

# Special Documentation

## Hygienic applications

Liquid analysis equipment  
EHEDG-certified equipment EL Class I  
3-A-certified equipment





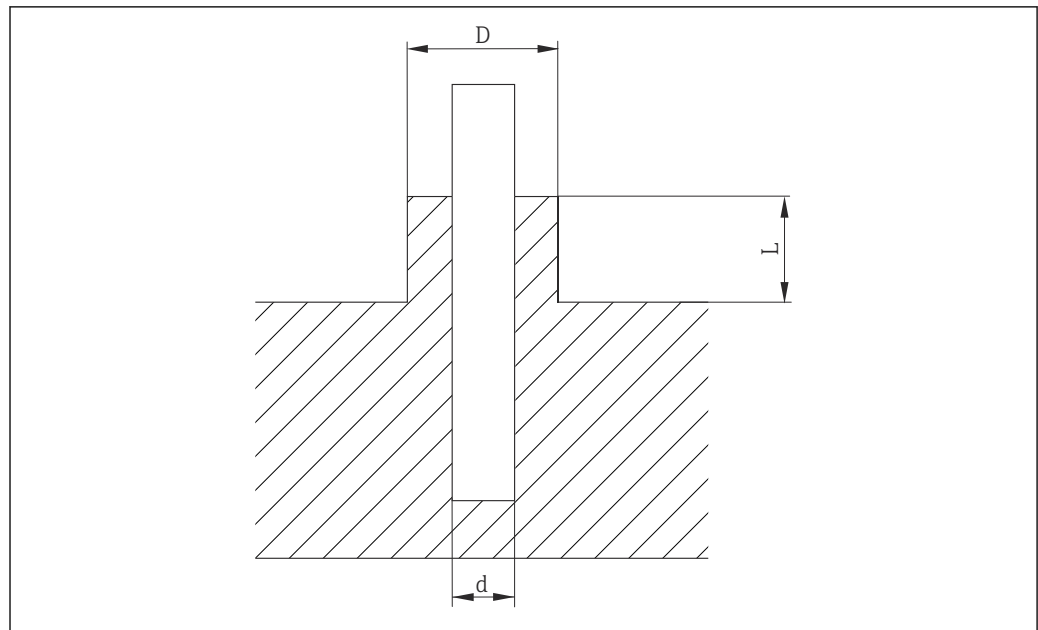
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# 1 Installation instructions

The following installation instructions only cover hygiene-compliant installation. To ensure optimal performance of your device, refer to the relevant Operating instructions or Technical Information.

- Install the device in accordance with generally recognized and applied industry standards. These standards include, for example, the latest applicable versions of EHEDG documents 8, 10 and 37 or 3-A Sanitary Standards 00, 46 or 74.
- Install devices and pipelines such that they are self-draining and thus retain neither product nor process media. The EHEDG recommends using an angle of at least 3° for this purpose.
- For installation, use suitable process connections, pipe connections or process assemblies recognized by 3-A and/or the EHEDG as hygienic. This may require the use of special, hygienic seals. For more details, see the latest applicable version of the 3-A Sanitary Standards or the EHEDG position paper “Easy Cleanable Pipe Couplings and Process Connections”.
- Devices that contain a leak detection port must be installed so that the hole is at the lowest possible point after installation.
- The seals used must be suitable for contact with foodstuffs and must comply with the applicable law.
- The process adapter used should be flush-mounted. If a dead leg is unavoidable, it should be kept as short as possible. The following conditions must be met (see also Figure 1):
  - For EHEDG-compliant installation:  $L \leq D - d$
  - For 3-A-compliant installation:  $L \leq 2 \times (D - d)$



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1 Relevant dimensions for installations with dead legs

- L* Length of dead leg  
*D* Inner diameter of dead leg  
*d* Enveloping diameter of device

- To avoid glass breakage, pH glass electrodes such as pH- or ORP electrodes must be installed in process assemblies with a protective cage.
- Tank installations must be installed so they are flush-mounted. In addition, the cleaning device must be fitted in such a way that both the process connection and the device can be rinsed out directly.
- The hygienic integrity of the installation must be guaranteed. This may require additional inspection measures.
- Endress+Hauser recommends cleaning the equipment immediately before or after installation.

