

CPA-P-307T



- hydrostatic level and temperature transmitter
- submersible probe with integrated Pt 100, diameter 27 mm
- nominal range: from 0...1 mH₂O up to 0...250 mH₂O / 0...30°C up to 0...70°C
- output signals: 2-wire: 4...20 mA (separate for pressure and temperature)
- stainless steel probe and sensor
- accuracy 0.5 % / 0.35 % / 0.25 % span
- small thermal effect, high accuracy
- certified for contact with drinking water by the Polish National Institute of Public Health (PZH) - EPDM/PUR version

The stainless steel submersible probe CPA-P-307T has been developed for continuous level and temperature measurement in water and in clean to lightly-soiled liquids.

The advantage: simultaneous recording of level and temperature with separate independent signal amplification. The maintenance and wiring costs are considerably reduced. In addition to classical signal processing of the level, an additional signal circuit independent of the level which converts the temperature signal into a 4...20 mA analogue signal in 2-wire technology is provided.

Typical application areas are, for example, drinking water purification, monitoring of rainwater overflow basins and river courses, in addition to level measurement in containers or tank batteries.

PREFERRED AREAS OF USE ARE



Water / filtrated sewage
drinking water system
water recycling



Fuel / Oil
fuel storage
tank farm

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 ₂ O]	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250
Overpressure	[bar]	0.5	1	1	2	5	5	10	10	20	40	40	80	80
Burst pressure ≥	[bar]	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50	50	120	120
max. ambient pressure (housing)		40 bar												

Input temperature range				
Temperature measuring range	standard	0 ... 30 °C	0 ... 50 °C	0 ... 70 °C
	others on request ¹			
¹ min. temperature range: 30°C; max. temperature range: 80°C min. temperature: -10°C; max. temperature: 70 °C				

Output signal / Supply	
2-wire (pressure) ²	4 ... 20 mA / V _S = 10 ... 30 V _{DC}
2-wire (temperature) ²	4 ... 20 mA / V _S = 10 ... 30 V _{DC}
² the circuits are galvanically isolated from each other	

Performance	
Accuracy (pressure) ³	standard: nominal pressure < 0.4 bar: ≤ ± 0.5 % span nominal pressure ≥ 0.4 bar: ≤ ± 0.35 % span option 1: nominal pressure ≥ 0.4 bar: ≤ ± 0.25 % span
Accuracy (temperature) ⁴	± 1 °C
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 at reference conditions
Response time	< 10 ms (for output signal 2-wire (pressure))
³ accuracy according to EN IEC 62828-2 – limit point adjustment (non-linearity, hysteresis, repeatability)	
⁴ Pt 100 class B; compensation time up to 1h depending on constant temperature and environmental respectively mass conditions	

Thermal effects (Offset and Span)		
Nominal pressure P _N	[bar]	< 0.40 ≥ 0.40
Tolerance band	[% span]	≤ ± 1 ≤ ± 0.75
in compensated range	[°C]	0 ... 70

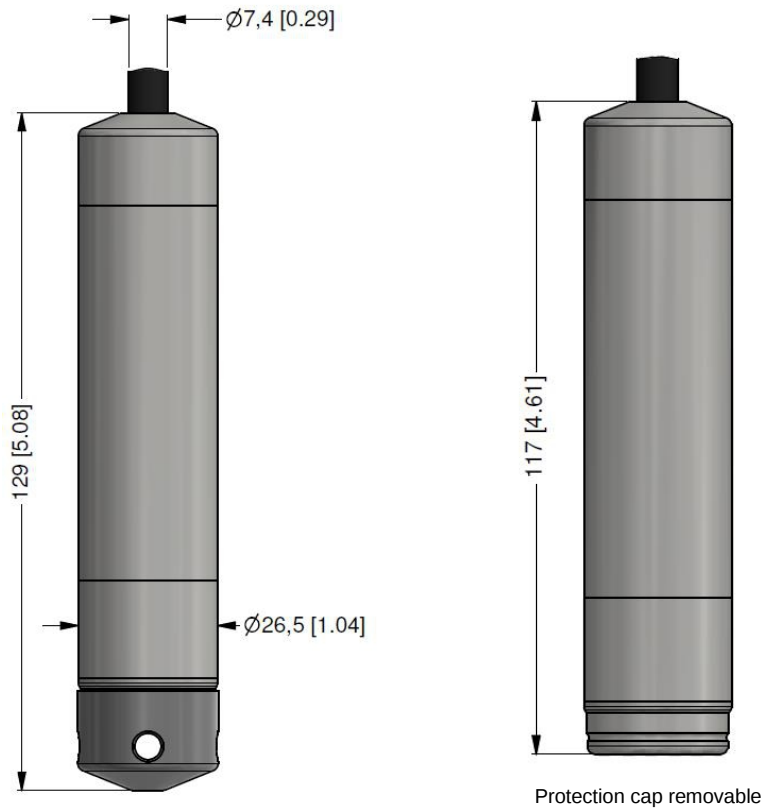
Permissible temperatures	
Permissible temperatures	Medium/ electronics/ environment/ storage: -20 ... 80 °C *
<i>*If the cable is intended for use in a smaller temperature range, the use of the probe is limited by this range.</i>	
Electrical protection ⁵	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326
⁵ additional external overvoltage protection unit in terminal box KL 1 or KL 2 with atmospheric pressure reference available on request	
Electrical connection	
Cable with sheath material ⁶	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 ⁷ (-25 ... 75 °C) black Ø 7,4 mm TPE-U (-25 ... 125 °C) blue Ø 7,4 mm
Bending radius	static installation: 10-fold cable diameter, dynamic application: 20-fold cable diameter
⁶ cable with integrated air tube for atmospheric pressure reference	
⁷ 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 (with drinking water certificate) others on request
Diaphragm	stainless steel 1.4435 (316L)
Protection cap	POM-C
Cable sheath	PVC / PUR (with drinking water certificate) / FEP / TPE-U, others on request
Miscellaneous	
Drinking water certificate ⁸	according to Polish National Institute of Public Health (PZH) (with order please indicate if the device must be certificated for drinking water)
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: 1µH/m
Current consumption	signal output current: max. 25 mA / signal output voltage: max. 7 mA
Weight	approx. 200 g (without cable)
Ingress protection	IP 68
CE-conformity	EMC Directive: 2014/30/EU
⁸ only possible with EPDM seal in combination with PUR cable	

ELECTRICAL CONNECTION

Wiring diagram	
2x2-wire-system (current)	
Pin configuration	
Electrical connection	cable colours (DIN 47100)
Supply P+	wh (white)
Supply P-	bn (brown)
Supply T+	gy (gray)
Supply T-	pk (pink)
Shield	ye/gn (yellow / green)



DIMENSION DRAWINGS

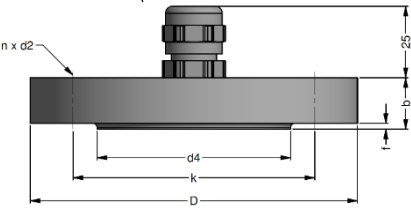


ACCESSORIES

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 material: TPE (ingress protection IP 68)	
Seal insert	according to DIN 2507	
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

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



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 clamp

Technical Data	
Suitable for	all probes with cable Ć 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



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

