

CPA-K-382H



- hydrostatic level transmitter
- submersible probe, diameter 39.5 mm
- nominal pressure: from 0...0,6 mH₂O up to 0...200 mH₂O
- output signal: 2-wire: 4...20 mA
- HART® communication (setting of offset, span and damping)
- stainless steel probe, ceramic sensor
- accuracy 0.2 % / 0.1 % span
- especially for sewage, polluted and higher viscosity fluids
- optional: diaphragm 99.9 % Al₂O₃, different kinds of cables and seals
- certified for contact with drinking water by the Polish National Institute of Public Health (PZH) - EPDM/PUR version

The stainless steel probe **CPA-K-382H** has been designed for continuous level measurement in sewage, polluted and higher viscosity fluids.

Basic element is a robust and high overpressure capable capacitive ceramic sensor e.g. for low levels.

PREFERRED AREAS OF USE ARE



Water

- ground water level measurement
- rain spillway basins



Sewage

- waste water treatment
- water recycling



Fuel / Oil

- level monitoring in open tanks with low filling heights
- fuel storage
- tank farms / biogas plants

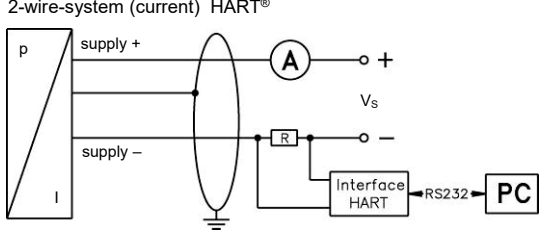
TECHNICAL DATA

Pressure ranges ¹									
Nominal pressure	[bar]	0.06	0.16	0.4	1	2	5	10	20
Level	[mH ₂ O]	0.6	1.6	4	10	20	50	100	200
Overpressure	[bar]	2	4	6	8	15	25	35	45
Max. ambient pressure (housing): 40 bar									
¹ on customer request we adjust the devices by software on the required pressure ranges, within the turn-down possibility (starting at 0.02 bar)									
Output signal / Supply									
Standard		2-wire: 4 ... 20 mA / V _S = 12 ... 36 V _{DC} with HART® communication						V _S rated = 24 V _{DC}	
Performance									
Accuracy ²	p _N ≥ 160 mbar	TD ≤ 1:5		≤ ± 0.2 % FSO				TD _{max} = 1:10	
		TD > 1:5		≤ ± [0.2 + 0.03 x TD] % FSO					
	p _N < 160 mbar			≤ ± [0.2 + 0.1 x TD] % FSO				TD _{max} = 1:3	
		p _N ≥ 1 bar	TD ≤ 1:5		≤ ± 0.1 % FSO				TD _{max} = 1:10
			TD > 1:5		≤ ± [0.1 + 0.02 x TD] % FSO				
Permissible load		R _{max} = [(V _S - V _{S min}) / 0.02 A] Ω load at HART [®] -communication: R _{min} = 250Ω							
Long term stability		≤ ± (0.1 x turn-down) % FSO / year at reference conditions							
Influence effects		supply: 0.05 % FSO / 10 V				permissible load: 0.05 % FSO / kΩ			
Turn-on time		850 msec							
Mean response time		140 msec without consideration of electronic damping						mean measuring rate 7/sec	
Max. response time		380 msec							
Adjustability		configuration of following parameters possible (interface / software necessary ³): - electronic damping: 0 ... 100 sec - offset: 0 ... 80 % FSO - turn down of span: max. 1:10							
² accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)									
³ software, interface, and cable have to be ordered separately (software appropriate for Windows® 95, 98, 2000, NT Version 4.0 or higher, and XP)									
Thermal effects (offset and span)									
Tolerance band		≤ ± 1 % FSO							
in compensated range		-20 ... 80 °C							
Permissible temperatures									
Permissible temperatures		medium / electronics / environment / storage: -25 ... 85 °C							
Electrical protection ⁴									
Short-circuit protection		permanent							
Reverse polarity protection		no damage, but also no function							
Electromagnetic compatibility		emission and immunity according to EN 61326							
⁴ additional external overvoltage protection unit in terminal box KL 1 or KL 2 with atmospheric pressure reference available on request									

