

DipFit W CPA 510 Immersion Assembly for pH/Redox Measurement

Operating Instructions

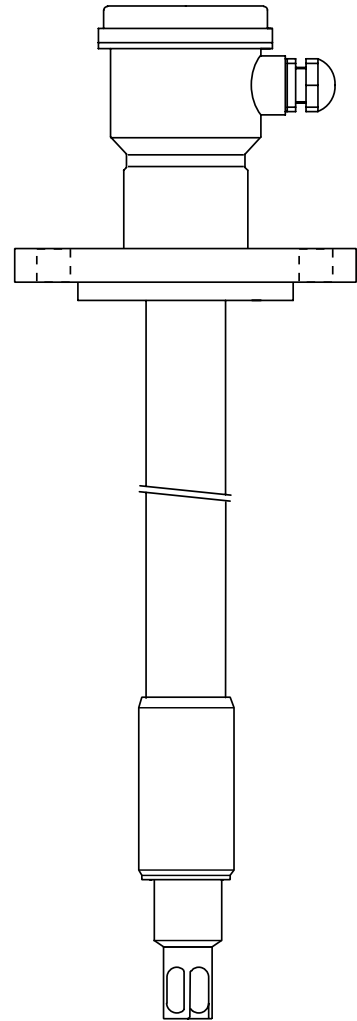
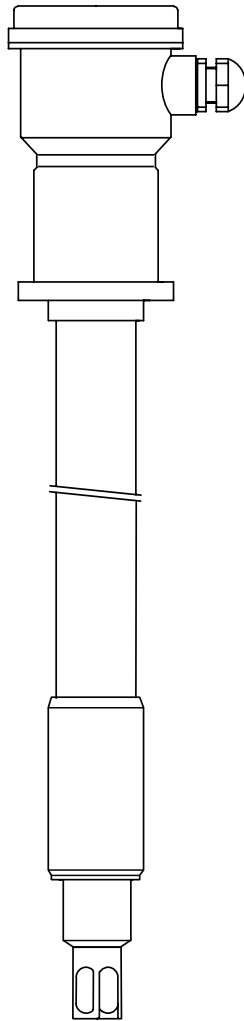


Table of contents

1	General	2
1.1	Application	2
1.2	Measuring system	2
2	Unpacking	3
2.1	Scope of supply	3
2.2	Product structure	3
3	Mounting and installation	4
3.1	Dimensions	4
3.2	Electrode installation	5
3.3	Mounting of the assembly	6
3.4	Mounting with pendulum frame	6
4	Maintenance	7
4.1	Assembly	7
4.2	Cleaning of the pH electrode	7
5	Technical data	8
5.1	Supplementary documentation	8

1 General

1.1 Application

DipFit W CPA 510 is an assembly intended to hold a combined pH or redox electrode filled with a gel electrolyte. It is universally suitable for use in water and waste water treatment systems as well as in process applications.

DipFit W CPA 510 can be used either as an immersion assembly in open containers and channels or as a built-in assembly in tanks and closed containers.

