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**JUMO Process Control, Inc.**  
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# JUMO reference electrode

## Brief description

It is the task of reference electrodes to supply a constant potential during potentiometric measurements. The potential of an indicator electrode (such as a glass pH electrode) serves as a counterpoint. Reference electrodes are equipped with a cartridge-style silver/silver chloride conduction system.

A 3-molar potassium chloride solution is used as the standard reference electrolyte. The operating temperature range is between 0 to 90 °C.

Reference electrodes can also be supplied with a liquid KCl electrolyte as an option. The operating temperature range is then between 0 to 135 °C. The maximum working temperature of the glass electrode must be taken into account here.



Type 201083/...

## Technical data

Temperature range	
Gel filling	0 to 80 °C
KCl filling	0 to 135 °C
Pressure range	
With plug cap	Unpressurized operation
With Pg13.5 screw cap	10 bar at 25 °C, 1 bar at 80 °C
Terminal head	Plug cap Pg13.5 screw cap
Process connection	Pg13.5 thread
Washer	PSU
Seal	FPM70
Shaft material	Glass (DIN 19263)
Insertion length	120 mm (standard) Other insertion length on request
Diaphragm	1 mm zirconium dioxide

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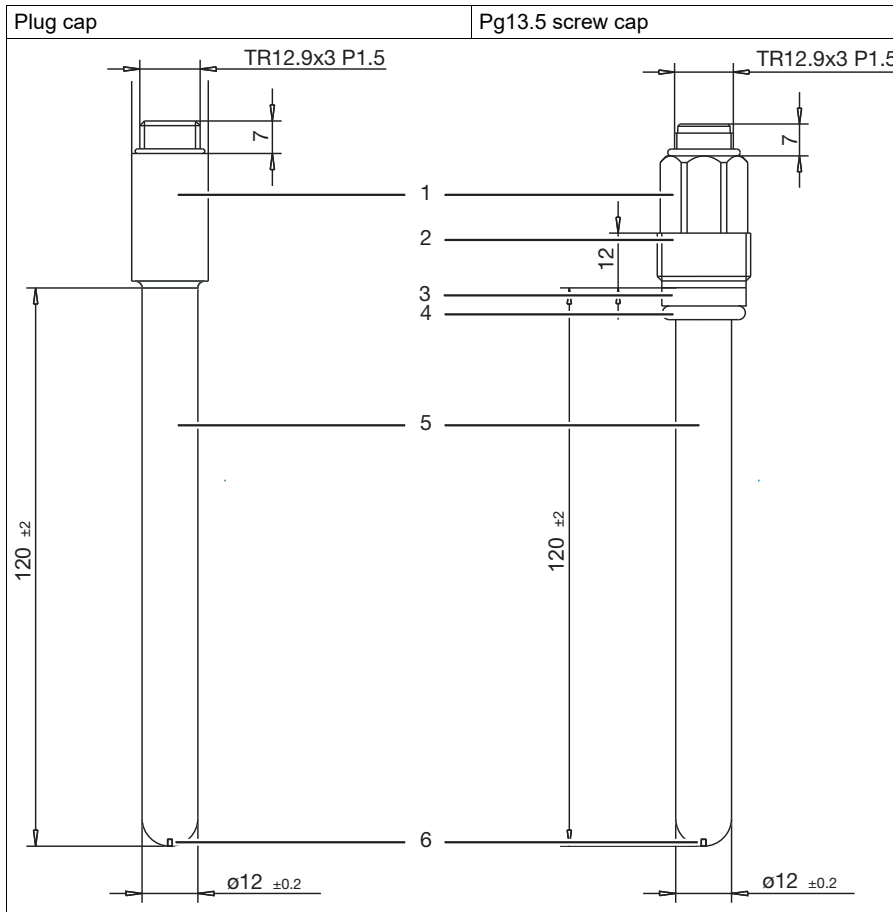
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# Dimensions

## Reference electrode



- |   |                              |   |                           |
|---|------------------------------|---|---------------------------|
| 1 | Plug cap or Pg13.5 screw cap | 2 | Pg13.5 process connection |
| 3 | Washer (PSU)                 | 4 | Seal (FMP70)              |
| 5 | Shaft material glass         | 6 | Diaphragm                 |

