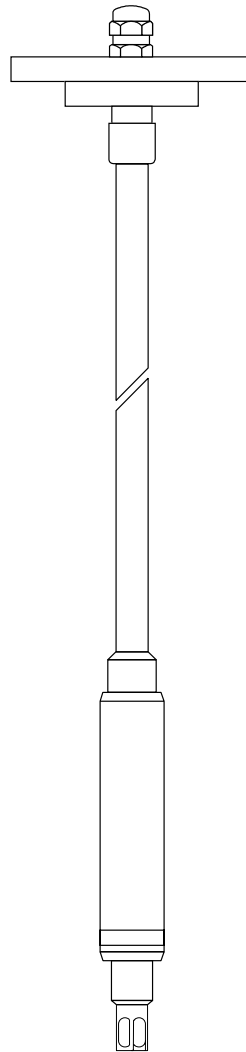


# DipFit W CPA 530 Immersion Assembly for pH/Redox Measurement

## Operating Instructions



Endress + Hauser

The Power of Know How



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## 1 General

### 1.1 Application

The DipFit W CPA 530 is an assembly intended to hold a combined pH or redox electrode with a solid electrolyte. It is suitable for universal use in water and waste water treatment systems as well as process applications. The DipFit W CPA 530 is used as a suspended assembly in conduits, ducts or tall tanks.

### 1.2 Measuring system

A measuring system consists of:

- the DipFit W CPA 530 assembly
- a pH / redox electrode 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).