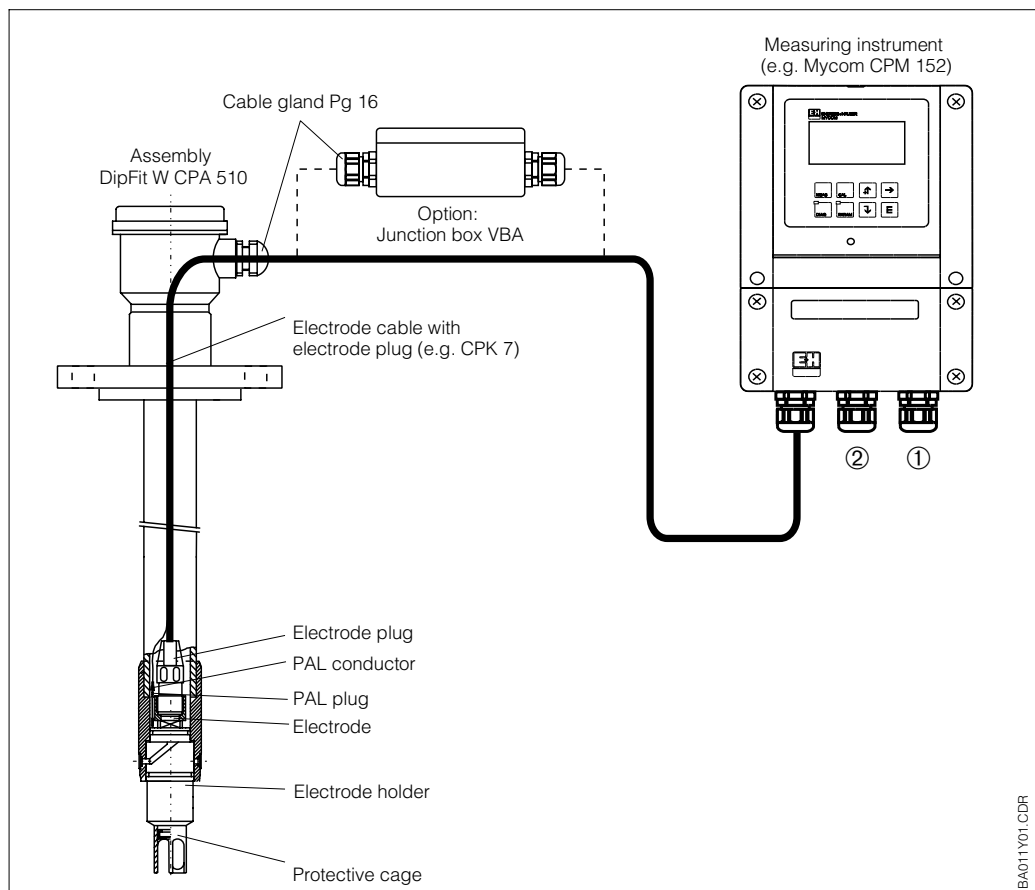
1.2 Measuring system

A measuring system consists of:

- the DipFit W CPA 510 assembly
- a pH / redox electrode, 120 mm in length, suitable for the assembly and the medium to be measured
- a pH / redox measuring instrument
- a CPK 1, CPK 7 or CPK 9 measuring cable (terminated).

Option:

- Junction box VBA and measuring cable (not terminated) for measuring cable extension.



2 Unpacking

- Inspect for any damaged packaging!
The post office or freight carrier must be informed of any damage.
Damaged packaging material must be retained until the matter has been settled.
- Verify that the contents are undamaged!
Inform the post office or freight carrier as well as the supplier of any damage.
- Check that the delivery is complete (see chapter 2.1) and agrees with the shipping documents and your order:
 - Quantity delivered
 - Unit type and version
 - Accessories
 - Operating instructions

If you have any questions, consult your supplier or the Endress+Hauser sales agency in your area (see back cover of these operating instructions for addresses).

2.1 Scope of supply

The shipment comprises:

- DipFit W CPA 510 assembly, immersion tube length, material and version according to order code (see chapter 2.2)
- Operating instructions (order no. 50049295)

Accessories:

- Dummy plug for bayonet version
 - of PVC (order no. 50044654)
 - of PVDF (order no. 50044655)
- Mounting frame for mounting on basin walls (order no. 50066561)
- Pendulum frame for pendulum mounting of assembly CPA 510-xx15 (order no. 50080196)

2.2 Product structure

Immersion assembly DipFit W CPA 510	must be ordered separately.										
<p>Assembly length</p> <p>0 1000 mm 1 mm immersion length (please specify)</p> <p>O-ring / assembly material</p> <p>11 EPDM / PVC 12 EPDM / PVDF 21 Viton / PVC 22 Viton / PVDF</p> <p>Mounting method</p> <p>0 without mounting 1 DN 50 flange 2 Union nut and DN 50 flange 3 Oval flange and mounting plate 4 Bayonet version with DN 50 flange 5 Suspension bracket; material: stainless steel 316Ti (PVC version only)</p>											
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; padding: 2px;">CPA 510-</td> <td style="width: 10%; text-align: center;">↓</td> <td style="width: 10%; text-align: center;">↓</td> <td style="width: 10%; text-align: center;">↓</td> <td style="width: 55%;"></td> </tr> <tr> <td style="padding: 2px;"></td> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> <td style="padding: 2px;">complete order code</td> </tr> </table>	CPA 510-	↓	↓	↓			↓	↓	↓	complete order code	
CPA 510-	↓	↓	↓								
	↓	↓	↓	complete order code							

Remark:

Always specify the immersion tube length in your orders.