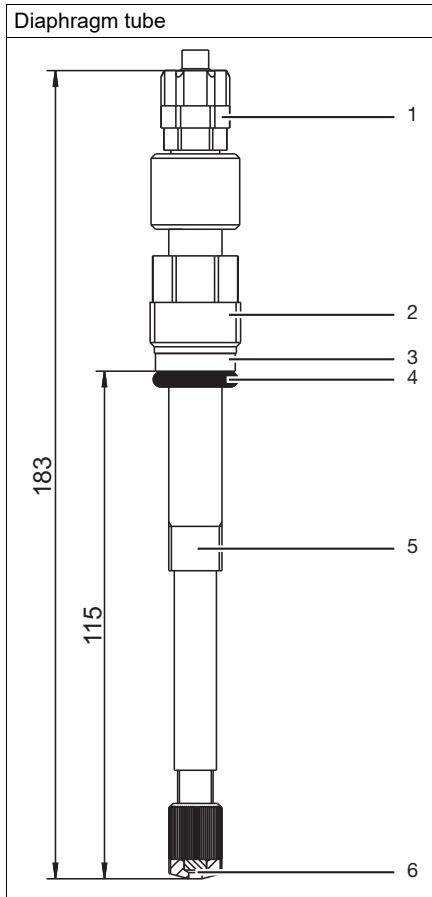
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## Accessories



- |   |                     |   |                                             |
|---|---------------------|---|---------------------------------------------|
| 1 | Hose connection     | 2 | Terminal head (PPO) with process connection |
| 3 | Washer (PSU)        | 4 | Seal (FMP70)                                |
| 5 | Shaft material (PP) | 6 | Diaphragm (PTFE)                            |

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## Order details

	<b>(1) Base type</b>
201083	JUMO reference electrode
	<b>(2) Shaft material</b>
89	Glass
	<b>(3) Electrolyte</b>
04	Gel filling
05	KCl filling
	<b>(4) Diaphragm</b>
07	1× zirconium dioxide diaphragm
09	3× zirconium dioxide diaphragm
	<b>(5) Connection</b>
21	Plug cap (S7)
22	Pg13.5 (S8) screw cap
	<b>(6) Cable length</b>
0000	None
	<b>(7) Insertion length</b>
120	120 mm (standard)

Order code                    **(1)**                    **(2)**                    **(3)**                    **(4)**                    **(5)**                    **(6)**                    **(7)**  
 Order example                201083                /                89                -                04                -                07                -                22                -                0000                -                120

**Note:**

The order code is a type explanation – not a modular system for own sensor combinations.  
 If you wish your own combinations please ask the JUMO analytical measurement experts for prior approval.

## Stock version

Item		Part no.
201083/89-04-07-22-0000-00-120	Reference electrode, 1× zirconium dioxide diaphragm, gel filling, Pg13.5 screw cap, 120 mm	00083865

## Manufacturing versions

Item		Part no.
201083/89-04-07-21-0000-120	Reference electrode, 1× zirconium dioxide diaphragm, Gel filling, plug cap, 120 mm	00083861
201083/89-05-07-21-0000-120	Reference electrode, 1× zirconium dioxide diaphragm, KCl filling, plug cap, 120 mm	00083862

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## Accessories

### Diaphragm tube

Description	Figure	Part no.
<p>Potentiometric measurements can be disturbed or falsified by electrochemical sensors due to physical and/or chemical interaction between the measuring medium and the reference system. In such cases, it is advisable to use an electrolyte key, which is built up with the aid of a diaphragm tube.</p> <p>The diaphragm of the diaphragm tube is made of PTFE and has a diameter of 5 mm.</p>		00084582

### Technical data

Temperature range	0 to 90 °C
Pressure range	6 bar at 25 °C, 1 bar at 80 °C
Hose connection	Plastic screw connection G1/8"
Terminal head	PPO
Process connection	Pg13.5 thread
Washer	PSU
Seal	FPM70
Shaft material	PP
Insertion length	120 mm
Diaphragm	PTFE

### Replacement diaphragms for diaphragm tube

Item	Part no.
Diaphragm replacement set for diaphragm tube (10 pieces)	00304567