

18D

Electro-mechanical pneumatic pressure switches

- -1 ... 30 bar
Port size: G1/4, 1/4 NPT or flange
- Microswitch with gold plated contacts
- High number of switching cycles
- Vibration resistant to 15 g
- Microswitch approved by UL and CSA
- Conforms to Low Voltage Directive 2006/95/EG
- Intrinsically safe operation



Technical features

Medium:

For neutral, gaseous and liquid fluids, non-combustible (Special versions for water application)

Operation:

Diaphragm

Operating pressure:

-1 ... 30 bar (-14 ... 435 psi)

Maximum over pressure:

80 bar (1160 psi)

Repeatability:

±3% for vacuum; ±4% of final value
(depending on regulating pressure)

Port size:

G1/4, 1/4 NPT or flange

Media viscosity:

Up to 1000 mm²/s

Switching pressure difference/hysteresis:

Fixed

Switching cycles:

100/min

Life cycle of mechanical parts:

10⁷ switching cycles

Switching element:

Microswitch with gold plated contacts

Mounting position:

Optional

Degree of protection:

IP65 for DIN EN 175301-803
(DIN 43650) form A connection
IP67 for M12 x 1 connection

Electrical connection:

DIN EN 175301-803 (DIN 43650)
form A or M12 x 1 IEC 947-5-2

Weight:

0,2 kg (0.44 lbs)

Ambient/Media temperature:

NBR: -10 ... +85°C (14 ... +185°F)

FPM: 0 ... +80°C (0 ... +176°F)

Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F)

Materials:

Housing: Aluminium (brass)

Sealing: NBR/FPM

Technical data

Electrical connection acc. to DIN EN 175301-803, form A

Symbol	Port size	Pressure range *1)		Switching pressure difference				Materials press sensor		Drawing No.	Model
		(bar)	(psi)	Lower range (bar)	Upper range (psi)	(bar)	(psi)	Body	Seal		
	G1/4	-1 ... 0	-14 ... 0	0,15	2,17	0,18	2,61	AL	FPM *2)	1	0880100
	G1/4	-1 ... 1	-14 ... 14	0,25	3,62	0,35	5,07	AL	FPM *2)	1	0880110
	1/4 NPT	-1 ... 0	-14 ... 0	0,15	2,17	0,18	2,61	AL	FPM *2)	1	0880120
	G1/4	-1 ... 0	-14 ... 0	0,15	2,17	0,18	2,61	AL	FPM *2)	1	0880126 *3) *4)
	Flange	-1 ... 0	-14 ... 0	0,15	2,17	0,18	2,61	AL	FPM *2)	3	0881100
	G1/4	0,2 ... 2	2,9 ... 29	0,20	2,9	0,35	5,07	AL	FPM *2)	1	0880200
	1/4 NPT	0,2 ... 2	2,9 ... 29	0,20	2,9	0,35	5,07	AL	FPM	1	0880220
	G1/4	0,2 ... 4	2,9 ... 58	0,20	2,9	0,35	5,07	AL	FPM	1	0880226 *3) *4)
	Flange	0,2 ... 2	2,9 ... 29	0,20	2,9	0,35	5,07	AL	NBR	3	0881200
	G1/4	0,5 ... 8	7,2 ... 116	0,35	5,07	0,85	12,3	AL	NBR	2	0880300
	1/4 NPT	0,5 ... 8	7,2 ... 116	0,35	5,07	0,85	12,3	AL	NBR	2	0880320
	G1/4	0,5 ... 8	7,2 ... 116	0,35	5,07	0,85	12,3	AL	FPM	2	0880326 *3) *4)
	Flange	0,5 ... 8	7,2 ... 116	0,35	5,07	0,85	12,3	AL	NBR	3	0881300
	G1/4	1 ... 16	23,2 ... 232	0,40	5,8	1,20	17,4	AL	NBR	2	0880400
	1/4 NPT	1 ... 16	23,2 ... 232	0,40	5,8	1,20	17,4	AL	NBR	2	0880420
	G1/4	1 ... 16	23,2 ... 232	0,40	5,8	1,20	17,4	AL	FPM	2	0880426 *3) *4)
	Flange	1 ... 16	23,2 ... 232	0,40	5,8	1,20	17,4	AL	NBR	3	0881400
	G1/4	1 ... 30	23,2 ... 435	1,0	14,5	5,00	72,5	AL	NBR	2	0880600
	1/4 NPT	1 ... 30	23,2 ... 435	1,0	14,5	5,00	72,5	AL	NBR	2	0880620

*1) Setpoints should be ideally in the middle of the switching pressure range. Reference pressure = atmospheric pressure. Switching pressure must not exceed the indicated values.

*2) Static seal: O-ring (NBR)

*3) LABS free

*4) Plug 0570110 not included, please order separately.

Electrical connection M12 x 1 nach IEC 947-5-2 - plug not included, max. allowable voltage 30 V

Symbol	Port size	Pressure range *1)		Switching pressure difference				Materials press sensor		Drawing No.	Model *2)
		(bar)	(psi)	Lower range (bar)	(psi)	Upper range (bar)	(psi)	Body	Seal		
	G1/4	-1 ... 0	-14 ... 0	0,15	2,17	0,18	2,61	AL	FPM	1	0880149 *3)
	G1/4	-1 ... 0	-14 ... 0	0,15	2,17	0,18	2,61	AL	FPM	1	0880160
	G1/4	0,2 ... 2	2,9 ... 29	0,20	2,9	0,35	5,07	AL	FPM	1	0880260
	G1/4	0,5 ... 8	7,2 ... 116	0,35	5,07	0,85	12,3	AL	FPM	2	0880360
	G1/4	1 ... 16	23,2 ... 232	0,40	5,8	1,20	17,4	AL	FPM	2	0880460
	G1/4	1 ... 30	23,2 ... 435	1,00	14,5	5,00	72,5	AL	FPM	2	0880660
	Flange	-1 ... 0	-14 ... 0	0,15	2,17	0,18	2,61	AL	FPM	3	0881160
	Flange	0,2 ... 2	2,9 ... 29	0,20	2,9	0,35	5,07	AL	FPM	3	0881260
	Flange	0,5 ... 8	7,2 ... 116	0,35	5,07	0,85	12,3	AL	FPM	3	0881360
	Flange	1 ... 16	23,2 ... 232	0,40	5,8	1,20	17,4	AL	FPM	3	0881460

*1) Setpoints should be ideally in the middle of the switching pressure range. Reference pressure = atmospheric pressure. Switching pressure must not exceed the indicated values.

*2) LABS free

*3) Switching function reversed

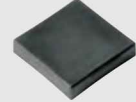
Versions for water applications

Electrical connection acc. to DIN EN 175301-803, form A

Symbol	Port size	Pressure range *1)		Switching pressure difference				Materials press sensor		Drawing No.	Model
		(bar)	(psi)	Lower range (bar)	(psi)	Upper range (bar)	(psi)	Body	Seal		
	G1/4	0,2 ... 2	2,9 ... 29	0,20	2,9	0,35	5,07	Brass	FPM	1	0880219
	1/4 NPT	0,2 ... 2	2,9 ... 29	0,20	2,9	0,35	5,07	Brass	FPM	1	0880240
	G1/4	0,5 ... 8	7,2 ... 116	0,35	5,07	0,85	12,3	Brass	FPM	2	0880323

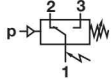
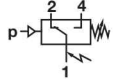
*1) Setpoints should be ideally in the middle of the switching pressure range. Reference pressure = atmospheric pressure. Switching pressure must not exceed the indicated values.

Accessories

Pressure port reducing nipple	Surge damper	Cover
		
Page 4	Page 4	Page 4
0574767 (brass)	0574773 (brass)	0554737
0550083 (stainless steel)	0553258 (stainless steel)	

Connector DIN EN 175301-803	Connector M 12 x 1 4-pin, 90°	4-pin, straight		
				
0570110 (Form A)	0523058 (2 m cable, 4-core)	0523056 (without cable)	0523057 (2 m cable, 4-core)	0523055 (without cable)
	0523053 (5 m cable, 4-core)		0523052 (5 m cable, 4-core)	

Switching function

	Connector DIN EN 175301-803, form A Microswitch SPDT Terminals 1 - 3: Contacts close on rising pressure. Terminals 1 - 2: Contacts open on rising pressure.		Connector IEC 947-5-2, M12 x 1 Microswitch SPDT Terminals 1 - 4: Contacts close on rising pressure. Terminals 1 - 2: Contacts open on rising pressure.
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20D

Electro-mechanical allfluid pressure switches

- -1 ... 100 bar
Port size: G1/2
- Microswitch with gold plated contacts
- Intrinsically safe operation
- Electrical connection:
connector acc. to DIN EN 175301-803 (form A) or cable gland



Technical features

Medium:
For neutral, aggressive, non-flammable gases and fluids

Operating pressure:
-1 ... 100 bar (-14 ... ??? psi)

Repeatability:
±1% of final value
(depending on regulating pressure)

Port size:
G1/2

Media viscosity:
Up to 1000 mm²/s

Sealing:
≤10⁻⁷ mbar · l · s⁻¹

Pulsations:
Not permitted

Switching pressure difference/hysteresis:
Fixed or adjustable

Switching cycles:
20/min maximum
Life cycle of mechanical parts:
107 switching cycles

Switching element:
Microswitch with gold plated contacts

Shock-/vibrations (to avoid if possible):
4 g max. (sinusoidal) / 5 Hz max.

