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ORIGAMETER RANGE

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Menu

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OpH218 / OpH228 / OCD218 Accuracy and simplicity: pH and conductivity

www.origalys.com



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Our expertise

Specialist in electrochemical analysis and measurement devices.

Designing, manufacturing & selling of analytical instruments in Electrochemistry.



French quality and international presence





Origa/tec Our values

Caring about people

Participative management / Team-building / Trust / Solidarity / Evolution



Innovate sustainably & differently

Initiative - Eco conception - Repairability - Sustainability - Performance



Share & transmit

Experiences - Preserve our know-how - Transmit - Train









Concept of pH-metry

Understanding and measuring acidity and alkalinity

pH metering is a technique for measuring the pH of a solution, i.e. its degree of acidity or alkalinity. The concept was introduced in 1909 by the Danish scientist Søren Sørensen.

The pH (Hydrogen Potential) is a numerical scale that varies from 0 to 14 :

- A pH below 7 indicates an acidic solution (such as lemon juice or vinegar),
- A pH above 7 indicates an alkaline solution (such as bleach),
- A pH of 7 is considered neutral (like pure water).

pH=-(log)aH+

aH+ represents the activity of hydrogen ions (H+) in the solution, being a measure of their effective concentration.

How does pH measurement work?

The pH is measured using a pH meter. This device consists of an electrode that is immersed in the solution to be measured. The electrode captures the hydrogen ions (H⁻) present in the solution and generates an electrical voltage. This voltage is then converted into a pH value by the pH meter.

Why is it important to measure pH?

pH influences many chemical and biological reactions. For example, an incorrectly adjusted pH can affect food quality, plant health and even the operation of laboratory equipment. Having a well-controlled pH is therefore crucial in many industrial and research processes.



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pH scale



-	• Suc gastrique
ა	Lemon juice
М	• Vinegar
	Tomatoes
л	Coffee
ת	• Milk
٦	• Pure water
œ	Blood
٥	• Sodium bicarbonate
5	• Soap
3	• Ammoniac
5	Detergent solutions
Z	• Bleach
7	• Caustic soda









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Benchtop pH meter : OpH218

ONS



Radiometer Heritage PHM210 (same designer)

Ideal for teaching



• Fast, reliable results

1201433

- Easy to use & simple connections
- Durable & repairable
- Data transfer (Regressi, ExAo, Excel)
- 5 year warranty

Article refe	rence	AR01126CIAL			
pH range	-9 à 23 pH	Resolution in °C	±0.1		
mV range	±2000 mV	Measures	Continuous or automatic		
T°C	-10°C to 110°C	Buffers	1 to 3		
pH resolution	±0.01 pH	Choice of buffers	Automatic / Free by adjustment / Manual		
mV resolution	±0.1 mV	Criteria for agreeing to calibration	 Slope: 95 à 102% Zero-pH : 5.80 to 7.50 pH Non-blocking criteria generating a warning 		

Benchtop pH meter : OpH228





Radiometer Heritage PHM220 (same designer)

Ideal for industry



- Fast, reliable results
- Easy to use & simple connections
- Durable & repairable
- Data transfer (Regressi, ExAo, Excel)
- 5 year warranty
- · Measurement history: quality control programmable measurements custom calibration
- GLP (Good Laboratory Practice) menu: traceability of measurements

Article Refe	erence	AR02100CIAL			
pH range	-9 à 23 pH	°C resolution	±0.1		
mV range	±2000 mV	Measures	Continuous, automatic or interval		
T°C	-10°C to 110°C	Buffers	1 to 4		
pH resolution	±0.01 pH	Choice of buffers	Automatic / Free by adjustment / Manual		
mV resolution	±0.1 mV	Criteria for agreeing to calibration (editable and customizable)	Default settings: • Slope : 95 to 102% • Zero-pH : 5.80 to 7.50 pH Non-blocking criteria generating a warning		



Benchtop pH meter packs : OpH218



Testimonials pH bench meter : OpH218



We find the pH meter ergonomic, very easy to use and of high quality.

We particularly like the fact that its calibration is not limited in error range and prevent cannot measurements.



The pH meter is very easy to use and saves space.

They are ideal for students in preparatory classes as well as secondary school pupils.



