

PRESSURE SWITCHES



Pressure sensor technology is critical when pressure monitoring for high security plants or pressure control for a higher functionality are needed. Norgren offers more than 50 years of knowledge and expertise in pressure sensor technology to find the appropriate solution for each customer. Choose from our extensive range including switches and sensors, electro-mechanical and electronic, pneumatic, vacuum, hydraulic and all fluid, analogue and digital/binary options.



Norgren pressure switches

Electro-mechanical pressure switches

18D Pneumatic
-1 ... 30 bar



Page 5-004

18D ATEX Pneumatic
-1 ... 30 bar



Page 5-008

18D Hydraulic
5 ... 420 bar



Page 5-010

18D ATEX Hydraulic
5 ... 420 bar



Page 5-012

20D Pneumatic
20D-LT Low pressure
20DD Differential Pneumatic
-0,025 ... 25 bar



Page 5-014

20D ATEX Low pressure
0 ... 0,6 bar



Page 5-020

20D & 20DD Allfluid
-1 ... 100 bar



Page 5-022

20D ATEX Allfluid
-1 ... 63 bar



Page 5-026

20D Allfluid power plant
-1 ... 100 bar



Page 5-030

20D Hydraulic
3 ... 420 bar



Page 5-032

20D ATEX Hydraulic
5 ... 400 bar



Page 5-034

Mini Pneumatic
2 ... 6,2 bar



Page 5-036

P R E S S U R E S W I T C H E S

Electronic pressure switches

50D Pneumatic (optional sensor output)
0 ... 10 bar, 0 ... 6 bar, -1 ... 0 bar and -1 ... 1 bar



Page 5-038

33D Pneumatic, Hydraulic/Allfluid (optional sensor output)
-1 ... 16 bar (pneumatic)
0 ... 630 bar (hydraulic/allfluid)



Page 5-040

33E Pneumatic, Hydraulic/Allfluid
0 ... 16 bar (pneumatic)
0 ... 400 bar (hydraulic/allfluid)



Page 5-044

33L , Hydraulic/Allfluid
-1 ... 16 bar (pneumatic)
0 ... 600 bar (hydraulic/allfluid)



Page 5-047

40D Pneumatic (optional sensor output)
Vacuum to 10 bar



Page 5-050

Norgren pressure switches

**Electronic
pressure sensors****18S Pneumatic**
-1 ... 25 bar

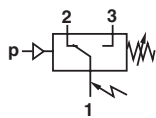
Page 5-052

18S Allfluid
0 ... 800 bar

Page 5-054

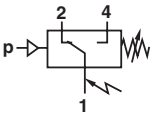
Electro-mechanical pneumatic pressure switches

18D Standard temperature -1 ... 30 bar
G1/4, 1/4 NPT & Flange



Switching function conforming to
DIN EN 175301-803, form A:
Microswitch SPDT (Commutator)

Terminals 1 - 3:
Contacts close on rising pressure
Terminals 1 - 2:
Contacts open on rising pressure



Switching function conforming to
IEC 947-5-2, M12 x 1:
Microswitch SPDT (Commutator)

Terminals 1 - 4:
Contacts close on rising pressure
Terminals 1 - 2:
Contacts open on rising pressure

Microswitch with gold plated contacts
High number of switching cycles
Vibration resistant to 15 g
Microswitch approved by UL and CSA
Intrinsically safe operation

TECHNICAL DATA

Medium:

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

Operation:

Diaphragm

Operating temperature range:

18D Standard temperature

Fluid	Ambient
-10* ... +80°C (NBR)	-10* ... +80°C (NBR)
0* ... +80°C (FKM)	0* ... +80°C (FKM)

Temperature at switching element:

18D +80°C

*Please contact our technical service for use below +2°C

Media viscosity:

Up to 1000 mm²/s

Switching pressure difference/hysteresis:

Fixed

Repeatability:

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

Switching element:

Microswitch with gold plated
contacts

Degree of protection:

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

Mounting position:

Optional

Electrical connection:

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

MATERIALS

Housing: Aluminium (brass)

Seals: 18D NBR/FKM

18D Standard temperature

DIN plug connection - plug included in scope of supply

Pressure range ^{*1)} (bar)	Switching pressure difference		Max. over pressure ^{*2)} (bar)	Switching cycles (1/min)	Materials pressure sensor		Port size	Weight (kg)	Dimension no.	MODELS
	Lower range (bar)	Upper range (bar)			Body	Seals				
-1 ... 0	0,15	0,18	80	100	AL	FKM ^{*3)}	G1/4	0,2	1	0880100
-1 ... 1	0,25	0,35	80	100	AL	FKM ^{*3)}	G1/4	0,2	1	0880110
-1 ... 0	0,15	0,18	80	100	AL	FKM ^{*3)}	1/4 NPT	0,2	1	0880120
-1 ... 0	0,15	0,18	80	100	AL	FKM ^{*3)}	G1/4	0,2	1	0880126 ^{*4) *5)}
-1 ... 0	0,15	0,18	80	100	AL	FKM ^{*3)}	Flange	0,2	3	0881100
0,2 ... 2	0,20	0,35	80	100	AL	FKM ^{*3)}	G1/4	0,2	1	0880200
0,2 ... 2	0,20	0,35	80	100	AL	FKM	1/4 NPT	0,2	1	0880220
0,2 ... 4	0,20	0,35	80	100	AL	FKM	G1/4	0,2	1	0880226 ^{*4) *5)}
0,2 ... 2	0,20	0,35	80	100	AL	NBR	Flange	0,2	3	0881200
0,5 ... 8	0,35	0,85	80	100	AL	NBR	G1/4	0,2	2	0880300
0,5 ... 8	0,35	0,85	80	100	AL	NBR	1/4 NPT	0,2	2	0880320
0,5 ... 8	0,35	0,85	80	100	AL	FKM	G1/4	0,2	2	0880326 ^{*4) *5)}
0,5 ... 8	0,35	0,85	80	100	AL	NBR	Flange	0,2	3	0881300
1 ... 16	0,40	1,20	80	100	AL	NBR	G1/4	0,2	2	0880400
1 ... 16	0,40	1,20	80	100	AL	NBR	1/4 NPT	0,2	2	0880420
1 ... 16	0,40	1,20	80	100	AL	FKM	G1/4	0,2	2	0880426 ^{*4) *5)}
1 ... 16	0,40	1,20	80	100	AL	NBR	Flange	0,2	3	0881400
1 ... 30	1,0	5,00	80	100	AL	NBR	G1/4	0,2	2	0880600
1 ... 30	1,0	5,00	80	100	AL	NBR	1/4 NPT	0,2	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)} Max. values. ^{*3)} Static seal: O-ring (NBR). ^{*4)} LABS free. ^{*5)} Plug 0570110 not included, please order separately.

For further information



www.norgren.com/info/en5-002

18D Standard temperature

M12 x 1 Connection - plug not included

Max. allowable voltage 30 V

Pressure range ^{*1)} (bar)	Switching pressure difference		Max. over pressure ^{*2)} (bar)	Switching cycles (1/min)	Materials pressure sensor		Port size	Weight (kg)	Dimension no.	MODELS
	Lower range (bar)	Upper range (bar)			Body	Seals				
-1 ... 0	0,15	0,18	80	100	AL	FKM	G1/4	0,2	1	0880149 ^{*4)} ^{*5)}
-1 ... 0	0,15	0,18	80	100	AL	FKM	G1/4	0,2	1	0880160 ^{*4)}
0,2 ... 2	0,20	0,35	80	100	AL	FKM	G1/4	0,2	1	0880260 ^{*4)}
0,5 ... 8	0,35	0,85	80	100	AL	FKM	G1/4	0,2	2	0880360 ^{*4)}
1 ... 16	0,40	1,20	80	100	AL	FKM	G1/4	0,2	2	0880460 ^{*4)}
1 ... 30	1,00	5,00	80	100	AL	FKM	G1/4	0,3	2	0880660 ^{*4)}
-1 ... 0	0,15	0,18	80	100	AL	FKM	Flange	0,2	3	0881160 ^{*4)}
0,2 ... 2	0,20	0,35	80	100	AL	FKM	Flange	0,2	3	0881260 ^{*4)}
0,5 ... 8	0,35	0,85	80	100	AL	FKM	Flange	0,2	3	0881360 ^{*4)}
1 ... 16	0,40	1,20	80	100	AL	FKM	Flange	0,2	3	0881460 ^{*4)}

