

## Ion-selective electrodes



Electrode system:  
 - two-electrode - measuring ion-selective electrode + auxiliary electrode;  
 - combined - measuring and auxiliary electrodes are combined constructively in one housing

Materials of electrode bodies:  
 - glass (model 1502);  
 - epoxy resin (model 1503).

### BASIC TECHNICAL SPECIFICATION AND PARAMETERS

Electrode	Type	Range		Slope, mV/dec under 25°C	pH Range	Temp range, °C		Resp. time, sec	hampering ions (95%, in 1x10 <sup>-2</sup> M)
		mole	ppm			long	short		
Ammonia (NH <sub>3</sub> )	NH31501	1,0-5x10 <sup>-7</sup>	17,000-0,01	56±3	>11	0-50	-	30	Volatile amides
Ammonium (NH <sub>4</sub> <sup>+</sup> )	NH41501/NH41502	1,0-5x10 <sup>-6</sup>	18,00-0,1	56±2	4-10	0-50	-	30	K <sup>+</sup>
Bromide (Br <sup>-</sup> )	BR01501/BR01502	1,0-5x10 <sup>-7</sup>	79,900-0,40	57±2	2-14	0-80	0-100	20	I <sup>-</sup> , CN <sup>-</sup> , S <sub>2</sub> <sup>-</sup> , Cl <sup>-</sup> , NH <sub>3</sub>
Cadmium (Cd <sup>2+</sup> )	CD21501/CD21502	1x10 <sup>-1</sup> -1x10 <sup>-7</sup>	11,200-0,01	27±2	2-12	0-80	0-100	20	Ag <sup>+</sup> , Hg <sub>2</sub> <sup>+</sup> , Cu <sub>2</sub> <sup>+</sup> , Pb <sub>2</sub> <sup>+</sup> , Fe <sub>2</sub> <sup>+</sup>
Calcium (Ca <sup>2+</sup> )	CAL1501/CAL1502	1,0-5x10 <sup>-6</sup>	40,000-0,2	27±2	3-10	0-50	-	30	Pb <sub>2</sub> <sup>+</sup> , Hg <sub>2</sub> <sup>+</sup> , Cu <sub>2</sub> <sup>+</sup> , Ni <sub>2</sub> <sup>+</sup>
Carbon dioxide CO <sub>2</sub> Carbonate CO <sub>3</sub> <sup>2-</sup>	CO21501	1x10 <sup>-2</sup> -2x10 <sup>-4</sup>	440-4,4	56±3	4,8-5,2	0-50	-	30	Volatile acids
Chloride (Cl <sup>-</sup> )	CL01501/CL01502	1,0-5x10 <sup>-6</sup>	35,500-1,8	56±2	2-12	0-80	-	20	S <sub>2</sub> <sup>-</sup> , I <sup>-</sup> , Br <sup>-</sup> , Cl <sup>-</sup>
Copper (Cu <sup>2+</sup> )	CU01501/CU01502	1x10 <sup>-1</sup> -1x10 <sup>-8</sup>	6,350-6,4x10 <sup>-4</sup>	27±2	0-12	0-80	0-100	20	Ag <sup>+</sup> , Hg <sub>2</sub> <sup>+</sup> , Cl <sup>-</sup> , Br <sup>-</sup> , Fe <sub>2</sub> <sup>+</sup>
Cyanide (CN <sup>-</sup> )	CN01501/CN01502	1x10 <sup>-2</sup> -5x10 <sup>-6</sup>	260-0,13	57±2	11-13	0-80	0-100	20	S <sub>2</sub> <sup>-</sup> , I <sup>-</sup> , Br <sup>-</sup> , Cl <sup>-</sup>
Fluoride (F <sup>-</sup> )	F001501/F001502	saturated-1x10 <sup>-6</sup>	saturated-0; 0,2	57±2	5-8	0-80	0-100	20	OH <sup>-</sup>
