CHAUVIN ARNOUX

Electrodes range

Range suitable for all your requirements

Reliable

Practical

- pH electrodes
- Redox electrodes
- Reference electrodes
- Conductivity cells
- Dissolved oxygen sensors
- Temperature sensors
- Cables and accessories

Measure up

General-purpose pH electrodes

The particularly rugged and reliable standard pH combination electrodes are intended for any test, production or teaching laboratory. They are ideal for routine measurements in large-mouthed recipients (beaker, Erlenmeyer flask, etc.), offering excellent response times.

pH MICRO electrodes

Used mainly in industrial, pharmaceutical and medical research, the pH MICRO electrodes are designed for small recipients or apparatus with a small volume of the specimen (haemolysis tube, NMR tube, electrophoresis plate, column outlet, etc.).

Combination electrodes

Electrode	BRV1A BRV1H	XRV1H	XRVST1H	BRV22A BRV22H	XRV22H	LRV6H	LRV7	BRV4A BRV4H	BRV5A BRV5H
pH range	0-14 0-12	0-12		0-14 0-12	0-12		0 - 14	0-14 0-12	
Shape of glass electrode	Spherical			Pointed	Pointed reinforced	Pointed reinforced	Pointed	Micro	
Electrode body	Glass	PVC	PVC	Glass	PVC	Polypropylene	PVC	Glass	Glass
Reference system	Ag/AgCl								
Reference electrolyte	KCl 1 mol/L					Polymer		KCl 1 mol/L	
Junction	Ceramic				Fabric	None	Ceramic and open	Ceramic	
Temperature sensor	No		Yes Pt100	No	No				
Operating temperature	0 to 80°C	0 to 60°C		0 to 80°C	0 to 60°C			0 to 80°C	
Ø and length under cap (mm)	12 x 120			6.5 (tip) x 120	12 x 120	12 (tip) x 130	6 (tip) x 123	6.5 (tip) x 120	5.5 (tip) x 120
Cable length	1 m								
BNC connection	BRV1A-BNC BRV1H-BNC	XRV1H-BNC	XRVST1H BNC (pH measurement) 5-pin plug (temperature)	BRV22A-BNC BRV22H-BNC	XRV22H-BNC	LRV6H-BNC	P01715019	BRV4A-BNC BRV4H-BNC	BRV5A-BNC BRV5H-BNC
S7 connection (screw-on)	BRV1A-S7 BRV1H-S7	XRV1H-S7		BRV22A-S7 BRV22H-S7	–	–	–	BRV4A-S7 BRV4H-S7-130 BRV4H-S7	BRV5A-S7 BRV5H-S7
DIN connection	BRV1H-DIN	XRV1H-DIN		–	–	–	–	–	–
Watertight 8-pin DIN connection	–	–		–	–	–	P01715020	–	–
TV connection	BRV1H-TV	XRV1H-TV		–	XRV22H-TV	–	–	–	–
Recommended applications	General use	General use Protected electrodes		Penetration of foodstuffs Fruit, cream, cheese, dough		Cheese and semi-solid products		Min. volume 0.5 mL in haemolysis tube	Mini volume

pH combination electrodes

Separate electrodes

Measuring electrodes | **Reference electrodes**

Electrode	BRV45H	DRV2A DRV2H	BV41A BV41H	XV41	BR41	BR42	XR41	XR42
pH range	0-12	0-14 0-12		0-12	0-14			
Shape of glass electrode	Spherical				–			
Electrode body	Glass	PVC and Plexiglas	Glass	PVC	Glass		PVC	
Reference system	Ag/AgCl		–		Ag/AgCl	Calomel	Ag/AgCl	Calomel
Reference electrolyte	Acetic acid	KCl 1 mol/L	–		KCl 1 mol/L	KCl 3 mol/L	KCl 1 mol/L	KCl 3 mol/L
Junction	Ceramic	Mechanical bridge	–		Ceramic			
Temperature sensor	No							
Operating temperature	0 to 80°C	0 to 60°C	0 to 80°C	0 to 60°C	0 to 80°C		0 to 60°C	
Ø and length under cap (mm)	12 x 120	25 x 95	12 x 110	12 x 120	12 x 115	12 x 115	8 (tip) x 110	
Cable length	1 m							
BNC connection	BRV45H-BNC	DRV2A DRV2H	BV41A-BNC BV41H-BNC	XV41-BNC	–	–	–	–
S7 connection (screw-on)	BRV45H-S7	–	BV41A-S7 BV41H-S7	XV41-S7	BR41-S7	BR42-S7	XR41-S7	XR42-S7
DIN connection	–	–	–	–	–	–	–	–
TV connection	–	–	–	–	–	–	–	–
2 mm banana connection	–	–	–	–	BR41-BA2	BR42-BA2	XR41-BA2	XR42-BA2
4 mm banana connection	–	–	–	–	BR41-BA4	BR42-BA4	XR41-BA4	XR42-BA4
Recommended applications	Non-aqueous media	Removable drainage bridge for clogging products (paint, emulsion, cream)	General use For use with a reference electrode BR41, BR42 or XR41, XR42		General use For use with a BV41A, BV41H or XV41H measuring electrode			

References

Measurement of redox potential

Redox potential is a measurement in millivolts (mV) for qualifying an aqueous solution and classify it as oxidizing or reducing. This measurement can be performed with a pH-meter measuring the mV and a metal electrode dedicated to redox potential measurements. A redox potential sensor comprises a reference electrode made up of a silver wire and a measuring electrode made up of a platinum or gold wire. The measured potential value E depends on the ion concentration, the pressure of the gases present and, if relevant, the pH when H+ ions are involved in a pair.

