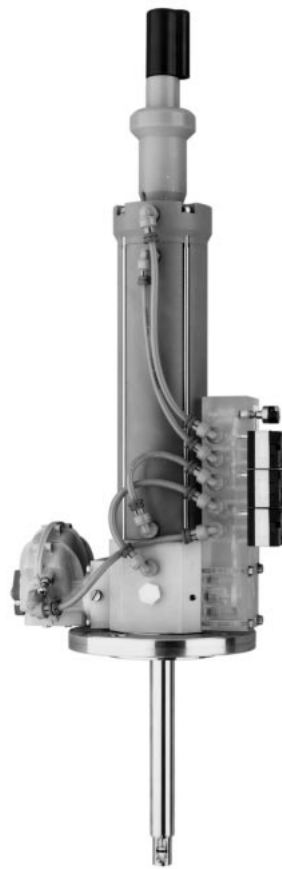


# Retractable Assembly for pH and Redox Measurement *profit CPA 463*

## Process assembly for manual or pneumatic operation with limit position signalling

Measurement of pH and redox values under process conditions requires assembly systems of superior quality and reliability. The Proffit process assemblies guarantee maximum life times, reduced maintenance and safe, reliable measurement even under high pressures and extreme temperatures.

The Proffit CPA 463 family of assemblies allow a pH or redox electrode to be sealed off, cleaned, calibrated or changed under process conditions. Plastic and metallic versions are available to cover the various requirements of industrial measuring applications. These assemblies can be operated manually or pneumatically.



### Areas of application

- Chemical production
- Paper industry
- Textile industry
- Effluent treatment
- Sewage treatment plants/digested sludge
- Water treatment
- Electrode-critical processes
- Tank filling systems
- Power plants
- Automated pH measurement

### Benefits at a glance

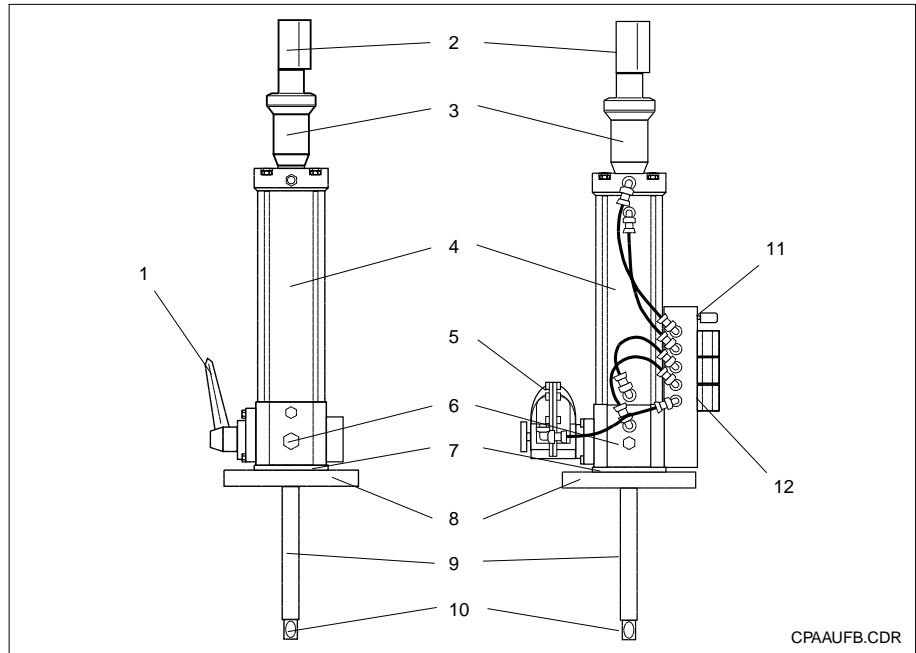
- Immersion depth of electrode 93 mm or 191 mm
- DN 50/PN 10 or ANSI 2" flange mounting
- Sealing with patented tap cock prevents medium carry-over
- Position feedback via pneumatic signal permits integration in automated process sequences
- Can be combined with fully automatic Airtrol calibration system and Autoclean automatic cleaning system