Lycée Raspail Paris



Lycée Balzac Paris



The range has been enhanced with the ability to perform calibrations from 100% manual to 100% automatic depending on requirements and class levels. The device is compact, lightweight and very easy to use.



The OrigaLys OpH218 pH meter is exactly what we needed: easy to use (just the follow on-screen instructions), easy to store and takes up very little space. It's a worthy successor to the PHM210.





Lycée Michelet Vanves

Testimonies collected by



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Reference electrodes & salt-bridge



		salt-bridge	salt-bridge	salt-bridge
57		35 mm	35 mm	35 mm
57 screw-on head	120 mm	105 mm	125 mm	105 mm
Article reference	AR02324	AR01382	AR01383	AR00865
Internet article code	OGR010	AR01382	AR01383	AR00865
Туре	Double junction	AL120	AL140	-
Reference element	Ag/AgCl	-	-	-
Temperature range	0 to 60°C	-10 to 105°C	-10 to 105°C	-10 to 105°C
Lower diameter	8 mm	8 mm	8 mm	12 mm
Jonction liquide	Porous	Porous	Porous	-
Electrolytic solution	3M KCl with Saturated AgCl	-	-	-
Lapping	No	RIN14/23	RIN14/23	NS14/15
Body	Glass	Glass	Glass	PVC

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Combined & Non-Combined pH Electrodes

