

Process assembly for pH/Redox measurement *profit CPA 441*

Process assembly with integrated electrolyte reservoir for installation of one pH or Redox combination electrode



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

Areas of application

The Probfit CPA 441 process assembly is particularly suitable for applications which require flushing of the electrode with liquid electrolyte, e.g. steam sterilization 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 membrane 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 sterilization process. Therefore the Probfit CPA 441 has a very large pressurizable 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 means of compressed air or a manual pump.

Benefits at a glance

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



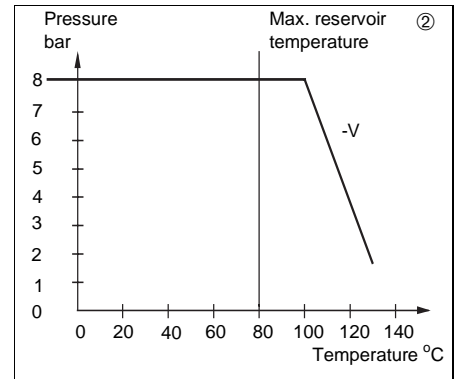
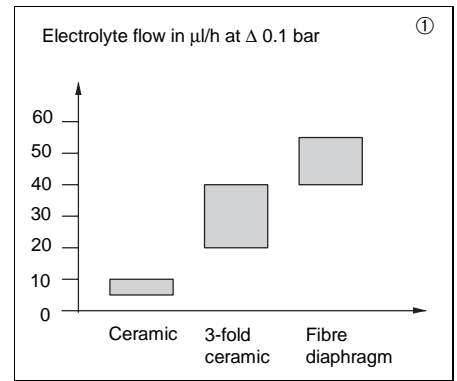
Operating principle

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.

Figure ① illustrates the relationship between the type of diaphragm and the electrolyte flow rate.

The Probfit CPA 441 can be used up to 8 bar pressure and temperatures up to 100 °C.



① Dependence of the electrolyte flow on the type of diaphragm

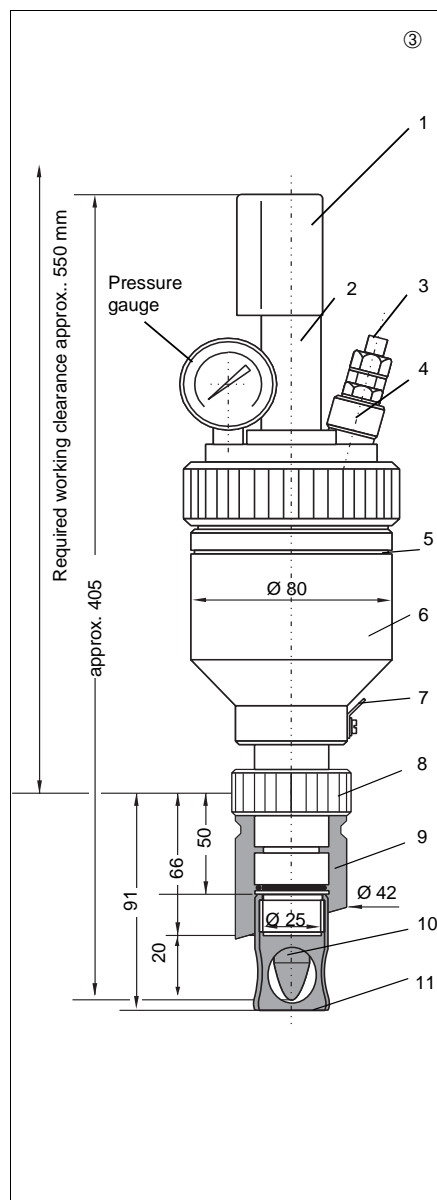
② Pressure and temperature stability of Probfit CPA 441

Dimensions and installation versions

③ Dimensioned drawing Probfit CPA 441

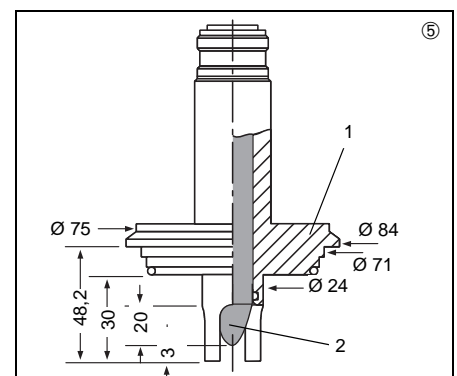
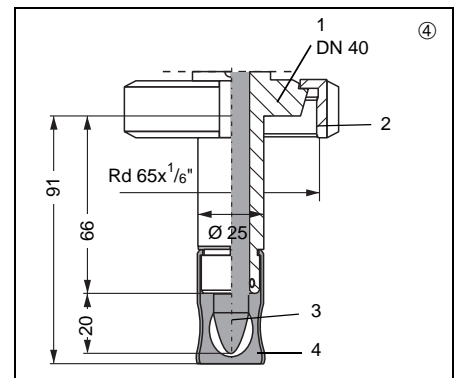
Installation version: adapter DN 25

