How Conductivity Works

Definition of Conductivity

Conductivity is the ability of a material to conduct electric current. The principle by which instruments measure conductivity in solution is simple—two plates are placed in the sample, a potential is applied across the plates (normally a sine wave voltage), and the current that passes through the solution is measured. Conductivity (G), the opposite of resistivity (R), is determined from the voltage and current values according to Ohm's law.

G = 1/R = amps/volts

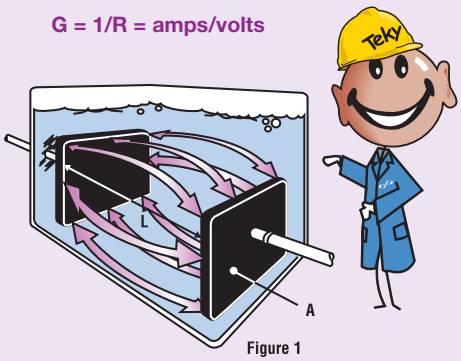

Figure 1

Units of Measurement

The basic unit of conductance is the siemen (S), also called the mho. Since cell geometry affects conductivity values, standardized measurements are expressed in (S/cm) to compensate for variations in electrode dimensions.

If the cell constant (K) is 1 cm^{-1}, the specific conductivity is the same as the measured conductivity of the solution. If other cell constants are used, the meter will automatically compensate for the change in geometry. To save room, cm^{-1} is not shown when cell constants are listed.

Although we specify conductivity ranges in µS or mS, due to space limitations these ranges should be understood to reflect specific conductivity in µS/cm or mS/cm, respectively.

1 µS/cm = 0.001 mS/cm = 0.000001 S/cm = 1 µmho/cm

Important features to consider...

- **Autoranging:** Meter automatically selects the most accurate range for measurement. There is no need to manually change the range.
- **TDS conversion factor:** When a solution does not have a similar ionic content to natural water or salt water, then a TDS conversion factor is needed to automatically adjust the TDS readings.
- **Temperature compensation:** A cell with built-in temperature sensor allows the meter to make adjustments to the conductivity or TDS readings based on changes in solution temperature.
- **Adjustable temperature coefficients:** Alcohols and pure water are affected by changes in temperature differently than typical samples. An adjustable temperature coefficient allows the user to compensate for the properties of the measured solution.
- **Adjustable cell constant:** Adjusts the measurement to reflect use of a cell with a constant other than K = 1.0. Wide range meters may accept cells between K = 0.01 and 10.

Cell constant (K)	Optimum conductivity range
0.01	0.055 to 20 µS
0.1	0.5 to 200 µS
1	0.01 to 2 mS
10	1 to 200 mS

Oakton® Waterproof EcoTestr™ Salt Pocket Meter

Just dip and read

- Low cost with long-life sensor
- IP67-rated waterproof housing that floats if dropped in water
- Precalibrated against NaCl standards
- Keep it with you—built-in clip for pocket or belt hanging

Features include single-button digital calibration, auto-shutoff, and display hold function.

OAKTON® ISO9001:2008 CERTIFIED SUPPLIER IP67

Description	EcoTestr Salt
Catalog number	GY-35462-50
Range	0 to 10.0 ppt
Resolution	0.1 ppt
Accuracy	±1% FS
Temperature compensation	Automatic, 0 to 50°C, 2% per °C
Calibration	One-point digital calibration
Power	Four 1.5 V batteries (included), >200 hours
Price	

GY-09377-16 **Replacement batteries.** Pack of 6

Oakton® Waterproof SaltTestr® 11 Pocket Meter

Never be without a meter

- Get easy spot checks of salt-based samples
- IP67-rated waterproof housing—even floats!
- Precalibrated against NaCl standards for immediate use

Push-button calibration provides easy and precise field calibration. Hold function freezes measurement for viewing and recording.

OAKTON® ISO9001:2008 CERTIFIED SUPPLIER CE IP67

Description		SaltTestr 11
Catalog number		GY-35662-52
Range	Salinity	0.0 to 10.00 ppt (g/L)
	Temperature	32 to 122°F (0 to 50°C)
Resolution	Salinity	0.01 ppt
	Temperature	0.01°F (0.1°C)
Accuracy	Salinity	±1% full-scale, 0.00 to 7.00 ppt; ±3% full-scale over 7.00 ppt
	Temperature	±0.9°F (0.5°C)
Temperature compensation		Automatic
Power		Four 1.5 V batteries (included)
Price		

GY-35661-17 **Replacement sensor**

GY-00653-89 **Oakton calibration solution;** 8974 µS (4487 ppm NaCl), 500 mL

GY-09377-16 **Replacement batteries.** Pack of 6

Oakton® Waterproof EcoTestr™ TDS and EC Pocket Meters

Stop replacing sensors

- Price allows you to just replace meter
- Rugged, chemical-resistant stainless steel sensors
- Easy push-button electronic single-point calibration
- Read measurements easily—ergonomic display for easy viewing at a glance
- Waterproof, floating meter—ideal for damp or dirty conditions
- Save money—ideal for education or field use

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ISO 9001:2008 CERTIFIED SUPPLIER IP67

Choose from four models depending on your parameter. TDS models include a self-adjusting TDS factor from 0.40 to 1.0.

Description		EcoTestr TDS Low	EcoTestr TDS High	EcoTestr EC Low	EcoTestr EC High
Catalog number		GY-35462-10	GY-35462-15	GY-35462-30	GY-35462-35
Range	Conductivity	—	—	0 to 1990 µS	0 to 19.90 mS
	TDS	0 to 1990 ppm	0 to 10.0 ppt	—	—
Resolution	Conductivity	—	—	10 µS	0.1 mS
	TDS	10 ppm	0.1 ppt	—	—
Accuracy	Conductivity	—	—	±1% FS	±2% FS
	TDS	±1% FS	±2% FS	—	—
Temperature compensation		Automatic, 0 to 50ºC, 2% per ºC			
Calibration		One-point digital calibration			
Power		Four 1.5 V batteries (included), >200 hours life			
Price					

GY-09377-16 **Replacement batteries,** 1.5 V button cell. Pack of 6

Oakton® Dual-Range Waterproof TDSTestr® 11 and ECTestr® 11 Meters

Get longer life with replaceable sensor

- Don't worry about losing your meter—floats if dropped in water and included lanyard keeps it close
- Get more out of your meter—dual range measurements for a wider application range
- Easy calibration—up to one point per range
- Stands up to whatever you throw at it—Valox® housing and stainless steel electrodes for good chemical compatibility

OAKTON®

ISO 9001:2008 CERTIFIED SUPPLIER CE IP67

Description		TDSTestr 11 Dual Range	ECTestr 11 Dual Range
Catalog number		GY-35662-10	GY-35662-30
Range	Conductivity	0 to 2000 ppm; 0 to 10.0 ppt	0 to 2000 µS; 0 to 20.00 mS
	Temperature	32 to 122°F (0 to 50°C)	32 to 122°F (0 to 50°C)
Resolution	Conductivity	10 ppm; 0.10 ppt	10 µS; 0.10 mS
	Temperature	0.1°F (0.1°C)	0.1°F (0.1°C)
Accuracy	Conductivity	±1% full scale	±1% full scale
	Temperature	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)
Temperature compensation		Automatic, 0 to 50°C; 2% per °C	Automatic, 0 to 50°C; 2% per °C
Calibration		One or two points	One or two points
Power		Four 1.5 V alkaline batteries (included), approximately 150 hours continuous use	
Price			

Accessories

GY-35661-17 **Replacement sensor** for pin-style testers

GY-09377-16 **Replacement batteries,** 1.5 V button cell. Pack of 6

GY-35661-70 **Calibration kit,** includes two each of TDS calibration solution pouches (447, 1413, 2764, and 15,000 µS), two rinse water pouches, sample jar, and foam-lined carrying case. Use with any Oakton TDS/ECTestr meter

GY-17090-30 **NIST-traceable calibration** for conductivity meter

Replaceable sensor

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Oakton® Multirange Waterproof Cup-Style TDSTestr® 11+ and ECTestr® 11+ Meters

Be more versatile in sampling

- Operates as either a cup-style or dip-style tester for greater flexibility
- Selectable measuring range
- Won't sink—waterproof, dustproof housings float
- Easy operation—push-button calibration, Hold function, and error messages
- Save money—replaceable sensor reduces costs

For cup-style measurements, pour a small amount of your sample directly into the sensor cup until it overflows; for dip style, simply immerse tester tip into sample.

Features cup-style sensor—draw or grab samples anywhere!

ISO9001:2008 CERTIFIED SUPPLIER CE IP67

Description		TDSTestr 11+ Multirange	ECTestr 11+ Multirange
Catalog number		GY-35662-15	GY-35662-35
Range	Conductivity	0 to 200.0, 0 to 2000 ppm; 0 to 10.00 ppt	0 to 200.0, 0 to 2000 µS/cm; 0 to 20.00 mS/cm
	Temperature	32 to 122°F (0 to 50°C)	32 to 122°F (0 to 50°C)
Resolution	Conductivity	0.1, 1 ppm; 0.01 ppt	0.1, 1 µS/cm; 0.01 mS/cm
	Temperature	0.1°F (0.1°C)	0.1°F (0.1°C)
Accuracy	Conductivity	±1% full scale	±1% full scale
	Temperature	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)
Temperature compensation		Automatic, 0 to 50°C; 2% per °C	
Calibration		Push-button calibration, one to three points	
Power		Four 1.5 V alkaline batteries (included), approximately 150 hours continuous use	
Price			

GY-35661-08 **Replacement sensor** for cup-style testers
GY-09377-16 **Replacement batteries,** 1.5 V button cell. Pack of 6
GY-17090-30 **NIST-traceable calibration** for conductivity meter

OAKTON®

Oakton® Waterproof Multiparameter Testr™ 35-Series Pocket Meters

Save time and money—like having three meters in one!

- Parameters include pH, conductivity, TDS, salinity, and temperature
- Compatible with a wide range of samples with long-life pH electrode and stainless steel pin-style conductivity sensor
- Save money by replacing sensor module

Advanced features include up to 5 point pH calibration with NIST or USA autobuffer recognition, auto-shutoff, user-adjustable temperature coefficient, self-adjusting TDS and salinity factor, and low-battery indicator. The IP67-rated housing floats if accidentally dropped into water.

