

**DESCRIPTION**

ASZ 3410 r is an electronic pressure switch with traditional SPDT relay outputs. Ceramic thick film sensor makes it a great choice for the aggressive\* media. Flush ceramic diaphragm and the open port options are available for the viscous and/or abrasive media. Microcontroller based electronic board provide a highly flexible and configurable solution for local equipment control. User can choose from a wide variety of relay triggering algorithms and adjust setpoints and hysteresis values\*\*. Additionally, an industry standard 4-20 mA analog output is provided, thus ASZ 3410 r is a pressure switch and pressure transmitter at the same time, making this model stand out in comparison to conventional mechanical switches.

**SPECIFICATIONS**

Pressure ranges: 0.6 bar to 600 bar

Setpoints, hysteresis: adjustable\*

Accuracy:  $\pm 0.5\%$

Relay outputs: SPDT, 2 pcs

Analog output: 4...20 mA (3-wire);

Sensor: ceramic thick film

Pressure port: G 3/4" (for flush diaphragm); G1/2"; G1/4"; 1/4" NPT; M20x1.5; other

Pressure port materials: stainless steel (for abrasive media), plastic (for aggressive media);

Media temperature: -20...+135 °C

Ambient temperature: -40...+70 °C

**APPLICATIONS**

Aggressive media\*

Viscous media

Tank liquid level control

Abrasive media

Sewage, waste water, sludge

\* please consult the manufacturer for particular media compatibility

\*\* setpoints and other parameters can be set either by factory or by user via PCON 200 adapter (sold separately)

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## TECHNICAL SPECIFICATIONS

### MEASURING RANGES

Pressure range, bar		Overpressure, bar	Burst pressure, bar	Pressure range, bar		Overpressure, bar	Burst pressure, bar
Gauge	Absolute			Gauge	Absolute		
0...0.6	0...0.6	3.0	4.0	0...25	0...25	100	125
0...1.0	0...1.0	3.0	4.0	0...40	0...40	100	125
0...1.6	0...1.6	6.0	8.0	0...60	0...60	200	250
0...2.5	0...2.5	6.0	8.0	0...100	0...100	200	250
0...4.0	0...4.0	15	20	0...160	0...160	400	500
0...6.0	0...6.0	15	20	0...250	0...250	800	1000
0...10	0...10	20	25	0...400	0...400	800	1000
0...16	0...16	40	50	0...600	0...600	900	1100

### PERFORMANCE

Accuracy, % of span*	±0.5
Temperature effect (% of span / 10 °C)	±0.2
Compensated range	-25...+85 °C
Power supply effect (rated supply voltage: 24 V ± 10%)	≤ ±0.05% of span / 10 V
Load resistance effect	≤ ±0.05% of span / kOhm
Long-term stability	≤ ±0.3% of span / year
Startup time (after power up)	less than 0.2 s
Response time (10...90%)	≤ 60 ms

\* Accuracy includes non-linearity, hysteresis and non-repeatability. The table shows the accuracy for normal conditions: atmospheric pressure from 84 to 106 kPa; air temperature from 15 to 25 °C; relative air humidity from 45 to 75%.

### OPERATING CONDITIONS

Medium temperature (depends on seal)	-20...+135 °C
Ambient temperature	-40...+70 °C
Storage temperature	-40...+70 °C
Vibration resistance	10 - 50 Hz, 0.35 peak to peak displacement
Shock resistance	10 g
Pressure sensor service life	> 100×10 <sup>6</sup> cycles
Switch contacts service life (electric), load dependent:	
- AC:	
125 V: 3 A (NO)/3 A (NC)	200000
250 V: 5 A (NO)/3 A (NC)	50000
- DC:	
30 V: 5 A (NO)/3 A (NC)	100000

