

# E. Electronic Pressure Switches



# E.5

hex 22  
High Performance  
1 switching output

## Electronic pressure switches, High-Performance series

hex 22 with one switching output



- Outstanding overpressure protection (up to 4 x)
- Ideal choice for mobile hydraulic applications
- Long service life even under high pressure change rates
- Wetted parts made of stainless steel and titanium ensuring excellent media compatibility
- All welded design, no elastomeric seal
- Silicon-on-sapphire technology (SoS) for highest reliability, accuracy and reliable process monitoring
- Very low temperature error and very good long-term stability
- Adjustment of switching point and hysteresis at factory

For versions with 2 switching outputs,  
please refer to chapter E.6, page 126

# Electronic pressure switches, High-Performance series

## Technical details

Type:	<b>0530 NO</b> <b>0531 NC</b>	<b>0532 NO</b> <b>0533 NC</b>			
Number of transistor outputs:	1 PNP output (High Side N-channel MOSFET)		1 NPN output (Low Side N-channel MOSFET)		
Supply voltage:	9,6 - 32 VDC				
Idle power consumption:	< 15mA				
Standard adjustment range $p_{nom}$ :	0 – 10 bar	0 – 25 bar	0 – 100 bar	0 – 250 bar	0 – 600 bar
Overpressure protection $p_U^{1)}$ :	40 bar	100 bar	400 bar	1,000 bar	1,650 bar
Burst pressure <sup>1)</sup> :	80 bar	200 bar	800 bar	2,000 bar	2,000 bar
Mechanical life expectancy:	10,000,000 pulsations at rise rates to 5 bar/ms $p_{nom}$				
Permitted pressure change rate:	$\leq 5$ bar/ms				
Switching point adjustment range:	2 ... 100 % of the nominal pressure range (Full Scale, FS), programmable at factory				
Hysteresis:	0.2 ... 99.8 % of the nominal pressure range (FS), programmable at factory (set to 5% of the switching point as standard)				
Accuracy:	$\pm 0.5$ % of the nominal pressure range (FS) at room temperature, $\pm 0.25$ % BFSL				
Resolution:	0.1 % of the nominal pressure range (FS)				
Switching delay:	ON (0 ... 0.5 s) / OFF (0 ... 2 s) delay in increments of 1 ms, irrespective of switching point, programmable at factory (specify value when ordering, otherwise default value of 0 s is set)				
Output:	0.5 A transistor output with short-circuit and overvoltage protection				
Operating mode:	with hysteresis or window function (see page 101), programmable at factory				
Long term stability:	$\pm 0.1$ % FS p. a.				
Repeatability <sup>2)</sup> :	$\pm 0.1$ % FS				
Temperature error <sup>2)</sup> :	$\pm 0.02$ % / 1 K FS				
Compensated temperature range:	-20 °C ... +80 °C (-4 °F ... +176 °F)				
Temperature range media:	-40 °C ... +125 °C (-40 °F ... +257 °F)				
Temperature range ambient:	-40 °C ... +100 °C (-40 °F ... +212 °F)				
Wetted parts material:	Stainless steel 1.4305 (AISI 303) and titanium				
Housing material:	Stainless steel 1.4305 (AISI 303)				
Insulation resistance:	> 100 M $\Omega$ (500 VDC, $R_i > 42 \Omega$ )				
Switching time:	< 2 ms				
Vibration resistance:	20 g at 4 ... 2000 Hz sine wave; DIN EN 60068-2-6				
Shock resistance:	half sine wave 500 m/s <sup>2</sup> ; 11 ms; DIN EN 60068-2-27				
Protection class:	Refer to the electrical connections				
EMC:	EMC 2014/30/EU, EN 61000-6-2:2005, EN 61000-6-3:2007				
Protection against reverse polarity, short-circuit and over voltage surges:	built-in				
Weight:	approx. 80 g (DIN 175301 approx. 110 g, cable version approx. 135 g)				

<sup>1)</sup> Static pressure. Dynamic value is 30 to 50 % lower. Values refer to the hydraulic/pneumatic part of the electronic pressure switch.

<sup>2)</sup> Within the compensated temperature range.

