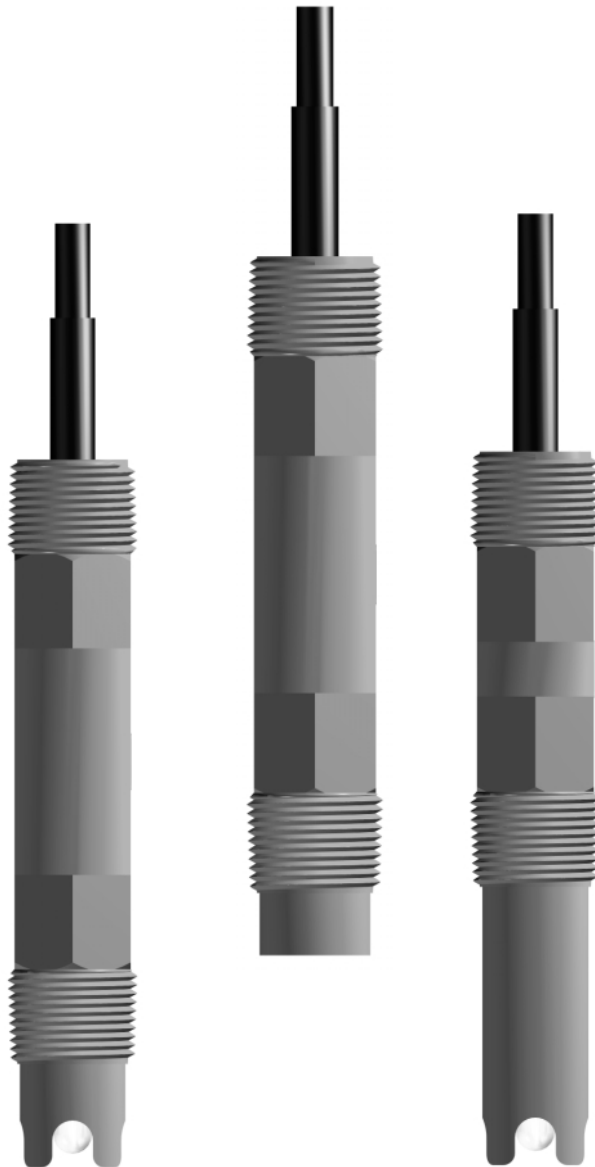


Electrodes for pH/Redox Measurement *OrbiPac W CPF 81/82*

pH / redox compact electrodes for installation or immersion in industrial and waste water



Areas of application

- Waste water treatment, industrial and communal
- Water conditioning
- Condensate cleaning

Benefits at a glance

- Suitable for installation and immersion
- Suitable for measurement within pH range 0 ... 14 and temperature range 0 ... 110 °C
- Three fixed cable lengths available (5 m/15 ft, 10 m/30 ft and 15 m/45 ft) or TOP 68 plug-in head
- pH combination electrode with or without integrated temperature sensor
- With patented KNO_3 electrolyte bridge for better protection against electrode poisons like S^{2-} or CN^- ions
- Protection guard against damage
- Flat membrane suitable for high flow rates and fibrous applications
- Selectable integrated preamplifier for noise-free measuring value transmission
- Screw-in thread NPT $\frac{3}{4}$ "

