JUMO GmbH & Co. KG

Delivery address: Mackenrodtstraße 14, 36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House
Temple Bank, Riverway
Harlow, Essex CM 20 2TT, UK
Phone: +44 1279 635533
Fax: +44 1279 635262
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO PROCESS CONTROL INC.

885 Fox Chase, Suite 103
Coatesville PA 19320, USA
Phone: 610-380-8002
1-800-554-JUMO
Fax: 610-380-8009
E-mail: info@JumoUSA.com
Internet: www.JumoUSA.com

Impedance converter for combination electrodes

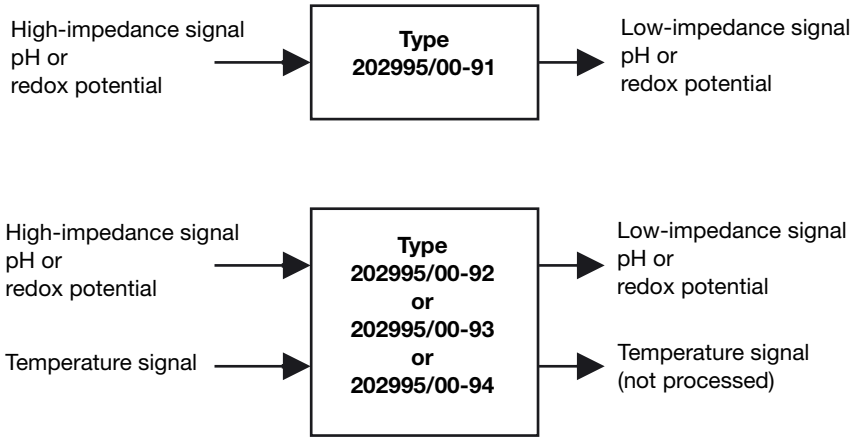
Series 202995 (former designation: 2 AMZ-20)

- **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



Technical data

Input

Input impedance	$R_e \geq 5 \times 10^{11}\ \Omega$
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
$R_i \leq 5\ \Omega$

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.

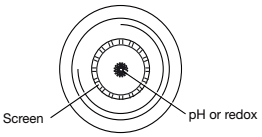
Housing
PC (polycarbonate)

Weight
35 g

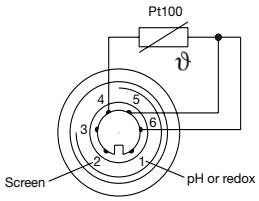
Electrical connection

Input / output
The assigment of input and output is always identical

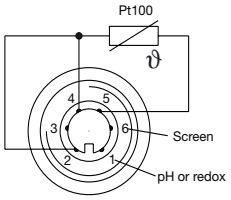
Connection
-91 (standard):
N cap
plug connector matches the JUMO electrode caps with cable socket N (see Data Sheet 202900) and most of the usual electrode caps (S7, S8).



-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)



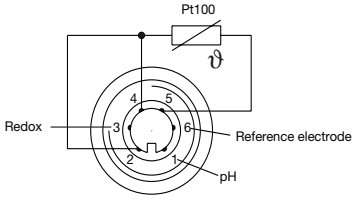
-93:
SMEK cap or SixPlug,
terminal assignment “other electrode manufacturers” for pH or redox combination electrodes with integrated temperature sensor (plan view of the connector for the impedance converter)



(1) Connection to glass/metal electrode

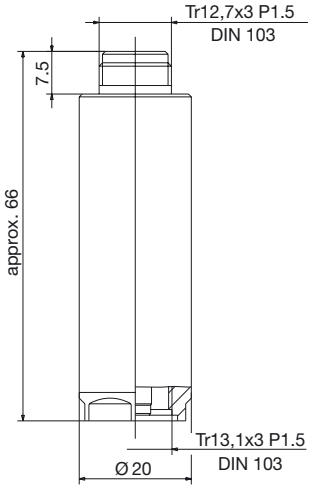
(2) Connection to reference electrode

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



Dimensions

Type 202995/00-91



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

Order details

	(1)	**Basic type**
202995		Impedance converter
	(2)	**Basic type extension**
00		none
	(3)	**Connection**
91		N cap, matching the N connector
92		SMEK cap (SixPlug), pin assignment JUMO"[1]
93		SMEK cap (SixPlug), pin assignment “other electrode manufacturers”[1]
94		SMEK cap (SixPlug), for multiparameter sensor (pH, redox, temperature)[1]

	(1)		(2)		(3)
Order code		/		-	
Order example	202995	/	00	-	91

Available from stock

(delivery 3 days after receipt of order)

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

Not available from stock

(delivery 2 weeks after receipt of order)

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!