

CPA-P-331



- hydrostatic level transmitter
- screw-in probe
- nominal pressure: from 0...100mbar up to 0...40bar
- output signals: 2-wire: 4...20 mA; 3-wire: 0...20 mA / 0...10V
- stainless steel probe and sensor
- accuracy 0.25 % / 0.35 % / 0.5 % span
- pressure port G 3/4" flush, excellent accuracy and long term stability, small thermal effect
- optional: various electrical connections



The screw-in transmitter **CPA-P-331** has been designed for continuous level measurement and is characterized by an excellent performance and a robust construction. The modular construction allows the user the highest possible flexibility in the adaptation of CPA-P-331.

PREFERRED AREAS OF USE ARE



Plant and Machine Engineering



Environmental Engineering
(water - sewage - recycling)



Energy Industry

TECHNICAL DATA

Input pressure range																	
Nominal pressure gauge	[bar]	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6	10	16	25	40		
Level	[mH ₂ O]	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250	400		
Overpressure	[bar]	0.5	1	1	2	5	5	10	10	20	40	40	80	80	105		
Burst pressure	[bar]	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50	50	120	120	210		
Vacuum resistance		P _N 1 bar: unlimited vacuum resistance P _N < 1 bar: on request															
Output signal / Supply																	
Standard		2-wire: 4 ... 20 mA / V _S = 8 ... 32 V _{DC}															
Options		3-wire: 0 ... 20 mA / V _S = 14 ... 30 V _{DC} 0 ... 10 V / V _S = 14 ... 30 V _{DC}															
Performance																	
Accuracy ¹		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															
Permissible load		current 2-wire: R _{max} = [(V _S - V _{S min}) / 0.02 A] W current 3-wire: R _{max} = 500 W voltage 3-wire: R _{min} = 10 kW															
Influence effects		supply: 0.05 % span / 10 V load: 0.05 % span / kW															
Long term stability		± 0.1 % span / year															
Response time ²		2-wire: 10 msec 3-wire: 3 msec															
¹ accuracy according to EN IEC 62828-2- limit point adjustment (non-linearity, hysteresis, repeatability) ² with optional accuracy 0,1 % span the response time is 200 msec																	
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										-20 ... 85					
Permissible temperatures																	
Permissible temperatures		medium: -40 ... 125 °C electronics / environment: -40 ... 85 °C storage: -40 ... 100 °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															
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	stainless steel 1.4404 (316L)	
Housing	stainless steel 1.4404 (316L)	
Option field housing	Stainless steel 1.4301 (304); cable gland M16x 1.5, brass, nickel plated (clamping range 2...8 mm)	
Seals	standard: FKM option: EPDM, NBR	others on request
Diaphragm	stainless steel 1.4435 (316L)	
Media wetted parts	pressure port, seals, diaphragm	
Miscellaneous		
Current consumption	signal output current: max. 25 mA	signal output voltage: max. 5 mA
Weight	approx. 200 g	
Installation position	any ³	
Operational life	> 100 x 10 ⁶ cycles	
CE-conformity	EMC Directive: 2014/30/EU	

³ Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviation in the zero point for pressure ranges P_N 1 bar.

ELECTRICAL CONNECTION

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 pin	5	4		ye/gn (yellow/green)

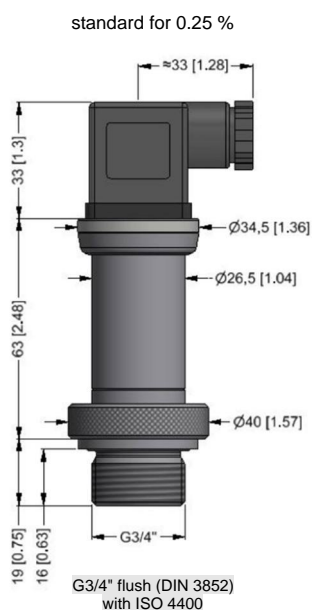
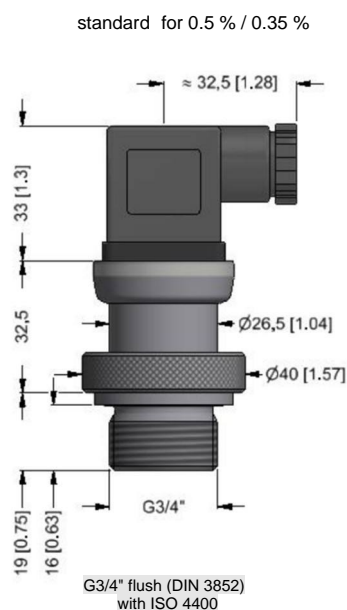
Wiring diagrams	
<p>2-wire-system (current)</p>	<p>3-wire-system (current/voltage)</p>

Electrical connections (dimensions in mm)						
<p>standard</p> <p>ISO 4400 (IP 65)</p>	<p>options</p> <p>Binder Series 723 5-pin (IP 67)</p>	<p>M12x1 4-pin (IP 67)</p>	<p>gland PG7/cable length specify (IP 67)⁵</p>	<p>field housing (IP 67)</p>	<p>cable outlet, cable with ventilation tube (IP 68)⁶</p>	<p>M16x1.5</p>

⁵ standard: 2 m PVC cable (without ventilation tube, permissible temperature: -5 ... 70 °C)
⁶ different cable types and lengths available, permissible temperature depends on kind of cable



DIMENSION DRAWINGS



ORDER CODE

CPA-P-331- - - - - - - - - - - - -

Pressure		Input		Output		Seals	
in bar	in m H ₂ O	[mH ₂ O]	[bar]				
4 3 0	4 3 1	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			
		0 ... 160	0 ... 16	1 6 0 2			
		0 ... 250	0 ... 25	2 5 0 2			
		0 ... 400	0 ... 40	4 0 0 2			
Customer		Customer - underpressure		9 9 9 9			
Housing material		Stainless steel 1.4404 (316 L)		X X X X			
Diaphragm material		Stainless steel 1.4435 (316 L)			1		
Output		4 ... 20 mA / 2-wire				1	
		0 ... 20 mA / 3-wire				2	
		0 ... 10 V / 3-wire ²				3	
		0 ... 5 V / 3-wire ²				4	
Customer						9	
Seals		Viton (FKM)					1
		EPDM					3
		Customer					5



Level transmitters

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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) ¹	T	R	0
+ PVC cable / 1 m			
Customer	9	9	9
Accuracy			
0,5 % (P _N ≤ 0,4 bar)			5
0,35 % (P _N > 0,4 bar)			3
0,25 % (P _N > 0,4 bar)			2
0,5 % including Calibration Certificate (P _N ≤ 0,4 bar)			T
0,35 % including Calibration Certificate (P _N > 0,4 bar)			S
Measured values table for accuracy 0,35 % (only on customer request)			M
Customer			9
Special version			
Standard			0 0 0
Temperature compensation -20...+50 °C			0 0 6
Customer			9 9 9

- 1 - code TR0 = PVC cable, cable with ventilation tube available in different types and lengths; cable not included in the price
 2 - maximum length of PVC cable – 25 m, PUR, FEP, TPE – 40 m

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

