



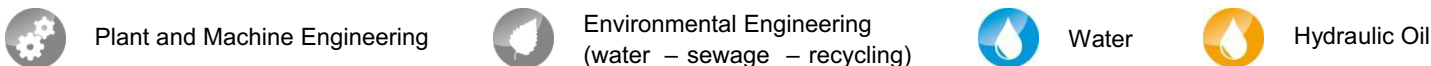
CCP-K-401

- intelligent electronic pressure switch
- nominal pressure: from 0...400 mbar up to 0...600 bar
- 1 or 2 independent PNP contacts, freely configurable
- output signals: 4...20 mA, 2- and 3-wire
- ceramic sensor
- accuracy 0.5 % span
- indication of measured values on a 4-digit LED display
- rotatable and configurable display module
- option: pressure port PVDF
- certified for contact with drinking water by the Polish National Institute of Public Health (PZH) - EPDM version

The intelligent electronic pressure switch **CCP-K-401** is the successful combination of intelligent pressure switch and digital display and has been specially designed for universal usage in industry applications; with flush diaphragm the CCP-K-401 is suitable for the usage in viscous, pasty or highly contaminated media. The rotatable stainless steel housing is predestined for rough conditions and difficult installing conditions, caused by the high functionality and robustness.

As standard the CCP-K-401 offers a PNP contact and is optionally available with a second, independent contact. Additionally it could be equipped with an analogue output.

PREFERRED AREAS OF USE ARE



TECHNICAL DATA

Input pressure ranges

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
Level gauge [mH ₂ O]	-	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	5	12	12	25	50	50	120	120	250	500	500	650	880
Vacuum resistance	P _N ≥ 1 bar: unlimited vacuum resistance P _N < 1 bar: on request																	

Contact

Number, type	standard: 1 PNP contact option: 2 independent PNP contacts
Max. switching current	4 ... 20 mA / 2- and 3-wire: contact rating 125 mA, short-circuit resistant; V _{Switch} = V _S - 2V
Accuracy of contacts ¹	≤ ± 0.5 % span
Repeatability	≤ ± 0.2 % span
Switching frequency	2-wire: max. 10 Hz / 3-wire: 50 Hz
Switching cycles	> 100 x 10 ⁶
Delay time	0 ... 100 sec

¹ accuracy according to EN IEC 62828-2- limit point adjustment (non-linearity, hysteresis, repeatability)

Analogue output (optionally) / Supply

2-wire current signal	4 ... 20 mA / V _S = 13 ... 36 V _{DC} permissible load: R _{max} = [(V _S - V _{S min}) / 0.02 A] W response time: < 10 msec
3-wire current signal	4 ... 20 mA / V _S = 24 V _{DC} ± 10 % adjustable (turn-down of span 5:1) ² permissible load: R _{max} = 500 W response time: < 30 msec
Without analogue output	V _S = 15 ... 36 V _{DC}
Accuracy ¹	± 0.5 % span

² with turn-down of span the analogue signal is adjusted automatically to the new measuring range

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 permissible temperature is -30 ... 60 °C

Pressure switches

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 / housing	1.4404 (316L) PVDF (for $P_N \leq 60$ bar, G1/2" open port)	
Housing	stainless steel 1.4301 (304)	
Housing cap	standard: plastic HDPE	
Display housing	stainless steel 1.4301 (304)	
Viewing glass	laminated safety glass	
Seals	standard: FKM option: EPDM ($P_N \leq 160$ bar) (with drinking water certificate) NBR others on request	
Diaphragm	ceramics Al_2O_3 96 %	
Media wetted parts	pressure port, seals, diaphragm	
Miscellaneous		
Display	4-digit, 7-segment-LED display, visible range 37.2 x 11 mm; digit height 10 mm, range of indication -1999 ... +9999; accuracy 0.1 % $\pm$ 1 digit; digital damping 0.3 ... 30 sec (programmable); measured value update 0.0 ... 10 sec (programmable)	
Option oxygen application ⁶	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 (without contacts)	2-wire signal output current:	max. 25 mA
	3-wire signal output current:	approx. 30 mA + signal current
Ingress protection	IP 67	
Installation position	any	
Weight	approx. 400 g	
Operational life	> 100 x 10 ⁶ pressure cycles	
CE-conformity	EMC Directive: 2014/30/EU	Pressure Equipment Directive: 2014/68/EU (module A) ⁷
⁶ not possible with flush pressure ports		
⁷ This directive is only valid for devices with maximum permissible overpressure > 200 bar		