## MECHANICAL SPECIFICATIONS

Pressure port material	stainless steel 316L (1.4404), PVC (-10...+50 °C, up to 10 bar), PVDF (-20...+70 °C, up to 25 bar)	
Housing material	stainless steel 1.4305 (303L)	
Seal (operating temperature)	EPDM (-20...+135 °C), NBR (-20...+100 °C), FKM (-20...+135 °C)	
Diaphragm	ceramics Al <sub>2</sub> O <sub>3</sub> 96 %	
Wetted parts	Diaphragm, pressure port, seal	
Pressure port	Stainless steel	PVC, PVDF
	M20x1.5 DIN 3852; M20x1.5 EN 837; G 1/2" DIN 3852; G 1/2" EN 837; G 1/4" DIN 3852; G 1/4" EN 837; 1/2" NPT; 1/4" NPT	M20x1.5 DIN 3852 open port; G 1/2" DIN 3852 open port; G 3/4" DIN 3852 open diaphragm
Electrical connection	Electrical connection M12x1 (5 pin) – power, output signal; M12x1 (4 pin) – switching lines	
Cable diameter	6...8 mm	
Wire cross section	0.75 mm	
Ingress protection	IP65	
Dimensions, mm, max	Ø48x120	
Weight, max	0.25 kg	

## ELECTRICAL SPECIFICATIONS

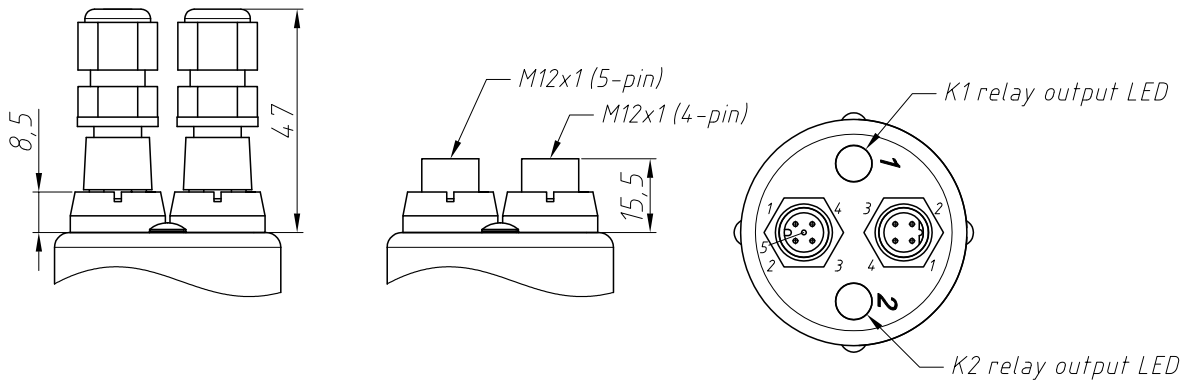
Power supply (U <sub>s</sub> ), V	12 to 36 (rated 24 V)
Power consumption, max	100 mA
Analog output:	
Number of analog measuring channels	one
Output signal	4...20 mA / 3-wire
Fault mode	2 mA and 22 mA
Load resistance (R <sub>L</sub> ), Ohm (±20 %)	[(U <sub>s</sub> - 5 V) / 0.025 A] Ohm
Galvanic isolation resistance to case, min.	100 MOhm (at a voltage of 100 V)
Relay outputs (dry contact):	
Number of relay outputs	1 to 2 (independent)
Switching contact type (version chosen when ordering)	normally closed (NC) or normally open (NO)
Max switching voltage	250 V (AC) 30 V (DC)
Max switching current (contact type)	5 A (NO) / 3 A (NC)
Rated load:	
- DC, voltage of 30 V	5 A (NO) / 3 A (NC)
- AC, voltage of 250 V	5 A (NO) / 3 A (NC)
Relay outputs operating modes (configurable)	hysteresis/window/pulse
Relay outputs accuracy	≤ ±0.5% of span
Switching frequency, max	5 Hz
Switching delay (programmable)	0...650 s
Dielectric strength, V	1000 (VAC 50/60 for 1 min)
Galvanic isolation resistance, MOhm, min.	100
UART interface (modified semiduplex):	
Number of interfaces	1
Data transfer rate, bit/s	9600
Protocol	P-Conf
Communication cable length, m, max	5