Mounting position:
Optional

Degree of protection:
IP65 for DIN EN 175301-803 (DIN 43650) form A connection
IP66 with cable gland

Electrical connection:
DIN EN 175301-803 (DIN 43650) form A or cable gland

Weight:
See table below

Ambient/Media temperature:
Ambient:
-25 ... +80°C (-13 ... +176°F)
Media:
-10 ... +100°C (14 ... +212°F)
Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F)

Materials:
Housing: aluminium diecast
Sensor: stainless steel
Sealing: stainless steel-bellows

Technical data

Standard models — 181xxxx (fixed switching pressure difference)

Electrical connection: cable gland M20 x 1,5

Symbol	Pressure range *1)		Over pressure *2)		Switching pressure difference				Weight		Model
	(bar)	(psi)	(bar)	(psi)	Lower range minimum (bar)	(psi)	Upper range maximum (bar)	(psi)	(kg)	(lbs)	
	-1 ... 0	-14 ... 0	10	145	0,06	0,87	0,07	1,01	0,8	1,7	1810115
	-1 ... 1	-14 ... 14,5	10	145	0,08	1,16	0,9	13,0	0,8	1,7	1810215
	-1 ... 2,5	-14 ... 36,2	10	145	0,9	13,0	0,12	1,74	1,1	2,4	1810415
	0,05 ... 1	0,72 ... 14,5	10	145	0,07	1,01	0,08	1,16	0,8	1,7	1811115
	0,5 ... 4	7,2 ... 58	20	290	0,3	4,35	0,33	4,78	0,8	1,7	1811415
	0,5 ... 6	7,2 ... 87	20	290	0,3	4,35	0,35	5,07	0,8	1,7	1811515
	0,5 ... 10	7,2 ... 145	20	290	0,3	4,35	0,4	5,80	0,8	1,7	1811615
	1 ... 16	14,5 ... 232	50	725	0,7	10,1	0,8	11,6	0,8	1,7	1811715
	1 ... 25	14,5 ... 362	50	725	0,9	13,0	0,9	13,0	0,8	1,7	1811815
	5 ... 63	72 ... 913	85	1232	1,0	14,5	2,0	29,0	1,1	2,4	1811915

Connector is not in scope of delivery; special pressure ranges on request

*1) Setpoints should be ideally in the middle of the switching pressure range. Reference pressure = atmospheric pressure. Switching pressure must not exceed the indicated values.

*2) Short-term pressure peaks are not allowed to exceed this limit value during operations. Operative utilization of the limit value is not permitted. The limit value corresponds to maximum testing pressure.

Standard models — 180xxxx (adjustable switching pressure difference)

Electrical connection: cable gland M20 x 1,5

Symbol	Pressure range *1)		Over pressure *2)		Switching pressure difference						Weight		Model
	(bar)	(psi)	(bar)	(psi)	Lower range		Upper range minimum		maximum		(kg)	(lbs)	
	-1 ... 0	-14 ... 0	10	145	0,12	1,74	0,13	1,88	0,7	10,1	1,1	2,4	1800115
	-1 ... 1	-14 ... 14,5	10	145	0,13	1,88	0,14	2,03	1,0	14,5	1,1	2,4	1800215
	-1 ... 2,5	-14 ... 36,2	10	145	0,17	2,46	0,2	2,9	2,5	36,2	1,1	2,4	1800415
	0,05 ... 1	0,72 ... 14,5	10	145	0,08	1,16	0,11	1,59	0,7	10,1	1,1	2,4	1801115
	0,1 ... 2,5	1,45 ... 36,2	10	145	0,11	1,59	0,15	2,17	2,0	29,0	1,1	2,4	1801315
	0,5 ... 4	7,2 ... 58	20	290	0,3	4,35	0,4	5,8	2,5	36,2	1,1	2,4	1801415
	0,5 ... 6	7,2 ... 87	20	290	0,35	5,07	0,5	7,25	5,0	72,5	1,1	2,4	1801515
	0,5 ... 10	7,2 ... 145	20	290	0,4	5,8	0,8	11,6	8,0	116	0,8	1,7	1801615
	1 ... 16	14,5 ... 232	50	725	0,8	11,6	1,1	15,9	12,0	174	0,8	1,7	1801715
	1 ... 25	14,5 ... 362	50	725	1,0	14,5	1,5	21,7	20,0	290	1,1	2,4	1801815
	5 ... 63	72,5 ... 913	85	1232	3,5	50,7	4,5	65,2	20,0	290	1,1	2,4	1801915
	5 ... 100	72,5 ... 1450	150	2175	4,0	58,0	9,0	130,5	55,0	797	1,1	2,4	1801015

Connector is not in scope of delivery; special pressure ranges on request

*1) Setpoints should be ideally in the middle of the switching pressure range. Reference pressure = atmospheric pressure. Switching pressure must not exceed the indicated values.

*2) Short-term pressure peaks are not allowed to exceed this limit value during operations. Operative utilization of the limit value is not permitted. The limit value corresponds to maximum testing pressure.

