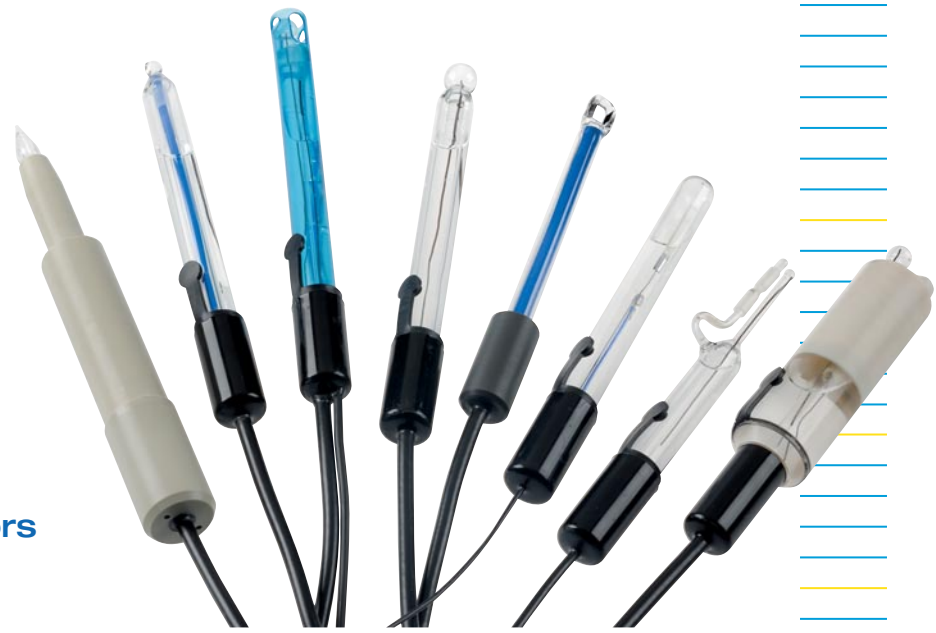
CHAUVIN® ARNOUX
CHAUVIN ARNOUX GROUP

Electrodes range

Range suitable for all your needs

Reliable

Practical



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

Eco Conception

Measure up

General-purpose pH electrodes

These standard pH combination electrodes, which are particularly rugged and reliable, are designed for all test, manufacturing and teaching laboratories. They are ideal for routine measurements in wide-mouthed recipients (beakers, Erlenmeyer flasks, etc.) and offer excellent response times.

MICRO pH electrodes

Used mainly in industrial, pharmaceutical and medical research, these MICRO pH electrodes are designed for small recipients or devices with small sample sizes (haemolysis tubes, NMR tubes, electrophoresis plates, column outlets, etc.).

Combination electrodes

Electrode	BRV1A BRV1H	XRV1H	XRVST1H	BRV22A BRV22H	XRV22H	LRV22H	LRV6H	BRV4A BRV4H	BRV5A BRV5H
pH range	0-14 0-12	0-12		0-14 0-12	0-12			0-14 0-12	
Shape of glass electrode	Spherical			Pointed	Reinforced pointed	Reinforced pointed for perforation	Reinforced pointed	Micro	
Electrode body	Glass	PVC	PVC	Glass	PVC	Glass	Polypropylene	Glass	Glass
Reference system	Ag/AgCl								
Reference electrolyte	KCl 1 mol/L						Polymer	KCl 1 mol/L	
Junction	Ceramic				Fabric	Ceramic	None	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	20 x 95	12 (tip) x 130	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	LRV22H-BNC	LRV6H-BNC	BRV4A-BNC BRV4H-BNC	BRV5A-BNC BRV5H-BNC
S7 connection (screw-on)	BRV1A-S7 BRV1H-S7	XRV1H-S7		BRV22A-S7 BRV22H-S7	XRV22H-S7	-	-	BRV4A-S7 BRV4H-S7-130 BRV4H-S7	BRV5A-S7 BRV5H-S7
DIN connection	BRV1H-DIN	XRV1H-DIN		-	-	-	-	-	-
TV connection	BRV1H-TV	XRV1H-TV		-	XRV22H-TV	-	-	-	-
Recommended applications	General use	General use Protected electrode		Penetration in foodstuffs Fruit, cream, meat, cheese, dough		Blade system with reinforced tip for meat	Reinforced tip for cheese	Min. volume 0.5 mL in haemolysis tube	Mini volume

