incoming makeup water, or additional outputs such as 4-20 mA and remote communications.
- Able to feed chemicals by multiple feed schemes including biocide addition, setpoint control, percent of blowdown, percent of time, and by water meter.

SPECIFICATIONS

Inputs			
Power	120/240 VAC 50/60 Hz	Conductivity Range	0-5000 µS (other ranges optional)
Sensor	pH Combination Glass Electrode	Conductivity Accuracy	± 40 µS
		Conductivity Resolution	10 µS
Temperature comp.	None	Deadband	Adjustable
Flow switch	Dry contact	Setpoints	Direct or Reverse (config in the field)
Water Meter Inputs	Contacting head, Paddle Wheel, or Turbine.	Feed timer	Adjustable
		Keypad	16 tactile push-buttons
Outputs		Display	Illuminated 128x64 pixel LCD
Relays	Four, 3 Amps @ 120 VAC	Ambient Temperature	32-158°F (0-70°C)
4-20 mA	Two isolated or non-isolated w/-35L option	Enclosure	NEMA 4X, ETL
Controller			
ORP Range	-1000 to +1000 mV		
ORP Accuracy	± 5 mV		
ORP Resolution	1 mV		

Sensors/Plumbing	Cooling Tower
Max Pressure	140 psi (9.65 bar)@ 100 °F
Max Temp	140°F (60°C)
Min flow	1 gpm (3.785 Lpm)

LonWorks is a registered trademark of Echelon Corporation

ORDERING INFORMATION

2430e LONWORKS Technology-based ORP and conductivity controller with plumbing and flow switch. Four relays are integral to the system. One is dedicated to blowdown. The others may be configured for ORP, inhibitor feed on conductivity, water meter, percent of time or schedule feed. ORP range is -1000 to +1000 mV and conductivity range is 0-5,000 µS.

CONTROLLER OPTIONS (optional, select one or more)

+24 volt power supply required for 3 or more nodes.
Communications node with LRWS program.
Two 4-20 mA output configurable for data acquisition of conductivity and ORP.
Network interface node. Allows 2 NRLY, 1 Makeup NCON, 4 sensor nodes (NpH or NCON), 2 N420I and or 2 NDIG to be added.
Card to connect controller to LON based systems or gateways.

-PS -
RS2L
-35L -
NIN
2KIN-V1

LANGUAGE OPTIONS (optional, choose one, English and Spanish Standard)

-EF English and French.
-EG English and German.

REMOTE NODE OPTIONS (optional, MUST have -NIN option)

NRLY Four additional relays with enclosure (2 per 2000 Series Controller), also available with receptacles and power cord
NpH pH/ORP node for a pH or ORP sensor.
N420I 4-20 ma input node for up to four 4-20 ma inputs.
NDIG Digital input node for up to four digital inputs.
NCON Conductivity node for makeup water or closed loop control (node only).
NCKT Conductivity node for makeup water or closed loop control with PVC sensor, tee and enclosure. Maximum water pressure and temperature is 140 psi @ 100°F (9.7 bar @ 38°C).

NOTE: <u>NOT</u> FOR USE WITH MULTIPLE COOLING TOWERS.

MOUNTING OPTIONS (optional)

MP Mounting Plate (12 X 21 in.).

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.
WEBNode IP/TCP device for use with 2000 Series controllers.
EZWeb Wireless internet interface for use with WEBNode and 2000 Series controllers.

PART NO.	ORP and CONDUCTIVITY COOLING TOWER CONTROLLER ONLY	LIST	CD
1268968	2430e controller only, no plumbing, no sensors.....	**$2,200**	**W**

PART NO.	ORP and CONDUCTIVITY COOLING TOWER CONTROLLER SYSTEMS	LIST	CD
	The Following Systems Include Sensor and Plumbing Assemblies		
1268628	2430e-RTC	$3,211	W
1268787	2430e-RTC-35L	3,436	W
1268788	2430e-RTC-35L-NIN	3,661	W
1268789	2430e-RTC-NIN	3,436	W
1268790	2430e-RTC-RS2L	3,436	W
1268791	2430e-RTC-RS2L-35L	3,661	W
1268634	2430e-RTC-RS2L-NIN	3,661	W
1268792	2430e-RTC-RS2L-35L-NIN	3,886	W
	This controller model is available on a mounting plate.	144	W
	Call factory for part numbers.		

PART NO.	REPLACEMENT PARTS	LIST	CD
1166418	O-Ring, for sensor and/or flow sight, set of 10	$10	R
1169740	Red Ring replacement Kit set of two	60	R
1107004	Reed Switch w/20 ft of cable	55	R
1167266	Flow Sight set of five	80	R
1167234	Flow Float set of five	90	R
1169202	Sensor, Conductivity 4 elec w/ 20 ft of cable	302	W
1240473	Sensor, ORP 1530e. 2330e, 2430e, 2830e, 2832e w/ 15 ft of cable	459	W
1268640	Plumbing, 1512e/2412e/2430e/2812e/2830e	250	R
1107251	PS (+24VDC supply required for 3 or more nodes)	37	R

LAKEWOOD INSTRUMENTS
MODEL 2812e MICROPROCESSOR-BASED
pH & CONDUCTIVITY COOLING TOWER CONTROLLER

Shown with optional mounting plate

LONWORKS® Technology is the latest in microprocessor capability that gives the user the highest level of application flexibility. A large graphic screen, multiple inputs and very easy setup with easy field upgrade characterize this new technology

Power cord, plug outlets and detached plumbing make installation easy. There is plenty of protected room inside the enclosure for electrician wiring.

FEATURES

- Two water meter inputs, pH and conductivity inputs with sensors with 15 ft cable, flow switch input, eight relay outputs (seven with drop cords), and Power On/Off switch are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes seven relays for bleed, chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Expandable in the field with the use of the Nodes for additional inputs, such as chiller loop monitor and cycles of concentration based on incoming makeup water, or additional outputs such as 4-20 mA and remote communications.
- Able to feed chemicals by multiple feed schemes including biocide addition, setpoint control, percent of blowdown, percent of time, and by water meter.

SPECIFICATIONS

Inputs	
Power	120/240 VAC 50/60 Hz
Sensor	pH Combination Glass Electrode
Temperature comp.	None
Flow switch	Dry contact
Water Meter Inputs	Contacting head, Paddle Wheel, or Turbine.
Outputs	
Relays	Eight, 3 Amps @ 120 VAC Seven with drop cords
4-20 mA	Two isolated or non-isolated w/-35L option
Controller	
pH Range	2 to 12 pH
pH Accuracy	± 0.05 pH
pH Resolution	0.01 pH
Conductivity Range	0-5000 µS (other ranges optional)
Conductivity Accuracy	± 40 µS
Conductivity Resolution	10 µS
Deadband	Adjustable
Setpoints	Direct or Reverse (config in the field)
Feed timer	Adjustable
Keypad	16 tactile push-buttons
Display	Illuminated 128x64 pixel LCD
Ambient Temperature	32-158°F (0-70°C)
Enclosure	NEMA 4X, ETL

Intertek

Sensors/Plumbing	Cooling Tower
Max Pressure	140 psi (9.65 bar)@ 100 °F
Max Temp	140°F (60°C)
Min flow	1 gpm (3.785 Lpm)

LonWorks is a registered trademark of Echelon Corporation

ORDERING INFORMATION

2812e LONWORKS Technology-based pH and conductivity controller with plumbing and flow switch. Eight relays are integral to the system. One is dedicated to blowdown. The others may be configured for pH (acid or caustic), inhibitor feed on conductivity, water meter, percent of time, or schedule feed. pH range 2-12 pH, and conductivity range is 0-5,000 µS.

CONTROLLER OPTIONS (optional, select one)

-As shown above
-Basic plus communications card(RS-232) and four 4-20mA inputs
-Deluxe plus Network/Internet communication interface
-WEB plus Broadband Internet two-way hub that is independent of any site infrastructure and can have up to four 2000 series controllers linked to it. Also functions a local WiFi Hotspot for those with password. Requires one year service agreement part number 126977.

-BASIC

Four additional relays with enclosure (1 per 2800 Series Controller)
pH/ORP node for a pH or ORP sensor.
Card to connect controller to LON based systems or gateways.
4-20 ma input node for up to four 4-20 ma inputs.
Digital input node for up to four digital inputs.
Conductivity node for makeup water or closed loop control (node only).
Conductivity node for makeup water or closed loop control with PVC sensor, tee and enclosure. Maximum water pressure and temperature is 140 psi @ 100°F (9.7 bar @ 38°C).
NOTE: <u>NOT</u> FOR USE WITH MULTIPLE COOLING TOWERS.
SEE 2000e SERIES CAPABILITIES SHEET FOR FURTHER INFO.

-DELUXE
-WEB -
EZWEB

ADVANCED ADD-ON REMOTE NODE OPTIONS (optional)
NRLY
NpH
2KIN-V1
N420I
NDIG
NCON
NCKT

MOUNTING OPTIONS (optional)

MP Mounting Plate (12 X 21 in.).

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.

PART NO.	pH and CONDUCTIVITY COOLING TOWER CONTROLLER ONLY	LIST	CD
1269025	2812e controller only, no plumbing, no sensors.....	$3,200	W

PART NO.	pH and CONDUCTIVITY COOLING TOWER CONTROLLER SYSTEMS	LIST	CD
	The Following Systems Include Sensor and Plumbing Assemblies		
1269035	2812e-BASIC	4,211	W
1269036	2812e-DELUXE	4,956	W
1269037	2812e-WEB	5,206	W
1269038	2812e-EZWEB.....	6,181	W
	(EZWEB requires 1 year service agreement, part no. 1268977)		
	This controller model is available on a mounting plate.	144	W
	Call factory for part numbers.		

PART NO.	REPLACEMENT PARTS	LIST	CD
1166418	O-Ring, for sensor and/or flow sight, set of 10	10	R
1169740	Red Ring replacement Kit set of two	60	R
1107004	Reed Switch w/ 20 ft of cable	55	R
1167266	Flow Sight set of five	80	R
1167234	Flow Float set of five	90	R
1169202	Sensor, Conductivity 4 elec w/ 20 ft of cable	302	W
1240472	Sensor, pH 1520e, 2350e, 2412e, 2812e, 2832e w/15 ft cable	459	W
1268640	Plumbing, 1512e/2412e/2430e/2812e/2830e	250	R

LAKEWOOD INSTRUMENTS
MODEL 2830e MICROPROCESSOR-BASED
ORP & CONDUCTIVITY COOLING TOWER CONTROLLER

Shown with optional mounting plate

LONWORKS® Technology is the latest in microprocessor capability that gives the user the highest level of application flexibility. A large graphic screen, multiple inputs and very easy setup with easy field upgrade characterize this new technology

Power cord, plug outlets and detached plumbing make installation easy. There is plenty of protected room inside the enclosure for electrician wiring.

FEATURES

- Two water meter inputs, ORP and conductivity inputs with sensors with 15 ft cable, flow switch input, eight relay outputs (seven with drop cords), and Power On/Off switch are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes seven relays for bleed, chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Expandable in the field with the use of the Nodes for additional inputs, such as chiller loop monitor and cycles of concentration based on incoming makeup water, or additional outputs such as 4-20 mA and remote communications.
- Able to feed chemicals by multiple feed schemes including biocide addition, setpoint control, percent of blowdown, percent of time, and by water meter.

SPECIFICATIONS

Inputs			
Power	120/240 VAC 50/60 Hz	Conductivity Range	0-5000 µS (other ranges optional)
Sensor	pH Combination Glass Electrode	Conductivity Accuracy	± 40 µS
		Conductivity Resolution	10 µS
Temperature comp.	None	Deadband	Adjustable
Flow switch	Dry contact	Setpoints	Direct or Reverse (config in the field)
Water Meter Inputs	Contacting head, Paddle Wheel, or Turbine.	Feed timer	Adjustable
		Keypad	16 tactile push-buttons
Outputs		Display	Illuminated 128x64 pixel LCD
Relays	Eight, 3 Amps @ 120 VAC Seven with drop cords	Ambient Temperature	32-158°F (0-70°C)
		Enclosure	NEMA 4X, ETL
4-20 mA	Two isolated or non-isolated w/-35L option		
Controller			
ORP Range	-1000 to +1000 mV		
ORP Accuracy	± 5 mV		
ORP Resolution	1 mV		

Intertek

Sensors/Plumbing	Cooling Tower
Max Pressure	140 psi (9.65 bar)@ 100 °F
Max Temp	140°F (60°C)
Min flow	1 gpm (3.785 Lpm)

LonWorks is a registered trademark of Echelon Corporation

ORDERING INFORMATION

2830e LONWORKS Technology-based ORP and conductivity controller with plumbing and flow switch. Eight relays are integral to the system. One is dedicated to blowdown. The others may be configured for ORP setpoint (direct or reverse), inhibitor feed on conductivity, water meter, percent of time, or schedule feed. ORP range is -1000 to +1000 mV and conductivity range is 0-5,000 µS.

CONTROLLER OPTIONS (optional, select one)

-As shown above

-Basic plus communications card(RS-232) and four 4-20mA inputs

-Deluxe plus Network/Internet communication interface

-WEB plus Broadband Internet two-way hub that is independent of any site infrastructure and can have up to four 2000 series controllers linked to it. Also functions a local WiFi Hotspot for those with password. Requires one year service agreement part number 126977.

-BASIC

Four additional relays with enclosure (1 per 2800 Series Controller)
pH/ORP node for a pH or ORP sensor.
Card to connect controller to LON based systems or gateways.
4-20 ma input node for up to four 4-20 ma inputs.
Digital input node for up to four digital inputs.
Conductivity node for makeup water or closed loop control (node only).
Conductivity node for makeup water or closed loop control with PVC sensor, tee and enclosure. Maximum water pressure and temperature is 140 psi @ 100°F (9.7 bar @ 38°C).

NOTE: NOT FOR USE WITH MULTIPLE COOLING TOWERS.

SEE 2000e SERIES CAPABILITIES SHEET FOR FURTHER INFO.

-DELUXE

-WEB -

EZWEB

ADVANCED ADD-ON REMOTE NODE OPTIONS (optional)

NRLY

NpH

2KIN-V1

N420I

NDIG

NCON

NCKT

MOUNTING OPTIONS (optional)

MP Mounting Plate (12 X 21 in.).

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.

PART NO.	ORP and CONDUCTIVITY COOLING TOWER CONTROLLER ONLY	LIST	CD
1269070	2830e controller only, no plumbing, no sensors.....	$3,200	W

PART NO.	ORP and CONDUCTIVITY COOLING TOWER CONTROLLER SYSTEMS	LIST	CD
	The Following Systems Include Sensor and Plumbing Assemblies		
1269039	2830e-BASIC	4,211	W
1269040	2830e-DELUXE	4,956	W
1269041	2830e-WEB	5,206	W
1269042	2830e-EZWEB.....	6,181	W
	(EZWEB requires 1 year service agreement, part no. 1268977)		
	This controller model is available on a mounting plate.	144	W
	Call factory for part numbers.		

PART NO.	REPLACEMENT PARTS	LIST	CD
1166418	O-Ring, for sensor and/or flow sight, set of 10	10	R
1169740	Red Ring replacement Kit set of two	60	R
1107004	Reed Switch w/ 20 ft of cable	55	R
1167266	Flow Sight set of five	80	R
1167234	Flow Float set of five	90	R
1169202	Sensor, Conductivity 4 elec w/ 20 ft of cable	302	W
1240473	Sensor, ORP 1530e, 2330e, 2430e, 2830e, 2832e w/ 15 ft of cable	459	W
1268640	Plumbing, 1512e/2412e/2430e/2812e/2830e	250	R

LAKEWOOD INSTRUMENTS
MODEL 2832e MICROPROCESSOR-BASED
ORP, pH & CONDUCTIVITY COOLING TOWER CONTROLLER

LONWORKS® Technology is the latest in microprocessor capability that gives the user the highest level of application flexibility. A large graphic screen, multiple inputs and very easy setup with easy field upgrade characterize this new technology

Power cord, plug outlets and detached plumbing make installation easy. There is plenty of protected room inside the enclosure for electrician wiring.
Shown with optional mounting plate

FEATURES

- Two water meter inputs, ORP, pH and conductivity inputs with sensors with 15 ft cable, flow switch input, eight relay outputs (seven with drop cords), and Power On/Off switch are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes seven relays for bleed, chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Expandable in the field with the use of the Nodes for additional inputs, such as chiller loop monitor and cycles of concentration based on incoming makeup water, or additional outputs such as 4-20 mA and remote communications.
- Able to feed chemicals by multiple feed schemes including biocide addition, setpoint control, percent of blowdown, percent of time, and by water meter.

SPECIFICATIONS

Inputs	
Power	120/240 VAC 50/60 Hz
Sensor	pH Combination Glass Electrode
Temperature comp.	None
Flow switch	Dry contact
Water Meter Inputs	Contacting head, Paddle Wheel, or Turbine.
Outputs	
Relays	Eight, 3 Amps @ 120 VAC Seven with drop cords
4-20 mA	Two isolated or non-isolated w/-35L option
Controller	
ORP Range	-1000 to +1000 mV
ORP Accuracy	± 5 mV
ORP Resolution	1 mV
pH Range	2 – 12 pH
pH Accuracy	± 0.05 pH
pH Resolution	0.01 pH
Conductivity Range	0-5000 µS (other ranges optional)
Conductivity Accuracy	± 40 µS
Conductivity Resolution	10 µS
Deadband	Adjustable
Setpoints	Direct or Reverse (config in the field)
Feed timer	Adjustable
Keypad	16 tactile push-buttons
Display	Illuminated 128x64 pixel LCD
Ambient Temperature	32-158°F (0-70°C)
Enclosure	NEMA 4X, ETL

Intertek

Sensors/Plumbing	Cooling Tower
Max Pressure	140 psi (9.65 bar)@ 100 °F
Max Temp	140°F (60°C)
Min flow	1 gpm (3.785 Lpm)

LonWorks is a registered trademark of Echelon Corporation

ORDERING INFORMATION

2832e LONWORKS Technology-based ORP, pH, and conductivity controller with plumbing and flow switch. Eight relays are integral to the system. One is dedicated to blowdown. The others may be configured for ORP, pH (acid or caustic), inhibitor feed on conductivity, water meter, percent of time, or schedule feed. ORP range is -1000 to +1000 mV, pH range 2-12 pH, and conductivity range is 0-5,000 µS.

CONTROLLER OPTIONS (optional, select one)

-As shown above

-Basic plus communications card(RS-232) and four 4-20mA inputs

-Deluxe plus Network/Internet communication interface

-WEB plus Broadband Internet two-way hub that is independent of any site infrastructure and can have up to four 2000 series controllers linked to it. Also functions a local WiFi Hotspot for those with password. Requires one year service agreement part number 126977.

-BASIC

Four additional relays with enclosure (1 per 2800 Series Controller)
pH/ORP node for a pH or ORP sensor.
Card to connect controller to LON based systems or gateways.
4-20 ma input node for up to four 4-20 ma inputs.
Digital input node for up to four digital inputs.
Conductivity node for makeup water or closed loop control (node only).
Conductivity node for makeup water or closed loop control with PVC sensor, tee and enclosure. Maximum water pressure and temperature is 140 psi @ 100°F (9.7 bar @ 38°C).

NOTE: <u>NOT</u> FOR USE WITH MULTIPLE COOLING TOWERS.

SEE 2000e SERIES CAPABILITIES SHEET FOR FURTHER INFO.

-DELUXE

-WEB -

EZWEB

ADVANCED ADD-ON REMOTE NODE OPTIONS (optional)

NRLY

NpH

2KIN-V1

N420I

NDIG

NCON

NCKT

MOUNTING OPTIONS (optional)

MP Mounting Plate (12 X 21 in.).

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.

PART NO.	pH, ORP, and CONDUCTIVITY COOLING TOWER CONTROLLER ONLY	LIST	CD
1269030	2832e controller only, no plumbing, no sensors.....	$3,696	W

PART NO.	pH, ORP, and CONDUCTIVITY COOLING TOWER SYSTEMS	LIST	CD
	The Following Systems Include Sensors and Plumbing Assemblies		
1269031	2832e-BASIC	5,199	W
1269032	2832e-DELUXE	5,944	W
1269033	2832e-WEB	6,194	W
1269034	2832e-EZWEB.....	7,169	W
	(EZWEB requires 1 year service agreement, part no. 1268977)		
	This controller model is available on a mounting plate.	144	W
	Call factory for part numbers.		

PART NO.	REPLACEMENT PARTS	LIST	CD
1166418	O-Ring, for sensor and/or flow sight, set of 10	10	R
1169740	Red Ring replacement Kit set of two	60	R
1107004	Reed Switch w/ 20 ft of cable	55	R
1167266	Flow Sight set of five	80	R
1167234	Flow Float set of five	90	R
1169202	Sensor, Conductivity 4 elec w/ 20 ft of cable	302	W
1240473	Sensor, ORP 1530e. 2330e, 2430e, 2830, 2832e w/ 15 ft of cable	459	W
1240472	Sensor, pH 1520e, 2350e, 2412e, 2812e, 2832e w/15 ft cable	459	W
1268942	Plumbing, 2400e, 2832e w/pH/cond/ORP	283	R

LAKEWOOD INSTRUMENTS
MODEL 2875e MICROPROCESSOR-BASED
CONDUCTIVITY COOLING TOWER CONTROLLER

LONWORKS® Technology is the latest in microprocessor capability that gives the user the highest level of application flexibility. A large graphic screen, multiple inputs and very easy setup with easy field upgrade characterize this new technology

Power cord, plug outlets and detached plumbing make installation easy. There is plenty of protected room inside the enclosure for electrician wiring.

Shown with optional mounting plate

FEATURES

- Two water meter inputs, conductivity inputs with sensor with 20 ft cable, flow switch input, eight relay outputs (seven with drop cords), and Power On/Off switch are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes seven relays for bleed, chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Expandable in the field with the use of the Nodes for additional inputs, such as chiller loop monitor and cycles of concentration based on incoming makeup water, or additional outputs such as 4-20 mA and remote communications.
- Able to feed chemicals by multiple feed schemes including biocide addition, setpoint control, percent of blowdown, percent of time, and by water meter.

SPECIFICATIONS

Inputs	
Power	120/240 VAC 50/60 Hz
Sensor	pH Combination Glass Electrode
Temperature comp.	None
Flow switch	Dry contact
Water Meter Inputs	Contacting head, Paddle Wheel, or Turbine.
Outputs	
Relays	Eight, 3 Amps @ 120 VAC Seven with drop cords
4-20 mA	Two isolated or non-isolated w/-35L option

Controller	
Conductivity Range	0-5000 µS (other ranges optional)
Conductivity Accuracy	± 40 µS
Conductivity Resolution	10 µS
Deadband	Adjustable
Setpoints	Direct or Reverse (config in the field)
Feed timer	Adjustable
Keypad	16 tactile push-buttons
Display	Illuminated 128x64 pixel LCD
Ambient Temperature	32-158°F (0-70°C)
Enclosure	NEMA 4X, ETL

Intertek

Sensors/Plumbing	**Cooling Tower**
Max Pressure	140 psi (9.65 bar)@ 100 °F
Max Temp	140°F (60°C)
Min flow	1 gpm (3.785 Lpm)

LonWorks is a registered trademark of Echelon Corporation

ORDERING INFORMATION

2832e LONWORKS Technology-based conductivity controller with plumbing and flow switch. Eight relays are integral to the system. One is dedicated to blowdown. The others may be configured for chemical feed on conductivity, water meter, percent of time, percent of blowdown time, schedule feed, or based on selectable alarms. Conductivity range is 0-5,000 µS.

CONTROLLER OPTIONS (optional, select one)

-As shown above

-Basic plus communications card(RS-232) and four 4-20mA inputs

-Deluxe plus Network/Internet communication interface

-WEB plus Broadband Internet two-way hub that is independent of any site infrastructure and can have up to four 2000 series controllers linked to it. Also functions a local WiFi Hotspot for those with password. Requires one year service agreement part number 126977.

-BASIC

Four additional relays with enclosure (1 per 2800 Series Controller)
pH/ORP node for a pH or ORP sensor.
Card to connect controller to LON based systems or gateways.
4-20 ma input node for up to four 4-20 ma inputs.
Digital input node for up to four digital inputs.
Conductivity node for makeup water or closed loop control (node only).
Conductivity node for makeup water or closed loop control with PVC sensor, tee and enclosure. Maximum water pressure and temperature is 140 psi @ 100°F (9.7 bar @ 38°C).

NOTE: <u>NOT</u> FOR USE WITH MULTIPLE COOLING TOWERS.

SEE 2000e SERIES CAPABILITIES SHEET FOR FURTHER INFO.

-DELUXE

-WEB -

EZWEB

ADVANCED ADD-ON REMOTE NODE OPTIONS (optional)

NRLY

NpH

2KIN-V1

N420I

NDIG

NCON

NCKT

MOUNTING OPTIONS (optional)

MP Mounting Plate (12 X 21 in.).

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.

PART NO.	CONDUCTIVITY COOLING TOWER CONTROLLER ONLY	LIST	CD
1269024	2875e controller only, no plumbing, no sensor.....	$3,000	W

PART NO.	CONDUCTIVITY COOLING TOWER CONTROLLER SYSTEMS	LIST	CD
	The Following Systems Include Sensor and Plumbing Assemblies		
1269020	2875e-BASIC	3,506	W
1269021	2875e-DELUXE	4,251	W
1269022	2875e-WEB	4,501	W
1269023	2875e-EZWEB.....	5,476	W
	(EZWEB requires 1 year service agreement, part no. 1268977)		
	This controller model is available on a mounting plate.	144	W
	Call factory for part numbers.		