		(5)	4			
57	103 mm	103 mm	103 mm	103 mm	103 mm	150 mm
l ete vissable S7					↓ ♥	
Article reference	AR02336	AR02339	AR00721	AR02353	AR02348	AR02311
Article reference	AR02336 OGPH201	AR02339 OGPH202	AR00721 OGPH203	AR02353 OGPH204	AR02348 OGPH208	AR02311 OGPH207
Article reference Internet article code Type	AR02336 OGPH201 pHC2401	AR02339 OGPH202 pHC3001	AR00721 OGPH203 pHC3005	AR02353 OGPH204 pHC3011	AR02348 OGPH208	AR02311 OGPH207 XC161-9
Article reference Internet article code Type Reference element	AR02336 OGPH201 pHC2401 Ag/AgCl	AR02339 OGPH202 pHC3001 Ag/AgCl	AR00721 OGPH203 pHC3005 Ag/AgCl	AR02353 OGPH204 pHC3011 Ag/AgCl	AR02348 OGPH208 - Ag/AgCl	AR02311 OGPH207 XC161-9 Ag/AgCl
Article reference Internet article code Type Reference element Temperature range	AR02336 OGPH201 pHC2401 Ag/AgCl -5 to 80°C	AR02339 OGPH202 pHC3001 Ag/AgCl -5 to 80°C	AR00721 OGPH203 pHC3005 Ag/AgCl -5 to 80°C	AR02353 OGPH204 pHC3011 Ag/AgCl -5 to 80°C	AR02348 OGPH208 - - Ag/AgCl 0° to 100°C	AR02311 OGPH207 XC161-9 Ag/AgCl 0 to 80°C
Article reference Internet article code Type Reference element Temperature range Lower diameter	AR02336 OGPH201 pHC2401 Ag/AgCl -5 to 80°C 12 mm	AR02339 OGPH202 pHC3001 Ag/AgCl -5 to 80°C 12 mm	AR00721 OGPH203 pHC3005 Ag/AgCl -5 to 80°C 12 mm	AR02353 OGPH204 pHC3011 Ag/AgCl -5 to 80°C 12 mm	AR02348 OGPH208 - Ag/AgCl O° to 100°C 12 mm	AR02311 OGPH207 XC161-9 Ag/AgCl 0 to 80°C 12 mm
Article reference Internet article code Type Reference element Temperature range Loquid junction	AR02336 OGPH201 pHC2401 Ag/AgCl -5 to 80°C 12 mm Annular	AR02339 OGPH202 pHC3001 Ag/AgCl -5 to 80°C 12 mm Porous	AR00721 OGPH203 pHC3005 Ag/AgCl -5 to 80°C 12 mm Porous	AR02353 OGPH204 pHC3011 Ag/AgCl -5 to 80°C 12 mm Porous	AR02348 OGPH208 - Ag/AgCl 0° to 100°C 12 mm Porous	AR02311 OGPH207 XC161-9 Ag/AgCl 0 to 80°C 12 mm Porous
Article reference Internet article code Type Reference element Temperature range Lower diameter Liquid junction Electrolytic solution	AR02336 OGPH201 pHC2401 Ag/AgCI -5 to 80°C 12 mm Annular 3M KCI + saturated AgCI	AR02339 OGPH202 pHC3001 Ag/AgCl -5 to 80°C 12 mm Porous 3M KCl + saturated AgC	AR00721 OGPH203 pHC3005 Ag/AgCl -5 to 80°C 12 mm Porous I3M KCl + saturated AgCl	AR02353 OGPH204 pHC3011 Ag/AgCl -5 to 80°C 12 mm Porous 3M KCl + saturated AgCl	AR02348 OGPH208 - Ag/AgCl 0° to 100°C 12 mm Porous 3M KCl + saturated AgCl	AR02311 OGPH207 XC161-9 Ag/AgCl 0 to 80°C 12 mm Porous 3M KCl + saturated AgCl
Article reference Internet article code Type Reference element Temperature range Lower diameter Liquid junction Electrolytic solution Body	AR02336 OGPH201 pHC2401 Ag/AgCl -5 to 80°C 12 mm Annular 3M KCl + saturated AgCl Glass	AR02339 OGPH202 pHC3001 Ag/AgCl -5 to 80°C 12 mm Porous 3M KCl + saturated AgC Glass	AR00721 OGPH203 pHC3005 Ag/AgCl -5 to 80°C 12 mm Porous I3M KCl + saturated AgCl Epoxy	AR02353 OGPH204 pHC3011 Ag/AgCl -5 to 80°C 12 mm Porous 3M KCl + saturated AgCl Glass	AR02348 OGPH208 - Ag/AgCl 0° to 100°C 12 mm Porous 3M KCl + saturated AgCl Glass	AR02311 OGPH207 XC161-9 Ag/AgCl 0 to 80°C 12 mm Porous 3M KCl + saturated AgCl Glass
Article reference Internet article code Type Reference element Temperature range Lower diameter Liquid junction Electrolytic solution Body Combined	AR02336 OGPH201 pHC2401 Ag/AgCl -5 to 80°C 12 mm Annular 3M KCl + saturated AgCl Glass Yes	AR02339 OGPH202 pHC3001 Ag/AgCl -5 to 80°C 12 mm Porous 3M KCl + saturated AgC Glass Yes	AR00721 OGPH203 pHC3005 Ag/AgCl -5 to 80°C 12 mm Porous 13M KCl + saturated AgCl Epoxy Yes	AR02353 OGPH204 pHC3011 Ag/AgCl -5 to 80°C 12 mm Porous 3M KCl + saturated AgCl Glass Yes	AR02348 OGPH208 - Ag/AgCl 0° to 100°C 12 mm Porous 3M KCl + saturated AgCl Glass Yes	AR02311 OGPH207 XC161-9 Ag/AgCl O to 80°C 12 mm Porous 3M KCl + saturated AgCl Glass Yes



Selecting the electrode for your application

Applications	Reference electrodes				Combined & Non-Combined pH Electrodes												
Applications	OGR003	OGR004	OGR009	OGR005	OGR006	OGR007	OGR010	OGPH201	OGPH202	OGPH203	OGPH204	OGPH208	OGPH207	OGPH205	OGPH001	OGPH002	OGPH301
Hydrofluoric acid																	
Photographic baths																	
Sea water, swimming pools																	
Emulsions																	
Education																	
Low ionic strength																	
Gel electrode																	
Grease / cream / cosmetics																	
Hops / beer																	
Oil																	
Milk																	
Lacquer																	
Liquor																	
Length > 150 mm																	
Micro-sample																	
Non-aqueous media																	
Paper							1.7.8										
Paint																	
Penetration (cheese)							~										
Blood							1										
High solid content																	
Alkaline solutions																	
Aqueous solutions																	
TRIS buffer solutions																	
Suspensions																	
Temperature: high/variable																	
Temperature, integrated probe																	
Field use																	
Grounds												-					
High viscosity																	
Voltammetry																	
Yogurt, curdled milk																	
Yogurt, curdled milk		Recomme	nded	Nd	t recommen	ded	Po	isible		Risk of deter	ioration						

pH solutions





Article reference	AR01380	AR01380	AR01381
Internet article code	AR01380	AR01380	AR01381
Solution type	For pH electrodes 4.005 ± 0.010 at 25°C	For pH electrodes 7.005 ± 0.010 at 25°C	For pH electrodes 9.180 ± 0.010 at 25°C
Quantity	250 mL	250 mL	250 mL



