

# Process Assembly for pH/Redox Measurement *UniFit H CPA 441*

## Process assembly with integrated electrolyte reservoir for installation of one combined pH or redox electrode



Measurement of pH and redox value under process conditions using glass electrodes requires assembly systems of the highest quality and reliability. The UniFit H process assembly ensures a maximum electrode lifetime, reduced maintenance effort and a reliable and precise measurement even under high pressures and temperatures.

### Areas of application

The UniFit H CPA 441 process assembly is particularly suitable for applications which require supply of the electrode with liquid electrolyte, e.g.

- steam sterilisation or
- media with low conductivity.

A small quantity of electrolyte must constantly flow out of the reference system of the built-in pH or redox electrode. This ensures that no foreign substances penetrate into the diaphragm or reference system and that the measurement remains stable in pure water by providing adequate conductivity.

This condition must be maintained under process pressure and during the sterilisation process. Therefore the UniFit H CPA 441 has a very large pressurisable electrolyte reservoir for long operating periods.

It is not necessary to remove the assembly or the electrode to refill. The pressure may be applied by compressed air or a manual pump.

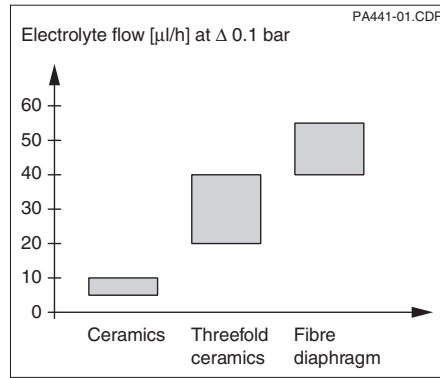
### Benefits at a glance

- Large electrolyte reservoir with check valve in the compressed-air connector and with pressure gauge
- Removal of assembly or electrode is not necessary to refill with electrolyte
- Various types of mounting:
  - Screw connection
  - Flange
  - Dairy fitting according to DIN 11851
  - Varivent adapter
- Protective guard for the electrode can be retrofitted
- Simple installation of combined pH/redox electrodes with liquid KCl filling, shaft length 225 mm



## Operating principle

Dependence of the electrolyte flow on the type of diaphragm



## Differential pressure

The pressure in the electrolyte reservoir must be higher than in the process chamber in order to be able to flush the reference system and diaphragm with electrolyte. The quantity of electrolyte flowing through the system depends on the overpressure of the electrolyte compared to the process pressure and on the diaphragm type.

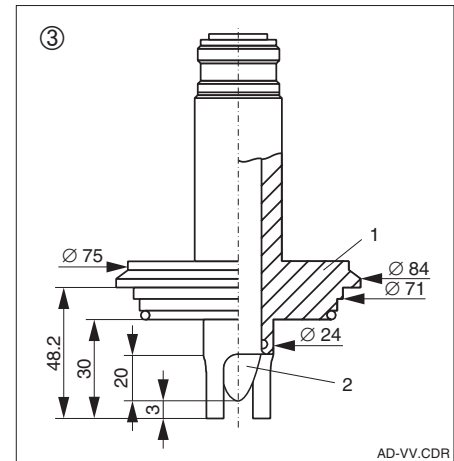
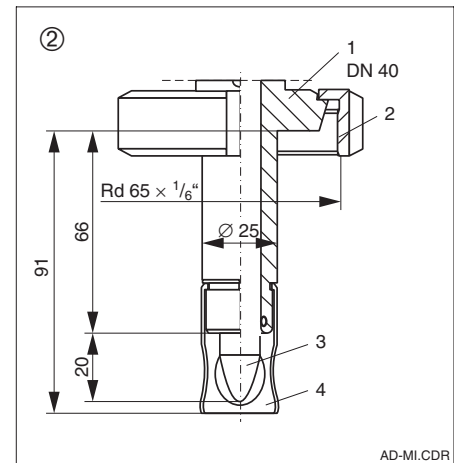
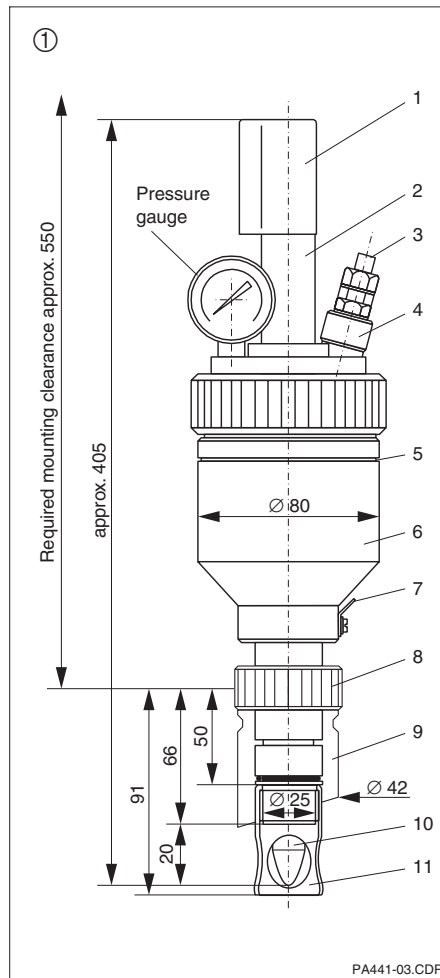
The UniFit H CPA 441 can be used with pressures up to 8 bar and temperatures up to 130 °C.