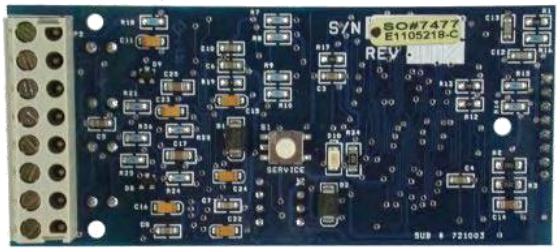
PART NO.	REPLACEMENT PARTS	LIST	CD
1166418	O-Ring, for sensor and/or flow sight, set of 10	10	R
1169740	Red Ring replacement Kit set of two	60	R
1107004	Reed Switch w/ 20 ft of cable	55	R
1167266	Flow Sight set of five	80	R
1167234	Flow Float set of five	90	R
1169202	Sensor, Conductivity 4 elec w/ 20 ft of cable	302	W
1107003	Plumbing, with 20' FS, remote plumbing	204	R

COOLING TOWER ACCESSORIES

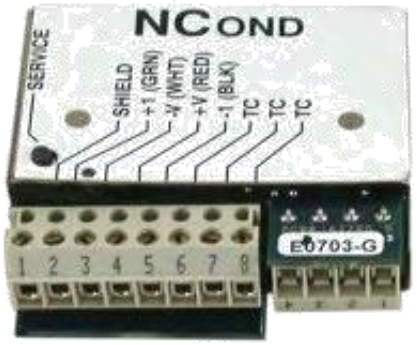
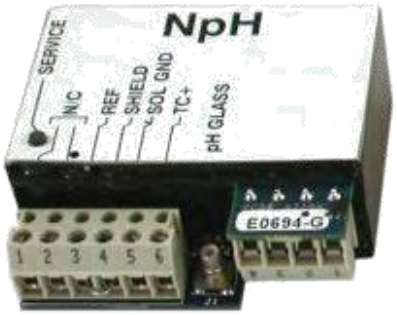
AND

REPLACEMENT PARTS

2000 SERIES OPTIONS AND NODES

	**NIN** **PART NO. 1220810** The NIN is the Network Interface Node. It is used to connect any external nodes to a 2000 series controller. Includes three standoffs for mounting. This option is included with the 2800e series.
	**35L** **PART NO. 1109657** The 35L option card provides two channels of isolated or non-isolated 4-20 mA output from a 2000 series controller. Includes three standoffs for mounting.
	**RS2L** **PART NO. 1109658** The RS2L option card provides an RS232 communications output for use with the WEBNode, modem, or direct connect to a computer. This option card comes with a 9-pin DCE connector, a 25-pin DTE connector, a 25 ft phone cable, and the LRWS software package. Includes three standoffs for mounting.
	**2KIN-V1** **PART NO. 1235230** The 2KIN-V1 option card allows a 2000 series controller to be attached to a LonWorks twisted pair network using FTT 10. It is one-way communications to the controller. Includes three standoffs for mounting.

NODES

	**NCON** **PART NO. 1168513** The Node, Conductivity (NCON) is a single channel of conductivity input to a 2000 series controller. A maximum of four NCON options can be used. A conductivity sensor must be ordered separately. The NIN option card is required for operation.
	**NPH** **PART NO. 1104522** The Node pH (NpH) is a single channel of pH or ORP input to a 2000 series controller. A maximum of four NpH options can be used. A pH or ORP sensor must be ordered separately. The NIN option card is required for operation.
	**NDIG** **PART NO. 1165667** The Node, Digital Input (NDIG) is four channels of digital input to a 2000 series controller. The first two channels can be used as additional water meter inputs. This node can be used for drum switch inputs. A maximum of two NDIG options can be used for a total of eight digital inputs. The NIN option card is required for operation.
	**N420I** **PART NO. 1169706** The Node, 4-20 mA Input (N420I) is four channels of 4-20 mA input to a 2000 series controller. A maximum of two N420I options can be used for a total of 8 channels of 4-20 mA input. The NIN option card is required for operation.

	**NRLY W/RECEPTACLES** **PART NO. 1268833** The Node, Relay (NRLY) is four relay outputs in a NEMA 4X enclosure from a 2000 series controller with a power cord and receptacles. The relays are pre-wired for 120 vac output. The NRLY power cord and receptacles can be removed for conduit connections and dry contacts. A maximum of two NRLY options can be used. The NIN option card is required for operation.
	**NCKT** **PART NO. 1169439** The Node, Conductivity Kit (NCKT) is a four-electrode conductivity sensor, a 3/4 inch solvent-weld plumbing assembly, and an NCON with a NEMA 4X enclosure.
	**PS** **PART NO. 1107251** The Power Supply (PS) is used to provide the +24 vdc to the 2000 series add-on nodes such as the NCON, NRLY, NpH, or NDIG. A PS is required if more than two nodes are attached to a 2000 series controller. This power supply is <u>not</u> necessary when using nodes with a 2800e series controller.

COMMUNICATIONS ACCESSORIES

WEBNODE
PART NO. 1268972

The Lakewood Instruments WEBNode connects the 2000 series -RS2L option card to Ethernet networks using the IP protocol family and the Transmission Control Protocol (TCP).

EZWEB WIRELESS
PART NO. 1268976

The Lakewood Instruments EZWEB WIRELESS Internet Interface consists of a (Plug and Play) integrated HUB /Router and an EVDO Rev A (3G) wireless connection and connects up to four WEBNodes to the internet through a static IP. It also allows a wireless WLAN connection to the internet. The EZWEB requires a 1 year service agreement, part number 1268977.

CABLE AND CONNECTORS KIT
PART NO. 1169333
PHONE CABLE 25 FT.
PART NO. 1166336
9-PIN DCE CONNECTOR
PART NO. 1167764
25-PIN DTE CONNECTOR
PART NO. 1167765

The phone cable and connectors kit includes the phone cable and both the 25-pin DTE connector and the 9-pin DCE connector for use with the RS2L option card.

LAKEWOOD INSTRUMENTS
WEBNODE FOR 2000 SERIES CONTROLLERS

The Lakewood Instruments WebNode connects the 2000 series - RS2L option card to Ethernet networks using the IP protocol family and the Transmission Control Protocol (TCP). The WebNode contains a Web (http) server that allows presentation of custom content.

FEATURES

- Compatible with ALL existing 2000 series controllers with the RS2L option.
- Plug and Play, minimal setup for intranet connections.
- Accessible via Internet through pre-assigned ports (with firewall access).
- Built in Web server hardware to prevent network port access by un-authorized sources.
- 99% of standard LRWS functions are available (Requires installation of LRWS and com port re-director software).

- The unit's configuration is stored in nonvolatile memory and is retained without power.
- Only one person at a time may access the controller. This eliminates the possibility of several people simultaneously attempting to configure the 2000 series controller.

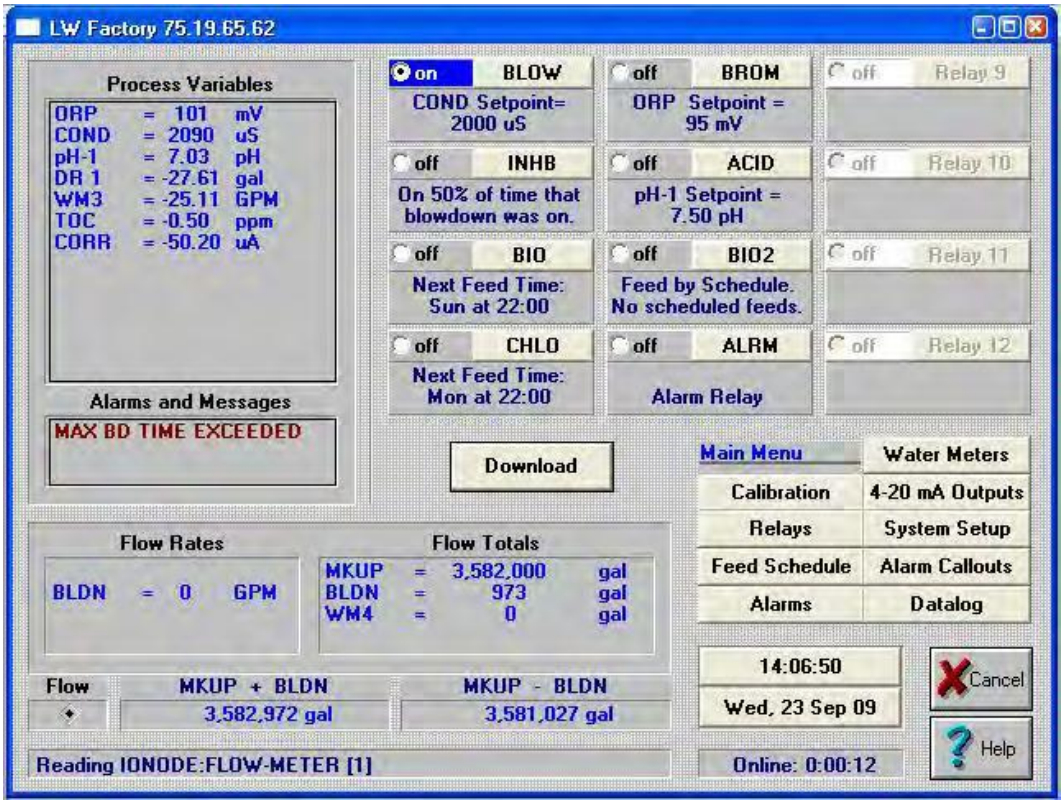
BENEFITS

- Simple, easy to access these devices from a local network or a remote location.
- Self contained web page, not hosted by manufacturer.
- Web page is accessible by an IP-based application (i.e. a web browser) over an IP network from any place in the world.
- Removes RS232 cable length limitations by using Ethernet or IP/TCP networks.
- No access fees

SPECIFICATIONS

Serial Interface	RS232. Baud rate software Selectable (300 to 19200bps)	Protocols Supported	ARP, UDP/IP, TCP/IP, Telnet, ICMP, SNMP, DHCP, BOOTP, TFTP, Auto IP,SMTP and HTTP
Serial Line Formats	7 or 8 data bits, 1-2 Stop bits, Parity: odd, even, none	LEDs	10Base-T & 100Base-TX Activity, Full/half duplex.
Modem Control	CTS, RTS		
Flow Control	XON/XOFF (software), CTS/RTS (hardware), None	Weight	2.2oz
		Material	Case: Flame Retardant
Network Interface	RJ45 Ethernet 10Base-T or 100Base-TX (Auto-sensing)	Temperature	Operating range: -40°C to +85°C (-40°F to 85°F)
Compatibility	Ethernet: Version2.0/IEEE 802.3	Relative Humidity	Operating: 5% to 95% non-condensing
Internal Web Server	Serves static web pages and Java applets	Input Power	+9 to +24VDC

LAKEWOOD REMOTE WINDOWS SOFTWARE (LRWS) FOR MODEL 2000 SERIES CONTROLLERS



LAKEWOOD REMOTE

Lakewood Remote is a *Windows*-based program that accesses all the features of Lakewood 2000 Series controllers remotely. Communication is direct-connect via RS -232, remotely over phone lines with a modem, or over the internet or intranet with the use of the WEBNode. A user-selectable password is required to access any feature beyond viewing.

Lakewood Remote allows access to multiple controllers, phone numbers, addresses, and passwords. Using standard *Windows*-format mouse-click buttons, all features of the controller can be accessed. The datalog stored in the controller can be downloaded into a comma-delimited file. This can be used by *Lakewood Graph* or imported into other applications, such as spreadsheets.

LAKEWOOD GRAPH

Lakewood Graph is a *Windows*-based program that takes delimited datalog files created by *Lakewood Remote* and plots the data on a time line.

SPECIFICATIONS

Platform required:

- 386 with 4M of RAM.
- Any machine that can run *Windows 3.1, 95, 98, NT, 2000, XP, VISTA*.
- 2M of hard drive space.
- Modem is optional.

Direct Connect RS-232:

- 1200, 2400, 4800, 9600 or 19200 baud.
- 8 data bits, 1 stop bit, NO parity.

Modem Requirements:

- Hayes AT command set
- 14,400 baud or higher.

Internet or Intranet Requirements:

- WEBNode
- IP protocol family and the Transmission Control Protocol (TCP).
- .netframework.

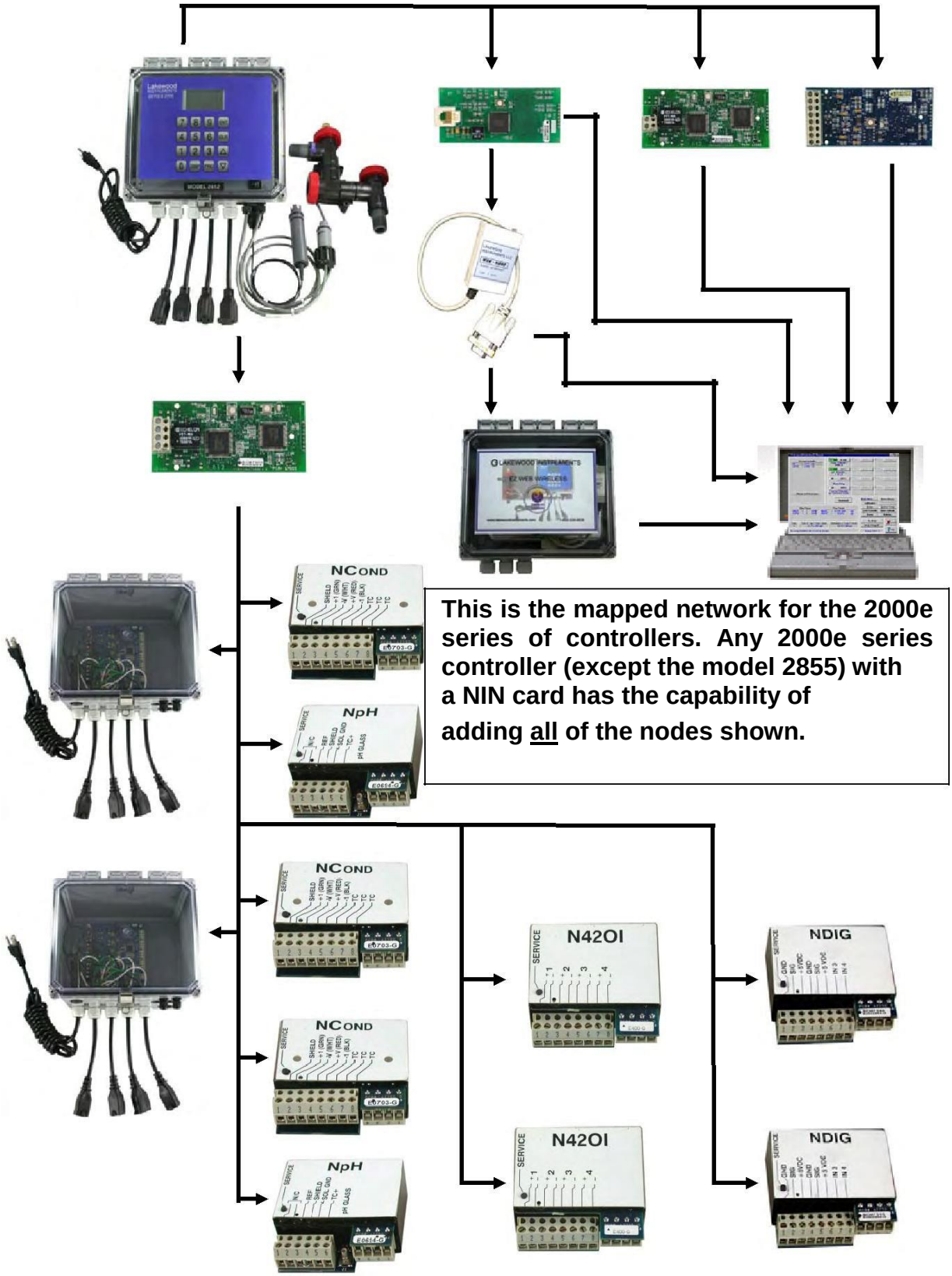
Datalog:

- 1 hour of 1 minute intervals.
- 28 days of hourly intervals.
- Both logs include process minimum, maximum, average pump run times and water meter totals.
- Minimum, maximum and average pump run times reset at the top of the hour.
- Downloaded by *Lakewood Remote* into a file of comma-delimited ASCII data that can be used by *Lakewood Graph* or imported into other applications, such as spreadsheets.

Security:

- View-only mode unless correct password is entered.
- 8-digit password can be changed only at the controller.

2000e SERIES CAPABILITIES

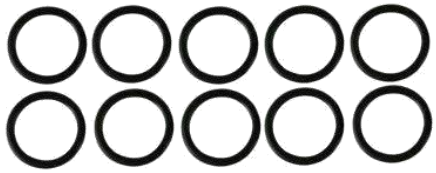
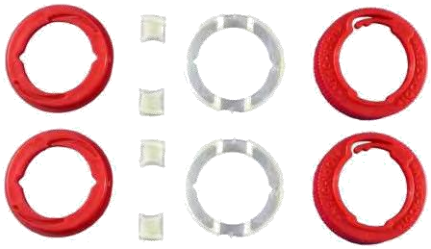


This is the mapped network for the 2000e series of controllers. Any 2000e series controller (except the model 2855) with a NIN card has the capability of adding <u>all</u> of the nodes shown.

2000 SERIES ADD-ON OPTIONS AND NODES

PART NO.	DESCRIPTION	LIST	CD
1168513	NCON, Conductivity Node used to add conductivity sensors	$485	R
1104522	NpH, pH and ORP Node used to add pH/ORP sensors	485	R
1165667	NDIG, Digital Input Node used to add digital inputs	485	R
1169706	N420I, 4-20 mA Input Node used to add 4-20 ma inputs	485	R
1268833	NRLY, Relay Node used to add four additional relays	595	R
1220810	NIN, Network Interface card	225	R
1109657	35L, dual channel 4-20mA output card	225	R
1109658	RS2L, RS232 communications option card	225	R
1235230	2KIN-V1, LonWorks Card	275	R
1169439	NCKT, Conductivity Node, sensor and tee prepackaged kit Can be used for make-up conductivity.	932	W
1107251	PS (+24VDC supply required for 3 or more nodes)	37	R
1268972	WEBNODE, kit includes connector and phone cable	265	R
1268976	EZWEB WIRELESS system	650	R
1268977	EZWEB WIRELESS Service 1 year subscription	CALL	N
1167979	LRWS, Lakewood Remote Windows Software	NC	R
1169333	Kit, Connectors and Cable	48	R
1166336	Cable, phone, 25ft	18	R
1167765	Connector, 25 Pin DTE	16	R
1167764	Connector, 9 Pin DCE	16	R

COOLING TOWER ACCESSORIES AND REPL. PARTS

	**O-Ring** **Set Of Ten** **Part No.1166418** Lakewood Instruments Cooling Tower Ph, Conductivity, ORP Sensors, And Flow Sights. These O-Rings Are Sold In Packages Of 10.
	**Red Ring Replacement** **Set Of Two** **Part No. 1169740** The Red Ring Replacement Kit Comes With Everything Needed Except Glue, To Replace The Red Locking Ring On A Lakewood Instruments Plumbing Assembly. These Kits Are Sold In Sets Of Two.
	**Reed Switch** **Part No. 1167235** This Reed Switch Assembly Comes With 16 Inches Of Cable For Use With Flow Switch Plumbing Assemblies That Are Attached To The Lakewood Instruments Controller Enclosures.
	**Reed Switch 20 ft.** **Part No. 1107004** This Reed Switch Assembly Comes With 20 Feet Of Cable For Use With Flow Switch Plumbing Assemblies That Are **NOT** Attached To The Lakewood Instruments Controller Enclosure.
	**Flow Float, Set Of Five** **Part No. 1167234** The Flow Float Is Used In The Lakewood Instruments Flow Switch Plumbing Assemblies. The Flow Float Activates The Reed Switch And Provides A Visual Indicator Of Flow. The Floats Are Sold In Sets Of Five.
	**Flow Sight, Set Of Five** **Part No. 1167266** The Flow Sight (With O–Ring) Is Part Of The Flow Switch Plumbing Assembly. The Flow Sight Allows A Visible Indication Of The Condition Of The Flow Float. The Sights Are Sold In Sets Of Five. NOTE: Color May Vary.

	**2 electrode Conductivity Sensor** **20 Foot** **Part No. 1167158** The 2 Electrode Conductivity Cooling Tower Sensor. This Sensor Is Used On The Following Models: 101-161RS, 101-161RSFS, 140, 1512e, 1575, And 1575e.
	**2 electrode Conductivity Sensor** **Part No. 1167157** The 2 Electrode Conductivity Cooling Tower Sensor. This Sensor Is Used On The Following Models: 101, 111, 151, 161, 173, 175, 211, 215, 222C, 412, And 420.
	**4 electrode Conductivity Sensor** **Part No. 1167286** The 4 Electrode Cooling Tower Conductivity Sensor With 30 Inches Of Cable For Use With The Models 224C, 1400, 2175, 2412, 2430, And NCKT.
	**4 electrode Conductivity Sensor** **20 Foot** **Part No. 1169202** The 4 Electrode Cooling Tower Conductivity Sensor With 20 Ft. Of Cable For Use With The Models 2175e, 2412e, 2430e, 2175-N4, 2412-N4, 2430-N4, 2812e, 2830e, 2832e, And 2875e. Also Available With A 4 Foot Body For Submersion Applications. Part No. 1169201.
	**2 electrode Conductivity Sensor w/ 4ft Body** **Part No. 1169207** **2 electrode Conductivity Sensor w/ 2ft Body** **Part No. 1269377** The 2 Electrode Conductivity Cooling Tower Sensor With Either a 2 Ft Or 4 Ft Body For Submersion Applications. These Sensors Are Used On The Following Models: 101-161RS, 101-161RSFS, 140, 1512e, 1575, And 1575e.

	**Sensor ORP** **Part No. 1169065** This ORP Sensor Is Used On Models 330, 2330, 2430.
	**Sensor pH** **Part No. 1167155** This pH Sensor Is Used On Models 350, 2350, And The Newer Model 2412. Older Model 2412 Controllers Can Be Upgraded In The Field To Use This Sensor.
	**Sensor pH w/15 ft cable** **Part No. 1240472** The pH Sensor with 15 foot cable and solution ground is used on the Model 1520e, 2350e, 2412e, 2812e, and 2832e.
	**Sensor ORP w/15 ft cable** **Part No. 1240473** The ORP Sensor with 15 foot cable and solution ground is used on the Model 1530e, 2330e, 2430e, 2830e, and 2832e.
	**Sensor pH** **Part No. 1167153** The Sensor Ph Is Used On Models 412, 420, 1400, And Older Model 2412 Controllers. Used In Conjunction With The pH Reference Sensor Part No. 1167154.

Sensor pH Reference
Part No. 1167154

This Refillable pH Reference Sensor Is Used On Models 412, 420, 1400 And Older Model 2412 Controllers. Used In Conjunction With The pH Sensor Part Number 1167153. The Refill Kit Is The Model 8042 Part Number 1169064.

Remote Input RTD
Part no. 1224302

The Remote Input RTD Is Used Where Extreme Variations In Water Temperature Cause Inaccurate Conductivity Readings. The RTD Is 500 Ohm NTC. Can Be Used With The Models 101, 111, 151, 161, 140, 173, 175, 211, 215, 412, 420, 1400, 1575, 1575e, 2175, 2412, And 2430.

8042
Part no. 1169064

8042 Is A Refill Solution Kit For pH Reference Sensor 1167154. It Contains 8 Oz. Of KCL Solution

FLO-TEKTOR
(formerly called SPAD)

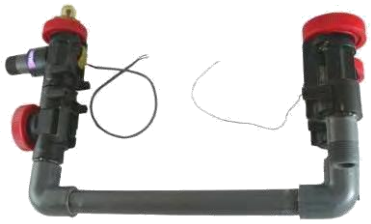
Part No. 1269090 5VDC 20 ft
Part No. 1269228 5 VDC 50 ft

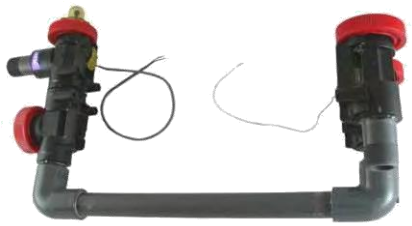
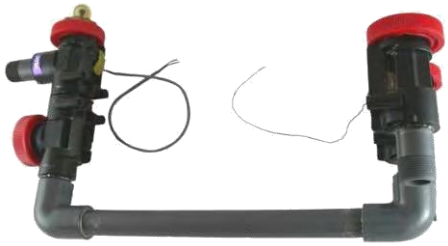
Part No. 1269103 24VDC 20 ft
Part No. 1269229 24 VDC 50 ft

The **FLO-TEKTOR** , formerly called the **SPAD**, is used as an alternative or as a backup to a mechanical flow switch. It is designed to detect the operation of external equipment, such as a recirculation pump. This allows the determination of flow based on the operation of a system pump instead of, or in addition to, the flow through a pipe. The FLO-TEKTOR can be used with any Lakewood Instruments controller (Must specify appropriate model below.). FLO-TEKTORs are externally mounted with no inter-connections to pumps required. Available with 20 feet or 50 feet of cable.

FLO-TEKTOR, 5V, (Models 140, 150, 1520/30e, and 1575e)
FLO-TEKTOR, 24V, (Models 1512e and 2000 series)

	**Plumbing 100** **Part No. 1167214** The Replacement Plumbing Assembly With 3/4 Inch NPT Connections For Use With The Model 101, 111, 151, 161, 140, And 1575e W/ Cooling Tower Conductivity Sensors. Does Not Include Flow Switch.
	**Plumbing FS** **Part No. 1167215** The Replacement Plumbing Assembly Comes With Flow Sight, Float, Reed Switch, And 3/4 Inch NPT Connections For Use With The Model 101- FS, 111-FS, 151-FS, 161-FS, 173, 175, 211, 215, 222C, 224C, Or 2175 Cooling Tower Controllers.
	**Plumbing FS 20 ft.** **Part No. 1107003** The Replacement Plumbing Assembly Comes With Flow Sight, Float, Reed Switch, And 3/4 Inch NPT Connections For Use With The Models 101-RSFS, 111-RSFS, 151-RSFS, 161-RSFS, 140 W/ FS, 1575e W/ FS, 2175e, and 2875e Cooling Tower Controllers.
	**Plumbing FS 20 ft. Right Exit.** **Part No. 1230562** The Replacement Plumbing Assembly Comes With Flow Sight, Float, Reed Switch, And 3/4 Inch NPT Connections For Use With The Models 101-RSFS, 111-RSFS, 151-RSFS, 161-RSFS, 140 W/ FS, 1575e W/ FS, 2175e, and 2875e Cooling Tower Controllers. This plumbing assembly exits to the right.

	**Plumbing Tee** **Part No. 1169440** This Replacement Plumbing Assembly Is Designed For 3/4 Inch Solvent Weld Connections. Used With Lakewood Instruments Cooling Tower Conductivity Sensors.
	**Plumbing 2330, 2350** **Part No. 1169066** The Replacement Plumbing Assembly Comes With Flow Sight, Float, Reed Switch, Solution Ground, And 3/4 Inch NPT Connections For Use With The Model 2330, Or 2350 Cooling Tower Controllers.
	**Plumbing 330, 350** **Part No. 1167233** The Replacement Plumbing Assembly Comes With Flow Sight, Float, Reed Switch, Solution Ground And 3/4 Inch NPT Connections For Use With The Model 330, Or 350 Cooling Tower Controllers.
	**Plumbing 2412, 2430** **Part No. 1167067** The Replacement Plumbing Assembly Comes With Flow Sight, Float, Reed Switch, Solution Ground And 3/4 Inch NPT Connections For Use With The Model 2412, Or 2430 Cooling Tower Controllers.
	**Plumbing 412** **Part No. 1167217** The Replacement Plumbing Assembly Comes With Flow Sight, Float, Reed Switch, Solution Ground And 3/4 Inch NPT Connections For Use With The Model 412 Cooling Tower Controller.

	**Plumbing 420** **Part No. 1169324** The Replacement Plumbing Assembly Comes With Flow Sight, Float, Reed Switch, Solution Ground And 3/4 Inch NPT Connections For Use With The Model 420 Cooling Tower Controller.
	**Plumbing SE** **Part No. 1234634** The Replacement Plumbing Assembly Comes With Flow Sight, Float, Reed Switch, Solution Ground And 3/4 Inch NPT Connections For Use With The Model 420 Cooling Tower Controller.
	**Plumbing 1400** **Part No. 1167218** The Replacement Plumbing Assembly With **90˚ Bend** Comes With Flow Sight, Float, Reed Switch, Solution Ground And 3/4 Inch NPT Connections. Used On The Model 1400 Cooling Tower Controller.
	**Plumbing 1400 N4** **Part No. 1167220** The Replacement Plumbing Assembly With **0˚ Bend** Comes With Flow Sight, Float, Reed Switch, Solution Ground And 3/4 Inch NPT Connections. Used On The Model 2412-N4, And 2430-N4 Cooling Tower Controllers.

Plumbing 1400 COR
Part No. 1167219

The Replacement Plumbing Assembly With **90˚ Bend** Comes With Flow Sight, Float, Reed Switch, Solution Ground, 3/4 Inch NPT Connections, And An Extra Tee For Use With A Corrosion Sensor. Used On The Model 1400 Cooling Tower Controller With Corrosion Monitor.

Plumbing 1400 COR
Part No. 1167221

The Replacement Plumbing Assembly With **0˚ Bend** Comes With Flow Sight, Float, Reed Switch, Solution Ground 3/4 Inch NPT Connections, And An Extra Tee For Use With A Corrosion Sensor. Used On The Model 1400 Cooling Tower Controller With Corrosion Monitor.

Plumbing 1520/30e, 2330e, 2350e
Part No. 1240477

The Replacement Plumbing Assembly Comes With Flow Sight, Float, Reed Switch, And 3/4 Inch NPT Connections. For Use With The Model 1520e, 1530e, 2330e, or 2350e Cooling Tower Controllers.
Does Not Include Solution Ground.

Also available in Right Exit version. Contact Lakewood for part number.

Plumbing 1512e, 2412e, 2430e, 2812e, 2830e
Part No. 1268640

The Replacement Plumbing Assembly Comes With Flow Sight, Float, Reed Switch, And 3/4 Inch NPT Connections. For Use With The Model 1512e, 2412e, or 2430e Cooling Tower Controllers.

Also available in Right Exit version. Contact Lakewood for part number.

Plumbing 2400e w/pH, Conductivity, and ORP
Part No. 1268942

The Replacement Plumbing Assembly Comes With Flow Sight, Float, Reed Switch, And 3/4 Inch NPT Connections. For Use With The Model 2832e Cooling Tower Controllers.

Also available in Right Exit version. Contact Lakewood for part number.

Plumbing 2000e w/pH and ORP
Part No. 1269245

The Replacement Plumbing Assembly Comes With Flow Sight, Float, Reed Switch, And 3/4 Inch NPT Connections. For Use With The Model 2000e Cooling Tower Controllers.

Also available in Right Exit version. Contact Lakewood for part number.

DS DRUM SWITCH
PART NO. 1167511

The Lakewood Instruments Drum Level Switch Can Be Used As Either A High Or A Low Level Indicator.

Applications:
- Chemical Drum Monitor
- Waste Water Tank Level
- Can Be Used With The 2000 Series NDIG
- Can Be Used With The 1500 Series

Features:
- Normally Open Or Normally Closed Contacts
- 4 Ft Body Length

pH/ORP Transmitter
Part no. 1269193

The pH/ORP Transmitter Converts The pH or ORP Signal From A pH or ORP Sensor To A 4-20 mA Signal.

	**Conductivity Transmitter** **Part no. 1269340** The Conductivity Transmitter Converts the Conductivity Signal From a Conductivity Sensor to a 4-20 mA Signal. For use with the model 1575e
	**pH / ORP Simulator** **Part No. 1263402** The pH / ORP Simulator Is Used To Simulate pH Or ORP Input To A Controller. The Simulator Is Powered By A 9v Battery And Comes With A Coaxial Cable With BNC Connectors.
	**EZ Service Kit** **Part No. 1268992** The EZ Service Kit includes: a flow sight, a float, spare fuses, o-rings, o-lube, tie wraps, spade lugs, a small screwdriver, a wire brush, a pH simulator shunt, and test terminal blocks for the 2000 and 1500 series cooling tower controllers.
	**pH/ORP Preamplifier** **Part no. 1167124** The pH/ORP Preamplifier Is Used To Convert The pH/ORP Signal From A pH/ORP Sensor Into A Voltage For Use By The Following Models Of Controllers: 330-RP, 350- RP, 350S, 352, 353, 820, 830, 1020, 1400, And 1720-R.
	**Conductivity Preamplifier** **Part no. 1167230** The Conductivity Preamplifier Is Used To Convert The Conductivity Signal From A Conductivity Sensor Into A Voltage For Use By The Following Models Of Controllers: 250 -RP, 250-2, 260-RP, 260-2, 843, 1040, And 1400.

PART NO.	DESCRIPTION	LIST	CD
1166418	O-Ring, for sensor and/or flow sight, set of 10	$10	R
1169740	Red Ring replacement Kit set of two	60	R
1167235	Reed Switch	41	R
1107004	Reed Switch w/20 ft of cable	55	R
1167234	Flow Float set of five	90	R
1167266	Flow Sight set of five	80	R
1167158	Sensor, Conductivity 2 elec w/ 20 ft cable	257	W
1169207	Sensor, Conductivity, 2 elec 4 ft body w/20 ft cable	289	W
1269377	Sensor, Conductivity, 2 elec 2 ft body w/20 ft cable	289	W
1167157	Sensor, Conductivity 2 elec w/ 2 ft Cable	221	W
1167286	Sensor, Conductivity 4 elec	266	W
1169202	Sensor, Conductivity 4 elec w/ 20 ft of cable	302	W
1169201	Sensor, Conductivity, 4 elec 4ft body (NOT PICTURED)	348	W
1169065	Sensor, ORP 330. 2330, 2430	348	W
1167155	Sensor, pH 350, 2350, 2412	316	W
1240472	Sensor, pH 1520e, 2350e, 2412e, 2812e, 2832e w/15 ft of cable	459	W
1240473	Sensor, ORP 1530e, 2330e, 2430e, 2830e, 2832e w/15 ft of cable	459	W
1167153	Sensor, pH electrode 412, 2412	273	W
1167154	Sensor, pH Reference 412, 2412	266	W
1224302	Remote input RTD, 500 NTC (Temperature input)	100	R
1169064	8042 (refill solution for 1167154)	54	R
1269090	FLO-TEKTOR, 5 VDC 20 ft cable (formerly SPAD)	199	R
1269228	FLO-TEKTOR, 5 VDC 50 ft cable (formerly SPAD)	233	R
1269103	FLO-TEKTOR, 24 VDC 20 ft cable (formerly SPAD)	199	R
1269229	FLO-TEKTOR, 24 VDC 50 ft cable (formerly SPAD)	233	R
1167214	Plumbing, tee, 3/4 inch NPT	100	R
1167215	Plumbing, FS, plumbing on box	186	R
1107003	Plumbing, with 20' FS, remote plumbing	204	R
1230562	Plumbing, with 20' FS, remote plumbing, Right Exit	204	R
1169440	Plumbing, tee	97	R
1169066	Plumbing, 2330, 2350	216	R
1167233	Plumbing, 330/350	214	R
1167067	Plumbing, 2412/2430	255	R
1167217	Plumbing, 412	316	R
1169324	Plumbing, 420	316	R
1234634	Plumbing, SE	316	R
1167218	Plumbing,1400 w/90° bend	316	R
1167220	Plumbing, N4, 1400 w/0° bend	316	R
1167219	Plumbing,1400 COR w/90° bend	341	R
1167221	Plumbing, 1400 COR w/0° bend	341	R
1240477	Plumbing, 1520/30e, 2330e, 2350e w/ 20ft flow switch	212	R
1268640	Plumbing, 1512e, 2412e, 2430e, 2812e, 2830e	250	R
1268942	Plumbing, 2400e w/ pH, conductivity, and ORP	283	R
1269245	Plumbing, 2000e w/pH and ORP	250	R
1167511	Drum Switch	234	R
1269193	pH/ORP transmitter	360	R
1269340	Conductivity transmitter	730	R
1263402	pH/ORP simulator	150	R
1268992	EZ Service Kit	31	R
1167124	pH/ORP preamplifier	325	R
1167230	Conductivity preamplifier	325	R

MISCELLANEOUS PLUMBING ACCESSORIES

9050 CORROSION COUPON RACK
PART NO. 1167416

The 9050 Is A PVC Four Coupon Holder System. The System Includes An Inlet And Outlet Shutoff Valve, Four (4) Coupon Holders And A 5 Gpm (18.9 LPM) Flow Regulator.
Material Is PVC Schedule 40 With Brass Regulator And Valves. The Coupon Holder Is ¾ Inch MNPT, PVC. The Pressure Rating Is 140 Psi At 100°F (9.7 Bar @ 38°C). The Maximum Temperature Is 140°F (60°C)

COUPON HOLDER
PART NO. 1167500

The Coupon Holder Is ¾ Inch MNPT, PVC. The Pressure Rating Is 140 Psi At 100°F (9.7 Bar @ 38°C). The Maximum Temperature Is 140°F (60°C)

9102 SAMPLE SHUTOFF ASSEMBLY
PART NO. 1167419

The 9102 Is A PVC Inlet Plumbing Assembly With Brass Shut-Off Valve And A Sample- Cock.
The Material Is PVC Schedule 80 With Brass Valves. The Pressure Rating Is 140 Psi At 100°F (9.7 Bar @ 38°C). The Maximum Temperature Is 140°F (60°C). The Connections Are ¾ Inch NPT.

9160 CORPORATION STOP
PART NO. 1167423 STAINLESS STEEL
PART NO. 1167424 CARPENTER20

The 9160 Is A Corporation Stop That Will Effectively Disperse Chemicals Such As Acid In The Center Of A Pipe. Process And Chemical Inlet Connections Are 1 Inch NPT. The Quill Diameter Is ½ Inch. The Quill Material Is 316ss. The Quill Adjustment Valve And Process Connections Are Brass. The Chemical Inlet Valve Is PVC Schedule 80. Also Available In Carpenter 20, Part Number 1167424.

9176 CHEMICAL INJECTION MANIFOLD
PART NO. 1167426

The 9176 Injection Manifold Is Designed For Use With Four (4) Chemical Injection Points Including Acid. A Sample Valve, Shut Off Valve, And Quick Release Unions Are Included For Easy Removal.
The Material Is PVC, Schedule 40 And 80. There Are Four ½ FNPT, PVC, Injection Tees, One Is Schedule 80 For Acid. The Maximum Pressure Is 140 Psi @ 100°F (9.7 Bar @ 38°C)
The Maximum Temperature Is 140°F (60°C).

ORDERING INFORMATION

PART NO.	DESCRIPTION	LIST	CD
1167500	Coupon Holder, PVC ¾" NPT	$59	R
1167416	9050, PVC corrosion coupon rack	469	R
1167419	9102, Controller inlet and shut-off valve with sample cock	110	R
1167423	9160, 316 S.S. corporation stop. 1" NPT. CPVC shut off valve	275	R
1167424	9160C20, Carpenter20 corp stop. 1" NPT. CPVC shut off valve	400	R
1167426	9176, PVC Injection manifold for up to 4 chemical pumps	252	R

95 Series
"SPRITE"
MOTORIZED BALL VALVES

The model 95 series, "SPRITE", is a mini 2-way motorized ball valve designed as an economical alternative to solenoid valves for use in high-fouling, cooling water environments. It is considered "mini" because it only measures approximately 3 inches wide by 3 inches tall.

The Sprite is motor-driven open by line voltage and motor-driven closed by way of a built in capacitor. This has the benefit of ensuring that the valve will close even on a complete loss of power and it only requires two wires to power it.

The long service life valve and actuator (approximately 70,000 to 100,000 cycles) includes a manual override and a visual indicator of valve position.

95 Series Specifications

Valve		**Actuator**	
Sizes	1/2, 3/4, and 1 inch	Housing Material	ABS
Body/Ball/Stem	CPVC, Chrome-Plated Brass, or 316 Stainless Steel	Ambient Temp	-4°F to 113°F (-20°C to 45°C)
Seal	EPDM	Rating	IP67
Seat	PTFE	Max Torque	2 Nm
Threads	NPT (Female)	Power Supply	120/240 VAC
Maximum Pressure	145 psi CPVC; 232 psi Brass; 232 psi Stainless	Max Power	5 W
Maximum Temperature	140°F (60°C)	Current	25 ±5 mA
Max Delta-P	100 psi to fully close	Running Time	5 - 7 seconds

ORDERING INFORMATION
VALVE ASSEMBLY MODEL NUMBER

SIZE	CPVC	CHROME/BRASS	SS
½ inch	95SP50	95SB50	95SS50
¾ inch	95SP75	95SB75	95SS75
1 inch	95SP100	95SB100	95SS100

Sprite shown with J-Box Option

95 SERIES "SPRITE" MOTORIZED BALL VALVES

PART NO.	DESCRIPTION	LIST	CD
1269072	95SP50, ½" CPVC MOTORIZED BALL VALVE	240	R
1269073	95SP75, ¾" CPVC MOTORIZED BALL VALVE	240	R
1269074	95SP100, 1" CPVC MOTORIZED BALL VALVE	240	R
1269076	95SB50, ½" chrome-plated brass MOTORIZED BALL VALVE	240	R
1269077	95SB75, ¾"chrome-plated brass MOTORIZED BALL VALVE	246	R
1269078	95SB100, 1" chrome-plated brass MOTORIZED BALL VALVE	246	R
1269080	95SS50, ½" 316 SS MOTORIZED BALL VALVE	240	R
1269081	95SS75, ¾" 316 SS MOTORIZED BALL VALVE	256	R
1269082	95SS100, 1" 316 SS MOTORIZED BALL VALVE	256	R
1269262	J-BOX OPTION	56	R

NOTE: Other materials and sizes are available with minimum 100 piece buy.

“SPRITE XT”

The "SPRITE XT", is a 2-way motorized ball valve with over 2.5 times the torque of the series 95 SPRITE.

The Sprite XT is motor-driven open by line voltage and motor-driven closed by way of a built in capacitor. This has the benefit of ensuring that the valve will close even on a complete loss of power and it only requires two wires to power it.

The brass valve is a standard full port design which is less restrictive than other styles, providing high flow characteristics with low pressure drops.

The SPRITE XT includes a manual override, a visual indicator of valve position, and a power cord in an 8 X 6 x 4 NEMA 4X enclosure.

SPRITE XT Specifications

Valve		**Actuator**	
Sizes	3/4 inch	Housing Material	ABS
Body/Ball/Stem	Brass	Ambient Temp	-22°F to 122°F (-30°C to 50°C)
Seal	EPDM	Rating	NEMA 4X
Seat	Reinforced PTFE	Max Torque	50 in.lb.
Threads	NPT (Female)	Power Supply	120 VAC
Maximum Pressure	360 psi (Static)	Max Power	8 W Peak, 5 W
Maximum Temperature	250°F (121°C)	Current	25 ±5 mA
Max Close-Off Press.	100 psi	Running Time	12-15 seconds

PART NO.	DESCRIPTION		LIST	CD
1269374	VALVE,BALL,3/4" BRASS, SPRITE XT	.....	$361	R

9500 Series
COOLING WATER BLOWDOWN VALVES

950X SERIES PLASTIC VALVE ASSEMBLIES		951X SERIES BRASS VALVE ASSEMBLIES	
Body	PVC	Body	Brass
Sizes	½ to 2 inch	Sizes	½ to 1 inch
Guide	316 SS	Diaphragm	Viton
Flow Control	Set screw	Differential Pressure	10 psi to open
Diaphragm	Buna-N	Max Pressure	235 psi (16.2 bar)
Differential Pressure	10 psi to open	Max Temperature	180°F (82°C)
Max Pressure	50 psi (3.4 bar)	Power	120 VAC
Max Temperature	120°F (49°C)		

Supplied with 120 VAC to 24 VAC power supply

ORDERING INFORMATION
VALVE ASSEMBLY MODEL and PART NUMBER

SIZE	PLASTIC	BRASS	FLOW RANGE*
½ inch	9501 (1167433)	9511 (1166666)	1-10 gpm
¾ inch	9502 (1167434)	9512 (1166667)	5-15 gpm
1 inch	9503 (1167435)	9513 (1166668)	10-40 gpm
1½ inch	9504 (1167436)	-	15-80 gpm
2 inch	9505 (1167437)	-	20-150 gpm

* Flow range is a rough approximation for pressure differentials from 1 to 50 psi (0.01 to 3.4 bar)

9500 SERIES COOLING WATER BLEED VALVES

PART NO.	DESCRIPTION	LIST	CD
1167433	9501, ½" plastic diaphragm bleed valve	$90	R
1167434	9502, ¾" plastic diaphragm bleed valve	90	R
1167435	9503, 1" plastic diaphragm bleed valve	90	R
1167436	9504, 1½" plastic diaphragm bleed valve	185	R
1167437	9505, 2" plastic diaphragm bleed valve	225	R
1166666	9511, ½" brass diaphragm bleed valve	187	R
1166667	9512, ¾" brass diaphragm bleed valve	285	R
1166668	9513, 1" brass diaphragm bleed valve	435	R

9600 Series Y Strainers

960X SERIES	STEEL Y STRAINER	961X SERIES	PLASTIC Y STRAINER
BODY	CAST IRON	BODY	PVC
SIZES	½ to 1 inch	SIZES	½ to 1 inch
SCREEN	20 mesh inch stainless steel	SCREEN	1/32” perforated plastic
MAX PRESSURE	250 psi @ 100°F	MAX PRESSURE	150 psi @ 70°F
MAX TEMPERATURE	120°F	MAX TEMPERATURE	150°F

STRAINER MODEL and PART NUMBER

SIZE	STEEL	PLASTIC
1/2 INCH	9601 (1166675)	9611 (1166682)
3/4 INCH	9602 (1166676)	9612 (1166683)
1 INCH	9603 (1166677)	9613 (1166684)

ORDERING INFORMATION

PART NO.	DESCRIPTION	LIST	CD
1166675	9601, 1/2" steel wye strainer	$29	R
1166676	9602, 3/4" steel wye strainer	33	R
1166677	9603, 1" steel wye strainer	40	R
1166682	9611, 1/2" plastic wye strainer	92	R
1166683	9612, 3/4" plastic wye strainer	104	R
1166684	9613, 1"plastic wye strainer	115	R

WATER METERS

AUTOTROL™ TURBINE WATER METER

1TM-NPT shown

Flow Sensor Specifications

	MODEL 1TM 1 inch (25 mm)	**MODEL 2TM 2 inch (51 mm)**
Flow rate range	0.275 – 35 gpm (0.0625 – 7.95 m^3 /h)	5 – 250 gpm (1.14 – 56.8 m^3/h)
Materials of construction:		
Housing	30% Glass-Filled PPO†	30% Glass Filled PPO†
Turbine (Impeller)	Polypropylene	Polypropylene
Bearings	Polyimide	Carbon Graphite
Shaft	302 SS	No shaft—thrust bearing
Accuracy	± 3% of reading	± 3% of reading
Pressure Drop	1.5 psi @ 30 gpm (10.3 kPa @ 7 m^3/h)	2.5 psi @ 150 gpm (17.2 kPa @ 34 m^3/h)
Maximum water temp.	100°F (38°C)	100°F (38°C)
Maximum temp.	122°F (50°C)	122°F (50°C)
Maximum pressure	127 psi (875 kPa)	100 psi (689 kPa)
Available cable lengths	25, 50 ft (7.6, 15.2 m)	25, 50 ft (7.6, 15.2 m)
Maximum cable length – kit form	1,000 ft. (305 m)	1,000 ft. (305 m)

† **PPO – Polyphenylene Oxide**

ORDERING INFORMATION

1033238	1TM-ESW	1 inch turbine meter with solvent weld PVC adapters
3023532	1TM-NPT	1 inch turbine meter with 1 inch NPT stainless steel adapter
1034080	2TM-ESW	2 inch turbine meter with solvent weld PVC adapters
3023536	2TM-NPT	2 inch turbine meter with 2 inch NPT stainless steel adapter
1033317	400B418-701	1 inch turbine meter only
1033358	480B78G1	2 inch turbine meter only

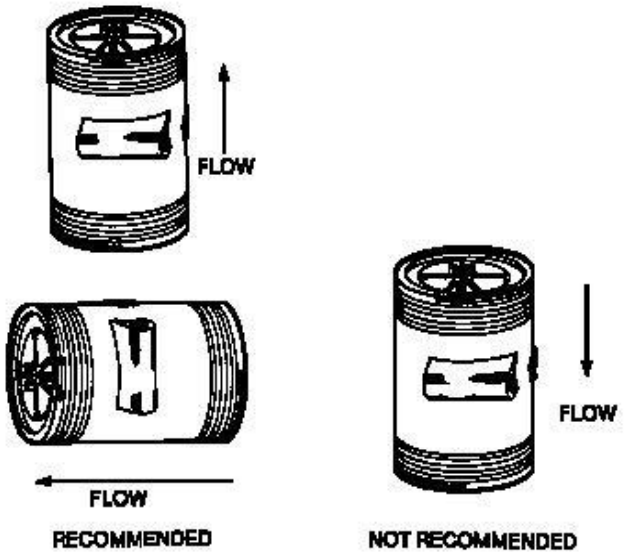
WATER METER CABLE (ORDER ONE CABLE FOR EACH TURBINE)

1033354	49C25	25 ft cable with Hall Effect sensor
1033355	49C50	50 ft cable with Hall Effect sensor

INSTALLATION INSTRUCTIONS

Install the turbine assembly in the water line. Note the flow direction arrow on the turbine body. It is highly recommended that there be a length of straight pipe either side of the turbine equal to ten times the pipe diameter.

If installation conditions do not permit this length, a minimum of 12 inches (31 cm) of straight pipe before and after the 2 inch (5 cm) turbine, and 6 inches (15 cm) before and after the 1 inch (2.5 cm) turbine may be sufficient.



