

Electronical pressure switch with LED display

with ceramic or thin film cell,
2 switching outputs, or
1 switching output and an analog output
4...20 mA or 0...10 V

semiconductor switch usable for p- or n-switching, depending on the circuit



Special features

The new pressure switch with display provides continuous pressure monitoring and allows the programming of the set points without pressurising. Time tested ceramic or thin film sensors, produce a pressure switch which has a high level of repeatability and durability, even in the case of a high number of pressure cycles. The turnable display and the turnable process connection allow the usage of this pressure switch even under extreme installation conditions.

Areas of application

Electronic pressure switches are suitable for many liquid and gaseous mediums and are used in vacuum technology (pump control), refrigeration technology (compressor control), gas technology (stock monitoring, leak detection), filter monitoring (dirt detection), level measurement (overflow protection, dry-running protection), and is also used for a whole variety of measurement tasks in hydraulics and pneumatics, in machine construction and in building technology.

Product features

Switching currents ranging from a few Micro-Amps to 500 mA can be switch by the output transistors. Determination of p- and n-switching applications is done by the connection of the external load. Dual stock for both versions is not necessary. The switching function (break or make contact), the set point and hysteresis can be adjusted under program control. This allows easy realization of 2-step controllers without additional external components. The sensor elements enable the switches to be used without any problem for applications with the occurrence of pressure and vacuum simultaneously.

Adjustment ranges (in bar)

Adjustment range	max. working pressure	Overload limit	Burst pressure	Sensor element	3137	3138	3138
					Output		
					2 x PNP/NPN	1x PNP/NPN 4...20 mA	1x PNP/NPN 0...10 V
-,999... 2,000	-1... 2	5	6	C	3137.101.403	3138.101.003	3138.101.103
-,999... 5,000	-1... 5	10	12	C	3137.045.403	3138.045.003	3138.045.103
-1,00... 10,00	-1... 10	20	25	C	3137.047.403	3138.047.003	3138.047.103
0,00... 20,00	-1... 20	40	50	C	3137.077.403	3138.077.003	3138.077.103
0,00... 50,00	-1... 50	100	120	C	3137.785.403	3138.785.003	3138.785.103
0,0... 100,0	-1... 100	200	250	D	3137.081.403	3138.081.003	3138.081.103
0,0... 160,0	-1... 160	320	480	D	3137.082.403	3138.082.003	3138.082.103
0,0... 250,0	-1... 250	500	750	D	3137.084.403	3138.084.003	3138.084.103
0,0... 400,0	-1... 400	800	1200	D	3137.086.403	3138.086.003	3138.086.103
0,0... 600,0	-1... 600	1200	1500	D	3137.087.403	3138.087.003	3138.087.103
0,0... 700,0	-1... 700	1200	1500	D	3137.101.403	3138.101.003	3138.101.103

