

# 20<sup>th</sup> anniversary of

Advanced  
Digital  
Water  
Analysis



# 2018

## PROFESSIONAL INSTRUMENTS FOR WATER & LAB ANALYSIS

Consistency, Reliability,  
Durability and Performance



pH  
ISE  
ORP  
EC  
TDS  
DO  
TEMP



## Adwa Instruments

Founded in 1998, Adwa Instruments is one of the leading manufacturers of instrumentation to measure pH, Conductivity, ORP, Dissolved Oxygen and Temperature for Research and Industry. Headquartered in Szeged, Hungary and with a manufacturing plant in Romania, Europe, Adwa Instruments is dedicated through a worldwide distributor network, to provide top class instrumentation and service.

Thanks to the customers' feedback, we have developed a line of user-friendly products which are durable, reliable and accurate, with an excellent cost-performance ratio. All of our instruments are supplied complete with the necessary electrodes, probes, calibration solutions and are ready for use. Some units combine two or more parameters, providing added versatility and excellent value for money. From basic hand-held units to high-performance benchtop type laboratory instruments, Adwa Instruments has a reputation for reliability and accuracy.

Total quality and customer satisfaction is the guiding principle of Adwa Instruments. We try to anticipate, to understand and go beyond the expectations of our customers. Total quality demands continuous improvement in all our processes, products and services.

As a result, our corporate philosophy is focused on total customer satisfaction.



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## AD1000-AD1020

### Professional Multi-Parameter pH-ORP-ISE-Temperature Benchtop Meters with RS232/USB inter- face & GLP

**AD1000** and **AD1020** are professional benchtop meters with ranges for pH, ORP (Oxidation Reduction Potential), ISE (**AD1020** only) and temperature measurements. Relative mV readings are also provided. Main features include:

- Up to 5-point calibration with 7 memorized buffers and two custom buffers
- Calibration time-out alarm
- Log-on-demand (up to 50 samples) and automatic logging (up to 1000 samples)
- Two selectable alarm limits
- User selectable logging interval mode
- HOLD feature to freeze the stable reading on the LCD
- GLP feature to view last calibration data for pH, ISE and relative mV
- PC interface/RS232/USB

**AD1000** and **AD1020** are supplied complete with AD1131B refillable glass body pH electrode with BNC connector and 1 m cable, AD7662 stainless steel temperature probe with 1 m cable, electrode holder, calibration solutions in sachets (pH7 and pH4, 20 ml each), 12 Vdc power adapter, and user manual.

## AD1030-AD1040-AD1200

### Professional Multi-Parameter pH-ORP-ISE-Temperature Benchtop Meters with GLP

**AD1030**, **AD1040** and **AD1200** are professional benchtop meters for pH, ORP (Oxidation Reduction Potential), ISE (**AD1200** only) and temperature measurements. Relative mV readings are also provided. Main features include:

- Up to three-point calibration with seven memorized buffers and two custom buffers
- Calibration time-out alarm
- pH calibration using buffers with 0.001 resolution
- pH readings with manual or automatic temperature compensation
- Up to 50 samples for log-on-demand (not for AD1030)
- Two selectable alarm limits
- HOLD feature to freeze the stable reading on the LCD
- GLP feature (not for AD1030) to view last calibration data for pH, ISE and relative mV ranges

**AD1030**, **AD1040** and **AD1200** are supplied complete with AD1131B refillable glass body pH electrode with BNC connector and 1 m cable, AD7662 stainless steel temperature probe with 1 m cable, electrode holder, calibration solutions in sachets (pH7 and pH4, 20 ml each), 12 Vdc power adapter, and user manual.

	<b>AD1000/AD1020</b>
<b>Range</b>	-2.00 to 16.00 pH / -2.000 to 16.000 pH ±2000 mV 0.001 to 19999 ppm ( <b>AD1020</b> only) -20.0 to 120.0°C (- 4.0 to 248.0°F)
<b>Resolution</b>	0.01 pH / 0.001 pH 0.1 mV (±999.9 mV) / 1 mV (outside) 0.001 ppm (0.001 to 9.999) 0.01 ppm (10.00 to 99.99) 0.1 ppm (100.0 to 999.9) 1 ppm (1000 to 19999) ( <b>AD1020</b> only) 0.1°C (0.1°F)
<b>Accuracy (at 25°C/77°F)</b>	±0.01 pH / ±0.002 pH ±0.2 mV up to ±699.9 mV ±0.5 mV up to ±999.9 mV ±2 mV outside ±0.5% f.s. ISE ( <b>AD1020</b> only) ±0.4°C (±0.7°F) (excluding probe error)
<b>pH Calibration</b>	Up to 5 point calibration, with 2 custom and 7 standard buffers (pH 1.68, 4.01, 6.86, 7.01, 9.18, 10.01, 12.45)
<b>ISE Calibration</b>	Up to two-point calibration, <b>(AD1020</b> only) 5 standard solutions available (0.1, 1, 10, 100, 1000 ppm)
<b>PC Interface</b>	USB and RS232

	<b>AD1030/AD1040/AD1200</b>
<b>Range</b>	-2.00 to 16.00 pH / -2.000 to 16.000 pH ±2000 mV 0.001 to 19999 ppm ( <b>AD1200</b> only) -20.0 to 120.0°C (- 4.0 to 248.0°F)
<b>Resolution</b>	0.01 pH / 0.001 pH 0.1 mV (±999.9) / 1 mV (outside) 0.001 ppm (0.001 to 9.999) 0.01 ppm (10.00 to 99.99) 0.1 ppm (100.0 to 999.9) 1 ppm (1000 to 19999) ( <b>AD1200</b> only) 0.1°C (0.1°F)
<b>Accuracy (at 25°C/77°F)</b>	±0.01 pH / ±0.002 pH ±0.2 mV up to ±699.9 mV ±0.5 mV up to ±999.9 mV ±2 mV outside ±0.5% f.s. for ISE ( <b>AD1200</b> only) ±0.4°C (±0.7°F) (excluding probe error)
<b>pH Calibration</b>	Up to 3 point calibration, with 2 custom and 7 standard buffers (pH 1.68, 4.01, 6.86, 7.01, 9.18, 10.01, 12.45)
<b>ISE Calibration</b>	Up to two-point calibration, <b>(AD1200</b> only) 5 standard solutions available (0.1, 1, 10, 100, 1000 ppm)

## AD3000

### Professional Multi-Parameter Conductivity-TDS-Temperature Benchtop Meter with GLP

**AD3000** is a microprocessor-based conductivity, TDS and temperature meter.

The auto ranging feature of the EC and TDS ranges automatically sets the instrument to the scale with the highest resolution.