Fluoroborate (BF <sub>4</sub> <sup>-</sup> )	BF45101 BF41502	1,0-7x10 <sup>-6</sup>	10,800-0,1 (kak B)	57±2 56±2	2,5-11	0-50		30	ClO <sub>4</sub> <sup>-</sup> , I <sup>-</sup> , CN <sup>-</sup>
Iodide (I <sup>-</sup> )	I001501/I001502	1,0-5x10 <sup>-8</sup>	127,000-6x10 <sup>-3</sup>	57±2	0-14	0-80	0-100	20	S <sub>2</sub> <sup>-</sup> , CN <sup>-</sup> , NH <sub>3</sub> , S <sub>2</sub> O <sub>3</sub> <sup>2-</sup> , Cl <sup>-</sup> , Br <sup>-</sup>
Lead (Pb <sup>2+</sup> )	PB21501/PB21502	1x10 <sup>-1</sup> -1x10 <sup>-6</sup>	20,700-0,2	25±2	3-8	0-80	0-100	20	Ag <sup>+</sup> , Hg <sub>2</sub> <sup>+</sup> , Cd <sub>2</sub> <sup>+</sup> , Fe <sub>2</sub> <sup>+</sup>
Lithium (Li <sup>+</sup> )	LIT1501/LIT1502	1,0-1x10 <sup>-5</sup>	6,900-0,7	56±2	5-10	0-50	-	30	Na <sup>+</sup> , K <sup>+</sup> , Ca <sub>2</sub> <sup>+</sup>
Nitrate (NO <sub>3</sub> <sup>-</sup> )	NO31501/NO31502	1,0-7x10 <sup>-6</sup>	62,000-0,5	57±2	2,5-11	0-50	-	30	ClO <sub>4</sub> <sup>-</sup> , I <sup>-</sup> , CN <sup>-</sup> , BF <sub>4</sub> <sup>-</sup>
Nitric oxide (NO <sub>x</sub> )	NOX1501	5x10 <sup>-3</sup> -5x10 <sup>-6</sup>	220-0,2	56±3	1,1-1,7	0-50	-	30	SO <sub>2</sub> <sup>-</sup> , HF, CH <sub>3</sub> COOH
Perchlorate (ClO <sub>4</sub> <sup>-</sup> )	PER1501/PER1502	1,0-7x10 <sup>-6</sup>	98,000-0,7	56±2	2,5-11	0-50	-	30	There is no noticeable influence
Potassium (K <sup>+</sup> )	K001501/K001502	1,0-1x10 <sup>-6</sup>	39,000-0,04	56±2	2-12	0-40	0-50	30	Cs <sup>+</sup> , NH <sub>4</sub> <sup>+</sup>
Silver / Sulfide (Ag <sup>+</sup> /S <sub>2</sub> <sup>-</sup> )	AGS1501/AGS1502	Ag <sup>+</sup> =1,0-1x10 <sup>-7</sup> S <sub>2</sub> <sup>-</sup> =1,0-1x10 <sup>-7</sup>	107,900-0,01 32,100-0,003	57±2 27	2-12	0-80	0-100	20	Hg <sub>2</sub> <sup>+</sup> , Hg <sup>+</sup>
Sodium (Na <sup>+</sup> )	NA71501/NA71502	1,0-1x10 <sup>-5</sup>	23,000-0,2	56±2	5-12	0-80	-	20	K <sup>+</sup> , Li <sup>+</sup> , H <sup>+</sup> , Ag <sup>+</sup> , Cs <sup>+</sup>
The surface-active substances (X <sup>+</sup> , X <sup>-</sup> )	SUR1501/SUR1502	5x10 <sup>-2</sup> , 1x10 <sup>-5</sup>	12,000-1,0	For titration	2-12	0-50	-	30	Same types of surfactants
Hardness of water (Ca <sub>2</sub> <sup>+</sup> /Mg <sub>2</sub> <sup>+</sup> )	WHA1501/WHA1502	1,0-1x10 <sup>-5</sup>	40,00-0,4 (like Ca)	26±3	5-10	0-50	-	20	Cu <sub>2</sub> <sup>+</sup> , Zn <sub>2</sub> <sup>+</sup> , Ni <sub>2</sub> <sup>+</sup> , Fe <sub>2</sub> <sup>+</sup>

Models 1501 are mono; 1502 - combined glass electrode; 1503 - combined epoxy electrode.