

Technical details

Silicon-on-Sapphire
Sensor with One
Switching Function

Type	0530 NO 0531 NC		0532 NO 0533 NC		
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:	< 15 mA				
Standard adjustment range p_{nom}	0 – 10 bar (0 – 145 psi)	0 – 25 bar (0 – 360 psi)	0 – 100 bar (0 – 1,450 psi)	0 – 250 bar (0 – 3,625 psi)	0 – 600 bar (0 – 8,700 psi)
Overpressure protection $p_u^{1)}$	40 bar (580 psi)	100 bar (1,450 psi)	400 bar (5,800 psi)	1,000 bar (14,500 psi)	1,650 bar (29,930 psi)
Burst pressure ¹⁾ :	80 bar (1,160 psi)	200 bar (2,900 psi)	800 bar (11,600 psi)	2,000 bar (29,000 psi)	2,000 bar (29,000 psi)
Mechanical life expectancy:	10,000,000 pulsations at rise rates to 72.5 psi/ms (5 bar/ms) at p_{nom}				
Permitted pressure change rate:	≤ 72.5 psi/ms (≤ 5 bar / ms)				
Switching point adjustment range:	2 ... 100 % of the nominal pressure range (Full Scale, FS), programmable at factory				
Differential:	0.2 ... 99.8 % of the nominal pressure range (FS), programmable at factory (set to 5% of the switching point as standard)				
Accuracy:	±0.5 % of the nominal pressure range (FS) at room temperature, ±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 differential or window mode, programmable at factory				
Long term stability:	±0.1 % FS p. a.				
Repeatability: ²⁾	±0.1 % FS				
Temperature error: ²⁾	±0.02 % / 1 K FS				
Compensated temperature range:	-4 °F ... +176°F (-20 °C ... +80°C)				
Temperature range media:	-40 °F ... +257°F (-40 °C ... +125°C)				
Temperature range ambient:	-40 °F ... +212°F (-40 °C ... +100°C)				
Wetted parts material:	Stainless steel AISI 303 (1.4305) and titanium				
Housing material:	Stainless steel AISI 303 (1.4305)				
Insulation resistance:	> 100 MΩ (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 ² ; 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. 2.8 oz / 80 g (DIN 175301 approx. 3.8 oz / 110 g, cable version approx. 4.8 oz / 135 g)				

1) Static pressure, dynamic value is 30 to 50 % lower. Values refer to the hydraulic/pneumatic part of the electronic pressure switch.

2) Within the compensated temperature range.

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hex 22

High Performance

1 switching output

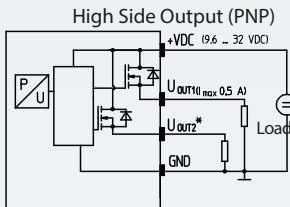
0530 / 0531 / 0532 / 0533

Electrical connectors and threads

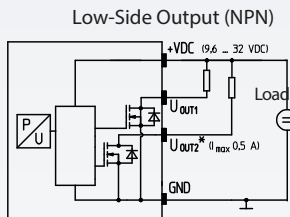


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Connection diagrams



Pin assignment depending on electrical connections
 * U_{OUT2} only for series 054x



Pin assignment depending on electrical connections
 * U_{OUT2} only for series 054x

Technical modifications and errors excepted.



DIN EN 175301-803 - A

Pin	Assignment
1	U_{V+}
2	Gnd
3	U_{out}
PE	

IP65
 $x \sim 60 / 76 \text{ mm}^*$
 $d \sim \varnothing 30 \text{ mm}$
 Connection code: 013

M12-DIN EN 61076-2-101 A

Pin	Assignment
1	U_{V+}
2	nc
3	Gnd
4	U_{out}

IP67
 $x \sim 54 \text{ mm}$
 $d \sim \varnothing 22 \text{ mm}$
 Connection code: 002

ISO 15170 - A1 - 4.1

Pin	Assignment
1	U_{V+}
2	Gnd
3	U_{out}
4	nc

IP67, IP6K9K
 $x \sim 65 \text{ mm}$
 $d \sim \varnothing 27 \text{ mm}$
 Connection code: 004

AMP Superseal 1.5 °

Pin	Assignment
1	U_{out}
2	Gnd
3	U_{V+}

IP67
 $x \sim 73 \text{ mm}$
 $d \sim \varnothing 26 \text{ mm}$
 Connection code: 007

* $x \sim 60 \text{ mm}$ without socketdevice, $x \sim 76 \text{ mm}$ with socket device

Deutsch DT04 - 4P

Pin	Assignment
1	Gnd
2	U_{V+}
3	nc
4	U_{out}

IP67, IP6K9K
 $x \sim 74 \text{ mm}$
 $d \sim \varnothing 23 \text{ mm}$
 Connection code: 008

Deutsch DT04 - 3P

Pin	Assignment
A	U_{V+}
B	Gnd
C	U_{out}

IP67, IP6K9K
 $x \sim 74 \text{ mm}$
 $d \sim \varnothing 23 \text{ mm}$
 Connection code: 010

Cable connection

Pin	Assignment
red	U_{V+}
white	U_{out}
black	Gnd

IP67
 $x \sim 44 \text{ mm}$
 (+ 20 mm bend relief)
 cable length $\sim 2 \text{ m}$
 $d \sim \varnothing 22 \text{ mm}$
 Connection code: 011

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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Silicon-on-Sapphire
Sensor with One
Switching Function

	Type	Pressure range	Pressure connection	Pressure unit	Electrical connection
Type	↓	↓	↓	↓	↓
PNP output (High Side), NO	0530				
PNP output (High Side), NC	0531				
NPN output (Low Side), NO	0532				
NPN output (Low Side), NC	0533				

Max. overpressure ²⁾	Burst pressure	Adjustment range ¹⁾	
40 bar (580 psi)	80 bar (1,160 psi)	0 – 10 bar (0 - 145 psi)	101
100 bar (1,450 psi)	200 bar (2,900 psi)	0 – 25 bar (0 - 362.5 psi)	251
400 bar (5,800 psi)	800 bar (11,600 psi)	0 – 100 bar (0 - 1,450 psi)	102
1,000 bar (14,500 psi)	2,000 bar (29,000 psi)	0 – 250 bar (0 - 3,625 psi)	252
1,650 bar (23,930 psi)	2,000 bar (29,000 psi)	0 – 600 bar (0 - 8,700 psi)	602

Pressure connection	
1/4 BSPP – DIN EN ISO 1179-2 (DIN 3852-11) form E	41
1/4 BSPP – DIN 3852-A	03
NPT 1/8	04
NPT 1/4	09
M 10x1 cyl. DIN 3852-A	30
7/16-20 UNF (max. 250 bar)	20
9/16-18 UNF	21
M 14x1.5 – DIN EN ISO 9974-2 (DIN 3852-11) form E	42

Pressure unit	
bar	B

Electrical connection	
DIN EN 175301-803-A (DIN 43650-A); socket device included	013
M 12 – DIN EN 61076-2-101 A	002
Bayonet ISO 15170-A1-4.1 (DIN 72585-A1-4.1)	004
AMP Superseal 1.5®	007
Deutsch DT04-4P	008
Deutsch DT04-3P	010
Cable connection (length of cable 6.5 ft / 2 m standard)	011

Order number:	05XX	XXX	XX	B	XXX
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¹⁾ Please state switching point and hysteresis when ordering.

²⁾ 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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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