^{*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)} Max. values

^{*4)} LABS free

^{*5)} Switching function reversed

18D Standard temperature - water applications

DIN Plug Connection - plug included in scope of supply

Pressure range ^{*1)} (bar)	Switching pressure difference		Max. over pressure ^{*2)} (bar)	Switching cycles (1/min)	Materials pressure sensor		Port size	Weight (kg)	Dimension no.	MODELS
	Lower range (bar)	Upper range (bar)			Body	Seals				
0,2 ... 2	0,20	0,35	80	100	brass	FKM	G1/4	0,2	1	0880219
0,2 ... 2	0,20	0,35	80	100	brass	FKM	1/4 NPT	0,2	1	0880240
0,5 ... 8	0,35	0,85	80	100	brass	FKM	G1/4	0,2	2	0880323
0,5 ... 8	0,35	0,85	80	100	brass	FKM	1/4 NPT	0,2	2	0880340

^{*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)} Max. values

Electro-mechanical pneumatic pressure switches

18D Standard temperature -1 ... 30 bar

G1/4, 1/4 NPT & Flange

ACCESSORIES

Pressure port reducing nipple	Surge damper	Cover (via adjustment screw)	Connector	Connector M 12 x 1 90°	Connector M 12 x 1 90°	Connector M 12 x 1 straight	Connector M 12 x 1 straight
							
0574767 (brass) 0550083 (stainless steel)	0574773 (brass) 0553258 (stainless steel)	0554737	0570110	0523058 (2 m cable, 4-pin) 0523053 (5 m cable, 4-pin)	0523056 (90° without cable)	0523057 (2 m cable, 4-pin) 0523052 (5 m cable, 4-pin)	0523055 (without cable)

Switching capacity

Micro-switch with gold plated contacts

Load level	Current type	Load type	U min [V]	Max. permanent current I _{max} [A] at U [V]	30	48	60	125	250	Contact life
Standard ^{*3)} (e.g. contractors, solenoids)	a.c.	ohmic	12	5	5	5	5	5	5	≥ 10 ⁷ switching cycles
	a.c.	inductive, cos φ ≈ 0,7	12	3	3	3	3	3	3	
	d.c.	ohmic	12	5	1,2	0,8	0,4	–	–	
	d.c.	inductive, L/R ≈ 10 ms	12	3	0,5	0,35	0,05	–	–	
Minor ^{*4)} (e.g. electronic circuits)	a.c.	ohmic	5 ^{*6)}	0,34	0,2	0,17	0,08	0,04	0,04	≥ 10 ⁷ switching cycles
	d.c.	inductive, L/R ≈ 10 ms	5 ^{*6)}	0,1	0,01	–	–	–	–	

Reference number: 30/min, Reference temperature: +30°C

Spark quenching with diode with d.c. and inductive load:

I_{max} = 1,5 x I_{max} of table

I_{min} = 1 (mA)

Creepage and air paths correspond to insulation group B according to VDE Reg. 0110 [except contact clearance of microswitch].

^{*3)} Gold-plating not required as it would decay.
Max. perm. in-rush current (appr. 30 ms) I_{a.c.} = max. 15 A

^{*4)} Gold-plating required (will not decay).

^{*6)} Lower value of critical voltage guarantees sufficient contact safety.
Lower voltages permissible under favourable conditions.

Recommended circuit - spark quenching / intrinsically safe with d.c. voltage

1. Diode D in parallel to inductive load.
Observance of correct polarity (positive pole to cathode).

Dimensioning specifications for quenching diode:
Rated voltage at diode: $U_D \geq 1,4 \times U_s$

Rated current at diode: $I_N \geq I_{Load}$

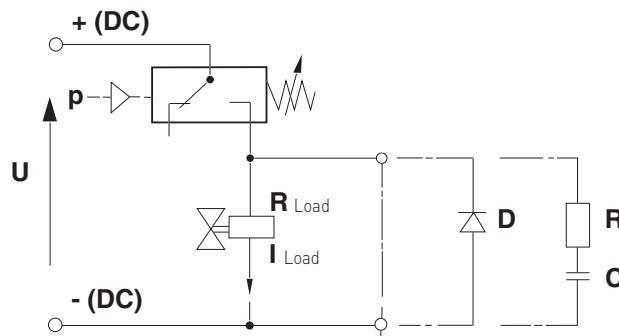
Selection of a quick switching diode (recovery time $t_{rr} \leq 200$ [ms]).

2. RC link in parallel to load in parallel to switching contact.
Suited for d.c. and a.c. voltage.

Dimensioning principles:

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

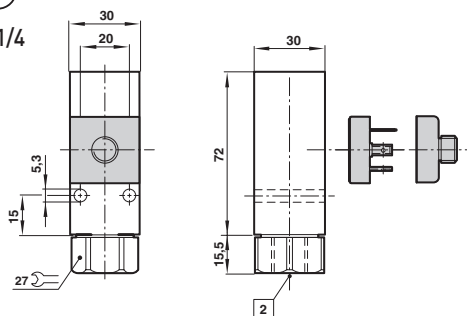
C in $[\mu F] \approx I_{Load}$ in [A]



DIMENSIONS

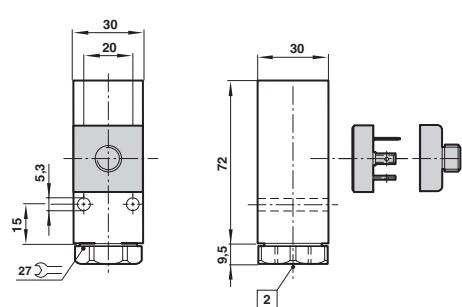
①

G 1/4



②

G 1/4

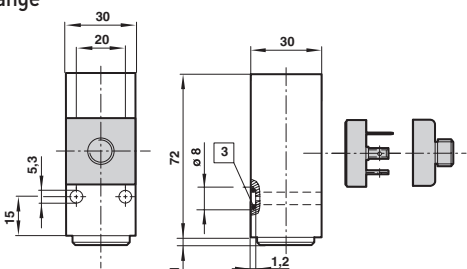


2

1/4 NPT on request

③

Flange



3

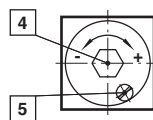
O-ring 5 x 1,5

Adjustable switch point

After releasing the locking screw

Clockwise rotation = increasing switch point

Anti-clockwise rotation = decreasing the switch point



4

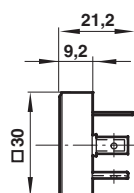
Switch point screw

5

Locking screw

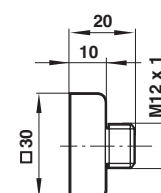
Electrical connection

for plug conforming to
DIN EN 175301-803, form A



Electrical connection

M12 x 1



Electro-mechanical hydraulic pressure switches

18D 5 ... 420 bar

G1/4, 7/16-20 UNF, 1/4 NPT & Flange (CETOP)



Microswitch with gold plated contacts
High number of switching cycles
Vibration resistant to 15 g
Microswitch approved by UL and CSA
Intrinsically safe operation

TECHNICAL DATA

Medium:

For neutral, self lubricating fluids, hydraulic oil, lube oil, light fuel oil

Operation:

Piston type sensor system

Temperature:

Fluid/Ambient:
-10 ... +80°C

*Please contact our technical service for use below +2°C

Temperature at switching element:
+80°C

Media viscosity:

Up to 1000 mm²/s

Switching pressure difference/hysteresis:

Fixed

Repeatability:

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

Switching element:

Microswitch with gold plated contacts

Degree of protection:

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

Mounting position:

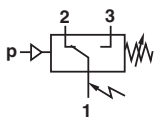
Optional, preferably with pressure connection underneath

Electrical connection:

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

MATERIALS

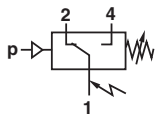
Housing: aluminium/steel, zinc diecast/brass
Sealing: teflon, perbunan, delrin



Switching function conforming to
DIN EN 175301-803, form A:
Microswitch SPDT (commutator)

Terminals 1 - 3:
Contacts close on rising pressure

Terminals 1 - 2:
Contacts open on rising pressure



Switching function conforming to
IEC 947-5-2, M12 x 1:
Microswitch SPDT (commutator)

