



CCA-K-331

- industrial pressure transmitter
- nominal pressure: from 0...400 mbar up to 0...600 bar
- output signals: 2-wire: 4...20 mA; 3-wire: 0...20 mA / 0...10 V
- ceramic sensor
- accuracy 0.5 % span
- pressure port G1/2" flush for pasty and polluted media
- pressure port G1/2" open port PVDF for aggressive media
- oxygen application
- certified for contact with drinking water by the Polish National Institute of Public Health (PZH) - EPDM version

The industrial pressure transmitter **CCA-K-331** with ceramic sensor has been especially designed for pasty, polluted or aggressive media and for oxygen applications at low pressure range.

As with all industrial pressure transmitters provided by Simex, you may choose between various electrical and mechanical connections also on CCA-K-331.

PREFERRED AREAS OF USE ARE



Plant and Machine Engineering



Environmental Engineering
(water - sewage - recycling)



Medical Technology



Energy Industry

TECHNICAL DATA

Input pressure range ¹																				
Nominal pressure gauge	[bar]	-1...0	0,4	0,6	1	1,6	2,5	4	6	10	16	25	40	60	100	160	250	400	600	
Nominal pressure abs.	[bar]	-	-	0,6	1	1,6	2,5	4	6	10	16	25	40	60	100	160	250	400	600	
Overpressure	[bar]	4	1	2	2	4	4	10	10	20	40	40	100	100	200	400	400	600	800	
Burst pressure ≥	[bar]	7	2	4	4	5	7,5	12	18	30	50	50	120	180	300	500	750	1000	1100	
Vacuum resistance		P _N ≥ 1 bar: unlimited vacuum resistance										P _N < 1 bar: on request								
¹ PVDF pressure port possible for nominal pressure ranges up to 60 bar																				
Output signal / Supply																				
Standard		2-wire: 4 ... 20 mA / V _S = 8 ... 32 V _{DC}																		
Options 3-wire		3-wire: 0 ... 20 mA / V _S = 14 ... 30 V _{DC} 0 ... 10 V / V _S = 14 ... 30 V _{DC}																		
Performance																				
Accuracy ²		± ± 0.5 % span																		
Permissible load		current 2-wire: R _{max} = [(V _S – V _{S min}) / 0.02 A] W voltage 3-wire: R _{min} = 10 kW										current 3-wire: R _{max} = 500 W								
Influence effects		supply: 0.05 % span / 10 V										load: 0.05 % span / kW								
Long term stability		≤ ± 0.3 % span / year at reference conditions																		
Response time		2-wire: ≤ 10 msec										3-wire: ≤ 3 msec								
² 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 ³		medium: -40 ... 125 °C										electronics / environment: -40 ... 85 °C				storage: -40 ... 100 °C				
³ for pressure port of PVDF the operation medium 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																		
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								



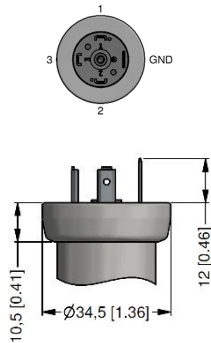
Materials	
Pressure port	standard: stainless steel 1.4404 (316 L) optional for G1/2" open port with nominal pressure range up to 60 bar: PVDF others on request
Housing	stainless steel 1.4404 (316 L)
Option field housing	stainless steel 1.4301 (304) with cable gland M16x 1.5 brass, nickel plated (clamping range 2...8 mm)
Seals (media wetted)	standard: FKM, options: EPDM (with drinking water certificate, for $P_N \leq 160$ bar), NBR, others on request
Diaphragm	ceramic Al_2O_3 96 %
Media wetted parts	pressure port, seals, diaphragm
Miscellaneous	
Option oxygen application	for $P_N \leq 15$ bar: O-ring in 70 EPDM 281 (with BAM-approval); permissible maximum values are 15 bar / 60° C and 10 bar / 90° C for $P_N \leq 25$ bar: O-ring in FKM Vi 567 (with BAM-approval); permissible maximum values are 25 bar / 150° C
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA
Weight	approx. 140 g
Installation position	any
Operational life	100 million load cycles
CE-conformity	EMC Directive: 2014/30/EU Pressure Equipment Directive: 2014/68/EU (module A) ⁴
⁴ This directive is only valid for devices with maximum permissible overpressure > 200 bar	