ISO9001:2008 CERTIFIED SUPPLIER CE IP67

Description		PCTestr 35	PTTestr 35	PCSTestr 35
Catalog number		GY-35425-00	GY-35425-05	GY-35425-10
Range	pH	0 to 14.0	0 to 14.0	0.00 to 14.00
	Conductivity	0 to 2000 µS/cm; 2.00 to 20.00 mS/cm	—	0.0 to 200.0, 200 to 2000 µS/cm; 2.00 to 20.00 mS/cm
	TDS	—	0 to 1000 ppm; 1.00 to 10.00 ppt	0.0 to 100.0 ppm, 100 to 1000 ppm; 1.00 to 10.00 ppt
	Salinity	—	—	0.0 to 100.0 ppm, 100 to 1000 ppm; 1.00 to 10.00 ppt
	Temperature	32 to 112°F (0 to 50.0°C)	32 to 112°F (0 to 50.0°C)	32 to 112°F (0 to 50.0°C)
Resolution	pH	0.1	0.1	0.01
	Conductivity	0.1 µS/cm; 0.01 mS/cm	—	0.1 µS, 1 µS/cm; 0.01 mS/cm
	TDS	—	1 ppm; 0.01 ppt	0.1 ppm, 1 ppm; 0.01 ppt
	Salinity	—	—	0.1 ppm, 1 ppm; 0.01 ppt; 0.01%
	Temperature	0.1°F (0.1°C)	0.1°F (0.1°C)	0.1°F (0.1°C)
Accuracy	pH	±0.1	±0.1	±0.01
	Conductivity	1% full scale	—	1% full-scale
	TDS	—	1% full-scale	1% full-scale
	Salinity	—	—	1% full-scale
	Temperature	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)	±0.9°F (±0.5°C)
Temperature compensation		Automatic or manual, 32 to 122°F (0 to 50°C)		
Calibration	pH	3 to 5 pH points		
	Conductivity	1 to 3 point standard/manual calibration		
Buffer recognition		USA: 1.68, 4.01, 7.00, 10.01, 12.45; NIST: 1.68, 4.01, 6.86, 9.18, 12.45		
Power		Four 1.5 V button cell batteries (included)		
Price				

GY-35425-50 **Replacement pH/conductivity/TDS/salinity sensor module**
GY-09377-16 **Replacement batteries,** 1.5 V button cell. Pack of 6
GY-17101-45 **NIST-traceable calibration** for pH pocket meters (non-BNC)
GY-17090-30 **NIST-traceable calibration** for conductivity meters

Oakton® CON 6+, TDS 6+, and SALT 6+ Meters

Read accurately at the touch of a button

- CON 6+ and TDS 6+ have five auto-ranging measurement modes—up to 200.0 mS (200.0 ppt)
- Temperature readout in °C with the push of a button
- Rubber boot with built-in stand protects meter and adds functionality

Quick and easy single-point calibration covers all five ranges with the CON 6+ and TDS 6+ meters; for greater precision, single points can be calibrated within each of the five measurement ranges. The SALT 6+ features single-point calibration; calibrate using 4487 ppm (4.5 ppt) calibration solution 00653-89 (sold below).

Additional features include a convenient Hold function and auto-off function that shuts meter off after 20 minutes of non-use. Programming functions allow customization of meter for temperature compensation, temperature coefficient, normalization, cell constant, and conductivity-to-TDS conversion factor (TDS 6+) for better accuracy in varying applications.

Meters include: protective rubber boot with stand, conductivity/TDS/temperature probe (K = 1.0), and four AAA batteries.

Kits include: protective rubber boot with stand, conductivity/TDS/temperature probe (K = 1.0), calibration solutions, sample bottles, rinse bottle, hard plastic carrying case, and four AAA batteries.

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ISO9001:2008 CERTIFIED SUPPLIER CE Meter only

Description		CON 6+ meter	CON 6+ meter kit	TDS 6+ meter	TDS 6+ meter kit	SALT 6+ meter	SALT 6+ meter kit
Catalog number			GY-35604-00	GY-35604-04	GY-35604-20	GY-35604-24	GY-35604-40	GY-35604-44
Precalibrated catalog number			GY-35604-01	GY-35604-05	GY-35604-21	GY-35604-25	GY-35604-41	GY-35604-45
Range	Conductivity	0 to 20.00, 0 to 200.0, 0 to 2000 µS; 0 to 20.00, 0 to 200.0 mS		0 to 10.00, 10 to 100.0, 100 to 1000 ppm; 1.00 to 10.00, 10.0 to 100.0, up to 200.0 ppt†		1 to 50.0 ppt, 0.1 to 5.00%	
	Temperature	–10.0 to 110.0°C		–10.0 to 110.0°C		–10.0 to 110.0°C	
Resolution	Conductivity	0.01, 0.1, 1 µS; 0.01, 0.1 mS		0.01, 0.1, 1 ppm; 0.01, 0.1 ppt		0.1 ppt, 0.01%	
	Temperature	0.1°C		0.1°C		0.1°C	
Accuracy	Conductivity	±1% full-scale		±1% full-scale		±1% full-scale	
	Temperature	±0.5°C		±0.5°C		±0.5°C	
Temperature compensation		Automatic or manual from 0.0 to 50.0°C		Automatic or manual from 0.0 to 50.0°C		Automatic or manual from 0.0 to 50.0°C	
Cell constant (K)		Selectable, 0.1, 1, and 10		Selectable, 0.1, 1, and 10		1.0	
Conductivity-to-TDS/salt conversion factor		—		0.4 to 1.00 adjustable		Nonlinear compensation	
Calibration points		5 maximum, one per range		5 maximum, one per range		One point in 1 to 50 ppt range	
Power		Four AAA batteries (included)		Four AAA batteries (included)		Four AAA batteries (included)	
Price							
Precalibrated price							

†With K = 10 probe

Accessories

GY-35606-53 **Conductivity probe,** K = 0.1
GY-35606-55 **Replacement conductivity probe,** K = 1.0
GY-35606-57 **Conductivity probe,** K = 10
GY-00653-89 **Calibration solution** for SALT 6+ meter, 4487 ppm NaCl; 500 mL bottle
GY-35653-15 **Calibration solution** for SALT 6+ meter, 3000 ppm NaCl. Pack of 20 (20-mL) pouches
GY-09376-00 **Replacement batteries,** AAA. Pack of 12
GY-17090-30 **NIST-traceable calibration** with data for conductivity meters

Oakton® Waterproof CON 150 Meter

Get more for your money

- Best value for an IP67-rated waterproof meter
- Know the status of your probe—intuitive, user-friendly icon displays cell constant
- Get quick and easy electrode attachment to a beaker or container with Grip-Clip™ holder
- Recall more data with expanded data logging for up to 150 data sets
- Use as a benchtop meter as well—built-in stand and wall-mount option
- Versatile power supply—battery or AC

Rugged, waterproof housing is ideal for use in any environment. View more data simultaneously with large, three-line LCD providing conductivity or TDS measurement with temperature. Get faster calibration with auto-ranging and auto-cal functions for one calibration point per measurement range. Select a probe with a 0.1, 1.0, or 10 cell constant and automatic temperature compensation (ATC). Get more accuracy even in fluctuating temperatures with ATC.

Meter features include adjustable conductivity-to-TDS factor, selectable temperature coefficient, ready (stability) indicator, smart averaging, hold function, calibration alarm (visible), battery life indicator, and probe status.

Meter includes: conductivity cell (K = 1.0), Grip-Clip holder, and two AA batteries.

Kit adds: two calibration standards and hard carrying case.

OAKTON®

ISO 9001:2008 CERTIFIED SUPPLIER

Description		CON 150 meter with probe	CON 150 meter kit
Catalog number		GY-35607-32	GY-35607-90
Precalibrated catalog number		GY-35607-34	GY-35607-91
Range	Conductivity	0 to 200 mS	
	TDS	0 to 200 ppt	
	Temperature	–17.0 to 230.0°F (–10.0 to 110.0°C)	
Resolution	Conductivity	0.01 µS to 0.1 mS	
	TDS	0.01 ppm to 0.1 ppt	
	Temperature	0.1°F/°C	
Accuracy	Conductivity	±1% full-scale	
	TDS	±1% full-scale	
	Temperature	±0.9°F (±0.5°C)	
Calibration	Conductivity	Auto/manual; 1 point/range	
	TDS	Auto/manual; 1 point/range	
	Temperature	Offset 0.1 increments	
Temperature compensation		Automatic or manual from –10 to 110°C	
Conductivity-to-TDS factor		0.4 to 1.0	
Data logging		Stores up to 150 data sets	
Power		Two AA batteries (included); universal power adapter (optional)	
Price			
Precalibrated price			

Built-in meter stand for steady benchtop use.

Save time, save money!

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Includes a data-rich, ISO 17025 certificate—**no additional charge!**
Precalibrated by INNOCAL® INNOVATIVE CALIBRATION SOLUTIONS

Accessories

GY-35608-55 **Conductivity cell,** K = 0.1
GY-35608-50 **Replacement conductivity cell,** K = 1.0
GY-35608-51 **Conductivity cell,** K = 10
GY-35614-50 **Replacement Grip-Clip holder** easily attaches probe to side of container for hands-free measurement
GY-35614-51 **Hard carrying case**
GY-35420-72 **Optional power adapter,** 110/220 VAC
GY-09376-01 **Replacement batteries,** AA. Pack of 4
GY-17090-30 **NIST-traceable calibration** with data for conductivity meter

Oakton® Waterproof CON 450 Meter

Easy to read in any environment

- Use it in any environment with backlit display and rugged design
- Know the status of your probe—intuitive, user-friendly icon displays cell constant
- Get quick and easy electrode attachment to a beaker or container with Grip-Clip™ holder
- Download and analyze up to 500 data sets with USB or RS-232 output
- Use as a benchtop meter as well—built-in stand and wall-mount option
- Versatile power supply—battery or AC

Waterproof, IP67-rated meter is ideal for even the harshest environments. View the main measurement simultaneously with temperature on backlit display. Get faster calibration with auto-cal function, which permits one calibration point per measurement range. Select a probe with a 0.1, 1.0, or 10 cell constant and automatic temperature compensation (ATC). Get more accuracy even in fluctuating temperatures with ATC.

Meter features include adjustable conductivity-to-TDS factor, selectable temperature coefficient, ready (stability) indicator, smart averaging, user-selectable °F/°C units, hold function, calibration alarm, battery life-indicator, and electrode status.

Meter includes: conductivity cell (model 35608-50, K = 1.0), Grip-Clip holder, and batteries.

Kit adds: calibration standards and hard carrying case.

OAKTON®

ISO9001:2008 CERTIFIED SUPPLIER

Description		CON 450 meter with probe	CON 450 meter kit
Catalog number		GY-35608-32	GY-35608-80
Precalibrated catalog number		GY-35608-34	GY-35608-81
Range	Conductivity	0 to 200 mS	
	TDS	0 to 200 ppt	
	Salinity	0 to 50 ppt	
	Temperature	–17.0 to 230.0°F (–10.0 to 110.0°C)	
Resolution	Conductivity	0.01 µS to 0.1 mS	
	TDS	0.01 ppm to 0.1 ppt	
	Salinity	0.01	
	Temperature	0.1°F/°C	
Accuracy	Conductivity	±1% full-scale	
	TDS	±1% full-scale	
	Salinity	±1% full-scale	
	Temperature	±0.9°F (±0.5°C)	
Calibration	Conductivity	Auto/manual; 1 point/range	
	TDS	Auto/manual; 1 point/range	
	Salinity	Auto/manual; 1 point/range	
	Temperature	±5.0° offset	
Temperature compensation		Automatic or manual from –10 to 110°C	
Data logging		Stores up to 500 data sets	
Output		USB or RS-232	
Power		Two AA batteries (included); 500 hours (without backlight); AC adapter (optional)	
Price			
Precalibrated price			

Save time, save money!