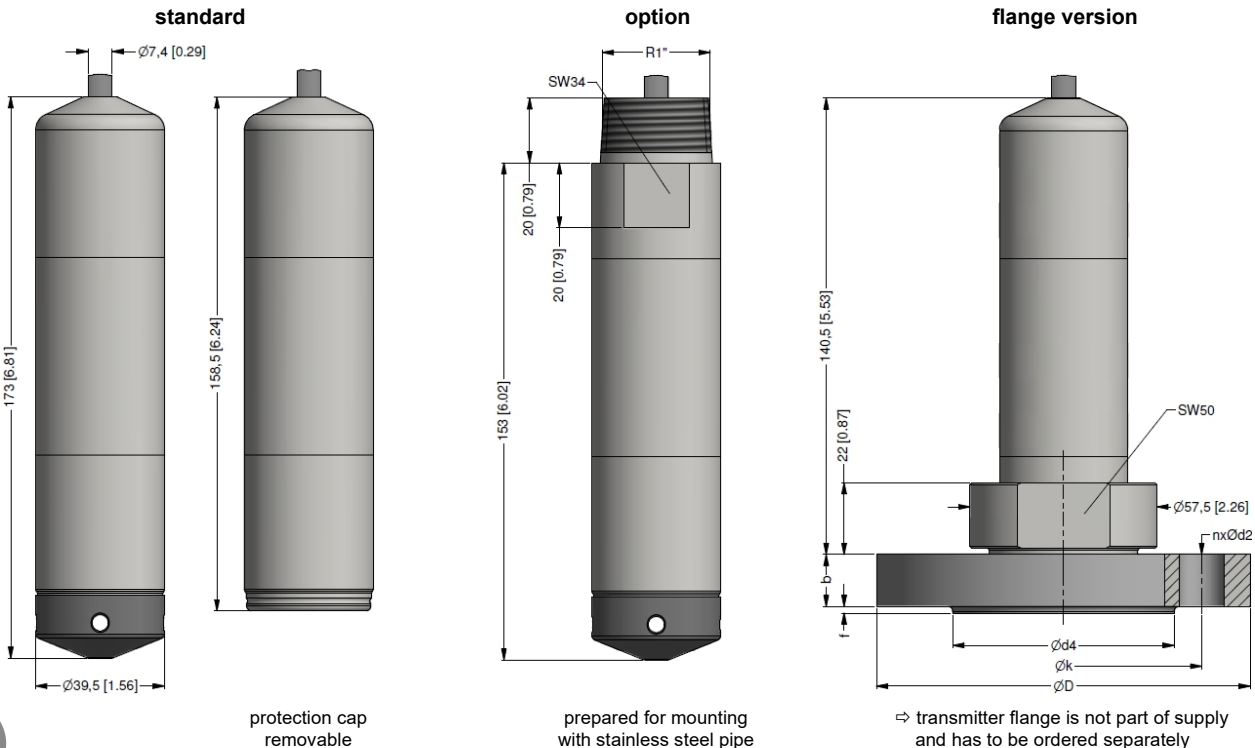
Level transmitters

Mechanical stability				
Vibration	4 g (according to: DIN EN 60068-2-6)			
Electrical connection				
Cable outlet with sheath material ⁵	PVC	(-5 ... 70 °C)	grey	Ø 7.4 mm
	PUR	(-25 ... 70 °C)	black (with drinking water certificate)	Ø 7.4 mm
	FEP ⁶	(-25 ... 70 °C)	black	Ø 7.4 mm
	TPE-U	(-25 ... 85 °C)	blue	Ø 7.4 mm
Bending radius	static installation:		10-fold cable diameter	
	dynamic application:		20-fold cable diameter	
⁵ shielded cable with integrated ventilation tube for atmospheric pressure reference				
⁶ do not use freely suspended probes with an FEP cable if effects due to highly charging processes are expected				
Materials				
Housing	stainless steel 1.4404 (316 L)			
Seals	FKM / FFKM / EPDM (with drinking water certificate)		others on request	
Diaphragm	standard: ceramics Al ₂ O ₃ 96 % option: ceramics Al ₂ O ₃ 99.9 %			
Protection cap	POM-C			
Cable sheath	PVC / PUR (with drinking water certificate) / FEP / TPE-U		others on request	
Miscellaneous				
Option cable protection for probes	prepared for mounting with stainless steel pipe			
Ingress protection	IP 68			
Current consumption	max. 21 mA			
Weight	approx. 400 g (without cable)			
CE-conformity	EMC Directive: 2014/30/EU			

ELECTRICAL CONNECTION

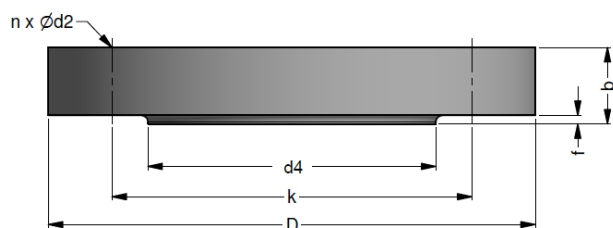
Wiring diagram	
2-wire-system (current) HART® 	
Pin configuration	
Electrical connection	cable colours (IEC 60757)
Supply +	WH (white)
Supply -	BN (brown)
Shield	GNYE (green-yellow)

DIMENSION DRAWINGS



ACCESSORIES

Transmitter flange for flange version



dimensions in mm			
size	DN25 / PN40	DN50 / PN40	DN80 / PN16
b	18	20	20
D	115	165	200
d2	14	18	18
d4	68	102	138
f	2	3	3
k	85	125	160
n	4	4	8

Technical data

Suitable for	CPA-K-382, CPA-K-382H
Flange material	stainless steel 1.4404 (316L)
Hole pattern	according to DIN 2507

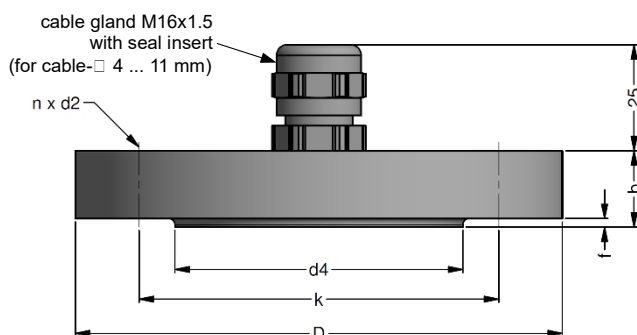
Ordering type

Ordering code

Weight

Transmitter flange DN25 / PN40	ZSF2540	1.2 kg
Transmitter flange DN50 / PN40	ZSF5040	2.6 kg
Transmitter flange DN80 / PN16	ZSF8016	4.1 kg

Mounting flange with cable gland



dimensions in mm			
size	DN25 / PN40	DN50 / PN40	DN80 / PN16
b	18	20	20
D	115	165	200
d2	14	18	18
d4	68	102	138
f	2	3	3
k	85	125	160
n	4	4	8

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

Ordering type

Ordering code

Weight

DN25 / PN40 with cable gland brass, nickel plated	ZMF2540	1.4 kg
DN50 / PN40 with cable gland brass, nickel plated	ZMF5040	3.2 kg
DN80 / PN16 with cable gland brass, nickel plated	ZMF8016	4.8 kg

Terminal clamp



Technical data

Suitable for	all probes with cable Ø 5.5 ... 10.5 mm
Material of housing	standard: steel, zinc plated optionally: stainless steel 1.4301 (304)
Material of clamping jaws and positioning clips	PA (fibre-glass reinforced)
Dimensions (mm)	174 x 45 x 32
Hook diameter	20 mm

Ordering type

Ordering code

Weight

Terminal clamp, steel, zinc plated	Z100528	approx. 160 g
Terminal clamp, stainless steel 1.4301 (304)	Z100527	

ORDER CODE

ORDER CODE _____

CPA-K-382H-						-				-				-				-				-				-										
Pressure																																				
in bar			5	6	5																															
			5	6	6																															
Input			[mH ₂ O]		[bar]																															
			0.6		0.06					0	6	0	0																							
			1.6		0.16					1	6	0	0																							
			4.0		0.40					4	0	0	0																							
			10		1.0					1	0	0	1																							
			20		2.0					2	0	0	1																							
			50		5.0					5	0	0	1																							
			100		10					1	0	0	2																							
			200		20					2	0	0	2																							
										9	9	9	9																							
Housing																																				
stainless steel 1.4404 (316L)																				1																
customer																				9																
Diaphragm																																				
ceramics Al ₂ O ₃ 96 %																				2																
ceramics Al ₂ O ₃ 99.9 %																				C																
customer																				9																
Output																																				
HART®-communication																				H																
4 ... 20 mA / 2-wire																																				
customer																				9																
Seal																																				
FKM																				1																
EPDM ⁴																				3																
FFKM																				7																
customer																				9																
Electrical connection																																				
PVC-cable (grey, Ø 7.4 mm) ¹																				1																
PUR-cable (black, Ø 7.4 mm) ^{1,4}																				2																
FEP-cable (black, Ø 7.4 mm) ¹																				3																
TPE-U-cable (blue, Ø 7.4 mm) ¹																				4																
customer																				9																
Accuracy																																				
p _N ≥ 1 bar:			0.1 % FSO																	1																
p _N < 1 bar:			0.2 % FSO																	B																
customer																				9																
Cable length																																				
in m																				9 9 9																
Special version																																				
standard																				0 0 0																
prepared for mounting																				5 0 2																
with stainless steel pipe																																				
flange version ³																				5 1 0																
customer ²																				9 9 9																

- 1 - shielded cable with integrated ventilation tube for atmospheric pressure reference
- 2 - stainless steel pipe is not part of the supply
- 3 - mounting accessories are not part of supply and have to be ordered separately
- 4 - drinking water certification only possible with EPDM seal (code 3) in combination with PUR cable

HART[®] is a registered trade mark of HART Communication Foundation

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