Terminals 1 - 4:
Contacts close on rising pressure

Terminals 1 - 2:
Contacts open on rising pressure

18D Hydraulic pressure switch

DIN Plug Connection - plug included

Pressure range *1) (bar)	Switching pressure difference		Max. over pressure *2) (bar)	Switching cycles (1/min)	Materials pressure sensor		Port size	Weight (kg)	Dimension no.	MODELS
	Lower range (bar)	Upper range (bar)			Body	Seals				
5 ... 70	10,5	15	400	100	AL/Steel	PTFE/NBR	G1/4	0,2	1	0882100
5 ... 70	10,5	15	400	100	AL/Steel	PTFE/NBR	Flange	0,2	2	0883100
5 ... 70	10,5	15	400	100	AL/Steel	PTFE/NBR	7/16-20 UNF	0,2	1	0882119
5 ... 70	10,5	15	400	100	AL/Steel	PTFE/NBR	1/4 NPT	0,2	1	0882120
10 ... 160	11	17	400	100	AL/Steel	PTFE/NBR	Flange	0,3	3	0870507
10 ... 160	11	17	400	100	AL/Steel	PTFE/NBR	G1/4	0,2	1	0882200
10 ... 160	11	17	400	100	AL/Steel	PTFE/NBR	Flange	0,2	2	0883200
10 ... 160	11	17	400	100	AL/Steel	PTFE/NBR	7/16-20 UNF	0,2	1	0882219
10 ... 160	11	17	400	100	AL/Steel	PTFE/NBR	1/4 NPT	0,2	1	0882220
25 ... 250	11	17	400	100	AL/Steel	PTFE/NBR	G1/4	0,2	1	0882300
25 ... 250	11	17	400	100	AL/Steel	PTFE/NBR	Flange	0,2	2	0883300
25 ... 250	11	17	400	100	AL/Steel	PTFE/NBR	7/16-20 UNF	0,2	1	0882319
25 ... 250	11	17	400	100	AL/Steel	PTFE/NBR	1/4 NPT	0,2	1	0882320
40 ... 420	17	35	600	100	AL/Steel	PTFE/NBR	Flange	0,3	3	0870502
40 ... 420	17	38	600	100	AL/Steel	PTFE/NBR	G1/4	0,2	1	0882400
40 ... 420	17	38	600	100	AL/Steel	PTFE/NBR	Flange	0,2	2	0883400
40 ... 420	17	38	600	100	AL/Steel	PTFE/NBR	7/16-20 UNF	0,2	1	0882419
40 ... 420	17	38	600	100	CN/Brass	PTFE/NBR	1/4 NPT	0,2	1	0882420

Connector included in delivery

*1) Setpoints should be ideally in the middle of the switching pressure range. Reference pressure = atmospheric pressure.

The switching pressure must not exceed the listed values

*2) Max. values

For further information



www.norgren.com/info/en5-010

18D Hydraulic pressure switch

M12 x 1 Connection - plug not included

Max. allowable voltage 30 V

Pressure range *1) (bar)	Switching pressure difference		Max. over pressure *2) (bar)	Switching cycles (1/min)	Materials pressure sensor		Port size	Weight (kg)	Dimension no.	MODELS
	Lower range (bar)	Upper range (bar)			Body	Seals				
5 ... 70	10,5	15	400	100	AL/steel	PTFE/NBR	G1/4	0,2	4	0882160
10 ... 160	11	17	400	100	AL/steel	PTFE/NBR	G1/4	0,2	4	0882260
25 ... 250	11	17	400	100	AL/steel	PTFE/NBR	G1/4	0,2	1	0882360
40 ... 420	17	35	600	100	AL/steel	PTFE/NBR	G1/4	0,2	1	0882460
5 ... 70	10,5	15	400	100	CN/steel	PTFE/NBR	Flange	0,3	2	0883160
10 ... 160	11	17	400	100	AL/steel	PTFE/NBR	Flange	0,2	2	0883260
25 ... 250	11	17	400	100	AL/steel	PTFE/NBR	Flange	0,2	2	0883360
40 ... 420	17	35	600	100	AL/steel	PTFE/NBR	Flange	0,2	2	0883460

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

*2) Max. values

ACCESSORIES

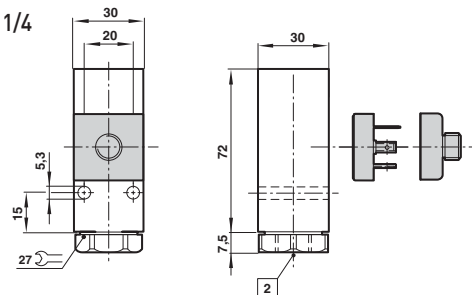
Pressure port reducing nipple	Surge damper	Cover (via adjustment screw)	Connector	Connector M12x1 90°	Connector M12x1 straight	Connector M12x1 straight	Connector M12x1 straight
							
0574767 (brass) 0550083 (stainless steel)	0574773 (brass) 0553258 (stainless steel)	0554737	0570110	0523058 (2 m cable, 4-pin) 0523053 (5 m cable, 4-pin)	0523056 (90° without cable)	0523057 (2 m cable, 4-pin) 0523052 (5 m cable, 4-pin)	0523055 (without cable)

Switching capacity, spark quenching / intrinsically safe with d.c. voltage see page 5-007

DIMENSIONS

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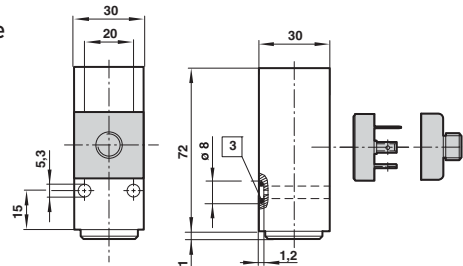
G 1/4



② 1/4 NPT on request

②

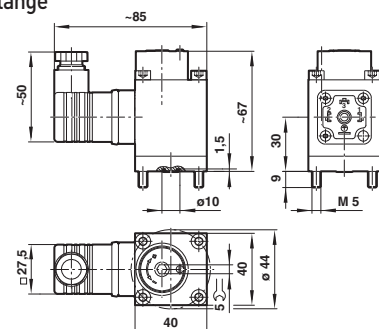
Flange



③ O-ring 5 x 1,5

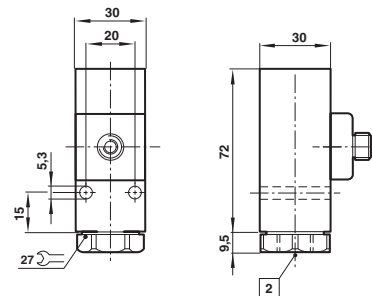
③

Flange



④

G 1/4

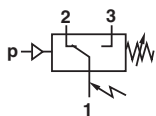


② G 1/4

Electro-mechanical hydraulic pressure switches

ATEX certified

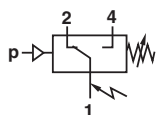
18D 5 ... 420 bar
G 1/4 & Flange



Switching function conforming to
DIN EN 175301-803, form A:
Microswitch SPDT
(commutator)

Terminals 1 - 3:
Contacts close on rising pressure

Terminals 1 - 2:
Contacts open on rising pressure



Switching function conforming to
IEC 947-5-2, M12 x 1:
Microswitch SPDT
(commutator)

Terminals 1 - 4:
Contacts close on rising pressure

Terminals 1 - 2:
Contacts open on rising pressure

For Ex applications conforming to ATEX 100a:

Zone 2 category ATEX 3G (gases)

Zone 22 category ATEX 3D (dusts)

TÜV approval: EX 8 03 01 11122 007

Microswitch with gold plated contacts

High number of switching cycles

Vibration resistant to 15 g

Microswitch approved by UL and CSA

Intrinsically safe operation

TECHNICAL DATA

Medium:

For neutral, self lubricating fluids,
hydraulic oil, lube oil, light fuel oil

Operation:

Softseal piston

Approvals:

TÜV (technical inspection agency): EX 8 03 01
11122 007

Zone 2 category: Ex II 3 G EEx NA / C IIC T6

Zone 22 category: EX II 3 D IP 65 T 80°C

Temperature:

Fluid/Ambient

-25* ... +80°C

*Please contact our technical service for use below +2°C

Media viscosity:

Up to 1000 mm²/s

Switching pressure difference/hysteresis:

Fixed

Repeatability:

±3%, for vacuum ±4% of final value

(depending on regulating pressure)

Switching element:

Microswitch with gold plated contacts

Degree of protection:

IP65 for DIN EN 175301-803

IP67 for M12 x 1 connection

Mounting position:

Optional

Electrical connection:

DIN EN 175301-803 (DIN 43650)

form A

M12 x 1 IEC 947-5-2

MATERIALS

Housing: aluminium/steel

Sealing: teflon/perbunan

18D Hydraulic ATEX

DIN plug connection - plug included in scope of supply

The Ex approval refers to the pressure switch in combination with the plug supplied

Pressure range *1)	Switching pressure difference		Max. over pressure *2)	Switching cycles	Materials pressure sensor		Port size	Weight	Dimension no.	MODELS
	Lower range	Upper range			Body	Seals				
(bar)	(bar)	(bar)	(bar)	(1/min)				(kg)		
5 ... 70	10,5	15	400	100	AL/Steel	PTFE/NBR	G1/4	0,2	2	0882180
10 ... 160	11	17	400	100	AL/Steel	PTFE/NBR	G1/4	0,2	2	0882280
25 ... 250	13	21	400	100	AL/Steel	PTFE/NBR	G1/4	0,2	2	0882380
40 ... 420	17	38	600	100	AL/Steel	PTFE/NBR	G1/4	0,2	2	0882480
5 ... 70	10,5	15	400	100	AL/Steel	PTFE/NBR	Flange	0,2	3	0883180
10 ... 160	11	17	400	100	AL/Steel	PTFE/NBR	Flange	0,2	3	0883280
25 ... 250	13	21	400	100	AL/Steel	PTFE/NBR	Flange	0,2	3	0883380
40 ... 420	17	38	600	100	AL/Steel	PTFE/NBR	Flange	0,2	3	0883480

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

*2) Max. values.