Choose Precalibrated
Includes a data-rich, ISO 17025 certificate—**no additional charge!**
Precalibrated by INNOCAL® INNOVATIVE CALIBRATION SOLUTIONS

Accessories

GY-35608-55 **Conductivity cell,** K = 0.1
GY-35608-50 **Replacement conductivity cell,** K = 1.0
GY-35608-51 **Conductivity cell,** K = 10
GY-35614-50 **Replacement Grip-Clip electrode holder**
GY-35614-51 **Hard carrying case**
GY-35630-53 **Data cable** for USB connectivity
GY-35420-01 **Data cable** for RS-232 connectivity
GY-35420-72 **Optional AC adapter,** 110/220 VAC
GY-09376-01 **Replacement batteries,** AA. Pack of 4

Oakton® Waterproof pH/CON 450 Meter

More measurements in one meter

- Get both pH and conductivity measurements with combination pH/CON probe or separate pH and conductivity probes
- Use it in any environment with backlit display and rugged design
- Intuitive, user-friendly icons show electrode status as pH slope and all constant
- Get quick and easy electrode attachment to a beaker or container with Grip-Clip™ holder
- Download and analyze up to 500 data sets with USB or RS-232 output
- Use as a benchtop meter as well—built-in stand and wall-mount option

Ideal meter for any environment with its rugged, waterproof housing. View both the main measurement and temperature simultaneously with large, backlit LCD. Ensure the accuracy of your measurements with up to six calibration points from USA, NIST, DIN, and custom pH buffer sets. Autocal feature for conductivity has one calibration point per range. Don't worry about accuracy in fluctuating temperature—ATC ensures measurement accuracy.

Meter features include ready (stability) indicator, smart averaging, user-selectable °C/°F units, hold function, calibration alarm, battery-life indicator, and electrode status. Choose combination pH/CON probe or separate probe options.

pH/CON 450 meter with combination probe includes: combination pH/CON probe (model 35630-51), Grip-Clip holder, and two AA batteries.

pH/CON 450 meter with separate probes includes: pH electrode (model 35641-51), conductivity probe (model 35608-50, K = 1.0), Grip-Clip holder, and two AA batteries.

pH/CON 450 kits add: calibration standards and hard carrying case.

OAKTON ISO9001:2008 CERTIFIED SUPPLIER Meter only

Description		Meter with combination probe	Meter with separate probes	Meter kit with combination probe	Meter kit with separate probes
Model		pH/CON 450			
Catalog number		GY-35630-10	GY-35630-12	GY-35630-80	GY-35630-90
Precalibrated catalog number		GY-35630-11	GY-35630-13	GY-35630-81	GY-35630-91
Range	pH	–2.00 to 16.00			
	mV	±2000 mV			
	Conductivity	0 to 200 mS			
	TDS	0 to 200 ppt			
	Salinity	0 to 50 ppt			
	Temperature	–17.0 to 230.0°F (–10.0 to 110.0°C)			
Resolution	pH	0.01			
	mV	0.1 mV ±999.9 mV; 1 mV beyond			
	Conductivity	0.01 µS to 0.1 mS			
	TDS	0.01 ppm to 0.1 ppt			
	Salinity	0.01			
	Temperature	0.1°F/°C			
Accuracy	pH	±0.01			
	mV	±0.2 mV ±2 LSD or ±0.5% of reading; whichever is greater			
	Conductivity	±0.5% full-scale (monovalent); ±1% full-scale (divalent)			
	TDS	±1% full-scale			
	Salinity	±1% full-scale			
	Temperature	±0.9°F (±0.5°C)			
Calibration	pH	Up to six points: USA, NIST, DIN, PWB, or custom			
	mV	±200 mV			
	Conductivity	Up to six points			
	TDS	Auto/manual; one point per range			
	Salinity	Auto/manual; one point per range			
	Temperature	±5.0° offset			
Temperature compensation		Automatic or manual from –10 to 110°C			
Output		USB or RS-232			
Data logging		Stores up to 500 data sets			
Power		Two AA batteries (included), 500 hours (without backlight); AC adapter (optional)			
Price					
Precalibrated price					

Accessories

GY-35641-51 **Replacement pH electrode.** Double-junction; epoxy body; BNC connector

GY-35618-05 **ATC probe.** Use with any standard pH electrode for temperature compensation

GY-35630-51 **Replacement combination pH/CON/ATC probe**

GY-35608-55 **Conductivity cell,** K = 0.1

GY-35608-50 **Replacement conductivity cell,** K = 0.1

GY-35608-51 **Conductivity cell,** K = 1.0

GY-35614-50 **Replacement Grip-Clip holder**

GY-35614-51 **Hard carrying case,** for 150/450 meters

GY-35630-53 **Data cable** for USB connectivity

GY-35420-01 **Data cable** for RS-232 connectivity

GY-35420-72 **Optional AC adapter,** 110/220 VAC

GY-09376-01 **Replacement batteries,** AA. Pack of 4

GY-17106-20 **NIST-traceable calibration** with data for pH meter

GY-17090-30 **NIST-traceable calibration** with data for conductivity meter

Oakton® Waterproof Handheld Conductivity and CON/DO Meters

Effortlessly transfer data to PC

- Store up to 500 data points and download to computer or printer with the infrared (IrDA) wireless technology
- Programmable "calibration due" date for increased data integrity
- Stores up to 500 data points with time-and-date stamp for GLP compliance
- Wireless download of data via IrDA port

These top-of-the-line waterproof meters offer single or multiparameter measurement capabilities to meet all of your testing needs. The IP67-rated housing allows use in dirty and wet environments without harm to the meter. User-selectable "calibration due" and set point alarms, automatic or manual standards recognition, and single- or multiple-point calibration provide flexibility in meeting you data quality objectives. The large backlit, graphic LCD shows the measured value and units, temperature, time, battery life, and menu options.

What's included: software and four AA batteries; order optional universal power adapter separately for use in a lab.

Kits add: plastic carrying case, protective rubber boot, and calibration solutions.

CD 650 models further add: multiprobe holder.

35408-02

OAKTON®

ISO 9001:2008 CERTIFIED SUPPLIER · CE · IP67 · Meter only

Model		CON 600			CON 610			CD 650		
Description		**Meter only**	**Meter with probe 35408-52**	**Meter kit**	**Meter only**	**Meter with probe 35408-52**	**Meter kit**	**Meter only**	**Meter with probes 35408-52 and 35640-50**	**Meter kit**
Catalog number		GY-35408-02	GY-35408-00	GY-35408-70	GY-35408-12	GY-35408-10	GY-35408-80	GY-35433-02	GY-35433-00	GY-35433-70
Precalibrated catalog number		GY-35408-03	GY-35408-01	GY-35408-71	GY-35408-13	GY-35408-11	GY-35408-81	GY-35433-03	GY-35433-01	GY-35433-71
Range	Conductivity	0 to 200 mS			0 to 500 mS			0 to 500 mS		
	TDS	0 to 500 ppt			0 to 500 ppt			0 to 500 ppt		
	Salinity	—			0 to 80 ppt			0 to 80 ppt		
	Resistivity	—			0 to 20.00 MΩ			0 to 20.00 MΩ		
	Dissolved oxygen	—			—			0 to 600%; 0 to 90 mg/L		
	Barometric pressure	—			—			Automatic compensation, 450 to 825 mm Hg		
	Temperature	14 to 230°F (–10 to 110°C)			14 to 230°F (–10 to 110°C)			14 to 230°F (–10 to 110°C)		
Resolution	Conductivity	0.01, 0.1 µS; 0.001, 0.01, 0.1 mS			0.01, 0.1 µS; 0.001, 0.01, 0.1 mS			0.01, 0.1 µS; 0.001, 0.01, 0.1 mS		
	TDS	0.01, 0.1 ppm, 0.001, 0.01, 0.1 ppt			0.01, 0.1 ppm, 0.001, 0.01, 0.1 ppt			0.01, 0.1 ppm, 0.001, 0.01, 0.1 ppt		
	Salinity	—			0.01, 0.1 ppm; 0.001, 0.01 ppt			0.01, 0.1 ppm; 0.001, 0.01 ppt		
	Resistivity	—			0.01, 0.001 m Ω; 0.1 k Ω; 0.1, 0.01, 0.001 Ω			0.01, 0.001 m Ω; 0.1 k Ω; 0.1, 0.01, 0.001 Ω		
	Dissolved oxygen	—			—			0.1%, 0.01 mg/L		
	Barometric pressure	—			—			1 mm Hg		
	Temperature	0.1°F (0.1°C)			0.1°F (0.1°C)			0.1°F (0.1°C)		
Accuracy	Conductivity	±1% full-scale			±1% full-scale			±1% full-scale		
	TDS	±1% full-scale			±1% full-scale			±1% full-scale		
	Salinity	—			±1% full-scale			±1% full-scale		
	Resistivity	—			±1% full-scale			±1% full-scale		
	Dissolved oxygen	—			—			±2%; ±0.2 mg/L		
	Barometric pressure	—			—			±1%		
	Temperature	±0.9°F (±0.5°C)								
Temperature compensation		Automatic or manual, 0 to 100°C, linear or pure water for conductivity								
Calibration		Automatic/manual and single/multipoint standard recognition; programmable "cal due" alarm								
Conductivity-to-TDS factor		0.40 to 1.00								
Data storage		500 data sets								
Output		IrDA/ RS-232								
Power		Four AA batteries (included) or optional universal AC adapter								
Price										
Precalibrated price										

Accessories

GY-35408-50 **Conductivity cell,** 2-electrode, K = 0.1
GY-35408-52 **Replacement conductivity cell,** 2-electrode, K = 1
GY-35408-54 **Conductivity cell,** 2-electrode, K = 10
GY-35408-56 **Conductivity cell,** 4-electrode, K = 0.3
GY-35640-50 **Replacement DO probe** with 10-ft (3.0-m) cable
GY-35640-52 **DO probe** with 25-ft (7.6-m) cable
GY-35640-54 **DO probe** with 50-ft (15.2-m) cable
GY-35640-56 **DO probe** with 100-ft (30.5-m) cable
GY-35640-80 **Replacement membrane kit;** two membrane caps and one bottle of electrolyte solution
GY-35418-05 **ATC probe.** Use for temperature compensation with any pH electrode without built-in ATC
GY-35418-83 **Universal adapter,** 110/220 VAC
GY-09376-01 **Replacement batteries,** AA. Pack of 4
GY-17090-30 **NIST-traceable calibration** for conductivity meters
GY-17106-04 **NIST-traceable calibration** for DO meters

Durable A-Series Conductivity and pH/CON Meters

Stop toggling screens

- Get more data on one screen—temperature, electrode status, mode, calibration, and more
- Know when reading is complete with Auto-Read™ function
- Increased accuracy with selectable cell constant and reference temperatures
- Perfect for field testing—feature a durable, waterproof IP67-rated housing

Star A122 Conductivity Meter is a low-cost option that combines simplicity with accuracy. Ideal for everyday conductivity, TDS, and temperature measurements.