References

pH combination electrodes

Separate electrodes

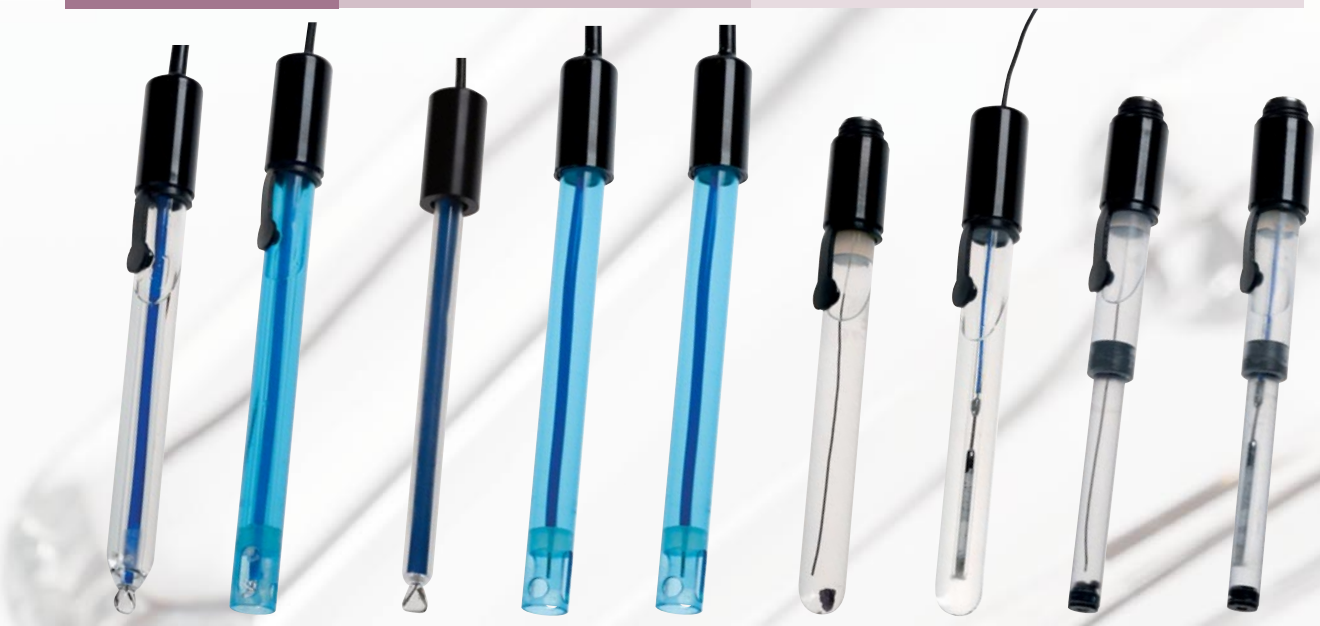
Measuring electrodes

Reference electrodes

Electrode	BRV45H	BRV15H	BRSb1	DRV2A DRV2H	BV41A BV41H	XV41	BR41	BR42	XR41	XR42
pH range	0-12		2-11	0-14 0-12		0-12	0-14			
Shape of glass electrode	Spherical	Surface	–	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			Acetic acid	–		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	12 x 95	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									
References: BNC connection	BRV45H-BNC	BRV15H-BNC	BRSB1-BNC	DRV2A DRV2H	BV41A-BNC BV41H-BNC	XV41-BNC	-	-	-	-
References: S7 connection (screw-on)	BRV45H-S7	BRV15H-S7	BRSB1-S7	-	BV41A-S7 BV41H-S7	XV41-S7	BR41-S7	BR42-S7	XR41-S7	XR42-S7
References: DIN connection	-	-	-	-	-	-	-	-	-	-
References: TV connection	-	-	-	-	-	-	-	-	-	-
References: 2 mm banana connection	–	–	–	–	–	–	BR41-BA2	BR42-BA2	XR41-BA2	XR42-BA2
References: 4 mm banana connection	–	–	–	–	–	–	BR41-BA4	BR42-BA4	XR41-BA4	XR42-BA4
Recommended applications	Non-aqueous environment	By contact on surface	Measurement in presence of F ions	Removable drainage bridge for clogging products (paint, emulsion, cream)	General use For use with a reference electrode such as the BR41, BR42, XR41 or XR42		General use For use with a measuring electrode such as the BV41A, BV41H or XV41H			

Measurement of redox potential

Redox potential is a measurement in millivolts (mV) used to qualify an aqueous solution as oxidizing or reducing.
This measurement can be performed using a pH-meter measuring mV and a metallic electrode designed for redox potential measurements. A redox potential sensor comprises a reference electrode composed of silver wire and a measuring electrode composed of a platinum or gold element. The value of the potential measured, E, depends on the ion concentration and the pressure of the gases present, as well as the pH when the H^+ ions are involved in a couple.



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 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-in)	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 such as the BR41, BR42, XR41 or XR42			General use For use with a reference electrode such as the BPT1, XPT1 or XPT2			

References

Combination electrode	Electrodes for argentometry	
	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-in)	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.