ELECTRICAL CONNECTION

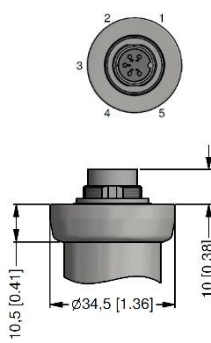
Wiring diagrams					
2-wire-system (current)			3-wire-system (current / voltage)		
Pin configuration					
Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	field housing 	cable colours (DIN 47100)
Supply +	1	3	1	IN +	wh (white)
Supply -	2	4	2	IN -	bn (brown)
Signal + (only for 3-wire)	3	1	3	OUT+	gn (green)
Shield	ground pin	5	4		gnye (green-yellow)

standard

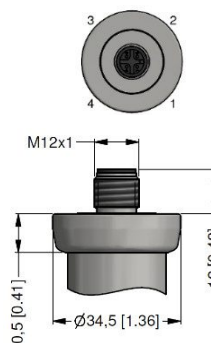
options



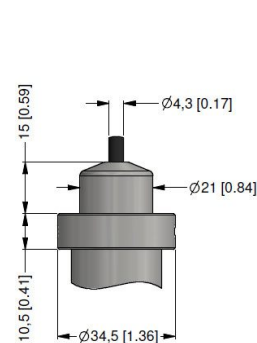
ISO 4400 (IP 65)



Binder Series 723 5-pin (IP 67)



M12x1 4-pin (IP 67)

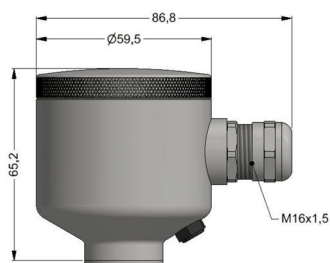


cable gland PG7 / cable length specify (IP 67) ⁵

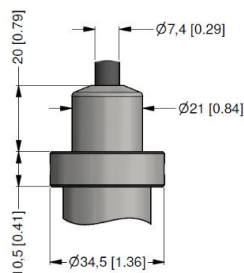


Pressure transmitters

option



field housing
(IP 67)



cable outlet,
cable with ventilation tube
(IP 68)⁶

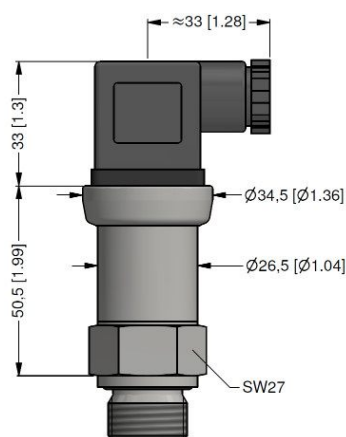
⇒ universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request

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

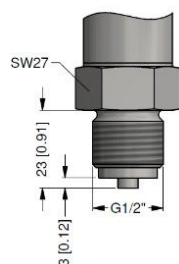
DIMENSION DRAWINGS

standard

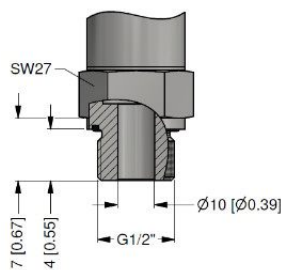


G1/2" DIN 3852
with ISO 4400

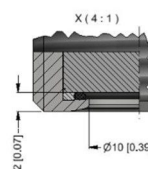
options



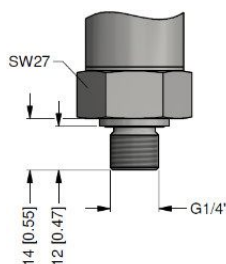
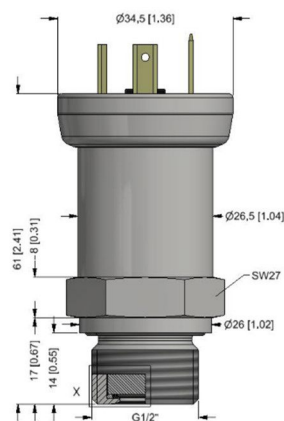
G1/2" EN 837