Combined pH or redox electrodes (OrbiSint W CPS 11/12 or OrbiTex W CPS 21) and measuring cables (CPK 1, CPK 7 or CPK 9)

3 Mounting and installation

3.1 Dimensions

Fig. 3.1 DipFit W CPA 510 (①) without mounting

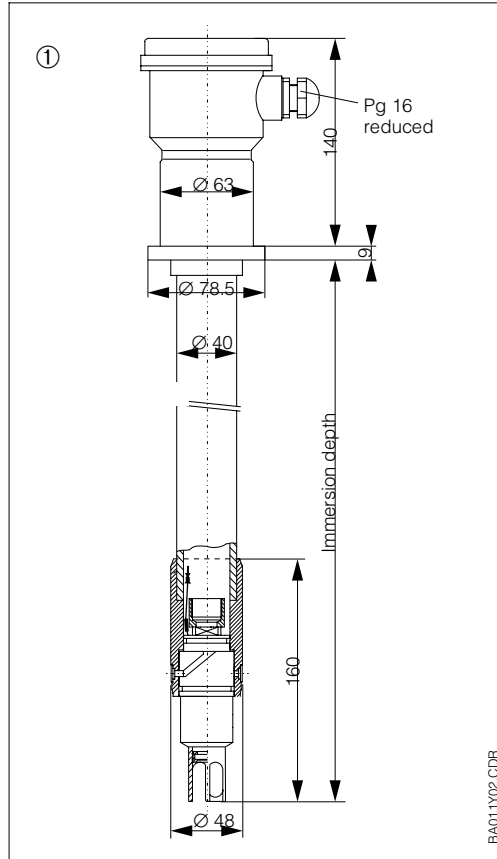


Fig. 3.2 DipFit W CPA 510 (②) with flange DN 50

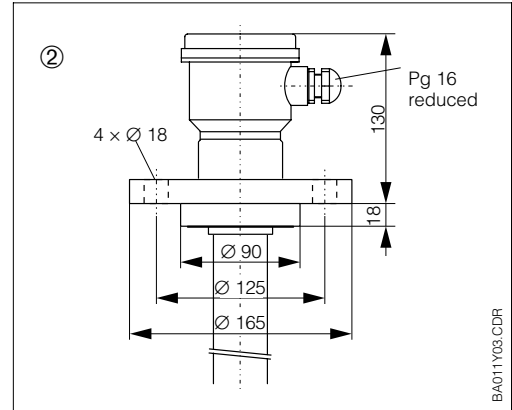


Fig. 3.3 DipFit W CPA 510 (③) with suspension bracket

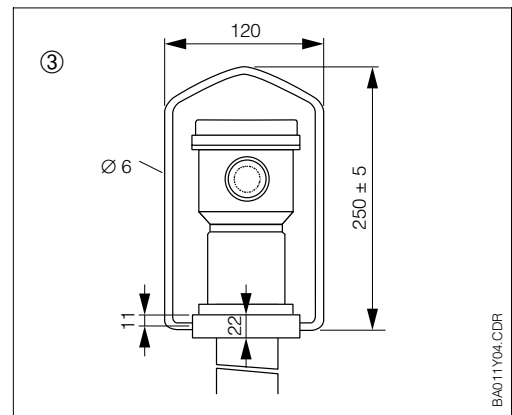


Fig. 3.4 DipFit W CPA 510 (④) with pendulum frame (to be ordered separately)

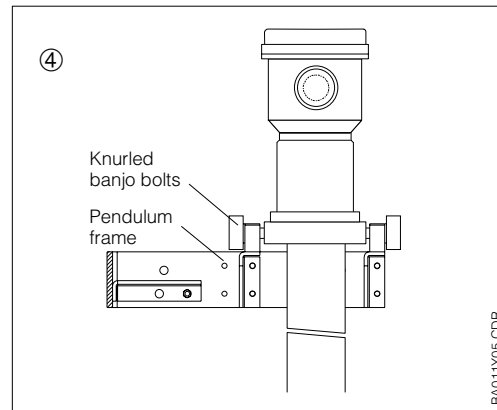


Fig. 3.5 DipFit W CPA 510 with flange DN 50 with bayonet lock (⑤)