Star A222 Conductivity and A325 pH/Conductivity Meters support a multilanguage interface, improved stability algorithms, extended data logging, and improved data security over the Star meters. Meters use RS-232 or USB for connectivity and include data analysis software. GLP-related features include extensive data sets with time-and-date stamp and electrode verification. Meet all US Pharmacopeoeia (USP) requirements.

Meters include: four AA batteries.

Star A122 meter kit adds: conductivity cell (K = 1), 1413 µS conductivity standard (five 60-mL bottles), rinse solution (10 pouches), protective armor with electrode holder, and hard carrying case.

Star A222 meter kit adds: conductivity cell (K = 0.475), 1413 µS conductivity standard and rinse solution (10 pouches), protective armor with electrode holder, and hard carrying case.

Star A325 meter kit adds: conductivity cell (K = 0.475), 1413 µS conductivity standard and rinse solution (10 pouches), ROSS™ Triode pH/ATC electrode, pH buffers (4, 7, 10) and storage solution (10 pouches), protective armor with electrode holder, and hard carrying case.

ISO 9001:2008 CERTIFIED SUPPLIER · IP67 · Meter only

Description		A122 CON meter only	A122 CON meter kit	A222 CON meter only	A222 CON meter kit	A325 pH/CON meter only	A325 pH/CON meter kit
Catalog number			GY-19704-45	GY-19704-47	GY-19704-16	GY-19704-18	GY-58825-68	GY-58825-70
Parameters		Conductivity/TDS/temperature		Conductivity/TDS/salinity/resistivity/temperature		pH/mV/conductivity/TDS/ salinity/resistivity/temperature	
Range	pH	—		—		–2.000 to 20.000	
	mV	—		—		±2000.0 mV	
	Conductivity	0.1 µS to 200 mS		0.01 µS to 3000 mS		0.01 µS to 3000 mS	
	TDS	1 to 19,999 ppm		0 to 200 ppt		0 to 200 ppt	
	Salinity	—		0.01 to 80.0 ppt NaCl		0.01 to 80.0 ppt NaCl	
	Resistivity	—		2 Ω to 100 MΩ		2 Ω to 100 MΩ	
	Temperature	23 to 221°F (–5 to 105°C)		23 to 221°F (–5 to 105°C)		23 to 221°F (–5 to 105°C)	
Resolution	pH	—		—		0.1, 0.01, 0.001	
	mV	—		—		0.1	
	Conductivity	0.01 µS		0.001 µS		0.001 µS	
	TDS	4 significant digits		4 significant digits		4 significant digits	
	Salinity	—		0.01		0.01	
	Resistivity	—		2 Ω		2 Ω	
	Temperature	0.1		0.1		0.1	
Accuracy	pH	—		—		±0.002	
	mV	—		—		±0.2 or 0.05% of reading	
	Conductivity	±0.5% of reading ± 1 digit		±0.5% of reading ± 1 digit		±0.5% of reading ± 1 digit	
	TDS	±0.5% of reading ± 1 digit		±0.5% of reading ± 1 digit		±0.5% of reading ± 1 digit	
	Salinity	—		±0.1		±0.1	
	Resistivity	—		0.5% of reading ± 1 digit		0.5% of reading ± 1 digit	
	Temperature	±0.1		±0.1		±0.1	
Temperature compensation		Automatic or manual		Automatic or manual		Automatic or manual	
Calibration points		1		Up to 5		Up to 5	
Data logging		50 sets		2000 sets with time-and-date stamp		2000 sets with time-and-date stamp	
Output		—		RS-232, USB		RS-232, USB	
Power		Four AA batteries (included) or optional AC adapter					
Price							

GY-58825-52 **Hard carrying case**
GY-58825-53 **Protective meter armor** with electrode holder
GY-58822-03 **Universal AC power adapter**
GY-19704-70 **Orion DuraProbe conductivity probe,** K = 0.475
GY-05718-34 **ROSS Triode pH/ATC electrode**

GY-55350-68 **pH buffer kit.** Includes 473 mL each of 4, 7, 10 buffers and storage solution, and 60 mL of cleaning solution
GY-09376-01 **Replacement batteries,** AA. Pack of 4
GY-17106-20 **NIST-traceable calibration** with data for pH meter
GY-17090-30 **NIST-traceable calibration** with data for conductivity meter

Waterproof Conductivity and pH/CON Meters

Just rinse, fill, and read

- Waterproof housing even floats if dropped in water
- Simple, push-button calibration
- Don't worry about fluctuating temperatures—automatic temperature compensation to 77°F (25°C)
- Minimal sample required—just 1.2 mL for pH and 5 mL for conductivity
- Get greater resolution with autoranging function between 0 and 9999 µS or 10 to 20.00 mS

Model 19707-07 features an internal, non-refillable pH sensor that protects the glass pH bulb from breakage while allowing field replacement.

What's included: 9V battery.

CE IP67 2 YEAR WARRANTY Meter only

Description		TP1	TPH1
Catalog number		GY-19707-05	GY-19707-07
Range	Conductivity	0 to 9999 µS; 10 to 20.00 mS	
	TDS	0 to 9999 ppm; 10 to 20.00 ppt	
	pH	—	0 to 14
	Temperature	32 to 160°F (0 to 71°C)	
Resolution	Conductivity	1 µS; 0.01 mS	
	TDS	1 ppm; 0.01 ppt	
	pH	—	0.01
	Temperature	0.1°F/°C	
Accuracy	Conductivity	±1% of reading	
	TDS	±1% of reading	
	pH	—	±0.02
	Temperature	±1°F/°C	
Temperature compensation		Automatic, 32 to 160°F (0 to 71°C)	
Power/battery life		One 9 V battery (included) / >100 hours	
Price			

GY-19401-60 **Carrying case,** soft sided
GY-19070-50 **Replacement pH sensor** for model 19707-07
GY-09376-04 **Replacement batteries,** 9 V. Pack of 4
GY-17090-30 **NIST-traceable calibration** for conductivity meters

Calibration Solutions

Be more accurate

- Get reliable readings with ±1% accuracy

Include NIST-traceable calibration report supplied by the manufacturer. One 32-oz (946-mL) bottle.

Conductivity (µS)	Conductivity-to-TDS calibration values			Catalog number	Price
	ppm KCl	ppm NaCl	ppm 442		
23.8	—	11.08	15	GY-01489-90	
445	—	214	300	GY-01489-93	
700	—	340	478	GY-01489-94	
3900	—	2027	3000	GY-01489-96	
30,100	—	18,235	30,000	GY-01489-99	

Waterproof Multiparameter Meters

Don't lose your data

- Store and recall up to 100 measurements with time/date stamp in nonvolatile memory
- Waterproof housing is submersible to 3 ft (0.9 m)
- Get accurate readings to 9999 µS/ppm
- Just add sample, push button, and read—it's that easy
- Automatic ranging function
- Download and analyze data via bluDock™ accessory

Factory-calibrated meters have conductivity-to-TDS conversion curves for NaCl, 442, and KCl standards stored in memory. You can also calibrate using your own calibration values. Automatic temperature compensation with adjustable temperature coefficients up to 9.99%/°C provides accurate and precise measurements.

CE IP67 2 YEAR WARRANTY Meter only

Description		4PII	6Psi
Catalog number		GY-19401-12	GY-19401-22
Range	Conductivity	0 to 9.99, 10 to 99.99, 100 to 999.9, 1000 to 9999 µS; 10.00 to 200 mS (autoranging)	
	TDS	0 to 9.99, 10 to 99.99, 100 to 999.9, 1000 to 9999 ppm; 10.00 to 200 ppt	
	Resistivity	10 to 100, 100 to 1000 kΩ; 1 to 30 MΩ	
	pH	—	0 to 14.00 pH
	ORP	—	±999 mV
	Chlorine	—	0.20 to 9.99 ppm
	Temperature	32 to 160°F (0 to 71°C)	
Resolution	Conductivity	0.01, 0.1, 1 µS; 0.01 mS	
	TDS	0.01, 0.1, 1 ppm; 0.01 ppt	
	Resistivity	0.01, 0.1 kΩ; 0.01 MΩ	
	pH	—	0.01 pH unit
	ORP	—	1 mV
	Chlorine	—	0.01
	Temperature	0.1°F (0.1°C)	
Accuracy	Conductivity	±1% of reading	
	TDS	±1% of reading	
	Resistivity	±1% of reading	
	pH	—	±0.01 pH
	ORP	—	±1 mV
	Chlorine	—	±2.5% of reading
	Temperature	±0.2°F (±0.1°C)	
Temperature compensation		Automatic from 0 to 71°C; adjustable from 0 to 9.99% per °C	
Power/battery life		One 9 V battery (included)/>100 hours (5000 readings)	
Price			

Accessories

GY-19401-32 **bluDock accessory package.** Includes bluDock, software, and dongle
GY-19401-50 **Replacement pH/ORP sensor,** for 6Psi meter, model 19401-22
GY-19401-60 **Soft protective case,** blue nylon with belt clip
GY-19401-70 **Hard protective case,** contains calibration solutions
GY-09376-04 **Replacement batteries,** 9 V. Pack of 4
GY-17090-30 **NIST-traceable calibration** for conductivity meters

Analog Conductivity, Resistivity, TDS, and Multiparameter Meters

No maintenance required

- Maintenance-free, built-in electrodes do not require replatinizing
- Don't worry about fluctuations in temperature with automatic temperature compensation

Analyze your samples on-site with these portable meters. Optional conductivity range extender expands range by a factor of 10. Minimum sample volume is 25 mL.

A. Analog Conductivity Meters

Choose from one, three, or four ranges.

B. Analog Conductivity/Resistivity Meter

Test both standard and high-purity water samples with five conductivity ranges and one resistivity range.

C. Analog Total Dissolved Solids Meters

Available with one or three ranges.

D. Analog pH/Conductivity Meter

Get accurate, on-the-spot measurements of pH and conductivity with this compact meter. Meter features analog display of conductivity measurements from 0 to 10,000 µS in four ranges. Meter also includes a pH sensor that measures pH from 2.0 to 12.0 pH.

The optional calibration kit 01489-51 includes a large foam-lined carrying case; 2-oz bottles of pH 4, 7 and 10 buffers; and a 7000 µS conductivity standard.

