

## 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
- various electrical and mechanical connections



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 <sup>1</sup>																		
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	4	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 <sub>N</sub> 1 bar: unlimited vacuum resistance										P <sub>N</sub> < 1 bar: on request							
<sup>1</sup> PVDF pressure port possible for nominal pressure ranges up to 60 bar																		
Output signal / Supply																		
Standard	2-wire: 4 ... 20 mA / V <sub>S</sub> = 8 ... 32 V <sub>DC</sub>																	
Options 3-wire	3-wire: 0 ... 20 mA / V <sub>S</sub> = 14 ... 30 V <sub>DC</sub> 0 ... 10 V / V <sub>S</sub> = 14 ... 30 V <sub>DC</sub>																	
Performance																		
Accuracy <sup>2</sup>	± 0.5 % span																	
Permissible load	current 2-wire: R <sub>max</sub> = [(V <sub>S</sub> - V <sub>S min</sub> ) / 0.02 A] W										current 3-wire: R <sub>max</sub> = 500 W							
	voltage 3-wire: R <sub>min</sub> = 10 kW																	
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							
<sup>2</sup> 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 <sup>3</sup>	medium: -40 ... 125 °C					electronics / environment: -40 ... 85 °C					storage: -40 ... 100 °C							
<sup>3</sup> 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							

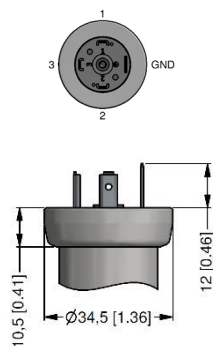


Materials	
Pressure port	standard: stainless steel 1.4404 (316 L) optional for G1/2" open port with nominal pressure range up to 60 bar: PVDF others on request
Housing	stainless steel 1.4404 (316 L)
Option field housing	stainless steel 1.4301 (304) with cable gland M16x 1.5 brass, nickel plated (clamping range 2...8 mm)
Seals (media wetted)	standard: FKM options: EPDM (for P <sub>N</sub> 160 bar), NBR others on request
Diaphragm	ceramic Al <sub>2</sub> O <sub>3</sub> 96 %
Media wetted parts	pressure port, seals, diaphragm
Miscellaneous	
Option oxygen application	for P <sub>N</sub> 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 <sub>N</sub> 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) <sup>4</sup>
<sup>4</sup> This directive is only valid for devices with maximum permissible overpressure > 200 bar	

## ELECTRICAL CONNECTION

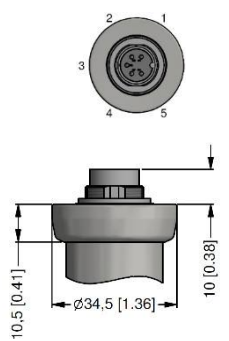
Wiring diagrams					
<p>2-wire-system (current)</p>		<p>3-wire-system (current / voltage)</p>			
Pin configuration					
Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	field housing 	cable colours (DIN 47100)
Supply +	1	3	1	IN +	wh (white)
Supply -	2	4	2	IN -	bn (brown)
Signal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

### standard

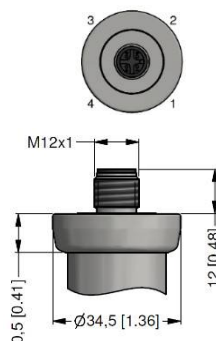


ISO 4400 (IP 65)

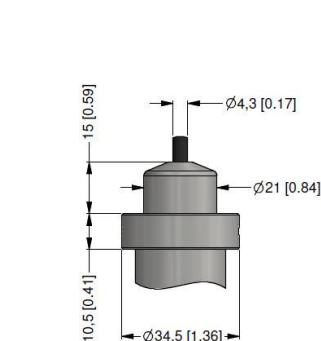
### options



Binder Series 723 5-pin (IP 67)

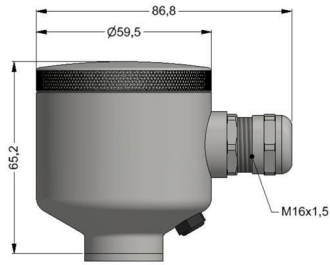


M12x1 4-pin (IP 67)

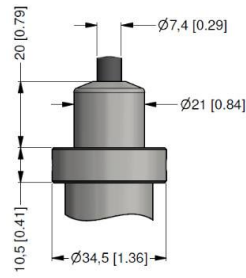


cable gland PG7 / cable length specify (IP 67) <sup>5</sup>

option



field housing  
(IP 67)



cable outlet,  
cable with ventilation tube  
(IP 68)<sup>6</sup>

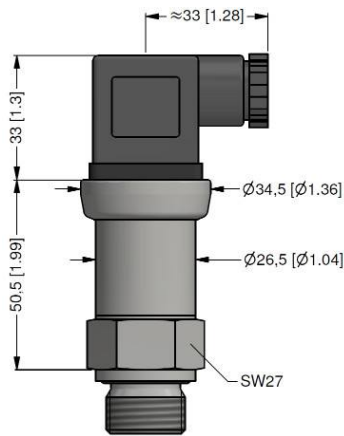
— universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request