## 2 Cleaning instructions

- The device is suitable for CIP (Cleaning in Place) and SIP cleaning (Sterilization in Place) (EHEDG Class I equipment). Dismantling the equipment is not necessary.
- Do not exceed the maximum permitted pressures and process temperatures. For detailed information, see the Operating Instructions or Technical Information for the equipment.
- To ensure the equipment's hygienic integrity and durability, it is recommended to avoid excessive chemical stress to the equipment's materials of construction and the process seals used. Consult your cleaning agent supplier for information on critical chemicals.

### 3 Certified devices

**i** Note that the following list only contains standard products. Modifications to the "technical special products" programme (TSP) are usually not covered by either the EHEDG or 3-A certificates. These must be evaluated separately, if necessary.

Explanation of table headers:

- A: Product structure option
- B: Description of the option

#### 3.1 Assemblies

##### 3.1.1 Unifit CPA842

*CPA842, order code for 030 "Seals"*

A	B	EHEDG	3-A
E1	EPDM-FDA (USP Class VI)	✓	✓
F1	FKM-FDA (USP Class VI)	✓	✓
S2	O-ring, silicone-FDA (USP Class VI)	-	✓

*CPA842, order code for 040 "Process connection"*

A	B	EHEDG	3-A
AC	Clamp 1.5" short	✓ <sup>1)</sup>	✓
AD	Clamp 1.5" long	✓ <sup>1)</sup>	✓
AE	Clamp 2"	✓ <sup>1)</sup>	✓
AF	Clamp 1.5" - angled 15°	✓ <sup>1)</sup>	✓
AG	Dairy fitting DN50	✓ <sup>1)</sup>	✓
AH	Varivent N 68mm DN40-125	✓	✓
AK	Aseptic DN50 threaded DIN11864-1A	✓	✓

1) Only with suitable seal: see EHEDG position paper "Easy Cleanable Pipe Couplings and Process Connections"

*CPA842, order code for 590 "Additional approval"*

A	B	EHEDG	3-A
LB	3-A	-	✓
LC	EHEDG EL Class I	✓	-

*CPA842, order code for 610 "Mounted accessories"*

A	B	EHEDG	3-A
NB	Sensor protection	-	✓

### 3.1.2 Cleanfit CPA875

In 3-A applications, modifications to the sensor required in accordance with the Operating Instructions.

*CPA875, order code for 040 "Material seals, wetted"*

A	B	EHEDG	3-A
E	EPDM-FDA (USP Class VI)	✓	✓
F	FKM-FDA (USP Class VI)	-	✓

*CPA875, order code for 060 "Process connection"*

A	B	EHEDG	3-A
CA	Clamp 1 ½"	✓ <sup>1)</sup>	-
CB	Clamp 2"	✓ <sup>1)</sup>	✓
CC	Clamp 2 ½"	✓ <sup>1)</sup>	✓
DA	Aseptic DN25 clampable DIN11864-3A	✓	-
DC	Aseptic DN50 threaded DIN11864-1A	✓	-
DF	Aseptic DN50 grooved flange DIN11864-2A	✓	-
EB	Neumo BioConnect DN50	✓	-
EF	Neumo BioConnect DN65	✓	-
MA	Dairy fitting DN50, DIN11851	✓ <sup>1)</sup>	-
MB	Dairy fitting DN65, DIN11851	✓ <sup>1)</sup>	-
VA	Varivent flange N (DN40-DN100)	✓	-

1) Only with suitable seal: see EHEDG position paper "Easy Cleanable Pipe Couplings and Process Connections"

*CPA875, order code for 080 "Version"*

A	B	EHEDG	3-A
A	EHEDG Class I	✓	✓

*CPA875, order code for 590 "Additional approval"*

A	B	EHEDG	3-A
LB	3-A	-	✓



## 3.2 Conductivity sensors

### 3.2.1 Smartec S CLD134

*CLD134, order code for 020 "Process connection"*

A	B	EHEDG	3-A
AA5	Aseptic DIN11864-1 A DN50	-	✓
BC5	NEUMO BioControl D50, DN40, 2"	-	✓
CS1	Clamp ISO2852 2"	-	✓
MV5	Dairy fitting DIN11851 DN50	-	✓
SMS	SMS 2"	-	✓
VA4	Varivent N DN40-125	✓	✓