Concept of conductimetry

Measuring the conductivity of solutions

Conductimetry is a method used to measure the electrical conductivity of a solution. It is used to assess the ability of a solution to conduct electricity, which is directly related to the presence of ions in the solution. The more ions a solution contains, the better it conducts electricity.

k = **G K** K = conductivity of the solution (S/cm or S/m) G = conductance (S) K = cell constant (cm - 1)

How does conductimetry work?

Conductivity is measured using a device called a conductivity meter. The conductivity meter sends an electric current through the solution and measures how easily the current flows. Conductivity is expressed in siemens per meter (S/m).

Why measure conductivity?

Conductimetry is useful in many areas because it allows you to:

- Monitor water quality: Pure water, for example, has a very low conductivity, while water containing a lot of dissolved salts (such as seawater) conducts electricity better.
- Monitor industrial processes: In the chemical, pharmaceutical or food industries, conductimetry is used to monitor the concentration of ions in solutions.
- · Analyse environmental samples: It is used to monitor the salinity of rivers or soils.

Measuring conductivity is an extremely widespread and useful method, especially in quality control applications.





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Benchtop conductivity meter OCD218

2010



RadioMeter Legacy CDM210 (same designer)

Ideal for teaching



- 5 years warranty
- Durable and repairable
- Reliable and fast results
- Easy to use & simple connections
- Data transfers (Regressi, ExAo, Excel)

Référence a	rticle	AR01	720CIAL
Conductivity	7 ranges from 0 - 1000 nS/cm to 0 - 1 S/cm	TDS (Total Dissolved Solids)	4 to 20 mg/l
Resolution	From RS = 100 pS to 100 µS	Salinité	2 to 42
T°C	-10°C to 110°C	Calibration	AutomaticManualStatic
Resistivity	1Ω.cm to 100 MΩ.cm	Selection	 Automatic: conductivity, resistivity, TDS & salinity Manual: conductivity

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Conductivity meter packs OCD218



Conductivity solutions



Article reference	AR01876	AR01880	AR01878	AR01879
Internet article code	AR01876	AR01880	AR01878	AR01879
Type of solution	1.413 mS to 25°C	12.85 mS to 25°C	111.80 mS to 25°C	1.408 mS to 25°C
Quantity	500 mL	500 mL	500 mL	500 mL

Article reference	AR02523	AR01877	AR01881
Internet article code	AR02523	AR01877	AR01881
Type of solution	1.015 mS to 25°C	12.88 mS to 25°C	111.31 mS to 25°C
Quantity	500 mL	500 mL	500 mL

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Conductivity cells & T°C probe

		1	2		
57 S7 S7 screw head	103 mm	103 mm	103 mm	0	Titanium T° probe
Article reference	AR02340	AR02315	AR02356	AR02316	AR00427CIAL
Internet article code	OGEPOXY001	OGEPOXY002	OGCGLASS001	OGCGLASS002	AR00427CIAL
Туре	CDC754-9 with 2 graphite plates (C)	CDC745-9 with 2 platinum plates (Pt)	XE100 with 2 platinum plates (Pt)	-	T201
Temperature range	0 to 100°C	0 to 100°C	0 to 100°C	0 to 100°C	-10 to 105°C
Lower diameter	12 mm	12 mm 12 mm		12 mm	7.5 mm
Liquid junction	-	ELP -	-	-	-
Connexion	S7 screw head	S7 screw head	S7 screw head	MiniDin6	Cinch
Grinded	No	No	No	No	No
Body	Ероху	Ероху	Glass	Glass	PEEK
Compatibility	CM210/230, CDM92 and CDM83	CM210/230, CDM92 and CDM83	CM210/230, CDM92 and CDM83	OCD218 and other (with adapter)	PHM2XX, CDM2XX and PHM9X
Number of poles	2	2	2	2	-
Temperature probe	No	No	No	Yes	yes
Cable	-	-	-	-	RCA/RCA included

