Level | Pressure | Flow | Temperature | Liquid Analysis | Registration | Systems Components | Services | Solutions

Technical Information

Orbisint CPS11 and CPS11D

pH electrodes, analog or with digital Memosens technology
For standard applications in process and environment technology, with dirt-repellent PTFE diaphragm, optional built-in temperature sensor

Application

- Long-term monitoring and limit monitoring of processes with stable process conditions
  - Pulp and paper industry
  - Plastics chemistry
  - Chemical processes
  - Power plants (e.g. flue gas washers)
  - Incineration plants
  - Food industry
  - Breweries
- Water treatment
  - Drinking water
  - Cooling water
  - Well water

With ATEX, FM and CSA approval for application in hazardous areas

Your benefits

- Robust electrode requiring low maintenance thanks to large PTFE ring diaphragm
- Application under pressures of up to 16 bar (232 psi)
- Process glass for highly alkaline applications available
- Built-in Pt 100 or Pt 1000 temperature sensor for effective temperature compensation (optional)
- Certified biocompatibility
- Sterilizable
- Long service life thanks to double junction system of metal lead and thus long electrode poison diffusion path
- Poison-resistant reference with ion trap (optional, CPS11D only)

Further benefits offered by Memosens technology

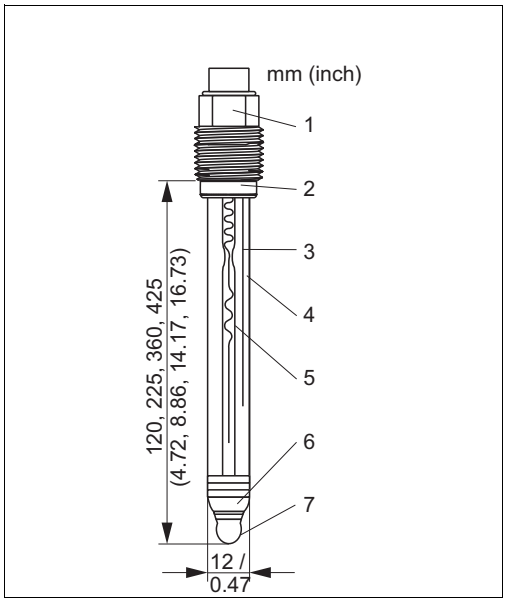
- Maximum process safety through contactless inductive signal transmission
- Data safety through digital data transmission
- Easy handling thanks to storage of sensor-specific data in the sensor
- Predictive maintenance possible thanks to registration of sensor load data in the sensor