## ELECTRICAL CONNECTIONS / PIN ASSIGNMENT

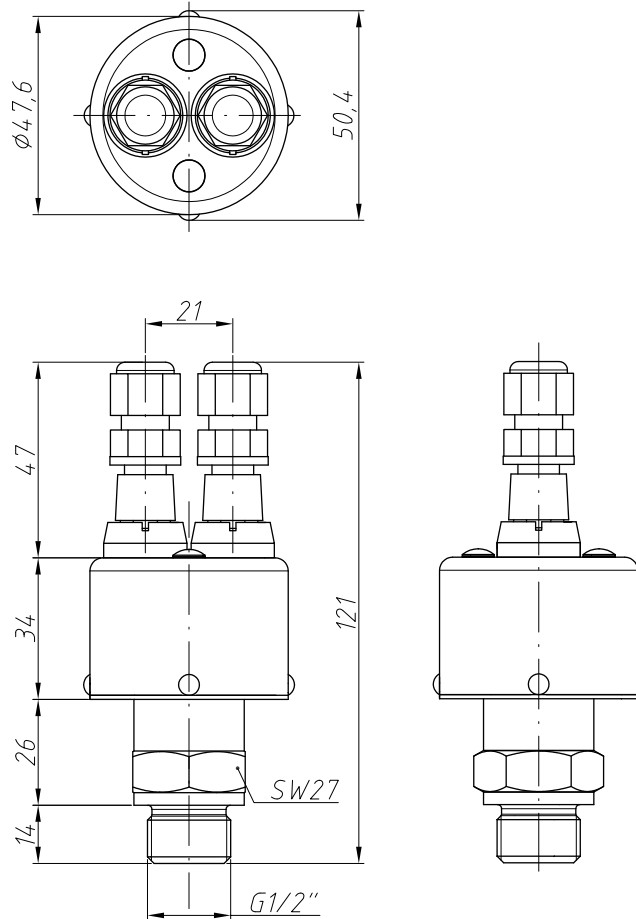
M12x1 (4 pins):		Connector pins
Relay 1	K1.1	1
	K1.1	4
Relay 2	K2.1	2
	K2.1	3
M12x1 (5 pins):		
Power +	U <sub>s</sub>	1
Power -	COM	2, 3
Communication interface	DIO	4
Analog output	I <sub>out</sub>	5

## ELECTRICAL CONNECTIONS, DIMENSIONS (mm)

M12x1



## DIMENSIONS (mm)



Housing of transmitter with welded sensor is 8 mm longer

## PRESSURE PORTS, DIMENSIONS (mm)

M20x1.5; G1/2" EN 837	M20x1.5; G1/2" DIN 3852	G1/2" DIN 3852 open port	1/2" NPT
<p>SW27 23 3 17.5 6 17.5 M20x1.5 G1/2"</p>	<p>SW27 14 G1/2" M20x1.5</p>	<p>SW27 21 14 10 G1/2"</p>	<p>SW27 20 1/2" NPT</p>
G1/4" EN 837	G1/4" DIN 3852	G3/4" DIN 3852 flush diaphragm	1/4" NPT
<p>SW27 15 5 9.5 2 G1/4"</p>	<p>SW27 14 12 19 G1/4"</p>	<p>SW32 3 16 32 G3/4"</p>	<p>SW27 14 1/4" NPT</p>

## ORDERING CODE

ASZ 3410 r		-X	-X	-XXXX	-X	-XX	-XX	-X	-XXX	-X	-X	-XX
<b>MEASUREMENT TYPE</b>												
Gauge		G										
Absolute		A										
Vacuum, LRL = -1 bar		V										
<b>UNIT OF MEASUREMENT</b>												
bar		B										
kg/cm <sup>2</sup>		S										
mH <sub>2</sub> O		W										
kPa		K										
MPa		M										
Other (specify when ordering)		X										
<b>UPPER RANGE LIMIT (URL)</b>												
bar, kg/cm <sup>2</sup>		mH <sub>2</sub> O		kPa		MPa						
0.6	0600	6.0	6000	60	6001	0.06	0060					
1.0	1000	10	1001	100	1002	0.10	0100					
1.6	1600	16	1601	160	1602	0.16	0160					
2.5	2500	25	2501	250	2502	0.25	0250					
4.0	4000	40	4001	400	4002	0.40	0400					
6.0	6000	60	6001	600	6002	0.60	0600					
10	1001	100	1002	1000	1003	1.0	1000					
16	1601	160	1602			1.6	1600					
25	2501	250	2502			2.5	2500					
40	4001	400	4002			4.0	4000					
60	6001					6.0	6000					
100	1002					10	1001					
160	1602					16	1601					
250	2502					25	2501					
400	4002					40	4001					
600	6002					60	6001					
Other	XXXX	Other	XXXX	Other	XXXX	Other	XXXX					
<b>ACCURACY</b>												
0.50% (standard)											D	
Other (specify when ordering)											X	
<b>NUMBER OF SWITCH OUTPUTS / CONFIGURATION</b>												
1 relay output (NO)											10	
1 relay output (NC)											11	
2 relay outputs (NO/NO)											20	
2 relay outputs (NO/NC)											21	
2 relay outputs (NC/NC)											22	
<b>ELECTRICAL CONNECTION</b>												
M12x1, straight connector											30	
Other (specify when ordering)											XX	
<b>OUTPUT SIGNAL</b>												
4...20 mA / 3-wire											B	
Other (specify when ordering)											X	

