automatyka

BD SENSORS
pressure measurement

DS 6

Industrial Pressure Switch

Hydraulics

- thickfilm ceramic sensor
- 1 or 2 switching outputs
- switching outputs freely configurable via adapter or programming device
- nominal pressure ranges from 0 ... 2 bar up to 0 ... 400 bar

The electronic pressure switch DS 6 has been designed for universal use. Preferred areas of use are, between others:

- machine building industry
- measurement and controls
- hydraulics

Media wetted materials are stainless steel for the pressure port, ceramics Al_2O_3 for the pressure sensor, and FKM or NBR for seals. These materials have been chosen particularly in order to achieve high media compatibility already in standard version.

The new microcontroller switching electronics offers – besides standard functions – many additional features for optimal adaption to the measuring requirements.

The 1 or 2 freely programmable switching outputs whose status is indicated by diffently coloured LED's can be configured quickly and comfortable either by means of the optionally available tools P-set (PC software and programming adapter) or via the programming device P6.

Characteristics

- stainless steel pressure port
- electical connection M12x1 5-pin
- diverse special versions, e.g. "oil and fat free" for oxygen applications
- customer specific versions:
  - special pressure ranges
  - variety of electrical and mechanical connections
  - other versions on request

CE

DS 6 Industrial Pressure Switch

TÜV CERT DIN EN ISO 9001

Input pressure range

Nonimal pressure gauge [bar]	2	5	10	20	50	100	200	400
Nominal pressure abs. [bar]	2	5	10	20	50	100	200	400
Permissible overpressure [bar]	7	12	25	50	120	250	400	600

Supply

Supply voltage V_s	12 ... 30 V_{DC}
Current consumption	max. 14 mA (without switching outputs)

Switching outputs

Number	standard: 1 optional: 2
Type	PNP
Switching performance	max. 300 mA, short-circuit proof
Accuracy of switching points	≤ ± 1 % FSO (BFSL: ≤ ± 0.5 % FSO)
Repeatability	≤ ± 0,2 % FSO
Status indication	SP 1: green SP 2 : yellow
Switching function [1]	standard: n/o optional: n/c
Switching mode [1]	standard: hysteresis mode optional: window mode
Switch on point [1]	standard: factory setting 80 % FSO others: specify on order; adjustable range 0 ... 100 % FSO
Switch off point [1]	standard: factory setting 75 % FSO others: specify on order; adjustable range 0 ... 100 % FSO
Switch on / switch off delay [1]	standard: off others: specify on order, adjustable range from 10 ms to 90 s (step 10 ms)
Switching frequency	200 Hz (without switching delay)
Switching cycles	> 100 x 10^6

Thermal effects

Temperature error for offset and span	≤ ± 0.3 % FSO / 10 K
in compensated range	-25 ... 85 °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 (20 ... 2000 Hz)	Shock	100 g / 11 ms

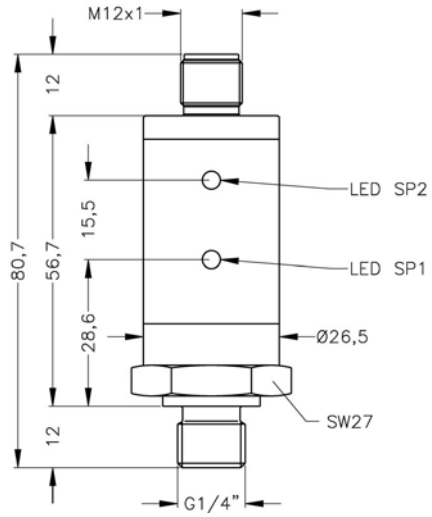
Temperatureinsatzbereiche

Medium	-25 ... 85 °C	Electronics / environment	-25 ... 85 °C	Stock	-40 ... 85 °C

[1] Parameters can be programmed by customer either with the programming kit (consisting of: PC interface "Adapt 3", power supply, cable connections for PC-interface and pressure switch-interface, configuration software "P-Set") or with the programming device P6. Configuration kit or programming device P6 are not part of supply and have to be ordered separately. For more detailled information see last page of this data sheet.