#### Variant:

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

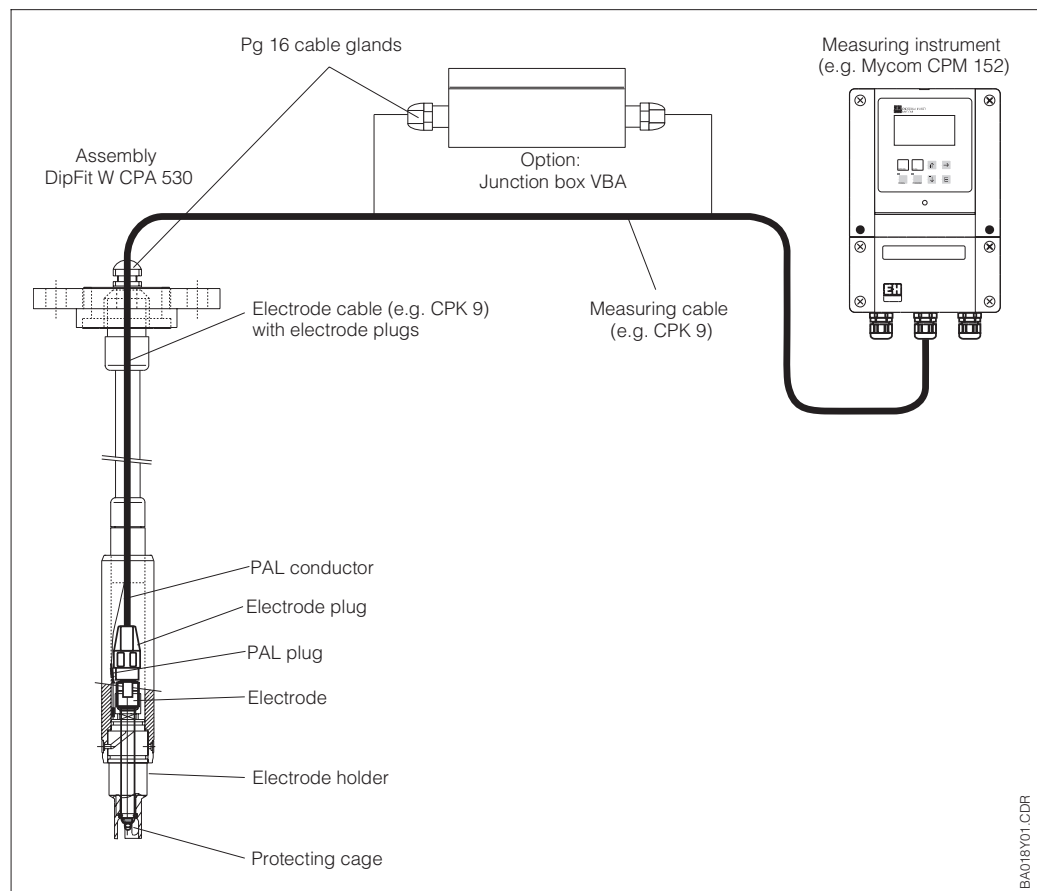


Fig. 1 The complete measuring system

BA018Y01.CDR

## 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
  - Unit identification card(s)

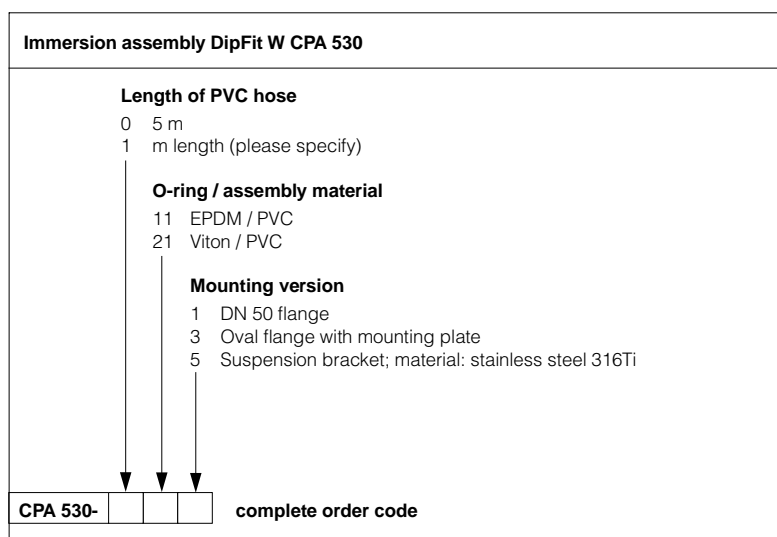
If you have any questions, consult your supplier or the Endress+Hauser sales agency in your area (see back cover of these operating instructions for addresses).

### 2.1 Scope of supply

The shipment comprises:

- DipFit W CPA 530 assembly,  
PVC hose, material and version according to order code
- Operating instructions (order no. 50050694)

### 2.2 Product structure



**Remark:**

Always specify the complete order code and the length of the PVC hose in your orders. Combined pH or redox electrode and measuring cable must be ordered separately.