CE Meter only

Key		A			B	C		D
Catalog number		GY-01489-10	GY-01489-20	GY-01489-35	GY-01489-30	GY-01489-15	GY-01489-25	GY-01489-62
Range	Conductivity	0 to 5000 µS	0 to 50 µS, 0 to 500 µS, 0 to 5000 µS	0 to 10 µS, 0 to 100 µS, 0 to 1000 µS, 0 to 10,000 µS	0 to 0.5 µS, 0 to 5 µS 0 to 50 µS, 0 to 500 µS, 0 to 5000 µS	—	—	0 to 10,000 µS
	Resistivity	—	—	—	2 to 30 MΩ	—	—	—
	TDS	—	—	—	—	0 to 5000 ppm	0 to 50 ppm, 0 to 500 ppm 0 to 5000 ppm	—
	pH	—	—	—	—	—	—	2.0 to 12.0 pH
Resolution	Conductivity	0.2 µS	0.2 µS	0.2 µS	0.2 µS	—	—	0.2 µS
	Resistivity	—	—	—	0.2 MΩ	—	—	—
	TDS	—	—	—	—	0.2 ppm	0.2 ppm	—
	pH	—	—	—	—	—	—	±0.2 pH
Accuracy	Conductivity	±2% full-scale	±2% full-scale	±2% full-scale	±2% full-scale	—	—	±2% full-scale
	Resistivity	—	—	—	±2% full-scale	—	—	—
	TDS	—	—	—	—	±2% full-scale	±2% full-scale	—
	pH	—	—	—	—	—	—	—
Temperature compensation		Automatic from 50 to 160°F (10 to 71°C)	Automatic from 50 to 160°F (10 to 71°C)	Automatic from 50 to 160°F (10 to 71°C)	Automatic from 32 to 120°F (0 to 49°C)	Automatic from 50 to 160°F (10 to 71°C)	Automatic from 50 to 160°F (10 to 71°C)	Automatic from 50 to 160°F (10 to 71°C)
Power		One 9 V battery (included)		Two 9 V batteries (included)		One 9 V battery (included)		Two 9 V batteries (included)
Price								

Accessories

GY-01489-50 **Range extender** increases conductivity range by 10x (for example, 0 to 50,000 µS for model 01489-10)
GY-01489-48 **Carrying case,** plastic sided, foam-lined
GY-01489-51 **Calibration kit** for model 01489-62
GY-01489-63 **Replacement pH sensor** for model 01489-62
GY-09376-04 **Replacement batteries,** 9 V. Pack of 4
GY-17090-30 **NIST-traceable calibration** for conductivity meters

Waterproof Conductivity Meter

No ordering separate components

- Kits contain everything you need to start testing
- Get fast and simple measurements with guided navigation
- No more interference from sunlight—antiglare coating for better visualization of screen
- Stands up to water—IP67 rated housing is dust- and waterproof

Features include selectable auto-off, three-point calibration, temperature readjustment, and improved stabilization algorithms. The hard carrying case also acts as a workstation in the field.

Choose from DW kit 16904-01 for general purpose, drinking water samples, or WW kit 16904-03 for dirty, wastewater applications.

19604-01

DW kit includes:
conductivity probe (19604-51), 1413 µS/cm standard (165-mL bottle), field carrying case, and three AA batteries.

WW kit includes: robust conductivity probe (19604-52), 1413µS/cm standard (165-mL bottle), field carrying case, and three AA batteries.

ISO9001:2008 CERTIFIED SUPPLIER CE IP67 2 YEAR WARRANTY Meter only

Description		Conductivity meter drinking water (DW) kit	Conductivity meter wastewater (WW) kit
Catalog number		GY-19604-01	GY-19604-03
Range	Conductivity	0.01 µS to 500.00 mS	
	TDS	0 to 50 g/L	
	Salinity	1 mg/L to 500g/L	
	Temperature	4 to 302°F (–20 to 150°C)	
Resolution	Conductivity	0.01/0.1/1	
	TDS	0.00 to 199.9 mS	
	Salinity	0.1/1	
	Temperature	0.1	
Accuracy	Conductivity	±0.5% ±1 digit	
	TDS	±0.5% ±1 digit	
	Salinity	±0.5% ±1 digit	
	Temperature	±0.2	
Temperature compensation		Automatic or manual	
Data logging		None	
Output		None	
Power		Three AA batteries	
Price			

Accessories

GY-19604-51 **Replacement probe,** general-purpose
GY-19604-52 **Replacement probe,** robust titanium
GY-09376-01 **Replacement batteries,** AA. Pack of 4
GY-17090-30 **NIST-traceable calibration** with data for conductivity meter

Portable Conductivity and pH/Con Meter Kits

Don't recalibrate when changing probes

- Automatic parameter recognition with IntelliCAL™ smart probes
- No ordering multiple items—kits make for easy ordering
- Be GLP compliant with storage of up to 500 data sets
- Rugged, IP67-rated waterproof housing

Intuitive user-interface prompts you through calibration, setup, and measurements. Get better readings with autoranging for conductivity, salinity, and TDS with automatic temperature compensation. Download and analyze data via USB port. Precalibrated smart probes store their own calibration data and identification. Order optional rugged probe for field applications; all connections between the meter and probe are secure and waterproof.

Conductivity kit includes: HQ14d meter, conductivity probe, meter stand, electrode stand, calibration solution, and four AA batteries.

pH/conductivity kit includes: HQ30d meter, conductivity probe, pH electrode, meter stand, electrode stand, pH buffers, calibration solution, and four AA batteries.

ISO9001:2008 CERTIFIED SUPPLIER CE IP67 2 YEAR WARRANTY

Description		Conductivity kit	pH/Conductivity kit
Catalog number		GY-59004-12	GY-59004-16
Range	pH	—	2.00 to 14.01
	mV	—	±1200.0
	Conductivity	0.01 µS to 200 mS	
	TDS	0.0 to 50,000 mg/L	
	Salinity	0 to 42 ppt	
	Temp, °C	0 to 80.0	
Resolution	pH	—	0.001
	mV	—	0.1
	Conductivity	0.01 µS	
	TDS	0.1 mg/L	
	Salinity	0.01 ppt	
	Temp, °C	0.1	
Accuracy	pH	—	±0.02
	mV	—	±0.02
	Conductivity	±0.5% of range	
	TDS	±0.5% ± 1 digit	
	Salinity	±0.5% ± 1 digit	
	Temp, °C	±0.3	
Temperature compensation		Automatic or manual	
Calibration points		1 per range	1 per range; up to 3 pH
Data logging capabilities		500	
Output		USB	
Power		Four AA batteries (included)	
Price			

Accessories

GY-59004-73 **Laboratory pH electrode;** epoxy body, sealed, double-junction, 3-ft (0.9-m) cable
GY-59004-74 **Rugged pH electrode;** stainless steel body, double-junction, 15-ft (5-m) cable
GY-59004-63 **Laboratory conductivity probe;** epoxy body, 4-cell, 3-ft (0.9-m) cable
GY-59004-65 **Rugged conductivity probe;** stainless steel body, 4-cell, 15-ft (5-m) cable
GY-09376-01 **Replacement batteries,** AA. Pack of 4
GY-17090-30 **NIST-traceable calibration** with data for conductivity meters
GY-17106-20 **NIST-traceable calibration** with data for pH meters

Conductivity Meter

No need for multiple cell constants

- Four-electrode conductivity cell provides stable measurements from 0 to 200 mS with auto-ranging function
- Measures conductivity, salinity, or TDS (calculated in g/L) with temperature
- Rugged, weighted probe assembly with automatic temperature compensation

The EC300A meter features easy-to-use interface, one-handed operation, and waterproof housing with a rugged, weighted probe that can be ordered with 13- or 33-ft (4- or 10-m) cable. Purchase meter with probes separately to customize your system, or choose the kit for a complete system.

What's included: 9 V battery.

Kit adds: conductivity probe with 13-ft (4-m) cable and hard carrying case.

ISO9001:2008 CERTIFIED SUPPLIER CE IP67

Description		Meter only	Meter kit
Catalog number		GY-19750-30	GY-19750-32
Range	Conductivity	0.0 to 200 mS	
	Salinity	0.0 to 70.0 ppt	
	Temperature	–10 to 90°C	
Resolution	Conductivity	0.1 µS to 0.1 mS	
	Salinity	0.1 ppt	
	Temperature	0.1°C	
Accuracy	Conductivity	±1% of reading to ±2.5% of reading	
	Salinity	±0.2% full-scale	
	Temperature	±0.2°C or ±0.4%, whichever is greater	
Temperature compensation		Automatic, 10 K thermistor at 25°C	
Conductivity-to-TDS factor		Adjustable, 0.30 to 1.00	
Memory		50 data sets	
Power		One 9 V battery (included)	
Price			

Accessories

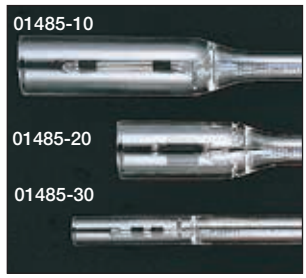
GY-19750-50 **Replacement conductivity cell,** 13-ft (4-m) cable
GY-19750-52 **Conductivity cell,** 33-ft (10-m) cable
GY-09376-04 **Replacement batteries,** 9 V. Pack of 4
GY-17090-30 **NIST-traceable calibration** with data for conductivity meters

Accessories for Conductivity Meters

at left and page 191

Dip-Style Conductivity Cells

Choose either Pyrex® glass or rugged ABS plastic cells. All are calibrated to within 1% of cell constant. Use glass microcell with fluid volumes as small as 3-mL, or plastic cells with volumes as small as 1-mL. Leads are 48" (0.6 m) long with spade lug connectors.



Cell type	Cell constant (K)	Catalog number	Price
Glass	1.0	GY-01485-10†	
Glass	0.1	GY-01485-20†	
Glass microcell	1.0	GY-01485-30†	
Plastic	1.0	GY-01485-40†	

†Requires cell adapter 19755-70 for use with 3100 or 3200 meters on page 191.

GY-19755-70 Conductivity cell adapter

Conductivity Cells for Models 3100/3200

Available in three cell configurations: dip, fill, and flow-through. Select the fill cells when solution purity is important. Pick the flow-through cells for in-line applications. All cells have a built-in thermistor for automatic temperature compensation, a seven-pin DIN connector, and a 4-ft (1.2-m) cable.

Type	Cell constant (K)	Material	Catalog number	Price
Dip	1.0	ABS plastic	GY-19755-50	
Dip		Glass	GY-19755-52	
Fill		Glass	GY-19755-54	
Flow-through	0.1	Glass	GY-19755-56	
Dip			GY-19755-58	

Calibration Set

Calibrate your conductivity meter for more accurate AC conductance and AC or DC resistance measurements.

Set includes NIST-traceable calibration report supplied by the manufacturer. Calibration set requires conductivity cell adapter 19755-70 sold above.

Description	Catalog number	Price
Calibration set includes seven calibrators	GY-01482-60	

Platinizing Station and Solution

Replatinize your electrodes in less than five minutes! Replatinize any cell with spade lug or stripped wire ends.

Sturdy plastic housing protects components. Platinizing station is powered by three D batteries (included) for portability. Order platinizing solution below.

Description	Catalog number	Price
Platinizing station	GY-01482-59	
Platinizing solution, 2-oz bottle. Contains enough solution for approximately 25 applications	GY-01486-20	

GY-09376-03 **Replacement batteries,** size D. Pack of 4

Waterproof Conductivity Handheld Meters

Versatile—one meter for field and lab

– Advanced 3310 models feature an innovative waterproof USB connection for ultra-flexible data output

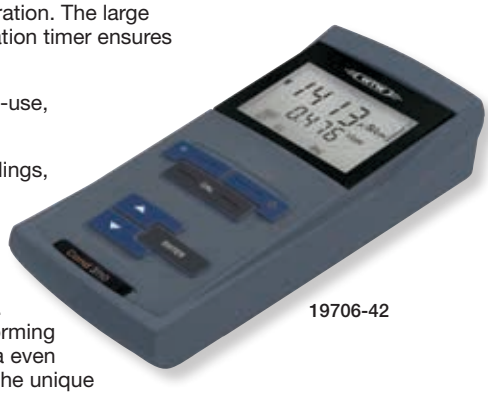
– IP67-rated meters feature a 100% waterproof and easy-to-clean keypad

Silicone rubber keys provide tactile feedback for error-free operation. The large graphic display allows for excellent readability. A built-in calibration timer ensures more reliable results.