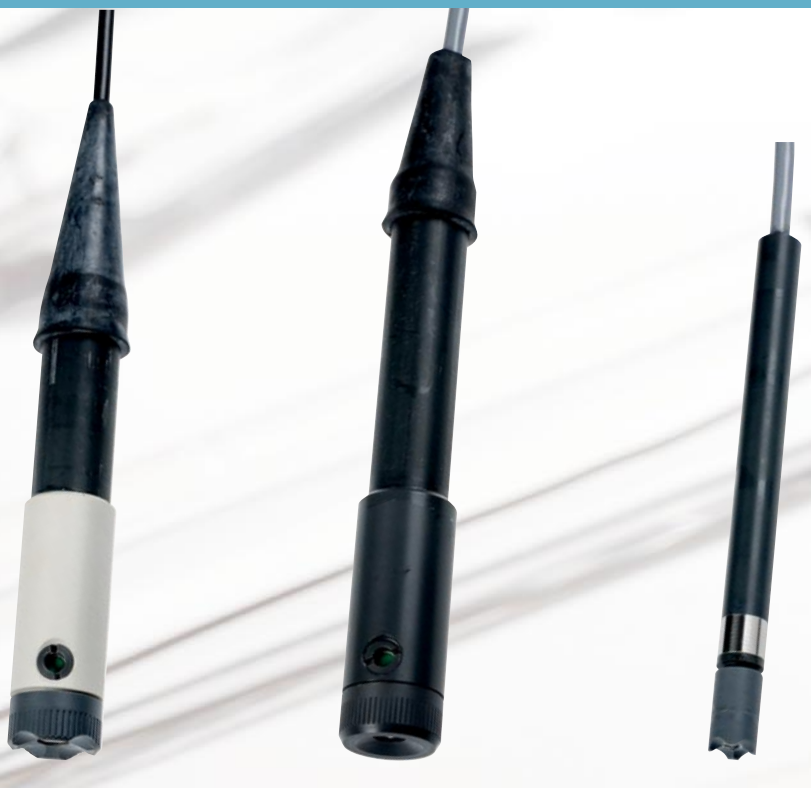
	Conductivity cell with temperature sensor	Conductivity cells		Temperature sensors	
Electrode	XCPST4	BCP4	XCP4	BT1	BT5
Range	0.1 µs to 200 mS			-50°C to +200°C	0°C to +90°C
Electrode body	PVC	Glass	PVC	Glass	Polypropylene
Type of cell	2 platinum poles			–	
Cell constant (cm^{-1})	1			–	
Temperature sensor	Yes Pt100	No		Pt100	
Operating temperature	0 to 60°C	0 to 80°C	0 to 60°C	-50°C to +200°C	0 to 90°C
Ø and length under cap (mm)	12 x 115	11 (tip) x 100	12 x 115	8 x 125	6 (tip) x 116
Cable length	1 m				
5-pole connection	XCPST4	-	-	-	-
BNC connection	-	BCP4-BNC	XCP4-BNC	-	-
S7 connection (screw-in)	-	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
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



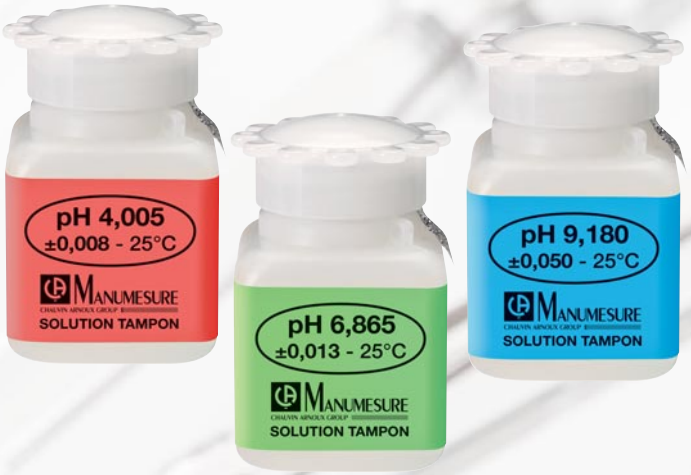
Electrode	BO23	BOT2	BOT4
Range	0 to 20mg/L		
Accuracy	0.02mg/L at 20°C		
Electrode body	PVC		
Type of sensor	Clark probe		
Temperature sensor	No	Yes Thermistor	
Operating temperature	15 to 30°C		
Ø and length under cap (mm)	23 (tip) x 105	25 (tip) x 135	12 x 120
Cable length	1 m		
Range	BO23	BOT2	BOT4
Recommended applications	General use		

Extensive 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

Please contact us for other connection technologies and mechanical accessories

Buffer solutions



MANUMESURE, a CHAUVIN ARNOUX Group company, proposes a range of calibration solutions with pH values of 4.005 ± 0.008, 6.865 ± 0.013 and 9.180 ± 0.050 which are traceable to the international reference standards. The pH buffer certified reference materials are produced in compliance with the NIST/IUPAC recommendations and the DIN 19266 standard.
The property value is directly traceable to the primary pH reference standards produced by the French national calibration laboratory (LNE). Accreditation as a producer of reference materials ensures that you use the only pH buffers whose use-by date, uncertainty and traceability to the S.I. system are acknowledged by the COFRAC.

cofrac
MATERIAUX DE REFERENCE
Accréditation N° 1-5650 Portée disponible sur www.cofrac.fr

References to order	
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 3x5 COFRAC-cert. pH 4, 7 and 9 buffers	**P01700104**

For standard use, concentrated pH buffer solutions are proposed with 3 values: pH 4, pH 7 and pH 9.
They are conditioned in 125 mL flasks.

References to order	
Concentrated pH 4 buffer	**P01700111**
Concentrated pH 7 buffer	**P01700112**
Concentrated pH 9 buffer	**P01700113**
Other solutions	**Please contact us**

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