

Modular ION_Mini 4.6

TECHNICAL SPECIFICATIONS

Electrodes specifications.....	2
Electrode characteristics.....	3
Order code.....	5

Electrodes specifications

MODULAR ELECTRODE / Mini ION 4.6 / Modular RE

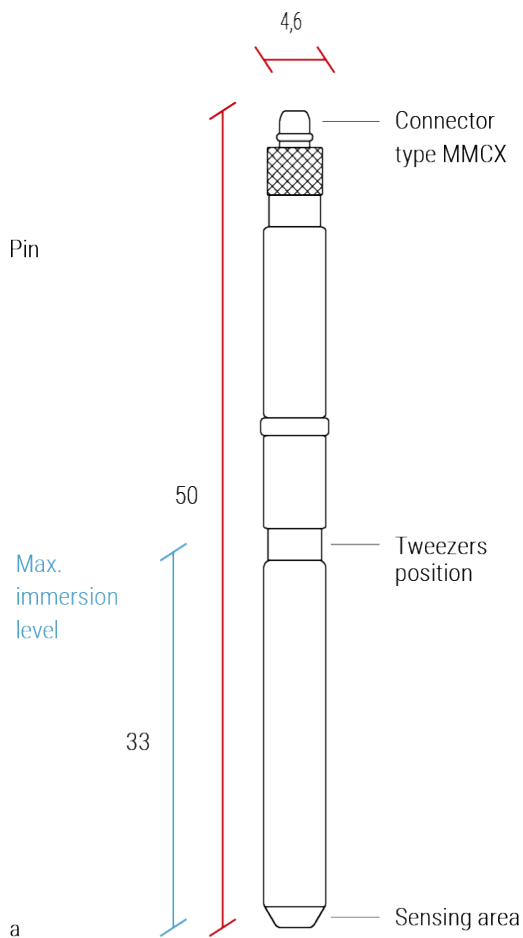
Body material: PVC

Diameter 4,6 mm

Length 50 mm

Spare part of electrode's head:

- Multi iON Probe, ref B25YX
- Single ION Probe, ref SXYZ



Electrode characteristics

ELECTRODE	Slope mV/ decade	Linear Range	Response time	pH range	Accuracy *	Repeatability **	Main interferences Selectivity coefficient
AMMONIUM	54±5 mV	5x10 ⁻⁶ ...0,5 M 0.09...9.000 mg/l	< 60"	4...8.5	±4%	±10%	K(NH ₄ ⁺ , K ⁺) = 10 ^{-1.0} , K(NH ₄ ⁺ + Ca ²⁺) = 10 ^{-4.0} K(NH ₄ ⁺ + Na ⁺) = 10 ^{-2.9} , K(NH ₄ ⁺ , Mg ²⁺) = 10 ^{-3.2}
BROMIDE	-54±5 mV	0.4...8.000 mg/l	< 60"	1...12	±4%	±10%	Trace of Ag, S o Hg. To avoid I- and CN ⁻ At less degree OH ⁻ (10 ^{-4.5}) and Cl ⁻ (10 ^{-2.7})
CALCIUM	24±5 mV	1x10 ⁻⁵ ...0,1 M 0.4...4.000 mg/l	< 60"	3.5...8	±8%	±20%	KCa ²⁺ H ⁺ = 10 ^{-2.9} / KCa ²⁺ Na ⁺ = 10 ^{-3.7} KCa ²⁺ K ⁺ = 10 ^{-3.6} / KCa ²⁺ NH ₄ ⁺ = 10 ^{-3.0}
CHLORIDE	-54±5 mV	0.5 mg/l 1,3...35.000 mg/l	< 60"	2...12	±4%	±10%	Iodide ions irreversibly damage the membrane. Will not give reliable readings if more than a trace of Ag or S ions are present in the solution.
COPPER	+25±5 mV	0.06...3.000 mg/l	<30">10ppm <5' <10ppm	2...7	±8%	±20%	Unreliable results in presence of Ag, S or H. Br and Cl ions will interfere if their concentration is comparable to copper ions