<u>CAUTIONS</u>:

- ***AUTOTROL TURBINE WATER METERS <u>ARE NOT</u> TO BE USED AS A UNION. WATER METERS MUST BE SUPPORTED AT BOTH ENDS.***
- ***WATER METERS WILL BE IDEALLY LOCATED IN HORIZONTAL PIPE WITH A LENGTH OF STRAIGHT PIPE EQUAL TO 10 PIPE DIAMETERS ON EITHER SIDE.***
- ***WATER METERS MUST HAVE FLOW ORIENTED FROM BOTTOM TO TOP WHEN MOUNTED VERTICALLY.***
- ***DO NOT OVER-TIGHTEN THE TURBINE HOUSING ADAPTER NUTS OR YOU MAY DAMAGE THE THREADS***

1TM-NPT
PART NO. 3023532

The 1TM-NPT Is A 1 Inch Turbine Water Meter With Stainless Steel NPT Adapter Fittings. The Flow Rate Is .275 – 35 Gpm. Max Water Temp 100˚F (38˚ C), Max Temp 122˚ (50˚ C) And Max Pressure 127 Psi (875 KPA).
The 1TM-NPT Comes With All Of The Parts Shown.

Hall Effect Cable Sold Separately.

1TM-ESW
PART NO. 1033238

The 1TM-ESW Is A 1 Inch Turbine Water Meter With PVC Solvent Weld Adapter Fittings. The Flow Rate Is .275 – 35 Gpm. Max Water Temp 100˚F (38˚ C), Max Temp 122˚ (50˚ C) And Max Pressure 127 Psi (875 KPA).
The 1TM-ESW Comes With All Of The Parts Shown.

Hall Effect Cable Sold Separately.

2TM-NPT
PART NO. 3023536

The 2TM-NPT Is A 2 Inch Turbine Water Meter With Stainless Steel NPT Adapter Fittings. The Flow Rate Is 5 – 250 Gpm. Max Water Temp 100˚F (38˚ C), Max Temp 122˚ (50˚ C) And Max Pressure 100 Psi (689 KPA).
The 2TM-NPT Comes With All Of The Parts Shown.

Hall Effect Cable Sold Separately.

2TM-ESW
PART NO. 1034080

The 2TM-ESW Is A 2 Inch Turbine Water Meter With PVC Solvent Weld Adapter Fittings. The Flow Rate Is 5 – 250 Gpm. Max Water Temp 100˚F (38˚ C), Max Temp 122˚ (50˚ C) And Max Pressure 100 Psi (689 KPA).
The 2TM-ESW Comes With All Of The Parts Shown.

Hall Effect Cable Sold Separately.

49C25 PART NO. 1033354

The 49C25 Is The Hall Effect Sensor With 25 Ft Of Cable For Use With The Autotrol Turbine Water Meters.

49C50 PART NO. 1033355

The 49C50 Is The Hall Effect Sensor With 50 Ft Of Cable For Use With The Autotrol Turbine Water Meters.

ORDERING INFORMATION

PART NO.	DESCRIPTION	LIST	CD
	TURBINES		
1033238	1TM-ESW, 1" Turbine Meter With PVC Fittings	$97	R
3023532	1TM-NPT, 1" Turbine Meter With NPT Fittings	122	R
1034080	2TM-ESW, 2" Turbine Meter With PVC Fittings	325	R
3023536	2TM-NPT, 2" Turbine Meter With NPT Fittings	361	R
	SENSOR CABLES (1 Required For Each Turbine)		
1033354	49C25, 25 Ft Cable For Turbine Meter	$57	R
1033355	49C50, 50 Ft Cable For Turbine Meter	108	R
	1 INCH TURBINE METER REPLACEMENT PARTS		
1033317	1 Inch Replacement Turbine Meter, 400B418-701	$74	R
1030541	Gasket 1 Inch	5	R
3014631	Turbine Nut 1 Inch for NPT Stainless Steel	15	R
1034385	Turbine Nut 1 Inch for ESW PVC	5	R
3014557	Adapter 1 Inch NPT Stainless Steel	19	R
1030579	Adapter 1 Inch ESW PVC	12	R
	2 INCH TURBINE METER REPLACEMENT PARTS		
1033358	2 Inch Replacement Turbine Meter, 480B78G1	$222	R
3030498	Gasket 2 Inch	15	R
1030664	Turbine Nut 2 Inch for NPT SS and PVC ESW	27	R
3014558	Adapter 2 Inch NPT Stainless Steel	37	R
1030666	Adapter 2 Inch ESW PVC	27	R

MJR SERIES
CONTACTING HEAD WATER METERS

The MJR Series Pulse Meters offer pulse output from a reed switch sensor. This allows the two-wire contact type closure to operate metering pumps, remote indicators and controls.

TYPICAL APPLICATIONS

- Cooling tower and boiler water treatment
- Proportional feed of chemicals
- Wide flow range
- Remote totalizing
- Automatic regeneration

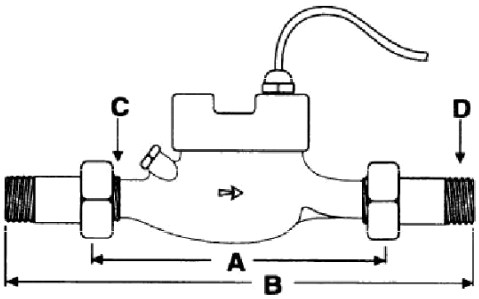
FEATURES

- Low-cost accuracy
- Wide flow range
- Low maintenance

Specifications

Materials	
Case	Cast Bronze
Magnet	Ceramic Permanent
Internals	Engineered Thermoplastic
Temperature	105°F (40°C)
Max Pressure	150 psi (10.3 bar)
Accuracy	½ to 1% of reading
Max Current	50 mA
Max Voltage	24 VDC
Cable Length	12 ft

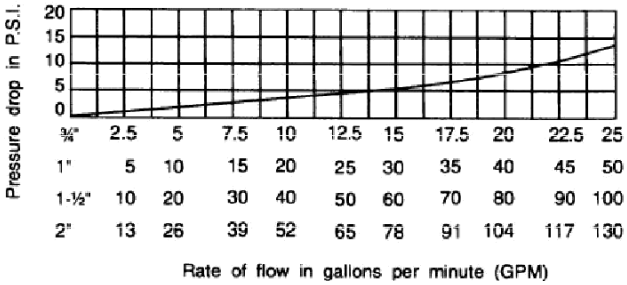
Flow Rates (GPM)				
	¾ inch	**1 inch**	**1 ½ inch**	**2 inch**
Min	0.25	0.30	0.50	1.00
Max	20	50	100	130



Dimensions

	¾"	1"	1-½"	2"
A (body)	7-½"	10-¾"	12-5/8"	10-5/8"
B (w/couplings)	12-5/8"	16-1/8"	18-½"	16-7/8"
C (IPS thread)	1"	1-¼"	2"	2-½"
D (NPT thread)	¾"	1"	1-½"	2"

Typical Pressure Drop Curve



ORDERING INFORMATION

PART NO.	DESCRIPTION	LIST	CD
1169381	MJR3/4-1, ¾ inch MNPT brass, 1 GPC	$188	R
1169385	MJR3/4-10, ¾ inch MNPT brass, 10 GPC	188	R
1166729	MJR3/4-100, ¾ inch MNPT brass, 100 GPC	188	R
1169382	MJR1-1, 1 inch MNPT brass, 1 GPC	278	R
1169386	MJR1-10, 1 inch MNPT brass, 10 GPC	278	R
1166730	MJR1-100, 1 inch MNPT brass, 100 GPC	278	R
1169383	MJR1 1/2-1, 1 1/2 inch MNPT brass, 1 GPC	503	R
1169387	MJR1 1/2-10, 1 1/2 inch MNPT brass, 10 GPC	503	R
1166731	MJR1 1/2-100, 1 1/2 inch MNPT brass, 100 GPC	503	R
1169384	MJR2-1, 2 inch MNPT brass, 1 GPC	679	R
1169388	MJR2-10, 2 inch MNPT brass, 10 GPC	679	R
1166732	MJR2-100, 2 inch MNPT brass, 100 GPC	679	R

WTC SERIES
TURBINE WATER METER

The Series WTC Turbine Meters offer accurate, economical reading of high flows with low head loss.

Specifications

Materials		**Temperature**	140°F (60°C)
Meter Body	Painted Carbon Steel	**Accuracy**	± 1%
Turbine Insert	Delrin		
Turbine Rotor	Delrin		
Shafts	Tungston Carbide	**Flow Rates (GPM)**	
Bearings	Sapphire Journal		
Pressure	200 psi (13.8 bar)		

	2 inch	**3 inch**	**4 inch**
Min	2	3	6
Max	150	400	600

Ordering Information

PART NO.	DESCRIPTION	LIST	CD
1167646	**WTC-2, 2 inch turbine water meter, 10 inch length**	**$1,100**	**R**
1167647	**WTC-3, 3 inch turbine water meter, 12 inch length**	**1,400**	**R**
1104233	**WTC-4, 4 inch turbine water meter, 14 inch length**	**1,700**	**R**

Available for the Model 2000 Series product line only.
For special applications please contact Lakewood Instruments

CONDENSATE CONTROLLERS

LAKEWOOD INSTRUMENTS
MODEL 1575e
WATER TREATMENT CONTROLLER

The Model 1575e uses the latest in microprocessor capability, giving the user a high level of application flexibility. A large illuminated graphics screen, multiple inputs, and very easy setup characterize this new technology. The Model 1575e is ETL approved.

PART NUMBER 1229239 SHOWN
Condensate Controller, Controller Only.

FEATURES

- Removable power cord and receptacles for simple conduit installations.
- Scheduled feed, which can use three relays for biocides or other chemicals.
- Two (2) water meter inputs, two (2) drum switch inputs, conductivity input, flow switch input, 4-20 mA output, and remote conductivity input via 4-20 mA are all standard features.
- Designed with a single circuit board for better reliability and lower cost.
- Large open shallow enclosure for easy wiring.
- Ball valve delay feature allows accurate control of motorized ball valves.
- Heavy-duty stainless steel domed numeric keypad and illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.
- LED indicators for power, alarm and relay status.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Controller can be used in boiler, cooling tower, or condensate applications when used with the appropriate conductivity sensor.
- Single circuit board design improves reliability.
- No add-on options. 4-20 mA output and feed schedule clock features are standard.

SPECIFICATIONS

Conductivity range	1-10 or 10-100 µS
Conductivity sensor	2 electrode
Conductivity Resolution	± 1 µS (conductivity <100 µS)
Temperature comp.	500NTC, NONE
Accuracy & repeatability	± 1.0%
Deadband/Setpoint	Programmable
Auto/Manual outputs	Menu selectable
Keypad	16 tactile push-buttons
Display	illuminated 128x64 pixel LCD
Drum Switch Inputs	2 digital contact inputs
Water meter inputs (2)	Contact head, paddle wheel or turbine
Timers	Max. blowdown time exceeded and relay run time exceeded
Output Signal	One 4 – 20 mA, isolated or non-isolated optionally powered output for conductivity
Input Signal	One 4-20 mA, non- isolated internally powered input for conductivity
Output relays	4, 3 selectable use, 1 blowdown
Relay ratings	3A each, 10A total
Power	120/240 VAC 50/60 Hz
Ambient	32° - 120°F (0 - 49°C)
Enclosure	NEMA 4X, ETL

Sensors/Plumbing	Condensate
Max Pressure	70 psi (4.8 bar)
Max Temp	392°F (200°C)
Min flow	1 gpm (3.785 Lpm)

Condensate Sensor Options

540K.1-4-TC500

-10I

-10R

540K.01-TC500

Ordering Information

PART NO.	DESCRIPTION	LIST	CD
1229239	1575e Controller Only, No Sensor	$1,054	W

PART NO.	CONDENSATE SENSORS	LIST	CD
1104591	540K.1-4-10I-10, with ¾ Inch NPT Inline, 10-100µs	$576	R
1168617	540K.1-4-10R-18, with 1.0 Inch NPT Retractable, 10-100µs	738	R
1104592	540K.01-4-10I-10, with ¾ Inch NPT Inline, 1-10µs	1,066	R
1169642	540K.01-4-10R-18, with 1.0 Inch NPT Retractable, 1-10µs	1,228	R

Notes: The model 1575e reads in whole numbers only.
All cable lengths are 20 feet.

PART NO.	CONDENSATE SENSOR REPLACEMENT TIPS	LIST	CD
1169054	540K.1-TC500 10-100µS	$417	R
1169055	540K.01-TC500 1-10µS	907	R

LAKEWOOD INSTRUMENTS
MODEL 1520/30e
pH or ORP WATER TREATMENT CONTROLLER

The Model 1520/30e uses the latest in microprocessor capability, giving the user a high level of application flexibility in pH or ORP control. The user in the field can configure this controller to operate as a pH or an ORP controller. A large illuminated graphics screen, multiple inputs, and very easy setup characterize this new technology. Water meters, sensors and plumbing assemblies are purchased separately.

PART NUMBER 1240475 SHOWN
Cooling Tower Water Treatment Controller, Controller Only.

FEATURES

- Removable power cord and receptacles for simple conduit installations.
- Scheduled feed, which can use three relays for biocides or other chemicals.
- Two (2) water meter inputs, two (2) drum switch inputs, pH or ORP input, flow switch input, and 4-20 mA output are all standard features.
- Designed with a single circuit board for better reliability and lower cost.
- Large open shallow enclosure for easy wiring.
- Heavy-duty stainless steel domed numeric keypad and illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.
- LED indicators for power, alarm and relay status.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Controller can be removed from a cooling tower and be placed in another type of application when used with the appropriate pH or ORP sensor.
- Single circuit board design improves reliability.
- No add-on options. 4-20 mA output and biocide features are standard.

SPECIFICATIONS

pH range	2-12 pH
ORP range	-1000 to +1000 mV
Sensor Types	Solution ground, Signal differential, or Single-Ended
Resolution	± .10 pH or 1 mV
Accuracy & repeatability	± 1.0%
Deadband/Setpoint	Adjustable
Auto/Manual outputs	Menu selectable
Keypad	16 tactile push-buttons
Display	Illuminated 128x64 pixel LCD
Drum Switch Inputs	2 digital contact inputs
Water meter inputs (2)	Contact head, paddle wheel or turbine

Timer	Relay run time exceeded
Output Signal	One 4 – 20 mA, non-isolated isolated powered output
Output relays	4 selectable use
Relay ratings	3A each, 10A total
Power	120/240 VAC 50/60 Hz
Ambient	32° - 120°F (0 - 49°C)
Power	120/240 VAC 50/60 Hz
Ambient	32° - 120°F (0 - 49°C)
Enclosure	NEMA 4X, ETL

Sensors/Plumbing	Condensate
Max Pressure	70 psi (4.8 bar)
Max Temp	230°F (110°C)
Min flow	1 gpm (3.785 Lpm)

ORDERING OPTIONS

Condensate Sensor Options

1165305 520-4-7I-10-STD
Condensate Ph Sensor
With ¾ In NPT Inline
Fitting

1167983 520-4-7R-18-STD
Condensate Ph Sensor
With 1.0 In NPT Retractable

Ordering Information

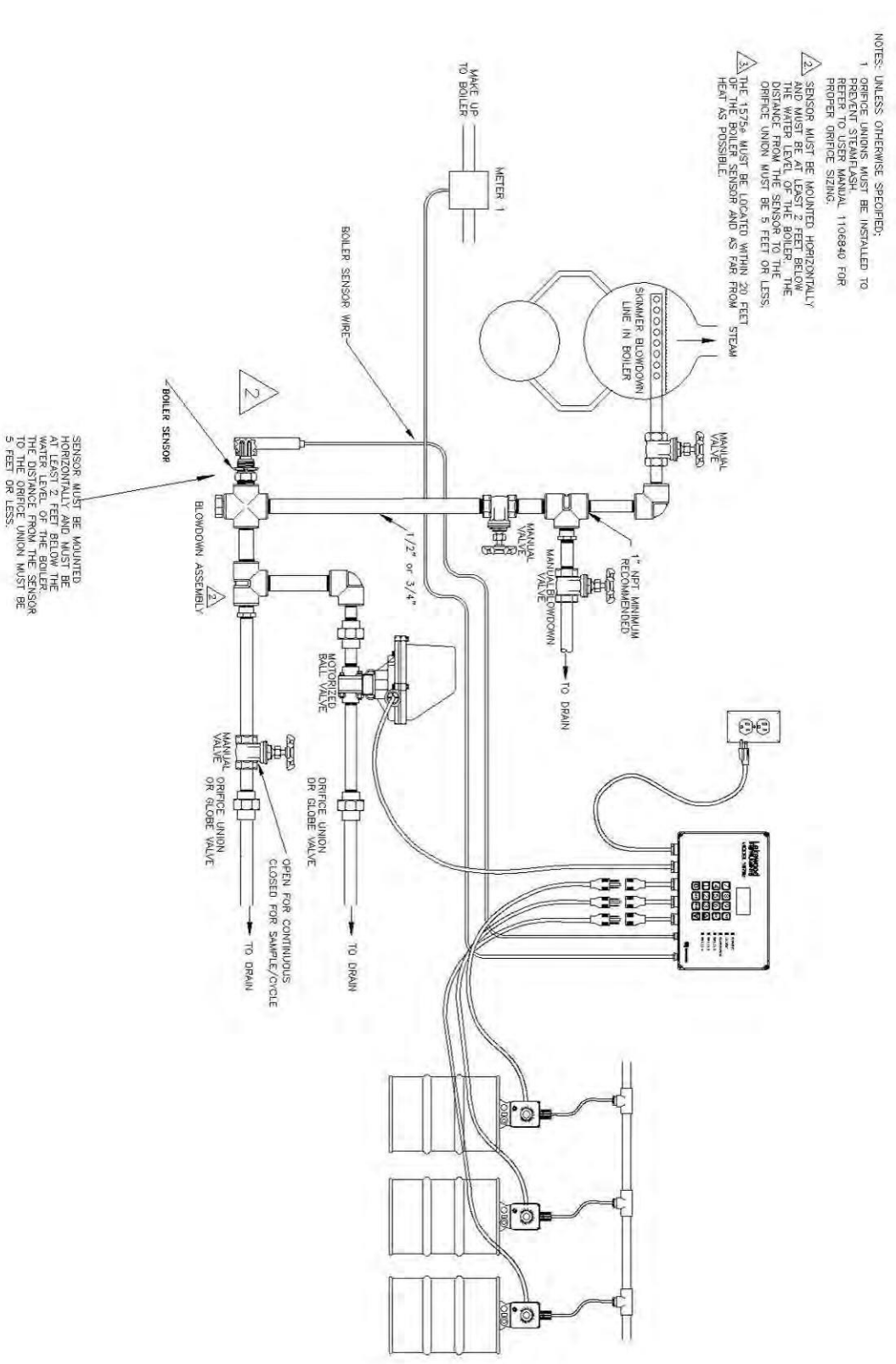
PART NO.	DESCRIPTION	LIST	CD
1240475	1520/30e controller only, no sensor	$1,201	W

PART NO.	CONDENSATE SENSORS	LIST	CD
1165305	520-4-7I-10-STD	$514	R
1167983	520-4-7R-18-STD	676	R

PART NO.	REPLACEMENT PARTS	LIST	CD
1263221	pH transmitter	$360	R
1167304	5207-STD Replacement pH Sensor Tip	355	R

Note: All cable lengths are 15 feet.

BOILER CONTROLLERS



LAKEWOOD INSTRUMENTS
MODEL 150
BOILER WATER TREATMENT CONTROLLER

The Model 150 uses the latest in microprocessor capability, giving the user a high level of application flexibility. Multiple inputs and very easy setup characterize this new technology.

This controller can be used in the Continuous Sample, Sample/Cycle, or **Sample/Hold** modes to control the boiler water conductivity.

PART NUMBER 1269089 SHOWN
Boiler Water Treatment Controller

FEATURES

- Use this Controller for conductivity control of boilers. It can be used for Continuous Sample, Sample/Cycle, or Sample/Hold control of boiler conductivity.
- Removable power cord and receptacles for simple conduit installations.
- One (1) water meter input, conductivity input, flow switch input, and 4-20 mA output are all standard features.
- Designed with a single circuit board for better reliability and lower cost.
- Large open shallow enclosure for easy wiring.
- The enclosure is rated NEMA 4X.
- Power selector switch for 115 or 230 vac operation.
- Heavy-duty stainless steel domed numeric keypad and illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.
- LED indicators for power, alarm and relay status.
- The display is lit by two LEDs when any key is pressed.

BENEFITS

- Easy to program, the Model 150 Controller uses an intuitive menu and a numeric keypad for programming.
- No add-on options. Flow switch input, 4-20mA output, and three boiler conductivity control methods; Continuous Sample, Sample/Cycle, and Sample/Hold are standard.
- Single circuit board design improves reliability.
- Multiple methods of chemical feed for application flexibility.

SPECIFICATIONS

Conductivity Range	100-10,000 µS	**Water Meter Input**	Contact Head, Paddle Wheel , Or Turbine
Conductivity Sensor	2-Electrode		
Conductivity Resolution	± 10 µS	**Timer**	Max Blowdown Time Exceeded, Relay Time Exceeded
Accuracy & Repeatability	± 1%		
Deadband/Setpoint	Adjustable	**Output Signal**	One 4-20 mA, non-Isolated Powered Output
Auto/Manual Outputs	Menu Selectable		
Output Relays	2 Selectable use 1 for Blowdown	**Relay Ratings**	3A Each, 10A Total
		Power	120/240 VAC 50/60 Hz
Keypad	16 Tactile Push-Buttons	**Ambient**	32°-120°F (0-49°C)
Display	16 X 2 Character	**Enclosure**	NEMA 4X, ETL

ORDERING OPTIONS

Boiler System Options

1168374 SR2
Boiler Water Sensor with 20 Ft Cable and Conduit Elbow.
3/4 INCH NPT Connection.

1167244 Orifice Union
1/2 INCH NPT

Orifice Plates, ½ in NPT
1166354 1/8 inch opening
1166355 1/16 inch opening

1268608 MBV1
1/2 INCH NPT
Motorized ball valve
OR
1268614 MBV2
3/4 INCH NPT
Motorized ball valve

Ordering Information

PART NO.	CONDUCTIVITY BOILER WATER CONTROLLER ONLY	LIST	CD
1269089	150 Controller only, no sensor	$762	W

PART NO.	CONDUCTIVITY BOILER WATER CONTROLLER SYSTEMS	LIST	CD
	The Following Systems Include Sensor and Plumbing Assemblies		
1269092	150, SR2, 1/2 Union, Orifice plate, MBV1	2,138	W
1269260	150, SR2, 3/4 Union, Orifice plate, MBV2	2,276	W
1269093	150, SR2, PLKT	1,624	W

PART NO.	BOILER OPTIONS (AND/OR REPLACEMENT PARTS)	LIST	CD
1168374	SR2, 2-electrode boiler sensor, conduit elbow, and 20 ft cable.	$349	W
1229843	SR2HD, 2-elec harsh duty sensor, conduit elbow, and 20 ft cable	591	W
1166355	Orifice Plate, ½ inch NPT, 1/16	31	R
1166356	Orifice Plate, ½ inch NPT, ¼	31	R
1166354	Orifice Plate, ½ inch NPT, 1/8	31	R
1167972	Orifice Plate, ½ inch NPT, 3/8	31	R
1167244	Orifice Union, ½ inch NPT	84	R
1167245	Orifice Union, 3/4 inch NPT	94	R
1268608	MBV1 ½ inch NPT Motorized ball valve	912	W
1268614	MBV2 3/4 inch NPT Motorized ball valve	1,040	W
1167295	PL5, ½ sample/cycle plumbing assembly	198	W
1168601	PL575, ¾ sample/cycle plumbing assembly	218	W
1167297	PL6, ½ continuous plumbing assembly	438	W
1167296	PL675, ¾ continuous plumbing assembly	458	W
1167520	GV, Globe valve with Position Indicator	445	R
1269395	GVN, Globe valve without Position Indicator	290	R
1233981	PLKT Plumbing kit. sample/cycle and continuous sample kit.	513	W
	Includes unions, orifice plates, cross, tee, and manual block valve only. Does not include piping.		

PART NO.	REPLACEMENT SENSOR	LIST	CD
1167162	2 electrode boiler sensor	$290	W
1229841	2 electrode harsh duty boiler sensor	544	W

LAKEWOOD INSTRUMENTS
MODEL 1575e
WATER TREATMENT CONTROLLER

The Model 1575e uses the latest in microprocessor capability, giving the user a high level of application flexibility. A large illuminated graphics screen, multiple inputs, and very easy setup characterize this new technology. The Model 1575e is ETL approved.

PART NUMBER 1229239 SHOWN
Boiler Controller, Controller Only.

FEATURES

- Removable power cord and receptacles for simple conduit installations.
- Scheduled feed, which can use three relays for biocides or other chemicals.
- Two (2) water meter inputs, two (2) drum switch inputs, conductivity input, flow switch input, 4-20 mA output, and remote conductivity input via 4-20 mA are all standard features.
- Designed with a single circuit board for better reliability and lower cost.
- Large open shallow enclosure for easy wiring.
- Ball valve delay feature allows accurate control of motorized ball valves.
- Heavy-duty stainless steel domed numeric keypad and illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.
- LED indicators for power, alarm and relay status.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Controller can be used in boiler, cooling tower, or condensate applications when used with the appropriate conductivity sensor.
- Single circuit board design improves reliability.
- No add-on options. 4-20 mA output and feed schedule clock features are standard.