Cond 3110 Meter is designed for users who desire a simple-to-use, yet dependable instrument.

Cond 3210 Meter adds data logging for up to 200 manual readings, expanded measurement parameters including TDS and resistivity, and improved resolution of readings.

Cond 3310 Meter further adds extended data memory for logging up to 5000 GLP-compliant data sets. Time-controlled data logging function offers adjustable data collection intervals. "Sleep" mode saves power and extends battery life when performing long-term monitoring. Nonvolatile memory saves all stored data even if battery power is lost. Data transfer to PC is made simple via the unique waterproof mini-USB interface.



19706-42

19706-50

Meters include: CD-ROM and four AA batteries.

Meter kits add: probe specified in ordering table below, calibration solutions, stand, beaker, and hard carrying case.

ISO 9001:2008 CERTIFIED SUPPLIER

Specifications

Description		ProfiLine Cond 3110	ProfiLine Cond 3210	ProfiLine Cond 3310
Parameters		Conductivity/salinity/temperature	Conductivity/TDS/resistivity/salinity/temperature	Conductivity/TDS/resistivity/salinity/temperature
Range	Conductivity	0 to 1000 mS (five-scale autoranging)	0 to 1000 mS (seven-scale autoranging)	0 to 1000 mS (seven-scale autoranging)
	TDS	—	1 to 199.9 g/L (three-scale autoranging)	1 to 199.9 g/L (three-scale autoranging)
	Salinity	0.0 to 70.0 ppt	0.0 to 70.0 ppt	0.0 to 70.0 ppt
	Temperature	23 to 221°F (–5.0 to 105°C)	23 to 221°F (–5.0 to 105°C)	23 to 221°F (–5.0 to 105°C)
Resolution	Conductivity	0.1, 1 µS; 0.01, 0.1, 1 mS	0.001, 0.01, 0.1, 1 µS; 0.01, 0.1, 1 mS	0.001, 0.01, 0.1, 1 µS; 0.01, 0.1, 1 mS
	TDS	—	1 mg/L; 0.01, 0.1 g/L	1 mg/L; 0.01, 0.1 g/L
	Salinity	0.1	0.1	0.1
	Temperature	0.1°F (0.1°C)	0.1°F (0.1°C)	0.1°F (0.1°C)
Accuracy	Conductivity	±0.5% of reading	±0.5% of reading	±0.5% of reading
	TDS	—	±0.5% of reading	±0.5% of reading
	Salinity	±0.1 from 5 to 25°C, ±0.2 from 25 to 30°C	±0.1 from 5 to 25°C, ±0.2 from 25 to 30°C	±0.1 from 5 to 25°C, ±0.2 from 25 to 30°C
	Temperature	±0.1°F (±0.1°C)	±0.1°F (±0.1°C)	±0.1°F (±0.1°C)
Temperature compensation		Automatic (nLF)	Automatic (nLF), 0 to 5%/°C	Automatic (nLF), 0 to 10%/°C
Cell constant		Fixed at K = 0.475, calibratable from 0.450 to 0.500, 0.800 to 0.880	Fixed at K = 0.010, calibratable from 0.450 to 0.500, 0.800 to 0.880	Fixed at K = 0.010, calibratable from 0.450 to 0.500, 0.800 to 0.880
Data logging capabilities		—	200 manual points	200 manual points, 5000 automatic data sets
Output		—	—	Waterproof USB
Power		Four AA batteries	Four AA batteries	Four AA batteries

Description	Cond 3110		Cond 3210		Cond 3310	
	Catalog number	Price	Catalog number	Price	Catalog number	Price
Meter only	GY-19706-42		GY-19706-46		GY-19706-50	
Meter kit and TetraCon® probe, 4.9-ft (1.5-m) cable	GY-19706-43		GY-19706-47		GY-19706-51	
Meter kit and TetraCon probe, 9.8-ft (3-m) cable	GY-19706-44		GY-19706-48		GY-19706-52	
Meter kit and KLE probe, 4.9-ft (1.5-m) cable	GY-19706-45		GY-19706-49		GY-19706-53	

Accessories

GY-19707-50 Replacement TetraCon 4-cell conductivity probe, K = 0.475; 4.9-ft (1.5-m) cable

GY-19707-80 Replacement TetraCon 4-cell conductivity probe, K = 0.475; 9.8-ft (3-m) cable

GY-19707-81 Replacement KLE 2-cell conductivity probe, K = 0.84; 4.9-ft (1.5-m) cable

GY-19706-62 Replacement LR 325/01 conductivity probe, K = 0.1; 3.3-ft (1-m) cable

GY-09376-01 Replacement batteries, AA. Pack of 4

GY-17090-30 NIST-traceable calibration with data for conductivity meters

Oakton® Benchtop CON 700 and 2700 Meters

Don't waste your valuable bench space

- No more squinting—large display allows for reading across the room
- Get the best resolution—autoranging feature reads 0 to 200.0 mS across five ranges
- More accurate—adjustable temperature coefficient, selectable cell constant, and automatic temperature compensation
- Store up to 500 readings for later retrieval

Oakton CON 2700 meter has advanced features for GLP-compliant readings—all calibration and stored data are stamped with time/date. Advanced setup options let you customize the meter to your needs. Informative display shows measurements together with temperature, electrode status, calibration points, time, and date all at once! Programmable functions include data logging intervals, limit alarms, and password protection. Data is easily exported to a computer via RS-232 port (order cable and adapter separately below).

What's included: conductivity/temperature probe 35608-74 (CON 700) or 35412-10 (CON 2700), electrode stand, and universal 100/240 VAC power supply.

Features water-resistant keypad and pull-out reference guide.

OAKTON®

Save time, save money!

Choose Precalibrated
Includes a data-rich, ISO 17025 certificate—**no additional charge!**
Precalibrated by INNOCAL® INNOVATIVE CALIBRATION SOLUTIONS

ISO 9001:2008 CERTIFIED SUPPLIER

CE Meter only

Description		CON 700 meter	Precalibrated CON 700 meter	CON 2700 meter	Precalibrated CON 2700 meter
Catalog number		GY-35411-00	GY-35411-01	GY-35412-00	GY-35412-01
Range	Conductivity	0.0 to 20.00, 0 to 200.0, 0 to 2000 µS; 0 to 20.00, 0 to 200.0 mS		0.0 to 20.00, 0 to 200.0, 0 to 2000 µS; 0 to 20.00, 0 to 500.0 mS	
	TDS	0.00 to 100.0 ppt		0.050 to 500.0 ppt	
	Salinity	—		0.0 to 80.0 ppt	
	Resistivity	—		2.000 Ω to 20.0 MΩ	
	Temperature	32.0 to 212°F (0.0 to 100.0°C)		32.0 to 212°F (0.0 to 100.0°C)	
Resolution	Conductivity	0.01, 0.1, 1 µS; 0.01, 0.1 mS		0.01, 0.1 µS; 0.001, 0.01, 0.1 mS	
	TDS	0.01, 0.1, 1 ppm; 0.01, 0.1 ppt		0.01, 0.1 ppm; 0.001, 0.01, 0.1 ppt	
	Salinity	—		0.01, 0.1 ppm; 0.001, 0.01, 0.1 ppt	
	Resistivity	—		0.01 MΩ, 0.001, 0.01 kΩ, 0.01, 0.1 Ω	
	Temperature	0.1°F or °C		0.1°F or °C	
Accuracy	Conductivity	±1% full-scale		±1% full-scale	
	TDS	±1% full-scale		±1% full-scale	
	Salinity	—		±1% full-scale	
	Resistivity	—		±1% full-scale	
	Temperature	±0.9°F (±0.5°C)		±0.5°F (±0.3°C)	
Temperature compensation		Automatic or manual, adjustable from 0.0 to 10% per °F/°C		Automatic or manual, adjustable from 0.0 to 10% per °F/°C	
Cell constant (K)		Select from K = 0.1, 1.0, or 10		0.010 to 10.000	
Conductivity-to-TDS factor		Adjustable from 0.4 to 1.0		Adjustable from 0.4 to 1.0	
Data logging		100 data sets		500 data sets	
Output		—		RS-232	
Power		100/240 VAC with universal adapter (included)		100/240 VAC with universal adapter (included)	
Price					

Teky's Tips

2-cell vs 4-cell conductivity probes

Most conductivity meters use either 2-cell or 4-cell conductivity probes. 2-cell probes feature electrode surfaces made of platinum, titanium, gold-plated nickel, or graphite, and are good for general applications. 4-cell electrodes use a reference voltage to compensate for any polarization or fouling of the electrode plates. The reference voltage ensures measurements indicate actual conductivity independent of electrode condition, resulting in higher accuracy.

Conductivity Probes

Cell constant (K)	Body/electrode	Catalog number	Price
2-cell conductivity probes for CON 700 or CON 2700 meters			
0.1	Epoxy/platinum	GY-35608-72	
1.0	Ultem®/stainless steel	GY-35608-74	
1.0	Glass/platinum	GY-35608-76	
10	Epoxy/platinum	GY-35608-78	
4-cell conductivity probes for CON 2700 meter only			
0.1	Epoxy/platinum	GY-35608-90	
1.0	Epoxy/graphite	GY-35412-10	
1.0	Glass/platinum	GY-35608-92	
10	Epoxy/platinum	GY-35608-94	

Accessories

GY-35420-01 RS-232 cable
for 2700 series meters

GY-35630-53 USB cable
for 2700 series meters

GY-17090-30 NIST-traceable calibration
with data for conductivity meters

Oakton® Benchtop PC 700 and PC 2700 Meters

Get all the readings you need in one compact unit

– Economical PC 700 for basic laboratory use

– Advanced PC 2700 for research grade use with ion capability

PC 700 Meter features pH auto-buffer recognition for both USA and NIST buffer sets, automatic or manual temperature compensation, and selectable temperature units. Previous calibration points, electrode slope and offset, and conductivity/TDS cell constants are stored in memory for quick and easy retrieval. Store up to 100 data sets in the meter's memory for retrieval later.

PC 2700 Meter meets GLP requirements—meter stamps all calibration and stored data with time/date. Nonvolatile memory stores up to 500 data sets to simplify documenting large volumes of pH, mV, ISE, conductivity, TDS, salinity, or resistivity measurements. Data is easily exported to a computer via RS-232 port. Order RS-232 and optional RS-232-to-USB adapter separately below.

Meter only includes: universal 110/240 VAC power supply and electrode stand.

Meter with probes adds: combination pH electrode 35805-04 and conductivity/temperature probe 35608-74 (PC 700) or 35412-10 (PC 2700).