Option selector

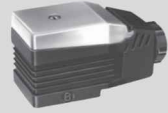
Switching pressure difference Adjustable 0 Fixed 1		Pressure range (bar) -1 ... 0 01 -1 ... 1 02 -1 ... 2,5 04 0,05 ... 1 11 0,1 ... 2,5 13 0,5 ... 4 14 0,5 ... 6 15 0,5 ... 10 16 1 ... 16 17 1 ... 25 18 5 ... 63 19 5 ... 100 10*	Electrical connection Interface for DIN EN 175301-803 form A connector *1) 10 Cable gland 15	
			18★★★★★	

*1) Connector is not in scope of delivery

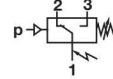
*only for adjustable switching pressure difference

Accessories

Surge damper  Page 4 0553258 (stainless steel G1/4) 0574773 (brass/steel G1/4)	Pressure port – reducing nipple  Page 4 0550083 (G1/4 » G1/2) 0574765 (G1/4 » 1/4 NPT)	Brackets  Page 4 0574772 (steel) 0553908 (stainless steel)
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Connector DIN EN 175301-803  0570110 (Form A)	Connector with LED  Page 4 0585418
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Switching function

	Connector DIN EN 175301-803, form A Microswitch SPDT Terminals 1 - 3: Contacts close on rising pressure. Terminals 1 - 2: Contacts open on rising pressure.
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8D

Electro-mechanical pneumatic pressure switch

- 0,1 ... 30 bar
Port size: G1/4 or flange
- Robust design
- Preferred for pressure monitoring
- High accuracy



Technical features

Medium:
For neutral, gaseous fluids

Operation:
Diaphragm

Operating pressure:
0,1 ... 30 bar (1.45 ... 435 psi)

Maximum over pressure:
50 bar (725 psi)

Repeatability:
±2% of final value
(depending on regulating pressure)

Port size:
G1/4 or flange

Media viscosity:
Up to 1000 mm²/s

Switching pressure difference/hysteresis:
Fixed

Switching cycles:
60 1/min

Switching element:
Microswitch with silver plated contacts

Mounting position:
Optional

Degree of protection:
IP64 for DIN EN 175301-803
(DIN 43650) form A and cable gland

Electrical connection:
DIN EN 175301-803 (DIN 43650)
form A or cable

Weight:
0,4 kg (0.88 lbs)

Ambient/Media temperature:
Ambient:
-10 ... +80°C (14 ... +176°F)
Media:
0 ... +80°C (0 ... +176°F)
Air supply must be dry enough
to avoid ice formation at
temperatures below +2°C (+35°F)

Materials:
Body: Aluminium
Sealing: NBR/FPM

Technical data

Electrical connection acc. to DIN EN 175301-803, form A - Connectors are not scope of delivery

Electrical connection with cable gland (Pg 13,5) - Cable glands are scope of delivery

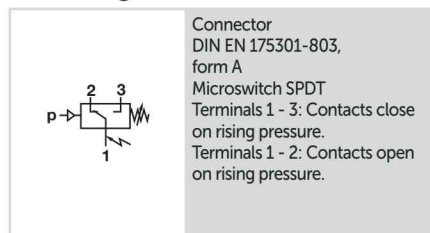
Symbol	Port size	Pressure range *1)		Switching pressure difference				Electrical connection	Materials press sensor		Drawing No.	Model
		(bar)	(psi)	Lower range (bar)	(psi)	Upper range (bar)	(psi)		Body	Seal		
	G1/4	0,2 ... 12	2.9 ... 174	1,1	16	1,5	21,8	Cable gland	AL	NBR	1	0820150
	Flange	0,2 ... 12	2.9 ... 174	1,1	16	1,5	21,8	Cable gland	AL	NBR	3	0820250
	G1/4	0,5 ... 30	7.2 ... 435	1,2	17,4	2,2	31,9	Cable gland	AL	NBR	1	0820750
	Flange	0,5 ... 30	7.2 ... 435	1,2	17,4	2,2	31,9	Cable gland	AL	NBR	3	0820850
	G1/4	0,02 ... 2	0.29 ... 29	0,12	1.74	0,14	2.03	Form A	AL	NBR	2	0820149
	G1/4	0,1 ... 6	1.45 ... 87	0,11	1.59	0,13	1.88	Form A	AL	NBR	2	0820148
	G1/4	0,2 ... 12	2.9 ... 174	1,1	16	1,5	21,8	Form A	AL	NBR	2	0820155
	G1/4	0,5 ... 30	7.2 ... 435	1,2	17,4	2,2	31,9	Form A	AL	NBR	2	0820755

*1) Setpoints should be ideally in the middle of the switching pressure range. Reference pressure = atmospheric pressure.
Switching pressure must not exceed the indicated values.