TI028C/07/en/02.08
71068748

Endress+Hauser
People for Process Automation

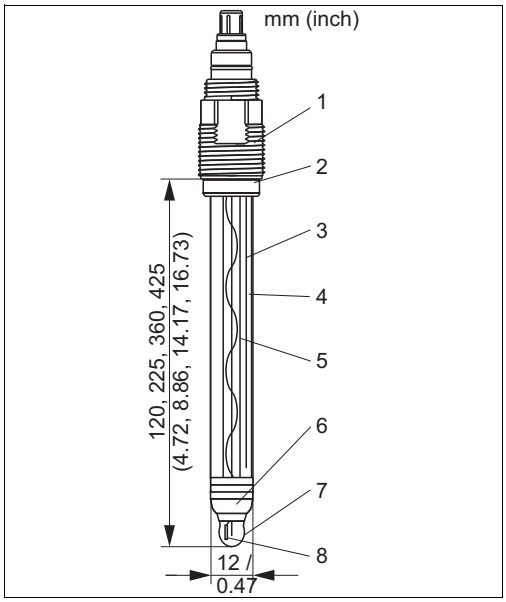
Mechanical construction

Design, dimensions



CPS11 with GSA plug-in head

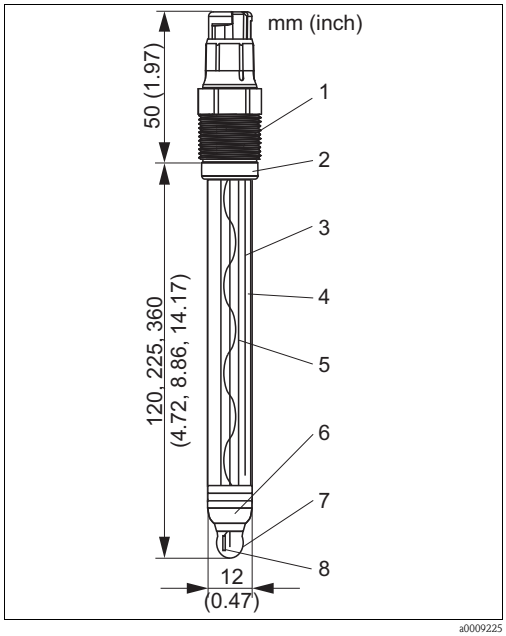
1 GSA plug-in head, Pg 13.5
2 Viton O-ring with thrust collar
3 Ag/AgCl metal lead - reference
4 "Advanced Gel" electrolyte
5 Ag/AgCl metal lead - pH
6 PTFE diaphragm
7 pH glass membrane



CPS11 with TOP68, built-in temperature sensor

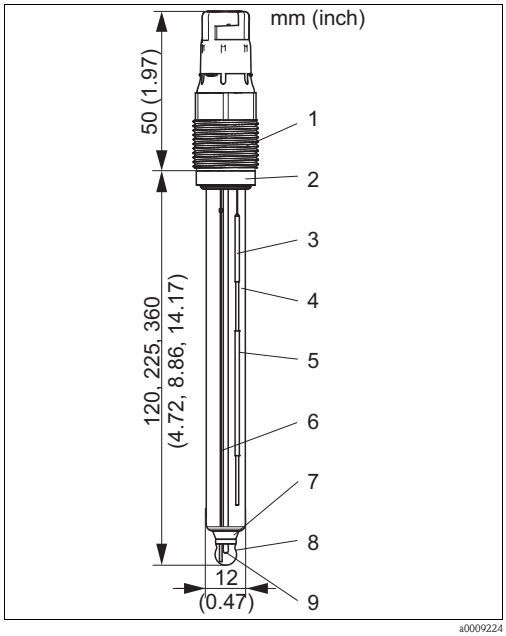
1 TOP68 plug-in head, Pg 13.5
2 Viton O-ring with thrust collar
3 Ag/AgCl metal lead - reference
4 "Advanced Gel" electrolyte
5 Ag/AgCl metal lead - pH
6 PTFE diaphragm
7 pH glass membrane
8 Pt 100 temperature sensor

Design, dimensions CPS11D



CPS11D with Memosens, built-in temperature sensor

1 Memosens plug-in head, Pg 13.5
2 Viton O-ring with thrust collar
3 Ag/AgCl metal lead - reference
4 "Advanced Gel" electrolyte
5 Ag/AgCl metal lead - pH
6 PTFE diaphragm
7 pH glass membrane
8 Temperature sensor



CPS11D-7BTxx

1 Memosens plug-in head, Pg 13.5
2 Viton O-ring with thrust collar
3 Ag/AgCl metal lead - reference
4 "Advanced Gel" electrolyte
5 Ion trap
6 Ag/AgCl metal lead - pH
7 PTFE diaphragm
8 pH glass membrane
9 Temperature sensor

Weight

approx. 0.1 kg (0.22 lbs)

Material

Electrode shaft	process glass
pH membrane glasses	types A, B, F
Metal lead	Ag/AgCl
Diaphragm	ring-shaped Teflon® diaphragm, sterilizable

Process connection

Pg 13.5

Temperature sensor

CPS11:	Pt 100, Pt 1000
CPS11D:	NTC

Plug-in heads

CPS11:
- ESA: plug-in head Pg 13.5, TOP68 for electrodes with or without temperature sensor, 16 bar (232 psi) triple safety overpressure, Ex
- GSA: plug-in head Pg 13.5 for electrodes without temperature sensor

CPS11D: Memosens plug-in head for digital, contactless data transmission

Reference system

CPS11:	Ag/AgCl metal lead with Advanced Gel 3 M KCl, AgCl free
CPS11D:	
Versions AA, AS, BA, FA	Ag/AgCl metal lead with Advanced Gel 3 M KCl, AgCl free
Version BT	Ag/AgCl metal lead with ion trap and Advanced Gel 3 M KCl

Certificates and approvals

Ex approval

CPS11 (TOP68)

- ATEX II 1G EEX ia IIC T3/T4/T6
- FM Class I Div. 2, in combination with the Liquiline M CM42 and Mycom S CPM153 transmitters

CPS11D

- ATEX II 1G EEX ia IIC T3/T4/T6
- FM / CSA Class I Div. 2, in combination with the Liquiline M CM42 and Mycom S CPM153 transmitters

Note!
Ex versions of digital sensors with Memosens technology are indicated by an orange-red ring in the plug-in head.

Biocompatibility

Biocompatibility validated according to:

- ISO 10993-5:1993
- USP, current revision

TÜV certificate

TOP68 plug-in head

Pressure resistance 16 bar (232 psi), min. triple overpressure safety

Memosens plug-in head

Pressure resistance 16 bar (232 psi), min. triple overpressure safety

Electromagnetic compatibility of CPS11D

Interference emission and interference immunity complies with EN 61326: 1997 / A1: 1998

Ordering information

Product structure CPS11

	Electrode type
1	without temperature sensor
2	with built-in Pt 100 (not available with GSA plug-in head)
3	with built-in Pt 1000 (not available with GSA plug-in head)

	Application range
AA	pH = 1 to 12, T = -15 to 80 °C (5 to 176 °F), 6 bar (87 psi)
AS	pH = 1 to 12, T = -15 to 80°C (5 to 176 °F), 6 bar (87 psi), salt ring
BA	pH = 0 to 14, T = 0 to 135 °C (32 to 275 °F), sterilizable, 16 bar (232 psi) in combination with ESA plug-in head
FA	pH = 0 to 10, T = 0 to 70 °C (32 to 158 °F), HF resistant up to 1 g/l, 6 bar (87 psi)

	Shaft length
2	120 mm (4.72")
4	225 mm (8.86")
5	360 mm (14.17")
6	425 mm (16.73")

	Plug-in head
ESA	Plug-in head Pg 13.5, TOP68, 16 bar (232 psi) in combination with BA application range, Ex
GSA	Plug-in head Pg 13.5, DIN coax, non-Ex

CPS11-	complete order code

Product structure CPS11D

	Version
7	max. 135 °C (275 °F), built-in temperature sensor

	Application range
AA	pH = 1 to 12, T = -15 to 80 °C (5 to 176 °F), 6 bar (87 psi)
AS	pH = 1 to 12, T = -15 to 80 °C (5 to 176 °F), 6 bar (87 psi), salt ring
BA	pH = 0 to 14, T = 0 to 135 °C (32 to 275 °F), 16 bar (232 psi), sterilizable
BT	pH = 0 to 14, T = 0 to 135 °C (32 to 275 °F), 16 bar (232 psi), ion trap
FA	pH = 0 to 10, T = 0 to 70 °C (32 to 158 °F), 6 bar (87 psi), HF resistant up to 1 g/l

	Shaft length
2	120 mm (4.72")
4	225 mm (8.86")
5	360 mm (14.17")
6	425 mm (16.73")

	Approval
1	Non-hazardous area
G	ATEX II 1G EEx ia IIC T3/T4/T6

CPS11D-	complete order code

Accessories

Note!
In the following sections, you find the accessories available at the time of issue of this documentation.
For information on accessories that are not listed here, please contact your responsible service.

Transmitters

Liquiline M CM42
- Modular two-wire transmitter, stainless steel or plastic, field or panel instrument,
- various Ex approvals (ATEX, FM, CSA, Nepsi, TIIS),
- HART, PROFIBUS or FOUNDATION Fieldbus available
- Ordering acc. to product structure, see Technical Information (TI381C/07/en)

Liquisys M CPM223/253
- Transmitter for pH and ORP, field or panel-mounted housing,
- HART or PROFIBUS available
- Ordering acc. to product structure, see Technical Information (TI194C/07/en)

Mycom S CPM153
- Transmitter for pH and ORP, one or two channel version, Ex or non-Ex,
- HART or PROFIBUS available
- Ordering acc. to product structure, see Technical Information (TI233C/07/en)