C: Ceramic cell

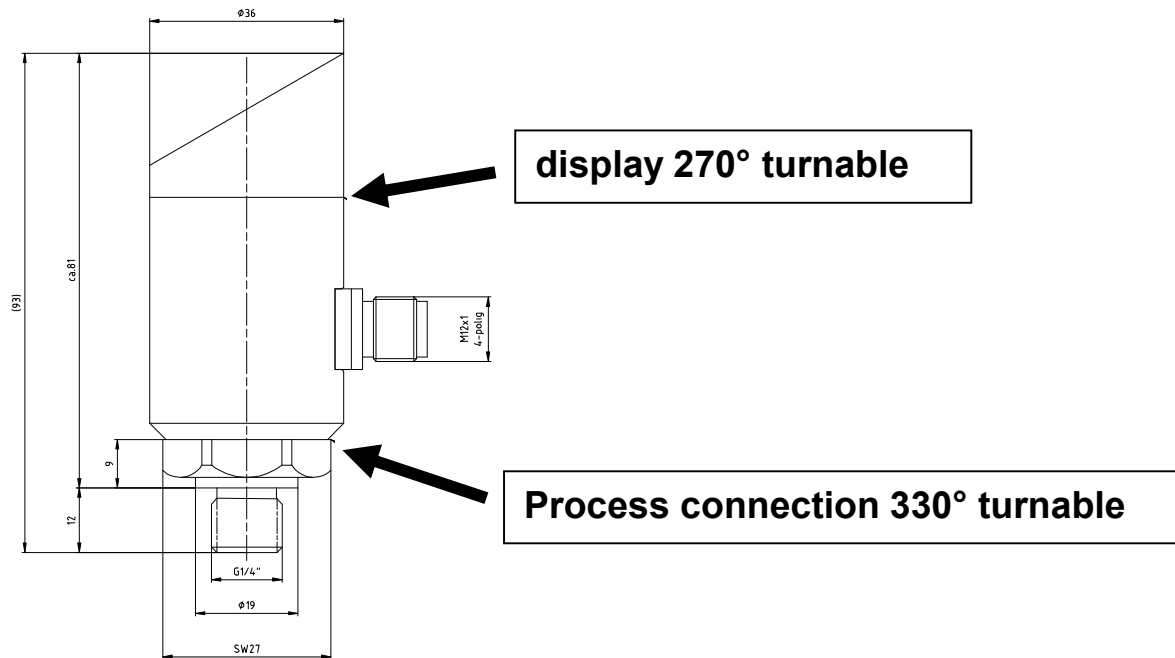
D: Thin film cell

Model No.: 3137, 3138

Technical data

Model No.	3137/3138	Options
pressure type	Gauge pressure, positive or negative	
process connection	G 1/4 DIN 3852-E	G 1/8 B, 1/4 NPT, M 10x1, M 12x1,5, G 1/2 B, 1/2 NPT
materials measuring element pressure port housing	stainless steel, up to 50 bar ceramic with NBR-O-ring stainless steel stainless steel, electronic insert plastic	other material on request stainless steel
load cycles	> 1 Mio. Pressure cycles	
supply voltage	12... 30 VDC	
power consumption	≤ 50 mA, without load current	
outputs number	2 switch outputs or 1 switch and 1 analog output	
switch outputs number switch function power rating adjustment - set point - hysteresis	1 or 2 NC, NO programmable 0,5 A programmable with the display 1... 100 % of full scale 1... 100 % of full scale	
analog output signal load resistance hysteresis	0...10 V; 3-wire or 4...20 mA, 3-wire voltage output > 10 kΩ current output < 500 Ω 0,3% of full scale for ceramic cell 0,1% of full scale for thin film cell	
display accuracy	7-segments-LED, red, 7,6 mm high -999... 9999 1% of full scale + 1 Digit	
repeatability	0,5 % of full scale	
temperature ranges storage media ambient	-30... + 80°C -20... + 80°C -20... + 80°C	
temperature compensated range	0... + 80°C	
electrical connection	round connector M 12x1; 4-pin	
protection class	IP 65	
CE -sign	emission and interference acc to EN 61 326, declaration of conformity on request	
electrical protection	reverse polarity and over voltage protection	
weight	approx. 0.3 kg	

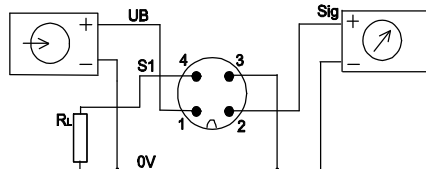
Dimensions



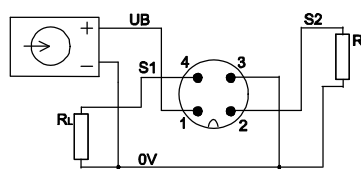
Electrical connections

Round connector M 12 x 1 (4-pin)

1 switch output and 1 analog output



2 switch outputs



Signal	pin
Supply: UB	1
Supply: 0V	3
Output: S 1	4
Output: S 2	2

The load can be connected to ground (p-switching) or to supply voltage (n-switching).

Programming

Operating modes

On power on the switch performs an **initialisation routine**. The display and the status LEDs are switched on. The nominal pressure is displayed for a short time. During this routine the outputs are not active.