Measurements are compensated for temperature effect automatically (ATC) or manually (MTC) with the conductivity probe with built-in temperature sensor. It is also possible to disable the temperature compensation and measure the actual conductivity.

The temperature coefficient is user selectable. The instrument is equipped with a stability indicator, to indicate when the measurement is to be recorded.

**AD3000** includes also GLP capability. In addition, the meter allows the user to enter an ID code to uniquely identify the instrument.

**AD3000** is supplied complete with AD76309 conductivity probe with built-in temperature sensor and 1 m cable, 12 Vdc power adapter, calibration solutions in sachets (1413  $\mu\text{S}/\text{cm}$  and 12,88 mS/cm, 20 ml each), and user manual.

AD3000	
Range	0.00 to 19.99 $\mu\text{S}/\text{cm}$ ; 0.00 to 9.99 ppm 20.0 to 199.9 $\mu\text{S}/\text{cm}$ ; 10.0 to 99.9 ppm 200 to 1999 $\mu\text{S}/\text{cm}$ ; 100 to 999 ppm 2.00 to 19.99 mS/cm; 1.00 to 9.99 ppt 20.0 to 199.9 mS/cm; 10.0 to 99.9 ppt -9.9 to 120.0°C
Resolution	0.01, 0.1, 1 $\mu\text{S}/\text{cm}$ ; ppm 0.01, 0.1 mS/cm; ppt 0.1°C
Accuracy (at 25°C/77°F)	$\pm 1\%$ f.s. (EC/TDS) $\pm 0.5^\circ\text{C}$
EC Calibration	Offset at 0.00 $\mu\text{S}/\text{cm}$ ; Slope at 1 point with 6 memorized values (84.0, 1413 $\mu\text{S}/\text{cm}$ ; 5.00, 12.88, 80.0, 111.8 mS/cm) or with custom value



## AD8000

### Professional Multi-Parameter pH-ORP-Conductivity-TDS-Temperature Benchtop Meter with GLP

**AD8000** is a microprocessor-based pH, ORP, conductivity, TDS and temperature benchtop meter. Relative mV feature is also provided.

The auto ranging feature of the EC and TDS ranges automatically sets the instrument to the scale with the highest resolution.

pH measurements are compensated for temperature effect automatically (ATC) using AD5006

temperature probe, while the EC readings can be compensated automatically (ATC) using the

conductivity probe with a built-in temperature sensor or manually (MTC). It is also possible to disable

the temperature compensation and measure the actual conductivity. The temperature coefficient

is user selectable. The pH calibration can be performed at 1, 2 or 3 points with five memorized

buffers (pH 4.01, 6.86, 7.01, 9.18, 10.01). In addition, **AD8000** is provided with calibration

timeout alarm, GLP feature to view last calibration data and automatic HOLD feature

to freeze the first stable reading on the LCD.

**AD8000** is supplied complete with AD1131B refillable

glass body pH electrode with BNC connector and 1 m

cable, AD76309 conductivity probe with built-in temperature

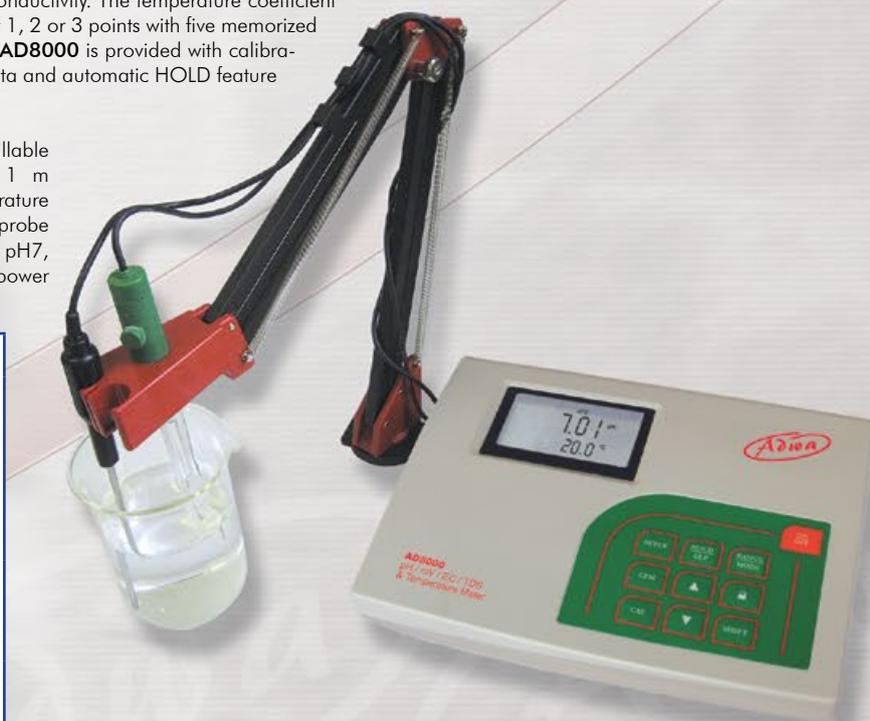
sensor and 1 m cable, A7662 stainless steel temperature probe

with 1 m cable, calibration solutions in sachets (pH4, pH7,

1413  $\mu\text{S}/\text{cm}$  and 12,88 mS/cm, 20 ml each), 12 Vdc power

adapter and user manual.

