



DS 200

Electronic Pressure Switch

Stainless Steel Sensor

accuracy according to EN IEC 62828-2:
standard: 0.35 % span
option: 0.25 % span

Nominal pressure

from 0 ... 100 mbar up to 0 ... 600 bar

Contacts

1 or 2 independent PNP contacts, freely configurable

Analogue output

2-wire: 4 ... 20 mA

3-wire: 4 ... 20 mA / 0 ... 10 V

others on request

Special characteristics

- ▶ indication of measured values on a 4-digit LED display
- ▶ rotatable and configurable display module

Optional versions

- ▶ **IS-version**
Ex ia = intrinsically safe for gases
- ▶ pressure sensor welded
- ▶ customer specific versions




The electronic pressure switch DS 200 is the successful combination of

- ▶ intelligent pressure switch
- ▶ digital display

and has been specially designed for numerous applications in various industrial sectors.

As standard the DS 200 offers a PNP contact and a rotatable display module with 4-digit LED display. Optional versions like e.g. an intrinsically safe version and an analogue output complete the profile.

Preferred areas of use are

-  Plant and Machine Engineering
-  Heating and Air Conditioning
-  Environmental Engineering
(water – sewage – recycling)



Input pressure range												
Nominal pressure gauge ¹	[bar]	-1...0	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6
Nominal pressure abs.	[bar]	-	-	-	-	0.40	0.60	1	1.6	2.5	4	6
Level gauge ¹	[mH ₂ O]	-	1	1.6	2.5	4	6	10	16	25	40	60
Overpressure	[bar]	5	0.5	1	1	2	5	5	10	10	20	40
Burst pressure ≥	[bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50

Nominal pressure gauge ¹ / abs.	[bar]	10	16	25	40	60	100	160	250	400	600
Level gauge ¹	[mH ₂ O]	100	160	250	400	600	-	-	-	-	-
Overpressure	[bar]	40	80	80	105	210	210	600	1000	1000	1000
Burst pressure ≥	[bar]	50	120	120	210	420	420	1000	1250	1250	1250
Vacuum resistance	P _N ≥ 1 bar: unlimited vacuum resistance; P _N < 1 bar: on request										
¹ from 60 bar: measurement starts with ambient pressure											

Contact ²	
Standard	1 PNP contact
Options	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 0 ... 10 V / 3-wire: contact rating 125 mA, short-circuit resistant
Accuracy of contacts ³	standard: P _N < 0.4 bar: ≤ ± 0.5 % span P _N ≥ 0.4 bar: ≤ ± 0.35 % span option: P _N ≥ 0.4 bar: ≤ ± 0.25 % span
Repeatability	≤ ± 0.1 % span
Switching frequency	max. 10 Hz
Switching cycles	> 100 x 10 ⁶
Delay time	0 ... 100 sec
² max. 1 contact for 2-wire current signal with plug ISO 4400 as well as 2-wire current signal with IS-protection no contact possible with 3-wire in combination with plug ISO 4400	
³ 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] Ω response time: < 10 msec
2-wire current signal with IS-protection	4 ... 20 mA / V _S = 15 ... 28 V _{DC} permissible load: R _{max} = [(V _S - V _{S min}) / 0.02 A] Ω response time: < 10 msec
3-wire current signal	4 ... 20 mA / V _S = 19 ... 30 V _{DC} adjustable (turn-down of span 5:1) ⁴ permissible load: R _{max} = 500 Ω response time: < 3 sec
3-wire voltage signal	0 ... 10 V / V _S = 15 ... 36 V _{DC} permissible load: R _{min} = 10 kΩ response time: < 3 msec
Accuracy ³	standard: P _N < 0.4 bar: ≤ ± 0.5 % span; P _N ≥ 0.4 bar: ≤ ± 0.35 % span option: P _N ≥ 0.4 bar: ≤ ± 0.25 % span
⁴ with turn-down of span the analogue signal is adjusted automatically to the new measuring range	

Thermal effects (Offset and Span)				
Nominal pressure P _N	[bar]	-1 ... 0	< 0.40	≥ 0.40
Tolerance band	[% span]	≤ ± 0.75	≤ ± 1	≤ ± 0.75
in compensated range	[°C]	-20 ... 85	0 ... 70	-20 ... 85

Permissible temperatures			
Permissible temperatures	medium: -40 ... 125 °C	electronics / environment: -40 ... 85 °C	storage: -40 ... 100 °C

