CPA-K-809

- hydrostatic level transmitter for viscous and aggressive media
- submersible probe, diameter 45 mm
- nominal pressure: from 0...0.4 mH_2O up to 0...100 mH_2O
- output signals: 2-wire: 4...20 mA; 3-wire: 0...10 V
- high purity ceramic sensor
- plastic probe
- accuracy 0.35 % / 0.25 % span
- chemical resistance, high overpressure resistance, diaphragm 99.9 % Al_2O_3, housing material PP-H or PVDF
- optional: various kinds of cables and seals

The plastic submersible probe **CPA-K-809** is designed for continous level measurement in waste water or in most of aggressive media. Basic element is a capacitive ceramic sensor. Basic element of the plastic probe is the flush mounted ceramic sensor, which makes cleaning easier when solid parts of the medium deposit on it. Di erent cable and seal materials are available in order to achieve maximum media compatibility.

PREFERRED AREAS OF USE ARE

Sewage
waste water treatment
water recycling
dumpsite

Aggressive media
most of acids and lyes

TECHNICAL DATA

Input pressure range														
Nominal pressure gauge [bar]	0.04	0.06	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10
Level [mH_2O]	0.4	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100
Overpressure [bar]	2	2	4	4	6	6	8	8	15	25	25	35	35
max. ambient pressure (housing)	10 bar												

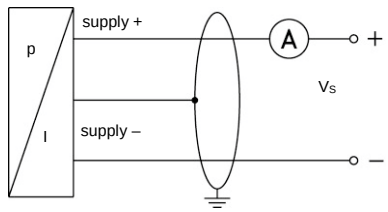
Output signal / Supply		
Standard	2-wire: 4 ... 20 mA / V_S = 9 ... 32 V_{DC}	
Option 3-wire	3-wire: 0 ... 10 V / V_S = 12.5 ... 32 V_{DC}	
Performance		
Accuracy[1]	standard: ≤ ± 0.35 % span option: ≤ ± 0.25 % span	
Permissible load	$R_{max} = [(V_S - V_{S\,min}) / 0.02\ A]$ W	
Influence e ects	supply: 0.05 % span / 10 V load: 0.05 % span / kW	
Long term stability	≤ ± 0.1 % span / year	
Turn-on time	700 msec	
Mean response time	< 200 msec	measuring rate: 5/sec
Max. response time	380 msec	
[1] accuracy according to EN IEC 62828-2– limit point adjustment (non-linearity, hysteresis, repeatability)		
Thermal e ects (O set and Span)		
Thermal error	≤ ± 0.1 % span / 10 K in compensated range 0 ... 70 °C	
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	
[2] 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 [3]	PUR (-25 … 80 °C) black (with drinking water certificate) FEP [4] (-25 … 75 °C) black TPE-U (-25 … 125 °C) blue	Ø 7,4 mm Ø 7,4 mm 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	
[3] cable with integrated air tube for atmospheric pressure reference *[4] do not use freely suspended probes with an FEP cable if e ects due to highly charging processes are expected*		
Materials (media wetted)		
Housing	standard: PP-H option: PVDF	
Seals	FKM / EPDM / FFKM	
Diaphragm	ceramics Al_2O_3 99.9 %	
Cable sheath	PUR, FEP, TPE-U	
Miscellaneous		
Option pipe R1”	prepared for mounting with plastic pipe	
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	max. 21 mA	
Weight	approx. 320 g (without cable)	
Ingress protection	IP 68	
CE-conformity	EMC Directive: 2014/30/EU	

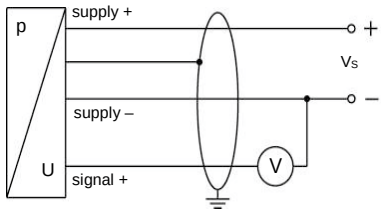
ELECTRICAL CONNECTION

Wiring diagram

2-wire-system (current)



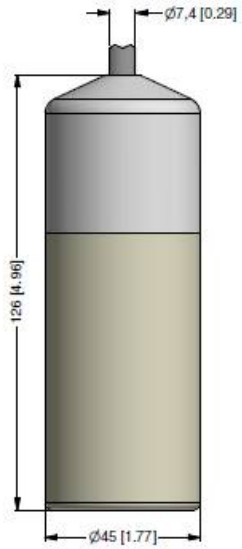
3-wire-system (voltage)