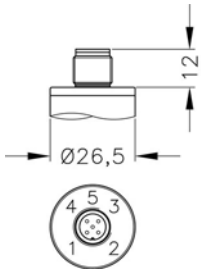
Dimensions / Connections

Mechanical connections



G1/4" DIN 3852
M10x1; M12x1; M12x1,5

Electrical connections



M12x1 5-pin

Materials

Pressure port / housing	stainless steel 1.4305 (303) / stainless steel 1.4305 (303), POM black
Seals	P_N < 100 bar: FKM $P_N \geq$ 100 bar: NBR others on request
Diaphragm	ceramics Al_2O_3 96 %
Media wetted parts	pressure port, seals, diaphragm

Miscellanous

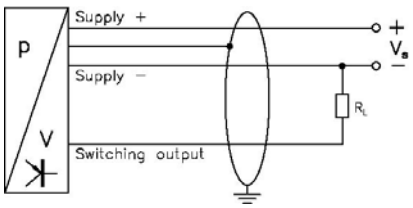
Weight	approx. 90 g
Installation position	any
Ingress protection	IP 67

Pin configuration

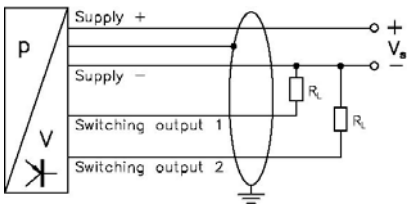
Electrical connection	M12x1 (5-pin)	cable colours (DIN 47100)
Supply +	1	white
Supply –	3	brown
Switching output 1	4	grey
Switching output 2	5	pink
Ground	plug housing	cable shield

Wiring diagrams

1 switching output



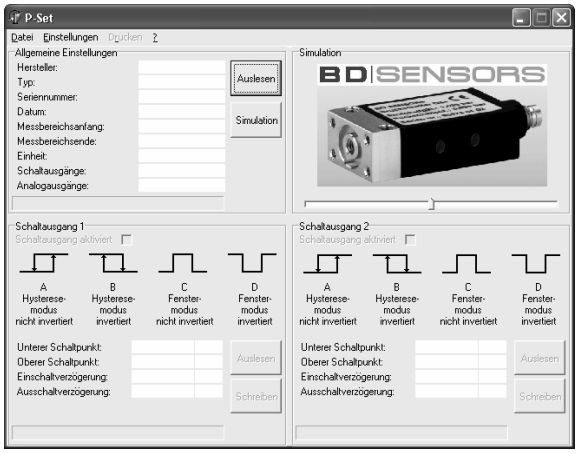
2 switching outputs



The DS 6 can be connected to a PC via a programming adapter and configured by software. Setting of following parameters is possible:

- switching mode (hysteresis or window mode)
- inversion of switching output
- switch on / lower switching point
- switch off / upper switching point
- switch on / switch off delay

The programming adapter is part of a programming kit containing also power supply, cable, and a CD-ROM with the configuration software P-Set.
All cables required for connecting the pressure switch have to be plugged to the programming adapter. The user requires only a Windows® PC with serial interface.



Installation of configuration software P-Set is very easy. P-Set is running on all Windows® PC's (95, 98, ME, 2000, NT, XP). After software installation the adapter only has to be connected with the serial interface of the PC, the power supply, and the pressure switch. You can find more information on the software functions in the software manual.

Alternatively to PC programming BD SENSORS offers the programming device P6. It is simply plugged between DS 6 and the female connector. Via of two push-buttons and a 4-digit LED display all possible settings can be made.

Windows ® is a registered trademark of Microsoft Corporation

Ordering code DS 6

DS 6 □□□-□□□□-□-□-□□□-□□□-□-□□□-□□□

Pressure																										
gauge		6	8	5																						
absolut		6	8	6																						
Input	[bar]																									
2					2	0	0	1																		
5					5	0	0	1																		
10					1	0	0	2																		
20					2	0	0	2																		
50					5	0	0	2																		
100					1	0	0	3																		
200					2	0	0	3																		
400					4	0	0	3																		
customer					X	X	X	X																		
Number of contacts																										
1 contact									1																	
2 contacts									2																	
Analogue output																										
without analogue output										0																
Electrical Connection																										
M12x1 (5-pin)											N	1	0													
customer											X	X	X													
Mechanical Connection																										
G1/4" DIN 3852														3	0	0										
customer														X	X	X										
Seals																										
for P_N < 100 bar	FKM																1									
for P_N = 100 bar	NBR																5									
customer																	X									
Setting code																										
BD SENSORS standard [1]																		0	0	0						
setting according to customer [1]																		X	X	X						
Special version																										
standard																					0	0	0			
oxygen application																					0	0	7			
customer																					X	X	X			

[1] The parameters can be adjusted of customer through configuration Set (consist of PC-Interface, connection net part, connection cable from PC-Interface to DS 6, configuration-software) or through Hand-Program device P6. The configuration set or Hand-Program device P6 is not part of supply and have to be ordered separately. For more information see on last side of data sheet for DS 6.

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