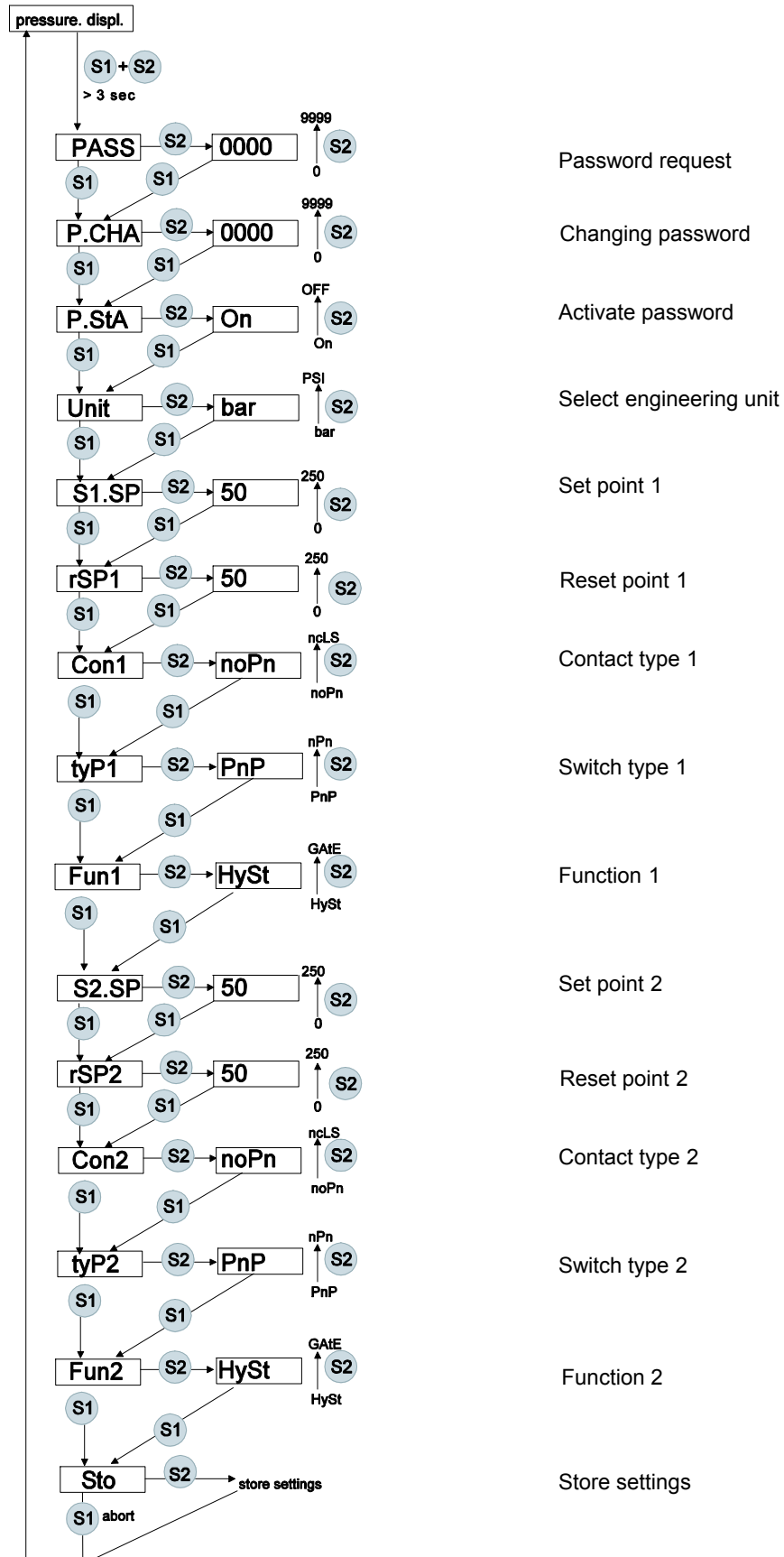
After this initialisation the switch is in **normal operation mode**. The pressure is displayed, the switching outputs are active and the LEDs display the status.

The programmed **set points** are **displayed** after a short push of S1 or S2. For this time the status LEDs are blinking.

A longer push (press the button until the display blinks) sets the set point to the actual pressure. The hysteresis remains unchanged. If the password is activated (s. programming mode) the change is only accepted after entering the password.

Programming mode

The programming mode is entered by simultaneously pressing both buttons. This mode allows a complete setup of the switch.



Subject to technical alternations