

CCA-K-331P



- industrial pressure transmitter for viscous and pasty media
- nominal pressure: from 0...60 bar up to 0...400 bar
- output signals: 2-wire: 4...20 mA; 3-wire: 0...20 mA / 0...10 V
- pressure ports with flush welded stainless steel diaphragm
- accuracy 0.5 % span
- optionally: food compatible filling fluid with FDA approval, cooling element for media temperatures up to 300°C



The pressure transmitter **CCA-K-331P** is suitable for measuring the pressure of viscous and pasty media, where a totally flush pressure port is required.

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

PREFERRED AREAS OF USE ARE



Plant and Machine Engineering



Food Industry



Viscous and Pasty Media

TECHNICAL DATA

Input pressure range	
Nominal pressure gauge / abs.	[bar] 60 100 160 250 400
Overpressure	[bar] 100 100 200 400 400
Burst pressure ≥	[bar] 120 180 300 500 750
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 ¹	≤ ± 0,5 % span
Permissible load	current 2-wire: R _{max} = [(V _S - V _{S min}) / 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
Long term stability	≤ ± 0,3 % span / year at reference conditions
Response time	2-wire: ≤ 10 msec 3-wire: ≤ 3 msec
¹ accuracy according to EN IEC 62828-2- limit point adjustment (non-linearity, hysteresis, repeatability)	
Thermal effects (Offset and Span) ² / Permissible temperatures	
Thermal error	≤ ± 0,2 % span / 10 K
in compensated range	-20 ... 85°C
Permissible temperatures	medium ³ : -40 ... 125 °C for filling fluid silicon oil -10 ... 125 °C for filling fluid food compatible oil electronics / environment: -40 ... 85 °C storage: -40 ... 100 °C
Permissible temperature medium for cooling element ⁴	filling fluid silicon oil overpressure: -40 ... 300 °C vacuum: -40 ... 150 °C filling fluid food compatible oil overpressure: -10 ... 250 °C vacuum: -10 ... 150 °C
² an optional cooling element can influence thermal effects for offset and span depending on installation position and filling conditions.	
³ max. temperature of the medium for overpressure > 0 bar: 150 °C for 60 minutes with a max. environmental temperature of 50 °C	
⁴ max. temperature depends on the used sealing material, type of seal and installation	
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	20 g RMS (25 ... 2000 Hz) according to DIN EN 60068-2-6
Shock	500 g / 1 msec according to DIN EN 60068-2-27



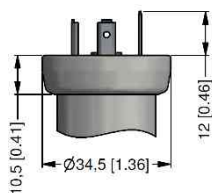
Pressure transmitters

Filling fluids	
Standard	silicon oil
Options	food compatible oil (with FDA approval) (Mobil SHC Cibus 32; Category Code: H1; NSF Registration No.: 141500) others on request
Materials	
Pressure port	stainless steel 1.4404 (316 L)
Housing	stainless steel 1.4404 (316 L)
Option field housing	stainless steel 1.4301 (304) with cable gland 16x 1.5 brass, nickel plated (clamping range 2...8 mm)
Seals (media wetted)	standard: FKM (recommended for medium temperatures $\leq 200\text{ }^{\circ}\text{C}$) option: FFKM ⁵ (recommended for medium temperatures $\leq 260\text{ }^{\circ}\text{C}$) others on request
Diaphragm	stainless steel 1.4435 (316 L)
Media wetted parts	pressure port, seals, diaphragm
⁵ for pressure ranges ≤ 100 bar	
Miscellaneous	
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA
Weight	min. 200 g (depending on process connection)
Installation position	any (standard calibration in a vertical position with the pressure port connection down)
Operational life	$> 100 \times 10^6$ pressure cycles
CE-conformity	EMC Directive: 2014/30/EU Pressure Equipment Directive: 2014/68/EU (module A) ⁶
⁶ This directive is only valid for devices with maximum permissible overpressure > 200 bar	

ELECTRICAL CONNECTION

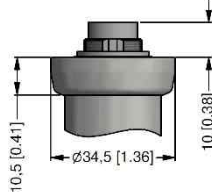
	2-wire-system (current)	3-wire-system (current / voltage)			
Pin configuration					
Electrical connection	ISO 4400	Binder 723, (5-pin)	M12x1 / metal, (4-pin)	field housing Vs-, Vs+, S+ GND	cable colours (DIN 47100)
Supply +	1	3	1	IN +	wh (white)
Supply -	2	4	2	IN -	bn (brown)
Signal + (only for 3-wire)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

standard

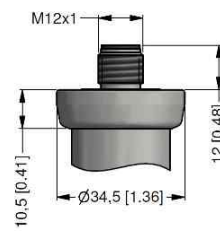


ISO 4400
(IP 65)

option



Binder Series 723 5-pin
(IP 67)



M12x1 4-pin
(IP 67)