AD8000	
Range	-2.00 to 16.00 pH / -2.000 to 16.000 pH $\pm 699.9$ mV / $\pm 2000$ mV 0.00 to 19.99 $\mu\text{S}/\text{cm}$ ; 0.00 to 9.99 ppm 20.0 to 199.9 $\mu\text{S}/\text{cm}$ ; 10.0 to 99.9 ppm 200 to 1999 $\mu\text{S}/\text{cm}$ ; 100 to 999 ppm 2.00 to 19.99 mS/cm; 1.00 to 9.99 ppt 20.0 to 199.9 mS/cm; 10.0 to 99.9 ppt -9.9 to 120.0°C (pH range) 0.0 to 100.0°C (EC range)
Resolution	0.01 pH / 0.001 pH 0.1 mV ( $\pm 699.9$ mV) / 1 mV ( $\pm 2000$ mV) 0.01, 0.1, 1 $\mu\text{S}/\text{cm}$ ; ppm 0.01, 0.1 mS/cm; ppt 0.1°C
Accuracy (at 25°C/77°F)	$\pm 0.01$ pH / $\pm 0.002$ pH $\pm 0.2$ mV up to $\pm 699.9$ mV $\pm 1$ mV up to $\pm 2000$ mV $\pm 1\%$ f.s. (EC/TDS) $\pm 0.5^\circ\text{C}$



## AD130

### Professional Multi-Parameter Splash-Proof pH-ORP-Temp Portable Meter

AD130 is a heavy-duty portable pH meter designed to provide laboratory results and accuracy even under harsh industrial conditions.

Main features include:

- 7 memorized buffers for pH calibration (pH 1.68, 4.01, 6.86, 7.01, 9.18, 10.01 and 12.45)
- Messages on the LCD to make the calibration easy and accurate
- pH readings with manual or automatic temperature compensation
- pH calibration using pH buffers with 0.01 resolution
- Temperature range from -20 to 120°C (-4 to 248°F) using A7662 probe AD130 can also use ORP electrodes to measure mV, with a resolution up to 0.1 mV.

AD130	
Range	pH -2.00 to 16.00 ORP -1999 to +1999 mV Temp -20.0 to 120.0°C (-4.0 to 248.0°F)
Resolution	pH 0.01 ORP 0.1 up to ±699.9 mV / 1 mV (outside) Temp 0.1 °C (0.1°F)
Accuracy (at 25°C/77°F)	pH ± 0.01 pH ORP ±0.2 up to ±699.9 mV / ±1 mV (outside) Temp ±0.4°C (±0.8°F)
Calibration	pH up to 2-points
Buffers	pH 1.68, 4.01, 6.86, 7.01, 9.18, 10.01, 12.45
Temperature compensation	ATC/MTC (-20 to 120°C)
Calibration ORP	factory
UNIT	°C and °F
LCD	2 rows
Hold function	yes
Low battery indication	yes
Stability indicator	yes
Auto shutt-off	20 min. (can be disabled)
Power supply	4 x 1.5V AA batteries
Battery life	500 hours approx

Supplied with: AD1230B pH electrode with Epoxy body, BNC connector and 1m cable, AD7662 stainless steel temperature probe, calibration solutions in sachets (pH4 and pH7, 20 ml each), 1.5V AA alkaline battery (4 pcs), and user manual.



## AD131 - AD132

### Professional Waterproof pH-ORP-Temperature Portable Meter with RS232 interface & GLP

AD131 and AD132 are heavy-duty portable waterproof meters for pH, ORP (Oxidation Reduction Potential) and temperature measurements, designed to provide laboratory results and accuracy even under harsh industrial conditions.

Main features include:

- 7 memorized buffers for pH calibration (pH 1.68, 4.01, 6.86, 7.01, 9.18, 10.01 and 12.45)
- Messages on the LCD to make the calibration easy and accurate
- pH readings with manual or automatic temperature compensation
- Calibration time-out alarm
- Log-on-demand
- HOLD feature to freeze stable reading on the LCD
- GLP feature to view last calibration data for pH and relative mV
- PC interface (only for AD132)
- Connection to an external serial printer with the following specification (only for AD132): at least 16 characters/line, baud rate 9600 and RS232 input

AD131, AD132		
Range	pH -2.00 to 16.00 ORP -2000 to +2000 mV Temp 20.0 to 120.0°C (-4.0 to 248.0°F)	
Resolution	pH 0.01 ORP 0.1 up to ±999.9 mV / 1 mV (outside) Temp 0.1°C (0.1°F)	
Accuracy (at 25°C/77°F)	pH ± 0.01 pH ORP ±0.2 up to ±699.9 mV / ±1 mV (outside) Temp ±0.5 up to ±999.9 mV / ±2 mV (outside) ±0.4°C (±0.8°F)	
Calibration	pH up to 5-points	
Buffers	pH 1.68, 4.01, 6.86, 7.01, 9.18, 10.01, 12.45	
Temperature compensation	ATC/MTC (-20 to 120°C)	
Calibration ORP	factory	
UNIT	°C and °F	
Memory	500 samples on demand, with time GLP yes, with time	
Hold function	yes (Auto End Point)	
Low battery indication	yes	
Stability indicator	yes	
Auto shutt-off	20 min. (can be disabled)	
PC interface	RS232 for PC software and External Printer (AD132 only)	
Power supply	4 x 1.5V AA batteries	
Battery life	300 hours approx	



Supplied with: AD1230B pH electrode with Epoxy body, AD7662 stainless steel temperature probe, calibration solutions in sachets (pH4 and pH7, 20 ml each), 1.5V AA alkaline battery (4 pcs) and user manual and only for AD132: AD9551 serial communication cable.

## AD331

### Professional Waterproof Conductivity-Temperature Portable Meter with GLP

AD331 is a waterproof portable meter that reads Conductivity in 5 ranges and temperature.

The auto ranging feature of the EC range automatically sets the instrument to the scale with the highest resolution. Measurements are compensated for temperature effect automatically (ATC) or manually (MTC). It is also possible to disable the temperature compensation feature to measure the actual conductivity. The temperature coefficient is user selectable. This instrument also features a measurement stability indicator, GLP capability, and a user selectable ID code to uniquely identify the instrument.