### 3 Mounting and installation

#### 3.1 Dimensions

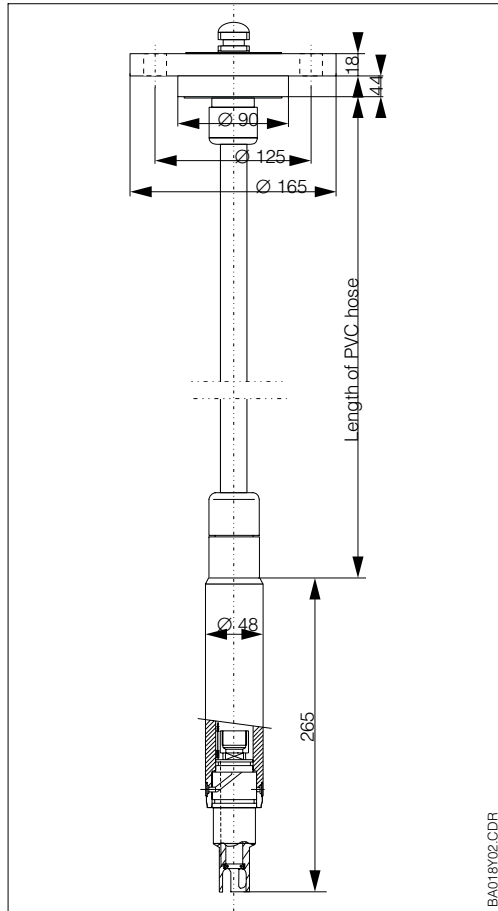


Fig. 2 DipFit W CPA 530 with DN 50 flange

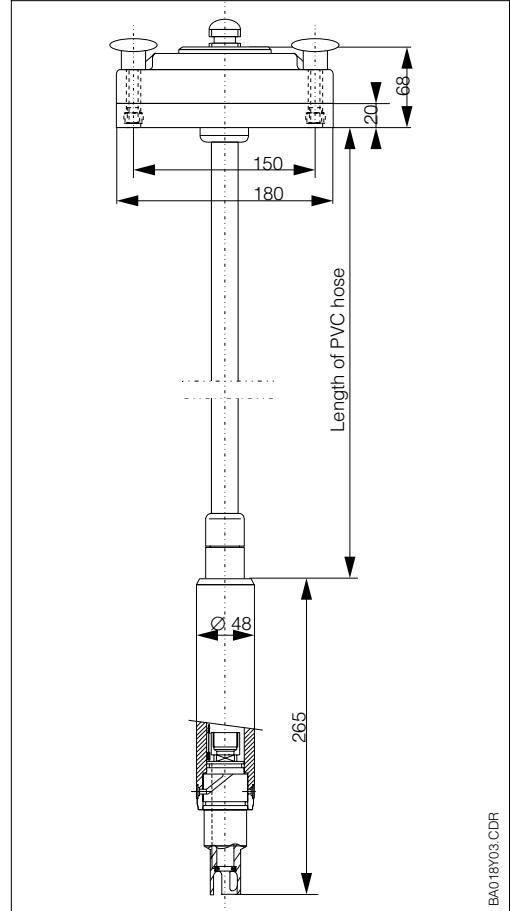


Fig. 3 DipFit W CPA 530 with oval flange and mounting plate

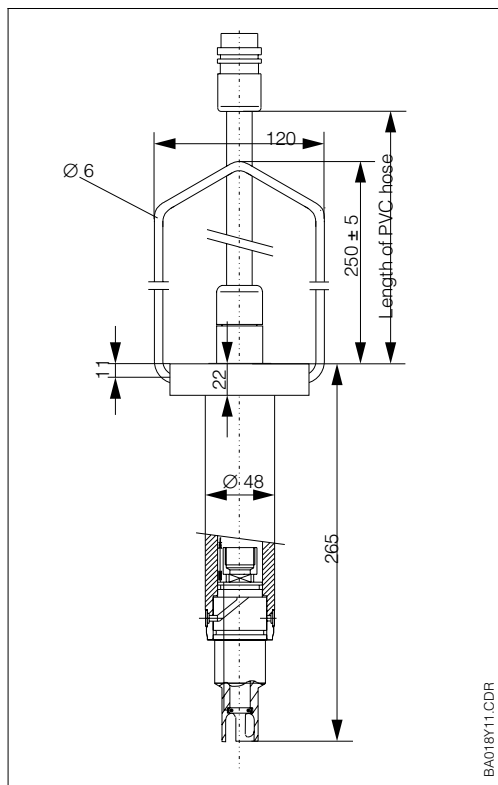


Fig. 4 DipFit W CPA 530 with suspension bracket

#### 3.2 Mounting the assembly

The DipFit W CPA 530 is mounted using a DN 50 flange, an oval flange and mounting plate, or a suspension bracket.

- To remove the assembly in case of mounting with flange DN 50, loosen the flange screws.
- To remove the assembly in case of oval flange installation, loosen the tommy screws and remove the assembly via the lateral opening in the mounting plate.

### 3.3 Electrode installation

- You may install combined pH / redox electrodes with Pg 13.5 screw head and  $\varnothing$  12 mm  $\times$  120 mm shaft.
- To Fig. 5, ①: Disengage the bayonet lock by turning the electrode holder and pull the electrode holder out of the assembly.



#### Caution:

- You must remove the yellow protective cap before installing a new electrode!
  - Make sure that the O-ring and clamping ring on the screw head are plugged in on the glass shaft before installation!
  - Wet the electrodes before installation. Simple immersion in water is sufficient.
- To Fig. 5, ②: Screw in the electrode by hand and tighten it with a size 17 socket wrench.

### 3.4 Mounting the electrode cable



#### Note:

Push electrode holder receptacle up over the hose.

- Screw electrode plug onto the electrode screw head and hand-tighten it.
- Install conductor for potential matching pin on the existing potential matching connector (PMC) plug.
- Loosen the union nuts on both ends of the hose. Loosen the Pg union on the assembly head.



#### Note:

- Leave an extra measuring cable length of approx. 10 cm in the assembly for installation and removal of the electrode holder.
- Grease cable with glycerin before mounting. Then the passage of the cable is simplified.
- Shove cable through open shell into the hose.
- Mount electrode holder in reversed direction as at unmounting.
- Hand-tighten the union nuts. Fix the Pg cable gland on top of the assembly.