For further information



www.norgren.com/info/en5-012

18D Hydraulic ATEX

M12 x 1 Connection - plug not included

Max. allowable voltage 30 V

The pressure switch will loose its Ex approval if used with plugs and leads other than those listed below.

Pressure range *1) (bar)	Switching pressure difference		Max. over pressure *2) (bar)	Switching cycles (1/min)	Materials pressure sensor		Port size	Weight (kg)	Dimension no.	MODELS
	Lower range (bar)	Upper range (bar)			Housing	Seals				
5 ... 70	10,5	15	400	100	AL/Steel	PTFE/NBR	G1/4	0,2	2	0882181
10 ... 160	11	17	400	100	AL/Steel	PTFE/NBR	G1/4	0,2	2	0882281
25 ... 250	13	21	400	100	AL/Steel	PTFE/NBR	G1/4	0,2	2	0882381
40 ... 420	17	38	600	100	AL/Steel	PTFE/NBR	G1/4	0,2	2	0882481
5 ... 70	10,5	15	400	100	AL/Steel	PTFE/NBR	Flange	0,2	3	0883181
10 ... 160	11	17	400	100	AL/Steel	PTFE/NBR	Flange	0,2	3	0883281
25 ... 250	13	21	400	100	AL/Steel	PTFE/NBR	Flange	0,2	3	0883381
40 ... 420	17	38	600	100	AL/Steel	PTFE/NBR	Flange	0,2	3	0883481

*1) Reference pressure is the atmospheric air pressure

*2) 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

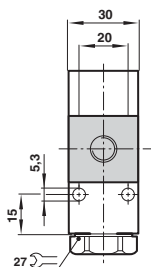
Pressure port reducing nipple	Surge damper	Cover (via adjustment screw)	Connector M12 x 1 90°	Connector M12 x 1 90°
				
0574767 (brass) 0550083 (stainless steel)	0574773 (brass) 0553258 (stainless steel)	0554737	0523058 (2 m cable, 4-pin) 0523053 (5 m cable, 4-pin)	0523056 (without cable)

Switching capacity, spark quenching / intrinsically safe with d.c. voltage see page 5-007

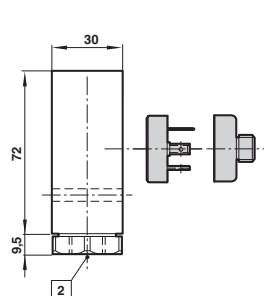
DIMENSIONS

②

G 1/4

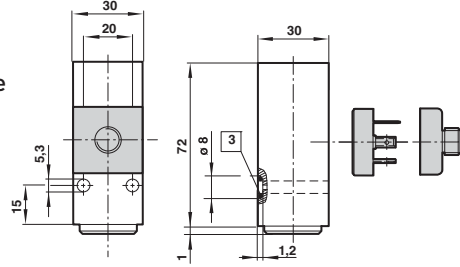


2 1/4 NPT on request



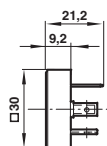
③

Flange

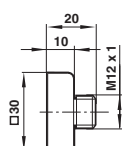


3 O-ring 5 x 1,5

Electrical connection
conforming to
DIN EN 175301-803, form A

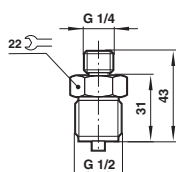


Electrical connection
M12 x 1

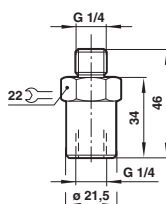


ACCESSORIES

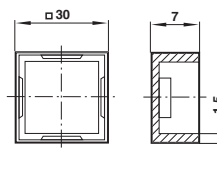
Pressure port/Reducing nipple
Material: brass
Model: 0574767



Surge damper
Material: brass
Model: 0574773



Cover
Model: 0554737



Electro-mechanical pneumatic pressure switches

20D Standard pressure -1 ... 25 bar / 20D Low pressure -0,025 ... 1,6 bar / 20DD Differential 0,02 ... 6 bar
G1/4



High accuracy
Microswitch with gold plated contacts
Suitable for intrinsically safe operation
Optional electrical connections
Optional fixed or adjustable switching pressure difference
Robust metal housing

TECHNICAL DATA

Medium:

For neutral, non-flammable gases

Temperature:

Fluid Ambient
-10 ... +100°C -25 ... +80°C

Please contact our technical service for use below +2°C

Media viscosity:

1000 mm²/s max.

Switching pressure difference/hysteresis:

Fixed - option
Adjustable - option

Repeatability:

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

Degree of protection (conforming to DIN 40050):

IP65

Mounting position:

Optional

Resistance to shock and vibration (avoid if possible):

4 g max. (sinusoidal) / 5 Hz max.

Sealing:

≤ 10⁻⁷ mbar · l · s⁻¹

Pulsations:

Not permitted

Switching cycles:

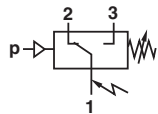
20/min. max. standard version
10/min. max. low pressure version

MATERIALS

Housing: aluminium diecast

Sensor: brass or stainless steel

Seals: stainless steel-bellows



Switching function:
Microswitch SPDT
(commutator)

Terminals 1 - 3:
Contacts close on
rising pressure

Terminals 1 - 2:
Contacts open on
rising pressure

20D Pneumatic - standard pressure - fixed switching pressure difference

Operating pressure range *1)	Over pressure *2)	Switching pressure difference for sensor codes 00 typical (bar)		Switching pressure difference for sensor codes 05 typical (bar)		MODELS
(bar)	(bar)	Lower range Min.	Upper range Max.	Lower range Min.	Upper range Max.	
-1 ... 0	10	0,06	0,07	0,06	0,07	181 01 00
-1 ... 1	10	0,06	0,08	0,08	0,09	181 02 00
-1 ... 1,6	10	0,08	0,09	0,08	0,09	181 03 00
-1 ... 2,5	10	0,08	0,12	0,09	0,12	181 04 00
0,05 ... 1	10	0,06	0,08	0,07	0,08	181 11 00
0,1 ... 2,5	10	0,07	0,09	0,11	0,15	181 13 00
0,5 ... 4	20	0,20	0,25	0,30	0,33	181 14 00
0,5 ... 6	20	0,20	0,30	0,30	0,35	181 15 00
0,5 ... 10	20	0,30	0,40	0,30	0,40	181 16 00
1 ... 16	50	0,60	0,80	0,70	0,80	181 17 00
1 ... 25	50	0,70	0,90	0,70	0,90	181 18 00

Connector is not included; special pressure ranges on request

*1) Atmospheric air pressure

*2) Short term pressure peaks should not exceed this value. Normal operation should be within switching pressure range.
Over pressure equals maximum test pressure.

For further information



www.norgren.com/info/en5-014

Electro-mechanical pneumatic pressure switches

20D Standard pressure -1 ... 25 bar / 20D Low pressure -0,025 ... 1,6 bar / 20DD Differential 0,02 ... 6 bar
G1/4

20DD Pneumatic differential pressure switch - fixed switching pressure difference One pressure sensor *1)

Differential pressure range *2)	Switching pressure difference		Operating pressure range *3)	Over pressure *4)	Switching cycles per minute (min ⁻¹)	Pressure sensor material			Weight (kg)	MODELS
	Lower range (bar)	Upper range (bar)				Housing	Bellows	Other materials		
0,2 ... 1,6	-1 ... 16	0,12	0,17	20	10	Brass	Stainless steel	Solder	1,20	1819205
0,3 ... 4	-1 ... 16	0,2	0,25	20	10	2.0401	1.4401		1,20	1819405
0,5 ... 6	-1 ... 25	0,6	0,7	30	10				1,20	1819505

*1) Tested in accordance with DIN 89011, 5.2., within the frequency range 25 ... 100 Hz; within the frequency range 2 ... 25 Hz tested with amplitude 1.6 mm.