AD331	
Range	0.00 to 19.99 $\mu\text{S}/\text{cm}$ 0.0 to 199.9 $\mu\text{S}/\text{cm}$ 0 to 1999 $\mu\text{S}/\text{cm}$ 0.00 to 19.99 $\text{mS}/\text{cm}$ 0.0 to 199.9 $\text{mS}/\text{cm}$ -9.9 to 120.0 $^{\circ}\text{C}$
Resolution	0.01 / 0.1 / 1 $\mu\text{S}/\text{cm}$ 0.01 / 0.1 $\text{mS}/\text{cm}$ 0.1 $^{\circ}\text{C}$
Accuracy (at 25 $^{\circ}\text{C}/77^{\circ}\text{F}$ )	$\pm 1\%$ f.s. $\pm 0.5$ $^{\circ}\text{C}$
EC Calibration	Offset: 0.0 $\mu\text{S}/\text{cm}$ ; Slope: 1 point with 6 memorized standards (84.0, 1413 $\mu\text{S}/\text{cm}$ ; 5.00, 12.88, 80.0, 111.8 $\text{mS}/\text{cm}$ ) or one custom value
Temperature calibration	User offset adjustment $\pm 1^{\circ}\text{C}$
Temperature	ATC / MTC from -9.9 to 120 $^{\circ}\text{C}$ Compensation
Temperature coefficient	0.0 to 10.0 $\%/^{\circ}\text{C}$
Reference temperature	Selectable from 15.0 to 30.0 $^{\circ}\text{C}$
Probe	4-ring EC probe (K=1) with built-in NTC10K temperature sensor
Memory	250 samples on demand with time stamp
GLP	Yes with time stamp
Hold function	yes (auto)
Low battery indication	yes
Auto shutt-off	yes
Power supply	4 x 1.5V AA batteries



Supplied with: AD76309 conductivity probe with built-in temperature sensor, calibration solutions in sachets (1413  $\mu\text{S}/\text{cm}$  and 12,88  $\text{mS}/\text{cm}$ , 20 ml each), 1.5V AA alkaline battery (4 pcs) and user manual.

## AD330 - AD332

### Professional Waterproof Conductivity-TDS-Temperature Portable Meter with RS232 interface & GLP

AD330 and AD332 are waterproof portable meters that read TDS and Conductivity in 5 ranges and temperature.

The auto ranging feature of the EC and TDS ranges automatically sets the instrument to the scale with the highest resolution. Measurements are compensated for temperature effect automatically (ATC) or manually (MTC). It is also possible to disable the temperature compensation feature to measure the actual conductivity.

The temperature coefficient is user selectable. These instruments also features a measurement stability indicator, GLP capability, and a user selectable ID code to uniquely identify the instrument.

Moreover, AD332 includes PC interface and printing function. Connect the meter to an external serial printer with the following printer specifications:

- at least 16 characters / line
- baud rate 9600
- 9-pin RS232 input

AD330, AD332	
Range	0.00 to 19.99 $\mu\text{S}/\text{cm}$ / 0.00 to 10.00 ppm 0.0 to 199.9 $\mu\text{S}/\text{cm}$ / 0.0 to 100.0 ppm 0 to 1999 $\mu\text{S}/\text{cm}$ / 0 to 1000 ppm 0.00 to 19.99 $\text{mS}/\text{cm}$ / 0.00 to 10.00 ppt 0.0 to 199.9 $\text{mS}/\text{cm}$ / 0.0 to 100.0 ppt -9.9 to 120.0 $^{\circ}\text{C}$
Resolution	0.01 / 0.1 / 1 $\mu\text{S}/\text{cm}$ ; ppm 0.01 / 0.1 $\text{mS}/\text{cm}$ ; ppt 0.1 $^{\circ}\text{C}$
Accuracy (at 25 $^{\circ}\text{C}/77^{\circ}\text{F}$ )	$\pm 1\%$ f.s. $\pm 0.5$ $^{\circ}\text{C}$
EC calibration	Offset: 0.0 $\mu\text{S}/\text{cm}$ ; Slope: 1 point with 6 memorized standards (84.0, 1413 $\mu\text{S}/\text{cm}$ ; 5.00, 12.88, 80.0, 111.8 $\text{mS}/\text{cm}$ )
Temperature calibration	User offset adjustment $\pm 1^{\circ}\text{C}$
Temperature compensation	ATC / MTC from -9.9 to 120 $^{\circ}\text{C}$
Temperature coefficient	0.0 to 10.0 $\%/^{\circ}\text{C}$
Reference temperature	Selectable from 15.0 to 30.0 $^{\circ}\text{C}$
TDS factor	0.4 to 1.0
Probe	4-ring EC probe (K=1) with built-in NTC10K temperature sensor
Memory	250 samples on demand with time stamp (only AD332)
GLP	Yes with time stamp
Printer	External through RS232 (only AD332)
Hold function	yes (auto)
Low battery indication	yes
Auto shutt-off	yes
PC Interface	RS232 for PC software and External Printer (only AD332)
Power supply	4 x 1.5V AA batteries



Supplied with: AD76309 conductivity probe with built-in temperature sensor, calibration solutions in sachets (1413  $\mu\text{S}/\text{cm}$  and 12,88  $\text{mS}/\text{cm}$ , 20 ml each), 1.5V AA alkaline battery (4 pcs) and user manual and only for AD332: AD9551 serial communication cable.



## AD110-AD111

Standard Professional pH-Temperature Portable Meter (AD110) & Standard Professional pH-ORP-Temperature Portable Meter (AD111)

AD110 and AD111 are compact pH meters featuring automatic pH calibration, HOLD function, low battery indication, temperature measurement and compensation. In addition, AD111 can measure in the mV range.

AD110 and AD111 offer you the greatest value-for-money for basic pH, ORP and Temperature measurements. 2 points push-button calibration with auto buffer recognition in 3 points (pH 4.01, pH 7.01 and pH 10.01).

Auto-off after 8 minutes of non-use conserves energy and lengthens battery life-span.

AD110 is supplied complete with AD1230B pH electrode with Epoxy body, BNC connector and 1 m cable, AD7662 stainless steel temperature probe with 1 m cable, calibration solutions in sachets (pH4 and pH7, 20 ml each), batteries (4 x 1.5V AA alkaline) and instruction manual.