# Design

Construction of Probit CPA 463 assembly

- 1 Hand lever for tap cock
- 2 Splash protection cap for measuring cable
- 3 Protective sleeve
- 4 Pneumatic cylinder
- 5 Pneumatic actuator for tap cock
- 6 Rinse port G 1/4"
- 7 Flanged sleeve
- 8 Loose flange
- 9 Electrode guide
- 10 Protection guard (can be replaced with support sleeve)
- 11 Service position feedback
- 12 Pneumatic control



The retractable assembly CPA 463 is installed via a loose flange. The electrode guide with the built-in pH/redox electrode can be actuated

- manually with Probit CPA 463-H
- pneumatically with Probit CPA 463-R, or
- pneumatically for Airtrol CPC 200/210 with rinse port adapter (water valve block) and Probit CPA 463-A.

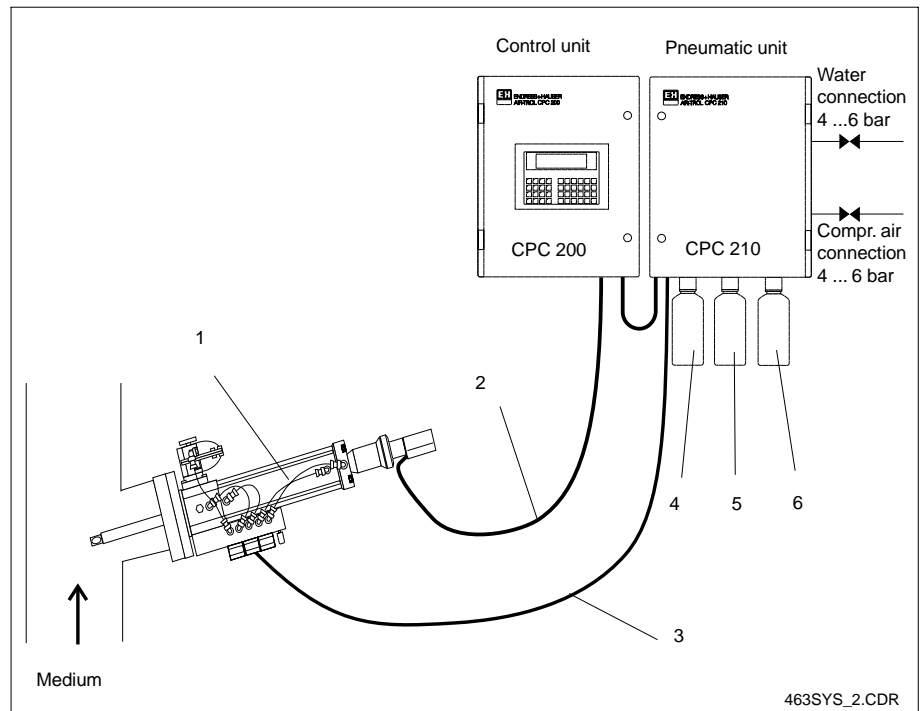
The electrode guide is moved into the process space for measurement and withdrawn into the assembly for calibration, cleaning and electrode replacement.

When retracted, the assembly is sealed off from the process by means of a tap cock. In this position, the electrode can be calibrated, cleaned, or replaced in a simple manner without interrupting the process.

