CPA-P-331

- hydrostatic level transmitter
- screw-in probe
- nominal pressure: from 0...100 mbar up to 0...40 bar
- output signals: 2-wire: 4...20 mA; 3-wire: 0...20 mA / 0...10 V
- stainless steel probe and sensor
- accuracy 0.25 % / 0.35 % / 0.1 % 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 adaption 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_2O]	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 option 2: for all nominal pressures: ≤ ± 0.1 % span														
Permissible load	current 2-wire: $R_{max} = [(V_S - V_{S\,min}) / 0.02\ A]\ \Omega$ 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														
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

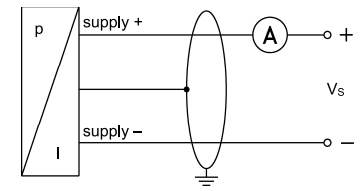
[3] Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviation in the zero point for pressure ranges $P_N \leq 1$ bar.

ELECTRICAL CONNECTION

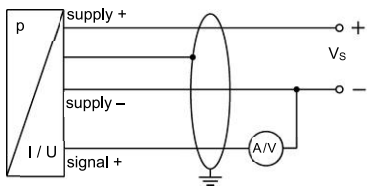
Pin configuration					
Electrical connections	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	field housing	cable colours (DIN 47100)
Supply +	1	3	1	IN +	wh (white)
Supply –	2	4	2	IN –	bn (brown)
Signal + (only for 3-wire)	3	1	3	OUT +	gn (green)
Shield	ground pin ⏚	5	4	⏚	ye/gn(yellow/green)

Wiring diagrams

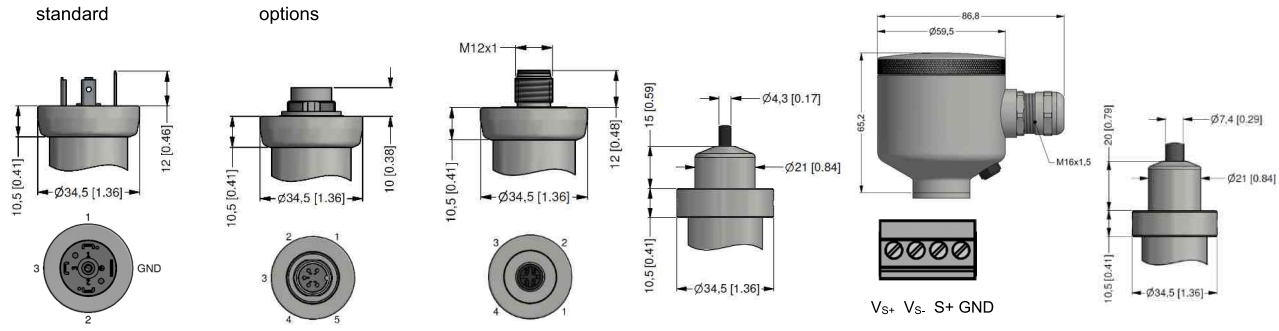
2-wire-system (current)



3-wire-system (current/voltage)



Electrical connections (dimensions in mm)

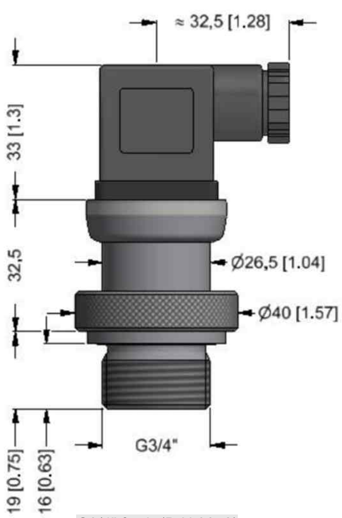


ISO 4400 (IP 65) | Binder Series 723 5-pin (IP 67) | M12x1 4-pin (IP 67) | gland PG7/cable length specify (IP 67) [5] | field housing (IP 67) | cable outlet, cable with ventilation tube (IP 68) [6]

[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

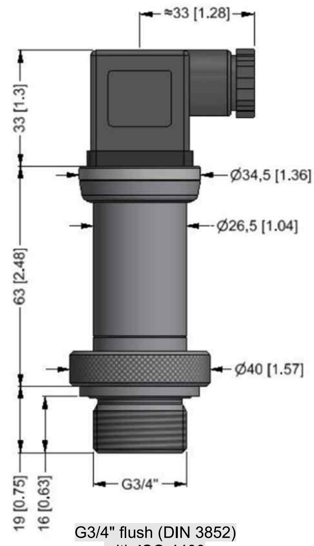
DIMENSION DRAWINGS

standard for 0.5 % / 0.35 %



G3/4" flush (DIN 3852) with ISO 4400

standard for 0.25 % / 0.1 %



G3/4" flush (DIN 3852) with ISO 4400

ORDER CODE

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			Code
Pressure			
in bar			4 3 0
in m H_2O			4 3 1
Input	**[mH_2O]**	**[bar]**	
	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			9 9 9 9
Customer - underpressure			X X X X
Housing material			
Stainless steel 1.4404 (316 L)			1
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

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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 % ($P_N \leq 0,4$ bar)				5				
0,35 % ($P_N > 0,4$ bar)				3				
0,1 % ($P_N \geq 0.4$ bar)				1				
0,25 % ($P_N > 0,4$ bar)				2				
0,5 % including Calibration Certificate ($P_N \leq 0,4$ 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.