

Retractable holder for pH/ORP measurement *CleanFit P CPA 472*

Compact retractable holder for pH/ORP
electrodes installation in tanks or pipelines



The compact retractable holder permits automatic cleaning, calibration and replacement of the electrode while the process tank is full or under process conditions with pressures up to 87 psi (6 bar). The material in contact with the medium is plastic.

Application Areas

- Chemical industry
- Wastewater treatment
- Plant design
- Tanks and process vats
- Pipelines or pipes

Features and Benefits

- Compact design
- For pH or ORP electrodes
- Electrode can be cleaned and calibrated without interrupting the process, electrode life extended
- Reliable separation from the process by stop bolt and O-ring seals
- Simple removal and installation of electrode during ongoing process
- Adaptation to process requirements by various materials and available designs
- Can be automated with a pneumatic or electric control system

Endress + Hauser

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Area of application

Application

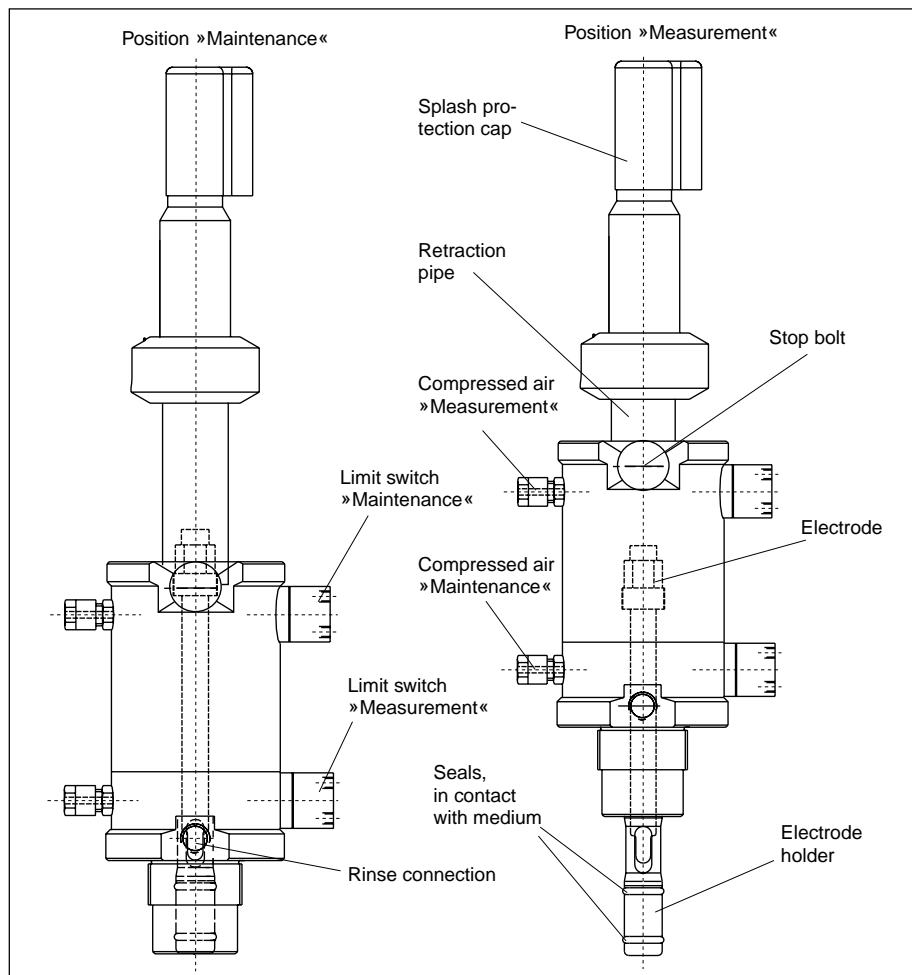
The retractable holder Cleanfit CPA 472 is intended for reliable in-process measurement of pH and ORP values. The CPA 472 has been designed as a compact retractable holder for the chemical industry, plant design, and industrial effluent treatment. Without having to interrupt the process, the installed electrode can be:

- separated from the process and moved to a rinse chamber manually or pneumatically
- rinsed with water or a cleaning solution
- kept moist during interruptions in operation
- removed or calibrated

The CPA 472 holder is available in versions with polypropylene (PP), Polyether ether ketone (PEEK) or polyvinylidene fluoride (PVDF, Kynar®) wetted materials. Depending on the application, you can choose the short holder version, for use with 120 mm gel electrodes or 225 mm liquid KCl electrodes, with immersion depth up to 4.33" (110 mm), or the extended holder version for use with 225 mm gel electrodes with immersion depths up to 8.46" (215 mm). The most commonly used process connections are available and include: 2" 150 lb ANSI flange, DN 50 flange, 1" NPT external thread, G 1-1/4 external, and Rd 78 slotted nut. Refer to page 6 for connection dimensions.