Redox combination electrodes

Simple Redox electrodes

Measuring electrodes | **Reference electrodes**

Electrode	BRPT1	XRPT1	BPT1	XPT1	XPT2	BR41	BR42	XR41	XR42
Range	+/- 2,000 mV								
Electrode body	Glass	PVC	Glass	PVC	PVC	Glass	Glass	PVC	PVC
Metal	Platinum wire				Platinum rod	–			
Reference system	Ag/AgCl		–			Ag/AgCl	Calomel	Ag/AgCl	Calomel
Reference electrolyte	KCl 1 mol/L		–			KCl 1 mol/L	KCl 3 mol/L	KCl 1 mol/L	KCl 3 mol/L
Junction	Ceramic		–			Ceramic			
Temperature sensor	No								
Operating temperature	0 to 80°C	0 to 60°C	0 to 80°C	0 to 60°C		0 to 80°C		0 to 60°C	
Ø and length under cap (mm)	12 x 115	12 x 120	8 x 115	12 x 120	12 x 120	12 x 115	12 x 115	8 (tip) x 110	
Cable length	1 m								
BNC connection	BRPT1-BNC	XRPT1-BNC	BPT1-BNC	XPT1-BNC	XPT2-BNC	–	–	–	–
S7 connection (screw-on)	BRPT1-S7	XRPT1-S7	BPT1-S7	XPT1-S7	XPT2-S7	BR41-S7	BR42-S7	XR41-S7	XR42-S7
DIN connection	–	XRPT1-DIN	–	–	–	–	–	–	–
TV connection	–	–	–	–	–	–	–	–	–
2 mm banana connection	–	–	–	–	–	BR41-BA2	BR42-BA2	XR41-BA2	XR42-BA2
4 mm banana connection	–	–	–	XPT1-BA4	XPT2-BA4	BR41-BA4	BR42-BA4	XR41-BA4	XR42-BA4
Recommended applications	General use	General use Protected electrode	General use For use with a reference electrode BR41, BR42, XR41 or XR42			General use For use with a measuring electrode BPT1, XPT1, XPT2			

Electrodes for argentometry

Combination electrode

Measuring electrodes | **Reference electrodes**

Electrode	BRAG1	BAG1	XAG1	BR43	XR43	BR44
Range	+/- 2,000 mV					
Electrode body	Glass		PVC	Glass	PVC	Glass
Metal	Silver rod			–		
Reference system	Mercurous sulphate	–		Mercurous sulphate	Mercurous sulphate	Ag/AgCl
Reference electrolyte	Saturated K_2SO_4	–		Saturated K_2SO_4	Saturated K_2SO_4	KCl 1 mol/L KNO_3 1 mol/L
Junction	Ceramic	–		Ceramic		
Temperature sensor	No					
Operating temperature	0 to 80°C		0 to 60°C	0 to 80°C	0 to 60°C	0 to 80°C
Ø and length under cap (mm)	12 x 125		12 x 120	12 x 115	8 (tip) x 110	12 x 120
Cable length	1 m					
BNC connection	BRAG1-BNC	BAG1-BNC	XAG1-BNC	–	–	–
S7 connection (screw-on)	BRAG1-S7	BAG1-S7	XAG1-S7	BR43-S7	XR43-S7	BR44-S7
DIN connection	–	–	–	–	–	–
TV connection	–	–	–	–	–	–
2 mm banana connection	–	–	–	BR43-BA2	XR43-BA2	BR44-BA2
4 mm banana connection	–	–	XAG1-BA4	BR43-BA4	XR43-BA4	BR44-BA4
Recommended applications	For argentometry measurements	For argentometry measurements, to be combined with reference electrode		Reference electrodes for argentometry		Double junction for clogging agents

References

Conductivity cells & temperature sensors

Electrical conductivity is the capability of a solution, metal or gas to allow an electric current to flow through it. In a solution, it is the anions (- charge) and cations (+ charge) which transport the current, whereas in a metal, it is the electrons. Conductivity is measured by applying an alternating current to a measuring cell. This cell is composed of a glass body supporting two to four platinum plates (also called poles) immersed in a solution. Like pH, conductivity measurements depend significantly on the temperature. When the temperature of a sample rises, its viscosity diminishes, leading to increased mobility of the ions present, thus increasing the conductivity. To measure conductivity correctly, you need to use a separate temperature sensor or a conductivity cell with a built-in temperature sensor.