SPECIFICATIONS

Conductivity range	500-8000 µS for Boilers
Conductivity sensor	2 electrode
Conductivity Resolution	± 10 µS (conductivity <5000 µS) ± 100µS (conductivity <5000 µS)
Temperature comp.	500NTC, NONE
Accuracy & repeatability	± 1.0%
Deadband/Setpoint	Programmable
Auto/Manual outputs	Menu selectable
Keypad	16 tactile push-buttons
Display	illuminated 128x64 pixel LCD
Drum Switch Inputs	2 digital contact inputs
Water meter inputs (2)	Contact head, paddle wheel or turbine
Timers	Max. blowdown time exceeded and relay run time exceeded
Output Signal	One 4 – 20 mA, isolated or non-isolated optionally powered output for conductivity
Input Signal	One 4-20 mA, non- isolated internally powered input for conductivity
Output relays	4, 3 selectable use, 1 blowdown
Relay ratings	3A each, 10A total
Power	120/240 VAC 50/60 Hz
Ambient	32° - 120°F (0 - 49°C)
Enclosure	NEMA 4X, ETL

Sensors/Plumbing	Boiler
Max Pressure	600 psi (41.3 bar)
Max Temp	486°F (252°C)

ORDERING OPTIONS

Boiler System Options

1168374 SR2
Boiler Water Sensor with 20 Ft Cable and Conduit Elbow.
3/4 INCH NPT Connection.

1167244 Orifice Union
1/2 INCH NPT

Orifice Plates, ½ in NPT
1166354 1/8 inch opening
1166355 1/16 inch opening

1268608 MBV1
1/2 INCH NPT
Motorized ball valve
OR
1268614 MBV2
3/4 INCH NPT
Motorized ball valve

Ordering Information

PART NO.	CONDUCTIVITY BOILER WATER CONTROLLER ONLY	LIST	CD
1229239	1575e Controller only, no sensor	$1,054	W

PART NO.	CONDUCTIVITY BOILER WATER CONTROLLER SYSTEMS	LIST	CD
	The Following Systems Include Sensor and Plumbing Assemblies		
1229244	1575e, SR2, Union, Orifice plate, MBV1	2,430	W
1229243	1575e, SR2, PLKT	1,916	W

PART NO.	BOILER OPTIONS (AND/OR REPLACEMENT PARTS)	LIST	CD
1168374	SR2, 2-electrode boiler sensor, conduit elbow, and 20 ft cable.	$349	W
1229843	SR2HD, 2-elec harsh duty sensor, conduit elbow, and 20 ft cable	591	W
1166355	Orifice Plate, ½ inch NPT, 1/16	31	R
1166356	Orifice Plate, ½ inch NPT, ¼	31	R
1166354	Orifice Plate, ½ inch NPT, 1/8	31	R
1167972	Orifice Plate, ½ inch NPT, 3/8	31	R
1167244	Orifice Union, ½ inch NPT	84	R
1167245	Orifice Union, 3/4 inch NPT	94	R
1268608	MBV1 ½ inch NPT Motorized ball valve	912	W
1268614	MBV2 3/4 inch NPT Motorized ball valve	1,040	W
1167295	PL5, ½ sample/cycle plumbing assembly	198	W
1168601	PL575, ¾ sample/cycle plumbing assembly	218	W
1167297	PL6, ½ continuous plumbing assembly	438	W
1167296	PL675, ¾ continuous plumbing assembly	458	W
1167520	GV, Globe valve with Position Indicator	445	R
1269395	GVN, Globe valve without Position Indicator	290	R
1233981	PLKT Plumbing kit. sample/cycle and continuous sample kit. Includes unions, orifice plates, cross, tee, and manual block valve only. Does not include piping.	513	W

PART NO.	REPLACEMENT SENSOR	LIST	CD
1167162	2 electrode boiler sensor	$290	W
1229841	2 electrode harsh duty boiler sensor	544	W

NexSys™

The Next Generation in Reliable Controllers

NexSys™ Boiler Control System

The **NexSys**™ control system is the latest in a long line of reliable, easy to use controllers from Lakewood Instruments. The **NexSys** ™ control system uses the latest in microprocessor technology with a 5.7" **Color Touch Screen** interface for a high level of application flexibility.

All features, parameters, settings, and functional requirements to operate, program, and monitor the **NexSys**™ control system are accessible from the touch screen and DO NOT require the use of an external input, PC or device to operate or access. The **NexSys**™ control system even includes On-Board Help Screens with wiring, programming, and maintenance instructions.

The **NexSys**™ control system comes **standard** with the following system interfaces and DMX outputs: LON EIA 709 FTT10, BACnet IP, and MODbus TCP. The unit comes from the factory ready to integrate readings into a BAS, including: The state of any installed relay (On/Off) , Water meter readings, Conductivity readings, Additional sensor readings (ph, ORP), sensor alarms, Additional 4-20mA input readings, Flow condition, and other digital inputs.

The **NexSys**™ control system comes standard with Ethernet capability through a browser (HTML5) interface that allows 100% access to all features and control parameters of the controller.

The **NexSys**[TM] control system has an astounding array of built-in features such as:

- LonWorks, MODbus, and BACnet communications interface
- Ethernet capability through an HTML interface
- The capability to send E-service reports to a subscribed service
- The ability to display operating values with time and date stamps on color coded graphs with zoom and scroll features
- Up to four boiler conductivity sensor inputs and two pH sensor inputs
- Trace chemistry capable with user definable correction factors as part of the programming
- Two water meter inputs with expansion capability to four
- Enclosure is NEMA 4X rated
- Two flow switch inputs configurable to any relay output with expansion capability to four
- Ability to add up to eight 4-20mA input readings
- Ability to add four digital inputs
- Ability to mount every sensor/input up to 400 meters away from the controller via 4-wire twisted pair
- Ability to control the blowdown of four boilers at the same time
- Six relay outputs expandable to ten relay outputs for user configurable operations such as:
  - Blowdown Valve Control by Sample/Cycle, Continuous Sample, and Sample Hold
  - Feed by Percent of Blowdown Time
  - Feed by Setpoint with Percent of Time Feature as Part of Spaced Feed
  - Trace Chemistry Control
  - By Makeup Totalized Gallons
  - By Blowdown Totalized Gallons
  - By Percent On-Time
  - By Scheduled Feed by Day and Time
  - As an Alarm Relay by User Selectable Alarms
- On-board Help Screens with wiring, programming, and maintenance instructions

Specifications

Touch Screen Interface:
- 5.7” diagonal viewing area
- Display size: 115X86 mm
- Pixel: 320X240
- Color: TFT 65536
- Backlight: LED or CCFL

Power: 120/240 VAC 50/60 Hz

Relay ratings:
- 120VAC 3A per relay 15A total

Enclosure: NEMA 4X

Printed in the USA, Rev B

NexSys™ The Next Generation in Reliable Controllers

NexSys™ Boiler System Config	Price	Type	1-4 / A, B or XX	-	1-4 / A, B or XX	1-4 / A, B or XX	-	1-4 / A, B or XX	-	1-4 or X	T, H or X	I, R or X	S, L or X	-	S, D or X	S, D or X	-	4, 8 or X	4, 8 or X	-	S,L or X	-	XX
		NXB		-			-		-					-			-			-		-	
Boiler Systems	$3,068																						
Boiler Probe Kit (1-4/ A = STD, B = HD) (Max 4 Cond sensors per system incl Condensate)	A = $836 B = $940																						
Sample Cycle Plumbing (1-4/ A = .50, B = .75)	A = $190 B = $195																						
Continuous Sample Plumbing (1-4/ A = .50, B = .75)	A = $381 B = $390																						
Motorized Ball Valve (1-4/ A = .50, B = .75)	A = $990 B = $1,040																						
Condensate Probe Kit (INCLUDES k.1, inline, 10 inch sensor) (Max 4 Cond sensors per system Incl Boiler)	$1,413																						
Condensate Cell Constant (T = 0.10 or H = 0.01)	T = INCL H = $90																						
Condensate Fitting (I = Insert or R = Retract)	I = INCL R = $105																						
Condesate Sensor Length (S = 10" or L = 18")	S = INCL L = $19																						
Relays (S = 6 or D = 10)	S = INCL D = $495																						
Water Meters Inputs (S = 2 D = 4)	S = INCL D = $374																						
4-20MA Input (4 or 8)	4 = $478 8 = $956																						
4-20mA Output (4 or 8)	CONSULT FACTORY																						
2nd Remote Display (S = 5.7" L = 15")	S = $1,269 L = $3,000																						
Custom Designator (-XX)	CONSULT FACTORY																						

X = No Option Needed

Pricing is for each.

All items are code W except 2nd remote display which is a code D

EXAMPLE:

A system that would include 1 boiler using sample/cycle control with 1/2" plumbing and motorized ball valve, and 1 condensate system with conductivity between 10-100uS using a 10" insertion sensor, would look like:

$6,497	NXB	1A	-	1A	XX	-	1A	-	1	T	I	S	-	D	S	-	X	X	-	X	-	XX
	$3,068	$836		$190	0		$990		$1,413	0	0	0		0	0		0	0		0		0

LAKEWOOD INSTRUMENTS MODEL 2250e MICROPROCESSOR-BASED BOILER CONTROLLER

LONWORKS® is the latest in microprocessor technology that gives the user the highest level of application flexibility. A large graphic screen, multiple inputs and very easy setup, with easy field upgrade characterize this new technology.

This controller can be used in the Continuous Sample, or Sample/Cycle modes to control the boiler water conductivity.

FEATURES

- Cycle/Sample or Continuous sample control of blowdown, configurable in the field.
- Two water meter inputs, conductivity input with 20 ft cable, flow switch input, four relay outputs, and Power On/Off switch in a NEMA 4X enclosure are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes four relays for blowdown, chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Accurate control of boiler conductivity.
- Control results in fuel savings by preventing excessive blowdown
- Prevents carryover due to excessive conductivity
- Two water meter inputs provided for accurate chemical addition.

SPECIFICATIONS

Inputs

Power	120/240 VAC 50/60 Hz
Sensor Input	2 or 4 Electrode Conductivity
Temperature Comp.	Selectable or Disabled
Flow Switch	Dry Contact
Water Meter Inputs	Two, Contact Head, Paddle Wheel, or Turbine

Outputs

Relays	Four, 3 amps @ 120 VAC
4-20 mA	Two, Isolated or Non-Isolated w/-35L Option

Sensor (SR2)

Pressure	600 psi (41.4 bar)
Max Temperature	486°F (252°C)
Body	316 Stainless
Electrode	416 Stainless
Connection	¾ Inch MNPT

Controller

Conductivity Range	500-8000 µS
Conductivity Accuracy	± 40 µS
Conductivity Resolution	10 µS
Deadband	Adjustable
Conductivity Setpoint	Cycle/Sample or Continuous
Sample Time	Adjustable
Cycle Time	Adjustable
Keypad	16 Tactile Push-Button
Display	Illuminated 128X64 Pixel LCD
Ambient Temperature	32-158°F (0-70°C)
Enclosure Rating	NEMA 4X, ETL

Intertek

LONWORKS is a registered trademark of Echelon Corporation

ORDERING INFORMATION

2250e LONWORKS Technology-based cycle sample or continuous blowdown conductivity controller. Range is 0-8,000 µS, has HIGH/LOW alarms, water meter inputs and chemical feed relays. Requires **SR2** or **SR4**, below, and **PL5** or **PL6** is recommended.

CONTROLLER OPTIONS (optional, select one or more)

-35L Two 4-20 mA output configurable for remote data acquisition of conductivity. **-**

RS2L Communications node with LRWS program.

-NIN Network interface node. Allows 2 NRLY, 1 Makeup NCON, 4 sensor nodes (NpH or NCON), 2 N420I, and / or 2 NDIG to be added.

NRLY Four additional relays with enclosure, also available with receptacles and power cord. **-**

PS +24 volt power supply required for 3 or more nodes.

LANGUAGE OPTIONS (optional, choose one, English and Spanish Standard)

-EF English and French.

-EG English and German.

SENSOR OPTIONS (required, select one below)

SR2 Boiler water sensor with condulet, ¾ inch NPT; rated to 600 psi @ 486°F (41.4 bar @ 252°C). This sensor cannot be used after a sample cooler.

SR4 4-electrode sensor with ¾ inch NPT; rated to 250 psi @ 392°F (17.2 bar @ 374°C).

PLUMBING (recommended, need one of the below per boiler)

PL5 Plumbing for cycle/sample assembly ½ inch (1/8 & 1/16 orifice plates and union).

PL6 Plumbing for continuous sample assembly, ½ inch (1/8 & 1/16 orifice plates & union).

PL575 Plumbing for cycle/sample assembly ¾ inch (1/8 & 1/16 orifice plates and union).

PL675 Plumbing for continuous sample assembly ¾ inch (1/8 & 1/16 orifice plates & union).

PLKT Plumbing kit. Continuous and sample cycle. Orifice plates and unions, cross, tee, manual block valve. No piping.

GV ½ inch forged globe valve for flow metering instead of an orifice plate and union. *NOTE: Two **GV** options are required for continuous sample and one for cycle sample if the orifice plate and union are not used.*

BLOWDOWN VALVE OPTIONS (optional, select one only)

MBV1 Motorized ½ inch blowdown valve rated to 400 psi @ 480°F (27.6 bar @ 249°C).

MBV2 Motorized ¾ inch blowdown valve rated to 400 psi @ 480°F (27.6 bar @ 249°C).

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.

WEBNode IP/TCP device for use with 2000 Series controllers.

EZWeb Wireless internet interface for use with WEBNode and 2000 Series controllers.

PART NO.	DESCRIPTION	LIST	CD
1268648	2250e-RTC	$2,100	W
1268840	2250e-RTC-35L	2,325	W
1268841	2250e-RTC-RS2L	2,325	W
1268842	2250e-RTC-RS2L-35L	2,550	W
1268843	2250e-RTC-35L-NIN	2,550	W
1268844	2250e-RTC-RS2L-NIN	2,550	W
1268845	2250e-RTC-RS2L-35L-NIN	2,775	W

PART NO.	BOILER OPTIONS (AND/OR REPLACEMENT PARTS)	LIST	CD
1168374	SR2, 2 electrode boiler sensor, conduit elbow, and 20 ft cable	$349	W
1229843	SR2HD, 2-elec harsh duty sensor, conduit elbow, and 20 ft cable	591	W
1168375	SR4, 4 electrode sensor with 20 ft cable	974	W
1167295	PL5, ½ sample/cycle plumbing	198	W
1168601	PL575, ¾ sample/cycle plumbing	218	W
1167297	PL6, ½ continuous plumbing	438	W
1167296	PL675, ¾ continuous plumbing	458	W
1233981	PLKT Plumbing kit. sample/cycle and continuous sample kit. Includes unions, orifice plates, cross, tee, and manual block valve only. Does not include piping.	513	W
1167520	GV, Globe valve with Position Indicator	445	R
1269395	GVN, Globe valve without Position Indicator	290	R
1268608	MBV1, ½ inch motorized ball valve	912	W
1268614	MBV2, ¾ inch motorized ball valve	1,040	W

PART NO.	REPLACEMENT SENSORS	LIST	CD
1167162	2 electrode boiler sensor	$290	W
1229841	2 electrode harsh duty boiler sensor	544	W
1168074	4 electrode sensor (543M-STD)	673	R

LAKEWOOD INSTRUMENTS MODEL 2855e
MICROPROCESSOR-BASED MULTI-BOILER CONTROLLER

The Lakewood Model 2855e Multi- Boiler Controller uses LONWORKS® Technology for accurate control of your boiler system. The system will allow control of one to eight boilers using the cycle sample or continuous sample method. Two water meter inputs are available which can be used to feed chemicals. Each conductivity input contains its own microcontroller which talks directly to the relay that controls the motorized ball valve for each boiler. The 2855e can be programmed with *LRWS* (*Lakewood Remote Windows Software*) or from the keypad of the controller. *LRWS* allows data to be accumulated on all boilers, water meter inputs, chemical pump on time and more.

FEATURES

- Cycle/Sample or Continuous sample control of blowdown, configurable in the field.
- Two water meter inputs, conductivity input with 20 ft cable, flow switch input, four relay outputs, and Power On/Off switch in a NEMA 4X enclosure are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes four relays for blowdown, chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Accurate control of boiler conductivity.
- Control results in fuel savings by preventing excessive blowdown.
- Prevents carryover due to excessive conductivity.
- One controller can monitor and datalog up to 8 Boilers.

SPECIFICATIONS

Controller Inputs	
Power	120 VAC 50/60 Hz
Network Inputs	One to Eight Boilers, One NRLY and up to 8 NCONs
WaterMeter Inputs	Two, Contact Head, Paddle Wheel, or Turbine
Outputs	
2855 Relays	Eight, 3 Amps @ 120 VAC 4 for alarms and chemicals 4 for Boiler Control
NRLY Relays	Four, 3 Amps @ 120 VAC
Sensor (SR2)	
Pressure	600 psi (41.4 bar)
Max Temperature	486°F (252°C)
Body	316 Stainless
Electrode	416 Stainless
Connection	¾ Inch MNPT

NCON, Conductivity Node	
Conductivity Range	500-10,000µS
Conductivity Accuracy	1% of Full Scale
Conductivity Resolution	1% of Reading
Ambient Temperature	32-158°F (0-70°C)
Temperature Comp.	Selectable of Disabled
Power	24 VDC
NRLY, Relay Node	
Ambient Temperature	32-158°F (0-70°C)
Enclosure	NEMA 4X
Power	24 VDC
Controller	
Deadband	Adjustable
Conductivity Setpoint	Cycle/Sample or Continuous
Sample/Cycle Times	Adjustable
Keypad	16 Tactile Push-Button
Display	Illuminated 128x64 pixel LCD
Ambient Temperature	32-158°F (0-70°C)
Enclosure	Nema 4X, ETL

Intertek

LonWorks is a registered trademark of Echelon Corporation

Maximum Setup for an 8 Boiler Sample/cycle Control Shown

2855e LonWorks Technology based multi- boiler cycle sample or continuous blowdown conductivity controller. Standard range is 500-10,000 µS and can control up to 8 boilers. The controller has a total of 8 relays, the first 4 of which are configurable for HIGH/LOW alarms or feed chemical based on 2 makeup sources, the second 4 relays are used for boiler blowdown control. For 5-8 boilers, a **NRLY** will need to be purchased. Requires one **SR2N** or **SR4N** and a **PL5**, **PL6** or **GV** per boiler (**NIN** included).

CONTROLLER OPTIONS (optional, select one or more)

-RS2L Communications node with LRWS program.

NRLY Four additional relays with enclosure, also available with receptacles and power cord.

SENSOR WITH NODE OPTIONS (required, select one below)

SR2N Boiler water sensor with **NCON** and enclosure, ¾ inch NPT; rated to 600 psi @ 486°F (41.4 bar @ 252°C). This sensor cannot be used after a sample cooler.

SR4N 4-electrode sensor with **NCON** and enclosure, ¾ inch NPT; rated to 250 psi @ 392°F (17.2 bar @ 374°C).

PLUMBING (recommended, need one of the below per boiler)

PL5 Plumbing for cycle/sample assembly ½ inch (1/8 & 1/16 orifice plates and union).

PL6 Plumbing for continuous sample assembly, ½ inch (1/8 & 1/16 orifice plates & union).

PL575 Plumbing for cycle/sample assembly ¾ inch (1/8 & 1/16 orifice plates and union).

PL675 Plumbing for continuous sample assembly ¾ inch (1/8 & 1/16 orifice plates & union).

PLKT Plumbing kit. Continuous and sample cycle. Orifice plates and unions, cross, tee, manual block valve. No piping.

GV ½ inch forged globe valve for flow metering instead of an orifice plate and union.
NOTE*: Two* ***GV*** *options are required for continuous sample and one for cycle sample if the orifice plate and union are not used.*

BLOWDOWN VALVE OPTIONS (optional, select one only)

MBV1 Motorized ½ inch blowdown valve rated to 400 psi @ 480°F (27.6 bar @ 249°C).

MBV2 Motorized ¾ inch blowdown valve rated to 400 psi @ 480°F (27.6 bar @ 249°C).

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.

WEBNode IP/TCP device for use with 2000 Series controllers.

EZWeb Wireless internet interface for use with WEBNode and 2000 Series controllers.

PART NO.	CONDUCTIVITY BOILER WATER CONTROLLER ONLY	LIST	CD
1269052	2855e-RTC	$3,000	W
1269053	2855e-RTC-RS2L	3,225	W

PART NO.	CONDUCTIVITY BOILER WATER CONTROLLER SYSTEMS	LIST	CD
	The following models include: model 2855e-RTC, the appropriate number of SR2N boiler sensors, PL5 or PL6 plumbing assemblies, MBV1 motorized ball valves, NRLY relay nodes. For use under the following conditions: 120 vac, <400 psi operating pressure, 1/2 inch piping, using a hot (>200F) sample. If a mixture of sample/cycle and continuous sample boiler systems are needed, please contact the factory.		
1269054	2855e-SC-1B 1 boiler controller sample/cycle control	$4,989	W
1269055	2855e-SC-2B 2 boiler controller sample/cycle control	6,978	W
1269056	2855e-SC-3B 3 boiler controller sample/cycle control	8,967	W
1269057	2855e-SC-4B 4 boiler controller sample/cycle control	10,956	W
1269058	2855e-SC-5B 5 boiler controller sample/cycle control	13,540	W
1269059	2855e-SC-6B 6 boiler controller sample/cycle control	15,529	W
1269060	2855e-SC-7B 7 boiler controller sample/cycle control	17,518	W
1269061	2855e-SC-8B 8 boiler controller sample/cycle control	19,507	W
	Add $148 Per Boiler for 3/4 Inch Plumbing and Valves	148	W
1269062	2855e-C-1B 1 boiler controller continuous sample control	$5,229	W
1269063	2855e-C-2B 2 boiler controller continuous sample control	7,458	W
1269064	2855e-C-3B 3 boiler controller continuous sample control	9,687	W
1269065	2855e-C-4B 4 boiler controller continuous sample control	11,916	W
1269066	2855e-C-5B 5 boiler controller continuous sample control	14,740	W
1269067	2855e-C-6B 6 boiler controller continuous sample control	16,969	W
1269068	2855e-C-7B 7 boiler controller continuous sample control	19,198	W
1269069	2855e-C-8B 8 boiler controller continuous sample control	21,427	W
	Add $148 Per Boiler for 3/4 Inch Plumbing and Valves	148	W
1169993	SR2N, 2 electrode sensor with 20 ft cable and cond node	879	W
1235438	SR2NHD, 2-elec harsh duty sensor, 20 ft cable, cond node	1,128	W
1169994	SR4N, 4 electrode sensor with 20 ft cable and cond node	1,722	W
1268833	NRLY relay node	595	R
1167295	PL5, ½ sample/cycle plumbing	198	W
1168601	PL575, ¾ sample/cycle plumbing	218	W
1167297	PL6, ½ continuous plumbing	438	W
1167296	PL675, ¾ continuous plumbing	458	W
1233981	PLKT Plumbing kit. sample/cycle and continuous sample kit. Includes unions, orifice plates, cross, tee, and manual block valve only. Does not include piping.	513	W
1167520	GV, Globe valve with Position Indicator	445	R
1269395	GVN, Globe valve without Position Indicator	290	R
1268608	MBV1, ½ inch motorized ball valve	912	W
1268614	MBV2, ¾ inch motorized ball valve	1,040	W

PART NO.	REPLACEMENT PARTS	LIST	CD
1167162	2 electrode boiler sensor	$290	W
1229841	2 electrode harsh duty boiler sensor	544	W
1168074	4 electrode sensor (543M-STD)	673	R
1168513	NCON conductivity node	485	R

BOILER ACCESSORIES

AND

REPLACEMENT PARTS

Boiler Sensor SR2
Part no.1168374

The SR2, 2 electrode sensor with conduit elbow and 20 foot cable. The SR2 is used for monitoring conductivity in a boiler blowdown line.
The SR2 **cannot** be used after a sample cooler.

Body	316 SS
Electrodes	416 SS
Max Pressure	600 psi (41.4 bar)
Max Temperature	486°F (252°C)
Cable	20 ft High temp
Process thread	¾ inch MNPT
Conduit connection	¾ inch MNPT

Boiler Sensor SR2T
Part no. 1269392

The SR2, 2 electrode sensor with conduit elbow, 20 foot cable, and ¾" cross. The SR2 is used for monitoring conductivity in a boiler blowdown line.
The SR2 **cannot** be used after a sample cooler.

Body	316 SS
Electrodes	416 SS
Max Pressure	600 psi (41.4 bar)
Max Temperature	486°F (252°C)
Cable	20 ft High temp
Process thread	¾ inch MNPT
Conduit connection	¾ inch MNPT

Boiler Sensor SR2N
Part no. 1169993

The SR2N, 2 electrode sensor with 20 foot cable and conductivity node. The SR2N is used for monitoring conductivity in a boiler blowdown line.
The SR2N **cannot** be used after a sample cooler.
For model 2255 and 2855e only.

Body	316 SS
Electrodes	416 SS
Max Pressure	600 psi (41.4 bar)
Max Temperature	486°F (252°C)
Cable	20 ft High temp
Process thread	¾ inch MNPT
Conduit connection	¾ inch MNPT

Boiler Sensor SR2HD

Part No. 1229843

The SR2HD, 2 electrode sensor with conduit elbow and 20 foot cable. The SR2HD is used for monitoring conductivity in a boiler blowdown line where a harsh or high amine environment exists.
The SR2HD **cannot** be used after a sample cooler.

Body	316 SS
Electrodes	416 SS
Max Pressure	600 psi (41.4 bar)
Max Temperature	486°F (252°C)
Cable	20 ft High temp
Process thread	¾ inch MNPT
Conduit connection	¾ inch MNPT

Boiler Sensor SR2NHD
Part No. 1235438

The SR2NHD, 2 electrode sensor with 20 foot cable and conductivity node. The SR2NHD is used for monitoring conductivity in a boiler blowdown line where a harsh or high amine environment exists.
The SR2NHD **cannot** be used after a sample cooler.
For model 2255 and 2855e only.