Endress+Hauser

The Power of Know How



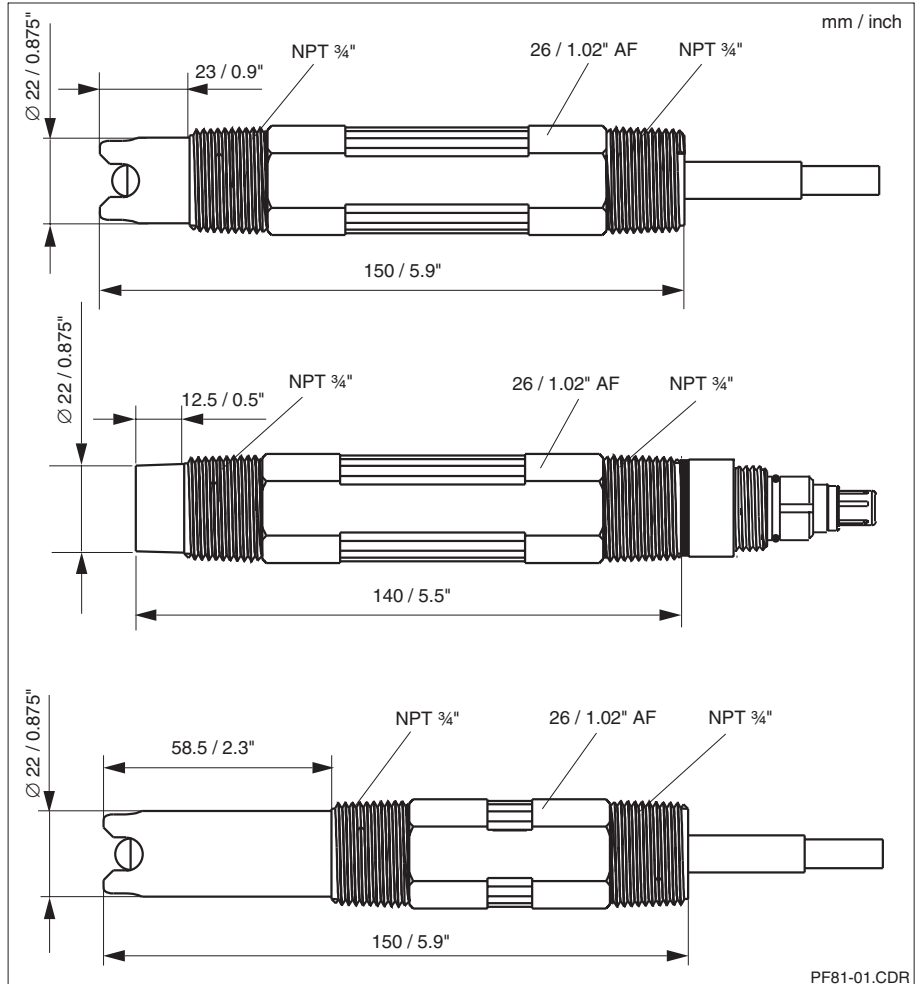
Electrode construction

pH/ORP electrodes
OrbiPac W CPF 81/82

top:
xx1 version
with short shaft and
protection guard

middle:
xx2 version
with short shaft and
flat membrane,
ESA plug-in head

bottom:
xx3 version with long
shaft and protection
guard for installation
in large pipe diameters.



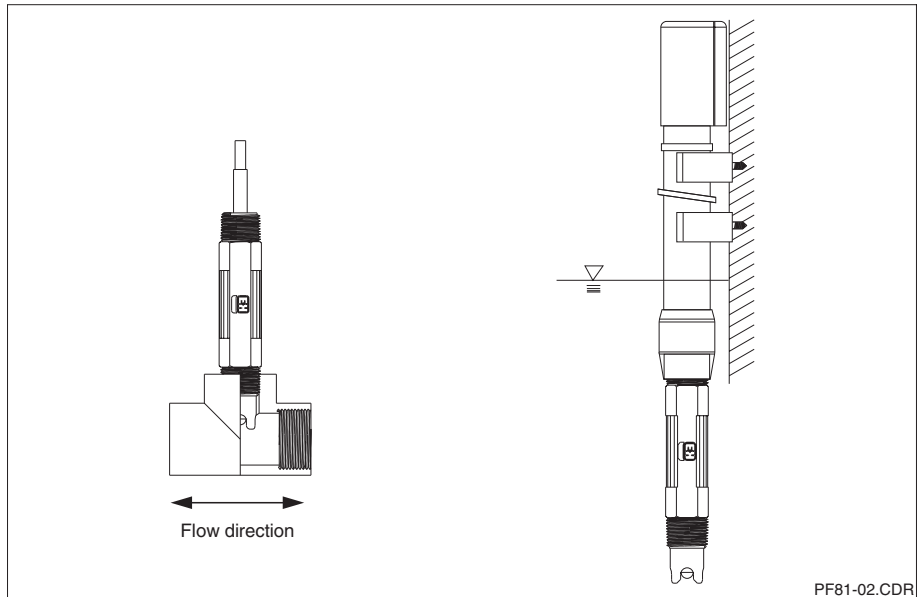
PF81-01.CDR

Installation

Installation examples

left:
Flow installation

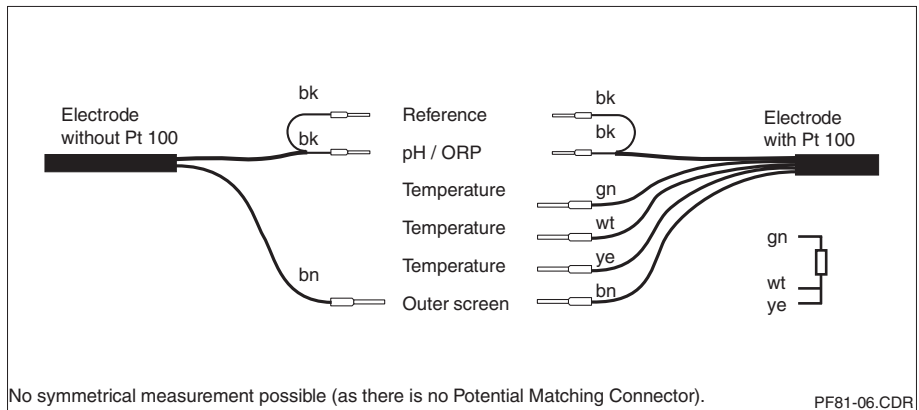
right:
Immersion installation



PF81-02.CDR

Electrical connection

Electrical connection of
CPF 81 / 82



No symmetrical measurement possible (as there is no Potential Matching Connector).