### 3.2.2 Smartec CLD18

*CLD18, order code for 020 "Process connection"*

A	B	EHEDG	3-A
MDK	Aseptic DIN11864-1 A DN50	✓	✓
MEK	Aseptic DIN11864-1 A DN40	-	✓
MOK	Dairy fitting DIN11851 DN50	✓ <sup>1)</sup>	✓
MQK	Dairy fitting DIN11851 DN40	-	✓
MYK	Dairy fitting DIN11853-2 DN50	✓	✓
TDK	Tri-Clamp ISO2852 2"	✓ <sup>1)</sup>	✓
TSK	Varivent N DN40-125	✓	✓

1) Only with suitable seal: see EHEDG position paper "Easy Cleanable Pipe Couplings and Process Connections"

### 3.2.3 Condumax CLS16

*CLS16, order code for 010 "Process connection"*

A	B	EHEDG	3-A
3C	Clamp ISO2852 1"	✓ <sup>1)</sup>	-
3D	Clamp ISO2852 1-1/2"	✓ <sup>1)</sup>	-
3E	Clamp ISO2852 2"	✓ <sup>1)</sup>	-
3F	Varivent N DN50-125	✓	-
4C	Clamp ISO2852 1" + EN10204-3.1	✓ <sup>1)</sup>	-
4D	Clamp ISO2852 1-1/2" + EN10204-3.1	✓ <sup>1)</sup>	-
4E	Clamp ISO2852 2" + EN10204-3.1	✓ <sup>1)</sup>	-
4F	Varivent N DN50-125 + EN10204-3.1	✓	-

1) Only with suitable seal: see EHEDG position paper "Easy Cleanable Pipe Couplings and Process Connections"

### 3.2.4 Condumax CLS16D

*CLS16D, order code for 010 "Process connection"*

A	B	EHEDG	3-A
3C	Clamp ISO2852 1"	✓ <sup>1)</sup>	-
3D	Clamp ISO2852 1-1/2"	✓ <sup>1)</sup>	-
3E	Clamp ISO2852 2"	✓ <sup>1)</sup>	-
3F	Varivent N DN50-125	✓	-
4C	Clamp ISO2852 1" + EN10204-3.1	✓ <sup>1)</sup>	-
4D	Clamp ISO2852 1-1/2" + EN10204-3.1	✓ <sup>1)</sup>	-
4E	Clamp ISO2852 2" + EN10204-3.1	✓ <sup>1)</sup>	-
4F	Varivent N DN50-125 + EN10204-3.1	✓	-

1) Only with suitable seal: see EHEDG position paper "Easy Cleanable Pipe Couplings and Process Connections"

### 3.2.5 Memosens CLS16E

*CLS16E, order code for 020 "Process connection"*

A	B	EHEDG	3-A
CA	Clamp ISO2852, 1-1/2"	✓ <sup>1)</sup>	-
CB	Clamp ISO2852, 2"	✓ <sup>1)</sup>	-
VA	Varivent N DN40-125	✓	-

1) Only with suitable seal: see EHEDG position paper "Easy Cleanable Pipe Couplings and Process Connections"

*CLS16E, order code for 590 "Additional approval"*

A	B	EHEDG	3-A
LC	EHEDG EL Class I	✓	-

### 3.2.6 Indumax CLS54

*CLS54, order code for 020 "Process connection"*

A	B	EHEDG	3-A
AA5	Aseptic DIN11864-1 A DN50	-	✓
BC5	NEUMO BioControl D50, DN40, 2"	-	✓
CS1	Clamp ISO2852 2"	-	✓
MV5	Dairy fitting DIN11851 DN50	-	✓
SMS	SMS 2"	-	✓
VA4	Varivent N DN40-125	✓	✓

### 3.2.7 Indumax CLS54D

*CLS54D, order code for 020 "Process connection"*

A	B	EHEDG	3-A
AA5	Aseptic DIN11864-1 A DN50	-	✓
BC5	NEUMO BioControl D50, DN40, 2"	-	✓
CS1	Clamp ISO2852 2"	-	✓
MV5	Dairy fitting DIN11851 DN50	-	✓
SMS	SMS 2"	-	✓
VA4	Varivent N DN40-125	✓	✓

