

Selection matrix for electronic pressure switches

Type / series		0500	0501	0510	0511	0520	0570	0530	0531	0532	0533	0540	0541	0542	0544	0545	0546
Page		109	109	113	113	117	120	125	125	125	125	129	129	129	129	129	129
Technology	ceramic / thick-film	■	■	■	■	■	■										
	titanium / SoS							■	■	■	■	■	■	■	■	■	■
Variants	NO	■	■	■	■	■	■	■		■		■		■	■		■
	NC	■	■	■	■				■		■		■	■			■
	1 switching output	■	■	■	■	■		■	■	■	■						
	2 switching outputs						■					■	■	■	■	■	■
	PNP (High Side)	■	■	■	■	■	■	■	■	■		■	■	■			■
	NPN (Low Side)										■	■				■	■
	analogue output 4 - 20 mA							■									
Supply voltage	9.6 – 32 V	■	■	■	■			■	■	■	■	■	■	■	■	■	■
	12 – 30 V						■										
	15 – 36 V					■											
Adjustment range	0 – 2 bar	■	■	■	■												
	0 – 4 bar	■	■	■	■												
	0 – 10 bar	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	0 – 16 bar	■	■	■	■			■	■	■	■	■	■	■	■	■	■
	0 – 25 bar							■	■	■	■	■	■	■	■	■	■
	0 – 40 bar	■	■	■	■												
	0 – 100 bar	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	0 – 250 bar					■		■	■	■	■	■	■	■	■	■	■
	0 – 400 bar						■	■	■	■	■	■	■	■	■	■	■
	0 – 600 bar							■	■	■	■	■	■	■	■	■	■
Switch point adjustability	at factory	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	by customer (on site)			■	■	■	■										
Hysteresis adjustability	at factory	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	by customer (on site)						■										
	window mode (settable at factory)							■	■	■	■						
Max. overpressure	up to 2 x	■	■	■	■	■	■										
	up to 4 x							■	■	■	■	■	■	■	■	■	■
Size	hex 22							■	■	■	■	■	■	■	■	■	■
	hex 24	■	■	■	■												
	A/F 30					■											
	A/F 32						■										
Housing material	zinc-plated steel					■											
	stainless steel 1.4305 / AISI 303	■	■	■	■			■	■	■	■	■	■	■	■	■	■
	aluminium / die-casted zinc						■										
Additional functions	7-segment and menu control						■										
	LED switching state indicator	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

■ M12x1 DIN EN 61076-2 101 A connector only

E.6

hex 22
High Performance
2 switching outputs

Electronic pressure switches, High-Performance series

hex 22 with two switching outputs



- 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

Technical details

Type	0540 NO / NO 0541 NC / NC 0542 NO / NC		0544 NO / NO 0545 NC / NC 0546 NO / NC		
Number of transistor outputs:	2 PNP outputs (High Side N-channel MOSFET)		2 NPN outputs (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 – 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 ¹⁾ :	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 at p_{nom}				
Permitted pressure change rate:	≤ 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 (Full Scale, FS), programmable at factory (5 % of the switching point is set 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				
Long term stability:	±0.1 % FS p. a.				
Repeatability ¹⁾ :	±0.1 % FS				
Temperature error ¹⁾ :	±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 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				
Short-circuit, overvoltage and reverse polarity protection	Built-in				
Weight:	approx. 80 g (DIN 175301 approx. 110 g, cable version approx. 135 g)				

¹⁾ Within the compensated temperature range.

²⁾ Static pressure. Dynamic value is 30 to 50 % lower. Values refer to the hydraulic/pneumatic part of the electronic pressure switch.

E.6

hex 22
High Performance
2 switching outputs

0540 / 0541 / 0542 / 0544 / 0545 / 0546

Electrical connectors and threads



M 12 – DIN EN 61076-2-101 A

Pin	Assignment
1	Uv+
2	Out 2
3	Gnd
4	Out 1

IP67
x ~ 54 mm
d ~ Ø 22 mm
Order number: 002

ISO 15170-A1-4.1

Pin	Assignment
1	Uv+
2	Out 2
3	Gnd
4	Out 1

IP67, IP6K9K
x ~ 65 mm
d ~ Ø 27 mm
Order number: 004

DEUTSCH DT04-4P

Pin	Assignment
1	Gnd
2	Uv+
3	Out 2
4	Out 1

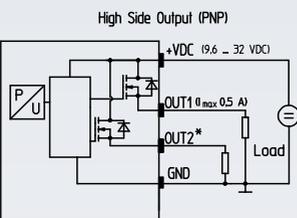
IP67, IP6K9K
x ~ 74 mm
d ~ Ø 23 mm
Order number: 008