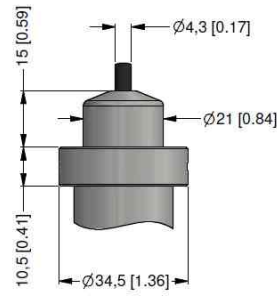


Pressure transmitters

option



field housing
(IP 67)



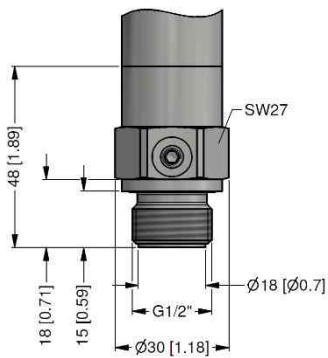
cable gland PG7 / cable length specify
(IP 67)⁸

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

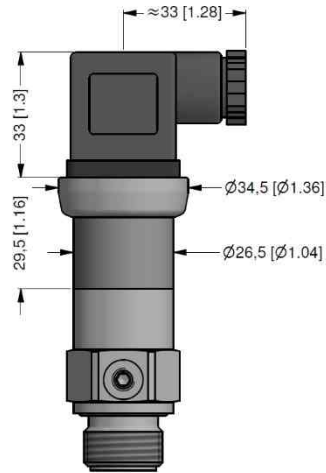
⁸ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C)

DIMENSION DRAWINGS

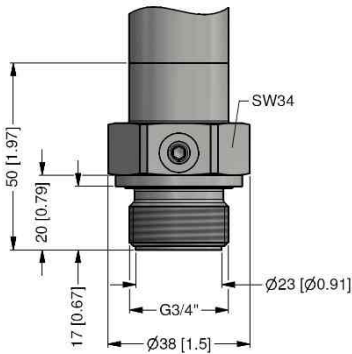
standard



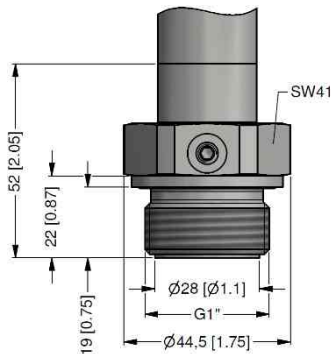
G 1 1/2" flush DIN 3852



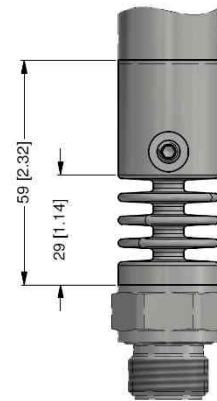
option



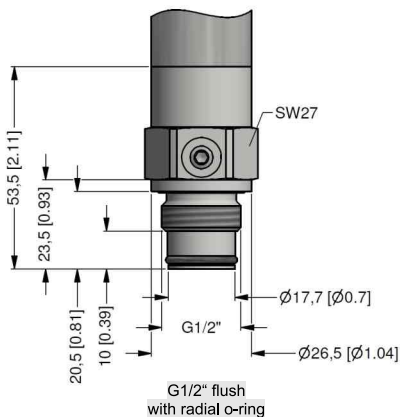
G3/4" flush DIN 3852



G1" flush DIN 3852



cooling element
300 °C⁹



G1/2" flush
with radial o-ring

⇒ metric threads and other versions on request

⁹ possible for nominal pressure ranges $P_N \leq 160$ bar;
max. temperature depends on the used sealing material, type of seal and installation



ORDER CODE

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

Pressure												
Gauge	5	0	5									
Absolute (temperature max. 70 °C)	5	0	6									
Input [bar]												
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							
Customer		9	9	9	9							
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			
4...20 mA / 3-wire									7			
Customer									9			
Accuracy												
1 %									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	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 (IP 68)									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	
Mechanical connection												
G 1/2" DIN 3852 flush diaphragm										Z	0	0
M 20 x 1,5 DIN 3852 flush diaphragm										D	0	4
G 3/4" DIN 3852 flush diaphragm										Z	3	0
G 1" DIN 3852 flush diaphragm										Z	3	1
G 1/2" DIN 3852 with rad. o-ring and flush diaphragm										Z	6	1
G 1 1/2" DIN 3852 flush diaphragm										Z	3	3
G 1" DIN 3852 2x o-ring flush diaphragm										Z	5	7
Customer										9	9	9
Diaphragm												
Stainless steel 1.4435 (316 L)											1	
Customer											9	
Seals												
Viton (FKM) (P _N < 100 bar)											1	
EPDM (P _N < 160 bar)											3	
NBR (P _N > 100 bar)											5	
FFKM (P _N ≤ 100 bar)											7	
Customer											9	
Filling Fluids												
Silicone oil											1	
Edible oil for foodstuff industry (temperature max. 150 °C)											2	
Customer											9	
Special version												
Standard												0 0 0
With cooling element from 125 °C up to 150 °C												1 5 0
With cooling element from 150 °C up to 300 °C (max. 200 °C permanent) ¹												2 0 0
Customer												9 9 9

1 - only for P_N ≤ 160 bar possible

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