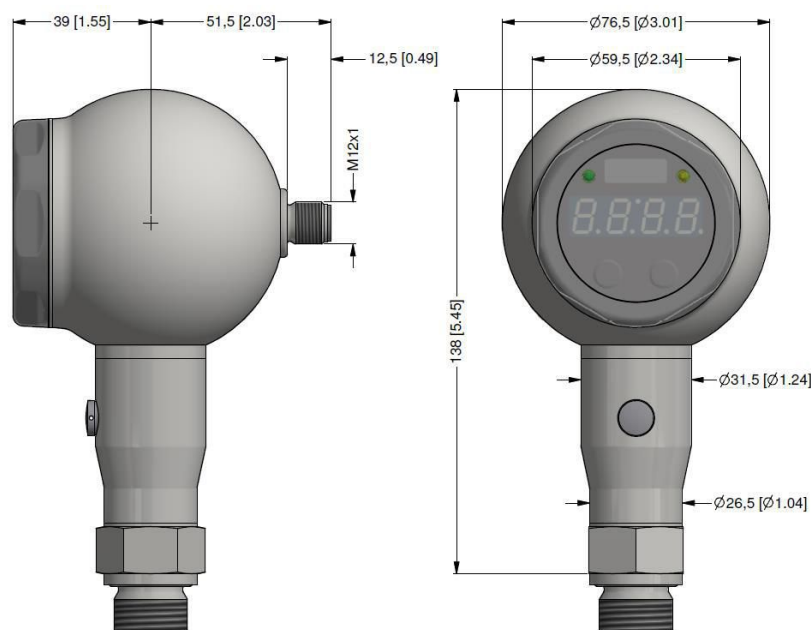
ELECTRICAL CONNECTION

Wiring diagrams	
2-wire-system (current)	3-wire-system (current / voltage)
Pin configuration	
Electrical connections	M12x1 metal (5-pin)
Supply +	1
Supply -	3
Signal + (only 3-wire)	2
Contact 1	4
Contact 2	5
Shield	plug housing / pressure port
Electrical connections	



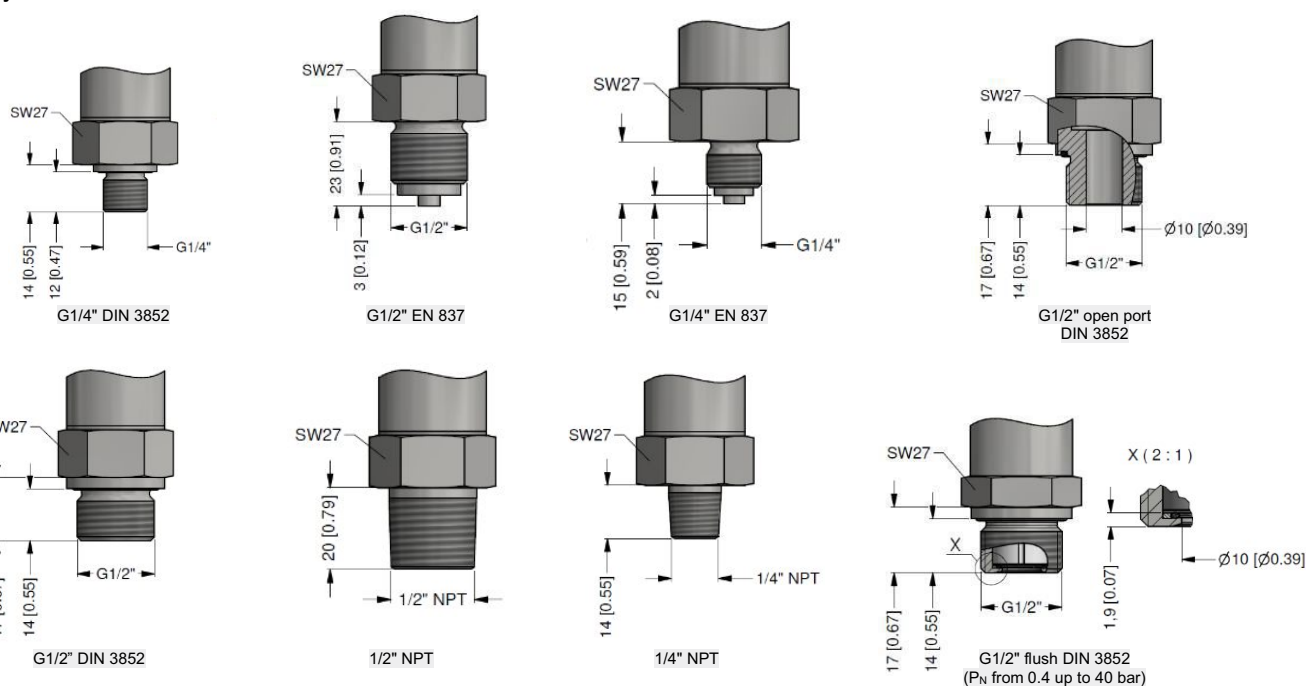
MECHANICAL CONNECTION

standard



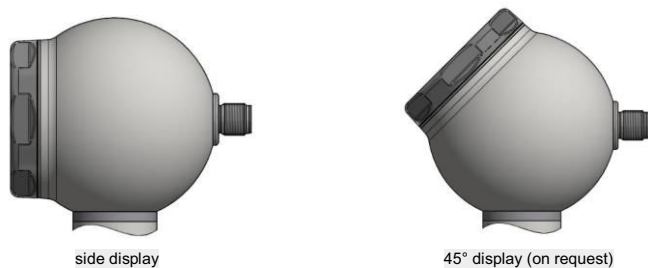
G1/2" DIN 3852

optionally



⇒ metric threads and other versions on request

DESIGNS



⁸ all designs in horizontal rotatable housing as standard



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