FLUORIDE	-54±5 mV	1x10 ⁻⁶ – 1 M 0.02 – 19.000 mg/l	< 60"	4...8	±4%	±10%	Only hydroxide ion (OH ⁻) affects to the fluoride measurement. To eliminate this interference, pH must be kept below 8. Due to the high complexation of F ions in real samples, a special TISAB must be used-
IODIDE	-54±5 mV	0.1...10.000 mg/l	< 60"	2...12	±4%	±10%	Trace of Ag, S o Hg. To avoid CN ⁻ In less significance Br 10 ^{-3.4} y Cl ⁻ 10 ⁻⁶
LITHIUM	54±5 mV	1.4x10 ⁻⁵ ...0,7 M 0.1...5.000 mg/l	< 60"	2...12	±4%	±10%	K (Li ⁺ , Na ⁺)=10 ^{-2.3} / K (Li ⁺ , K ⁺)=10 ^{-2.4} K (Li ⁺ , H ⁺)= 10 ^{-3.0}
MAGNESIUM	24±5 mV	1x10 ⁻⁴ ...0,1 M 2.4...2.400 mg/l	< 120"	3...8.5	±8%	±20%	K (Mg ²⁺ , K ⁺)=10 ^{-3.6} ; K (Mg ²⁺ , Ca ²⁺)= 10 ^{-1.0}
NITRATE	-54±5 mV	1x10 ⁻⁵ ...0,5 M 0.6...31.000 mg/l	< 60"	2...11	±4%	±10%	K(NO ₃ ⁻ , Br ⁻)= 10 ^{-1.5} , K (NO ₃ ⁻ , NO ₂ ⁻)= 10 ^{-1.7} K (NO ₃ ⁻ , OH ⁻)= 10 ^{-1.8} , K(NO ₃ ⁻ , CH ₃ COO ⁻)= 10 ^{-2.2}
NITRITE	-53.6 ±5 mV	0.5...1.000 mg/l	< 120"	4...8	±4%	±10%	K(NO ₂ ⁻ , SCN ⁻)= 10 ^{-0.2} , K(NO ₂ ⁻ , ClO ₄ ⁻)= 10 ^{-2.4} K(NO ₂ ⁻ , I ⁻)= 10 ^{-2.2} , K(NO ₂ ⁻ , Br ⁻)= 10 ^{-3.3}

PERCHLORATE	-54±5 mV	0.1...10.000 mg/l	< 60"	1...11	±4%	±10%	K (ClO ⁴⁻ , SCN ⁻)= 10 ^{-1.7} , K (ClO ⁴⁻ , I ⁻)= 10 ^{-1.7} K (ClO ⁴⁻ , NO ³⁻)= 10 ^{-1.7}
POTASSIUM	54±5 mV	0.3...39000 mg/l	< 60"	1...9	±4%	±10%	K (K ⁺ , NH ₄ ⁺)=10 ^{-2.1} ; K (K ⁺ , Li ⁺)=10 ^{-4.3} K (K ⁺ , Na ⁺)=10 ^{-4.6} K (K ⁺ , Ca ²⁺)= 10 ^{-3.9}
SODIUM	54±5 mV	2.3...23.000 mg/l	< 60"	1...9	±4%	±10%	K (Na ⁺ , Li ⁺)= 10 ^{-3.2} , K(Na ⁺ , K ⁺)= 10 ^{-2.5} K(Na ⁺ , Ca ²⁺)= 10 ^{-4.0}
SILVER	54±7 mV	0.1...10.000 mg/l	< 60"	1...9	±4%	±10%	Can not work on presence of S ²⁻ o Hg ²⁺

Order code

ION	Parameter	Order code
Ca2+)	Calcium	MD040
(Cl-)	Chloride	MD035
(Cu2+)	Copper	MD063
(F-)	Fluoride	MD019
(K+)	Potassium	MD039
(Li+)	Lithium	MD007
(Mg2+)	Magnesium	MD024
(Na+)	Sodium	MD023
(NH4+)	Ammonium	MD018
(NO2-)	Nitrite	MD046
(NO3-)	Nitrate	MD062
pH	Hydrogen	MD001
REF	Reference	MRX11
(ClO4-)	Perchlorate	MD099
(Ag+)	Silver	M107
(Br-)	Bromide	M080
(I-)	Iodide	M127