# THE MEASURING SODIUM ELECTRODE ENa-01

The glass sodium electrode **Ena-01** is a measuring half cell designed for measurements of concentration ( activity) of the sodium ions in aqueous solutions and in water-organic mixtures.


The measurements may be done both in laboratory and in industrial conditions.

The **ENa-01** electrode can't be used separately - it has to be used with a reference electrode with its potential undependant from the measured solution composition. For the laboratory measurements the **RL-100** reference electrode is advised, with the internal chamber filled with 1.0 M ammonium nitrate solution.
The sodium and reference electrode after connecting with an ion meter or a pH / mV meter create a measurink link which enables sodium ions concentration measurements. Using separate electrodes requires using a meter with 2 separate connectors - BNC for measuring electrode and "banana" for the reference one, or using a special adapter enabling connecting both electrodes to 1 BNC connector.

The electrode has a glass body and a round glass ion selective membrane. To eliminate additional interferences a low noise cable is used.
The size of the electrode enables its installation in typical flow or immersion heads.

Measurements in the laboratory may be done by a direct measurement or using any of the techniques based on the growth of sodium ion concentration in the sample. For buffering of the measured solutions, to eliminate the interfering influence of the hydrogen ions, an ammonia or amines should be used.
The typical applications of the sodium electrode are measurements in boiler water, distilled water, industrial sewage, all kinds of water in biologic samples (ex. blood), food products and soil samples etc.

## Technical data

| | |
|---|---|
| Measuring range for stationary measurements | $10^{-6} \div 1$ mol/l $Na^+$ |
| | 0.023 ÷ 3000 ppm $Na^+$ |
| Measuring range for measurements in flow | $10^{-7} \div$ 1 mol/l $Na^+$ |
| | $2 \cdot 10^{-3} \div$ 23000 ppm $Na^+$ |
| Temperature range | 0 ÷ 80 ºC |
| pH acceptable range | 8 ÷ 12 |
| Characteristic slope | 57 ± 2 mV/p$Na^+$ |
| Response time | 30 to 60 s |
| Membrane resistance (in 20ºC) | 100 to 300 MΩ |
| Selectivity coefficient | $Ag^+ = 100$ |
| | $H^+ 30$ |
| | $K^+ = 10^{-2}$ |
| | $NH_4^+ = 10^{-4}$ |
| Membrane shape | Round bulb |
| Body diameter | 12.0 ± 0.5 mm |
| Body length (without cable cap) | 120 ± 5 mm |
| Minimal immersion depth | 15 mm |
| Maximal immersion depth | 115 mm |
| Body material | glass |
| Cable cap material | polipropylene |
| Cable length | about 1 m |
| Connector | BNC-50 |

ELMETRON ® Sp. j.
41-814 Zabrze, Witosa 10 POLAND
tel. +48 32 / 2738106 fax +48 32 / 2738114
www.elmetron.pl e-mail: info@elmetron.com.pl