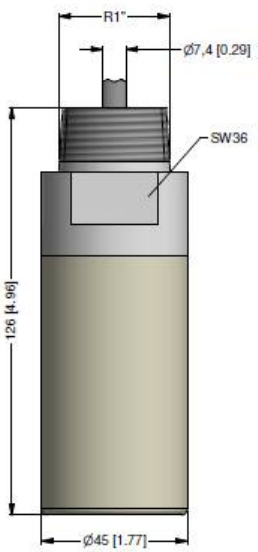
Pin configuration	
Electrical connection	cable colours (DIN 47100)
Supply +	wh (white)
Supply –	bn (brown)
Signal + (only for 3-wire)	gn (green)
Shield	gn/ye (green / yellow)

DIMENSION DRAWINGS

standard



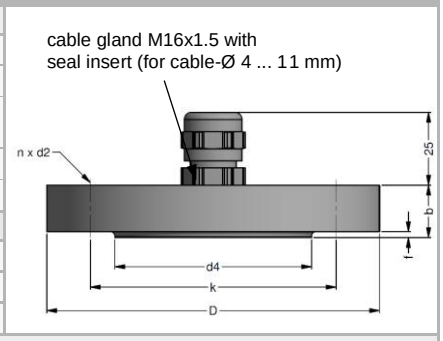
option



prepared for mounting with pipe R1"

ACCESSORIES

Assembling flange with cable gland		
Technical Data		
Suitable for	all probes	
Flange material	stainless steel 1.4404 (316L)	
Material of cable gland	standard: brass, zinc 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
Assembling Flange DN25 / PN40	5000275
Assembling Flange DN50 / PN40	5000278
Assembling Flange DN80 / PN16	5000279

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

ORDER CODE

CPA-K-809-□□□-□□□□-□-□-□-□-□-□-□-□□□-□□□

Pressure																		
in bar				3	9	5												
in m H_2O				3	9	6												
Input	**[mH_2O]**	**[bar]**																
	0 … 0.4	0 … 0,04				0	4	0	0									
	0 … 0.6	0 … 0,06				0	6	0	0									
	0 … 1	0 … 0,1				1	0	0	0									
	0 … 1.6	0 … 0,16				1	6	0	0									
	0 … 2.5	0 … 0,25				2	5	0	0									
	0 … 4	0 … 0,4				4	0	0	0									
	0 … 6	0 … 0,6				6	0	0	0									
	0 … 10	0 … 1				1	0	0	1									
	0 … 16	0 … 1,6				1	6	0	1									
	0 … 25	0 … 2,5				2	5	0	1									
	0 … 40	0 … 4				4	0	0	1									
	0 … 60	0 … 6				6	0	0	1									
	0 … 100	0 … 10				1	0	0	2									
Customer						9	9	9	9									
Housing material																		
PP-H										R1								
PVDF (accuracy 0,5 %)										B								
Customer										9								
Diaphragm material																		
Ceramic Al_2O_3 99,9 %											C							
Ceramic Al_2O_3 96 % with PTFE foil (accuracy ≥ 1%) - not possible for underpressure											3							
Customer											9							
Output																		
4 … 20 mA / 2-wire												1						
0 … 10 V / 3-wire [3]												3						
Customer												9						
Seals																		
Viton (FKM)													1					
EPDM													3					
FFKM													7					
Customer													9					

ORDER CODE

CPA-K-809-□□□ - □□□□ - □ - □ - □ - □ - □ - □ - □□□ - □□□

Accuracy											
0,5 % (PVDF housing)	5										
0,35 % (standart)	3										
0,25 %	2										
0,5 % including Calibration Certificate	T										
0,35 % including Calibration Certificate	S										
Customer	9										
Electrical connection											
PUR - cable (black, Ø 7,4 mm, price for 1 m)[1]		2									
FEP - cable with PTFE sheath (black, Ø 7,4 mm, price for 1 m)[1]		3									
TPE-U - cable, up to 125°C (blue, Ø 7.4 mm, price for 1 m)[1]		4									
Customer		9									
Cable length											
in m			9	9	9						
Special version											
Standard						0	0	0			
R 1" thread - Prepared for mounting with plastic pipe [2]						6	1	0			
Temperature compensation 0 … 100 °C						8	4	8			
Customer						9	9	9			
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
2 - pipe is not part of the supply
3 - maximum length of PVC cable – 25 m, PUR, FEP, TPE – 40 m

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