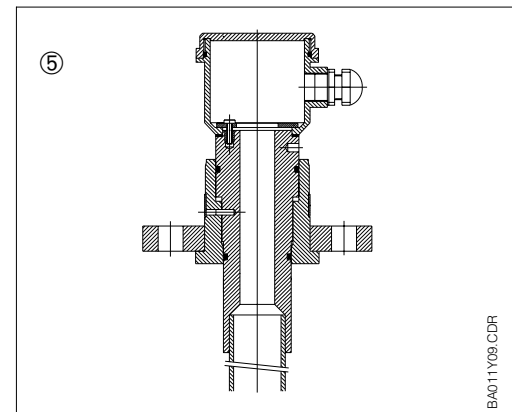


Fig. 3.6 DipFit W CPA 510 (⑥) with oval flange and mounting plate

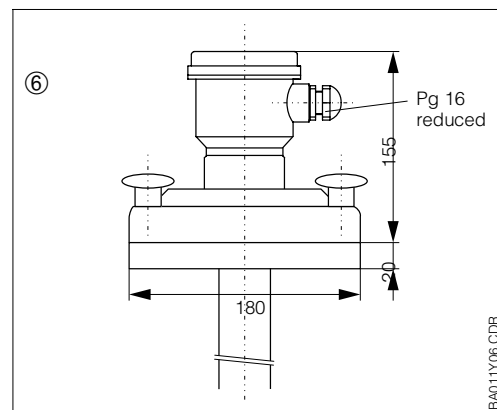
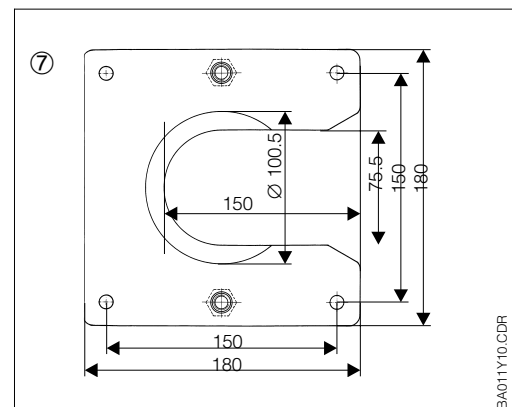


Fig. 3.7 Dimensions of oval flange (⑦)



3.2 Electrode installation

You may install electrodes with a threaded Pg 13.5 plug-in head, a shaft length of 120 mm and a shaft diameter of 12 mm.

Fig. 3.8, ①:

- Disengage the bayonet lock by turning the electrode holder and pull the electrode holder out of the assembly pipe.



Caution:

- Before installing a new electrode, make sure that the electrode shaft is fitted with O-ring B and pressure ring A and that the yellow protection cap is removed.
- The electrode shaft must be wetted before installation in the assembly. Wetting with water is sufficient.

Fig. 3.8, ②:

- Screw in the electrode by hand and tighten it with a size 17 socket wrench by a quarter turn.

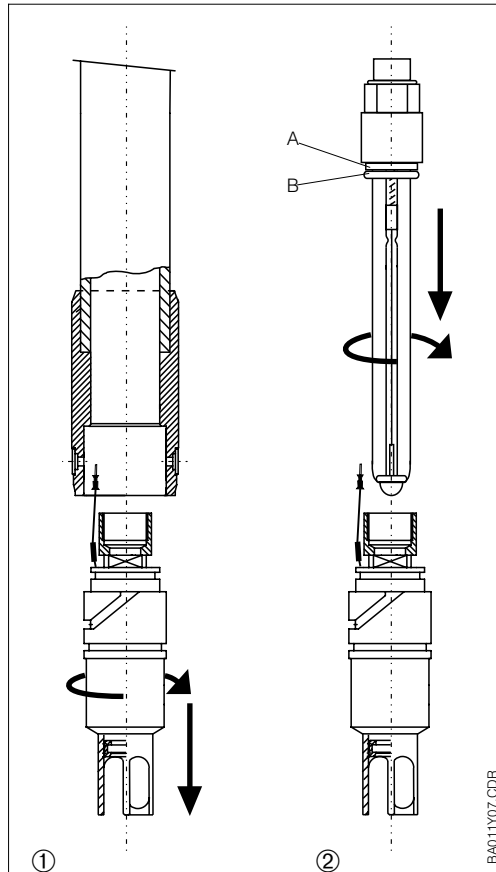


Fig. 3.8 ① Disassembly of electrode holder

② Installation of pH / redox electrode

Fig. 3.9, ①:

- Screw the lid off the connection head and push the electrode cable with the fitted electrode plug through the assembly pipe.
- Screw the electrode plug onto the electrode screw head and hand-tighten it.
- Install conductor for potential matching pin on the existing potential matching connector (PMC).