# Measuring system

Measuring system Probit CPA 463 with Airtrol CPC 200

- 1 Probit assembly CPA 463-A
- 2 pH measuring cable
- 3 Multiple hose connection
- 4 Buffer 1
- 5 Buffer 2
- 6 Cleaning agent

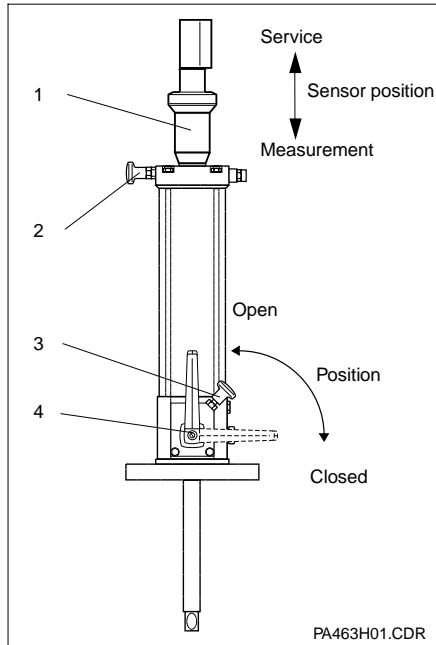


A measuring system consists of:

- the Probit CPA 463 assembly,
- a pH/redox electrode, suitable for the assembly and the medium to be measured,
- a pH/redox measuring instrument, e.g. CPC 200/210

- measuring cable CPK 1/CPK 7 (terminated)
- connecting hoses for calibration buffer solutions and cleaning agent.

# Function



Actuation of Probfit CPA 463-H

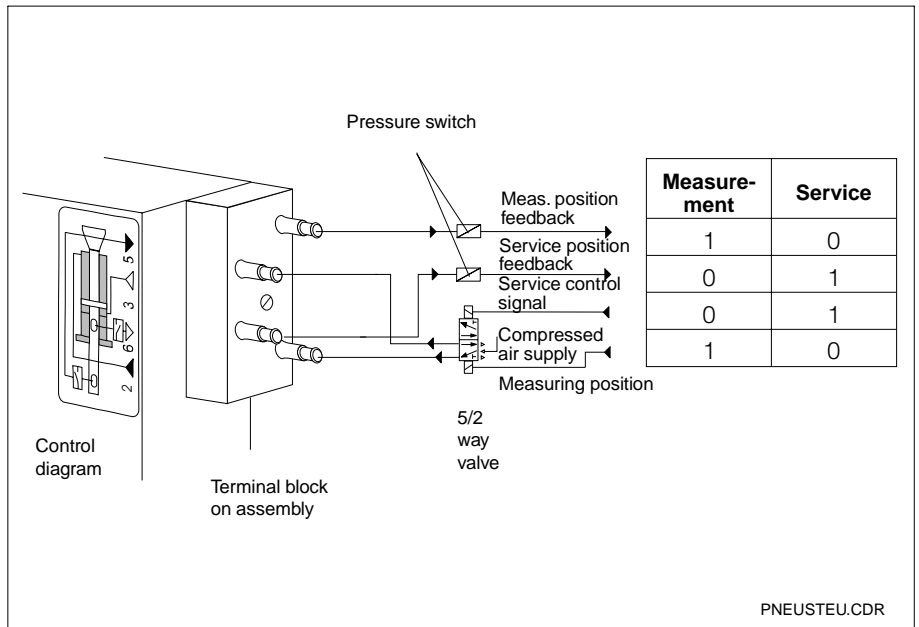
- 1 Electrode guide handle
- 2 Electrode guide locking button
- 3 Cock locking button
- 4 Stopcock

The retractable assemblies CPA 463-R and CPA 463-A can be remote-controlled pneumatically. Special features are:

- Control logic guarantees correct sequencing of electrode guide and tap cock actuation
- Two pneumatic signal outputs for the "measurement" and "service" limit positions are available for control or visual indication purposes.

