

OPA442

Process assembly

For installation of 120 mm sensors in food industry, biotechnology and chemical industry



Application

- Process assembly for pH glass electrodes, pH ISFET sensors and other 120 mm sensors
- Food
- Pharmaceuticals
- Chemicals
- Water treatment
- Permanent installation in tanks and pipework

Your benefits

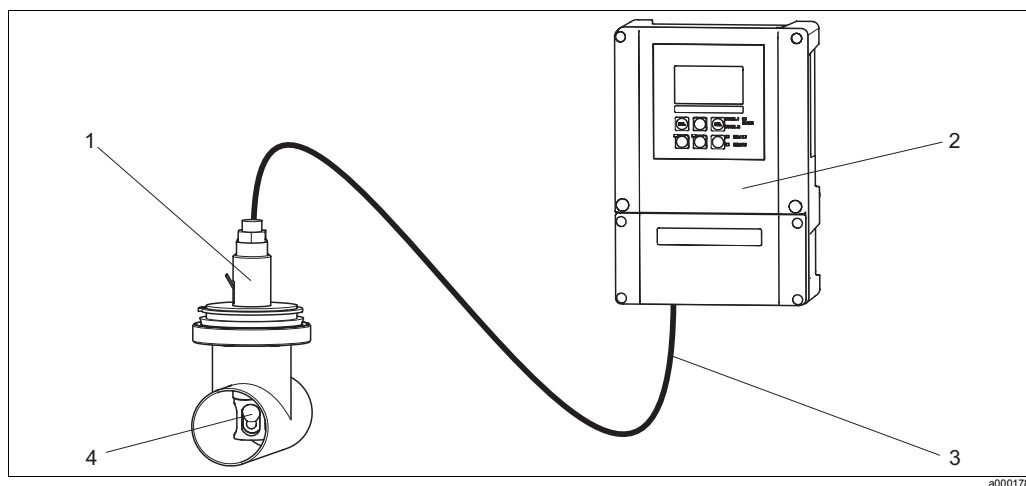
- Complies with 3A standard 74-02
- Complies with the basic criteria of the European Hygienic Equipment Design Group (EHEDG):
 - In-place cleanability
 - In-line steam sterilisability
- Flush mounted, leak-tight built-in electrode seal (moulded seal)
- Electropolished surface $R_a=0.4 \mu\text{m}$ or $0.8 \mu\text{m}$ (stainless steel 1.4435 / AISI 316L)
- Different process connections:
 - DN 25 nozzle
 - DN 50 dairy fitting
 - TriClamp (3 lengths)
 - Varivent
 - APV
 - Neumo BioControl
- Up to 10 bar (145 psi) and 140 °C (284 °F)
- Optional leakage monitoring

Function and system design

Measuring system

A complete measuring system comprises:

- OPA442 assembly
- 120 mm sensor, e.g. OPS11
- Transmitter, e.g. OPM 223/253
- Special measuring cable, e.g. OPK9



Example of a measuring system

- | | |
|---|-----------------|
| 1 | OPA442 |
| 2 | OPM 223/253 |
| 3 | Measuring cable |
| 4 | OPS11 |

Installation

Installation angle

- | | | |
|---|------------------|--|
| A | Glass electrode: | Installation angle of at least 15° from the horizontal |
| B | ISFET pH sensor: | No restrictions, recommended 0 ... 180° |
| C | Oxygen sensor: | Installation angle of at least 10° from the horizontal |

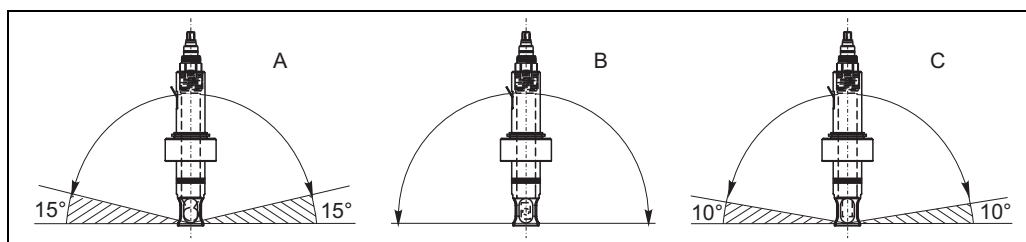


Fig. 1: Permitted installation angles depending on the sensor

Installation instructions

Only trained personnel may replace sealings.