*2) The differential pressure is the pressure difference between both pressure sensing elements under operating conditions.

*3) The working pressure range indicates the required minimum pressure as well as the load on the pressure sensor under operating conditions.

*4) Short term pressure peaks should not exceed this value. Normal operation should be within switching pressure range.
Over pressure equals maximum test pressure.

ACCESSORIES

Connector	Connector	Brackets	Surge damper	Pressure port – reducing nipple
				
0585418 (with LED)	0570110	0574772 (steel) 0553908 (stainless steel)	0553258 (stainless steel G1/4) 0574773 (brass/steel) G1/4) 0551894 (stainless steel G1/2 ... G1/2A)	0550083 (G1/4 – G1/2) 0574764 (G1/4 – G3/8) 0550083 (G1/4A ... G1/2A) 0574765 (G1/4 – 1/4 NPT)

Switching capacity for standard and low pressure switches with gold plated contacts

Load level	Current type	Load type	U min [V]	Max. permanent current I _{max} [A] at U [V]					Contact life
				30 M 12x1	48	60	125	250	
Standard *3) (e.g. contractors, solenoids)	a.c.	ohmic	12	5	5	5	5	5	≥ 10 ⁷ switching cycles
	a.c.	inductive, cos φ ≈ 0,7	12	3	3	3	3	3	
	d.c.	ohmic	12	5	1,2	0,8	0,4	–	
	d.c.	inductive, L/R ≈ 10 ms	12	3	0,5	0,35	0,05	–	
Minor *4) (e.g. electronic circuits)	a.c.	ohmic	5 *6)	0,34	0,2	0,17	0,08	0,04	≥ 10 ⁷ switching cycles
	d.c.	inductive, L/R ≈ 10 ms	5 *6)	0,1	0,01	–	–	–	

Reference number: 30/min, Reference temperature: +30°C

Spark quenching with diode with d.c. and inductive load:

I_{max} = 1,5 x I_{max} of table

I_{min} = 1 (mA)

Creepage and air paths correspond to insulation group B according to VDE Reg. 0110 (except contact clearance of microswitch).

*3) Gold-plating not required as it would decay.
Max. perm. in-rush current (appr. 30 ms) I_{a.c.} = max. 15 A

*4) Gold-plating required (will not decay).

*6) Lower value of critical voltage guarantees sufficient contact safety.
Lower voltages permissible under favourable conditions.

Recommended circuit - spark quenching / intrinsically safe with d.c. voltage

1. Diode D in parallel to inductive load.
Observance of correct polarity (positive pole to cathode).

Dimensioning specifications for quenching diode:
Rated voltage at diode: $U_D \geq 1,4 \times U_s$

Rated current at diode: $I_N \geq I_{Load}$

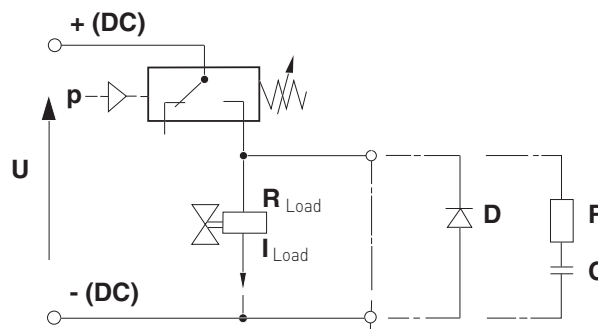
Selection of a quick switching diode (recovery time $t_{rr} \leq 200$ [ms]).

2. RC link in parallel to load in parallel to switching contact.
Suited for d.c. and a.c. voltage.

Dimensioning principles:

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

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



Switching capacity for differential pressure switch with gold plated contacts

Load level	Current type	Load type	Max. permitted constant current I [A] with U_s (V)			
			24	60	125	250
Normal (e.g. contactor, solenoids)	a.c.	ohmic	15	15	15	15
	a.c.	inductive, $\cos \varphi \approx 0,7$	4	2,5	1,5	0,9
Minor (e.g. electronic switching circuit)	a.c.	inductive spark quenching with RS contact	6	4	2,5	1,5
	d.c.	ohmic	2	0,9	0,45	0,2
	d.c.	inductive, $L/R = 10$ ms	1	0,3	0,09	0,02
	d.c.	inductive, spark quenching with diode	1,5	0,7	0,35	0,15

Reference number: 30/min

Reference temperature: +30°C

(with a reference temperature of + 70 °C, I_{max} corresponds to 50% of the tabulated values only)

$I_{max} = 1,5 \times I_{max}$ table

Contact-life appr. 1×10^6 switching cycles at max. current (at 50% of max. current, contact life is appr. 3 times as long)

Mechanical life appr. 5×10^6 switching cycles

For non-aggressive atmosphere, which in particular does not contain any sulphur, the following limits are valid:

Microswitch with silver contacts (standard):

U_{min} ca. 8 ... 12 V, I_{min} ca. 10 mA

Maximum values conforming to table above.

Microswitch with gold-plated contacts:

U_{min} and I_{min} : No lower limit Sensible upper limit:

U_{max} ca. 48 V, I_{max} ca. 20 mA; (for higher values silver spring contacts are completely sufficient).

Creepage and air paths correspond to insulation group B conforming to VDE Reg. 0110 (except contact clearance of microswitch).

Proposal for spark extinction with direct voltage

1. Diode D in parallel to inductive load.
Observance of correct polarity (positive pole to cathode).

Dimensioning specifications for erasing diode:

Nominal voltage of the diode $U_D \geq 1,4 \times U_s$

Nominal current of the diode $I_N \geq I_{Load}$

Select fast switching diodes

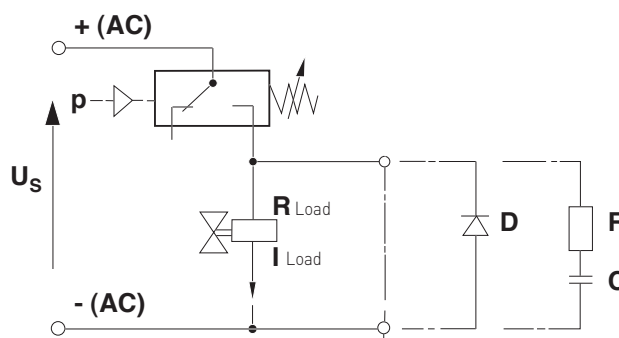
(blocking recovery time $t_{rr} \leq 200$ ms)

2. RC element parallel to the load (or parallel to the switching contact).
Suitable for direct voltage and alternating voltage.

Dimensioning principles:

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

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

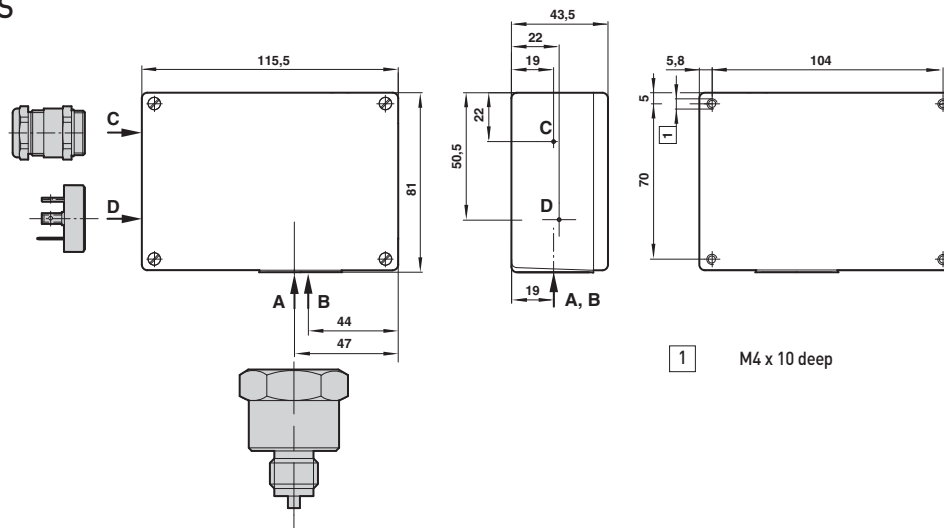


Electro-mechanical pneumatic pressure switches

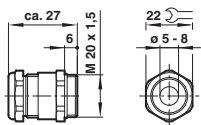
20D Standard pressure -1 ... 25 bar / 20D Low pressure -0,025 ... 1,6 bar / 20DD Differential 0,02 ... 6 bar
G1/4

