Impedance converter for combination electrodes

Series 202995 (former designation: 2 AMZ-20)
- independent of mains supply
- retrofitting is possible
- enables longer cable distances
- stabilizes signal

Brief description
The impedance converter converts the high-impedance signal of a pH electrode (up to 1,000 MΩ) into a low-impedance signal (< 1 kΩ). The use of an impedance converter can also be advantageous in conjunction with a metal electrode. The impedance converter is screwed directly onto the electrode head. This largely eliminates interference caused by dirt, moisture or electrical fields from power cables. A conventional coaxial cable is sufficient as a connecting cable between impedance converter and transmitter. Long distances between sensor and transmitter can be covered easily. Thanks to its built-in lithium battery, the impedance converter does not depend on an external power supply.

Block diagram

<table>
<thead>
<tr>
<th>Type 202995/00-91</th>
<th>Type 202995/00-92 or 202995/00-93 or 202995/00-94</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-impedance signal</td>
<td>Low-impedance signal pH or redox potential</td>
</tr>
<tr>
<td>High-impedance signal pH or redox potential</td>
<td>Temperature signal (not processed)</td>
</tr>
<tr>
<td>Temperature signal</td>
<td>Offset voltage</td>
</tr>
<tr>
<td>Temperature drift</td>
<td>15 μV/°C</td>
</tr>
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</table>

Technical data

Input
Input impedance $R_e \geq 5 \times 10^{11}$ Ω
Input current $i_e \leq 2$ pA at 25°C
Input voltage $U_e \pm 1$ V ± 10%

Output
Offset voltage $U_0 \leq 6$ mV (typ.)
Temperature drift 15 μV/°C

Permissible ambient temperature -10 to +60°C

Permissible storage temperature -10 to +60°C

Internal impedance $R_i \leq 5$ Ω

Amplification (pH or redox potential) 1 : 1

Linearity error ≤ 0.5%, if the input impedance of the subsequent amplifier is 20 MΩ.

Supply
internally from lithium battery (can be replaced), CR-1/3N-P (or equivalent).
Service life: at least 5 years (at 25°C).
The life expectancy of the battery can be negatively affected by external factors, such as strongly fluctuating temperatures during operation or storage.

Housing
PC (polycarbonate)

Weight
35 g
**Electrical connection**

**Input / output**
The assignment of input and output is always identical

**Connection**

- **-91** (standard):
  N cap plug connector matches the JUMO electrode caps with cable socket N (see Data Sheet 20.2900) and most of the usual electrode caps (S7, S8).

- **-92**:
  SMEK cap or SixPlug, terminal assignment “JUMO” for pH or redox combination electrodes with integrated temperature sensor (plan view of the connector for the impedance converter)

- **-93**:
  SMEK cap or SixPlug, terminal assignment “other electrode manufacturers” for pH or redox combination electrodes with integrated temperature sensor (plan view of the connector for the impedance converter)

- **-94**:
  SMEK cap or SixPlug, terminal assignment for multiparameter sensor (pH, redox, temperature) e.g. JUMO Multitrode (plan view of the connector for the impedance converter)

**Order details**

1. **Basic type**
   - Type 202995/00-91
   - Type 202995/00-92
   - Type 202995/00-93
   - Type 202995/00-94

2. **Basic type extension**
   - Type 202995/00-91
   - Type 202995/00-92
   - Type 202995/00-93
   - Type 202995/00-94

3. **Connection**
   - Type 202995/00-91
   - Type 202995/00-92
   - Type 202995/00-93
   - Type 202995/00-94

   **Order code**
   - (1) Basic type
   - (2) Basic type extension
   - (3) Connection

   **Order example**
   - 202995 / 00 - 91

**Dimensions**

- **Type 202995/00-91**
- **Type 202995/00-92**
- **Type 202995/00-93**
- **Type 202995/00-94**

**Available from stock**

- Impedance converter with N cap, Type 202995/00-91
  - Sales No. 20/00300455

**Not available from stock**

- Impedance converter with SMEK cap (SixPlug), pin assignment “JUMO”¹, Type 202995/00-92
  - Sales No. 20/00406964

- Impedance converter with SMEK cap (SixPlug), pin assignment “other electrode manufacturers”¹, Type 202995/00-93
  - Sales No. 20/00406965

¹ Take note of the pin assignment!