Note!

If the assembly was sent to the manufacturer for replacing the sealings, a final pressure safety test is carried out.

Environment

Ambient temperature

pH sensor: min. -15 °C (5 °F)
 Oxygen sensor: min. -10 °C (14 °F)



Caution!
Risk of frost damage
 Do not use the assembly and sensor below the temperatures specified.

Storage temperature

0 to 50 °C (32 to 122 °F)

Process

Process temperature range

pH sensor: -15 to 140 °C (5 to 284 °F)
 Oxygen sensor: -10 to 140 °C (14 to 284 °F)

Process pressure

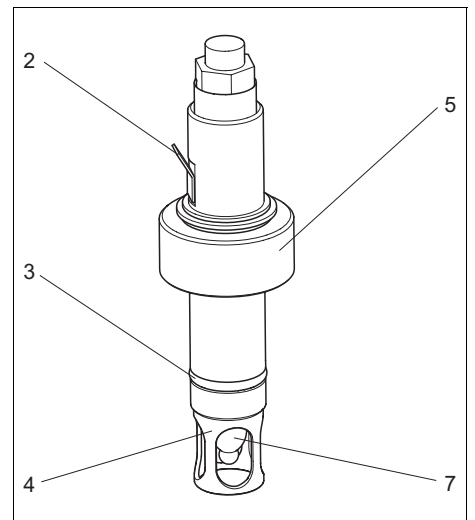
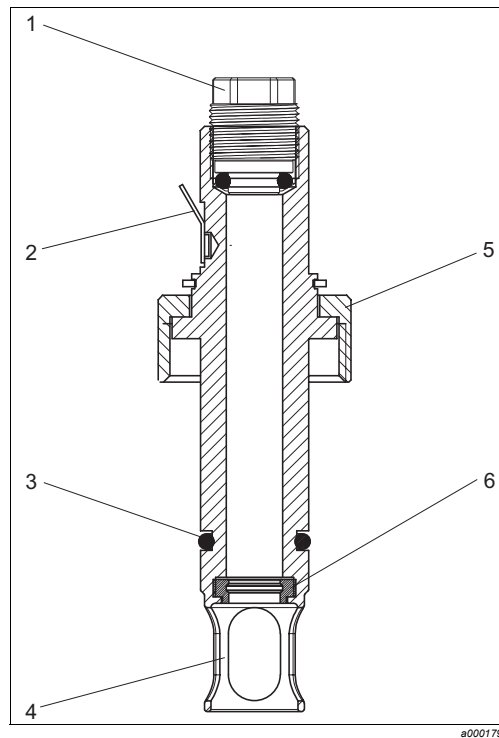
up to 10 bar (145 psi)

CIP / SIP cleaning

The assembly can be sterilised and cleaned acc. to EHEDG criteria. You will receive a 3-A certificate depending on the process connection.

