CPA-P-305

- hydrostatic level transmitters
- slimline probe, diameter 19 mm for cramped areas
- nominal pressure: from 0...1 mH_2O up to 0...250 mH_2O
- output signals: 2-wire: 4...20 mA
- stainless steel probe and sensor
- accuracy 0.35 % / 0,25 % span
- small thermal effect
- excellent long term stability and linearity
- optional: different kinds of cable

TThe slimline probe **CPA-P-305** with silicon stainless steel sensor is designed for continous level measurement in confined space conditions. Permissible media are clean or waste water and thin fluids.
A piezoresistiv stainless steel sensor with low thermal error, an excellent linearity and a long term stability, is basis of CPA-P-305.

PREFERRED AREAS OF USE ARE

Water
level measurement in confined space conditions
ground water monitoring
depth or level measurement in wells and open waters
drinking water system
level measurement in container

TECHNICAL DATA

Input pressure range														
Nominal pressure gauge	[bar]	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10	16	25
Level	[mH_2O]	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250
Overpressure	[bar]	1	1	1	1	3	3	6	6	20	20	60	60	100
max. ambient pressure (housing)		40 bar												

Output signal / Supply		
Standard	2-wire:	4 ... 20 mA / V_S = 12 ... 36 V_{DC}
Performance		
Accuracy	standard:	nominal pressure > 0.4 bar: ≤ ± 0.35 % span nominal pressure ≤ 0.4 bar: ≤ ± 0.50 % span
	option:	nominal pressure > 0.4 bar: ≤ ± 0.25 % span
Permissible load	R_{max} = [(V_S – $V_{S\,min}$) / 0,02 A] Ω	
Influence effects	supply: 0.05 % span / 10 V load: 0.05 % span / kΩ	
Long term stability	≤ ± 0.1 % span / year	
Response time	< 10 msec	
[1] accuracy according to EN IEC 62828-2– limit point adjustment (non-linearity, hysteresis, repeatability)		

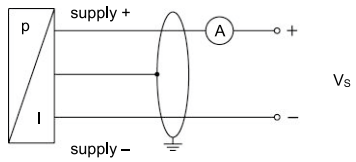
Thermal effects (Offset and Span)						
Nominal pressure P_N	[bar]	≤ 0.1	≤ 0.25	≤ 0.4	≤ 1	> 1
Tolerance band	[% span]	≤ ± 2	≤ ± 1.5	≤ ± 1	≤ ± 1	≤ ± 0.75
TC, average	[% span / 10 K]	± 0.3	± 0.2	± 0.14	± 0.1	± 0.07
in compensated range	[°C]	0 ... 50			0 ... 70	
Permissible temperatures						
Permissible temperatures	Medium/ electronics/ environment/ storage: -20 … 80 °C *					
**If the cable is intended for use in a smaller temperature range, the use of the probe is limited by this range.*						

Electrical protection [2]	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326
Integrated overvoltage protection (ground wire) in accordance with CSN EN 61000-4-5 (1 kV)[3]	
[2] additional external overvoltage protection unit in terminal box KL 1 or KL 2 with atmospheric pressure reference available on request *[3] version with the output signal 4 … 20 mA / 2-wire*	
Electrical connection	
Cable with sheath material [4]	PVC (-5 … 70 °C) grey (-25 … 70 °C in fixed condition) Ø 7,4 mm PUR (-25 … 80 °C) black (with drinking water certificate) Ø 7,4 mm FEP [5] (-25 … 75 °C) black Ø 7,4 mm
Cable capacitance	signal line/shield also signal line/signal line: 160 pF/m
Cable inductance	signal line/shield also signal line/signal line: 1 µH/m
Bending radius	static installation: 10-fold cable diameter dynamic application: 20-fold cable diameter
[4] cable with integrated air tube for atmospheric pressure reference *[5] do not use freely suspended probes with an FEP cable if effects due to highly charging processes are expected*	
Materials (media wetted)	
Housing	stainless steel 1.4404 (316L)
Seals	FKM / EPDM
Diaphragm	stainless steel 1.4435 (316L)
Protection cap	POM-C
Cable sheath	PVC / PUR / FEP
Miscellaneous	
Connecting cables (by factory)	cable capacitance: signal line/shield also signal line/signal line: 160 pF/m cable inductance: signal line/shield also signal line/signal line: 1 µH/m
Current consumption	signal output current: max. 25 mA
Weight	approx. 100 g (without cable)
Ingress protection	IP 68
CE-conformity	EMC Directive: 2014/30/EU