- 1 Splash protection cover with cable entry
- 2 Protection sleeve
- 3 Connection for compressed air tubing ID 6, OD 8 or connection $\varnothing 5\text{mm}$ for air pump, max. 8 bar
- 4 KCl refilling
- 5 Filling mark
- 6 Pressure reservoir transparent
- 7 PM connection
- 8 Union nut G1 1/4" material 1.4571
- 9 Welding socket straight or oblique
- 10 Electrode L=225mm
- 11 Protective guard



④ Installation version dairy fitting DN 40

- 1 Conical socket
- 2 Coupling nut F 40, DIN 11851
- 3 Electrode
- 4 Protective guard



⑤ Installation version: Varivent adapter

- 1 Clamp fitting
- 2 Electrode

Technical data

Materials in contact with medium

Electrode holder stainless steel 1.4571

O-rings EPDM, Viton

Materials in contact with medium

O-rings Silicone, EPDM

Electrolyte reservoir PC (polycarbonate)

Electrolyte reservoir cap Noryl

Union nut (built-in adapter version) stainless steel 1.4571

Installation versions

Built-in adapter straight, oblique (stainless steel 1.4571)

Dairy fitting connection stainless steel 1.4571

Varivent adapter stainless steel 1.4571

Operating pressure and temperature

Stainless steel version 8 bar at 90 °C

. 0 bar at 130 °C

Electrolyte reservoir max. temperature 80 °C

Total capacity 220 ml

Effective capacity 150 ml

Electrode installation via Pg 13.5 thread

Electrode shaft length 225 mm, diameter 12 mm

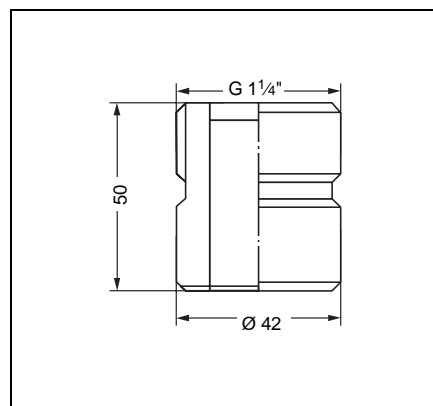
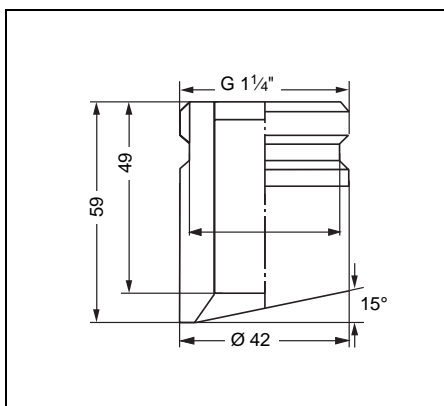
Weight approx. 2 kg

Subject to modifications.

Accessories

- ☐ Built-in adapter DN 25, straight or oblique

Built-in adapter:
Material stainless
steel 1.4571



- ☐ Dummy plug for built-in adapter G 1 1/4"
Material: stainless steel 1.4571
- ☐ Protective guard
Material: stainless steel 1.4571, screw-in or plug-in
- ☐ pH- or Redox combination electrode
Ceraliquid CPS 41/42
- ☐ Connection cable
CPK 1 for pH/Redox combination electrodes
CPK 7 for pH-/Redox combination electrodes with Pt 100

How to order

pH process assembly probfit CPA 441

O-ring / body / protective guard

- 13 EPDM / 1.4571 / screw-in
- 14 EPDM / 1.4571 / plug-in
- 23 Viton / 1.4571 / screw-in
- 24 Viton / 1.4571 / plug-in

Mounting method

- A without built-in adapter
- F Adapter 1.4571 / DN 25, G 1¼" straight
- G Adapter 1.4571 / DN 25, G 1¼" oblique
- I Dairy fitting connection 1.4571 / DN 40
- L Varivent-Adapter (only with version 14)
- Y Special mounting

CPA 441-

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⇐ complete order code

Supplementary documentation

- ☐ Technical Information
Ceraliquid CPS 41/42/43

Order No.
50059346

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