AD111 is supplied complete with AD1230B pH electrode with Epoxy body, BNC connector and 1 m cable, AD7662 stainless steel temperature probe with 1 m cable, calibration solutions in sachets (pH4 and pH7, 20 ml each), batteries (4 x 1.5V AA alkaline) and instruction manual.

		AD110
Range	pH Temp	-2.00 to 16.00 pH -5.0 to 105.0°C
Resolution	pH Temp	0.01 pH 0.1°C
Accuracy (at 25°C/77°F)	pH Temp	±0.02 pH ±0.5°C up to 60°C / ±1°C outside
pH Calibration		automatic, 1 or 2 point, with 3 memorized buffers value
Temp. Calibration		factory
Temp. Compensation		automatic or 25°C fixed

		AD111
Range	pH mV Temp	-2.00 to 16.00 pH ±1000 mV -5.0 to 105.0°C
Resolution	pH mV Temp	0.01 pH 1 mV 0.1°C
Accuracy (at 25°C/77°F)	pH mV Temp	±0.02 pH ±2 mV ±0.5°C up to 60°C / ±1°C outside
pH Calibration		automatic, 1 or 2 point, with 3 memorized buffers value
mV Calibration		factory
Temp. Calibration		factory
Temp. Compensation		automatic or 25°C fixed

## AD310-AD410

### Standard Professional Conductivity-TDS-Temperature Portable Meters

AD310 and AD410 are portable microprocessor-based instruments for measuring EC or TDS, and temperature.

The auto ranging feature of the EC and TDS readings automatically sets the instrument to the scale with the highest resolution.

Measurements are compensated for temperature effect automatically (ATC) or manually (MTC). The temperature compensation feature can also be disabled to measure actual conductivity or TDS.

The temperature coefficient is user selectable. The instruments also feature a measurement stability indicator.

Both models are supplied complete with AD76309 conductivity probe with built-in temperature sensor and 1 m cable, batteries (4 x 1.5V AA alkaline) and instruction manual.

AD310 is supplied with calibration solution in sachets (1413  $\mu\text{S}/\text{cm}$ , 20 ml), while AD410 is supplied with calibration solution in sachets (1382 ppm, 20 ml).

		AD310	AD410
Range	EC/TDS	19.99 / 199.9 / 1999 $\mu\text{S}/\text{cm}$ 19.99 / 199.9 mS/c	9.99 / 99.9 / 999 ppm 9.99 / 99.9 ppt
	Temp	-9.9 to 120.0°C	9.9 to 120.0°C
Resolution	EC/TDS	0.01 / 0.1 / 1 $\mu\text{S}/\text{cm}$ 0.01 / 0.1 mS/cm	0.01 / 0.1 / 1 ppm 0.01 / 0.1 ppt
	Temp	0.1°C	0.1°C
Accuracy (at 25°C/77°F)	EC/TDS	$\pm 1\%$ f.s.	$\pm 1\%$ f.s.
	Temp	$\pm 0.5^\circ\text{C}$	$\pm 0.5^\circ\text{C}$
EC/TDS Calibration		Offset: 0.0 $\mu\text{S}/\text{cm}$ ; Slope: 1 point with 6 memorized standards (84.0, 1413 $\mu\text{S}/\text{cm}$ ; 5.00, 12.88, 80.0, 111.8 mS/cm) or one custom value	Offset: 0.0 ppm; Slope: 1 point with 4 memorized standards (800, 1382 ppm; 6.44, 40.0 ppt) or one custom value
Temp. Compensation		automatic or manual -9.9 to 120.0°C	automatic or manual -9.9 to 120.0°C
Temperature		Selectable Coefficient from 0.00 to 6.00%/°C	Selectable Coefficient from 0.00 to 6.00%/°C
Reference Temperature		Selectable at 20.0 or 25.0°C	Selectable at 20.0 or 25.0°C



## AD11-AD12-AD14

### Professional Waterproof pH-ORP-Temperature Pocket Testers with replaceable probe



**AD11** and **AD12** are the most advanced microprocessor based Waterproof pH/Temp pocket testers in the market. These fast, stable and precise pocket testers are for users who require the greatest accuracy. Simple user-replaceable pH/Temp probe: just unscrew the plastic ring on the top of the electrode and replace it with a new one! 2 rows display LCD (reads both pH and temperature measurements) and built-in HOLD function that freezes the display for easy and accurate recording. Other features such as stability indicator, automatic calibration and automatic temperature compensation make these waterproof pocket testers a must-have in a variety of industries. The modular design allows replacing the electrode in a fast and simple way.

**AD14** is designed for simultaneous pH, ORP and Temperature measurements. The large display also has graphic symbols to guide you through the operations. Calibration is performed automatically in 1 or 2 points.

		AD11	AD12	AD14
Range	pH	-2.0 to 16.0 pH	-2.00 to 16.00 pH	-2.00 to 16.00 pH
	ORP			±1000 mV
	Temp	-5.0 to 60.0°C 23.0 to 140.0°F	-5.0 to 60.0°C 23.0 to 140.0°F	-5.0 to 60.0°C 23.0 to 140.0°F
Resolution	pH	±0.1 pH	±0.01 pH	±0.01 pH
	ORP			1 mV
	Temp	0.1°C / 0.1°F	0.1°C / 0.1°F	0.1°C / 0.1°F
Accuracy (at 25°C/77°F)	pH	±0.1 pH	±0.01 pH	±0.01 pH
	ORP			±2 mV
	Temp	±0.5°C / ±1°F	±0.5°C / ±1°F	±0.5°C / ±1°F

## AD31-AD32

### Professional Waterproof Conductivity-TDS-Temperature Pocket Testers with replaceable probe

**AD31** and **AD32** are waterproof Conductivity, TDS and temperature testers. The housing has been completely sealed against humidity. All Conductivity and TDS readings are automatically temperature compensated (ATC), and temperature values can be displayed in °C or °F units. The Conductivity/TDS conversion factor (CONV) can be selected by the user, as well as the coefficient β (BETA) for temperature compensation. The instruments can be calibrated at one point. Measurements are highly accurate with a unique stability indicator right on the LCD. The models are also provided with a low battery symbol which warns the user when the batteries need to be replaced.