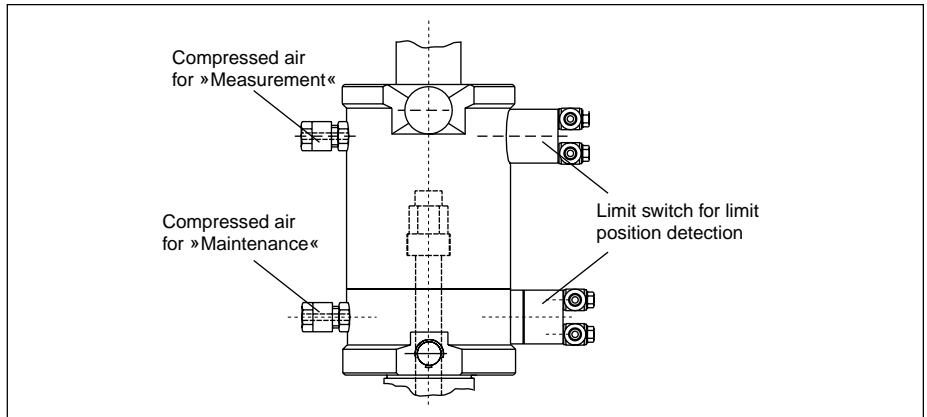
Function and system design

Function



Auxiliary connections

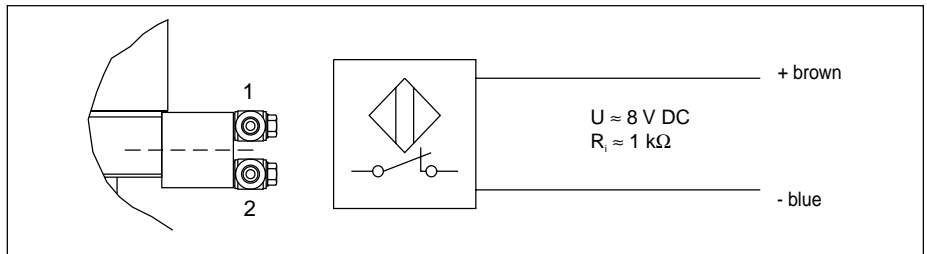
Pneumatic connections for automatic actuation



The Cleanfit CPA 472 holder is operated with an air pressure of 60 to 115 psi (4 to 8 bar). The air must be filtered (40 micron or smaller) and free from water and oil. There is no continuous pressure demand. Air lines must have a minimal diameter of 0.16" (4 mm).

NOTE: If pressure increases over 115 psi (8 bar) are possible, including short peak pressures, a pressure reducer must be installed.

Connections for limit position detection



Left, pneumatic limit switch (1: compressed air inlet, 2: compressed air outlet). Right, electric limit switch.

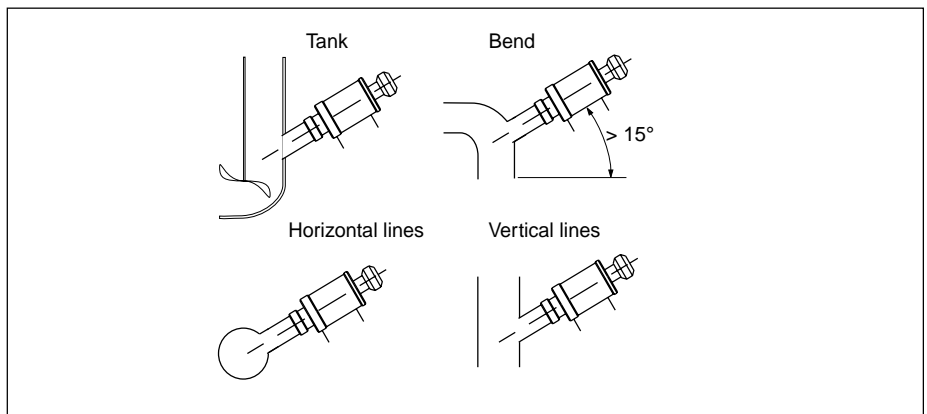
The lower limit switches are used for the »Measurement« function, the upper one for the »Service« function (refer to the measuring system with pneumatic control graphic, page 2).