Advanced features on PC 2700 for GLP compliance

ISO 9001:2008 CERTIFIED SUPPLIER CE Meter only

Model		PC 700		PC 2700	
Description		**Meter only**	**Meter with pH and conductivity/ temperature probes**	**Meter only**	**Meter with pH and conductivity/ temperature probes**
Catalog number		GY-35413-20	GY-35413-00	GY-35414-20	GY-35414-00
Precalibrated catalog number		GY-35413-21	GY-35413-01	GY-35414-21	GY-35414-01
Range	pH	–2.00 to 16.00		–2.000 to 20.000	
	mV/Rel mV	±2000		±2000.0	
	ISE	—		0.001 to 19999 ppm	
	Conductivity	0.0 µS to 200 mS		0.050 µS to 500.0 mS	
	TDS	0.00 ppm to 100.0 ppt @ 0.5 factor (200.0 ppt @ 1.0 factor)		0.050 to 500.0 ppt	
	Salinity	—		0.0 to 80.0 ppt	
	Resistivity	—		2.000 Ω to 20.0 MΩ	
	Temperature	32.0 to 212°F (0.0 to 100.0°C)		32.0 to 212°F (0.0 to 100.0°C)	
Resolution	pH	0.01 pH		0.001, 0.01, 0.1 pH	
	mV/Rel mV	0.1 within ±199.9 mV, 1 beyond ±199.9 mV		0.1 mV	
	ISE	—		2 or 3 digits	
	Conductivity	0.01, 0.1, 1 µS; 0.01, 0.1 mS		0.01, 0.1 µS; 0.001, 0.01, 0.1 mS	
	TDS	0.01, 0.1, 1 ppm; 0.01 0.1 ppt		0.01, 0.1 ppm; 0.001, 0.01, 0.1 ppt	
	Salinity	—		0.1 ppt	
	Resistivity	—		0.01 mΩ, 0.001, 0.01 kΩ, 0.01, 0.1 Ω	
	Temperature	0.1°F or °C		0.1°F or °C	
Accuracy	pH	±0.01 pH		±0.002 pH	
	mV/Rel mV	±0.2 within ±199.9 mV, ±2 beyond 199.9 mV		±0.2 mV	
	ISE	—		0.5% full scale (monovalent), 1% full scale (divalent)	
	Conductivity	±1% full-scale		±1% full-scale	
	TDS	±1% full-scale		±1% full-scale	
	Salinity	—		±1% full-scale	
	Resistivity	—		±1% full-scale	
	Temperature	±0.9°F (±0.5°C)		±0.5°F (±0.3°C)	
Calibration	pH	Up to 5 points (USA or NIST buffer sets)		Up to 6 (USA, NIST, DIN, or custom buffer sets)	
	ISE	—		Up to 8 points	
	Conductivity/TDS	5 points (one point per range)		5 points (one point per range)	
Temperature compensation		Automatic or manual		Automatic or manual	
Conductivity cell constant		Fixed at K = 1.0 cm^{-1}		Fixed at K = 1.0 cm^{-1}	
Conductivity-to-TDS factor		Adjustable from 0.4 to 1.0		Adjustable from 0.4 to 1.0	
Data logging		100 data sets		500 data sets	
Output		—		RS-232	
Power		110/240 VAC universal adapter		110/240 VAC universal adapter	
Price					
Precalibrated price					

GY-35805-04 **Replacement combination pH electrode;** double-junction, glass body, refillable, 3.3-ft (1-m) cable

GY-35608-74 **Replacement conductivity/temperature probe** for 700-series meter; 2-cell, K = 1.0, Ultem®/stainless steel with ATC

GY-35412-10 **Replacement conductivity/temperature probe** for 2700-series meter; 4-cell, K = 1.0, epoxy/graphite

GY-35420-01 **RS-232 cable** for 2700-series meter

GY-22050-58 **RS-232 to USB adapter** (requires 35420-01 cable)

GY-17106-20 **NIST-traceable calibration** with data for pH meter

GY-17090-30 **NIST-traceable calibration** with data for conductivity meters

Benchtop A-Series Conductivity and pH/CON Meters

Don't second-guess readings

- Stable readings locked in with Auto-Read™ function
- Get more data with large display—temperature, electrode status, mode, calibration data, and more
- Be more accurate with selectable cell constant and reference temperatures

Star A112 Conductivity Meter is a low-cost option that combines simplicity with accuracy. Ideal for everyday conductivity, TDS, and temperature measurements.

Star A212 Conductivity and A215 pH/Conductivity Meters meet all US Pharmacopoeia (USP) requirements. They support a multilanguage interface, improved stability algorithms, extended data logging, and improved data security over the Star meters. GLP-related features include extended data sets with time-and-date stamp and electrode verification. Meters use RS-232 or USB for connectivity and include data analysis software.

Meters include: electrode arm with redesigned probe holder and universal power adapter.

Star A112 meter kit adds: conductivity probe (K = 1) and 1413 µS conductivity standard (five 60-mL bottles).

Star A212 meter kit adds: conductivity probe (K = 0.475) and 1413 µS conductivity standard (five 60-mL bottles).

Star A215 meter kit adds: conductivity probe (K = 1), 1413 µS conductivity standard (five 60-mL bottles), ROSS™ Triode pH/ATC electrode, and pH 4, 7, 10 buffers and storage solution (475-mL bottles).

ISO9001:2008 CERTIFIED SUPPLIER · Meter only

Description		A112 Cond meter only	A112 Cond meter kit	A212 Cond meter only	A212 Cond meter kit	A215 pH/Cond meter only	A215 pH/Cond meter kit
Catalog number		GY-19704-41	GY-19704-43	GY-19704-22	GY-19704-24	GY-58825-36	GY-58825-38
Parameters		Conductivity/TDS/temperature		Conductivity/TDS/salinity/resistivity/temperature		pH/mV/conductivity/TDS/salinity/ resistivity/temperature	
Range	pH	—		—		–2.000 to 20.000	
	mV	—		—		±2000.0 mV	
	Conductivity	0.1 µS to 200 mS		0.001 µS to 3000 mS		0.001 µS to 3000 mS	
	TDS	1 to 19,999 ppm		0 to 200 ppt		0 to 200 ppt	
	Salinity	—		0.01 to 80.0 ppt NaCl		0.01 to 80.0 ppt NaCl	
	Resistivity	—		2 Ω to 100 MΩ		2 Ω to 100 MΩ	
	Temperature	23 to 221°F (–5 to 105°C)		23 to 221°F (–5 to 105°C)		23 to 221°F (–5 to 105°C)	
Resolution	pH	—		—		0.1, 0.01, 0.001	
	mV	—		—		0.1	
	Conductivity	0.01 µS		0.001 µS		0.001 µS	
	TDS	4 significant digits		4 significant digits		4 significant digits	
	Salinity	—		0.01		0.01	
	Resistivity	—		2 Ω		2 Ω	
	Temperature	0.1		0.1		0.1	
Accuracy	pH	—		—		±0.002	
	mV	—		—		±0.2 or 0.05% of reading	
	Conductivity	±0.5% of reading ± 1 digit		±0.5% of reading ± 1 digit		±0.5% of reading ± 1 digit	
	TDS	±0.5% of reading ± 1 digit		±0.5% of reading ± 1 digit		±0.5% of reading ± 1 digit	
	Salinity	—		±0.1		±0.1	
	Resistivity	—		0.5% of reading ± 1 digit		0.5% of reading ± 1 digit	
	Temperature	±0.1		±0.1		±0.1	
Temperature compensation		Automatic or manual		Automatic or manual		Automatic or manual	
Calibration points		1		Up to 5		Up to 5	
Data logging		50 sets		2000 sets with time-and-date stamp		2000 sets with time-and-date stamp	
Output		—		RS-232, USB		RS-232, USB	
Power		100 to 240 VAC (power adapter included) or four AA batteries (not included)					
Price							

Accessories

GY-58825-50 **Electrode arm**
GY-58825-51 **Base** for electrode arm
GY-58822-03 **Replacement AC power adapter**
GY-19704-70 **Orion DuraProbe conductivity probe,** K = 0.475
GY-19704-46 **Conductivity calibration kit,** resistor set
GY-05718-34 **ROSS Triode pH/ATC electrode**
GY-55350-68 **pH buffer kit.** Includes 473 mL each of 4, 7, 10 buffers and storage solution, and 60 mL of cleaning solution
GY-09376-01 **Batteries,** AA. Pack of 4
GY-17106-20 **NIST-traceable calibration** with data for pH meter
GY-17090-30 **NIST-traceable calibration** with data for conductivity meter

Benchtop Conductivity Meters

Get up and running quickly

- Self-diagnostic test at start up ensures smooth operation
- High accuracy measurements with NIST traceable cell calibrations
- Dual LCD displays conductivity reading with temperature

These conductivity meters provide high accuracy measurements with NIST-traceable conductivity cell calibrations with built-in temperature sensors making them ideal for any lab. Easy-to-read dual LCD simultaneously displays temperature with the conductivity or salinity measurement.

Model 3100 is a basic model offering high accuracy conductivity, salinity and temperature measurements. Features adjustable temperature coefficient, reference temperature, and automatic temperature compensation.

Model 3200 advanced features exceed USP 24 specifications for conductivity, TDS, salinity, resistivity and temperature measurements making it ideal for ultrapure water applications. The meter features Resistance Ratio Technology™ which continually compares the sample resistance to a calibrated resistor head. Also features multipoint calibration, linear and nonlinear temperature compensation, high and low alarms, and data storage with data logging.

What's included: AC power adapter.

REQUIRED System Components

1) Meter
2) Conductivity Cell

19755-10

ISO 9001:2008 CERTIFIED SUPPLIER

Meter only

1. Meter

Description		Model 3100		Model 3200	
Catalog number		GY-19755-00	GY-19755-20	GY-19755-10	GY-19755-30
Range	Conductivity	0 to 499.9, 0 to 4999 µS; 0 to 49.99, 0 to 499.9 mS		0 to 0.9999, 0.95 to 9.999, 9.5 to 99.99, 95 to 999.9, 950 to 9999 µS; 9.5 to 99.99, 95 to 999.9 mS 0.95 to 3 S	
	TDS	—		0 to 19,999 mg/L	
	Salinity	0 to 80 ppt		0 to 80 ppt	
	Resistivity	—		0 to 29.9 MΩ (5 ranges)	
	Temperature	5 to 95°C		–5 to 100°C	
Resolution	Conductivity	1.0, 0.1 µS 0.01, 1.0 mS		0.0001, 0.001 µS 0.01, 0.1, 1.0 mS 0.01, 0.1 µS, 0.01 S	
	TDS	—		1 mg/L	
	Salinity	0.1 ppt		0.1 ppt	
	Resistivity	—		0.0001 µS to 0.01 S	
	Temperature	0.1°C		0.01°C	
Accuracy	Conductivity	±0.50%		±0.30%, ±0.20%, ±0.10%, ±0.10%, ±0.10%, ±0.10% ±0.30%, ±1.0%	
	TDS	—		±0.50% full-scale	
	Salinity	±2% full-scale		±0.1 ppt	
	Resistivity	—		±0.2% to ±1.0% full-scale	
	Temperature	±0.1°C + 1 LSD		±0.1°C	
Temperature compensation		Automatic from –5.0 to 95.0°C		Automatic/manual from –5.0 to 100.0°C	
Output		—		RS-232	
Data storage		—		100 points	
Power		115 VAC	230 VAC	115 VAC	230 VAC
Price					

2. Conductivity Cells for Models 3100/3200

Use the dip cells for quick multiple measurements. Select the fill cells when solution purity is important—simply draw a fluid sample, take a reading, and discard the sample. Pick the flow-through cells for in-line applications. All cells have a built-in thermistor for automatic temperature compensation, a seven-pin DIN connector, and a 4-ft (1.2-m) cable.