20D Pneumatic - standard pressure switches

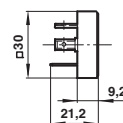
BASIC DIMENSIONS



Connector M20 x 1,5
conforming to DIN 46320



Connector conforming to
DIN EN 175301-803, form A

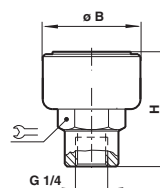


Sensor combinations

Operating pressure range Code	Sensor code 00	Sensor code 05	Sensor type
01	•	•	B
02	•	•	B
03	•	•	B
04	•	•	B
11	•	•	B
13	•	•	B
14	•	•	E
15	•	•	E
16	•	•	E
17	•	•	F
18	•	•	F

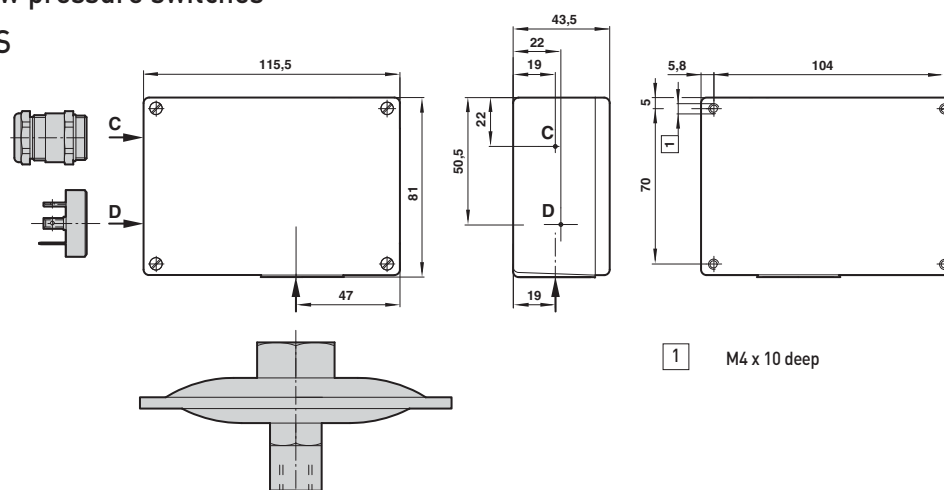
Sensor dimensions

Sensor type	H	B	5
B	42,5	51	30
E	47	40	24
F	43	47,5	41

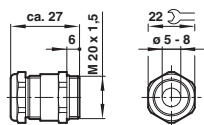


20D Pneumatic - low pressure switches

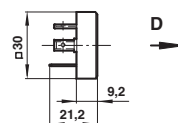
BASIC DIMENSIONS



Connector M20 x 1,5
conforming to DIN 46320



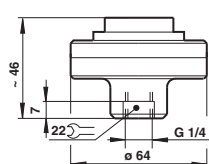
Connector conforming to DIN EN 175301-803, form A



Sensor

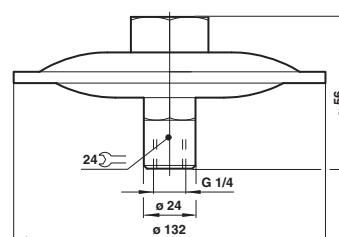
for pressure range substitutes 41 and 43

①



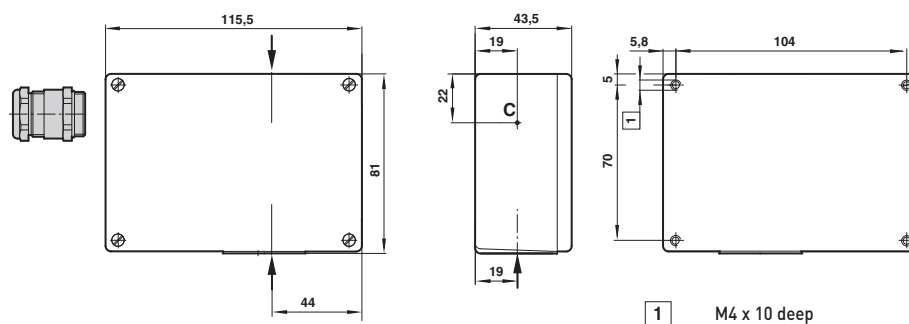
for pressure range substitutes 25, 26, 27 and 28

②

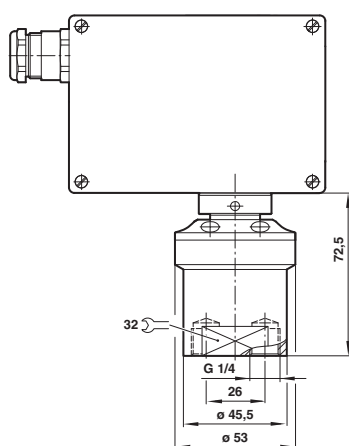


20DD Pneumatic differential pressure switches

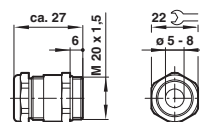
BASIC DIMENSIONS



①



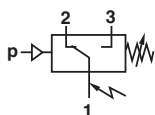
Electrical connector M20 x 1,5 conforming to DIN 46320



Electro-mechanical pneumatic pressure switches

ATEX certified

20D Low pressure 0 ... 0,6 bar
G 1/4



Switching function:
Microswitch SPDT
(commutator)

Terminals 1 - 3:
Contacts close on
rising pressure

Terminals 1 - 2:
Contacts open on
rising pressure

For Ex zones 1 and 2 (gases) as well as Ex zones 21 and 22 (dusts) category II2G, type of protection EEx de IIC T6

Microswitch with gold plated contacts

Electrical connection: connector
M20 x 1,5 (DIN 46320)

Robust metal housing - weather resistant

TECHNICAL DATA

Medium:

For neutral, gaseous fluids, non combustible

Temperature:

Fluid, ambient: -10* ... +75°C

*Please contact our technical service for use below +2°C.

Switching pressure difference/hysteresis:

Fixed

Repeatability:

±1% of final value

(depending on regulating pressure)

Switching pressure difference/hysteresis:

Fixed - option

Adjustable - option

Degree of protection:

IP65

Mounting:

Optional

Resistance to shocks and

vibrations (avoid if possible):

4 g max. (sinusoidal), max. 5 Hz

Sealing:

≤ 10⁻⁷ mbar • l • s⁻¹

Pulsations:

Not permitted

Switching cycles:

max. 20/min

MATERIALS

Body: aluminium diecast anodised

Sensor: stainless steel

Seals: NBR diaphragm

20D Pneumatic ATEX - low pressure - fixed switching pressure difference

Switching pressure range ^{*1)}	Max. over pressure ^{*2)}	Switching pressure difference		Fluid/fluid contact parts wetted parts	Sensor	Port size	MODELS
		typical value					
(bar)	(bar)	Lower range (bar)	Upper range (bar)				
0 ... 0,16	0,5	0,015	0,02	Pneumatic / 1.4305/1.4301	K	G 1/4	1842715
0 ... 0,6	15	0,06	0,16	Pneumatic / 1.4305/1.4301	L	G 1/4	1844115

20D Pneumatic ATEX - low pressure - adjustable switching pressure difference

Switching pressure range *1)	Max. over pressure *2)	Switching pressure difference			Fluid/fluid contact parts wetted parts	Sensor	Port size	MODELS
		typical value	Upper range					
(bar)	(bar)	(bar)	min. (bar)	max. (bar)				
0 ... 0,16	0,5	0,007	0,025	0,12	Pneumatic / 1.4305/1.4301	K	G 1/4	1852715
0 ... 0,6	15	0,09	0,16	0,8	Pneumatic / 1.4305/1.4301	L	G 1/4	1854115

*1) Atmospheric air pressure.

*2) Short term pressure peaks should not exceed this value. Normal operation should be within switching pressure range. Final value/over pressure equals maximum test pressure.