Operating conditions (installation)

Installation hints

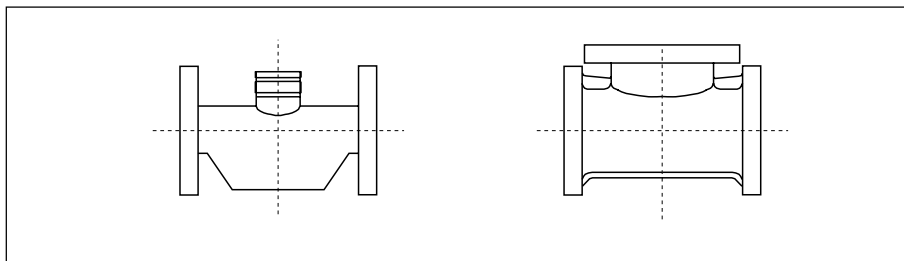
The CPA 472 holder is suitable for mounting on tanks or pipelines. Appropriate nozzles or sockets are to be provided.

NOTE: An installation angle of at least 15° from horizontal is mandatory.



NOTE: Pipe installation of the holder requires a nominal diameter of at least 3" (DN 80). A flow chamber must be used for diameters smaller than 3" (DN 80). A flow chamber is available from Endress+Hauser, 316L SS, DN 25 flanged.

Part No. 51502801



Operating conditions (environment)

Ambient temperature range

The ambient temperature must not drop below 32°F (0°C)

Caution: Damage to the unit will result from frost.

If temperatures can drop below 32°F (0°C), heating of the holder and any air or water lines is required.

Operating conditions (process)

Process temperature range

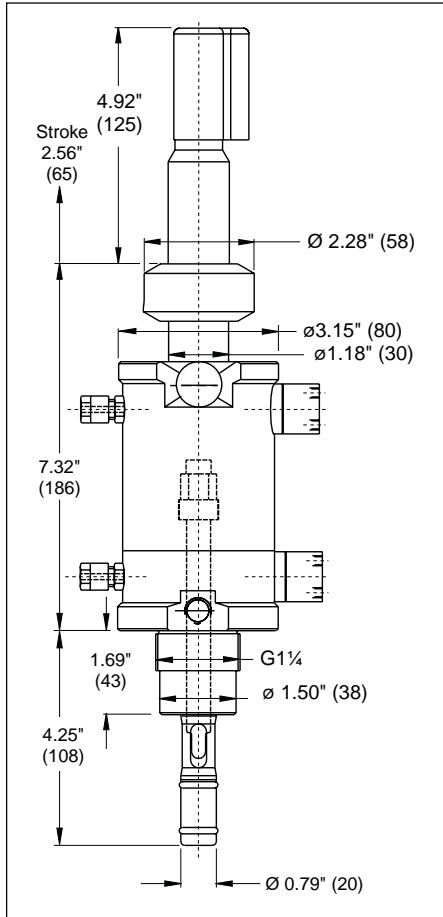
32° to 195°F (0° to 90°C), depending on material selected and process pressure

Process pressure range

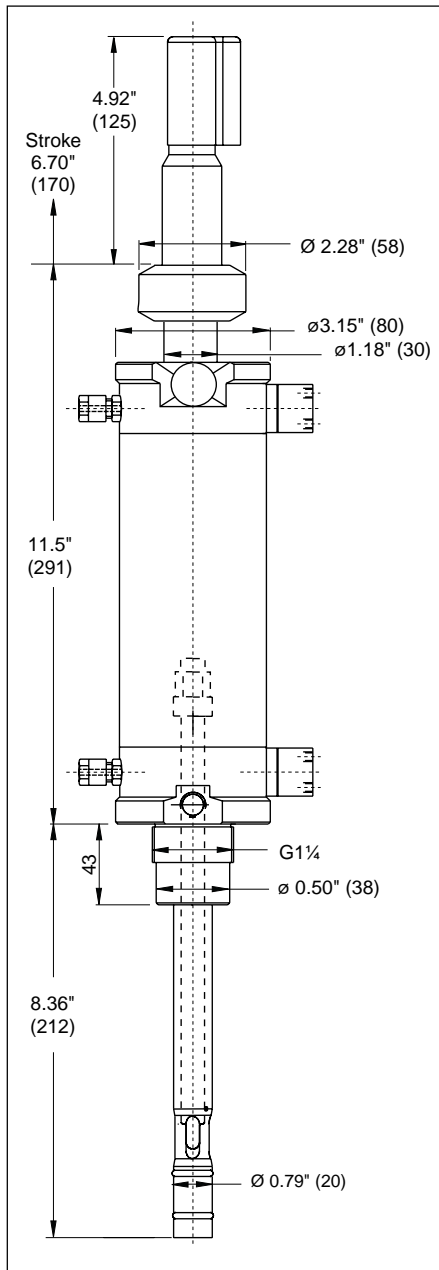
0 to 60 psi (0 to 4 bar) for manual actuation
0 to 90 psi (0 to 6 bar) for pneumatic actuation