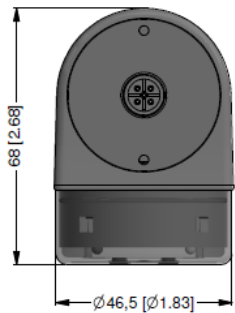
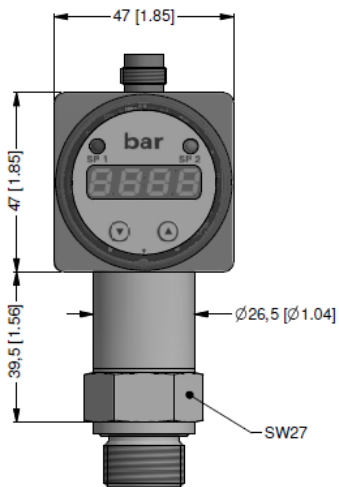
Electrical protection	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326

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

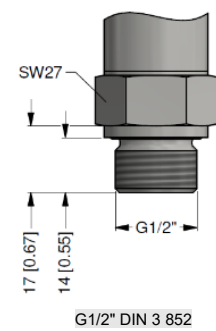
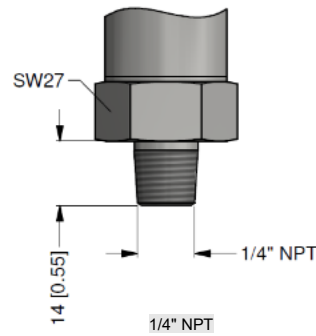
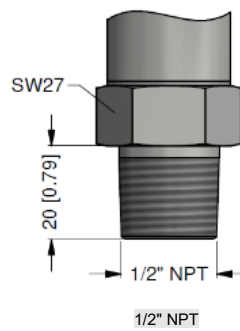
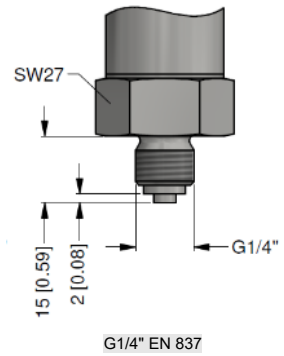
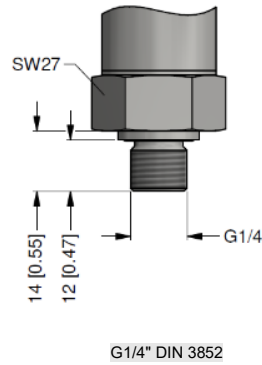
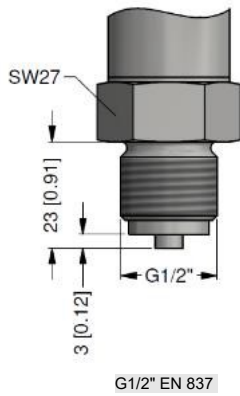
Materials	
Pressure port	stainless steel 1.4404 (316 L)
Housing	stainless steel 1.4404 (316 L)
Display housing	PA 6.6, polycarbonate
Seals (media wetted)	standard: FKM option: NBR; welded version ⁵ others on request
Diaphragm	stainless steel 1.4435 (316 L)
Media wetted parts	pressure port, seals, diaphragm
⁵ welded version only for pressure ports according to EN 837; possible for nominal pressure ranges P _N ≤ 40 bar	

Mechanical connections (dimensions in mm)

standard

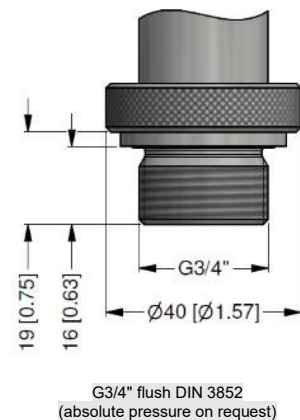
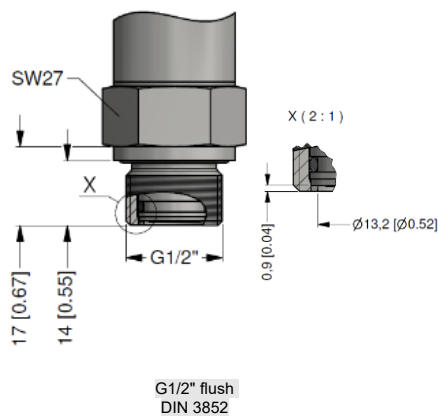
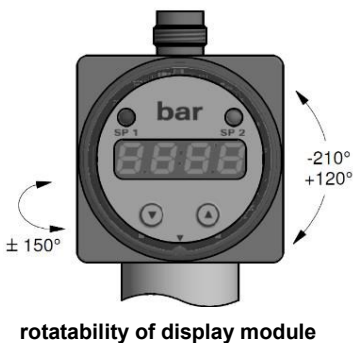