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# 0530 / 0531 / 0532 / 0533

Electrical connectors and threads



**DIN EN 175301- 803 - A**

Pin	Assignment
1	Uv+
2	Gnd
3	U <sub>out</sub>
PE	iPE

IP65

x ~ 60 / 76 mm\*

d ~ Ø 30 mm

**Order number: 013**

**M12-DINEN 61076-2-101 A**

Pin	Assignment
1	Uv+
2	nc
3	Gnd
4	Out

IP67

x ~ 54 mm

d ~ Ø 22 mm

**Order number: 002**

**ISO 15170 - A1 - 4.1**

Pin	Assignment
1	Uv+
2	Gnd
3	U <sub>out</sub>
4	nc

IP67, IP6K9K

x ~ 65 mm

d ~ Ø 27 mm

**Order number: 004**

**AMP Superseal 1.5 ®**

Pin	Assignment
1	Out
2	Gnd
3	Uv+

IP67

x ~ 73 mm

d ~ Ø 26 mm

**Order number: 007**

\* x ~ 60 mm without coupler socket, x ~ 76 mm with coupler socket

**Deutsch DT04 - 4P**

Pin	Assignment
1	Gnd
2	Uv+
3	nc
4	Out

IP67, IP6K9K

x ~ 74 mm

d ~ Ø 23 mm

**Order number: 008**

**Deutsch DT04 - 3P**

Pin	Assignment
1	Uv+
2	Gnd
3	Out

IP67, IP6K9K

x ~ 74 mm

d ~ Ø 23 mm

**Order number: 010**

**Cable connection**

Pin	Assignment
red	Uv+
white	Out
black	Gnd

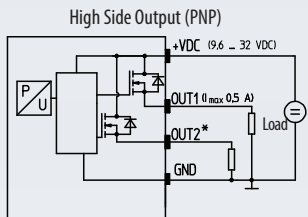
IP67

x ~ 44 mm  
(+ 20 mm bend relief)  
cable length ~ 2 m

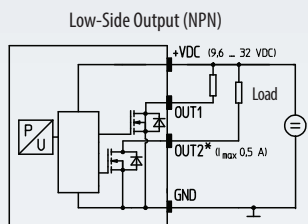
d ~ Ø 22 mm

**Order number: 011**

## Connection diagrams



Pin assignment depending on electrical connections  
\*OUT2 only for series 054x



Pin assignment depending on electrical connections  
\*OUT2 only for series 054x

**Thread code: 41**

**Thread code: 03**

**Thread code: 04**

**Thread code: 09**

**Thread code: 30**

**Thread code: 20**

**Thread code: 21**

**Thread code: 42**



# 0530 / 0531 / 0532 / 0533

## Order matrix for electronic pressure switches

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	Type	Adjustment range	Pressure connection	Pressure unit	Electrical connection
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### Type

PNP output (High Side), NO	<b>0530</b>
PNP output (High Side), NC	<b>0531</b>
NPN output (Low Side), NO	<b>0532</b>
NPN output (Low Side), NC	<b>0533</b>

Max. Overpressure <sup>2)</sup>	Burst pressure	Adjustment range <sup>1)</sup>	
40 bar	80 bar	0 - 10 bar (approx. 145 PSI)	<b>101</b>
100 bar	200 bar	0 - 25 bar (approx. 362 PSI)	<b>251</b>
400 bar	800 bar	0 - 100 bar (approx. 1.450 PSI)	<b>102</b>
1,000 bar	2,000 bar	0 - 250 bar (approx. 3.620 PSI)	<b>252</b>
1,650 bar	2,000 bar	0 - 600 bar (approx. 8.700 PSI)	<b>602</b>

### Pressure connection

G 1/4 – DIN EN ISO 1179-2 (DIN 3852-11), form E	<b>41</b>
G 1/4 – DIN 3852-A	<b>03</b>
NPT 1/8 (max. 250 bar)	<b>04</b>
NPT 1/4	<b>09</b>
M10x1 zyl. DIN 3852-A (max. 250 bar)	<b>30</b>
7/16 – 20 UNF (max. 250 bar)	<b>20</b>
9/16 – 18 UNF	<b>21</b>
M14x1,5 – DIN EN ISO 9974-2 (DIN 3852-11), form E	<b>42</b>

### Pressure unit

bar	<b>B</b>
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### Electrical connection

DIN EN 175301-803-A (DIN 43650-A); socket device included	<b>013</b>
M12 - DIN EN 61076-2-101-A	<b>002</b>
Bayonet ISO 15170-A1-4.1 (DIN 72585-A1-4.1)	<b>004</b>
AMP Superseal 1.5®	<b>007</b>
Deutsch DT04-4P	<b>008</b>
Deutsch DT04-3P	<b>010</b>
Cable connection (length of cable 2 m standard)	<b>011</b>

<b>Order number:</b>	<b>05XX</b>	<b>XXX</b>	<b>XX</b>	<b>B</b>	<b>XXX</b>
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<sup>1)</sup> Please state switching point and hysteresis when ordering.

<sup>2)</sup> Static pressure, dynamic pressure 30 to 50% lower. Value refers to the hydraulic or pneumatic part of the electronic pressure switch.



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