ACCESSORIES

Brackets



0574772 (steel)
0553908 (stainless steel)
0551894 (stainless steel G1/2)

Surge damper



0553258 (stainless steel G1/4)
0574773 (brass/steel) G1/4

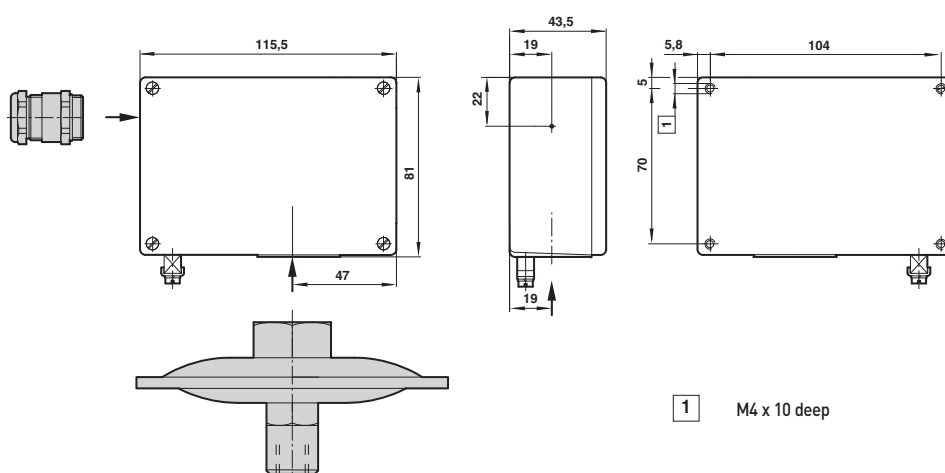
Pressure port reducing nipple



0553831 (G1/2 ... 1/2 NPT)
0550083 (G1/4 ... G1/2)
0574764 (G1/4 ... G3/8)
0574765 (G1/4 ... 1/4 NPT)

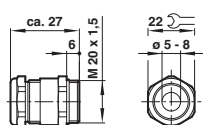
Recommended Circuit - Spark quenching / Intrinsically safe operation with DC voltage, see Standard 20D on page 5-017.
Accessories dimensional drawings - see standard 20D on page 5-018

BASIC DIMENSIONS



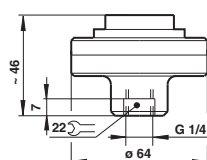
Electrical connection

Connection conforming to EEx e (ATEX),
Brass nickel-plated for cable Ø 5 ... 8 mm (Model: 0588819)



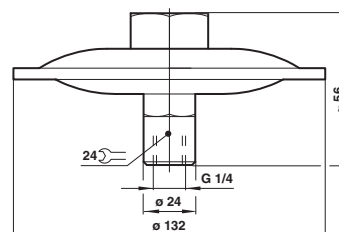
Sensor type

L



Sensor type

K



Electro-mechanical allfluid pressure switches

20D Allfluid -1 ... 100 bar / 20DD Differential allfluid 0,2 ... 30 bar
G1/2 (male)



Microswitch with gold plated contacts
(suitable for intrinsically safe operation)
Electrical connection: connector
conforming to DIN EN 175301-803 (form A)
or M20x1,5 (DIN 46320)
For sensing differential pressures
with high accuracy and sensitivity (20DD)

TECHNICAL DATA

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

Temperature:
Fluid Ambient
-10 ... +100°C -25 ... +80°C
Please contact our technical service for use below +2°C.

Media viscosity:
1000 mm²/s max.

Switching pressure difference/hysteresis:
Fixed - option
Adjustable - option

Repeatability:
±1% of full scale
(depending on regulating pressure)

**Degree of protection (conforming
to DIN 40050):**
IP65

Mounting position:
Optional

**Resistance to shock and
vibration (avoid if possible):**
4 g max. (sinusoidal)/5 Hz max.

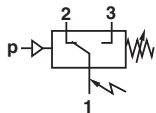
Sealing:
≤10⁻⁷ mbar • l • s⁻¹

Pulsation:
Not permitted

Switching cycles:
Max. 20/min.

MATERIALS

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



Switching function:
Microswitch SPDT
(commutator)

Terminals 1 - 3:
Contacts close on
rising pressure

Terminals 1 - 2:
Contacts open on
rising pressure

20D Allfluid - fixed switching pressure difference

Operating pressure range * ¹⁾ (bar)	Over pressure * ²⁾ (bar)	Switching pressure difference		MODELS
		Lower range (bar)	Upper range (bar)	
-1 ... 0	10	0,06	0,07	181 01 15
-1 ... 1	10	0,08	0,09	181 02 15
-1 ... 2,5	10	0,09	0,12	181 04 15
0,05 ... 1	10	0,07	0,08	181 11 15
0,5 ... 4	20	0,30	0,33	181 14 15
0,5 ... 6	20	0,30	0,35	181 15 15
0,5 ... 10	20	0,30	0,40	181 16 15
1 ... 16	50	0,70	0,80	181 17 15
1 ... 25	50	0,70	0,90	181 18 15
5 ... 63	85	1,00	2,00	181 19 15

Connector is not included; special pressure ranges on request

*¹⁾ Atmospheric air pressure

*²⁾ Short term pressure peaks should not exceed this value. Normal operation should be within switching pressure range.
Over pressure equals maximum test pressure.

For further information



www.norgren.com/info/en5-022

20D Allfluid - adjustable switching pressure difference

Switching pressure range * ¹⁾ (bar)	Over pressure * ²⁾ (bar)	Switching pressure difference			MODELS
		Lower range (bar)	Upper range Min. (bar)	Max. (bar)	
-1 ... 0	10	0,12	0,13	0,70	180 01 15
-1 ... 1	10	0,19	0,21	1,00	180 02 15
-1 ... 1,6	10	0,22	0,24	2,50	180 03 15
-1 ... 2,5	10	0,22	0,24	2,50	180 04 15
0,05 ... 1	10	0,15	0,16	0,70	180 11 15
0,1 ... 2,5	10	0,34	0,40	2,00	180 13 15
0,5 ... 4	20	0,80	0,80	2,50	180 14 15
0,5 ... 6	20	0,80	0,90	5,00	180 15 15
0,5 ... 10	20	0,90	1,90	8,00	180 16 15
1 ... 16	50	1,70	2,00	12,00	180 17 15
1 ... 25	50	1,80	2,80	20,00	180 18 15
5 ... 63	85	3,50	4,50	20,00	180 19 15
5 ... 100	150	4,00	9,00	55,00	180 10 15

Connector is not included; special pressure ranges on request.

*¹⁾ Atmospheric air pressure.

*²⁾ Short term pressure peaks should not exceed this value. Normal operation should be within switching pressure range.
Over pressure equals maximum test pressure.

OPTIONS SELECTOR

Operating pressure range		Substitute		181 ★★ ★★			Sensor material		Electrical connection		Substitute	
-1 ... 0	01						1.4404		DIN EN 175301-803; G1/2A		10	
-1 ... 1	02						1.4404		M20 x 1,5; G1/2A		15	
-1 ... 2,5	04											
0,05 ... 1	11											
0,5 ... 4	14											
0,5 ... 6	15											
0,5 ... 10	16											
1 ... 16	17											
1 ... 25	18											
5 ... 63	19											
5 ... 100	10											

20DD Allfluid differential pressure switch - fixed switching pressure difference

Two pressure sensors *¹⁾

Differential pressure range * ²⁾ (bar)	Switching pressure difference		Operating pressure range * ³⁾ (bar)	Over pressure * ⁴⁾ (bar)	Switching cycles per minute	Pressure sensor material			Total weight (kg)	Dimensional drawing no.	MODELS
	Lower range (bar)	Upper range (bar)				Housing	Bellows	Other materials			
0,2 ... 1	0,25	0,4	0,5 ... 16	20	10	Stainless steel	Stainless steel	Stainless steel	1,10	2	1819115
0,25 ... 2,5	0,3	0,5	0,5 ... 16	20	10	1.4404	1.4404	1.4404	1,10	2	1819315
0,5 ... 6	0,6	1	1 ... 25	30	10	Stainless steel	Stainless steel	Stainless steel	1,05	3	1819515
0,5 ... 16	0,8	1,4	1 ... 25	30	10	1.4305	1.4401	1.4301	1,05	3	1819715
1,0 ... 30	0,8	2	4 ... 63	70	10				1,05	4	1819815

*¹⁾ Tested in accordance with DIN 89011, 5.2., within the frequency range 25 ... 100 Hz; within the frequency range 2 ... 25 Hz tested with amplitude 1.6 mm.

*²⁾ The differential pressure is the pressure difference between both pressure sensing elements under operating conditions.

*³⁾ The working pressure range indicates the required minimum pressure as well as the load on the pressure sensor under operating conditions.

*⁴⁾ Short term pressure peaks should not exceed this value. Normal operation should be within switching pressure range. Over pressure equals maximum test pressure.