Accessories

Pressure port reducing nipple	Surge damper	Connector DIN EN 175301-803
		
Page 3	Page 3	
0574767 (brass)	0574773 (brass)	0570110 (Form A)
0550083 (stainless steel)	0553258 (stainless steel)	

Switching function



Switching capacity

Commutator with silver plated contacts

Current type	Load type	Max. permissible persistent current I _{max} [A] at U *1)				Electrical life-time *1)
		24 V	60 V	110 V	230 V	
a.c.	Resistive load	5	5	5	5	~ 1 x 10 ⁶ Switching cycles
a.c.	Inductive load, cos φ 0,7	4	2,5	1,5	0,9	
d.c.	Resistive load	2	0,9	0,45	0,2	
d.c.	Inductive load, L/R ≈ 10 ms	1	0,3	0,09	0,02	

Reference number: 60/min, Reference temperature + 30 °C (with a reference temperature of + 70 °C, I_{max} corresponds to 50% of the tabulated values only).
*1) At maximum current (at 50% of max. current, contact life is appr. 3 times as long).

Recommended circuit

Spark quenching and EMV intrinsically safe

1. Diode in parallel to inductive load.

Make sure polarity is correct when making connections.

Dimensioning of quenching diode (rectifier):

Rated voltage of diode $U_D \geq 1,4 \times U_S$.

Rated current of diode $I_N \geq I_{Load}$

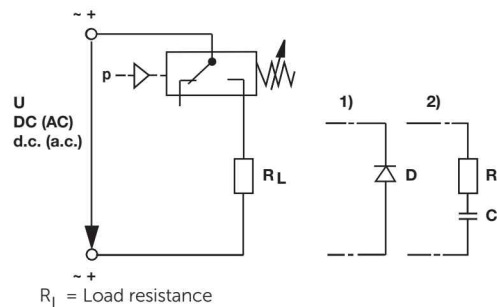
Quick diode (D) with $t_v \leq 200$ ns, parallel to inductive load.

2. RC link in parallel to load in parallel to switching contact.

Dimensioning principles:

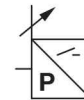
R_L in $\Omega \approx 0,2 \times R_{Load}$ in Ω

C in $[\mu F] \approx I_{Load}$ in [A]



34D Pneumatic/Hydraulic/Allfluid - electronic pressure sensor

- -1 ... 600 bar in different pressure ranges
- Port size G1/4 or flange mounting with adapter
- Two output options; 2 x digital outputs or 1 x digital and 1 x Analogue (both options IO-Link configurable)
- Multicolour 4-digit display with configurable colour change (red/green) at set point
- Upper body can be rotated 345° relative to the process connection for easy alignment of the display
- Suitable for harsh industrial and process control environments
- High overpressure resistance
- UL-listed



Technical features

Medium:

For neutral and aggressive, gaseous and liquid fluids

Pressure range:

-1 ... 1 bar (-14,5 ... 14,5 psi)
 -1 ... 10 bar (-14,5 ... 145 psi)
 0 ... 16 bar (0 ... 232 psi)
 0 ... 40 bar (0 ... 580 psi)
 0 ... 100 bar (0 ... 1450 psi)
 0 ... 160 bar (0 ... 2320 psi)
 0 ... 250 bar (0 ... 3626 psi)
 0 ... 400 bar (0 ... 5801 psi)
 0 ... 600 bar (0 ... 8702 psi)

Pressure type:

Relative pressure

Switching pressure difference:
 Programmable

Switching point:

Adjustable between
 0 ... 100% of full scale (FS)

Reset point:

Adjustable between
 0 ... 100% of full scale (FS)
 (smallest adjustable pressure switching difference between switching point and reset point $\geq 0,5\%$ of full scale (FS))

Display:

Alphanumeric display, 4-digit (red/green), programmable pressure units: bar, PSI, Mpa

Mounting position:

Optional

Total accuracy:

$\pm 0,5\%$ of full scale (FS) - without temperature sensitivity

Linearity:

$\pm 0,25\% + 1$ display step size

Shock proof:

50 g, (11ms), DIN EN 60068-2-27

Vibration proof:

20 g, 10 ... 2000 Hz,
 DIN EN 60068-2-6
 Degree of protection acc.
 DIN EN 60529:
 IP67 (with plug mounted)

Weight:

0,26 kg (0.57 lbs)

Temperature sensitivity:

Zero-point: $\pm 0,2\%$ of maximum operating pressure range (FS) per 10 Kelvin
 Pressure range: $\pm 0,2\%$ of maximum operating pressure range (FS) per 10 Kelvin

Ambient/Media temperature:

Ambient:

-25 ... +80°C (-13 ... +176°F)

Media:

-25 ... +80°C (-13 ... +176°F)
 Air supply must be dry enough to avoid ice formation at temperature below +2°C (+35°F)

Materials:

Housing:

Stainless steel (1.4404 / 316L);

PBT+PC-GF30; PBT-GF20; PC

Wetted parts: Stainless steel (1.4404 / 316L); Al2O3 (ceramics); FKM

Electrical parameters

Electrical connection:

M12 x 1 (contacts gold plated)

Power supply:

UB = 18 ... 30 VDC
 reverse-polarity protected (according to EN 50178 SELV/PELV)

Permissible residual ripple:

10% (within UB)

Current consumption:

< 35 mA

Switching mode:

PNP/NPN

Output signal:

Switching signal; IO-Link (configurable)

Contact rating:

I_{max}
 150 mA / -25 ... +80°C
 200 mA / -25 ... +60°C
 250 mA / -25 ... +40°C

Switching time:

< 3 ms

Signal delay:

On/Off 0 ... 50 s

Service life:

Min. 100 million switching cycles

Switching logic:

NO/NC programmable

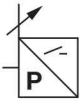
Operating mode:

Hysteresis and window mode separately selectable for each output

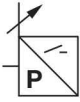
Electromagnetic compatibility:

EN 61000-6-2; EN 61000-6-3

Technical data - Output Signal 2 x PNP (1 x IO-Link, configurable)

Symbol	Port size	Pressure range (bar)	(psi)	Over pressure*1 (bar)	(psi)	Output Signal	Model
	G1/4	-1 ... 1	-14.5 ... 14.5	10	145	2 x PNP	34D-V101G-DD1-AA
	G1/4	-1 ... 10	-14.5 ... 145	75	1090	2 x PNP	34D-V110G-DD1-AA
	G1/4	0 ... 16	0 ... 232	85	1225	2 x PNP	34D-P016G-DD1-AA
	G1/4	0 ... 40	0 ... 580	200	2900	2 x PNP	34D-P040G-DD1-AA
	G1/4	0 ... 100	0 ... 1450	300	4350	2 x PNP	34D-P100G-DD1-AA
	G1/4	0 ... 160	0 ... 2320	350	5075	2 x PNP	34D-P160G-DD1-AA
	G1/4	0 ... 250	0 ... 3625	500	7250	2 x PNP	34D-P250G-DD1-AA
	G1/4	0 ... 400	0 ... 5800	800	11580	2 x PNP	34D-P400G-DD1-AA
	G1/4	0 ... 600	0 ... 8700	800	11580	2 x PNP	34D-P600G-DD1-AA

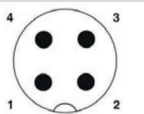
Technical data - Output Signal 1 x PNP (1 x IO-Link, configurable), 1 x Analogue

Symbol	Port size	Pressure range (bar)	(psi)	Over pressure*1 (bar)	(psi)	Output Signal	Model
	G1/4	-1 ... 1	-14.5 ... 14.5	10	145	1 x PNP / 1 x analogue	34D-V101G-DA1-AA
	G1/4	-1 ... 10	-14.5 ... 145	75	1090	1 x PNP / 1 x analogue	34D-V110G-DA1-AA
	G1/4	0 ... 16	0 ... 232	85	1225	1 x PNP / 1 x analogue	34D-P016G-DA1-AA
	G1/4	0 ... 40	0 ... 580	200	2900	1 x PNP / 1 x analogue	34D-P040G-DA1-AA
	G1/4	0 ... 100	0 ... 1450	300	4350	1 x PNP / 1 x analogue	34D-P100G-DA1-AA
	G1/4	0 ... 160	0 ... 2320	350	5075	1 x PNP / 1 x analogue	34D-P160G-DA1-AA
	G1/4	0 ... 250	0 ... 3625	500	7250	1 x PNP / 1 x analogue	34D-P250G-DA1-AA
	G1/4	0 ... 400	0 ... 5800	800	11580	1 x PNP / 1 x analogue	34D-P400G-DA1-AA
	G1/4	0 ... 600	0 ... 8700	800	11580	1 x PNP / 1 x analogue	34D-P600G-DA1-AA

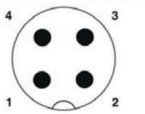
*1) Short-term pressure peaks are not allowed to exceed this limit value during operation.

Operative utilization of the over pressure is not permitted. The over pressure corresponds to the maximum testing pressure

Electrical connection M12 x 1 (2 x PNP)

	PIN-No.	Signal	Cable
	1	+ UB	brown
	2	Out 2 (PNP)	white
	3	0 Volt	blue
	4	Out 1 (PNP)/ IO-Link	black

Electrical connection M12 x 1 (1 x PNP, 1 x analogue)

	PIN-No.	Signal	Cable
	1	+ UB	brown
	2	Analogue 4 ... 20 mA / 0...10V	white
	3	0 Volt	blue
	4	Out 1 (PNP)/ IO-Link	black

Option selector

Pressure range (bar)	Substitute
-1 ... 1	V101G
-1 ... 10	V110G
0 ... 16	P016G
0 ... 40	P040G
0 ... 100	P100G
0 ... 160	P160G
0 ... 250	P250G
0 ... 400	P400G
0 ... 600	P600G