optionally



→ for nominal pressure $P_N > 400$ bar increases the length of devices without IS-version by 19 mm and of devices with IS-version by 39 mm

optionally for P_N from 0.1 up to 40 bar



→ metric threads and other versions on request

This data sheet contains product specification. properties are not guaranteed. Subject to change without notice.

Ordering code DS 200

23.08.2024

DS 200

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Pressure										
Gauge ¹	7	8	0							
Absolute ²	7	8	1							
Input [bar]										
0 ... 0,1 ²				1	0	0	0			
0 ... 0,16 ²				1	6	0	0			
0 ... 0,25 ²				2	5	0	0			
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				X	1	0	2			
Customer				9	9	9	9			
Customer - underpressure				X	X	X	X			
Electrical output / Analog output										
4 ... 20 mA / 2-wire								1		
0 ... 20 mA / 3-wire								2		
0 ... 10 V / 3-wire								3		
4 ... 20 mA / 3-wire								7		
Intrinsic safety Ex ia 4 ... 20 mA / 2-wire ³								E		
Customer								9		
Contact										
Without switching contact								0		
1 switching contact (version 3-wire only with 5-pin connector) ^{3,4}								1		
2 switching contacts (only with 5-pin connector) ^{3,4}								2		
Accuracy										
0,5 % (P _N ≤ 0,4 bar)								5		
0,35 % (P _N > 0,4 bar)								3		
0,25 % (P _N > 0,4 bar)								2		
0,5 % including Calibration Certificate (P _N ≤ 0,4 bar)								T		
0,35 % including Calibration Certificate (P _N > 0,4 bar)								S		
0,25 % including Calibration Certificate (P _N > 0,4 bar)								R		
Table of measured values for accuracy 0,5 %								N		
Table of measured values for accuracy 0,35 %								M		
Customer								9		
Electrical connection										
Connector DIN 43650 (ISO 4400) (IP 65) ⁴								1	0	0
Cable gland PG7 / cable length specify (IP 67)								4	0	0
+ PVC cable / 1 m										
Connector M 12 x 1 (5-pin) (IP 65)								N	0	1
Connector M 12 x 1 (5-pin) (IP 65) - metal								N	1	1
Connector Binder 723 7-pin (IP 65)								A	0	0



Customer	9	9	9							
Mechanical connection										
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 12 x 1 DIN 3852	6	0	0							
M 10 x 1 DIN 3852	7	0	0							
M 20 x 1,5 EN 837	8	0	0							
M 12 x 1,5 DIN 3852	C	0	0							
G 1/2" DIN 3852 with flush sensor diaphragm ⁵	F	0	0							
G 3/4" DIN 3852 with flush sensor diaphragm ⁵	K	0	0							
1/2" NPT	N	0	0							
1/4" NPT	N	4	0							
Customer	9	9	9							
Seals										
Viton (FKM) ($P_N \leq 40$ bar)								1		
Without seals - welded (only with EN 837) ⁶ ($P_N \leq 40$ bar)								2		
EPDM ($P_N < 160$ bar)								3		
NBR ($P_N > 40$ bar)								5		
Customer								9		
Special version										
Standard								0	0	0
Customer								9	9	9

0,-... without additional charge

On request...in accordance with the producer

Surcharges for calibration are not subject to any discounts. Subject to change.

This document contains the specification for ordering the product; detailed technical parameters of the product and its possible variants are given in BD SENSORS reserves the right to change sensor specifications without further notice.

1 from 60 bar: measurement starts with ambient pressure

2 absolute pressure possible from 0.4 bar

3 with IS version max. 1 contact is possible

4 with connector ISO 4400 and output 2-wire version only max. 1 contact possible; with 3-wire version no contact possible

5 not possible for nominal pressure $P_N > 40$ bar; for G3/4" flush nominal pressure abs. on request

6 welded version only with pressure ports according to EN 837; possible for nominal pressure ranges $P_N \leq 40$ bar