Body	316 SS
Electrodes	416 SS
Max Pressure	600 psi (41.4 bar)
Max Temperature	486°F (252°C)
Cable	20 ft High temp
Process thread	¾ inch MNPT
Conduit connection	¾ inch MNPT

Boiler Sensor SR2P
Part No. 1169878

The SR2P, 2 electrode sensor with conductivity preamp. The SR2P is used for monitoring conductivity in a boiler blowdown line. The SR2P **cannot** be used after a sample cooler.
For model 250/260-2 only.

Body	316 SS
Electrodes	416 SS
Max Pressure	600 psi (41.4 bar)
Max Temperature	486°F (252°C)
Cable	20 ft High temp
Process thread	¾ inch MNPT
Conduit connection	¾ inch MNPT

Boiler Sensor SR4
Part No. 1168375

The SR4, 4 electrode sensor with 20 foot cable. The SR4 can be in the boiler blowdown line or with a sample cooler. The SR4 can only be used with the model 2250 AND 2250e.

Body	316 SS
Electrodes	Titanium
Max Pressure	250 psi (17.2 bar)
Max Temperature	392°F (200°C)
Cable	20 ft High temp
Process thread	¾ inch MNPT
Conduit connection	¾ inch FNPT
Temperature comp	4K NTC

Boiler Sensor SR4N
Part No. 1169994

The SR4N, 4 electrode sensor with 20 foot cable and conductivity node. The SR4N can be in the boiler blowdown line or with a sample cooler. The SR4 can only be used with the model 2255 and 2855e.

Body	316 SS
Electrodes	Titanium
Max Pressure	250 psi (17.2 bar)
Max Temperature	392°F (200°C)
Cable	20 ft High temp
Process thread	¾ inch MNPT
Conduit connection	¾ inch FNPT
Temperature comp	4K NTC

Boiler Sensor SR4P
Part No. 1167455

The SR4P, 4 electrode sensor with 20 foot cable and conductivity preamp. The SR4P is used for monitoring conductivity in a boiler blowdown line. For model 250/260-2 only.

Body	316 SS
Electrodes	Titanium
Max Pressure	250 psi (17.2 bar)
Max Temperature	392°F (200°C)
Cable	20 ft High temp
Process thread	¾ inch MNPT
Conduit connection	¾ inch FNPT
Temperature comp	4K NTC

4 Electrode Boiler Sensor (543-M-STD)
Part No. 1168074

The 4 ELECTRODE BOILER SENSOR can be in the boiler blowdown line or with a sample cooler. The Boiler Sensor 4 Electrode can only be used with the 2250 and 2250e.

Body	316 SS
Electrodes	Titanium
Max Pressure	250 psi (17.2 bar)
Max Temperature	392°F (200°C)
Cable	20 ft High temp
Process thread	¾ inch MNPT
Conduit connection	¾ inch FNPT
Temperature comp	4K NTC

2 Electrode Boiler Sensor
Part no.1167162

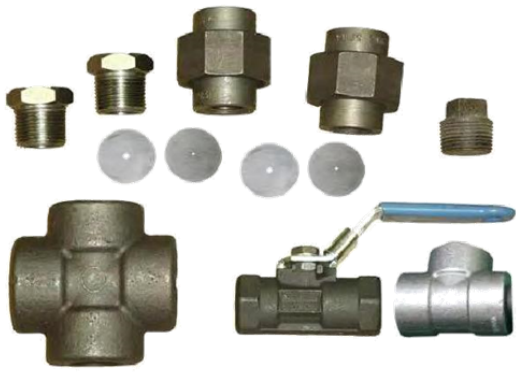
The 2-ELECTRODE BOILER SENSOR is used for monitoring conductivity in a boiler blowdown line. The 2-electrode boiler sensor cannot be used after a sample cooler.

Body	316 SS
Electrodes	416 SS
Max Pressure	600 psi (41.4 bar)
Max Temperature	486°F (252°C)
Cable	20 ft High temp
Process thread	¾ inch MNPT
Conduit connection	¾ inch MNPT

2 Electrode Harsh Duty Boiler Sensor
Part no.1229841

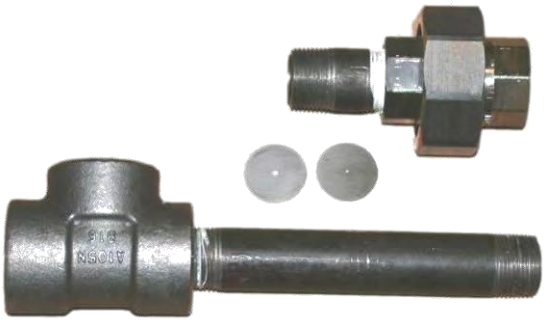
The 2-ELECTRODE HARSH DUTY BOILER SENSOR is used for monitoring conductivity in a boiler blowdown line where a harsh or high amine environment exists.
The 2 electrode harsh duty boiler sensor **cannot** be used after a sample cooler.

Body	316 SS
Electrodes	416 SS
Max Pressure	600 psi (41.4 bar)
Max Temperature	486°F (252°C)
Cable	20 ft High temp
Process thread	¾ inch MNPT
Conduit connection	¾ inch MNPT



PLKT Plumbing Kit
Part no.1233981

The PLKT plumbing kit can be used for sample / cycle and continuous sample kit. Includes unions, orifice plates, cross, tee, and a manual block valve only. The PLKT plumbing kit does not include piping.



PL5
Part no. 1167295

The PL5 **1/2 inch** cycle sample plumbing is used as a cycle sample method in boilers. The orifice restricts flow near the boiler sensor to prevent steam flashing during a sample. The PL6 can also be used as a PL5.

PL575
Part no. 1168601

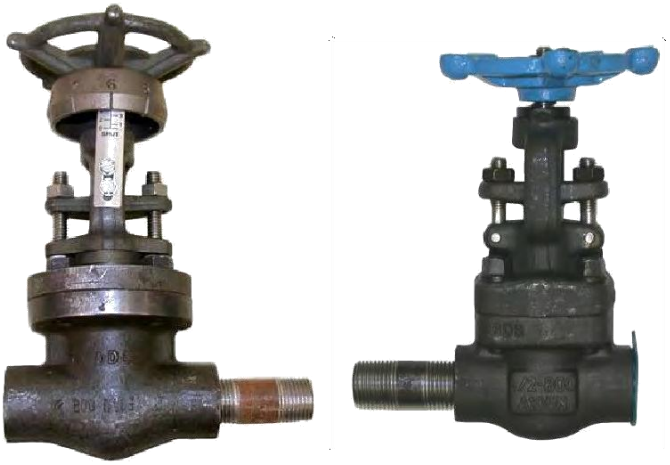
The PL575 **3/4 inch** cycle sample plumbing is used as a cycle sample method in boilers. The orifice restricts flow near the boiler sensor to prevent steam flashing during a sample. The PL675 can also be used as a PL575.

PL6
Part no. 1167297

The PL6 **1/2 inch** continuous plumbing is used for a continuous sampling of a boiler. The lower orifice bleeds a small sample across the sensor. The upper orifice is used with the motorized ball valve and opens when the conductivity is above set point.

PL675
Part no. 1167296

The PL675 **3/4 inch** continuous plumbing is used for a continuous sampling of a boiler. The lower orifice bleeds a small sample across the sensor. The upper orifice is used with the motorized ball valve and opens when the conductivity is above set point.



-GV w/POSITION INDICATOR
Part no. 1167520

The GV is a **1/2 inch** NPT Globe Valve with position indicator and is used for throttling or metering the flow restriction near the boiler sensor to prevent steam flashing.

-GVN w/o POSITION INDICATOR
Part no. 1269395

The GVN is a **1/2 inch** NPT Globe Valve without a position indicator and is used for throttling or metering the flow restriction near the boiler sensor to prevent steam flashing.

ORIFICE PLATES

The ORIFICE PLATES for **1/2** and **3/4** inch NPT union, restrict flow near the boiler sensor to prevent steam flashing during a sample.

FOR 1/2 INCH UNIONS

1/16 inch Part no. 1166355
¼ inch Part no. 1166356
1/8 inch Part no. 1166354
3/8 inch Part no. 1167972

FOR 3/4 INCH UNIONS

1/16 inch Part no. 1168998
¼ inch Part no. 1169000
1/8 inch Part no. 1168999
3/8 inch Part no. 1169001

ORIFICE UNION 1/2 INCH NPT
Part no. 1167244

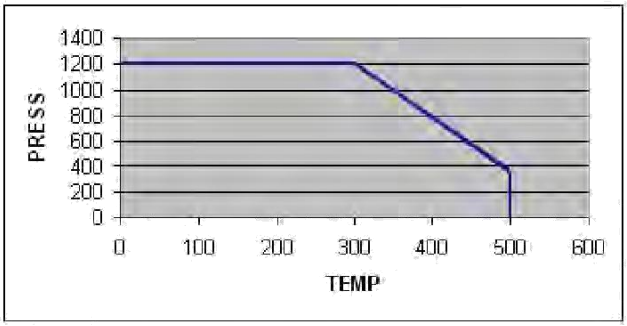
The ORIFICE UNION is a specially milled union for 1/2 orifice plates.

ORIFICE UNION 3/4 INCH NPT
Part no. 1167245

The ORIFICE UNION is a specially milled union for 3/4 inch orifice plates.

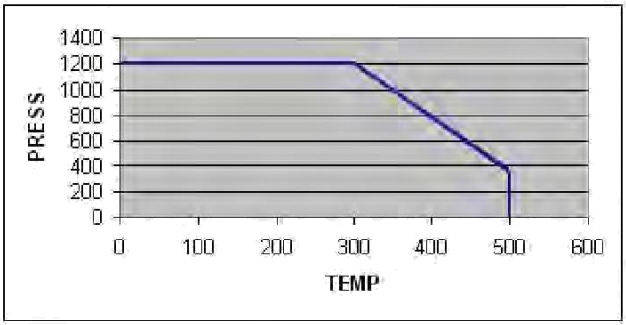
MBV1
Part no. 1268608

- Size **1/2 inch** NPT
- Body Carbon Steel
- Rating 400 psi (27.58 bar) @ 486°F (252°C)
- Seals Jamesbury XTREME®
- Ball 316 SS



MBV2
Part no. 1268614

- Size **3/4 inch** NPT
- Body Carbon Steel
- Rating 400 psi (27.58 bar) @ 486°F (252°C)
- Seals Jamesbury XTREME®
- Ball 316 SS



BOILER CONTROLLER REPLACEMENT PARTS

PART NO.	DESCRIPTION	LIST	CD
1168374	SR2, 2 electrode boiler sensor, conduit elbow and 20 ft cable	$349	W
1269392	SR2T, 2 electrode boiler sensor, conduit elbow, 20 ft cable, and cross	394	W
1229843	SR2HD, 2 electrode harsh duty sensor, conduit elbow, 20 ft cable	591	W
1169993	SR2N, 2 electrode sensor, 20 ft cable, conductivity node (2255 and 2855 only)	879	W
1235438	SR2NHD, 2 electrode harsh duty sensor, 20 ft cable, conductivity node (2255 and 2855 only)	1,128	W
1169878	SR2P, 2 electrode sensor with 20 ft cable, preamp (250/260-2 only)	693	W
1168375	SR4, 4 electrode sensor with 20 ft cable	974	W
1169994	SR4N, 4 electrode sensor, 20 ft cable, conductivity node (2255 only)	1,722	W
1167455	SR4P, 4 electrode sensor with 20 ft cable, preamp (250/260-2 only)	1,582	W
1167162	2 electrode boiler sensor replacement	290	W
1229841	2 electrode harsh duty boiler sensor replacement	544	W
1168074	4 electrode sensor (543M-STD)	673	R
1167295	PL5, ½ sample/cycle plumbing	198	W
1168601	PL575, ¾ sample/cycle plumbing ¾	218	W
1167297	PL6, ½ continuous plumbing	438	W
1167296	PL675, ¾ continuous plumbing	458	W
1233981	PLKT Plumbing kit. sample/cycle and continuous sample kit. Includes unions, orifice plates, cross, tee, and manual block valve only. Does not include piping.	513	W
1167520	GV, Globe valve with position indicator	445	R
1269395	GVN, Globe valve without position indicator	290	R
1166355	Orifice plate, 1/2NPT, 1/16	31	R
1166356	Orifice plate, 1/2NPT, 1/4	31	R
1166354	Orifice plate, 1/2NPT, 1/8	31	R
1167972	Orifice plate, 1/2NPT, 3/8	31	R
1168998	Orifice plate, 3/4NPT, 1/16	31	R
1169000	Orifice plate, 3/4NPT, 1/4	31	R
1168999	Orifice plate, 3/4NPT, 1/8	31	R
1169001	Orifice plate, 3/4NPT, 3/8	31	R
1167244	Orifice Union 1/2NPT	84	R
1167245	Orifice Union 3/4NPT	94	R
1268608	MBV1, ½ inch motorized ball valve	912	W
1268614	MBV2, ¾ inch motorized ball valve	1,040	W
1269179	Replacement Ball Valve ½ inch for MBV1	204	W
1269180	Replacement Ball Valve ¾ inch for MBV2	332	W
1269181	Replacement Actuator for MBV1 and MBV2	708	W
1107251	PS (+24VDC supply required for 3 or more nodes)	37	R

PROCESS CONTROLLERS

LAKEWOOD INSTRUMENTS
MODEL 1520/30e
pH or ORP WATER TREATMENT CONTROLLER

The Model 1520/30e uses the latest in microprocessor capability, giving the user a high level of application flexibility in pH or ORP control. The user in the field can configure this controller to operate as a pH or an ORP controller. A large illuminated graphics screen, multiple inputs, and very easy setup characterize this new technology. Water meters, sensors and plumbing assemblies are purchased separately.

PART NUMBER 1240475 SHOWN
Water Treatment Controller, Controller Only.

FEATURES

- Removable power cord and receptacles for simple conduit installations.
- Scheduled feed, which can use three relays for biocides or other chemicals.
- Two (2) water meter inputs, two (2) drum switch inputs, pH or ORP input, flow switch input, and 4-20 mA output are all standard features.
- Designed with a single circuit board for better reliability and lower cost.
- Large open shallow enclosure for easy wiring.
- Heavy-duty stainless steel domed numeric keypad and illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.
- LED indicators for power, alarm and relay status.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Controller can be removed from a cooling tower and be placed in another type of application when used with the appropriate pH or ORP sensor.
- Single circuit board design improves reliability.
- No add-on options. 4-20 mA output and biocide features are standard.

SPECIFICATIONS

pH range	2-12 pH
ORP range	-1000 to +1000 mV
Sensor Types	Solution ground, Signal differential, or Single-Ended
Resolution	± .10 pH or 1 mV
Accuracy & repeatability	± 1.0%
Deadband/Setpoint	Adjustable
Auto/Manual outputs	Menu selectable
Keypad	16 tactile push-buttons
Display	Illuminated 128x64 pixel LCD
Drum Switch Inputs	2 digital contact inputs
Water meter inputs (2)	Contact head, paddle wheel or turbine

Timer	Relay run time exceeded
Output Signal	One 4 – 20 mA, non-isolated isolated powered output
Output relays	4 selectable use
Relay ratings	3A each, 10A total
Power	120/240 VAC 50/60 Hz
Ambient	32° - 120°F (0 - 49°C)
Power	120/240 VAC 50/60 Hz
Ambient	32° - 120°F (0 - 49°C)
Enclosure	NEMA 4X, ETL

Sensors/Plumbing	Process/Wastewater
Max Pressure	70 psi (4.8 bar)
Max Temp	230°F (110°C)
Min flow	1 gpm (3.785 Lpm)

ORDERING OPTIONS

pH and ORP SENSORS

The 1520/30e uses the Lakewood Instruments model 520 series pH sensor for process pH applications and the model 530 series ORP sensor for process ORP applications. With two different body materials and three mounting options, Lakewood Instruments can supply pH or ORP sensors to fit your needs.

The 1520E Uses the Lakewood Instruments 520 Series Sensors For pH Part Number **1167302** pH Replacement Sensor Tip Shown

The 1530E Uses the Lakewood Instruments 530 Series Sensors For ORP Part Number **1167318** ORP Replacement Sensor Tip Shown

Ordering Information

PART NO.	pH/ORP PROCESS CONTROLLER	LIST	CD
1240475	**1520/30e controller only, no sensor .....**	**$1,201**	**W**

SEE THE 520 SERIES FOR PROCESS pH SENSORS AND THE 530 SERIES FOR PROCESS ORP SENSORS.

LAKEWOOD INSTRUMENTS
MODEL 2175Pe MICROPROCESSOR-BASED CONDUCTIVITY CONTROLLER

LONWORKS® Technology is the latest in microprocessor capability that gives the user the highest level of application flexibility. A large graphic screen, multiple inputs and very easy setup with easy field upgrade characterize this new technology.

Removable power cord and plug outlets make installation easy. For use with process-type conductivity sensors; ordered separately.

FEATURES

- Two water meter inputs, 4-electrode conductivity sensor input, flow switch input, four relay outputs, and Power On/Off switch in a NEMA 4X enclosure are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes four relays for bleed, chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Expandable in the field with the use of the Nodes for additional inputs, such as additional sensor inputs or additional outputs such as relays, 4-20 mA, LonWorks, and remote communications.
- Able to feed chemicals by multiple feed schemes including by feed schedule, setpoint control, percent of blowdown, percent of time, and by water meter.
- Able to bleed based on setpoint or by water meter.
- Includes sensor fouling compensation and alarm.

SPECIFICATIONS

Inputs	
Power	120/240 VAC 50/60 Hz
Sensor	4 electrode Conductivity 304 S.S. electrodes
Temperature comp.	Automatic
Flow switch	Dry contact
Water Meter Inputs	Contacting head, Paddle Wheel, or Turbine.
Outputs	
Relays	Four, 3 Amps @ 120 VAC
4-20 mA	Two isolated or non-isolated w/-35L option

Controller	
Conductivity Range	0-5,000 µS (other ranges optional)
Conductivity Accuracy	± 40 µS
Conductivity Resolution	10 µS
Deadband	Adjustable
Setpoints	Direct or Reverse (config in the field)
Feed timer	Adjustable
Keypad	16 tactile push-buttons
Display	Illuminated 128x64 pixel LCD
Ambient Temperature	32-158°F (0-70°C)
Enclosure	NEMA 4X, ETL

Sensors/Plumbing	**Process/Wastewater**
Max Pressure	70 psi (4.8 bar)
Max Temp	392°F (200°C)
Min flow	1 gpm (3.785 Lpm)

LonWorks is a registered trademark of Echelon Corporation

ORDERING INFORMATION

2175Pe LONWORKS Technology-based conductivity controller. The 2175Pe has built-in options for feed on conductivity, by feed schedule, blowdown or makeup, Percent of Time and Percent of Blowdown. Conductivity range is 1-100,000 µS dependent upon sensor. Controller includes power cord and outlet receptacles. Requires Conductivity sensor with **-4** option.

CONTROLLER OPTIONS (optional, select one or more)

-RS2L Communications node with LRWS program.
-35L Two 4-20 mA output configurable for remote data acquisition of conductivity.
-NIN Network interface node. Allows 2 NRLY, 1 Makeup NCON, 4 sensor nodes (NpH or NCON), 2 N420I and or 2 NDIG to be added.
2KIN-V1 Card to connect controller to LONWORKS based systems or gateways.
-PS +24 volt power supply required for 3 or more nodes.

ENCLOSURE

NEMA 4X Comes with ½ inch conduit knockouts.

LANGUAGE OPTIONS (optional, choose one, English and Spanish Standard)

-EF English and French.
-EG English and German.

REMOTE NODE OPTIONS (optional, MUST purchase -NIN **Option)**

NRLY Four additional relays with enclosure (2 per 2000 Series Controller), also available with receptacles and power cord
NpH pH/ORP node for a pH or ORP sensor.
N420I 4-20 ma input node for up to four 4-20 ma inputs.
NDIG Digital input node for up to four digital inputs.
NCON Conductivity node for makeup water or closed loop control (node only).
NCKT Conductivity node for makeup water or closed loop control with PVC sensor, tee and enclosure. Maximum water pressure and temperature is 140 psi @ 100°F (9.7 bar @ 38°C).

Refer to the 2000 series introduction section for more information.

NOTE: NOT FOR USE WITH MULTIPLE COOLING TOWERS.

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.
WEBNode IP/TCP device for use with 2000 Series controllers.
EZWeb Wireless internet interface for use with WEBNode and 2000 Series controllers.

PART NO.	DESCRIPTION	LIST	CD
1268870	2175Pe-RTC	$2,100	W
1268871	2175Pe-RTC-35L	2,325	W
1268872	2175Pe-RTC-35L-NIN	2,550	W
1268873	2175Pe-RTC-NIN	2,325	W
1268874	2175Pe-RTC-RS2L	2,325	W
1268875	2175Pe-RTC-RS2L-35L	2,550	W
1268876	2175Pe-RTC-RS2L-NIN	2,550	W
1268877	2175Pe-RTC-RS2L-35L-NIN	2,775	W

SEE THE 540 SERIES AND 543 SERIES FOR PROCESS CONDUCTIVITY SENSORS.

ALSO AVAILABLE AS A 2800Pe SERIES MODEL

LAKEWOOD INSTRUMENTS
MODEL 2330Pe MICROPROCESSOR-BASED ORP CONTROLLER

LONWORKS® Technology is the latest in microprocessor capability that gives the user the highest level of application flexibility. A large graphic screen, multiple inputs and very easy setup with easy field upgrade characterize this new technology.

Removable power cord and plug outlets make installation easy. For use with process-type ORP sensors; ordered separately.

FEATURES

- Two water meter inputs, ORP sensor input, flow switch input, four relay outputs, and Power On/Off switch in a NEMA 4X enclosure are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes four relays for chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Expandable in the field with the use of the Nodes for additional inputs, such as additional sensor inputs or additional outputs such as relays, 4-20 mA, LonWorks, and remote communications.
- Able to feed chemicals by multiple feed schemes including by feed schedule, setpoint control, percent of blowdown, percent of time, and by water meter.
- Able to bleed based on setpoint or by water meter.
- Includes sensor diagnostics and alarms.

SPECIFICATIONS

Inputs	
Power	120/240 VAC 50/60 Hz
Sensor	ORP Glass Electrode With BNC
Temperature comp.	None, 500 NTC, 4K NTC, 10K NTC, 100 PTC, 1K PTC, 3K PTC, and 10K PTC
Flow switch	Dry contact
Water Meter Inputs	Contacting head, Paddle Wheel, or Turbine.

Outputs	
Relays	Four, 3 Amps @ 120 VAC
4-20 mA	Two isolated or non-isolated w/-35L option

Controller	
ORP Range	-1000 to +1000 mV
ORP Accuracy	± 5 mV
ORP Resolution	1 mV
Deadband	Adjustable
Setpoints	Direct or Reverse (config in the field)
Feed timer	Adjustable
Keypad	16 tactile push-buttons
Display	Illuminated 128x64 pixel LCD
Ambient Temperature	32-158°F (0-70°C)
Enclosure	NEMA 4X, ETL

Sensors/Plumbing	**Process/Wastewater**
Max Pressure	70 psi (4.8 bar)
Max Temp	392°F (200°C)
Min flow	1 gpm (3.785 Lpm)

LonWorks is a registered trademark of Echelon Corporation

ORDERING INFORMATION

2330Pe LONWORKS Technology-based ORP controller. Four relays are integral to the system. The relays may be configured for ORP HIGH/LOW setpoints and alarms. ORP range is -1000 to +1000 mV. Controller includes power cord and outlet receptacles. Requires sensor (530-4 Series).

CONTROLLER OPTIONS (optional, select one or more)

-RS2L Communications node with LRWS program.
-35L Two 4-20 mA output configurable for remote data acquisition of ORP.
-NIN Network interface node. Allows 2 NRLY, 1 Makeup NCON, 4 sensor nodes (NpH or NCON), 2 N420I and or 2 NDIG to be added.
2KIN-V1 Card to connect controller to LON based systems or gateways.
-PS +24 volt power supply required for 3 or more nodes.

ENCLOSURE

NEMA 4X Comes with ½ inch conduit knockouts.

LANGUAGE OPTIONS (optional, choose one, English and Spanish Standard)

-EF English and French.
-EG English and German.

REMOTE NODE OPTIONS (optional, MUST purchase -NIN **Option)**

NRLY Four additional relays with enclosure (2 per 2000 Series Controller), also available with receptacles and power cord
NpH pH/ORP node for a pH or ORP sensor.
N420I 4-20 ma input node for up to four 4-20 ma inputs.
NDIG Digital input node for up to four digital inputs.
NCON Conductivity node for makeup water or closed loop control (node only).
NCKT Conductivity node for makeup water or closed loop control with PVC sensor, tee and enclosure. Maximum water pressure and temperature is 140 psi @ 100°F (9.7 bar @ 38°C).

Refer to the 2000 series introduction section for more information.

NOTE: NOT FOR USE WITH MULTIPLE COOLING TOWERS.

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.
WEBNode IP/TCP device for use with 2000 Series controllers.
EZWeb Wireless internet interface for use with WEBNode and 2000 Series controllers.

PART NO.	DESCRIPTION	LIST	CD
1268878	2330Pe-RTC	$2,200	W
1268879	2330Pe-RTC-35L	2,425	W
1268880	2330Pe-RTC-35L-NIN	2,650	W
1268881	2330Pe-RTC-NIN	2,425	W
1268882	2330Pe-RTC-RS2L	2,425	W
1268883	2330Pe-RTC-RS2L-NIN	2,650	W
1268884	2330Pe-RTC-RS2L-35L	2,650	W
1268885	2330Pe-RTC-RS2L-35L-NIN	2,875	W

SEE THE 530 SERIES FOR PROCESS ORP SENSORS.

ALSO AVAILABLE AS A 2800Pe SERIES MODEL

LAKEWOOD INSTRUMENTS
MODEL 2350Pe MICROPROCESSOR-BASED pH CONTROLLER

LONWORKS® Technology is the latest in microprocessor capability that gives the user the highest level of application flexibility. A large graphic screen, multiple inputs and very easy setup with easy field upgrade characterize this new technology.

Removable power cord and plug outlets make installation easy. For use with process-type pH sensors; ordered separately.

FEATURES

- Two water meter inputs, pH sensor input, flow switch input, four relay outputs, and Power On/Off switch in a NEMA 4X enclosure are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes four relays for chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Expandable in the field with the use of the Nodes for additional inputs, such as additional sensor inputs or additional outputs such as relays, 4-20 mA, LonWorks, and remote communications.
- Able to feed chemicals by multiple feed schemes including by feed schedule, setpoint control, percent of blowdown, percent of time, and by water meter.
- Able to bleed based on setpoint or by water meter.
- Includes sensor diagnostics and alarms.

SPECIFICATIONS

Inputs		**Controller**	
Power	120/240 VAC 50/60 Hz	pH Range	0-14 pH
Sensor	pH Glass Electrode With BNC	pH Accuracy	± 0.05 pH
		pH Resolution	0.01 pH
Temperature comp.	None, 500 NTC, 4K NTC, 10K NTC, 100 PTC, 1K PTC, 3K PTC, and 10K PTC	Deadband	Adjustable
		Setpoints	Direct or Reverse (config in the field)
		Feed timer	Adjustable
		Keypad	16 tactile push-buttons
Flow switch	Dry contact	Display	Illuminated 128x64 pixel LCD
Water Meter Inputs	Contacting head, Paddle Wheel, or Turbine.	Ambient Temperature	32-158°F (0-70°C)
		Enclosure	NEMA 4X, ETL

Outputs	
Relays	Four, 3 Amps @ 120 VAC
4-20 mA	Two isolated or non-isolated w/-35L option

Sensors/Plumbing	**Process/Wastewater**
Max Pressure	70 psi (4.8 bar)
Max Temp	392°F (200°C)
Min flow	1 gpm (3.785 Lpm)

LonWorks is a registered trademark of Echelon Corporation

ORDERING INFORMATION

2350Pe LONWORKS Technology-based pH controller with 4 selectable relays for HIGH/LOW setpoints or alarms. pH range is 0-14 pH. Controller includes power cord and outlet receptacles. Requires pH sensor (520-4 Series) which must be ordered separately.

CONTROLLER OPTIONS (optional, select one or more)

-RS2L Communications node with LRWS program.
-35LTwo 4-20 mA output configurable for remote data acquisition of pH.
-NIN Network interface node. Allows 2 NRLY, 1 Makeup NCON, 4 sensor nodes (NpH or NCON), 2 N420I and or 2 NDIG to be added.
2KIN-V1 Card to connect controller to LON based systems or gateways.
-PS +24 volt power supply required for 3 or more nodes.

ENCLOSURE

NEMA 4X Comes with ½ inch conduit knockouts.

LANGUAGE OPTIONS (optional, choose one, English and Spanish Standard)

-EF English and French.
-EG English and German.

REMOTE NODE OPTIONS (optional, MUST purchase -NIN **Option)**

NRLY Four additional relays with enclosure (2 per 2000 Series Controller), also available with receptacles and power cord
NpH pH/ORP node for a pH or ORP sensor.
N420I 4-20 ma input node for up to four 4-20 ma inputs.
NDIG Digital input node for up to four digital inputs.
NCON Conductivity node for makeup water or closed loop control (node only).
NCKT Conductivity node for makeup water or closed loop control with PVC sensor, tee and enclosure. Maximum water pressure and temperature is 140 psi @ 100°F (9.7 bar @ 38°C).

Refer to the 2000 series introduction section for more information.

NOTE: <u>NOT</u> FOR USE WITH MULTIPLE COOLING TOWERS.

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.
WEBNode IP/TCP device for use with 2000 Series controllers.
EZWeb Wireless internet interface for use with WEBNode and 2000 Series controllers.

PART NO.	DESCRIPTION	LIST	CD
1268886	2350Pe-RTC	$2,200	W
1268887	2350Pe-RTC-35L	2,425	W
1268888	2350Pe-RTC-35L-NIN	2,650	W
1268889	2350Pe-RTC-NIN	2,425	W
1268890	2350Pe-RTC-RS2L	2,425	W
1268891	2350Pe-RTC-RS2L-35L	2,650	W
1268892	2350Pe-RTC-RS2L-NIN	2,650	W
1268893	2350Pe-RTC-RS2L-35L-NIN	2,875	W

SEE THE 520 SERIES FOR PROCESS pH SENSORS.

ALSO AVAILABLE AS A 2800Pe SERIES MODEL

LAKEWOOD INSTRUMENTS
MODEL 2412Pe MICROPROCESSOR-BASED
pH AND CONDUCTIVITY CONTROLLER

LONWORKS® Technology is the latest in microprocessor capability that gives the user the highest level of application flexibility. A large graphic screen, multiple inputs and very easy setup with easy field upgrade characterize this new technology.

Removable power cord and plug outlets make installation easy. For use with process-type pH and conductivity sensors; ordered separately.

FEATURES

- Two water meter inputs, pH and conductivity sensor inputs, flow switch input, four relay outputs, and Power On/Off switch in a NEMA 4X enclosure are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes four relays for chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Expandable in the field with the use of the Nodes for additional inputs, such as additional sensor inputs or additional outputs such as relays, 4-20 mA, LonWorks, and remote communications.
- Able to feed chemicals by multiple feed schemes including by feed schedule, setpoint control, percent of blowdown, percent of time, and by water meter.
- Able to bleed based on setpoint or by water meter.
- Includes sensor diagnostics and alarms.

SPECIFICATIONS

Inputs	
Power	120/240 VAC 50/60 Hz
Sensors	2 or 4-Electrode Conductivity pH Glass Electrode With BNC
Temperature comp.	None, 500 NTC, 4K NTC, 10K NTC, 100 PTC, 1K PTC, 3K PTC, and 10K PTC
Flow switch	Dry contact
Water Meter Inputs	Contacting head, Paddle Wheel, or Turbine.
Outputs	
Relays	Four, 3 Amps @ 120 VAC
4-20 mA	Two isolated or non-isolated w/-35L option

Controller	
Conductivity Range	1-1,000,000 µS Varies w/Sensor
Conductivity Accuracy	± 40 µS
Conductivity Resolution	Varies with Range
pH Range	0-14 pH
pH Accuracy	± 0.05 pH
pH Resolution	0.01 pH
Deadband	Adjustable
Setpoints	Direct or Reverse (config in the field)
Feed timer	Adjustable
Keypad	16 tactile push-buttons
Display	Illuminated 128x64 pixel LCD
Ambient Temperature	32-158°F (0-70°C)
Enclosure	NEMA 4X, ETL

Intertek

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ORDERING INFORMATION

2412Pe LONWORKS Technology-based controller with 4 selectable relays for HIGH/LOW setpoints or alarms. pH range is 0-14 pH, conductivity range is 1-100,000 depending on sensors. Controller includes power cord and outlet receptacles. Requires pH sensor (520-4 Series) and conductivity sensor (540-4 series or 543-4 series) which must be ordered separately.

CONTROLLER OPTIONS (optional, select one or more)

-RS2L Communications node with LRWS program.
-35L Two 4-20 mA output configurable for data acquisition of conductivity and pH.
-NIN Network interface node. Allows 2 NRLY, 1 Makeup NCON, 4 sensor nodes (NpH or NCON), 2 N420I and or 2 NDIG to be added.
2KIN-V1 Card to connect controller to LON based systems or gateways.
-PS +24 volt power supply required for 3 or more nodes.

ENCLOSURE

NEMA 4X Comes with ½ inch conduit knockouts.

LANGUAGE OPTIONS (optional, choose one, English and Spanish Standard)

-EF English and French.
-EG English and German.

REMOTE NODE OPTIONS (optional, MUST purchase -NIN **Option)**

NRLY Four additional relays with enclosure (2 per 2000 Series Controller), also available with receptacles and power cord
NpH pH/ORP node for a pH or ORP sensor.
N420I 4-20 ma input node for up to four 4-20 ma inputs.
NDIG Digital input node for up to four digital inputs.
NCON Conductivity node for makeup water or closed loop control (node only).
NCKT Conductivity node for makeup water or closed loop control with PVC sensor, tee and enclosure. Maximum water pressure and temperature is 140 psi @ 100°F (9.7 bar @ 38°C).

Refer to the 2000 series introduction section for more information.

NOTE: NOT FOR USE WITH MULTIPLE COOLING TOWERS.

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.
WEBNode IP/TCP device for use with 2000 Series controllers.
EZWeb Wireless internet interface for use with WEBNode and 2000 Series controllers.

PART NO.	DESCRIPTION	LIST	CD
1268894	2412Pe-RTC	$2,200	W
1268895	2412Pe-RTC-35L	2,425	W
1268896	2412Pe-RTC-35L-NIN	2,650	W
1268897	2412Pe-RTC-NIN	2,425	W
1268898	2412Pe-RTC-RS2L	2,425	W
1268899	2412Pe-RTC-RS2L-35L	2,650	W
1268900	2412Pe-RTC-RS2L-NIN	2,650	W
1268901	2412Pe-RTC-RS2L-35L-NIN	2,875	W

SEE THE 520 SERIES FOR PROCESS pH SENSORS, AND THE 540 SERIES OR 543 SERIES FOR PROCESS CONDUCTIVITY SENSORS.

ALSO AVAILABLE AS A MODEL 2800Pe SERIES

LAKEWOOD INSTRUMENTS
MODEL 2430Pe MICROPROCESSOR-BASED ORP AND CONDUCTIVITY CONTROLLER

LONWORKS® Technology is the latest in microprocessor capability that gives the user the highest level of application flexibility. A large graphic screen, multiple inputs and very easy setup with easy field upgrade characterize this new technology.

Removable power cord and plug outlets make installation easy. For use with process-type ORP and conductivity sensors; ordered separately.

FEATURES

- Two water meter inputs, ORP and conductivity sensor inputs, flow switch input, four relay outputs, and Power On/Off switch in a NEMA 4X enclosure are all standard features.
- Removable power cord and receptacles for simple conduit installations.
- Includes four relays for chemical feed, and alarms; expandable up to 12 relay outputs.
- Includes three security levels to prevent unauthorized programming access.
- Includes two languages; English/Spanish are standard.
- Heavy-duty stainless steel domed numeric keypad and large illuminated graphical display allow for quick and easy programming. Steel domed switches improve the tactile sensing and life expectancy of the keypad.

BENEFITS

- Easy to program with the Lakewood plain English, intuitive, and user friendly menu interface.
- Expandable in the field with the use of the Nodes for additional inputs, such as additional sensor inputs or additional outputs such as relays, 4-20 mA, LonWorks, and remote communications.
- Able to feed chemicals by multiple feed schemes including by feed schedule, setpoint control, percent of blowdown, percent of time, and by water meter.
- Able to bleed based on setpoint or by water meter.
- Includes sensor diagnostics and alarms.

SPECIFICATIONS

Inputs

Power	120/240 VAC 50/60 Hz
Sensors	2 or 4-Electrode Conductivity ORP Glass Electrode With BNC
Temperature comp.	None, 500 NTC, 4K NTC, 10K NTC, 100 PTC, 1K PTC, 3K PTC, and 10K PTC
Flow switch	Dry contact
Water Meter Inputs	Contacting head, Paddle Wheel, or Turbine.

Outputs

Relays	Four, 3 Amps @ 120 VAC
4-20 mA	Two isolated or non-isolated w/-35L option

Controller

Conductivity Range	1-1,000,000 µS Varies w/Sensor
Conductivity Accuracy	± 40 µS
Conductivity Resolution	Varies with Range
ORP Range	-1000 to +1000 mV
ORP Accuracy	± 5 mV
ORP Resolution	1 mV
Deadband	Adjustable
Setpoints	Direct or Reverse (config in the field)
Feed timer	Adjustable
Keypad	16 tactile push-buttons
Display	Illuminated 128x64 pixel LCD
Ambient Temperature	32-158°F (0-70°C)
Enclosure	NEMA 4X, ETL

Intertek

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ORDERING INFORMATION

2430Pe LONWORKS Technology-based controller with 4 selectable relays for HIGH/LOW setpoints or alarms. Controller includes power cord and outlet receptacles. Requires ORP and conductivity sensors (530-4, and 540-4 or 543-4 series) which must be ordered separately.

CONTROLLER OPTIONS (optional, select one or more)

-RS2L Communications node with LRWS program.
-35L Two 4-20 mA output configurable for data acquisition of conductivity and ORP.
-NIN Network interface node. Allows 2 NRLY, 1 Makeup NCON, 4 sensor nodes (NpH or NCON), 2 N420I and or 2 NDIG to be added.
2KIN-V1 Card to connect controller to LON based systems or gateways.
-PS +24 volt power supply required for 3 or more nodes.

ENCLOSURE

NEMA 4X Comes with ½ inch conduit knockouts.

LANGUAGE OPTIONS (optional, choose one, English and Spanish Standard)

-EF English and French.
-EG English and German.

REMOTE NODE OPTIONS (optional, MUST purchase -NIN **Option)**

NRLY Four additional relays with enclosure (2 per 2000 Series Controller), also available with receptacles and power cord
NpH pH/ORP node for a pH or ORP sensor.
N420I 4-20 ma input node for up to four 4-20 ma inputs.
NDIG Digital input node for up to four digital inputs.
NCON Conductivity node for makeup water or closed loop control (node only).
NCKT Conductivity node for makeup water or closed loop control with PVC sensor, tee and enclosure. Maximum water pressure and temperature is 140 psi @ 100°F (9.7 bar @ 38°C).

Refer to the 2000 series introduction section for more information.

NOTE: NOT FOR USE WITH MULTIPLE COOLING TOWERS.

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.
WEBNode IP/TCP device for use with 2000 Series controllers.
EZWeb Wireless internet interface for use with WEBNode and 2000 Series controllers.

PART NO.	DESCRIPTION	LIST	CD
1268902	2430Pe-RTC	$2,200	W
1268903	2430Pe-RTC-35L	2,425	W
1268904	2430Pe-RTC-35L-NIN	2,650	W
1268905	2430Pe-RTC-NIN	2,425	W
1268906	2430Pe-RTC-RS2L	2,425	W
1268907	2430Pe-RTC-RS2L-35L	2,650	W
1268908	2430Pe-RTC-RS2L-NIN	2,650	W
1268909	2430Pe-RTC-RS2L-35L-NIN	2,875	W

SEE THE 530 SERIES FOR PROCESS ORP SENSORS, AND THE 540 SERIES OR 543 SERIES FOR PROCESS CONDUCTIVITY SENSORS.

ALSO AVAILABLE AS A 2800Pe SERIES MODEL

LAKEWOOD INSTRUMENTS MODEL 2450e
REVERSE OSMOSIS MONITOR

The Model 2450e uses LONWORKS® Technology that is the latest in microprocessor capability, giving the user the highest level of application flexibility. A large illuminated graphics screen, multiple inputs and very easy setup with easy field upgrades characterize this new technology. Water meters and sensors are purchased separately.

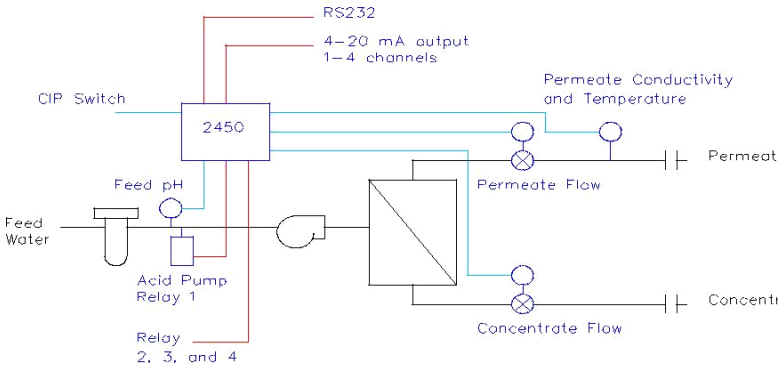
FEATURES

- Uses 2-electrode or 4-electrode conductivity sensors.
- Uses differential pH sensor with ¾ inch MNPT
- process connection. pH input can also be
- configurable for an ORP sensor.
- Two water meter inputs for Permeate and
- Concentrate flow rates.
- RS232 output for remote monitoring, control and data
- acquisition (-RS2L).
- Includes –RTC card
- 4-20 mA output for (-35L, select any four, two per –35L card) pH, conductivity, temperature, concentrate flow, permeate flow, percent recovery.
- Input for CIP lockout.
- System run timer.
- Five (5) Count down timers
  - Lubrication interval
  - Check CIP
  - Check Filters
  - Check Membranes
  - Check Sensor
- Four (4) relays have user-selectable options
  - pH setpoint;
  - conductivity setpoint;
  - temperature setpoint
  - permeate flow setpoint;
  - concentrate flow setpoint;
  - percent recovery setpoint;
  - various alarms.

SPECIFICATIONS

Inputs		pH Range	0-14 pH
Power	120/240 VAC 50/60 Hz	pH Accuracy	± 0.05 pH
Sensors	2 or 4-electrode Conductivity pH or ORP differential	pH Resolution	0.01 pH
		ORP Range	-1000 to +1000 mV
Temperature comp.	None, 500 NTC, 4K NTC	ORP Accuracy	± 5 mV
CIP switch	Dry contact	ORP Resolution	1 mV
Water Meter Inputs	Two, open collector type	Deadband	Adjustable
Outputs		Setpoints	Direct or Reverse
Relays	Four, 3 Amps @ 120 VAC	Feed timer	Adjustable
4-20 mA	Two isolated or non-isolated w/-35L option	Keypad	16 tactile push-buttons
		Display	Illuminated 128x64 pixel LCD
Controller		Ambient Temperature	32-158°F (0-70°C)
Conductivity Range	1-1,000,000 µS Varies w/Sensor	Enclosure	NEMA 4X, ETL
Conductivity Accuracy	± 40 µS		
Conductivity Resolution	Varies with Range		

LonWorks is a registered trademark of Echelon Corporation



ORDERING INFORMATION

2450e LONWORKS Technology-based Reverse Osmosis Monitor including the Real Time Clock. Sensors and water meters are ordered separately.

CONTROLLER OPTIONS (optional; select no more than two)

-35L Two channels of 4-20 mA outputs.
-35L2 Two additional channels of 4-20mA outputs for a total of four 4-20 mA outputs. The 35L must be installed before adding this option.
-RS2L Communications node with the LRWS program.

LANGUAGE OPTIONS (optional, choose one, English and Spanish Standard)

-EF English and French.
-EG English and German.

SENSOR OPTIONS

520-4-7I-10-STD	pH sensor **0-14 pH**, ¾ inch NPT
530-4-7I-10	ORP sensor, **-1000- +1000 mv** ¾ inch NPT
540K.01-4-10I-10-TC 500	Conductivity Sensor **1-10 µS**, ¾ inch NPT
540K.1-4-10I-10-TC 500	Conductivity Sensor **10-100 µS**, ¾ inch NPT
543-L-4-8I-10-STD	Conductivity Sensor **100-1000 µS**, 1 inch NPT
543-M-4-8I-10-STD	Conductivity Sensor **500-100,000 µS**, 1 inch NPT

AUTOTROL TURBINE WATER METER OPTIONS

1TM-NPT 1 inch turbine water meter with stainless steel pipe thread adapters.
1TM-ESW 1 inch turbine water meter with PVC solvent weld adapters. **2TM-NPT** 2 inch turbine water meter with stainless steel pipe thread adapters. **2TM-ESW** 2 inch turbine water meter with PVC solvent weld adapters.

49C25	25 ft cable for turbine meters.
49C50	50 ft cable for turbine meters.

SOFTWARE AND REMOTE COMMUNICATIONS

LRWS W*indows*-based software program for computer to communicate with 2000 Series.
WEBNode IP/TCP device for use with 2000 series controllers.
EZWEB Wireless internet interface for use with WEBNode and 2000 series controllers

MODEL 2450e

PART NO.	DESCRIPTION	LIST	CD
1269236	2450e	$2,350	W
1269243	2450e-RS2L	2,575	W
1269257	2450e-35L-RS2L	2,800	W
1269258	2450e-35L	2,575	W
1269259	2450e-35L-35L2	2,800	W

PART NO.	Accessories	LIST	CD
1107018	520-RO	$506	R
1107021	543-M-RO	861	R
1107022	543-L-RO	861	R
1107020	540K.1-RO	576	R
1107019	540K.01-RO	1,066	R
3023532	1TM-NPT	122	R
1033238	1TM-ESW	97	R
3023536	2TM-NPT	361	R
1034080	2TM-ESW	325	R
1033354	49C25	57	R
1033355	49C50	108	R
1167979	LRWS, Registered Lakewood Remote Windows Software	NC	R
1109658	RS2L, RS232 communications option	225	R
1109657	35L, dual channel 4-20mA output card	225	R
1222111	35L2, dual channel 4-20mA output card, second card	225	R

PROCESS SENSORS

Lakewood Instruments
Model 520 Series pH Sensors

5205 Replacement Tip CPVC

5207 Replacement Tip 316 SS

Lakewood Instruments uses the latest technology in pH electrode construction. Lakewood's differential electrode design prevents ground loop problems and excessive dependence on the reference electrode connection to the process stream for stable readings. With two different body materials, three mounting options and three different glass electrodes, Lakewood Instruments can supply pH sensors to fit your needs.

Specifications

Option	Body Material	Max Temp.†	Pressure*	Wetted Materials
-5x	CPVC	150°F (66°C) †	100 psi (6.9 bar)*	CPVC, Glass, Carbon, Viton
-7x	316 SS	230°F (110°C) †	150 psi (10.3 bar)*	316 SS, Glass, Viton

-STD is the STANDARD glass bulb type electrode for use in systems with low fouling potential and minimal abrasives. pH range is 0-12, Max Temperature† is 230°F (110°C)†
For replacement tips specify electrode type and total length in inches

-HS is the HIGH SODIUM glass bulb type electrode for use in systems with a high pH and high concentration of sodium ions. This sensor compensates for sodium ion errors. pH range is 0-14, Max Temperature† is 212°F (100°C)†
For replacement tips specify electrode type and total length in inches

-DG is the extra strength DOME glass bulb type electrode for use in systems with slightly fouling or slightly abrasive water. pH range is 0-12, Max Temperature† is 212°F (100°C)†
For replacement tips specify electrode type and total length in inches

TEMPERATURE COMPENSATOR: 10K PTC

†Temperature rating of sensors depends on the combination of the body and glass electrode. Use the lower temperature of the sensor's body or glass electrode to determine sensors temperature specification.

*** The maximum pressure rating for the 5I, 5R, 7I and 7R options with the Teflon ferrules is 70 psi.**

ENCLOSURES

- 0 FOR PVC
Used on the 2 wire transmitter only

- 0 FOR 316 SS
Used on the 2 wire transmitter only

- 1 NEMA-4X w/amplifier
* For use with Model 350-RP, 352, 820 and 1020 controllers.

- 5 NEMA-4X

- 2 CL I, II w/amplifier
* For use with Model 350-RP, 352, 820 and 1020 controllers.