PF81-06.CDR


Temperature and pH ranges

When selecting pH electrodes, the temperature of the medium to be measured has to be considered as well as the pH value. The temperature/pH range table is a guide for selecting the appropriate electrode.

Finally select the shaft length, the membrane, the measuring cable length and the integrated temperature sensor according to the order code.

Application of electrodes for various temperature and pH values

Application	Version	Temperature range in °C						pH range										
		-20	0	20	40	60	80	100	120	0	2	4	6	8	10	12	14	
Waste water Water conditioning	NN																	///
Process water (standard)	NN																	///
Condensate cleaning	NH																	///
Process water (highly alkaline)	LN																	
	LH																	

 reduced accuracy

Technical data

General data

Manufacturer	Endress+Hauser
Product designation	OrbiPac W CPF 81 / 82

Mechanical data

Total length	140 mm (5.5") / 150 mm (5.9")
Shaft length with protection guard	23 mm (0.9") / 12.5 mm (0.5") / 58.5 mm (2.3")
Shaft diameter	22 mm (0.875")
Ingress protection	Fixed cable version: IP 67 ESA plug-in head version: IP 68

Process connection

Thread	NPT ¾"
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Materials

Housing	PPS
Shaft (wetted materials)	PPS
pH electrode (wetted materials)	lead-free membrane glass, suitable for process applications
ORP electrode (wetted materials)	platinum ring

Measuring range

pH range	0 ... 11 / 0 ... 14
Temperature range (Pt 100)	0 ... 80 °C / 0 ... 110 °C
Pressure range	10 bar (150 psi) at 80 °C / 3.5 bar (50 psi) at 110 °C

Measuring system

Reference system	double junction (two chamber system) KNO ₃ and KCl / AgCl
Minimum conductivity	> 50 µS /cm
Zero potential	pH 7.0 ± 0.2
Glass impedance	150 MΩ at 25 °C

Integrated preamplifier

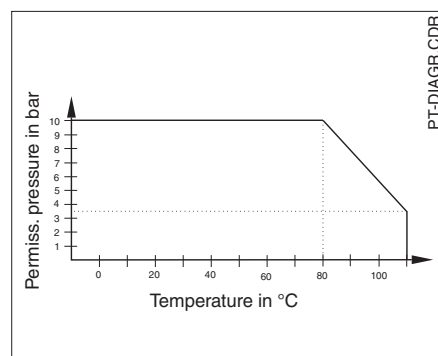
Design	poured within sensor body
Power supply	via integrated round cells
Reference potential	reference electrode

Note:

The pre-amplifier option (variants B, D) will negate the SCS function of the measuring transmitter. This function should then be turned off.

Subject to modifications.

Pressure-temperature diagram



Accessories

- o Measuring transmitter Liquisys M
CPM 223/253
Technical Information
Order no. 51500277

- o Immersion assembly DipFit W CYA
611
Technical Information
Order no. 50085985

Product structure

OrbiPac W Electrodes CPF 81

Application

NN	pH 0 ... 11, T = 0 ... 80 °C
NH	pH 0 ... 11, T = 0 ... 110 °C
LN	pH 0 ... 14, T = 0 ... 80 °C
LH	pH 0 ... 14, T = 0 ... 110 °C

Version

1	Insertion length 23 mm / 0.9", with protection guard
2	Insertion length 12.5 mm / 0.5", flat membrane
3	Insertion length 58.5 mm / 2.3", with protection guard

Process connection

1	NPT 3/4"
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Equipment

A	No Pt 100, no preamplifier
B	No Pt 100, with preamplifier
C	With Pt 100, no preamplifier
D	With Pt 100, with preamplifier

Cable connection

2	5 m / 15 ft fixed cable
3	10 m / 30 ft fixed cable
4	15 m / 30 ft fixed cable
8	ESA plug-in head (TOP 68)

CPF 81-

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complete order code

OrbiPac WElectrodes CPF 82

Application

PA	ORP measurement
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Version

1	Insertion length 23 mm / 0.9", with protection guard
3	Insertion length 58.5 mm / 2.3", with protection guard

Process connection

1	NPT 3/4"
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Equipment

A	No preamplifier
B	With preamplifier

Cable connection

2	5 m / 15 ft fixed cable
3	10 m / 30 ft fixed cable
4	15 m / 45 ft fixed cable
8	ESA plug-in head (TOP 68)

CPF 82-

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complete order code

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