Note:

Leave an **extra measuring cable length of approx. 10 cm in the assembly** for installation and removal of the electrode holder.

Fig. 3.9, ②:

- Lead the cable end through the Pg 16 clamp-type screw union of the connection head and fix it with the Pg union. Screw on the lid of the connection head.

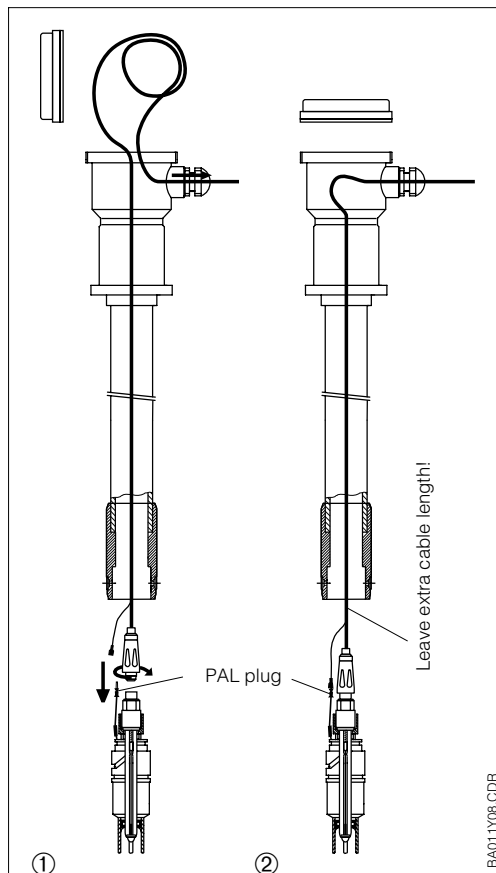


Fig. 3.9 ① Mounting of measuring cable with plug

② Mounting of measuring cable to electrode

3.3 Mounting of the assembly

The standard version of DipFit W 510 is mounted using a DN 50 flange, a DN 50 flange and union nut, a DN 50 flange with bayonet lock or an oval flange and mounting plate.

- To remove the assembly in case of flange mounting, loosen the flange screws.
- To remove the assembly in case of flange mounting with union nut, loosen the union nut and then pull the assembly out of its holder.
- The bayonet version is mounted by a DN 50 flange and a bayonet lock on the assembly head. This allows to remove the assembly with the flange firmly mounted by a simple counter-clockwise rotation.
- To remove the assembly in case of oval flange mounting, loosen the tommy screws and remove the assembly via the lateral opening in the mounting plate.

3.4 Mounting with pendulum frame

The DipFit W assembly CPA 510 is designed for pendulous suspension from the pendulum frame (order no. 50080196):

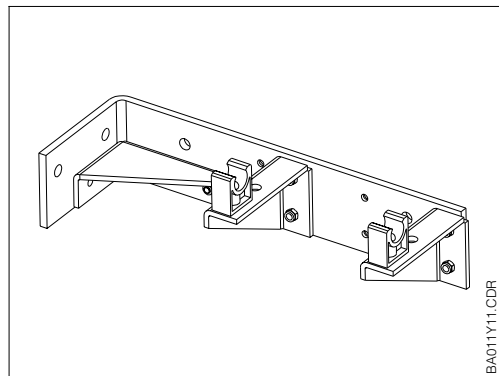


Fig. 3.10 Pendulum frame
(Order no. 50080196)

- Screw stop nuts on both the knurled banjo bolts (included in delivery of pendulum frame)
- Remove suspension bracket of assembly.
- Screw knurled banjo bolts into the drill holes M8 of the retaining ring and fasten them according to the mounting instructions of the pendulum frame.