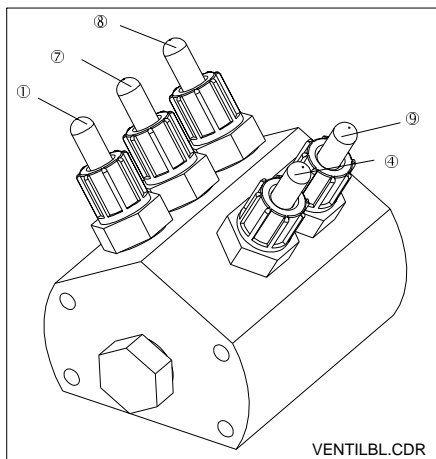
Control of the assembly has been simplified considerably by this. A pneumatic switch is sufficient for operation. The control logic assures operational reliability since the sequence of movements is positively controlled. Installation is extremely simple since only 4 pneumatic control lines must be connected to the assembly.

# Pneumatic connections



Pneumatic control unit of Probfit CPA 463-A/-R

# Rinse port adapter for CPA 463-A



Rinse port adapter for Probfit CPA 463-A

- ① Water
- ④ Rinse air
- ⑦ Cleaning solution
- ⑧ Buffer 2
- ⑨ Buffer 1

The following connections on the rinse port are available:

- water
- rinse air
- cleaning solution
- buffer 1
- buffer 2.

The connections are to be chosen as illustrated beside. Hose dimensions: OD6 / ID4.

The rinse port adapter can be retrofitted for the CPA 463-H and CPA 463-R versions (see accessories).

# Dimensions and installation

Dimensions  
Probit CPA 463

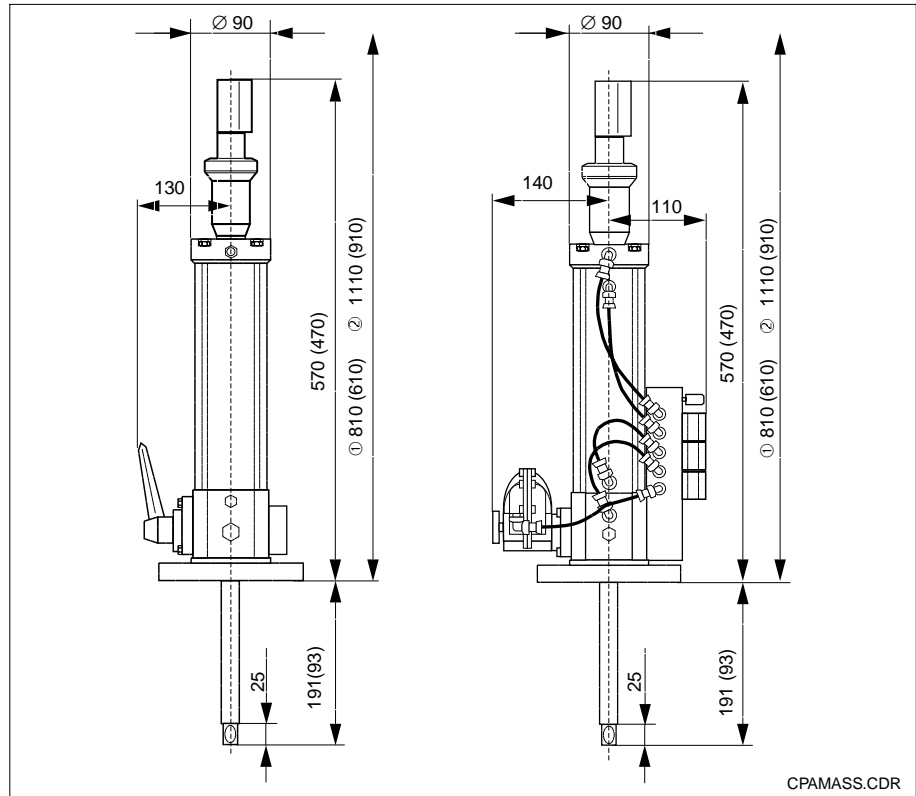
*left*  
CPA 463-H

*right*  
CPA 463-R / -A

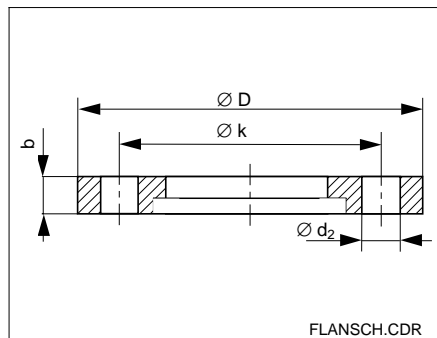
Dimensions in brackets  
for short version