Mechanical construction

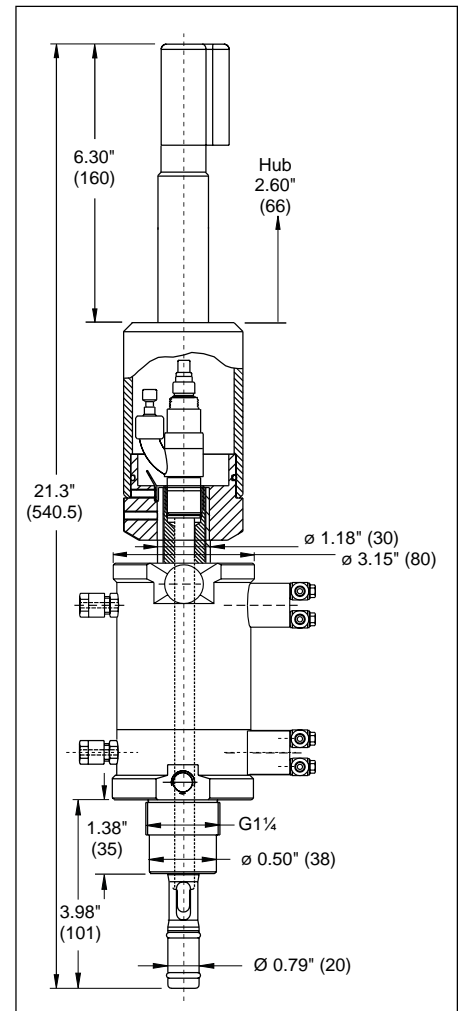
Dimensions



CPA 472 standard version (for electrode length of 120 mm, gel electrode CPS 11, CPS 71)



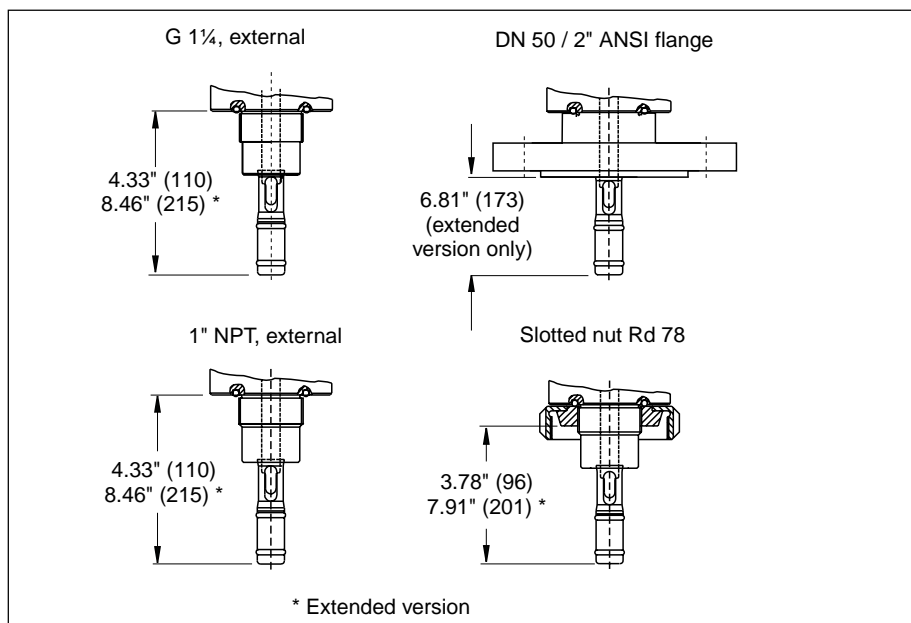
CPA 472 extended version (for electrode length 225 mm, gel electrode CPS 11, CPS 71)