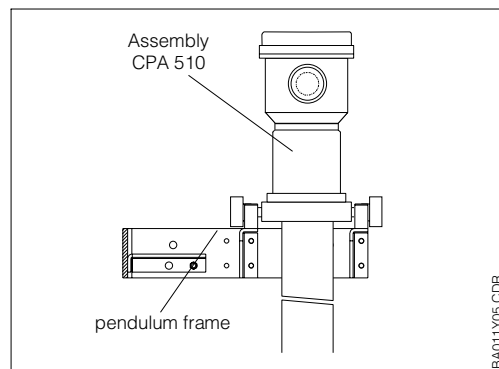


Fig. 3.11 Assembly CPA 510 mounted
with pendulum frame

- Fig. 3.11:
- Hang assembly in pendulum frame.

4 Maintenance

4.1 Assembly

- Remove the assembly at regular intervals (depending on the medium)
- Clean the side in contact with the medium, if required.
- Visual inspection of the O-rings: Replace damaged O-rings!



Caution:

- Avoid any damaging of the new O-rings and the O-ring seat.
- Pay special attention to an appropriate material of the O-rings in contact with the medium.

Order numbers for spare O-rings:

O-ring material	in contact with the medium	not in contact with the medium
EPDM (standard)	50044657	50044660
Viton	50044658	50044661

4.2 Cleaning of the pH electrode

- Clean the electrode at regular intervals (depending on the medium) to guarantee reliable measurements.
- Poor response time, low sensitivity (slope) and unstable measured values indicate soiling.
- Clean the electrode before each calibration.



Caution:

- Do not use abrasive cleaning agents! These may cause irreparable damage to the electrode measuring surface.
- Vigorously flush the electrode with distilled water after cleaning. Cleaning agent residue may impair measurements.
- Recalibrate the measuring system after each cleaning.

Cleaning process:

- Remove light deposits with suitable cleaning agents (see table).
- Use a soft brush and appropriate cleaning agents to remove adhering dirt.
- Remove stubborn dirt by soaking in cleaning agent.



Note:

Clean Redox electrodes only mechanically! Chemical cleaning cause measured errors because a potential is implicated. This abates not before a few hours.

Soiling, deposit	Cleaning agent
Grease and oil	Tenside containing (alkaline) media or water soluble organic solvents (e.g. alcohol)
Limestone deposits, metal hydroxides, heavy biological deposits	Hydrochloric acid 3 %
Sulphide deposits	Mixture of 3 % hydrochloric acid and thio-urea (usual commercial)
Protein deposits	Mixture of 0.1 molar hydrochloric acid and pepsin (usual commercial)
Fibres, suspended materials	Pressurized water, possibly with wetting agents
Light biological deposits	Pressurized water

5 Technical data

General data	Manufacturer	Endress+Hauser
	Product designation	DipFit W CPA 510
Attachment	CPA 510-xxx1	DN 50 flange
	CPA 510-xxx2	DN 50 flange and union nut
	CPA 510-xxx3	oval flange and mounting plate
	CPA 510-xxx4	DN 50 flange and bayonet lock
	CPA 510-xx15	suspension bracket
Materials in contact with the medium	Immersion tube	PVC, PVDF
	Flange DN 50	PVC, UP-GF
	Oval flange with mounting plate	PP-GF
	Electrode holder	PPS with 40 % GF
	O-rings	EPDM, Viton
	Bayonet pin for electrode holder	titanium
	PAL plug	Hastelloy C4
Operating pressure and temperature	PVC version with flange DN 50 with oval flange and mounting plate	6 bar at 20 °C, 0 bar at 50 °C 0 bar at 50 °C
	PVDF version with flange DN 50 with oval flange and mounting plate	6 bar at 20 °C, 2 bar at 90 °C, 0 bar at 115 °C 0 bar up to 80 °C
Immersion depth	Standard	1000 mm
	Other lengths	500 to 3000 mm
	Required mounting cross section	DN 50
	Weight	2.3 kg
Electrodes	Electrode type	OrbiSint W CPS 11/12, OrbiTex W CPS 21
	Installation	via Pg 13.5 thread
	Shaft length	120 mm
	Shaft diameter	12 mm

5.1 Supplementary documentation

- Technical Information
 pH / redox combined electrodes
 OrbiSint W CPS 11/12/13
 order no. 50054649
- Technical Information
 pH / redox combined electrodes
 OrbiTex W CPS 21
 order no. 50054650

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