① Length in extended  
state

② Required mounting  
clearance



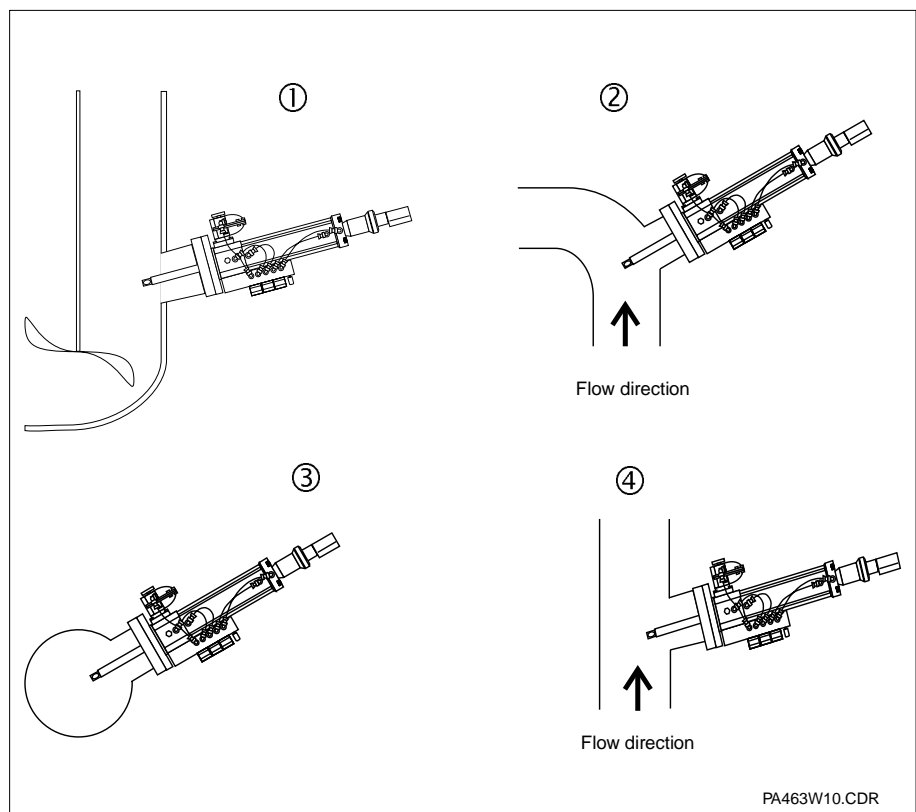
CPAMASS.CDR



Loose flanges used on  
Probit assemblies  
(included in scope of  
delivery)

FLANSCH.CDR

Flange	DN 50/PN10	ANSI 2" , 150 lbs
ØD	165	152,4
Øk	125	120,6
Ød <sub>2</sub>	18	19
b	18	19
Screws	M 16	M 16
Bores	8	4



Examples for mounting  
Probit CPA 463

- ① Tank
- ② Bend
- ③ Horizontal pipes
- ④ Vertical pipes

PA463W10.CDR

# Installation angles

Installation angles of the assembly

Recommended installation range:

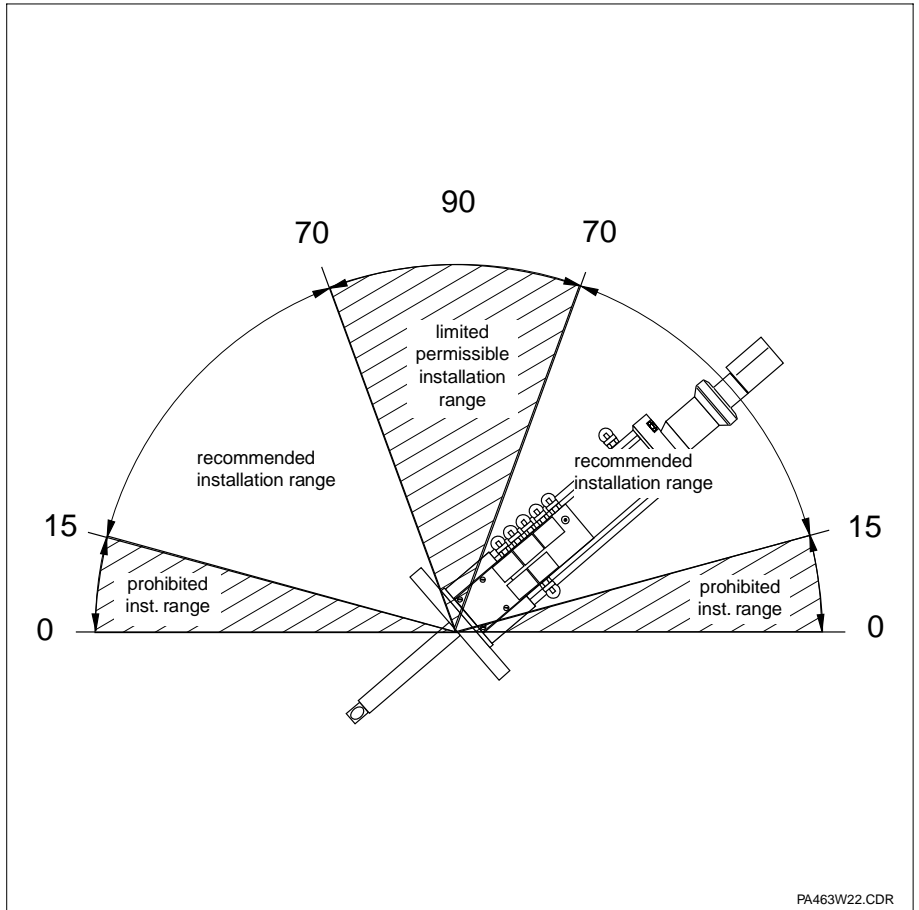
full operability with CPS 11, 12, 41 (incl. autom. cleaning and calibration)

Limited permissible installation range:

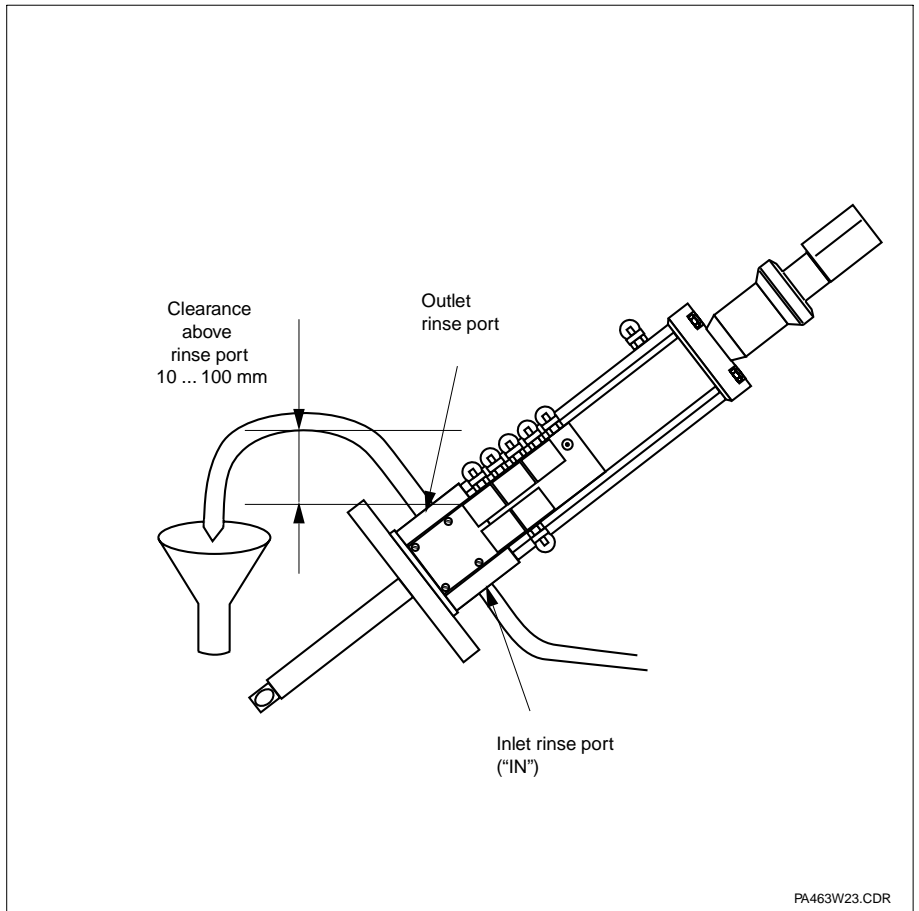
limited operability with CPS 11, 12 (no automatic calibration); no operability with CPS 41