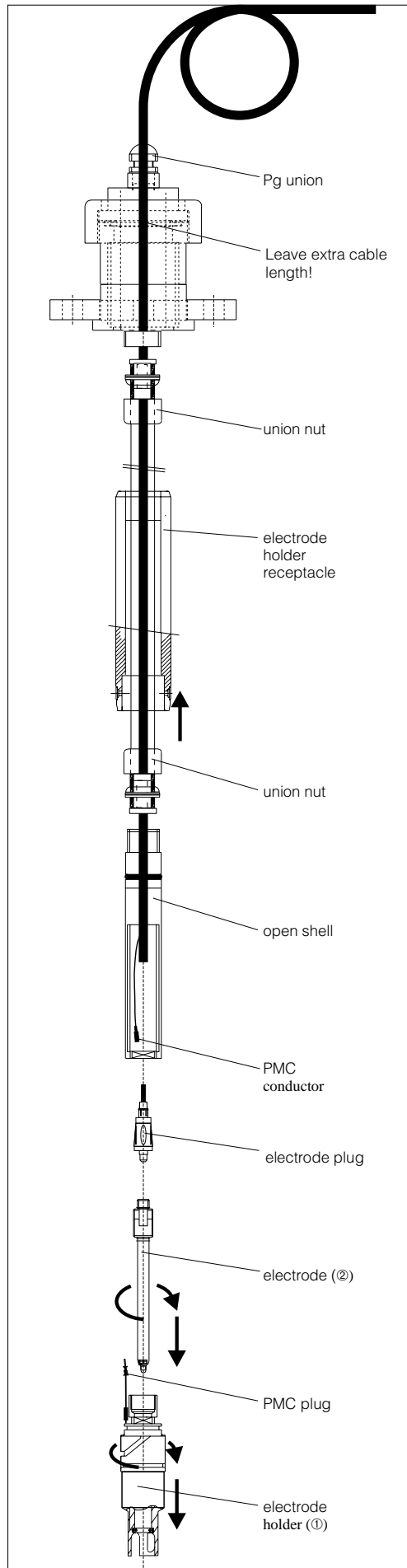


Fig. 5 Mounting pH/Redox electrode and electrode cable with plug

### 3.5 Electrical connection



**Warning:**

- The notes and warnings in these operating instructions must be strictly adhered to!
- Use a terminated CPK 1 or CPK 7 cable for connection. (Terminal assignment for E+H instruments: see Fig. 8.)



**Caution:**

- Faults on the assembly may only be eliminated by authorised and properly trained personnel!
- If faults cannot be remedied, the assembly must be removed from service and secured to prevent accidental start-up.