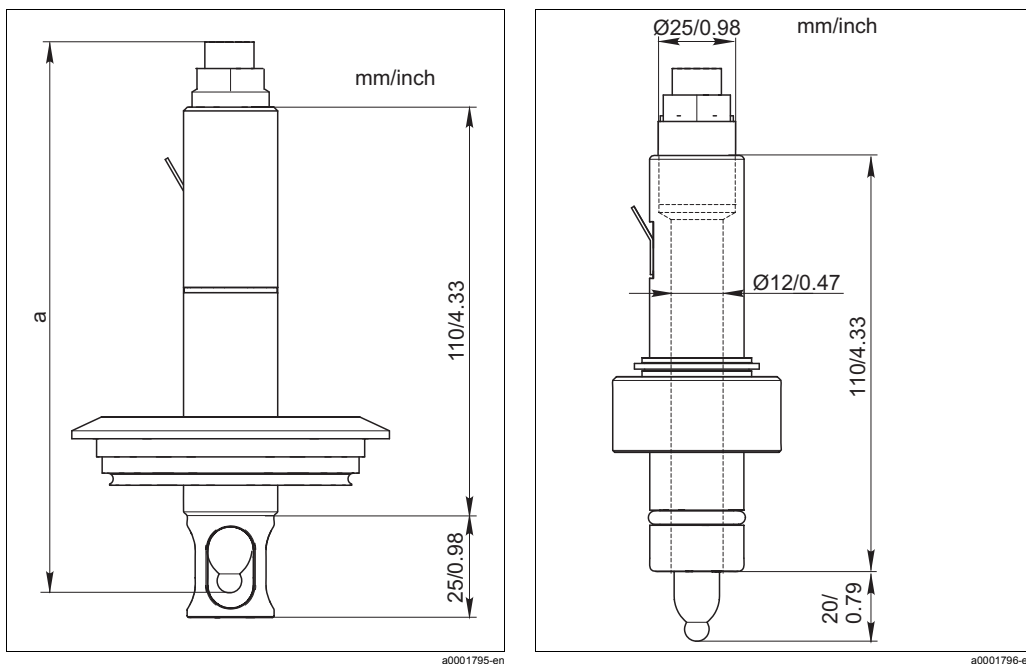
Mechanical construction

Design



- 1 Dummy plug
- 2 PM pin
- 3 O-ring
- 4 Sensor protection guard (optional)
- 5 Process connection (here DN25 standard / 1.6")
- 6 Moulded seal
- 7 Sensor (here glass electrode)

Dimensions



Version G with protection guard

Version A without protection guard

a Sensor length (without cable)

Weight

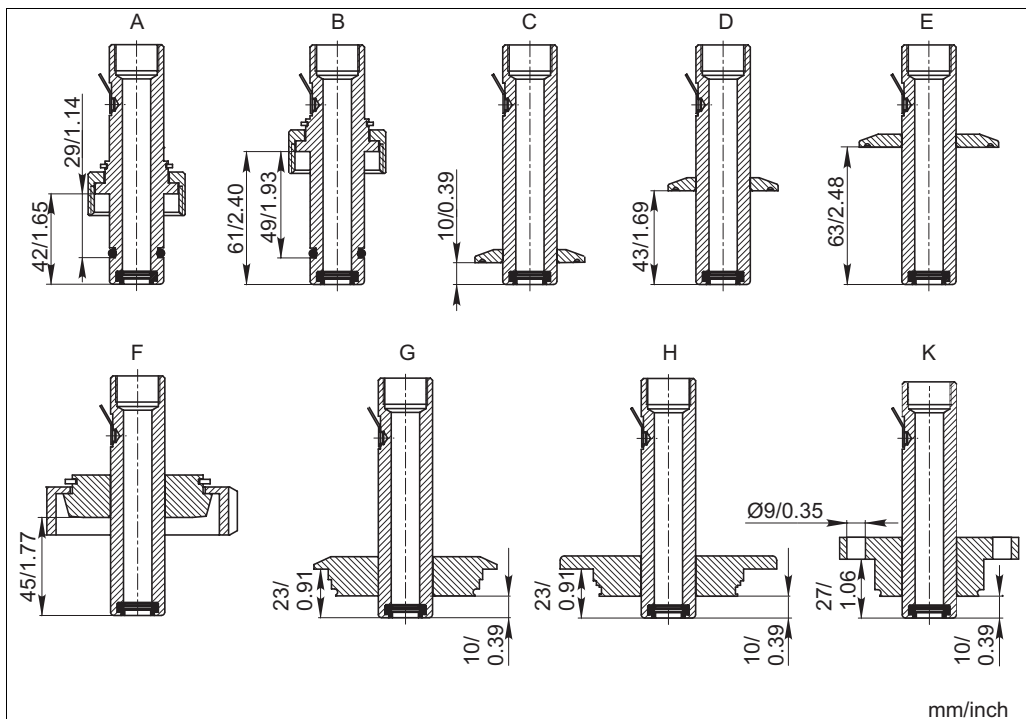
0.5 to 0.8 kg (1.1 to 1.8 lb) depending on the process connection

Materials

Seals:
Assembly:

EPDM / FPM (Viton®) / Silicone
Stainless steel 1.4435 (AISI 316L)

Process connections



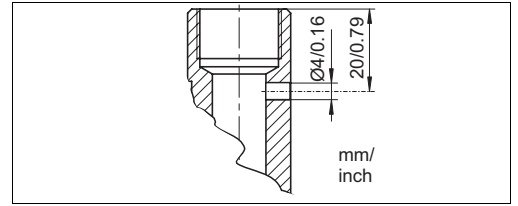
Process connections

- A DN25 standard / 1.6"
- B DN25, for B.Braun port, too / 2.4"
- C TriClamp 1.5" / 0.4"
- D TriClamp 1.5" / 1.7"
- E TriClamp 2" / 2.5"

- F Dairy fitting DN50 DIN 1185 / 2.5"
- G Varivent DN40-125 / 0.4"
- H APV DN40-100 / 0.4"
- K Neumo BioControl D50 / 0.4"

Leakage monitoring (optional)

Leakage monitoring indicates any leaks in the moulded seal. In the event of a leak, small amounts of fluid escape through the monitoring hole. The moulded seal must then be replaced.