CPA 472 standard version with 225 mm liquid KCl electrode Ceraliquid CPS 41 (with hose connection for refilling KCl)

Weight	Standard version, approximately 3 lbs. (1.5 kg); extended version, approximately 6 lbs (3 kg)
Wetted materials	Electrode holder: PP, PEEK, PVDF (Kynar®) Seals: FPM, Kalrez®
Non-wetted materials	Housing: PA
Rinse connections	Rinse water pressure, 30 to 85 psi (2 to 6 bar). Two 1/4" NPT internal or two G 1/4 internal.
Pneumatic connections	Pressure, 60 to 115 psig (4 to 8 bar). Filtered air (40 micron), water-free and oil-free. Minimum nominal diameter of air lines, 0.16" (4 mm)
Limit switches	Pneumatic 3/2-way valve or electric limit switch
Electrode types	Standard version: 120 mm gel electrodes 225 mm KCl with KCl refilling Extended version: 225 mm gel electrodes

Process connections G 1-1/4 internal thread, 2" Tri-clamp®, DN 50 flange, 2" 150 lb ANSI flange, dairy fitting (DIN 11851), 1" NPT external thread, Varivent, and APV



Certificates and approvals

Ex approval	Electric limit switches are approved for EEx ia IIC T1 / T2 / T3 / T4 / T5 / T6 (approval number: PTB no. Ex - 83 / 2023 X)
CE Mark	By attaching the CE Mark, Endress+Hauser confirms that the instrument fulfills all the requirements of the relevant CE directives

Accessories

pH/ORP combination electrodes	Orbisint CPS 11/12 and CPS 71, 120 mm length	
pH/ORP combination electrodes	Orbisint CPS 11/12 and CPS 71, 225 mm length Ceraliquid CPS 41 (with ESS head), 225 mm length	
Welding socket	G 1-1/4, internal thread, PP	Part No. 51502809
	G 1-1/4, internal thread, PVDF	Part No. 51502810
	Rd 78 external thread, PP	Part No. 51502811
	Rd 78 external thread, PVDF	Part No. 51502812
Flow chamber	DN 50, PP	Part No. 51502815
	DIN 25, PVDF	Part No. 51502816
Wetted seal sets	FPM (Viton®)	Part No. 51502813
	Kalrez®	Part No. 51502814
Hose connection set	G 1/4, DN 12, PVDR (2 pcs.)	Part No. 50090491
Retrofit limit switch kits	Pneumatic limit switches (2 pcs.)	Part No. 51502874
	Electric limit switches (ex, 2 pcs.)	Part No. 51502873

Supplemental Documentation

- Technical Information Orbisint CPS 11/12/13, TI 028C/24/ae
- Technical Information Ceraliquid CPS 41, TI 079C/24/ae

Ordering Information

Cleanfit CPA 472

CPA 472 -

- 1 Drive type and limit switches
 - A Manual drive (cannot be converted to pneumatic actuation)
 - B Pneumatic without limit switches (can be retrofitted)
 - C Pneumatic with 2 pneumatic limit switches (for Endress+Hauser automated systems)
 - D Pneumatic with 2 electric limit switches
 - E Pneumatic with 2 electric Ex limit switches
- 2 Assembly version
 - 1 Standard version
- 3 Electrode holder
 - A For gel electrodes with Pg 13.5
 - B For KCl electrodes with Pg 13.5 hose connection head (immersion depth 1 only)
- 4 Immersion depth
 - 1 Standard version up to 4.33" (110 mm), depending on process connection (possible electrode lengths A = 120 mm, B = 225 mm), not for process connection D
 - 2 Extended version, up to 8.46" (215 mm), depending on process connection (possible electrode length, A = 225 mm)
- 5 Wetted material
 - A PP
 - B PEEK
 - C PVDF
 - D PVDF with PEEK electrode holder
- 6 Seal material (wetted)
 - 2 FPM (Viton®)
 - 3 Kalrez®
- 7 Process connection
 - A G 1-1/4 external thread
 - B 1-1/4" NPT external thread
 - C Slotted nut Rd 78, DIN 11851-3, SS
 - D PP - DN 50 flange (immersion depth 2 only)
 - E PP flange, 2" ANSI (immersion depth 2 only)
- 8 Optional equipment
 - 1 Without rinse connection (retrofitting not possible)
 - 3 With rinse fitting 2 x G 1/4 internal thread
 - 4 With rinse fitting, 2 x 1/4" NPT internal thread

广州晋合水处理设备有限公司



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