34D-*****-1-AA

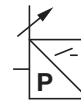
Analogue-Type	Substitute
IO-Link, configurable	1
Output Signal	Substitute
2 x PNP	DD
1 x PNP / 1 x Analogue	DA

Mounting accessories

Flange adapter	Wall mounting kit	Mounting clamp	Label Tag Holder	Cover protection	Throttle screw	Adapter G1/4 - G1/4	Adapter G1/4 - 1/4 NPT
							
34D-FLANGE-ADPT	34D-BRKT-ANGLED	34D-BRKT-BODY	34D-LABEL-TAG	34D-COVER-PROTEC	34D-DAMPING-SCRW	34D-14G-G-ADPT	34D-14G-NPT-ADPT

54D Pneumatic – electronic pressure sensor

- -1 ... 16 bar, with three pressures ranges
- Compact, robust and light weight with G1/8 port
- 2 switching outputs or 1 switching output (IO-Link configurable), 1 analogue (4 ... 20mA)
- Pressure display colour change configurable at switching point (red/green)
- High overpressure and vacuum resistance
- Option for set up as a differential pressure sensor
- UL-listed



Technical features

Medium:

Compressed air (filtered/lubricated/non-lubricated)

Pressure range:

-1 ... 1 bar (-14,5 ... 14,5 psi)
-1 ... 10 bar (-14,5 ... 145 psi)
0 ... 16 bar (0 ... 232 psi)

Pressure type:

Relative, and option for differential pressure

Switching pressure difference:

Programmable

Switching point:

Adjustable between
0 ... 100% of full scale (FS)

Reset point:

Adjustable between
0 ... 100% of full scale (FS)
(smallest adjustable pressure switching difference between switching point and reset point $\geq$ 0,5% of full scale (FS))

Display:

Alphanumeric display, 4-digit (red/green), programmable pressure units: bar, kPa, psi, inHg

Mounting position:

Optional

Total accuracy:

$\pm 0,5\%$ of full scale (FS) - without temperature sensitivity

Linearity:

$\pm 0,25\% + 1$ display step size

Shock proof:

50 g, (11ms), DIN EN 60068-2-27

Vibration proof:

20 g, 10 ... 2000 Hz,
DIN EN 60068-2-6

Degree of protection acc.

DIN EN 60529:
IP65

Weight:

0,087 kg (0.19 lbs)

Temperature sensitivity:

Zero-point: $\pm 0,2\%$ of maximum operating pressure range (FS) per 10 Kelvin
Pressure range: $\pm 0,2\%$ of maximum operating pressure range (FS) per 10 Kelvin (at 0 ... 60°C)

Ambient/Media temperature:

Ambient:
0 ... +70°C (+32 ... +158°F)

Media:
0 ... +70°C (+32 ... +158°F)

Air supply must be dry enough to avoid ice formation at temperature below +2°C (+35°F)

Materials:

Housing:
PBT, FKM, Polyester
Wetted parts: Brass, FKM, Silicon (coated), PBT

Electronic features

Electrical connection:

M8

Power supply:

UB = 18 ... 32 VDC
reverse-polarity protected
(according to EN 50178 SELV/PELV)

Permissible residual ripple:

10% (within UB)

Current consumption:

< 50 mA

Switching mode:

PNP

Output signal:

Switching signal; IO-Link (configurable)

Contact rating:

I_{max} VDC = 100 mA

Switching time:

< 6 ms

Adjustable signal delay dS, dr[s]:

0; 0,002 ... 5

Service life:

Min. 50 million switching cycles

Switching logic:

NO/NC programmable

Operating mode:

Hysteresis and window mode separately selectable for each output

Electromagnetic compatibility:

EN 61000-6-2; EN 61000-6-3

Technical data - Output Signal 2 x PNP (1 x Diagnostic signal configurable)

Symbol	Port size	Pressure range (bar)	(psi)	Over pressure*1 (bar)	(psi)	Type of Pressure	Output Signal	Model
	G1/8	-1 ... 1	-14.5 ... 14.5	20	290	Relative	2 x PNP	54D-V101G-DD0-AA
	G1/8	-1 ... 10	-14.5 ... 14.5	20	290	Relative	2 x PNP	54D-V110G-DD0-AA
	G1/8	0 ... 16	0 ... 232	20	290	Relative	2 x PNP	54D-P016G-DD0-AA

Technical data - Output Signal 1 x PNP (optional to be IO-Link configurable)/ 1 x analogue

Symbol	Port size	Pressure range (bar)	(psi)	Over pressure*1 (bar)	(psi)	Type of Pressure	Output Signal	Model
	G1/8	-1 ... 1	-14.5 ... 14.5	20	290	Relative & differential	1 x PNP / 1 x analogue	54D-V101G-DA1-AA
	G1/8	-1 ... 10	-14.5 ... 14.5	20	290	Relative & differential	1 x PNP / 1 x analogue	54D-V110G-DA1-AA
	G1/8	0 ... 16	0 ... 232	20	290	Relative & differential	1 x PNP / 1 x analogue	54D-P016G-DA1-AA

*1) Short-term pressure peaks are not allowed to exceed this limit value during operation.