<sup>5</sup> standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70°C)

<sup>6</sup> different cable types and lengths available, permissible temperature depends on kind of cable

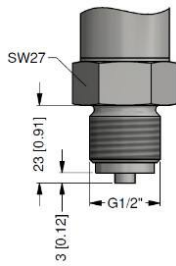
## DIMENSION DRAWINGS

standard

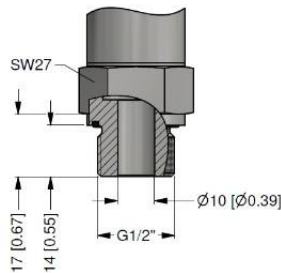


G1/2" DIN 3852  
with ISO 4400

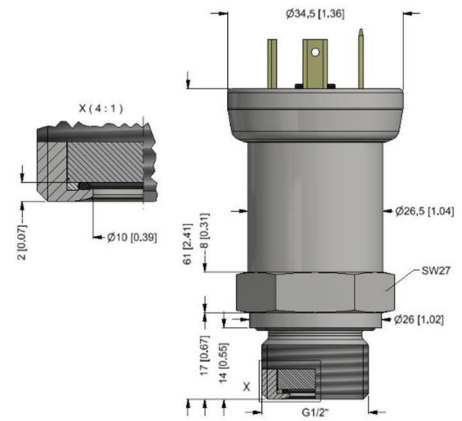
options



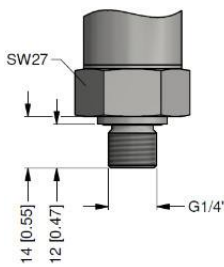
G1/2" EN 837



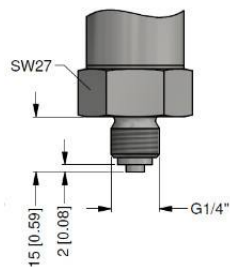
G1/2" open port



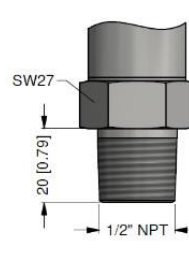
G1/2" semi-flush DIN 3852; M20x1.5<sup>7</sup>



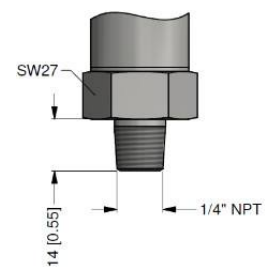
G1/4" DIN 3852



G1/4" EN 837



1/2" NPT



1/4" NPT

metric threads and other versions on request

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

ORDER CODE

CCA-K-331-    -     -  -  -     -     -     -     -

<b>Pressure</b>									
Gauge									
Absolute	2	5	0						
	2	5	1						
<b>Input [bar]</b>									
0 ... 0,4				4	0	0	0		
0 ... 0,6				6	0	0	0		
0 ... 1				1	0	0	1		
0 ... 1,6				1	6	0	1		
0 ... 2,5				2	5	0	1		
0 ... 4				4	0	0	1		
0 ... 6				6	0	0	1		
0 ... 10				1	0	0	2		
0 ... 16				1	6	0	2		
0 ... 25				2	5	0	2		
0 ... 40				4	0	0	2		
0 ... 60				6	0	0	2		
0 ... 100				1	0	0	3		
0 ... 160				1	6	0	3		
0 ... 250				2	5	0	3		
0 ... 400				4	0	0	3		
0 ... 600				6	0	0	3		
-1 .. 0 bar				X	1	0	2		
Customer				9	9	9	9		
Customer underpressure				X	X	X	X		
<b>Output</b>									
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	
<b>Accuracy</b>									
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
<b>Electrical connection</b>									
Connector DIN 43650 (ISO 4400) (IP 65)									1 0 0
Connector Binder 723 5-pin (IP 67)									2 0 0
Cable gland PG7 / cable length specify (IP 67)									4 0 0
+ PVC cable / 1 m									
Cable outlet, cable with ventilation tube (IP68) <sup>1</sup>									T R 0
+ PVC cable / 1 m									
Connector Buccaneer (IP 68)									5 0 0
Field housing stainless steel, cable gland M16 x 1,5 (IP 67)									8 0 0
Field housing stainless steel, cable gland M20 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
Customer									9 9 9



CCA-K-331-    -      -  -  -    -  -  -

<b>Mechanical connection<sup>2</sup></b>									
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 <sub>N</sub> 25 bar) <sup>3</sup>	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						
<b>Seals</b>									
Viton (FKM)								1	
EPDM (P <sub>N</sub> < 160 bar)								3	
NBR								5	
Customer								9	
<b>Pressure port</b>									
Stainless steel 1.4404 (316 L)									1
PVDF (P <sub>N</sub> 60 bar) only with G 1/2" DIN 3852 open port H00 <sup>4</sup>									B
Customer									9
<b>Diaphragm</b>									
Ceramics Al <sub>2</sub> O <sub>3</sub> 96 %									2
Ceramics Al <sub>2</sub> O <sub>3</sub> 96 % with a PTFE foil (accuracy 1%) - not possible used for underpressure									3
Customer									9
<b>Special version</b>									
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<sub>N</sub> 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

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