## ORDERING CODE (CONTINUED)

ASZ 3410 r	-X	-X	-XXXX	-X	-XX	-XX	-X	-XXX	-X	-X	-XX
<b>PRESSURE PORT</b>											
								M20x1.5 DIN 3852 (standard)	200		
								M20x1.5 EN 837 (standard)	201		
								G1/2" DIN 3852 (standard)	720		
								G1/2" EN 837 (standard)	721		
								G1/4" DIN 3852 (standard)	740		
								G1/4" EN 837	741		
								G3/4" DIN 3852 flush diaphragm	735		
								G1/2" DIN 3852 open port	726		
								1/4" NPT	840		
								1/2" NPT	820		
								Other (specify when ordering)	XXX		
<b>SEALS</b>											
								FKM (-20...+135 °C) (standard)	F		
								NBR (-20...+100 °C)	N		
								EPDM (-20...+135 °C)	E		
								Other (specify when ordering)	X		
<b>PRESSURE PORT MATERIAL</b>											
								Stainless steel 316L	A		
								PVC (-10...+50 °C, up to 10 bar)	P		
								PVDF ( -20...+70 °C, up to 25 bar)	F		
								Other (specify when ordering)	X		
<b>VERSION</b>											
										Standard	00
										Other (specify when ordering)	XX

Example: ASZ 3410 r-G-B-1001-D-20-30-B-200-F-A-00

## ACCESSORIES

				
DZ 10 Pressure snubber	PZ 1024 Power supply unit	PCON 200 Programming adapter	P-conf Software	

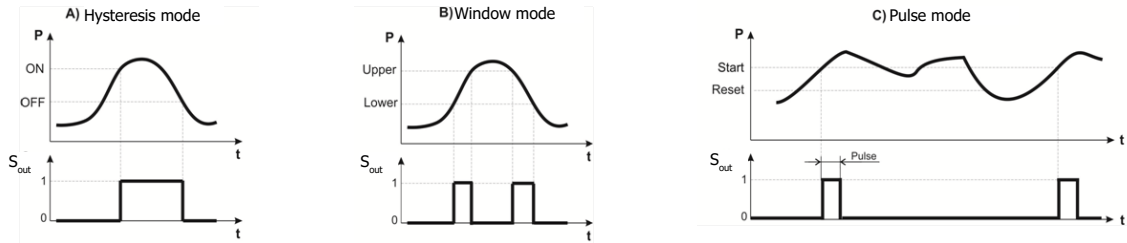
## PRESSURE SWITCH ORDER FORM

### ORDERING CODE

**ASZ 3410 r**    -X    -X    -XXXX    -X    -XX    -XX    -X    -XXX    -X    -XX

### CONFIGURABLE FEATURES AND FUNCTIONS

Relay outputs operation logic ( $S_{out}$ ) depending on input pressure (P).



Note:

The default mode is A.

$S_{out}$  at "0" means that the relay output state corresponds to that specified when ordering (NO or NC).  $S_{out}$  at "1" means the relay output state changed.

### Switch outputs operating mode parameters (one mode selected):

Mode	Parameter	Factory settings for switches K1 and K2	Ordered settings	
			Switch K1	Switch K2
A: Hysteresis Mode	Level ON	55 % of span		
	Level OFF	50 % of span		
	Delay ON	0 ms		
	Delay OFF	0 ms		
B: Window Mode	Upper level	-		
	Lower level	-		
	Delay Upper	-		
	Delay Lower	-		
C: Pulse Mode	Start level	-		
	Reset level	-		
	Delay Pulse	-		
	Pulse width, must be $\geq 20$ ms	-		

### Customer

Order number:

Company:

Phone / fax / e-mail:

Contact person

Position:

Full name: