

CPA-K-358H



- hydrostatic level transmitter
- detachable probe, diameter 39.5 mm
- nominal pressure: from 0...60 cmH₂O up to 0...100 mH₂O
- output signals: 2-wire: 4...20 mA
- stainless steel probe, ceramic sensor
- accuracy 0.1 % span
- HART® communication (setting of offset, span and damping)
- especially for sewage, viscous and pasty media
- optional: diaphragm 99.9 % Al₂O₃
- certified for contact with drinking water by the Polish National Institute of Public Health (PZH) - EPDM/PUR version

The detachable stainless steel probe **CPA-K-358H** has been designed for level measurement in waste water, waste and higher viscosity media. Basic element is a capacitive ceramic sensor. In order to facilitate stock-keeping and maintenance the transmitter head is plugged to the cable assembly with a connector and can be changed easily.

PREFERRED AREAS OF USE ARE



Water

- ground water level measurement
- rain spillway basin



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

Input pressure range ¹

Nominal pressure gauge	[bar]	0.06	0.16	0.4	1	2	5	10
Level	[mH ₂ O]	0.6	1.6	4	10	20	50	100
Overpressure	[bar]	2	4	6	8	15	25	35
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 / $V_S = 12 \dots 36 V_{DC}$ with HART[®] communication $V_{S \text{ rated}} = 24 V_{DC}$

Performance

Accuracy ²	$P_N \geq 160 \text{ mbar}$	TD $\leq 5:1$ TD $> 5:1$	$\pm 0.2 \%$ span $\pm [0.2 + 0.03 \times \text{TD}] \%$ span	TD _{max} = 10:1
	$P_N < 160 \text{ mbar}$		$\pm [0.2 + 0.1 \times \text{TD}] \%$ span	TD _{max} = 3:1
	$P_N \geq 0.6 \text{ bar}$	TD $\leq 5:1$ TD $> 5:1$	$\pm 0.1 \%$ span $\pm [0.1 + 0.02 \times \text{TD}] \%$ span	TD _{max} = 10:1
Permissible load	$R_{\text{max}} = [(V_S - V_{S \text{ min}}) / 0.02 \text{ A}] \text{ W}$ load at HART [®] -communication: $R_{\text{min}} = 250 \text{ W}$			
Long term stability	$\leq \pm (0.1 \times \text{turn-down}) \%$ span / year at reference conditions			
Influence effects	supply: 0.05 % span / 10 V load: 0.05 % span / kW			
Turn-on time	850 msec			
Mean response time	140 msec – without consideration of electronic damping			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 % span - turn-down of span: max. 10:1			

² accuracy according to EN IEC 62828-2– 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) / - permissible temperatures

Tolerance band	$\leq \pm (0.2 \times \text{turn-down}) \%$ span
TC, average	$\pm (0.02 \times \text{turn-down}) \%$ span / 10 K
in compensated range	-20 ... 80 °C
Permissible temperatures	medium/ electronics/ environment/ storage: -20 ... 85 °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 ⁴

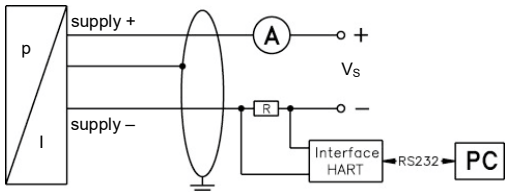
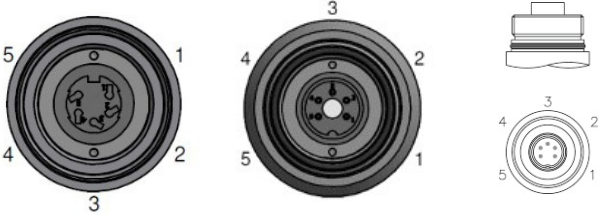
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Lightning protection	integrated
Electromagnetic compatibility	emission and immunity according to EN 61326

⁴ additional external overvoltage protection unit in terminal box KL 1 or KL 2 with atmospheric pressure reference available on request

Level transmitters

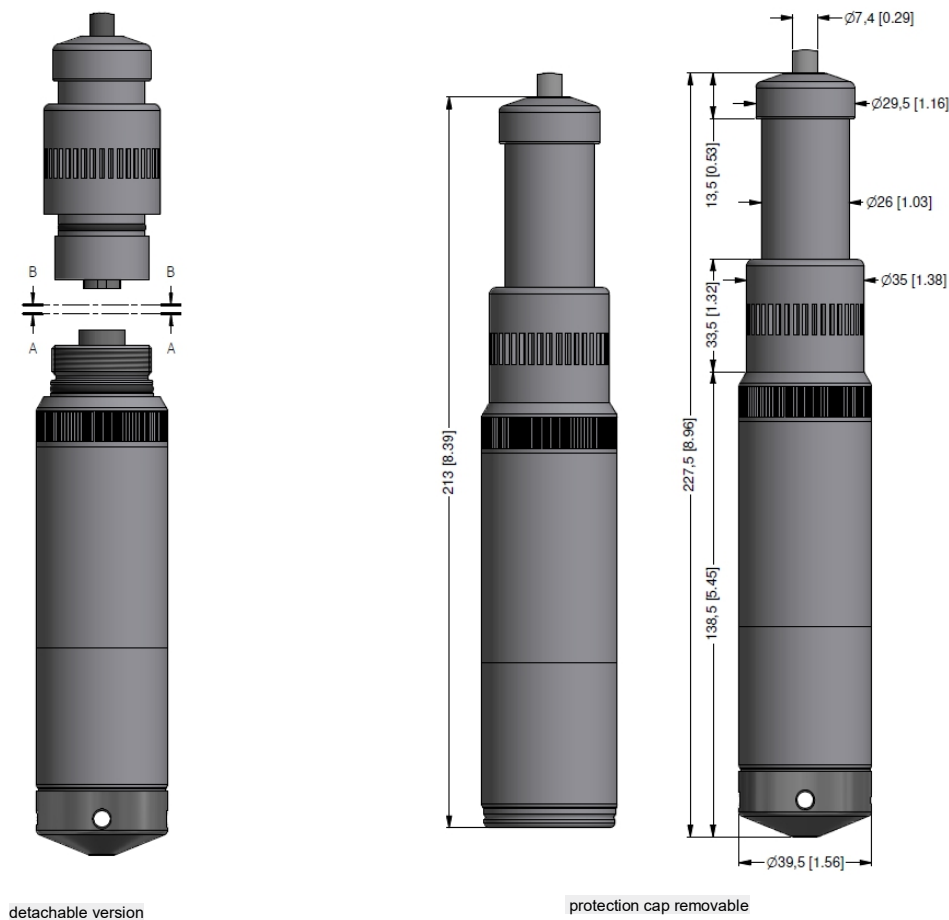
Mechanical stability			
Vibration	4 g (according to: DIN EN 60068-2-6)		
Electrical connection			
Cable with sheath material ⁵	PVC (-5 ... 70 °C) grey (-25 ... 70 °C in fixed condition)	Ø 7,4 mm	
	PUR (-25 ... 80 °C) black (with drinking water certificate)	Ø 7,4 mm	
	FEP ⁶ (-25 ... 75 °C) black	Ø 7,4 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		
⁵ shielded cable with integrated air 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 (media wetted)			
Housing	stainless steel 1.4404 (316L)		
Seals	FKM 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 cheath	PVC / PUR (with drinking water certificate) / FEP / TPE-U		
Miscellaneous			
Current consumption	max. 21 mA		
Weight	approx. 650 g (without cable)		
Ingress protection	IP 68		
CE-conformity	EMC Directive: 2014/30/EU		

ELECTRICAL CONNECTION

Wiring diagram		
2-wire-system (current) HART® 		connector 
Pin configuration		
Electrical connection	Binder series 723 ⁸ (5-pin)	cable colours (DIN 47100)
Supply +	3	WH (white)
Supply -	1	BN (brown)
Shield	5	GN/YE (green / yellow)
⁸ in detached version		



DIMENSION DRAWINGS



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Windows® is a registered trade mark of Microsoft Corporation Windows® is a registered trade mark of Microsoft Corporation

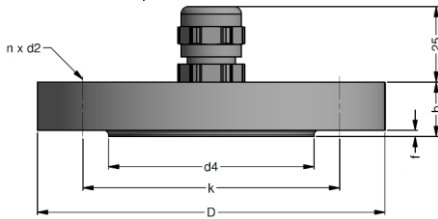
ACCESSORIES

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

cable gland M16x1.5 with
seal insert (for cable- $\varnothing$ 4 ... 11 mm)



Ordering type

DN25 / PN40 with cable gland brass, nickel plated	Ordering code
DN50 / PN40 with cable gland brass, nickel plated	ZMF2540
DN80 / PN16 with cable gland brass, nickel plated	ZMF5040
	ZMF8016

Terminal clamp

Technical Data

Suitable for	all probes with cable $\varnothing$ 5.5 ... 10.5 mm	
Material	standard: steel, zinc plated optionally: stainless steel 1.4301 (304)	
Weight	approx. 160 g	



Ordering type

Terminal clamp, steel, zinc plated	Ordering code
Terminal clamp, stainless steel 1.4301 (304)	1003440
	1000278

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