The **AD32P** probe supplied with the meters, is interchangeable and can be easily replaced by the user. The encapsulated temperature sensor allows fast and accurate temperature measurement and compensation.

		AD31	AD32
Range	EC	0 to 3999 µS/cm	0.00 to 20.00 mS/cm
	TDS	0 to 2000 ppm	0.00 to 10.00 ppt
	Temp	0.0 to 60.0°C / 32.0 to 140.0°F	0.0 to 60.0°C / 32.0 to 140.0°F
Resolution	EC	1 µS/cm	0.01 mS/cm
	TDS	1 ppm	0.01 ppt
	Temp	0.1°C / 0.1°F	0.1°C / 0.1°F
Accuracy (at 25°C/77°F)	EC/TDS	±2% f.s.	±2% f.s.
	Temp	±0.5°C / ±1°F	±0.5°C / ±1°F



## AD33-AD35

### Professional Conductivity-Temperature Pocket Testers with replaceable probe

**AD33** and **AD35** are waterproof Conductivity testers, that also measure temperature. The housing has been completely sealed against humidity. All Conductivity readings are automatically temperature compensated, and temperature values can be displayed in °C or °F units. Conductivity calibration is automatic at one point, while temperature range is factory calibrated and can only be adjusted by the user.

The **AD33P** probe supplied with the meters, is interchangeable and can be easily replaced by the user. The encapsulated temperature sensor allows fast and accurate temperature measurement and compensation. To prolong battery life, these models are provided with an auto-off feature that turns them off after 5 minutes of non-use. Moreover, when batteries become too weak to ensure reliable readings the meter automatically turns off.



		AD33	AD35
Range	EC	0 to 1999 µS/cm	0 to 199.9 µS/cm
	Temp	0.0 to 60.0°C 32.0 to 140.0°F	0 to 60.0°C 32.0 to 140.0°F
Resolution	EC	1 µS/cm	0.1 µS/cm
	Temp	0.1°C / 0.1°F	0.1°C / 0.1°F
Accuracy (at 25°C/77°F)	EC/Temp	±2% f.s. ±0.5°C / ±1°F	±2% f.s. ±0.5°C / ±1°F

## AD100-AD101

### Standard Pocket pH Testers

Microprocessor based pH testers, assure to produce fast and stable readings.

It also comes with features such as automatic temperature compensation, large and easy to read LCD screen, low battery indication, automatic shut-off after 8 minutes and others.

They are also incorporated with easy push buttons for automatic calibration and splashproof keypad that prevents water infiltration.

		AD100	AD101
Range	pH	-2.0 to 16.0 pH	-2.00 to 16.00 pH
Resolution	pH	0.1 pH	0.01 pH
Accuracy	pH	±0.1 pH	±0.02 pH
Calibration		automatic at 1 or 2 points	automatic at 1 or 2 point
Temperature Compensation		automatic (0° to 50°C)	automatic (0° to 50°C)



## AD203-AD204

### Standard Pocket Conductivity Testers

Easy to use, simple maintenance and yet high accuracy Conductivity pocket testers for daily measuring purposes.

With its built-in automatic temperature compensation feature, it ensures accurate readings under any ambient conditions.

Features such as splash-proof keypad prevent water infiltration into the testers, large and easy to read display among others make the testers easy and simple to maintain but yet provide professional measurements.

If calibration is necessary, simply submerge the electrode tip into the calibration solution and adjust the easily accessible trimmer on the side of the tester.

		AD203	AD204
Range	EC	0 to 1999 $\mu\text{S}/\text{cm}$	0.00 to 19.99 $\text{mS}/\text{cm}$
Resolution	EC	1 $\mu\text{S}/\text{cm}$	0.01 $\text{mS}/\text{cm}$
Accuracy	EC	±2% f.s	±2% f.s
Temperature Compensation		automatic	automatic



## AD201-AD202

### Standard Pocket TDS Testers

These pocket testers have a large and easy to read display and for better resolution they also show the full scale readout so to obtain the actual test values.

These TDS pocket testers provide a fast and dependable way to measure the Total Dissolved Solids in your water samples.

The built-in automatic temperature compensation feature ensures accurate readings under any ambient conditions.

The splash-proof keypad prevents water infiltrations into the testers.

If calibration is necessary, simply submerge the electrode tip into the calibration solution and adjust the easily accessible trimmer on the side of the tester.

		AD201	AD202
Range	TDS	0 to 1999 ppm	0.00 to 10.00 g/l
Resolution	TDS	1 ppm	0.01 g/l
Accuracy	TDS	±2% f.s	±2% f.s
Conversion factor		0.5 ppm	0.5 ppm
Temperature compensation		automatic	automatic



## AD630

### Dissolved Oxygen & Temperature Waterproof Meter with Galvanic Probe

**AD630** is a heavy-duty portable waterproof meter for DO (Dissolved Oxygen) and temperature measurements, designed to provide laboratory results and accuracy even under harsh industrial conditions.

Main features include:

- DO readings displayed in ppm or % saturation units
- DO calibration at 1 or 2 standard points (0 and 100%), or at 1 custom point (>20%)
- Galvanic DO probe with built-in temperature sensor
- Automatic temperature compensation
- Log-on-demand
- Setup mode for setting altitude & salinity compensation factors, temperature measure unit (°C or °F), serial communication parameters, date & time, auto-off, instrument ID code
- HOLD feature to freeze stable reading on the LCD
- GLP feature to view last calibration data
- PC interface via RS232 port

Galvanic probe: Unlike polarographic probes, Galvanic DO probes do not require any conditioning time when the unit is switched on, saving time when many measurements are required.