Fig. 6 CPK 1 cable: Electrode connection

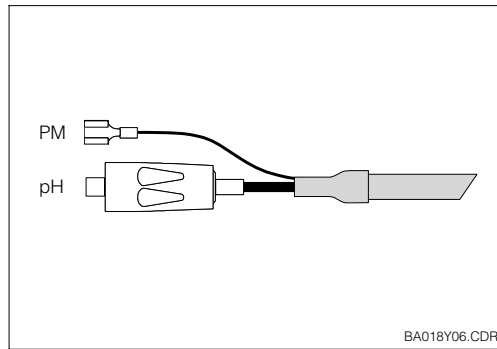


Fig. 7 CPK 1 cable: Instrument connection

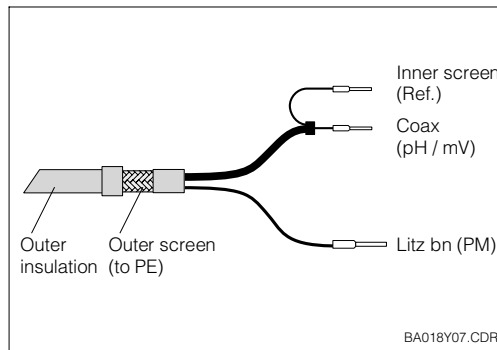
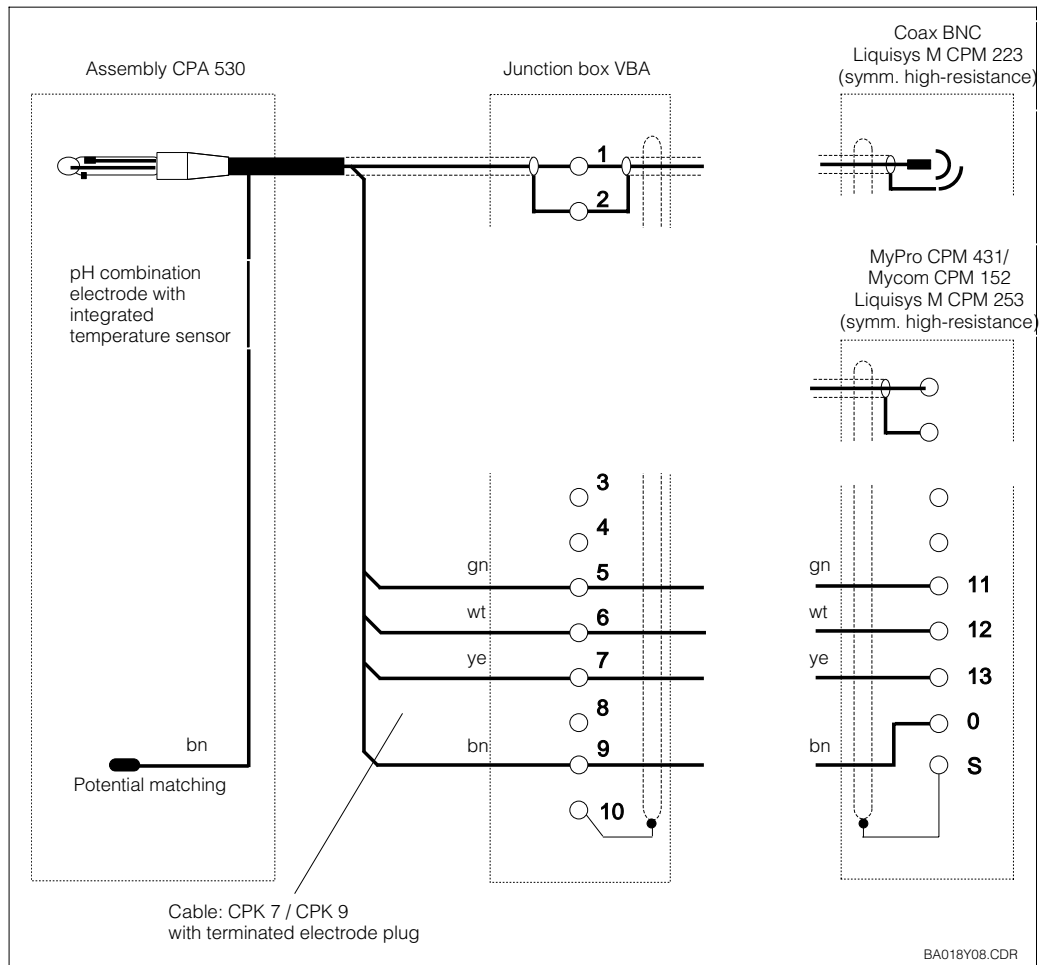


Fig. 8 Connection of DipFit W CPA 530, combination electrode with CPK 7 / CPK 9



## 4 Maintenance

### 4.1 Cleaning

#### 4.1.1 Cleaning the assembly

The assembly must be removed at intervals depending on the medium. O-rings with a sealing function must be visually inspected and replaced if required. It may become necessary to completely clean the side which is in contact with the medium.

#### 4.1.2 Cleaning the 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:

- Vigorously flush the electrode with distilled water after cleaning! Cleaning agent residue may severely impair measurements.
- Recalibrate the measuring system after each cleaning.



#### Note:

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

#### Manual cleaning

Clean all parts of the electrode which are in contact with the medium. Please note the following:

- Remove light coatings using a suitable cleaning solution.
- Use a soft brush and appropriate cleaning solution to remove adhering dirt.
- Remove stubborn dirt by soaking in cleaning agent.



#### Caution:

- Do not use abrasive cleaning agents! These may cause irreparable damage to the electrode measuring surfaces.

#### Selecting cleaning agents

The cleaning agents selected will depend on the type of soiling. The most frequent types of soiling and the appropriate cleaning agents are listed in the table below:

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



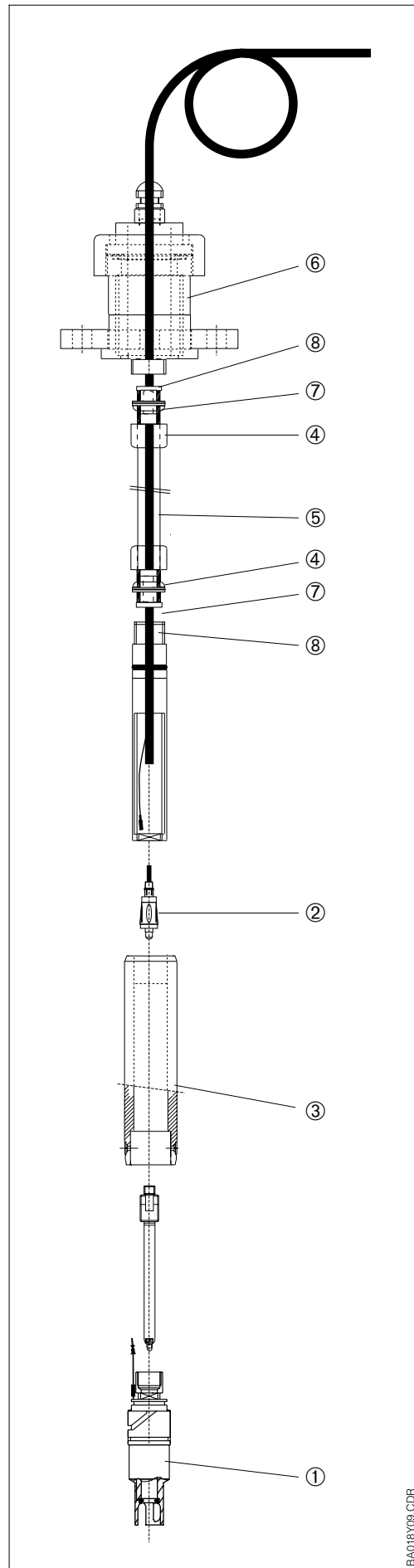


Fig. 9 Mounting of electrode cable and cable protection hose

## 4.2 Replacing worn parts

All O-rings of the assembly must be occasionally checked for damage.

The standard material for O-rings in contact with the medium is EPDM.

The following O-ring sets can be ordered:

EPDM Order No.: 50044657

Viton Order No.: 50044658



### Caution:

Should it become necessary to replace O-rings, then

- avoid any damage of the new O-rings and the O-ring seat, and
- observe precautions for possible special materials (depending on the medium).

## 4.3 Replacing the electrode cable

- Loosen the electrode holder bayonet lock by turning it and remove the electrode holder (1) from the assembly.
- Unscrew the electrode plug (2) of the old/defective cable from the electrode and cut it off from the cable.
- Push the electrode holder receptacle (3) up over the cable protection hose.
- Loosen the union nuts (4) on both ends of the hose and unscrew them; loosen the Pg cable gland on the assembly head (6).
- Pull the old or defective cable out of the protection hose (5).
- Push the new cable through the open shell (9), the PVC hose (5) and the assembly head (6) from the electrode side.
- 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) plug (10).
- Hand-tighten the union nuts (4) on both ends of the hose and fix the Pg 16 cable gland on top of the assembly head (6).
- Insert the electrode holder in the open shell (9), push the electrode holder receptacle (3) above it and fix it with the bayonet lock.

## 4.4 Replacing the cable protection hose

Proceed as described for the electrode cable.  
Additional:

- Loosen and unscrew the union nuts (④) and pull the clamping rings (⑦) off the support sleeve (⑧) via the hose
- Pull the support sleeves (⑧) out of the hose and install them on the new hose along with the clamping rings reversing the sequence of the instructions above
- Install the hose and electrode cable on the assembly head (⑥) and electrode holder as described above.

## 5 Technical data

<b>General data</b>	Manufacturer	Endress+Hauser
	Product designation	DipFit W CPA 530
<b>Attachment</b>	CPA 530-xx1	DN 50 flange, PN 10
	CPA 530-xx2	oval flange and mounting plate
	CPA 530-xx5	suspension bracket, SS 1.4571
<b>Materials in contact with the medium</b>	Immersion tube	PVC
	Electrode holder	PPS mit 40 % GF
	oval flange, mounting plate	PP-GF
	Protection hose	PVC
	O-rings	EPDM, Viton
	Bayonet pin for electrode holder	titanium
	PAL plug	Hastelloy C4
<b>Operating pressure and temperature</b>	with flange DN	20 °C, max. 3 bar
	with oval flange and mounting plate	50 °C at 0 bar
<b>Geometry / Dimensions</b>	Immersion depth	max. 10 m
	Required mounting cross section	DN 50
	Weight	about 2 ... 2,5 kg
<b>Elektrodes</b>	Elektrode 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 combination electrodes  
OrbiSint W CPS 11/12/13  
Order no. 50054649
- Technical Information  
pH / redox combination electrodes  
OrbiTex W CPS 21  
Best.-Nr. 50054650

