

R 503/P
R 503/D

Reference Electrode R 503/P
Reference Electrode R 503/D

Distributed by:



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ADVANCED APPLIED TECHNOLOGIES

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**Accuracy when
going to press**

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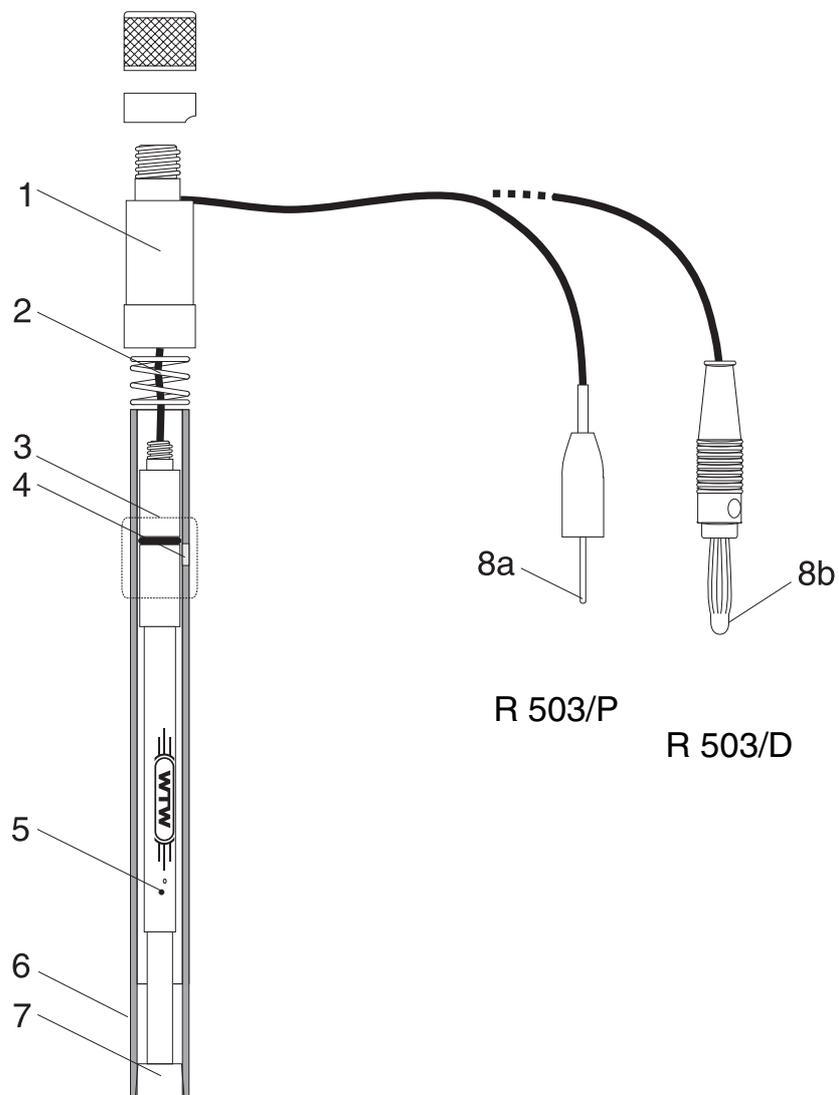
**Warranty
declaration**

In case of proper handling, WTW guarantees the quality of the electrode for one year.

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Construction of the electrode R 503



1	Electrode head
2	Spring
3	Plastic sleeve
4	Filling opening for bridge electrolyte solution
5	Inner diaphragm
6	Body
7	Sleeve diaphragm
8a	Pin plug (2 mm)
8b	Banana plug (4 mm)

Commissioning

Application

The reference electrode R 503/P or R 503/D serves to create a reference potential when measuring ion concentrations. Together with a type 501 WTW ion selective electrode it forms a double electrode.

Filling the bridge electrolyte solution

1	Screw the white screw cap off the bottle with the bridge electrolyte solution.
2	Remove the red closing cap.
3	Screw the white screw cap on the bottle again.
4	Put the outlet of the white screw cap upright.
5	Hold the electrode in a vertical position. While doing so, push the plastic sleeve (3) downwards until the filling opening (4) is free.
6	Fill bridge electrolyte solution through the filling opening (4).
7	Briefly press the body of the electrode (6) upwards against the electrode head in order to moisten the sleeve diaphragm (7) with electrolyte solution.
8	Refill spilled electrolyte solution.
9	Close the bottle with bridge electrolyte solution: Put the outlet of the white screw cap downwards.

The electrode is now ready to measure. Always leave the filling opening of the reference electrode open while measuring.

**Note**

The reference electrode must contain enough electrolyte solution, so that the level of the electrolyte solution is clearly higher than that of the test sample during measurement.

Interferences

The bridge electrolyte solution ELY/BR 503 contains K^+ and NO_3^- . Therefore, it cannot be used to measure the concentration of nitrates, perchlorates or fluoborates.

To measure

- NO_3^- , use ELY/BR/503/N
- K^+ , use ELY/BR/503/K

as bridge electrolyte solution (see RECOMMENDED ACCESSORIES).

Aging

Please note that every electrode undergoes a natural aging process. The following factors shorten the lifetime considerably:

- Incorrect storing
- Special measuring media
- High temperatures
- High changes in temperature

The warranty does not cover damage caused by measuring conditions and mechanical damage.

Maintenance

- Refill used bridge electrolyte solution daily.
- In case of longer running-in times, perform the following activities:
 - Clean the sleeve diaphragm using methanol
 - Replace the electrolyte solution
- Rinse off crystals on the electrode outside with water.

Storage

- Between two measurements, store the electrode in air.
- Overnight up to one week: Push the closing collar over the filling opening. Place the electrode into distilled water.
- For more than a week: Remove the electrolyte solution of the electrode, rinse the electrode using deionized water and blot it dry using a clean paper towel. Store the electrode in a dry place.

Recommended accessories

Description	Model	Order no.
Bridge electrolyte solution for the R 503 reference electrode	ELY/BR/503	106575
Bridge electrolyte solution for the R 503 reference electrode when measuring NO_3^-	ELY/BR/503/N	106576
Bridge electrolyte solution for the R 503 reference electrode when measuring K^+	ELY/BR/503/K	106577

Technical data

pH range	2 ... 10	(can also be used with higher pH values for a short period of time)
Temperature range	10 ... 100 °C	
Shaft length	120 mm	
Shaft diameter	12 mm	
Cable length	1 m	
Plug	Pin plug (R 503/P) or banana plug (R 503/D), depending on the design.	