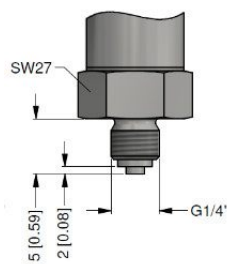
G1/2" open port



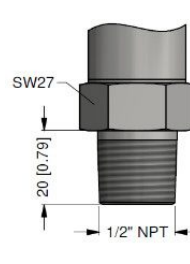
G1/2" semi-flush DIN 3852; M20x1.5⁷



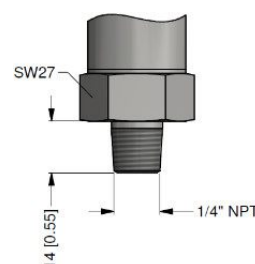
G1/4" DIN 3852



G1/4" EN 837



1/2" NPT



1/4" NPT

⇒ metric threads and other versions on request

⁷ possible for nominal pressure ranges $P_N \leq 25$ bar; absolute pressure ranges on request

ORDER CODE _____

CCA-K-331- - - - -

Pressure					
Gauge	2	5	0		
Absolute	2	5	1		
Input [bar]					
0 ... 0,4			4	0	0
0 ... 0,6			6	0	0
0 ... 1			1	0	0
0 ... 1,6			1	6	0
0 ... 2,5			2	5	0
0 ... 4			4	0	0
0 ... 6			6	0	0
0 ... 10			1	0	0
0 ... 16			1	6	0
0 ... 25			2	5	0
0 ... 40			4	0	0
0 ... 60			6	0	0
0 ... 100			1	0	0
0 ... 160			1	6	0
0 ... 250			2	5	0
0 ... 400			4	0	0
0 ... 600			6	0	0
-1 .. 0 bar			X	1	0
Customer			9	9	9
Customer underpressure			X	X	X
Output					
4 ... 20 mA / 2-wire				1	
0 ... 20 mA / 3-wire				2	
0 ... 10 V / 3-wire				3	
0 ... 5 V / 3-wire				4	
0 ... 1 V / 3-wire				5	
1 ... 6 V / 3-wire				6	
Customer				9	
Accuracy					
1 % (underpressure ranges)				8	
0,5 % (standard)				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
Connector Binder 723 5-pin (IP 67)				2	0
Cable gland PG7 / cable length specify (IP 67)				4	0
+ PVC cable / 1 m					
Cable outlet, cable with ventilation tube (IP68) ¹				T	R
+ PVC cable / 1 m					
Connector Buccaneer (IP 68)				5	0
Field housing stainless steel, cable gland M16 x 1,5 (IP 67)				8	0
Field housing stainless steel, cable gland M20 x 1,5 (IP 67)				8	8
Connector DIN 43650 (ISO 4400) - potting compound inside (IP 67)				E	0
Connector M12 x 1, 4-pin (IP 67)				M	0
Connector M12 x 1, 4-pin (IP 67) - metal				M	1
Customer				9	9



Pressure transmitters

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Mechanical connection ²									
G 1/2" DIN 3852	1	0	0						
G 1/2" EN 837	2	0	0						
G 1/4" DIN 3852	3	0	0						
G 1/4" EN 837	4	0	0						
M 20 x 1,5 DIN 3852	5	0	0						
M 20 x 1,5 EN 837	8	0	0						
G 1/2" DIN 3852 with flush sensor diaphragm ($P_N \leq 25$ bar) ³	F	0	0						
1/2" NPT	N	0	0						
1/4" NPT	N	4	0						
G 1/2" DIN 3852 open (max. 400 bar)	H	0	0						
M 20 x 1,5 DIN 3852 open - housing 1.4404 (316 L) (max. 400 bar)	H	0	5						
Customer	9	9	9						
Seals									
Viton (FKM)				1					
EPDM ⁵ ($P_N < 160$ bar)				3					
NBR				5					
Customer				9					
Pressure port									
Stainless steel 1.4404 (316 L)					1				
PVDF ($P_N \leq 60$ bar) only with G 1/2" DIN 3852 open port H00 ⁴					B				
Customer					9				
Diaphragm									
Ceramics Al ₂ O ₃ 96 %						2			
Ceramics Al ₂ O ₃ 96 % with a PTFE foil (accuracy 1%) - not possible used for underpressure						3			
Customer						9			
Special version									
Standard							0	0	0
Version for oxygen (Viton o-rings, max. 25 bar)							0	0	7
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 - metric threads and others on request

3 - possible for nominal pressure ranges $P_N \leq 25$ bar; absolute pressure ranges on request

4 - PVDF only with G1/2" DIN 3852 open pressure port (up to 60 bar); permissible medium temperature: -30 ... 60°C

5 - drinking water certification only possible with EPDM seal

The manufacturer reserves the right to change sensor specifications without prior notice.