Operative utilization of the over pressure is not permitted. The over pressure corresponds to the maximum testing pressure

Electrical connection M8 x 1 (2 x PNP) (1 x Diagnostic signal configurable)

	PIN-No.	Signal	Cable
	1	+ UB	brown
	2	Out 2 (PNP)	white
	3	0 Volt	blue
	4	Out 1 (PNP)	black

Electrical connection M8 x 1 (1 x PNP, 1 x analogue)

	PIN-No.	Signal	Cable
	1	+ UB	brown
	2	analogue (4...20 mA)	white
	3	0 Volt	blue
	4	Out 1 (PNP)/IO-Link	black

Option selector

Pressure range (bar)	Substitute	54D-★★★★-★★★-AA	Analogue-Type	Substitute
-1 ... 1	V101G		Without IO-Link	0
-1 ... 10	V110G		IO-Link configurable	1
0 ... 16	P016G		Output Signal	Substitute
			2 x PNP	DD
			1 x PNP / 1 x Analogue	DA

Accessories

Connector M8 x 1	DIN-Railclip
	
0523449000000000 (1,5 m Cable,4-pin)	0523446000000000 (1,5 m Cable,4-pin, 90° angled)
0523447000000000 (5 m Cable,4-pin)	0523448000000000 (5 m Cable,4-pin, 90° angled)
	54D-DINRAIL-CLIP

Serie M/80

Sensor de caudal en línea

- Medición de caudal, presión, temperatura y consumo total para el uso eficiente de aire comprimido y nitrógeno
- Transmisión digital de parámetros mediante IO-link
- Pantalla TFT integrada para facilitar la identificación
- Alta precisión, repetibilidad y dinámica de medición
- Clase de protección III IP65, IP67



Características técnicas

Fluido:
Aire comprimido y nitrógeno

Gama de presión:
-1 ... 16 bar (-14 ... 232 psi)

Tipo de Presión:
Presión relativa

Coefficiente de temperatura [1/K]:
±0,07 % MW

Precisión (en el rango de medición)*:
clase 141: ± (2 % MW + 0,5 % MEW); clase 344: ± (6 % MW + 0,6 % MEW); calidad del aire según ISO 8573-1:2010; a temperatura media 23 °C
*MW = valor medido;
MEW = Valor final del campo de medida

Repetibilidad:
± (0,4 % MW + 0,1 % MEW)

Tiempo de respuesta:
0.1 s; (dAP = 0)

Valor del proceso de amortiguación dAP:
0 ... 5 s

Monitoreo de la presión
Tiempo de respuesta:
0.05 s

Monitoreo de la temperatura
Respuesta dinámica T05 / T09:
T09 = 0,5 s

Visualización:
Pantalla a color 1,44", 128 x 128 píxeles 2 x LED, amarillo

Posición de montaje:
Consulte la sección de Posición de Instalación del Manual de Funcionamiento.

A prueba de vibraciones:
5 g (10 ... 2000 Hz)
DIN EN 68000-2-6

Temperatura ambiente/fluido:
Fluido: -10 ... +60°C (14 ... 140°F)
*El aire de suministro debe ser lo suficientemente seco para evitar la formación de hielo a temperaturas inferiores a 2°F (+35°C).

Temperatura de almacenamiento:
-20 ... +85°C (-4 ... 185°F)

Máxima humedad relativa del aire:
90%

Materiales:
Carcasa: PBT+PC-GF30; PPS GF40; acero inoxidable (304/1.4301); acero inoxidable (303/1.4305); acero (1.5523) galvanizado; 2.0401 (latón / CW614N); FKM
Partes mojadas: Acero inoxidable (304/1.4301); acero inoxidable (303/1.4305); FKM; cerámica de vidrio pasivado; PPS GF40; Al₂O₃ (cerámica); acrilato

Parámetros eléctricos

Conexión eléctrica:
M12 x 1
(contactos chapados en oro)

Fuente de alimentación:
UB = 18 ... 30 VDC Protección contra polaridad inversa (según EN 50178 SELV/ PELV)

Consumo de corriente:
< 80 mA

Modo de conmutación:
PNP/NPN

Señal de salida:
Señal de conmutación; señal analógica; señal de impulsos; IO-Link; (configurable)

Clasificación de los contactos:
4 ... 20 mA; (escalable)

MTTF:
183 años

Lógica de conmutación:
NO/NC programable

Modo de funcionamiento:
Histéresis / ventana; NO / NC; salida de corriente/pulso; pantalla giratoria y desconectable; Unidad de visualización; totalizador

Compatibilidad electromagnética:
DIN EN 60947-5-9