**AD630** offers high performance at an affordable price!

AD630	
Range	0.00 to 45.00 ppm O <sub>2</sub> 0.0 to 300.0 % saturation 0.0 to 50.0°C / 32.0 to 122.0°F
Resolution	0.01 ppm / 0.1% 0.1°C / 0.1°F
Accuracy	±1.5% f.s. (DO) ±0.5°C / ±1.0°F
DO calibration	Automatic, at 1 or 2 standard points (0 and 100%) or 1 custom point (> 20%)
Temperature calibration	User offset adjustment
Temperature compensation	Automatic from 0 to 50°C
Altitude compensation	0 to 4000 m (resolution 100 m)
Salinity Compensation	0.0 to 50.0 g/l (resolution 0.1 g/l)
Log-on-demand	Up to 100 samples
PC Interface	RS232 port
Probe (included) AD8001/3	galvanic DO probe with built-in temperature sensor, DIN connector and 3 m cable
Environment	0 to 50°C (32 to 122°F) RH max. 100% non-condensing
Power Supply	4 x 1.5 V AA, alkaline battery
Battery Life	Approx. 200 hours of continuous use
Auto shutt-off	User selectable: 5 minutes or disabled
Dimensions	188 x 96 x 70 mm
Weight	460 g



### Accessories

- AD8001/3** Galvanic DO probe with built-in temperature sensor, DIN connector and 3 m cable  
**AD8001A/P** Spare membrane with O-ring (5 pcs)

### Supplied complete with

- AD8001/3** galvanic DO probe with built-in temperature sensor, spare membrane with O-ring  
**AD9072S** electrolyte solution (30 ml bottle)  
**AD9551** serial communication cable, 1.5V AA alkaline battery (4 pcs) and user manual

## ECO209

### Continuous pH Monitors

ECO209 is a continuous pH monitor suitable for constant monitoring of pH level of a given water or solution sample such as aquarium tank, ponds, hydroponics systems among others. This easy to use instrument, with simple maintenance features, automatic temperature compensation for accurate readings at any given ambient, 2 calibration points for better accuracy and an easy to read large LCD display. ECO209 is supplied with a 12V DC adapter, an epoxy body pH probe, buffer solution, a screwdriver for calibration purposes and a stainless steel temperature probe. The gel-filled pH electrode is interchangeable and has been specially designed to address the needs of growers.

ECO209	
Range	0.0 to 14.0 pH
Resolution	0.1 pH
Accuracy (at 25°C/77°F)	±0.2 pH
Calibration	manual, 2 points through trimmer
pH electrode	AD1230B
Environment	0 to 50°C, 95% RH max
Power supply	external, 12V DC
Dimensions	120 x 134 x 54 mm
Weight approx.	250 g



## ECO406-ECO407

### Continuous Conductivity & TDS Monitors



These continuous indicators are designed for easy maintenance, simple to read, accurate readings and cost effective purpose, so to meet the general requirements of all range of users. It comes with features such as automatic temperature compensation and single point manual calibration that makes these monitors even more reliable.

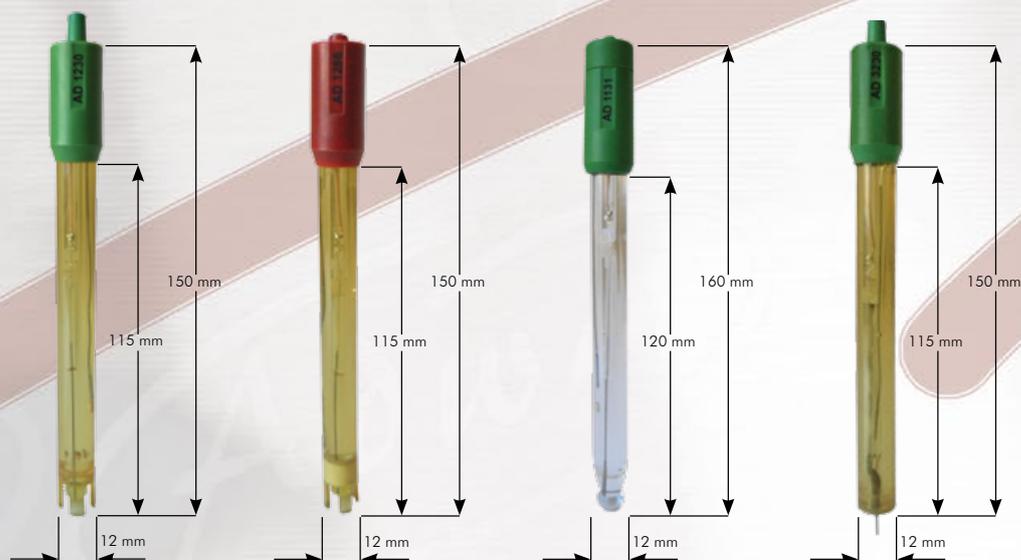
The meters are supplied with an epoxy body EC/TDS electrode for a more durable life-span, stainless steel temperature probe for automatic temperature compensation and with calibration solutions and screwdriver for calibration purposes. The ideal tool to monitor your nutrient solution continuously without having to worry about dead batteries.

	ECO406	ECO407
Range	0 to 9.99 mS/cm	0 to 1990 ppm
Resolution	0.01 mS/cm	10 ppm
Accuracy (at 25°C/77°F)	±2% f.s	±2% f.s
TDS factor	---	approx. 0.7
Calibration	manual, single point, through trimmer	manual, single point, through trimmer
Temp. compensation	automatic	automatic
Probe	AD7632	AD7634
Environment	0 to 50°C, 95% RH max	0 to 50°C, 95% RH max
Power supply	external, 12V DC adapter	external, 12V DC adapter
Dimensions	120 x 134 x 54 mm	120 x 134 x 54 mm
Weight approx.	approx. 300 g	approx. 300 g

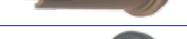
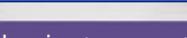