### 3.2.8 Memosens CLS82D

*CLS82D, order code for 020 "Process connection"*

A	B	EHEDG	3-A
CA	Clamp ISO2852, 1 1/2"	✓ <sup>1)</sup>	✓
CB	Clamp ISO2852, 2"	✓ <sup>1)</sup>	✓
EG	NEUMO BioControl D25	-	✓
PG	PG 13.5 120mm	✓ <sup>2)</sup>	✓
PM	PG 13.5 215mm	✓ <sup>2)</sup>	✓
VA	Varivent N DN40 - DN125	✓	✓
VB	Varivent F DN25	✓ <sup>3)</sup>	✓

- 1) Only with suitable seal: see EHEDG position paper "Easy Cleanable Pipe Couplings and Process Connections"
- 2) With suitable process assembly (e.g. CPA842)
- 3) Only suitable for tank installation

### 3.2.9 Memosens CLS82E

*CLS82E, order code for 020 "Process connection"*

A	B	EHEDG	3-A
CA	Clamp ISO2852, 1 1/2"	✓ <sup>1)</sup>	✓
CB	Clamp ISO2852, 2"	✓ <sup>1)</sup>	✓
PG	PG 13.5 120mm	✓ <sup>2)</sup>	✓
PM	PG 13.5 215mm	✓ <sup>2)</sup>	✓
VA	Varivent N DN40 - DN125	✓	✓

- 1) Only with suitable seal: see EHEDG position paper "Easy Cleanable Pipe Couplings and Process Connections"
- 2) With suitable process assembly (e.g. CPA842)

*CLS82E, order code for 590 "Additional approval"*

A	B	EHEDG	3-A
LB	3-A	-	✓
LC	EHEDG EL Class I	✓	-

### 3.3 pH sensors

#### 3.3.1 Ceramax CPS341D

*CPS341, order code for 030 "Adapter process connection"*

A	B	EHEDG	3-A
1H	Varivent DN50/40; 316L/1.4404	✓	-
1K	Milk pipe DN50; 316L/1.4404	✓ <sup>1)</sup>	-
1M	Tri-Clamp compatible DN50, 316L/1.4404	✓ <sup>1)</sup>	-

1) Only with suitable seal; see EHEDG position paper "Easy Cleanable Pipe Couplings and Process Connections"

*CPS341D, order code for 590 "Additional approval"*

A	B	EHEDG	3-A
LC	EHEDG EL Class 1	✓	-

#### 3.3.2 Memosens CPS47E

With suitable process assembly (e.g. CPA842)

*CPS47E, order code for 020 "Electrode type"*

A	B	EHEDG	3-A
6	Hygienic version, operating point = 0 mV, temperature sensor Pt1000	✓	✓

*CPS47E, order code for 590 "Additional approval"*

A	B	EHEDG	3-A
LB	3-A	-	✓
LC	EHEDG EL Class I	✓	-

#### 3.3.3 Memosens CPS61E

With suitable process assembly (e.g. CPA842)

*CPS61E, order code for 020 "Electrode type"*

A	B	EHEDG	3-A
6	Hygienic version, zero point pH 7.0, temperature sensor NTC 30k	✓	✓

*CPS61E, order code for 040 "Reference system"*

A	B	EHEDG	3-A
TP	Pressure-bearing, 1 ceramic junction, ion trap, 3 M KCl, Ag/AgCl	✓	✓
TU	Upside-down installation, 1 ceramic junction, ion trap, 3 M KCl, Ag/AgCl	✓	✓

*CPS61E, order code for 590 "Additional approval"*

A	B	EHEDG	3-A
LB	3-A	-	✓
LC	EHEDG EL Class I	✓	-

### 3.3.4 Ceragel CPS71

With suitable process assembly (e.g. CPA842)

*CPS71, order code for 020 "Application"*

A	B	EHEDG	3-A
TP	0-12 pH, 0 to 135 °C (0 to 275 °F), pressure-bearing reference value with ion trap, 6 bar (87.02 psi), 1 junction	✓	-
TU	0-14 pH, 0 to 135 °C (0 to 275 °F), 10 bar (145.04 psi), ion trap, 1 junction, upside-down installation	✓	-