- 3 CL I, II
Can be used with NpH

INLINE MOUNTING OPTIONS

- 5I 1 1/2 Inch NPT CPVC Compression

- 7I 3/4 Inch NPT 316 SS Swagelock

- 5R 1 1/2 Inch NPT CPVC Ball Valve

- 7R 1 Inch NPT 316 SS Ball valve

ORDERING INFORMATION

Select one item from each column below.

pH Sensor	Cable Length or Enclosure	Material, Inline Fitting	Body Length	Electrode Type
520	**-0** 1/2 inch NPT adapter	**-5S** CPVC no fitting	**-10** inch†	**-STD**
	-1 NEMA-4X w/amplifier*	**-5I** CPVC w/compress fitting 11/2 inch NPT	**-18** inch	**-DG**
	-2 Aluminum encl w/amp*	**-5R** CPVC w/ball valve 11/2 inch NPT	**-48** inch	**-HS**
	-3 Aluminum enclosure	**-7S** 316 SS no fitting		
	-4 180 inch of cable	**-7I** 316 SS w/Swagelock fitting 3/4 inch NPT		
	-5 NEMA-4X enclosure	**-7R** 316 SS w/ball valve 1inch NPT		

Example

520	**-4**	**-5R**	**-18**	**-STD**

†**10 inch body not available with** -5R or -7R **Option.**

PART NO.	DESCRIPTION	LIST	CD
1168554	520-0-5I-18-STD	$589	R
1105043	520-0-5I-10-STD	561	R
1168555	520-0-5R-18-STD	719	R
1104459	520-0-5S-18-STD	491	R
1168556	520-0-5S-48-STD	554	R
1105044	520-0-5S-10-STD	463	R
1109968	520-0-7I-10-STD	555	R
1228783	520-0-7I-10-DG	660	R
1168560	520-0-7I-18-STD	588	R
1168561	520-0-7R-18-STD	717	R
1168562	520-0-7S-48-STD	581	R
1105046	520-0-7S-10-STD	482	R
1105282	520-1-5I-10-STD	939	R
1109797	520-1-5I-18-DG	1,072	R
1168436	520-1-5I-18-HS	1,072	R
1168102	520-1-5I-18-STD	967	R
1255042	520-1-5I-48-STD	1,030	R
1167935	520-1-5R-18-STD	1,097	R
1169578	520-1-5S-48-DG	1,037	R
1169660	520-1-5S-48-HS	1,037	R
1167071	520-1-5S-48-STD	932	R
1169695	520-1-5S-18-STD	869	R
1168576	520-1-7I-18-STD	966	R
1169879	520-1-7I-10-STD	933	R
1169880	520-1-7R-18-HS	1,200	R
1168577	520-1-7R-18-STD	1,095	R
1168578	520-1-7S-48-STD	959	R
1167993	520-2-5I-18-STD	1,027	R
1168581	520-2-5R-18-STD	1,157	R
1166591	520-2-7I-10-STD	974	R
1165340	520-2-7R-48-STD	1,221	R
1167992	520-2-7R-18-STD	1,155	R
1167991	520-2-7S-48-STD	1,019	R
1168564	520-3-5I-18-STD	702	R
1105047	520-3-5I-10-STD	674	R
1168565	520-3-5R-18-STD	832	R
1168566	520-3-5S-48-STD	667	R
1105048	520-3-5S-10-STD	576	R
1167450	520-3-7I-18-HS	806	R
1168570	520-3-7I-18-STD	701	R
1105049	520-3-7I-10-STD	668	R
1104450	520-3-7R-18-DG	935	R
1168571	520-3-7R-18-STD	830	R
1168572	520-3-7S-48-STD	694	R
1105050	520-3-7S-10-STD	595	R
1169666	520-4-5I-18-DG	663	R
1167986	520-4-5I-18-STD	548	R

PART NO.	DESCRIPTION	LIST	CD
1105051	520-4-5I-10-STD	$520	R
1167988	520-4-5R-18-STD	678	R
1109615	520-4-5S-18-STD	450	R
1167989	520-4-5S-48-STD	513	R
1105052	520-4-5S-10-STD	422	R
1268974	520-4-5S-10-HS	527	R
1228083	520-4-7I-10-HS	619	R
1165305	520-4-7I-10-STD	514	R
1269219	520-4-7I-10-DG	619	R
1167984	520-4-7I-18-STD	547	R
1240143	520-4-7I-48-STD	613	R
1167983	520-4-7R-18-STD	676	R
1269102	520-4-7R-18-DG	781	R
1269171	520-4-7S-18-STD	474	R
1109944	520-4-7S-48-DG	645	R
1167982	520-4-7S-48-STD	540	R
1169876	520-4-7S-10-STD	441	R
1168586	520-5-5I-18-STD	642	R
1105054	520-5-5I-10-STD	614	R
1168587	520-5-5R-18-STD	772	R
1104404	520-5-5S-18-STD	544	R
1168588	520-5-5S-48-STD	607	R
1105055	520-5-5S-10-STD	516	R
1268639	520-5-5S-10-HS	621	R
1168592	520-5-7I-18-STD	641	R
1105056	520-5-7I-10-STD	608	R
1168593	520-5-7R-18-STD	770	R
1168594	520-5-7S-48-STD	634	R
1105057	520-5-7S-10-STD	535	R
1239903	520-6-5I-18-STD	586	R
1169704	520-6-5S-48-HS	656	R
1167125	520-6-5S-48-STD	551	R
1167126	520-6-5S-18-STD	488	R
1169646	520-6-7R-18-STD	714	R
1167129	520-6-7S-48-STD	578	R
1167130	520-6-7S-18-STD	512	R

PART NO.	REPLACEMENT PARTS	LIST	CD
1169452	5205-DG (specify length when ordering)	$460	R
1169453	5205-HS (specify length when ordering)	460	R
1167302	5205-STD (specify length when ordering)	355	R
1169460	5207-DG (specify length when ordering)	460	R
1169462	5207-HS (specify length when ordering)	460	R
1167304	5207-STD (specify length when ordering)	355	R
1167261	Fitting, 5I	108	R
1167090	Fitting, 5R	238	R
1167374	Fitting, 7I	83	R
1167375	Fitting, 7R	212	R
1167124	Preamp, pH/ORP	325	R
1166317	Cable, 4 conductor /ft, 20 ft minimum order	1	R
1169780	Cable, pH, BNC / 4Conductor, 5ft	105	R
1169781	Cable, pH, BNC / 4Conductor, 10ft	105	R

Lakewood Instruments
530 Series ORP Sensors

5305 Replacement Tip CPVC

5307 Replacement Tip 316 SS

Lakewood Instruments uses the latest technology in ORP electrode construction. Lakewood's differential electrode design prevents ground loop problems and excessive dependence on the reference electrode connection to the process stream for stable readings. With two different body materials and three mounting options, Lakewood Instruments can supply ORP sensors to fit your needs.

Specifications

	Option	Body Material	Max Temp.	Pressure*	Wetted Materials
	-5x	CPVC	150°F (66°C)	100 psi (6.9 bar)*	CPVC, Glass, Carbon, Viton
	-7x	316 SS	230°F (110°C)	150 psi (10.3 bar)*	316 SS, Glass, Viton

Close up of the stainless steel sensor tip shown

Range on ORP sensors is -1000 to +1000 mV

For replacement tips specify total length in inches

*The maximum pressure rating for the 5I, 5R, 7I and 7R options with the teflon ferrules is 70 psi.

ENCLOSURES

- 0 FOR PVC
Used on the 2 wire transmitter only

- 0 FOR 316 SS
Used on the 2 wire transmitter

- 1 NEMA-4X w/amplifier
* for use with Model 353 and 830 controllers.

- **5 NEMA-4X**

- 2 CL I, II w/amplifier
* for use with Model 353, 830 controllers.

- **3 CL I, II**
CAN BE USED WITH NPH

INLINE MOUNTING OPTIONS

- 5I 1 1/2 Inch NPT CPVC Compression

- 7I 3/4 Inch NPT 316 SS Swagelock

- 5R 1 1/2 Inch NPT CPVC Ball Valve

- 7R 1 Inch NPT 316 SS Ball valve

ORDERING INFORMATION

Select one item from each column below.

ORP Sensor	Cable Length or Enclosure	Material, Inline Fitting	Body Length	Electrode Type
530	**-0** 1/2 inch NPT adapter	**-5S** CPVC no fitting	**-10** inch †	**-STD**
	-1 NEMA-4X w/amplifier*	**-5I** CPVC w/compress fitting 11/2 inch NPT	**-18** inch	**-DG**
	-2 Aluminum encl w/amp*	**-5R** CPVC w/ball valve 11/2 inch NPT	**-48** inch	**-HS**
	-3 Aluminum enclosure	**-7S** 316 SS no fitting		**-FG**
	-4 180 inch of cable	**-7I** 316 SS w/Swagelock fitting 3/4 inch NPT		
	-5 NEMA-4X enclosure	**-7R** 316 SS w/ball valve 1 1/2 inch NPT		

Example

530	**-4**	**-5R**	**-18**	**-STD**

† **10 inch body not available with** -5R or -7R **Option.**

PART NO.	DESCRIPTION	LIST	CD
1169239	530-0-5I-18	$675	R
1105067	530-0-5I-10	647	R
1169240	530-0-5R-18	805	R
1169241	530-0-5S-48	640	R
1105068	530-0-5S-10	549	R
1169243	530-0-7I-18	674	R
1105069	530-0-7I-10	641	R
1169244	530-0-7R-18	803	R
1169245	530-0-7S-48	667	R
1105070	530-0-7S-10	568	R
1169246	530-1-5I-18	1,053	R
1169247	530-1-5R-18	1,183	R
1167078	530-1-5S-48	1,018	R
1169013	530-1-7I-18	1,052	R
1169249	530-1-7R-18	1,181	R
1229305	530-1-7S-18	979	R
1169250	530-1-7S-48	1,045	R
1169251	530-2-5I-18	1,113	R
1169252	530-2-5R-18	1,243	R
1169253	530-2-5S-48	1,078	R
1169255	530-2-7I-18	1,112	R
1169256	530-2-7R-18	1,241	R
1169257	530-2-7S-48	1,105	R
1169258	530-3-5I-18	788	R
1105071	530-3-5I-10	760	R
1169259	530-3-5R-18	918	R
1169260	530-3-5S-48	753	R
1105072	530-3-5S-10	662	R
1169262	530-3-7I-18	787	R
1105073	530-3-7I-10	754	R
1169263	530-3-7R-18	916	R
1169264	530-3-7S-48	780	R
1105074	530-3-7S-10	681	R
1169194	530-4-5I-18	634	R
1169668	530-4-5I-10	606	R
1169265	530-4-5R-18	764	R
1169266	530-4-5S-48	599	R
1169664	530-4-5S-10	508	R
1169268	530-4-7I-18	633	R
1169889	530-4-7I-10	600	R
1169269	530-4-7R-18	762	R
1169270	530-4-7S-48	626	R
1105075	530-4-7S-10	527	R
1169271	530-5-5I-18	728	R
1105076	530-5-5I-10	700	R
1169272	530-5-5R-18	858	R
1169273	530-5-5S-48	693	R
1105077	530-5-5S-10	602	R

PART NO.	DESCRIPTION	LIST	CD
1169275	530-5-7I-18	$727	R
1105078	530-5-7I-10	694	R
1169276	530-5-7R-18	856	R
1105079	530-5-7S-10	621	R
1167144	530-6-5S-48	637	R
1167145	530-6-5S-18	574	R
1167148	530-6-7S-48	664	R
1167149	530-6-7S-18	598	R

PART NO.	REPLACEMENT PARTS	LIST	CD
1167318	5305 (specify length when ordering)	$441	R
1106786	5307 (specify length when ordering)	441	R
1167261	Fitting, 5I	108	R
1167090	Fitting, 5R	238	R
1167374	Fitting, 7I	83	R
1167375	Fitting, 7R	212	R
1167124	Preamp, pH/ORP	325	R
1166317	Cable, 4 conductor /ft, 20 ft minimum order	1	R
1169780	Cable, pH, BNC / 4Conductor, 5ft	105	R
1169781	Cable, pH, BNC / 4Conductor, 10ft	105	R

LAKEWOOD INSTRUMENTS
SERIES 540
2-ELECTRODE CONDUCTIVITY SENSORS

540K.1 SENSOR TIP

540K.01 SENSOR TIP WITH SS BODY

The Model 540 Conductivity Sensor offers a reliable and easy-to-use tool for measuring high-purity water or condensate return. Available configured as in -line, retractable or submersible, the Model 540 provides accurate input for monitoring or control of total dissolved solids in the 1 to 10 µS or 10 to 100 µS conductivity ranges. These sturdy sensors can withstand temperatures up to 392°F (200°C) and will serve for a long period of time.

BENEFITS

- Reliable control
- Labor-saving
- Economical
- Long life
- Accurate

SPECIFICATIONS

Length(s) body	10 inch or 18 inch
Diameter, OD	¾ inch
Material	316 SS
Temp. ranges	0-392°F (200°C)
Temp. comp.	500 NTC
Cell constants	0.01 or 0.1
Cable lengths	20 ft max.
Cable insulation	TFE
Pressure Trend Swagelock	70 psi (4.8 bar)
Insulator mat.	PVDF
Range K.1	10-100 µS
Range K.01	1-10 µS

ENCLOSURES

-1 NEMA-4X w/amplifier*

- 2 CL I, II w/amplifier*

-3 CL I, II
CAN BE USED
WITH NCON

INLINE MOUNTING OPTIONS

(All sensors have ¾ inch NPT on sensor tip)

- **10I** 3/4 inch NPT 316 SS Swagelock

- **10R** 1 inch NPT 316 SS Ball valve

ORDERING INFORMATION

Select one item from each column below.

Sensor	Cable Length or Enclosure	Material, Inline Fitting	Body Length	Temp Comp
540K.1	**- 1** NEMA-4X w/amplifier*	**- 10S** 316 SS no fitting	**- 10** inch†	**- TC500**
540K.01	**- 2** Aluminum enclosure w/amp*	**- 10I** 316 SS w/Swagelock fitting ¾ inch NPT	**- 18** inch	
	- 3 Aluminum enclosure	**- 10R** 316 SS w/ball valve 1 inch NPT		
	- 4 240 inch of cable			

EXAMPLE

540K.1	**-4**	**-10R**	**-18**	**-TC500**

*Amplifier options **-1** and **-2** are only available with Model 843 controllers.

† 10 inch body not available with **-10R** Option.

PART NO.	DESCRIPTION	LIST	CD
1105089	540K.1-1-10I-10-TC500	$995	R
1169775	540K.1-1-10I-18-TC500	1,028	R
1166617	540K.1-1-10R-18-TC500	1,157	R
1105090	540K.1-1-10S-10-TC500	922	R
1166619	540K.1-1-10S-18-TC500	955	R
1105091	540K.1-2-10I-10-TC500	1,055	R
1166620	540K.1-2-10I-18-TC500	1,088	R
1169831	540K.1-2-10R-18-TC500	1,217	R
1105092	540K.1-2-10S-10-TC500	982	R
1166713	540K.1-2-10S-18-TC500	1,015	R
1105093	540K.1-3-10I-10-TC500	730	R
1169881	540K.1-3-10I-18-TC500	763	R
1166727	540K.1-3-10R-18-TC500	892	R
1105094	540K.1-3-10S-10-TC500	657	R
1167086	540K.1-3-10S-18-TC500	690	R
1104591	540K.1-4-10I-10-TC500	576	R
1169602	540K.1-4-10I-18-TC500	609	R
1168617	540K.1-4-10R-18-TC500	738	R
1105096	540K.1-4-10S-10-TC500	503	R
1167087	540K.1-4-10S-18-TC500	536	R

PART NO.	REPLACEMENT PARTS	LIST	CD
1169054	540K.1-TC500	$417	R
1167374	Fitting, 10I	83	R
1167375	Fitting, 10R	212	R
1166317	Cable, 4 conductor /ft, 20 ft minimum order (price per foot)	1	R
1167230	Preamp, Conductivity	325	R

PART NO.	DESCRIPTION	LIST	CD
1167080	540K.01-1-10I-18-TC500	$1,518	R
1105082	540K.01-1-10I-10-TC500	1,485	R
1167421	540K.01-1-10R-18-TC500	1,647	R
1167438	540K.01-1-10S-18-TC500	1,445	R
1105083	540K.01-1-10S-10-TC500	1,412	R
1165078	540K.01-2-10I-18-TC500	1,578	R
1105084	540K.01-2-10I-10-TC500	1,545	R
1169665	540K.01-2-10R-18-TC500	1,707	R
1165080	540K.01-2-10S-18-TC500	1,505	R
1105085	540K.01-2-10S-10-TC500	1,472	R
1167440	540K.01-3-10I-18-TC500	1,253	R
1105086	540K.01-3-10I-10-TC500	1,220	R
1167446	540K.01-3-10R-18-TC500	1,382	R
1104592	540K.01-4-10I-10-TC500	1,066	R
1167084	540K.01-4-10I-18-TC500	1,099	R
1169642	540K.01-4-10R-18-TC500	1,228	R

PART NO.	REPLACEMENT PARTS	LIST	CD
1169055	540K.01-TC500	$907	R
1167374	Fitting, 10I	83	R
1167375	Fitting, 10R	212	R
1166317	Cable, 4 conductor /ft, 20 ft minimum order (price per foot)	1	R
1167230	Preamp, Conductivity	325	R

543 SERIES
4-ELECTRODE CONDUCTIVITY SENSORS

543-M REPLACEMENT TIP

543-LL REPLACEMENT TIP

543-L REPLACEMENT TIP

ELECTRODE SPECIFICATIONS

Electrode	Conductivity Range	Temp Compensator	Max Temp	Max Pressure*
543-M	500-100,000 µS	4K NTC	392°F (200°C)	250 psi (17.2 bar)
543-L	100-1,000 µS	4K NTC	392°F (200°C)	250 psi (17.2 bar)
543-LL	10-500 µS	1K PTC	392°F (200°C)	250 psi (17.2 bar)

BODY SPECIFICATIONS

Option	Body Material	Max Temp	Pressure*	Wetted Materials
-5x	CPVC	150°F (66°C)	100 psi (6.9 bar)	CPVC, 316 SS, PEEK, Titanium, Viton
-8x	316 SS	260°F (127°C)	150 psi (10.3 bar)	316 SS, PEEK, Titanium, Viton

• The maximum pressure rating for the 8I and 8R options with the Teflon ferrule is 70 psi

ENCLOSURES

-1 NEMA-4X w/amplifier*

- 5 NEMA-4X

- 2 CL I, II w/amplifier*

-3 CL I, II
CAN BE USED WITH NCON

INLINE MOUNTING OPTIONS

(All sensors have ¾ inch NPT on sensor tip)

- **8I** 1 inch NPT 316 SS Swagelock

- **8R** 1½ inch NPT 316 SS Ball valve

ORDERING INFORMATION

Select one item from each column below.

Sensor	Cable Length or Enclosure	Material, Inline Fitting	Body Length
543-M	**- 0** ½ inch NPT adapter[#]	**- 5S** CPVC no fitting	**- 10** inch[†]
543-L	**- 1** NEMA-4X w/amplifier*	**- 8S** 316 SS no fitting	**- 18** inch
543-LL	**- 2** Aluminum encl. w/amp*	**- 8I** 316 SS w/Swagelock fitting 1 inch NPT	**- 48** inch
	- 3 Aluminum enclosure	**- 8R** 316 SS w/ball valve 1½ inch NPT	
	- 4 240 inch of cable		
	- 5 NEMA-4X enclosure		

EXAMPLE

543-M	**-4**	**-8R**	**-18**

[#]For use with the model 1743 two-wire transmitter.
*Amplifier options **-1** and **-2** are only available with Model 843 controllers.
[†]10 inch body is not available with **-8R** Option.

PART NO.	DESCRIPTION	LIST	CD
1104238	543-M-0-8I-10	$902	R
1105215	543-M-0-5S-10	792	R
1169090	543-M-0-8S-48	924	R
1169088	543-M-0-5S-48	884	R
1168105	543-M-0-8R-18	1,191	R
1168104	543-M-0-8I-18	948	R
1104476	543-M-1-5S-18	1,199	R
1104356	543-M-1-8S-10	1,185	R
1104970	543-M-1-5S-10	1,170	R
1104973	543-M-1-8I-10	1,280	R
1169095	543-M-1-8R-18	1,569	R
1169094	543-M-1-8I-18	1,326	R
1169093	543-M-1-8S-48	1,302	R
1169091	543-M-1-5S-48	1,262	R
1104974	543-M-2-8I-10	1,340	R
1105039	543-M-2-8S-10	1,245	R
1169099	543-M-2-8R-18	1,629	R
1169098	543-M-2-8I-18	1,386	R
1169097	543-M-2-8S-48	1,362	R
1109896	543-M-3-8R-18	1,304	R
1105040	543-M-3-5S-10	905	R
1105041	543-M-3-5S-18	934	R
1105042	543-M-3-5S-48	997	R
1105225	543-M-3-8I-10	1,015	R
1105226	543-M-3-8I-18	1,061	R
1105227	543-M-3-8S-10	920	R
1105228	543-M-3-8S-18	966	R
1105229	543-M-3-8S-48	1,037	R
1166602	543-M-4-5S-10	751	R
1105230	543-M-4-5S-18	780	R
1169101	543-M-4-5S-48	843	R
1104578	543-M-4-8I-10	861	R
1168103	543-M-4-8I-18	907	R
1169104	543-M-4-8R-18	1,150	R
1105233	543-M-4-8S-10	766	R
1105234	543-M-4-8S-18	812	R
1169103	543-M-4-8S-48	883	R

PART NO.	DESCRIPTION	LIST	CD
1109802	543-M-5-8I-18	$1,001	R
1105236	543-M-5-5S-10	845	R
1105237	543-M-5-5S-18	874	R
1105238	543-M-5-5S-48	937	R
1105242	543-M-5-8I-10	955	R
1105243	543-M-5-8R-18	1,244	R
1105244	543-M-5-8S-10	860	R
1105245	543-M-5-8S-18	906	R
1105246	543-M-5-8S-48	977	R

PART NO.	REPLACEMENT PARTS	LIST	CD
1168074	543M-STD	$673	R
1169168	Fitting, 8I	105	R
1169058	Fitting, 8R	348	R
1168893	Adapter, 543 to 3/4 NPT	32	R
1166317	Cable, 4 conductor /ft, 20 ft minimum order (price per foot)	1	R
1167230	Preamp, Conductivity	325	R

PART NO.	DESCRIPTION	LIST	CD
1105140	543-L-0-5S-10	$792	R
1105142	543-L-0-8I-10	902	R
1105143	543-L-0-8S-10	807	R
1169109	543-L-0-8R-18	1,191	R
1169108	543-L-0-8I-18	948	R
1169107	543-L-0-8S-48	924	R
1169105	543-L-0-5S-48	884	R
1105144	543-L-1-5S-10	1,170	R
1105146	543-L-1-8I-10	1,280	R
1105147	543-L-1-8S-10	1,185	R
1169114	543-L-1-8R-18	1,569	R
1169113	543-L-1-8I-18	1,326	R
1169112	543-L-1-8S-48	1,302	R
1169110	543-L-1-5S-48	1,262	R
1104240	543-L-2-8I-10	1,340	R
1105148	543-L-2-8S-10	1,245	R
1169118	543-L-2-8R-18	1,629	R
1169117	543-L-2-8I-18	1,386	R
1169116	543-L-2-8S-48	1,362	R
1105149	543-L-3-8R-18	1,304	R
1105150	543-L-3-5S-10	905	R
1105151	543-L-3-5S-18	934	R
1105152	543-L-3-5S-48	997	R
1105156	543-L-3-8I-10	1,015	R
1105157	543-L-3-8I-18	1,061	R
1105158	543-L-3-8S-10	920	R
1105159	543-L-3-8S-18	966	R
1105160	543-L-3-8S-48	1,037	R
1105161	543-L-4-5S-10	751	R
1105162	543-L-4-5S-18	780	R
1169120	543-L-4-5S-48	843	R
1105165	543-L-4-8I-10	861	R
1169123	543-L-4-8I-18	907	R
1169124	543-L-4-8R-18	1,150	R
1105166	543-L-4-8S-10	766	R
1105167	543-L-4-8S-18	812	R
1169122	543-L-4-8S-48	883	R

PART NO.	DESCRIPTION	LIST	CD
1105169	543-L-5-5S-10	$845	R
1105170	543-L-5-5S-18	874	R
1105171	543-L-5-5S-48	937	R
1104430	543-L-5-8I-18	1,001	R
1105168	543-L-5-8I-10	955	R
1109654	543-L-5-8R-18	1,244	R
1105175	543-L-5-8S-10	860	R
1104859	543-L-5-8S-18	906	R
1105176	543-L-5-8S-48	977	R

PART NO.	REPLACEMENT PARTS	LIST	CD
1168075	543L-STD	$673	R
1169168	Fitting, 8I	105	R
1169058	Fitting, 8R	348	R
1168893	Adapter, 543 to 3/4 NPT	32	R
1166317	Cable, 4 conductor /ft, 20 ft minimum order (price per foot)	1	R
1167230	Preamp, Conductivity	325	R

PART NO.	DESCRIPTION	LIST	CD
1105177	543-LL-0-5S-10	$817	R
1105179	543-LL-0-8I-10	927	R
1105180	543-LL-0-8S-10	832	R
1169129	543-LL-0-8R-18	1,216	R
1109128	543-LL-0-8I-18	973	R
1169127	543-LL-0-8S-48	949	R
1169125	543-LL-0-5S-48	909	R
1105182	543-LL-3-8R-18	1,329	R
1105183	543-LL-3-5S-10	930	R
1105184	543-LL-3-5S-18	959	R
1105185	543-LL-3-5S-48	1,022	R
1105189	543-LL-3-8I-10	1,040	R
1105190	543-LL-3-8I-18	1,089	R
1105191	543-LL-3-8S-10	945	R
1105192	543-LL-3-8S-18	991	R
1105193	543-LL-3-8S-48	1,062	R
1105195	543-LL-4-5S-10	776	R
1105196	543-LL-4-5S-18	805	R
1169130	543-LL-4-5S-48	868	R
1105199	543-LL-4-8I-10	886	R
1169133	543-LL-4-8I-18	932	R
1169134	543-LL-4-8R-18	1,175	R
1105200	543-LL-4-8S-10	791	R
1105201	543-LL-4-8S-18	837	R
1169132	543-LL-4-8S-48	908	R
1105203	543-LL-5-8R-18	$1,269	R
1105204	543-LL-5-5S-10	870	R
1105205	543-LL-5-5S-18	899	R
1105206	543-LL-5-5S-48	962	R
1105210	543-LL-5-8I-10	980	R
1105211	543-LL-5-8I-18	1,026	R
1105212	543-LL-5-8S-10	885	R
1105213	543-LL-5-8S-18	931	R
1105214	543-LL-5-8S-48	1,002	R

PART NO.	REPLACEMENT PARTS	LIST	CD
1168076	543LL-STD	$698	R
1169168	Fitting, 8I	105	R
1169058	Fitting, 8R	348	R
1168893	Adapter, 543 to 3/4 NPT	32	R
1166317	Cable, 4 conductor /ft, 20 ft minimum order (per foot)	1	R
1167230	Preamp, Conductivity	325	R