

Special Documentation

Hygienic applications

Equipment for liquid analysis
EHEDG certified equipment EL class I
3-A certified equipment



Table of contents

1	Installation Instructions	4
2	Cleaning Instructions	5
3	Certified Devices	6
3.1	Assemblies	6
3.1.1	Unifit CPA842	6
3.1.2	Cleanfit CPA875	7
3.2	Conductivity sensors	8
3.2.1	Smartec S CLD134	8
3.2.2	Smartec CLD18	8
3.2.3	Condumax CLS16	8
3.2.4	Condumax CLS16D	9
3.2.5	Memosens CLS16E	9
3.2.6	Indumax CLS54	9
3.2.7	Indumax CLS54D	10
3.2.8	Memosens CLS82D	10
3.2.9	Memosens CLS82E	10
3.3	pH sensors	11
3.3.1	Tophit CPS441	11
3.3.2	Tophit CPS441D	11
3.3.3	Tophit CPS471	11
3.3.4	Tophit CPS471D	11
3.3.5	Memosens CPS47D	11
3.3.6	Memosens CPS47E	12
3.3.7	Memosens CPS61E	12
3.3.8	Ceragel CPS71	12
3.3.9	Ceragel CPS71D Memosens	13
3.3.10	Memosens CPS77D	13
3.3.11	Memosens CPS77E	13
3.4	Oxygen Sensors	13
3.4.1	Oxymax H COS22	13
3.4.2	Oxymax H COS22D	14
3.4.3	Memosens COS22E	14
3.4.4	Memosens COS81D	14
3.4.5	Memosens COS81E	15
3.5	Spectrometers and photometers	15
3.5.1	Memosens Wave CKI50	15
3.5.2	3.5.2 Absorption sensor OUSAF11 ...	16

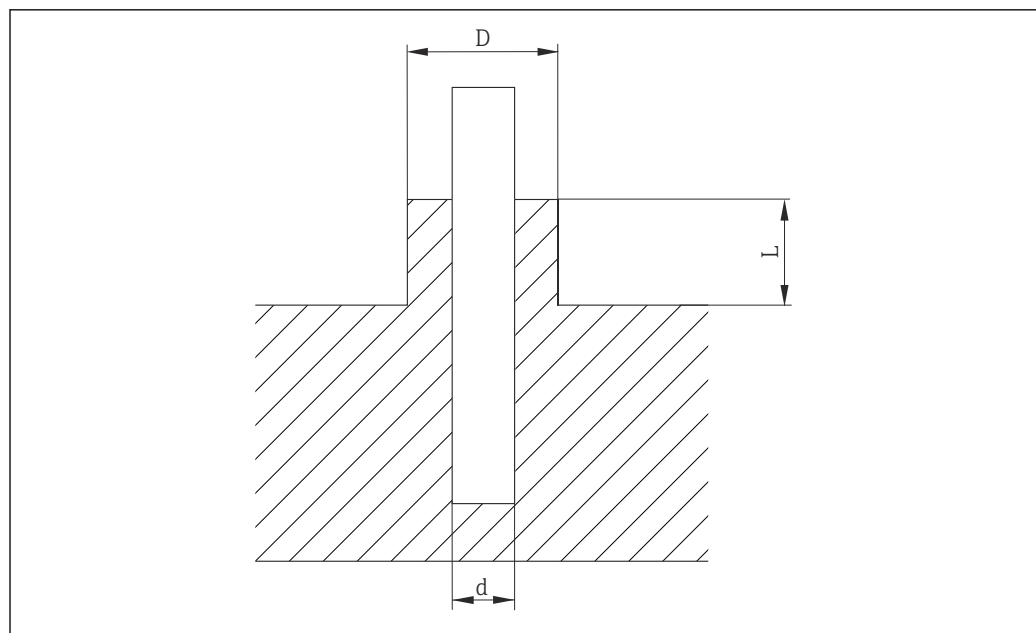
1 Installation Instructions



Please note that the following instructions cover hygienic installation only.

Additionally, please refer to the equipment's operating instructions or technical information sheets.

- Install the equipment according to the directions given in applicable industry standards. These may include EHEDG Documents 8, 10 and 37 or 3-A Sanitary Standards 00-, 46- or 74- in their most recent version each.
- Equipment and piping shall be installed self-draining, so neither product nor process fluids are retained. EHEDG recommends an angle of at least 3° to facilitate draining by gravity.
- Suitable, 3-A and/or EHEDG conformant process connections, pipe couplings or process assemblies shall be applied. This may include use of special hygienic seals. 3-A Sanitary Standards or the latest version of the EHEDG Position Paper "Easy cleanable Pipe couplings and Process connections" may provide guidance.
- Equipment featuring a leak detection port shall be mounted with the leak detection port(s) at the lowest possible point, as installed.
- Applied seals shall be suitable for food contact and conformant to applicable legislation.
- The process connections used shall be front-flush. If a dead leg is unavoidable, it shall be kept as short as possible. The following conditions must be met (see Figure 1 for details):
 - 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 equipment

- To prevent breakage, glass sensors, such as pH and ORP electrodes shall be installed using hygienically designed process assemblies or sensor holders featuring a protective cage.
- Within tank installations, the equipment shall be front flush. Additionally, any cleaning device shall be located to directly flush the equipment and process connection.
- The hygienic integrity of the installation must be guaranteed. This might require means for inspection.
- Endress+Hauser recommends cleaning the equipment immediately before or after installation.

2 Cleaning Instructions

- The equipment is suitable for cleaning in place (CIP) and sterilization in place (SIP) without dismantling (EHEDG Class I equipment).
- The maximum allowable temperature and pressure ratings must not be exceeded. Please refer to the equipment's operating instructions or technical information sheets for exact specifications.
- 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

 Please note that the following list does only cover standard products. Technical special products (TSP) modifications are usually covered neither by EHEDG nor 3-A certificates. These are to be evaluated separately, should the situation arise.

Explanation of the table headers:

- A: Option in the product structure
- 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 Silikon-FDA (USP Class VI)	-	✓

CPA842, order code for 040 "Process Connection"

A	B	EHEDG	3-A
AC	Clamp 1,5" short	✓ ¹⁾	✓
AD	Clamp 1,5" long	✓ ¹⁾	✓
AE	Clamp 2"	✓ ¹⁾	✓
AF	Clamp 1,5" - oblique 15°	✓ ¹⁾	✓
AG	Dairy Fitting DN50	✓ ¹⁾	✓
AH	Varivent N 68mm DN40-125	✓	✓

- 1) only with special gasket according to 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	✓	-

3.1.2 Cleanfit CPA875

Requires sensor modifications acc. to operating instructions for 3-A applications.

CPA875, order code for 040 "Material Seals"

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"	✓ ¹⁾	-
CB	Clamp 2"	✓ ¹⁾	✓
DA	Aseptik DN25 clampable DIN11864-3A	✓	-
DC	Aseptik DN50 screw-on DIN11864-1A	✓	-
DF	Aseptik DN50 groove flange DIN11864-2A	✓	-
EB	Neumo BioConnect DN50	✓	-
EF	Neumo BioConnect DN65	✓	-
MA	Dairy fitting DN50, DIN11851	✓ ¹⁾	-
MB	Dairy fitting DN65, DIN11851	✓ ¹⁾	-
VA	Varivent Flansch N (DN40-DN100)	✓	-

1) only with special gasket according to 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	-	✓
MQK	Dairy Fitting DIN11851 DN40	-	✓
MXK	Dairy Fitting DIN11853-2 DN40	-	✓
MYK	Dairy Fitting DIN11853-2 DN50	-	✓
TDK	Tri-Clamp ISO2852 2"	✓	✓
TSK	Varivent N DN40-125	✓	✓

3.2.3 Condumax CLS16

CLS16, order code for 010 "Process Connection"

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

- 1) only with special gasket according to 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"	✓ ¹⁾	-
3D	Clamp ISO2852 1-1/2"	✓ ¹⁾	-
3E	Clamp ISO2852 2"	✓ ¹⁾	-
3F	Varivent N DN50-125	✓	-
4C	Clamp ISO2852 1" + EN10204-3.1	✓ ¹⁾	-
4D	Clamp ISO2852 1-1/2" + EN10204-3.1	✓ ¹⁾	-
4E	Clamp ISO2852 2" + EN10204-3.1	✓ ¹⁾	-
4F	Varivent N DN50-125 + EN10204-3.1	✓	-

- 1) only with special gasket according to 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"	✓ ¹⁾	-
CB	Clamp ISO2852, 2"	✓ ¹⁾	-
VA	Varivent N DN40-125	✓	-

- 1) only with special gasket according to 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"	✓ ¹⁾	✓
CB	Clamp ISO2852, 2"	✓ ¹⁾	✓
EG	NEUMO BioControl D25	-	✓
PG	PG 13,5 120mm	✓ ²⁾	✓
PM	PG 13,5 215mm	✓ ²⁾	✓
VA	Varivent N DN40 - DN125	✓	✓
VB	Varivent F DN25	✓ ³⁾	✓

- 1) only with special gasket according to 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"	✓ ¹⁾	✓
CB	Clamp ISO2852, 2"	✓ ¹⁾	✓
PG	PG 13,5 120mm	✓ ²⁾	✓
PM	PG 13,5 215mm	✓ ²⁾	✓
VA	Varivent N DN40 - DN125	✓	✓

- 1) only with special gasket according to 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 Tophit CPS441

With suitable process assembly (e.g. CPA842).

CPS441, order code for 030 "Option"

A	B	EHEDG	3-A
1	EPDM, hygienic version	-	✓

3.3.2 Tophit CPS441D

With suitable process assembly (e.g. CPA842).

CPS441D, order code for 040 "Option"

A	B	EHEDG	3-A
1	EPDM, hygienic version	-	✓

3.3.3 Tophit CPS471

With suitable process assembly (e.g. CPA842).

CPS471, order code for 030 "Option"

A	B	EHEDG	3-A
1	EPDM, hygienic version	-	✓

3.3.4 Tophit CPS471D

With suitable process assembly (e.g. CPA842).

CPS471D, order code for 030 "Option"

A	B	EHEDG	3-A
1	EPDM, hygienic version	-	✓

3.3.5 Memosens CPS47D

With suitable process assembly (e.g. CPA842).

All standard options for CPS47D EHEDG and 3-A certified.

3.3.6 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	✓	-

3.3.7 Memosens CPS61E

With suitable process assembly (e.g. CPA842).

CPS61E, order code for 020 "Reference System"

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	Pressurized, 1 ceramic junction, ion trap, 3 M KCl, Ag/AgCl	✓	✓
TU	Upside-down mounting, 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	✓	-

3.3.8 Ceragel CPS71

With suitable process assembly (e.g. CPA842).

CPS71, order code for 020 "Application Range"

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

3.3.9 Ceragel CPS71D Memosens

With suitable process assembly (e.g. CPA842).

CPS71D, order code for 020 "Application Range"

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

3.3.10 Memosens CPS77D

With suitable process assembly (e.g. CPA842).

All standard options for CPS77D EHEDG and 3-A certified

3.3.11 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 040 "Material O-ring"

A	B	EHEDG	3-A
2	Fluorelastomer FDA	✓	-

3.4.2 Oxyman 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 040 "Material O-ring"

A	B	EHEDG	3-A
2	Fluorelastomer FDA	✓	-

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 code 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 code for 590 "Additional Approval"

A	B	EHEDG	3-A
LC	EHEDG EL Class I	✓	-

3.5 Spectrometers and photometers

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 "Sealings Media Wetted"

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 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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