## Dimensions and mounting versions

- ① Mounting version: Adapter DN 25
  - 1 Splash protection cover with cable entry
  - 2 Protective sleeve
  - 3 Connection for compressed-air tube ID 6 / OD 8 or connection Ø 5 mm for air pump, max. 8 bar
  - 4 KCl refilling
  - 5 Filling mark
  - 6 Pressure reservoir, transparent
  - 7 PM connection
  - 8 Union nut G 1¼

Material: 1.4571 (SS 316Ti)

  - 9 Welding socket, straight or oblique
  - 10 Electrode, shaft length 225 mm
  - 11 Protective guard
- ② Mounting version: Dairy fitting DN 40
  - 1 Conical socket
  - 2 Coupling nut F 40, DIN 11851
  - 3 Electrode
  - 4 Protective guard
- ③ Mounting version: Varivent adapter
  - 1 Clamp fitting
  - 2 Electrode



# Technical data

## General data

Manufacturer	Endress+Hauser
Product designation	UniFit H CPA 441

## Materials in contact with medium

Electrode holder	stainless steel 1.4571 (SS 316Ti)
O-rings	EPDM, Viton

## Materials not in contact with medium

O-rings	silicone, EPDM
Electrolyte reservoir	PC (polycarbonate)
Electrolyte reservoir cap	PC (polycarbonate)
Union nut (built-in adapter version)	stainless steel 1.4571 (SS 316Ti)

## Mounting versions

without adapter	PVC / PVDF / stainless steel 1.4571 (SS 316Ti)
Built-in adapter, straight or oblique	stainless steel 1.4571 (SS 316Ti)
Dairy fitting	stainless steel 1.4571 (SS 316Ti)
Tri-Clamp 2"	stainless steel 1.4571 (SS 316Ti)

## Operating pressure and temperature

PVC version	8 bar at 20 °C, 0 bar at 50 °C
PVDF version	8 bar at 20 °C, 0 bar at 115 °C
Stainless steel version	8 bar at 90 °C, 0 bar at 130 °C
Electrolyte reservoir	80 °C

## Measures and weight

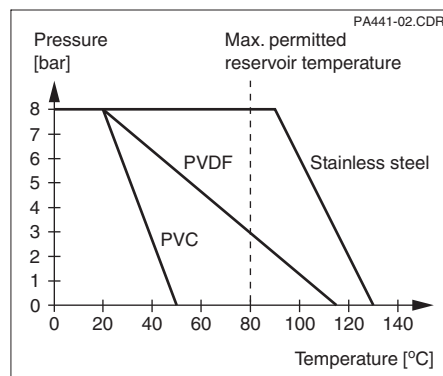
Total capacity	220 ml
Effective capacity	150 ml
Electrode installation	via Pg 13.5 thread
Shaft length	225 mm
Shaft diameter	12 mm
Weight	approx. 2 kg

## Supplementary documentation

Technical Information Ceraliquid CPS 41/42/43	order no. 50059346
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Subject to modifications.

Pressure and temperature stability of the assembly UniFit H CPA 441

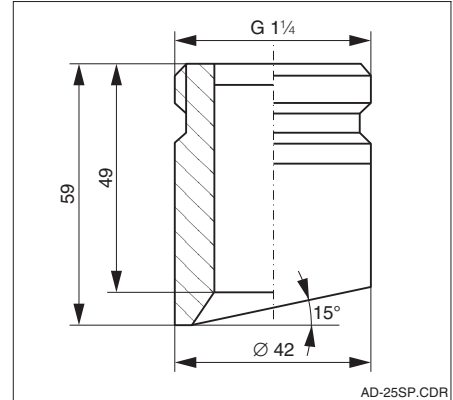
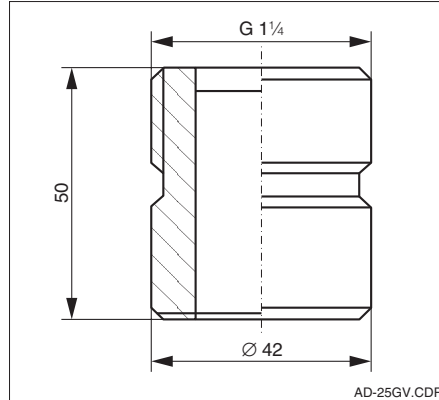


## Accessories

- Built-in adapter DN 25, oblique or straight  
Material: stainless steel 1.4571 (SS 316Ti)
- Dummy plug for built-in adapter G 1¼  
Material: stainless steel 1.4571 (SS 316Ti)
- Protective guard
- Combined pH or redox electrode Ceraliquid CPS 41/42  
see Technical Information CPS 41/42/43, order no. 50059346
- Connection cable
  - CPK 1 for combined pH/redox electrodes
  - CPK 7 for combined pH/redox electrodes with integrated Pt 100

left:  
Built-in adapter, straight

right:  
Built-in adapter, oblique



## Product structure

### pH/redox process assembly UniFit H CPA 441

#### O-ring / body / protective guard

- 11 EPDM / PVC / screw-in (only version A)
- 12 EPDM / PVDF / screw-in (only version A)
- 13 EPDM / 1.4571 (SS 316Ti) / screw-in
- 14 EPDM / 1.4571 (SS 316Ti) / plug-in
- 23 Viton / 1.4571 (SS 316Ti) / screw-in
- 24 Viton / 1.4571 (SS 316Ti) / plug-in

#### Mounting version

- A without adapter
- F Adapter 1.4571 (SS 316Ti) / DN 25, G 1¼ / straight
- G Adapter 1.4571 (SS 316Ti) / DN 25, G 1¼ / oblique
- I Adapter 1.4571 (SS 316Ti) / dairy fitting DN 40
- K Adapter 1.4571 (SS 316Ti) / Tri-Clamp 2"
- L Adapter 1.4571 (SS 316Ti) / Varivent for DN 40 ... 125 (only version 14)

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complete order code

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