## ACCESSORIES

### Electrodes and Probes



	<b>AD1230B</b>	<b>AD1286</b>	<b>AD1131B</b>	<b>AD3230B</b>
<b>Description</b>	Combination pH electrode	pH electrode	Refillable, combination pH electrode	Gel filled, combination ORP electrode with platinum contact
<b>Reference</b>	Double, Ag/AgCl	Double Ag/AgCl	Double Ag/AgCl	Single Ag/AgCl
<b>Junction/Flow rate</b>	Ceramic, single / 15-20 $\mu$ L/H	PTFE	Ceramic, single / 15-20 $\mu$ L/H	Ceramic, single
<b>Electrolyte</b>	Gel	Polymer	KCl 3.5M	Gel
<b>Max. Pressure</b>	2 bar	3 bar	0.1 bar	2 bar
<b>Range</b>	pH: 0 to 13	pH: 0 to 13	pH: 0 to 13	ORP: +2000mV
<b>Recommended Operational Temperature</b>	0 to 70°C (32 to 158°F)	0 to 80°C (32 to 176°F)	0 to 100°C (32 to 212°F)	-5 to 70°C (23 to 158°F)
<b>Tip/Shape</b>	Spheric (dia: 7.5 mm)	Spheric (dia: 7.5 mm)	Spheric (dia: 9.5 mm)	Platinum pin
<b>Temperature Sensor</b>	No	No	No	No
<b>Body Material</b>	PEI	PEI	Glass	PEI
<b>Cable</b>	Coaxial: 1m (3.3')	Coaxial: 2m (6.6')	Coaxial: 1m (3.3')	Coaxial: 1m (3.3')
<b>Connector</b>	BNC	BNC	BNC	BNC

	<b>AD76309</b>	4 RING STAINLESS STEEL CONDUCTIVITY/TDS PROBE WITH 1 METER LONG CABLE
	<b>AD7632</b>	CONDUCTIVITY PROBE WITH 2 METERS LONG CABLE FOR ECO406
	<b>AD7634</b>	TDS PROBE WITH 2 METERS LONG CABLE AND WITHOUT CONNECTOR FOR ECO407
	<b>AD7662</b>	STAINLESS STEEL TEMPERATURE PROBE WITH 1 METER LONG CABLE. SUPPLIED WITH BENCHTOP AND PORTABLE METERS
	<b>AD8001/3</b>	GALVANIC DO PROBE WITH BUILT-IN TEMPERATURE SENSOR, DIN CONNECTOR AND 3 METERS LONG CABLE FOR AD630
	<b>AD11P</b>	REPLACEABLE pH/TEMP ELECTRODE FOR AD11 AND AD12
	<b>AD14P</b>	REPLACEABLE pH/ORP/TEMPERATURE ELECTRODE FOR AD14
	<b>AD32P</b>	REPLACEABLE EC/TDS/TEMP ELECTRODE FOR AD31 & AD32
	<b>AD33P</b>	REPLACEABLE EC/TDS/TEMP ELECTRODE FOR AD33, AD34, AD35 & AD36

## ACCESSORIES

### Other accessories

	AD8001 A/P	SPARE MEMBRANES WITH O-RING (5 PCS) FOR AD8001/3 DO GALVANIC PROBE
	AD9315	ELECTRODE HOLDER FOR BENCHTOP METERS
	AD9316	APPLICATION SOFTWARE FOR BENCHTOP METERS AND WATERPROOF PORTABLE METERS
	AD9335	220 VAC EUROPEAN ADAPTER FOR BENCHTOP METERS
	AD9336	110 VAC US ADAPTER FOR BENCHTOP METERS WITH US PLUG
	AD9337	110 VAC AUSTRALIAN ADAPTER FOR BENCHTOP METERS WITH AUSTRALIAN PLUG
	AD9338	220 VAC UK ADAPTER FOR BENCHTOP METERS WITH UK PLUG
	AD9345	HARD CARRYING CASE FOR ADWA WATERPROOF PORTABLE METERS (400X300X100)
	AD9350	HARD CARRYING CASE (SMALL) (240X180X80)
	AD9551	RS232 SERIAL COMMUNICATION CABLE

# CALIBRATION AND OTHER SOLUTIONS

Adwa's calibration solutions are made from established formulas. The pH calibration solutions are available in 230ml durable plastic bottles and are economical and convenient for laboratory use, or in 20 ml sachets for quick, accurate and convenient calibrations. All of our pH, Conductivity, TDS and ORP calibration solutions have a lot number and expiration date printed on them. Cleaning solutions and storage solutions are also available.



CODE	DESCRIPTION	CODE	DESCRIPTION
AD70000P	Electrode rinse solution, 20 ml sachet in box of 25 pcs.	AD7032	1382 ppm buffer solution in 230 ml bottle
AD70004P	pH 4.01 buffer solution, 20 ml sachet in box of 25 pcs.	AD7033	84 µS/cm calibration solution in 230 ml bottle
AD70007P	pH 7.01 buffer solution, 20 ml sachet in box of 25 pcs.	AD7034	80000 µS/cm calibration solution in 230 ml bottle
AD7000	Electrode rinse solution in 230ml bottle	AD7035	111800 µS/cm calibration solution in 230 ml bottle
AD70010P	pH 10.01 buffer solution, 20 ml sachet in box of 25 pcs.	AD7039	5000 µS/cm calibration solution in 230 ml bottle
AD70030P	12.88 mS/cm calibration solution, 20 ml sachet in box of 25 pcs.	AD7040	Zero oxygen solution, supplied in carton box with dry chemical reagent, 12 g (AD7040-1) and solvent in bottle 500 ml (AD7040-2); CERTIFICATE included
AD70031P	1413 µS/cm calibration solution, 20 ml sachet in box of 25 pcs.	AD7442	1500 ppm TDS buffer solution in 230 ml bottle
AD70032P	1382 ppm calibration solution, 20 ml sachet in box of 25 pcs.	AD70442P	1500 ppm calibration solution, 20 ml sachet in box of 25 pcs.
AD7004	pH 4.01 buffer solution in 230 ml bottle	AD7061	Electrode cleaning solution in 230 ml bottle
AD7007	pH 7.01 buffer solution in 230 ml bottle	AD7071S	Electrode refillable solution 3.5 M KCL+ AgCl, 30ml
AD7010	pH 10.01 buffer solution in 230 ml bottle	AD7082S	Electrode refillable solution 3.5 M KCL 30ml
AD7020	ORP test solution (200/275 mV) , 230 ml bottle	AD7082	Electrode refillable solution 3.5 M KCL, 4 X 30ml
AD70300	Electrode storage solution in 230 ml bottle	AD9072S	Electrolyte solution for DO galvanic probe in 30 ml bottle
AD7030	12.88 mS/cm buffer solution in 230 ml bottle	AD9072	Electrolyte solution for DO galvanic probe, 4 X 30ml
AD7031	1413 µS/cm buffer solution in 230 ml bottle		



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