Prohibited installation range:

no operability with CPS 11, 12, 41



PA463W22.CDR



Assembly installation using the rinse port

PA463W23.CDR

# Technical data

## General data

Manufacturer	Endress+Hauser GmbH+Co.
Designation	Probit CPA 463

## Installation

Immersion depth	90 mm, 190 mm *
Number of mounting positions in electrode holder	1 mounting position for pH combination electrode
Electrode length	360 mm
Electrode plug-in head	Pg 13,5

## Mounting

Flange version 1	4-hole DN 50 / PN 10 flange acc. to DIN 2501
Flange version 2	ANSI 2" flange

## Process connection

Rinse port adapter for CPA 463-A	Inlet G 1/4 , outlet G 1/4
Hose connections adapter	5 hose connections OD6 / ID4
Pneumatic control conduits	4 hose connections OD6 / ID4

## Weight

PVC version	3,5 kg / 5 kg
PVDF version	3,5 kg / 5 kg
Stainless steel 1.4571 version	5,5 kg / 8 kg

## Materials in contact with medium

CPA 463-H / -R / -A version:	PVC	PVDF	1.4571
Pneumatic cylinder	PVC	PVC	PVC-C
Housing	PVC	PVDF	PVDF
Stopcock	PVC	PVDF	PVDF
Electrode guide and flanged sleeve	PVC	PVDF	1.4571
Flange	PVC	UP-GF	1.4571
Seals	EPDM, Viton, Chemraz, Fluoraz		

## Operating data

<b>CPA 463-H</b>	<b>Pressure / Temperature:</b>
PVC	3 bar / 20 °C; 0 bar / 60 °C
PVDF	3 bar / 20 °C; 1 bar / 100 °C
Stainless steel 1.4571	3 bar / 100 °C
<b>CPA 463-R / -A</b>	<b>Pressure / Temperature:</b>
PVC	6 bar / 20 °C; 0 bar / 60 °C
PVDF	6 bar / 20 °C; 1 bar / 100 °C
Stainless steel 1.4571	6 bar / 100 °C
Compressed air	3 ... 6 bar
Compressed air quality	filtered ( 5 µm ), water and oil-free

