

CPA-K-331



- hydrostatic level transmitter
- screw-in probe
- nominal pressure: from 0...400 mbar up to 0...60 bar
- output signals: 2-wire: 4...20 mA; 3-wire: 0...20 mA / 0...10 V
- stainless steel probe
- ceramic sensor
- accuracy 0.5 % span
- pressure port G 3/4" flush for pasty and impure media
- pressure port PVDF for aggressive media



The screw-in transmitter **CPA-K-331** has been especially designed for level and process measurement and is suitable for pressure measurement of liquids, oils and gases. Usage in more viscous or polluted media is possible because of the semi-flush pressure sensor. For the usage in aggressive media we recommended the version with PVDF pressure port.

PREFERRED AREAS OF USE ARE



Plant and Machine Engineering



Environmental Engineering
(water - sewage - recycling)



Energy Industry



Medical Technology

TECHNICAL DATA

Input pressure range													
Nominal pressure gauge [bar]	0.4	0.6	1	1.6	2.5	4	6	10	16	25	40 ¹	60 ¹	
Level [mH ₂ O]	4	6	10	16	25	40	60	100	160	250	400	600	
Overpressure [bar]	1	2	2	4	4	10	20	20	40	100	100	200	
Burst pressure [bar]	2	4	4	5	5	12	25	25	50	120	120	250	
Vacuum resistance [bar]	P _N ≥ 1 bar: unlimited vacuum resistance P _N < 1 bar: on request												

¹ only possible with stainless steel pressure port

Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / V _S = 8 ... 32 V _{DC}
Option 3-wire	3-wire: 0 ... 20 mA / V _S = 14 ... 30 V _{DC} 0 ... 10 V / V _S = 14 ... 30 V _{DC}

Performance	
Accuracy ³	≤ ± 0.5 % span
Permissible load	current 2-wire: R _{max} = [(V _S - V _{Smin}) / 0.02 A] Ω current 3-wire: R _{max} = 500 Ω voltage 3-wire: R _{min} = 10 kΩ
Influence effects	supply: 0.05 % span / 10 V load: 0.05 % span / kΩ
Response time	2-wire: ≤ 10 msec 3-wire: ≤ 3 msec

³ accuracy according to EN IEC 62828-2— limit point adjustment (non-linearity, hysteresis, repeatability)

Thermal effects (Offset and Span) / Permissible Temperatures	
Thermal error	≤ ± 0.2 % span / 10 K
in compensated range	-25 ... 85 °C
Permissible temperatures ⁴	medium: -40 ... 125 °C electronics / environment: -40 ... 85 °C storage: -40 ... 100 °C

⁴ for pressure port of PVDF the permissible temperature is -30 ... 60 °C

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



Level transmitters

Mechanical stability			
Vibration	10 g RMS (25 ... 2000 Hz)	according to DIN EN 60068-2-6	
Shock	500 g / 1 msec	according to DIN EN 60068-2-27	
Materials			
Pressure port / housing	standard:	pressure port	housing
	options for $P_N \leq 25$ bar:	stainless steel 1.4404 (316L) PVDF	stainless steel 1.4404 (316L) PVDF
Option field housing	stainless steel 1.4301 (304); cable gland M16x1.5, brass nickel plated (clamping range 2...8 mm)		
Seals	standard: FKM options: EPDM, NBR, others on request		
Diaphragm	ceramics Al_2O_3 96 %		
Media wetted parts	pressure port, seals, diaphragm		
Miscellaneous			
Current consumption	signal output current: max. 25 mA	signal output voltage: max. 5 mA	
Weight	approx. 150 g		
Installation position	any		
Operational life	> 100 x 10 ⁶ pressure cycles		
CE-conformity	EMC Directive: 2014/30/EU		