### 3.3.5 Ceragel CPS71D Memosens

With suitable process assembly (e.g. CPA842)

*CPS71D, order code for 020 "Application"*

A	B	EHEDG	3-A
TP	0-12 pH, 0 to 135 °C (0 to 275 °F), pressure-bearing reference value with ion trap, 6 bar (87.02 psi), 1 junction	✓	-
TU	0-14 pH, 0 to 135 °C (0 to 275 °F), 10 bar (145.04 psi), ion trap, 1 junction, upside-down installation	✓	-

### 3.3.6 Memosens CPS77E

With suitable process assembly (e.g. CPA842)

*CPS77E, order code for 020 "Electrode type"*

A	B	EHEDG	3-A
6	Hygienic version, operating point = 0 mV, temperature sensor Pt1000	✓	✓

*CPS77E, order code for 590 "Additional approval"*

A	B	EHEDG	3-A
LB	3-A	-	✓
LC	EHEDG EL Class I	✓	-

### 3.4 Oxygen sensors

#### 3.4.1 Oxymax H COS22

With suitable process assembly (e.g. CPA842)

*COS22, order code for 040 "Material shaft sleeve"*

A	B	EHEDG	3-A
B	Stainless steel	✓	-

*COS22, order code for 050 "Material O-ring"*

A	B	EHEDG	3-A
2	FDA-compliant fluoroelastomer	✓	-

#### 3.4.2 Oxymax H COS22D

With suitable process assembly (e.g. CPA842)

*COS22D, order code for 040 "Material shaft sleeve"*

A	B	EHEDG	3-A
B	Stainless steel	✓	-

*COS22D, order code for 050 "Material O-ring"*

A	B	EHEDG	3-A
2	FDA-compliant fluoroelastomer	✓	-

#### 3.4.3 Memosens COS22E

With suitable process assembly (e.g. CPA842)

*COS22E, order code for 050 "Cap characteristic"*

A	B	EHEDG	3-A
AA	Stainless steel	✓	-

*COS22E, order code for 090 "Material O-ring"*

A	B	EHEDG	3-A
1	EPDM	✓	-
3	FKM	✓	-

*COS22E, order for 590 "Additional approval"*

A	B	EHEDG	3-A
LC	EHEDG EL Class I	✓	-

### 3.4.4 Memosens COS81D

With suitable process assembly (e.g. CPA842)

*COS81D, order code for 050 "Material O-ring"*

A	B	EHEDG	3-A
1	EPDM	✓	-

### 3.4.5 Memosens COS81E

With suitable process assembly (e.g. CPA842)

*COS81E, order code for 050 "Cap characteristic"*

A	B	EHEDG	3-A
AC	Stainless steel C-Shape	✓	-
AU	Stainless steel U-shape	✓	-

*COS81E, order code for 090 "Material O-ring"*

A	B	EHEDG	3-A
1	EPDM	✓	-

*COS81E, order for 590 "Additional approval"*

A	B	EHEDG	3-A
LC	EHEDG EL Class I	✓	-

## 3.5 Spectrometer and photometer

### 3.5.1 Memosens Wave CKI50

*CKI50, order code for 050 "Measuring head "*

A	B	EHEDG	3-A
A	Immersion probe, hygienic	✓	✓

*CKI50, order code for 060 "Material, roughness; length"*

A	B	EHEDG	3-A
11	316L/1.4404, Ra=0.8; L=48.5mm	✓	✓

*CKI50, order code for 110 "Process connection"*

A	B	EHEDG	3-A
AA	Varivent N DN50-125	✓	✓

*CKI50, order code for 120 "Wetted seals"*

A	B	EHEDG	3-A
2	FFKM (FDA) and PEEK (FDA)	✓	✓

*CKI50, order code for 590 "Additional approval"*

A	B	EHEDG	3-A
LB	3-A	-	✓
LC	EHEDG EL Class I	✓	-

### 3.5.2 Absorption sensor OUSAF11

*OUSAF11, order code for 040 "Process connection"*

A	B	EHEDG	3-A
B1	Triclamp 2"	-	✓
B2	Triclamp 2.5"	-	✓
B3	Triclamp 3"	-	✓
C1	Varivent N DIN40-125	-	✓











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