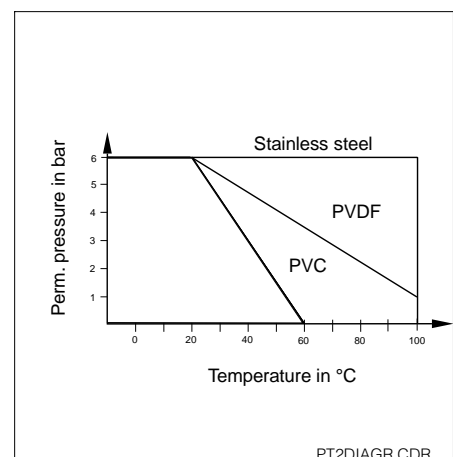
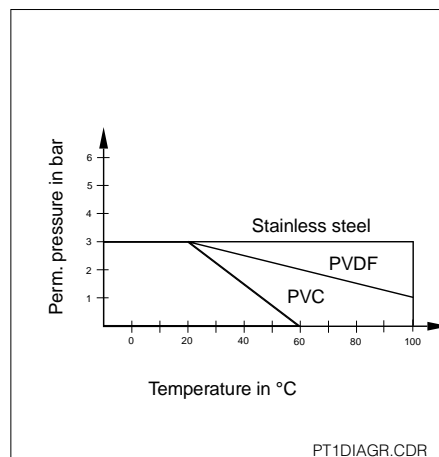
\* Caution: Ceraliquid electrodes (CPS 41 / CPS 42) cannot be used with an immersion depth of 190 mm.

Subject to modifications.

Pressure/temperature diagram

Left:  
CPA 463-H version

Right:  
CPA 463-R / -A versions



## Accessories

Endress+Hauser offers the following special accessories for the retractable assemblies Probit CPA 463:

- Rinse port adapter  
Order no. 50092132
- Retraction security lock  
Order no. 50051999
- Outlet valve  
Order no. 50053655
- Protection cap for liquid filled electrodes CPS 41  
Order no. 50080932
- pH/redox combination electrodes acc. to the following tables:

pH combination electrodes, length 360 mm:

Electrode type/ Order no.	Temperature	pH range
CPS 11-1AA5GSA	-15 ... 80 °C	1 ... 12
CPS 11-2AA5TSA	-15 ... 80 °C	1 ... 12
CPS 11-1BA5GSA	10 ... 130 °C	0 ... 14
CPS 11-2BA5TSA	10 ... 130 °C	0 ... 14
CPS 41-2BB5TSS	10 ... 130 °C	0 ... 14

Redox combination electrode, length 360 mm:

Electrode type/ Order no.	Temperature	pH range
CPS 12-0PA5GSA	-15 ... 130 °C	0 ... 14

- Buffer solution CPY 2
- Measuring cable CPK 1 or CPK 7

Endress+Hauser offers the following control systems for automatic cleaning and calibration of the retractable assemblies:

- Autoclean CPC 20  
Automatic cleaning control unit  
Technical Information TI 161C/07/en  
Order no. 50089158
- Airtrol CPC 200 / 210  
Automatic cleaning and calibration unit  
Technical Information TI 095C/07/en  
Order no. 50061485
- Airtrol 500  
Hand-operated unit  
Technical Information TI 038C/07/en  
Order no. 50057223

# How to order

## Retractable assembly Probit CPA 463

### Actuation

- H manual
- R pneumatic, positively controlled
- A for Airtrol CPC 200/210, with rinse port adapter

### Immersion depth / material

- 0 90 mm / PVC
- 1 190 mm / PVC
- 2 90 mm / PVDF
- 3 190 mm / PVDF
- 4 90 mm / 1.4571
- 5 190 mm / 1.4571

### O-ring material

- 1 EPDM
- 2 Viton
- 3 Chemraz
- 4 Fluoraz

### Mounting types

- 1 Installation via DIN flange DN50 / PN10
- 2 Installation via ANSI 2 " flange, 150 lbs.

CPA 463 -

complete order code

**Endress+Hauser GmbH+Co.**  
**- Instruments International -**  
P.O. Box 2222  
D-79574 Weil am Rhein  
Tel. (07621) 975 - 02  
Fax (07621) 975345

**Endress + Hauser**  
Nothing beats know-how