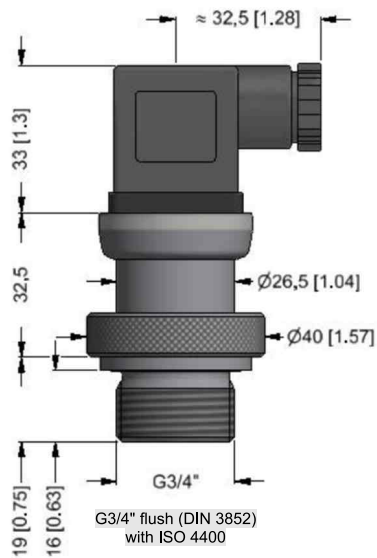
ELECTRICAL CONNECTION

Wiring diagrams					
2-wire-system (current)			3-wire-system (current / voltage)		
Pin configuration					
Electrical connections	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	field housing	cable colours (DIN 47100)
Supply +	1	3	1	IN +	wh (white)
Supply -	2	4	2	IN-	bn (brown)
Signal + (only for 3-wire)	3	1	3	OUT+	gn (green)
Shield	ground contact	5	4		gn/ye (green / yellow)
Electrical connections (dimensions in mm)					
standar d	option				
ISO 4400 (IP 65)	Binder Series 723 5-pin (IP 67)	M12x1 4-pin (IP 67)	cable gland PG7/cable length specify (IP 67) ⁶	field housing (IP 67)	cable outlet, cable with ventilation tube (IP 68) ⁷
<p>⇒ universal stainless steel housing 1.4404 with cable gland M20x1.5 (ordering code 880) and other versions on request</p>					
<p>⁶ standard: 2 m PVC-cable without ventilation tube (permissible temperature: -5 ... 70°C)</p> <p>⁷ different cable types and length available, permissible temperature depends on kind of cable</p>					



Level transmitters

DIMENSION DRAWINGS



ORDER CODE

CPA-K-331-------

Pressure												
in bar		4	6	0								
in m H ₂ O		4	6	1								
Input		[mH₂O]	[bar]									
	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					
	0 ... 160	0 ... 16		1	6	0	2					
	0 ... 250	0 ... 25		2	5	0	2					
	0 ... 400	0 ... 40 ¹		4	0	0	2					
	0 ... 600	0 ... 60 ¹		6	0	0	2					
Customer				9	9	9	9					
Analogue output												
4...20 mA / 2-wire									1			
0 ... 20 mA / 3-wire									2			
0...10 V / 3-wire ⁴									3			
Customer									9			
Accuracy												
1 %										8		
0,5 %										5		
1 % including Calibration Certificate										U		
0,5 % including Calibration Certificate										T		
Table of measured values for accuracy 0,5 %										N		
Customer										9		
Electrical connection												
Connector DIN 43650 (ISO 4400) (IP 65)										1	0	0
Connector Binder Serie 723 5-pin (IP 67)										2	0	0
Cable gland PG7 / cable length specify (IP 67)										4	0	0
+ PVC cable / 1 m												
Connector Buccaneer (IP 68)										5	0	0
Field housing stainless steel, cable gland M 16 x 1,5 (IP 67)										8	0	0
Field housing stainless steel, cable gland M 20 x 1,5 (IP 67)										8	8	0
Connector DIN 43650 (ISO 4400) - Potting compound inside (IP 67)										E	0	0
Connector M12 x 1, 4-pin (IP 67)										M	0	0
Connector M12 x 1, 4-pin (IP 67) - metal										M	1	0
Cable outlet, cable with ventilation tube (IP68) ²										T	R	0
+ PVC cable / 1 m												
Customer										9	9	9



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CPA-K-331---

Mechanical connection											
G 3/4" (DIN 3852) - flush											
Customer	K	0	0								
	9	9	9								
Seals											
Viton (FKM)									1		
EPDM									3		
NBR									5		
Customer									9		
Housing											
Stainless steel 1.4404 (316 L)									1		
PVDF ($P_N \leq 25$ bar) ³									B		
Customer									9		
Diaphragm											
Ceramic Al ₂ O ₃ 96 %									2		
Ceramic Al ₂ O ₃ 96 % with PTFE foil (accuracy \geq 1%)									3		
Customer									9		
Special version											
Standard									0	0	0
Customer									9	9	9

1 - only possible for pressure port of stainless steel

2 - code TR0 = PVC cable, cable with ventilation tube available in different types and lengths; cable not included in the price

3 - permissible medium temperature: -30 ... 60 °C

4 - maximum length of PVC cable – 25 m, PUR, FEP, TPE – 40 m

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