	Conductivity cell with built-in temperature sensor	Conductivity cells		Temperature sensors		
Electrode	XCPST4	BCP4	XCP4	BT1	BT5	**BT6**
Range	0.1 µs to 200 mS			-50°C to +200°C	0°C to +90°C	-10°C to +110°C
Electrode body	PVC	Glass	PVC	Glass	Polypropylene	Stainless steel
Type of cell	2 platinum poles			–		
Cell constant (cm^{-1})	1			–		
Temperature sensor	Yes Pt100	No		Yes Pt100		Yes Pt1000
Operating temperature	0 to 60°C	0 to 80°C	0 to 60°C	-50°C to +200°C	0 to 90°C	-10°C to +110°C
Ø and length under cap (mm)	12 x 115	11 (tip) x 100	12 x 115	8 x 125	6 (tip) x 116	5 x 97
Cable length	1 m					
5-pole connection	XCPST4	–	–	–	–	–
BNC connection	–	BCP4-BNC	XCP4-BNC	–	–	–
S7 connection (screw-on)	–	BCP4-S7	XCP4-S7	–	–	–
2 mm banana connection	–	–	XCP4-BA2	–	–	–
4 mm banana connection	–	–	XCP4-BA4	–	–	–
Other types of connection	–	–	XCP4-JEN	BT1-JACK	BT5- JACK	P01710070 (JACK)
Other types of connection	–	–	XCP4-RAD	BT1-DIN	BT5-DIN	–
Recommended applications	General use					

References

Dissolved oxygen measurement

These rugged PVC dissolved oxygen probes are based on the principle of the Clark probe and can be used in a temperature range from 0° to 60°C. The oxygen-permeable membrane is mounted on a washer (BO23 and BOT2). The assembly, maintained by the removable protective end-piece, is very easy to change. A temperature sensor is associated with the dissolved oxygen probe (BOT2 and BOT4) to enable automatic temperature correction.

Dissolved oxygen probes

Electrode	BO23	BOT2
Measurement range	0 to 0.20mg/L	
Accuracy	0.02mg/L at 20°C	
Electrode body	PVC	
Type of probe	Clark probe	
Temperature sensor	No	Yes Thermistor
Operating temperature	15 to 30°C	
Ø and length under cap (mm)	23 (tip) x 105	25 (tip) x 135
Cable length	1 m	
5-pole DIN reference	BO23	BOT2
Recommended applications	General use	

A vast choice of connection technologies

 BNC type *Ref-***BNC**	 2 mm banana type *Ref-***BA2**
 S7 screw-in type *Ref-***S7**	 4 mm banana type *Ref-***BA4**
 DIN type *Ref-***DIN**	 Jack type *Ref-***JACK**
 TV type *Ref-***TV**	 5-pole DIN type

Other connection technologies and mechanical accessories: please contact us

• PVC electrode extension: HEALLPVC • Support for 3 electrodes: PELECT

Standard reference solutions

MANUMESURE, a CHAUVIN ARNOUX Group company, proposes a full range of calibration solutions for the measurement of pH, oxidation-reduction potential and conductivity. With the aim of meeting your requirements more closely, the range includes certified reference standards traceable to the SI units which follow the NIST (US National Institute of Standards and Technology) and DIN19266 specifications. Manumesure also proposes three pH buffers with a use-by date, uncertainty and traceability to the SI system acknowledged by COFRAC. The property value is directly traceable to the primary pH reference standards produced by the French national calibration laboratory (LNE).

NIST pH buffers (125 ml flask)	
pH 1.68 NIST buffer	**P01700105**
pH 4.01 NIST buffer	**P01700106**
pH 7.00 NIST buffer	**P01700107**
pH 9.18 NIST buffer	**P01700108**
pH 10.01 NIST buffer	**P01700109**
COFRAC-certified pH buffers (25 ml flask)	
COFRAC-cert. pH 4.005 buffers (x10)	**P01700101**
COFRAC-cert. pH 6.865 buffers (x10)	**P01700102**
COFRAC-cert. pH 9.180 buffers (x10)	**P01700103**
Set of COFRAC-cert. 3x5 pH 4, 7 and 9	**P01700104**

Other solutions: Please contact us

Concentrated pH buffers (125 ml flask)	
Concentrated pH 4 buffer	**P01700111**
Concentrated pH 7 buffer	**P01700112**
Concentrated pH 9 buffer	**P01700113**
Redox buffers (125 ml flask)	
146 mV Michaelis solution	**P01700110**
220 mV Redox buffer	**P01700114**
468 mV Redox buffer	**P01700115**
Conductivity standards (flacon 125 ml)	
147 µS/cm conductivity standard	**P01700117**
1408 µS/cm conductivity standard	**P01700118**
12.85 mS/cm conductivity standard	**P01700119**
KCl 1 mol/L conductivity standard	**P01700116**

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