Cable connection

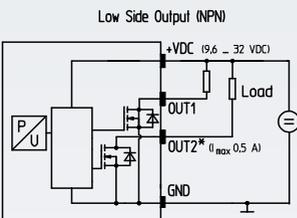
Cable	Assignment
brown	Uv+
white	Out 2
black	Out 1
blue	Gnd

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 electr. connection
*OUT2 only for 054x



Pin assignment depending on electr. connection
*OUT2 only for 054x

Technical modifications and errors excepted.

Thread code: 41

Thread code: 03

Thread code: 04

Thread code: 09

Thread code: 30

Thread code: 20

Thread code: 21

Thread code: 42



0540 / 0541 / 0542 / 0544 / 0545 / 0546

Order matrix for electronic pressure switches

E.6

hex 22
High Performance
2 switching outputs



	Type	Pressure range	Pressure connection	Pressure unit	Electrical connection
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Type

PNP output (High Side), NO / NO (NO/NO)	0540
PNP output (High Side), NC / NC (NC/NC)	0541
PNP output (High Side), NO / NC (NO/NC)	0542
NPN output (Low Side), NO / NO (NO/NO)	0544
NPN output (Low Side), NC / NC (NC/NC)	0545
NPN output (Low Side), NO / NC (NO/NC)	0546

Max. overpressure ²⁾	Burst pressure	Adjustment range ¹⁾	
40 bar	80 bar	0 – 10 bar (approx. 145 PSI)	101
100 bar	200 bar	0 – 25 bar (approx. 362 PSI)	251
400 bar	800 bar	0 – 100 bar (approx. 1,450 PSI)	102
1,000 bar	2,000 bar	0 – 250 bar (approx. 3,620 PSI)	252
1,650 bar	2,000 bar	0 – 600 bar (approx. 8,700 PSI)	602

Pressure connection

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

Pressure unit

bar	B
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Electrical connection

M 12 – DIN EN 61076-2-101 A	002
Bayonet ISO 15170-A1-4.1 (DIN 72585-A1-4.1)	004
Deutsch DT04-4P	008
Cable connection (length of cable 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. Values refer to the hydraulic or pneumatic part of the electronic pressure switch.



E



- High-quality accessories
- Developed for our products
- Aligned to our products
- Direct from the manufacturer

Accessories

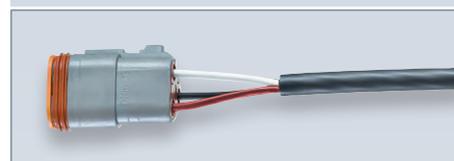
Mating plugs

E.7

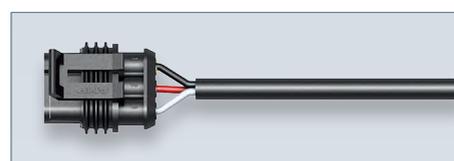
Accessories



<p>Deutsch DT06-3S (for DT04-3P) 3 x 0.5 mm² PUR cable (2 m), IP67</p>	<p>Suitable for connector code 010 Deutsch DT04-3P</p>	<p>Order number: 1-1-36-653-160</p>
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<p>TE AMP Superseal 1.5[®], 3-pin 3 x 0.5 mm² Radox cable (2 m), IP65</p>	<p>Suitable for connector code 007 AMP Superseal 1.5[®]</p>	<p>Order number: 1-1-32-653-158</p>
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<p>M12 DIN EN 61076-2-LF, 4-pin 4 x 0.34 mm² PUR cable (2 m), IP65</p>	<p>Suitable for connector code 002 M12 DIN EN 61076-2-101 A</p>	<p>Order number: 1-1-00-653-162</p>
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<p>M 12x1 DIN EN 61071-2-101 D straight, 4-pin Terminals for wire diameter 0.75 mm² (AWG 18)</p>	<p>Suitable for connector code 002 M12 DIN EN 61076-2-101 A</p>	<p>Order number: 1-6-00-652-016</p>
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<p>Coupler socket M 12x1 DIN EN 61071-2-101 D Angled, 4-pin Terminals for wire diameter 0.75 mm² (AWG 18)</p>	<p>Suitable for connector code 002 M12 DIN EN 61076-2-101 A</p>	<p>Order number: 1-6-00-652-017</p>
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