ELECTRICAL CONNECTION

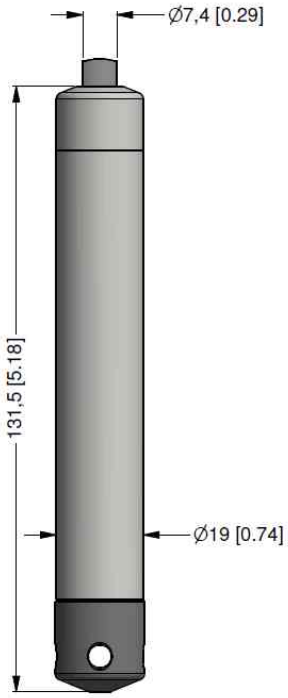
Wiring diagram

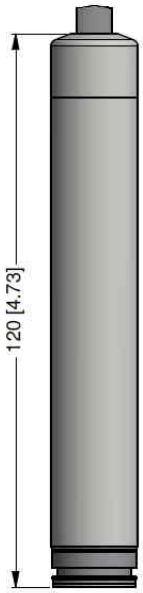
2-wire-system (current)



Pin configuration	
Electrical connection	cable colours (DIN 47100)
Supply + Supply –	wh (white) bn (brown)
Shield	gn/ye (green / yellow)

DIMENSION DRAWINGS



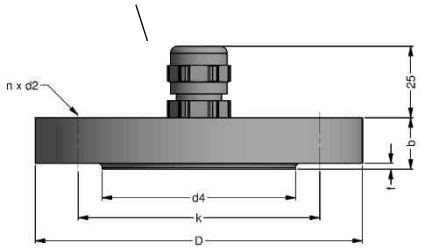


Protection cap removable

ACCESSORIES

Mounting flange with cable gland		
Technical data		
Suitable for	all probes	
Flange material	stainless steel 1.4404 (316L)	
Material of cable gland	standard: brass, nickel plated on request: stainless steel 1.4305 (303); plastic	
Seal insert	material: TPE (ingress protection IP 68)	
Hole pattern	according to DIN 2507	
Version	**Size (in mm)**	**Weight**
DN25 / PN40	D = 115, k = 85, b = 18, n = 4, d= 14	1.4 kg
DN50 / PN40	D = 165, k = 125, b = 20, n = 4, d= 18	3.2 kg
DN80 / PN16	D = 200, k = 160, b = 20, n = 8, d= 18	4.8 kg
Ordering type		**Ordering code**
DN25 / PN40 with cable gland brass, nickel plated		ZMF2540
DN50 / PN40 with cable gland brass, nickel plated		ZMF5040
DN80 / PN16 with cable gland brass, nickel plated		ZMF8016

cable gland M16x1.5 with
seal insert (for cable-∅ 4 ... 11 mm)



Cable clamp		
Technical Data		
Suitable for	all probes with cable ∅ 5.5 ... 10.5 mm	
Material	standard: steel, zinc plated optionally: stainless steel 1.4301 (304)	
Weight	approx. 160 g	
Ordering type		**Ordering code**
Terminal clamp, of steel, zinc plated		1003440
Terminal clamp, of stainless steel 1.4301 (304)		1000278

ORDER CODE

CPA-P-305-□□□-□□□□-□-□-□-□-□-□-□-□-□□□-□□□

Pressure			
in bar			400
in m H_2O			401
Input	**[mH_2O]**	**[bar]**	
	0 … 1	0 … 0,1	1000
	0 … 1,6	0 … 0,16	1600
	0 … 2,5	0 … 0,25	2500
	0 … 4	0 … 0,4	4000
	0 … 6	0 … 0,6	6000
	0 … 10	0 … 1	1001
	0 … 16	0 … 1,6	1601
	0 … 25	0 … 2,5	2501
	0 … 40	0 … 4	4001
	0 … 60	0 … 6	6001
	0 … 100	0 … 10	1002
	0 … 160	0 … 16	1602
	0 … 250	0 … 25	2502
Customer			9999
Housing material			
Stainless steel 1.4404 (316L)			1
Diaphragm material			
Stainless steel 1.4435 (316L)			1
Output			
4 … 20 mA / 2-wire			1
Customer			9
Seals			
Viton (FKM)			1
EPDM			3
Customer			9
Accuracy			
0,5 % ($P_N \leq 0,4$ bar)			5
0,35 % ($P_N > 0,4$ bar)			3
0,25 % ($P_N > 0,4$ bar)			2
Customer			9
Electrical connection			
PVC - cable (grey, Ø 7,4 mm)[1]			1
PUR - cable (black, Ø 7,4 mm)[1]			2
FEP - cable with PTFE sheath (black, Ø 7,4 mm)[1]			3
Customer			9
Cable length			
in m			999
Special version			
Standard			000
Customer			999
Accessories for submersible transmitter			
Terminal clamp - zinc plated			1003440
Terminal clamp - Stainless Steel 1.4301			1000278
Mounting screw PG16 - plastic			5002200

1 - shielded cable with integrated ventilation tube for atmospheric pressure reference

Manufacturer reserves the right to change sensor specifications without further notice.