Ordering information

Product structure

Process connection; Installation depth	
A	DN 25 standard / 1.6" installation depth without protection guard
B	DN 25 also for B. Braun / 2.4" installation depth without protection guard
C	TriClamp; 1.5" / 0.4" installation depth without protection guard
D	TriClamp; 1.5" / 1.7" installation depth without protection guard
E	TriClamp; 2" / 2.5" installation depth without protection guard
F	DN 50 dairy fitting / 2.5" installation depth without protection guard
G	DN 40-125 Varivent / 0.4" installation depth without protection guard
H	DN APV 40-100 / 0.4" installation depth without protection guard
K	D50 Neumo BioControl / 0.4" installation depth without protection guard
Material	
1	Stainless steel 1.4435 (AISI 316L), surface finish $R_a = 0.8 \mu\text{m}$
2	Stainless steel 1.4435 (AISI 316L), surface finish $R_a = 0.4 \mu\text{m}$ / grit 240 with certificate 2.1.B acc. to EN 10204
Certificates	
A	3-A, EHEDG cleanable and sterilisable
B	3-A, EHEDG cleanable and sterilisable + EN 10204-3.1B
Sealing	
1	EPDM moulded seal (complying with FDA requirements)
2	FPM (Viton®) moulded seal (complying with FDA requirements)
3	Silicon moulded seal (complying with FDA requirements)
Electrode protection guard	
A	With integrated electrode protection guard (+ 25 mm installation depth)
B	Without electrode protection guard (+ 20 mm free installation depth required)
Version	
1	Standard version
2	With leakage monitoring
Additional equipment	
A	Standard version
OPA442-	complete order code

Certificates and approvals

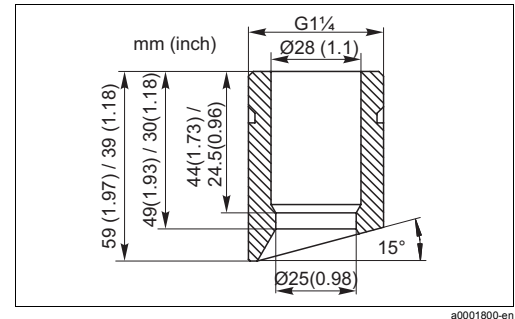
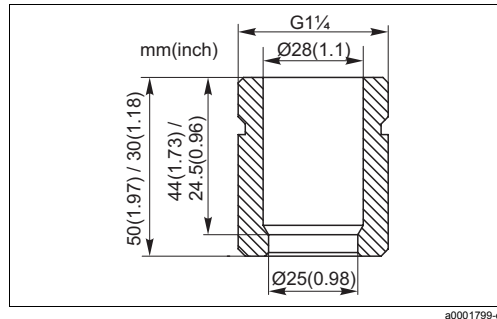
- Ability to be cleaned/sterilised validated in accordance with EHEDG criteria
- The versions with process connection C, D, E, F, G, H and K comply with the 3-A standard 74-02
- 3.1.B (materials test certificate in accordance with EN 10204)
- 2.3 (surface finish in accordance with EN 10204)

Accessories

Seals

- EPDM seal set for OPA442; order no. 51507170
- FPM (Viton®) seal set for OPA442; order no. 51507169
- Silicon seal set for OPA442; order no. 51507171

Welding sockets



- DN25 welding socket, straight, stainless steel 1.4435, L=50; order no. 51508049
- DN25 welding socket, angled, stainless steel 1.4435, L=50/60; order no. 51508050
- DN25 welding socket, straight, stainless steel 1.4435, L=30; order no. 51508051
- DN25 welding socket, angled, stainless steel 1.4435, L=30/40; order no. 51508052