Selecting the electrode for your application

Applications / Type	Conductivity cells & temperature probe							
Applications / Type	OGEPOXY001	OGEPOXY002	OGCGLASS001	OGCGLASS002	AR00427CIAL			
Extended measuring range			~					
(Non)aqueous media								
Strong acids and bases								
Use with a sample changer								
Integrated temperature probe								
Continuous measurements			×					
Micro-samples								
Online measurements								
Titration								
Salinity								
pure water	1 1 2 3 3 3 3 3 3 3							
Use in test tubes								
Plastic body		~						
Viscous medium								
Highly resistant environments	V							
Field use		✓						

Connectors, cables and adapter





Male banana ø4mm	AR01206 (1m) AR01207 (2m)			
BNC	AR01211 (0.25m) AR01210 (1m)	N. S. S.		
S7	A LE	AR01206 (1m) AR01207 (2m)	AR01211 (0.25m) AR01210 (1m)	AR01635 (1m)

Adapter: cord for OCD Mini-DIN6 male / DIN6 screwed female / 15 cm (AR01544)

Accessory for electrodes & cells



Article reference : AR00325

The adaptable electrode holder is an essential device designed to hold electrodes in place during electrochemical experiments.

It offers great versatility and adapts to all types of electrodes.

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The importance of calibration

Calibration of pH and conductivity meters is crucial to ensure accurate measurements, adjusting the devices to drifts due to wear or environmental conditions. It also ensures the repeatability of results, their comparability, and compliance with quality standards, particularly in regulated sectors.

Calibration for pH meter:

pH meter calibration requires buffer solutions adapted to each electrode to establish a precise relationship between the measured potential and the pH. This calibration can be done with one, two or three solutions, by choosing buffers close to the pH of the samples. There are 3 calibration modes:

- In automatic mode: Use of predefined buffers with automatic recognition (IUPAC or 4-7-10 series)
- In manual mode: Manual setting of buffers (IUPAC or 4-7-10 series), with the possibility of combining the two series.
- In free mode: Manual entry of buffer values, useful for buffer solutions outside the standard series.

The choice of mode and buffers is made in the device configuration menu. Calibration takes into account the temperature, which can be adjusted manually or measured automatically if a probe is connected.

Calibration for conductivity meter:

Calibration of a conductivity meter, required for each electrode, allows to define the relationship between the measured potential and the displayed conductivity. It can also be done in three different ways:

- In automatic mode: Use of a standard solution chosen from options (KCl or NaCl of different concentrations, seawater), with automatic calculation of the cell constant.
- In manual mode: Use of a standard solution of known conductivity and manual adjustment of the cell constant to match the conductivity.
- In known mode: Direct entry of the value of the cell constant previously determined.

The mode and the standard solution are set in the device menu. The temperature, influencing the conductivity, is taken into account automatically or adjusted manually if a temperature probe is connected.



USB communication and remote control

USB communication with a PC is provided by a DLL developed and supplied by OrigaLys. Complete documentation and an example of use with Microsoft Excel software (pH collector) are available for download at www.origalys.com. This allows storage, display and plotting in real time on a graph and measurements as a function of time.





Our services

Radiometer's Maintenance

As former Radiometer and Tacussel designers, we are qualified to provide a repair diagnosis for all your Radiometer Analytical and Tacussel instruments.

VoltaLab Range : PST006, PGZ100, PGP201, PST050, PGZ301 ou PGZ402.

Rotating Disk Electrode (RDE) : EDI101.

Speed controller for RDE: CTV101.



Personalization

We design custom equipment from specifications to final product and develop tailored methods in our software.

OrigaLys can design special equipment with you, and for you.

From the first specifications to the final product, we are by your side.

We can integrate a specific method into our software.



Webinars, training & application notes

Our Experts are at your service to improve your skills, efficiency and train you using our devices as well as various applications. Also thanks to our webinars, users could deepen their knowledge and discover more solutions





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