Type	Cell constant (K)	Material	Catalog number	Price
Dip		ABS plastic	GY-19755-50	
Dip	1.0	Glass	GY-19755-52	
Fill		Glass	GY-19755-54	
Flow-through Dip	0.1	Glass	GY-19755-56	
			GY-19755-58	

Low-Range Conductivity Meter

Test twelve decades of conductivity measurements from one meter

NEW

- Trust your readings—noise suppression technology and factory calibration ensures accuracy
- Ultra-wide conductivity range of 1 fS/cm (hexane) to 1 mS/cm (low-concentration salt water)
- Robust, smart probe technology with complete auto-ranging capabilities
- Transfer data easily via USB port

This benchtop meter offers a full range that can measure samples from non-polar, non-aqueous fuels through low concentration salt solutions in water. The easy-to-read 16-character, two-line display easily shows conductivity and temperature measurements. High-accuracy, low-noise smart probe and meter are factory calibrated for maximum accuracy. Smart probe saves calibration data for quick startup. Auto-ranging convenience with manual range locking feature available.

What's included: smart probe, data acquisition software, and 100 to 240 VAC power supply

Description	Low- range conductivity meter
Catalog number	GY-58828-10
Conductivity range	1 fS/cm to 1 mS/cm
Measured conductance	5 pS to 1 mS
Measured frequency	<1 Hz to 1 kHz
Resolution	4 digits
Accuracy	±1% full-scale ±1 digit
Output	USB
Power	5 VDC adapter; 100 to 240 VAC
Price	

Accessories

GY-58828-50 **Replacement conductivity probe;** full-range smart probe

Twin Conductivity/Salinity Meter

Easily measure samples as small as 100 µL!

- Measures conductivity and features salinity conversion from 0 to 1.1%
- Functions include one-touch calibration, auto-hold, low-battery indication, and auto shut-off (after 60 minutes of nonuse)
- Temperature alarm alerts you when sample falls outside temperature range

Built-in sensor lets you measure by dipping the tip into the sample or by placing a sample directly on the sample pad.

Note: Meter requires the included solutions for calibration (order replacement solution kit at right).

ISO 9001:2008 CERTIFIED SUPPLIER

Description	Twin conductivity/salinity meter
Catalog number	GY-05751-10
Range	0 to 199 µS; 0.20 to 1.99 mS; 2.0 to 19.9 mS
Resolution	1 µS; 0.01 mS; 0.1 mS
Accuracy	±2% full scale, ±1 digit
Temperature compensation	Automatic from 5 to 35°C; 2% per °C at 25°C
Power	Two CS-2032 3 V batteries (included)
Price	

Accessories

GY-05751-52 **Replacement sensor cartridge**
GY-05751-70 **Replacement solution kit** include four bottles of DI water and four bottles of calibration solutions (1410 µS)
GY-09376-17 **Replacement batteries;** CR-2032 lithium, 3 V. Pack of 6
GY-17106-22 **NIST-traceable calibration** with data for conductivity tester

Cole-Parmer® Conductivity Solutions, NIST-Traceable Reference Materials

Trust your standards—high accuracy

- Up to ±0.25% accuracy verified by an ISO Guide 34 and ISO 17025 accredited lab

A. Batch-Tested Bottles, 16-oz

- Easy calibration with included instructions and temperature compensation chart
- Includes NIST-traceable certificate and batch testing information

B. Individually Tested Bottles, 16-oz

- Each bottle individually calibrated—NIST-traceable certificate included with serial number and testing information
- Easy calibration with step-by-step instructions and included temperature compensation chart

C. One-Shot® Vials, pack of six 3.4-oz vials

- Fresh solution each time you calibrate—single-use vials eliminate contamination
- Grab it and go—convenient for field use; calibrate right in vial
- Includes NIST-traceable calibration report and temperature compensation chart

Cole-Parmer®

Conductivity (µS)	Resistivity (MΩ)	TDS (ppm)	Catalog number	Price
A. Batch tested, one 16-oz (473-mL) glass bottle				
1	1	0.66	GY-00652-20	
5	0.2	3.3	GY-00652-22	
10	0.1	6.6	GY-00652-24	
100	0.01	66	GY-00652-26	
1000	0.001	666	GY-00652-28	
1413	0.00071	933	GY-00652-30	
10,000	0.0001	6666	GY-00652-32	
100,000	0.00001	66,666	GY-00652-34	
150,000	0.0000066	100,000	GY-00652-53	
200,000	0.000005	133,333	GY-00652-55	
B. Individually tested, one 16-oz (473-mL) glass bottle				
1	1	0.66	GY-00652-40	
5	0.2	3.3	GY-00652-42	
10	0.1	6.6	GY-00652-44	
100	0.01	66	GY-00652-46	
1000	0.001	666	GY-00652-48	
1413	0.00071	933	GY-00652-50	
10,000	0.0001	6666	GY-00652-52	
100,000	0.00001	66,666	GY-00652-54	
150,000	0.0000066	100,000	GY-00652-56	
200,000	0.000005	133,333	GY-00652-58	
C. One-Shot®, pack of six 3.4-oz (100-mL) vials				
5	0.2	3.3	GY-00652-60	
10	0.1	6.6	GY-00652-62	
100	0.01	66	GY-00652-64	
1000	0.001	666	GY-00652-66	
1413	0.00071	933	GY-00652-68	
10,000	0.0001	6666	GY-00652-70	
100,000	0.00001	66,666	GY-00652-72	
150,000	0.0000066	100,000	GY-00652-76	
200,000	0.000005	133,333	GY-00652-78	
Assortment†	—	—	GY-00652-74	

†Assortment has one 100-mL vial each of 10, 100, 1000, 1413, 10,000, and 100,000 µS.

Oakton® Calibration Solutions

Save money while calibrating

- KCl, NaCl, and 442 conversions printed right on the bottle
- Temperature corrections at hand—printed right on the bottle

Include NIST-traceable calibration report supplied by the manufacturer.
One 17-oz (500-mL) bottle.

OAKTON®

Conductivity (µS)	Conductivity-to-TDS calibration values			Catalog number	Price
	ppm KCl	ppm NaCl	ppm 442		
23	11.6	10.7	14.74	GY-00653-23	
84	40.38	38.04	50.5	GY-00653-16	
447	226	215	300	GY-00653-47	
1413	745	702	1000	GY-00653-18	
1500	757	737	1050	GY-00653-15	
2070	1045	1041	1500	GY-00653-27	
2764	1382	1414	2062	GY-00653-20	
8974	5101	4487	7608	GY-00653-89	
12,880	7447	7230	11,367	GY-00606-10	
15,000	8759	8532	13,455	GY-00653-50	
80,000	52,168	48,384	79,688	GY-00653-32	

Conductivity Calibration Solutions

Use with any meter

Available in portable 5 x 60 mL bottles which are easier to carry than larger bottles, minimize wasted solution, and provide more volume than pouches.

Conductivity (µS)	ppm NaCl	Qty/pk	Catalog number	Price/pk
100	47	Five 60-mL bottles	GY-19704-90	
1413	692		GY-19704-91	
12900	7230		GY-19704-92	
111000	—		GY-19704-93	

Accessories

GY-19704-94 **KCl standard** (0.1 M), 12900 µS, 7230 ppm NaCl, 475-mL bottle

Teky's Tips

Conductivities of commonly measured solutions:

Ultrapure water	0.055 µS
Deionized water	0.1 to 10 µS
Distilled water	0.5 µS
Boiler feed water	1.0 µS
Good city water	50 µS
Drinking water	0.5 to 1 mS
Wastewater	0.9 to 9 mS
Sea water	53 mS
10% NaOH	355 mS
10% H_2SO_4	432 mS

When measuring conductivity, it is important to calibrate your meter using a standard solution close to your measured range.

Calibration Solutions

Be certain of your accuracy

These calibration solutions are referenced to primary standard solutions according to OIML recommendation 56. Values are accurate to ±0.25 to ±0.5%. Each 32-oz bottle comes with NIST-traceable calibration report supplied by the manufacturer.

Conductivity (µS)	Conductivity-to-TDS calibration values	Catalog number	Price
	ppm NaCl		
1000	495	GY-01482-54	
10,000	5400	GY-01482-56	
100,000	—	GY-01482-58	

Oakton® Conductivity Calibration Pouches

Calibrate on the go!

- Single-use pouches for easy calibrations
- Quick-reference conversion table printed on each pack

Include NIST-traceable calibration report supplied by the manufacturer.

OAKTON®

Conductivity (µS)	Conductivity-to-TDS calibration values			Catalog number	Price/ pk of 20
	ppm KCL	ppm NaCl	ppm 442		
10	4.8	4.7	7.0	GY-35653-09	
447	226	216	300	GY-35653-10	
1413	745	702	1000	GY-35653-11	
2764	1382	1414	2062	GY-35653-12	
15,000	8759	8532	13,445	GY-35653-13	
Rinse solution	—	—	—	GY-35653-00	

Cole-Parmer® Redi-Stor™ Conductivity Probe Storage Solution

Keep probes in working order

Ideal for storing and conditioning all glass and epoxy conductivity probes. It preserves the probe's cleanliness, allows immediate use, and reduces contamination that can occur with storing probe in water only. One 16-oz (473-mL) bottle.

Cole-Parmer®

Description	Catalog number	Price
Redi-Stor conductivity probe storage solution	GY-00652-80	

Calibration Solutions

Be more accurate

- Get reliable readings with ±1% accuracy
- Include conversions for quick reference

Include NIST-traceable calibration report supplied by the manufacturer.
One 32-oz (946-mL) bottle.

Conductivity (µS)	Conductivity-to-TDS calibration values			Catalog number	Price
	ppm KCl	ppm NaCl	ppm 442		
23.8	—	11.08	15	GY-01489-90	
46.7	—	21.8	30	GY-01489-91	
70	—	32.8	45	GY-01489-92	
445	—	214	300	GY-01489-93	
700	—	340	478	GY-01489-94	
2060	—	1036	1500	GY-01489-95	
3900	—	2027	3000	GY-01489-96	
7000	—	3740	5687	GY-01489-97	
16,630	—	9462	15,000	GY-01489-98	
30,100	—	18,235	30,000	GY-01489-99	

Oakton® Grip-Clip™ Holder

Hands-free measurements

- No messing with electrode holders—simply clip to side of beaker for easier probe handling
- Holds an ATC probe and a 11- or 12-mm probe or a 16-mm probe

OAKTON®

Description	Catalog number	Price
Oakton Grip-Clip holder	GY-35614-50	