ACCESSORIES

Connector	Connector	Brackets	Surge damper	Pressure port - reducing nipple
				
0585418 (with LED)	0570110	0574772 (steel) 0553908 (stainless steel)	0553258 (stainless steel G1/4) 0574773 (brass/steel) G1/4	0550083 (G1/4 - G1/2) 0574764 (G1/4 - G3/8) 0574765 (G1/4 - 1/4 NPT)

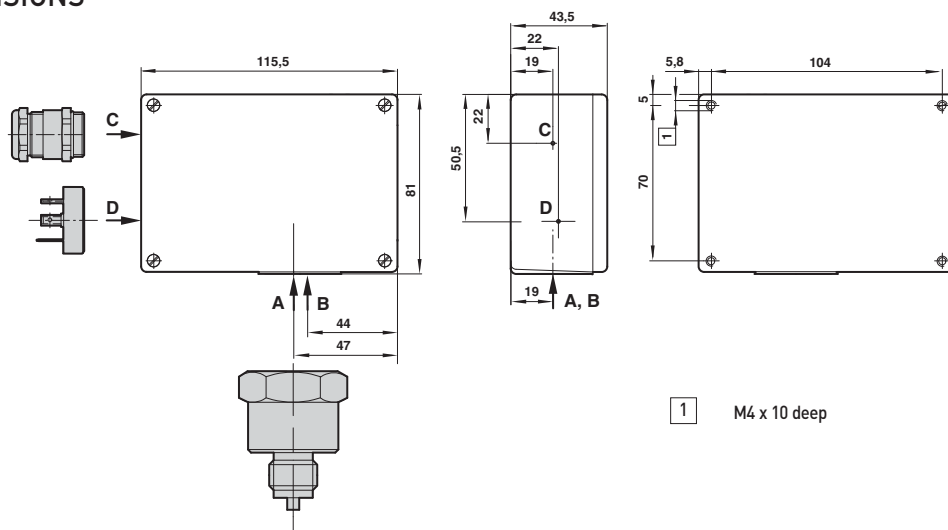
Switching capacity, spark quenching / intrinsically safe with d.c. voltage, see standard 20D of page 5-017

Electro-mechanical allfluid pressure switches

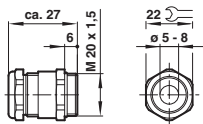
20D Allfluid -1 ... 100 bar / 20DD Differential allfluid 0,2 ... 30 bar
G1/2 (male)

20D Allfluid pressure switch

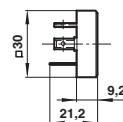
BASIC DIMENSIONS



Connector M20 x 1,5
(standard/preferred connector)
conforming to DIN 46320



Connector conforming
to DIN EN 175301-803, form A



Sensor combination

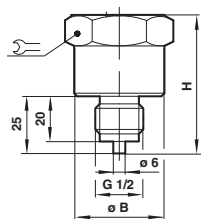
Operating pressure range Code	Sensor type
01	B
02	B
03	B
04	B
11	B
13	B
14	B
15	B
16	B
17	F
18	F
19	H
10	I

Sensor dimensions

Sensor type	H	B	⌀
B	75	42	32
F	43	37	32
H	53	37	32
I	62	37	32

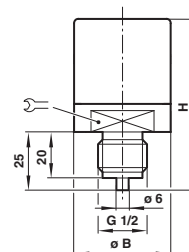
Sensor type

F, H, I



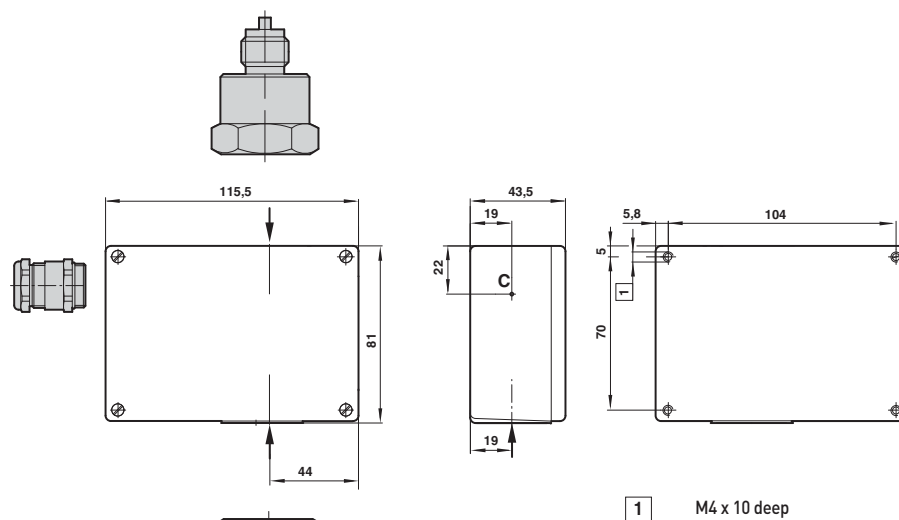
Sensor type

B

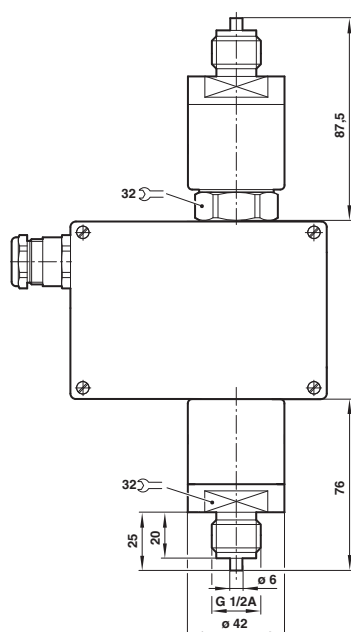


20DD Allfluid differential pressure switch

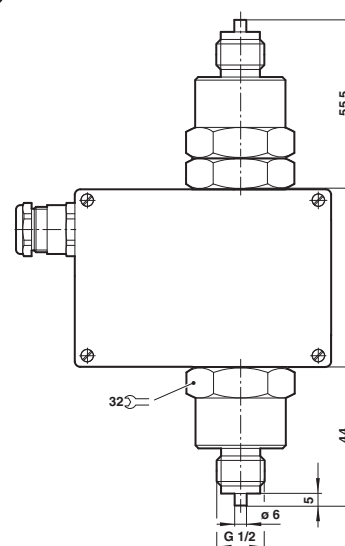
BASIC DIMENSIONS



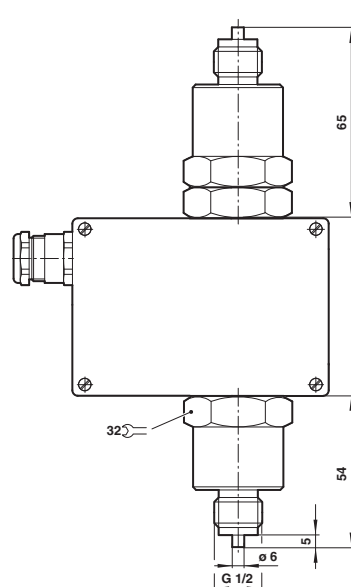
②



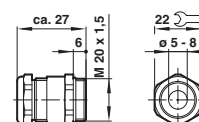
③



④



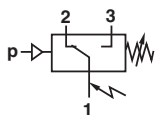
Electrical connector M20 x 1,5 conforming to DIN 46320



Electro-mechanical allfluid pressure switch

ATEX certified

20D Allfluid -1 ... 63 bar
G1/2 (male)



Switching function:
Microswitch SPDT
(commutator)

Terminals 1 - 3:
Contacts close on
rising pressure

Terminals 1 - 2:
Contacts open on
rising pressure

For Ex zones 1 and 2 (gases) as well as
Ex zones 21 and 22 (dusts) category II2G,
type of protection EEx de IIC T6

Microswitch with gold plated contacts

Electrical connection: connector M20 x 1,5

Robust metal housing in weather-resisting
version

TECHNICAL DATA

Medium:

For neutral, non-inflammable gases and fluids

Operation:

Softseal piston, stainless steel bellows

Temperature:

Fluid/Ambient:

-10 ... +75°C

Please contact our technical service for use below +2°C

Switching pressure difference/hysteresis:

Fixed - option

Adjustable - option

Repeatability:

±1% of full scale

(depending on regulating pressure)

Microswitch

With gold plated contacts

Degree of protection (conforming
to DIN 40050):

IP65

Mounting position:

Optional

Resistance to shock and vibration
(avoid if possible):

4 g max. (sinusoidal) / 5 Hz max.

Sealing:

≤10⁻⁷ mbar • l • s⁻¹

Pulsations:

Not permitted

Switching cycles:

20/min. max.

MATERIALS

Housing: aluminium diecast

Sensor: stainless steel

Sealing: stainless steel-bellows

20D Allfluid ATEX - fixed switching pressure difference

Operating pressure range * ¹⁾ (bar)	Over pressure * ²⁾ (bar)	Switching pressure difference typical value		Pressure sensor material	Sensor	Fluid port (male)	MODELS
		Lower range (bar)	Upper range (bar)				
-1 ... 0	10	0,20	0,23	1.4404	B	G 1/2	184 01 15
-1 ... 1	10	0,20	0,25	1.4404	B	G 1/2	184 02 15
-1 ... 2,5	10	0,22	0,26	1.4404	B	G 1/2	184 04 15
0,05 ... 1	10	0,16	0,18	1.4404	B	G 1/2	184 11 15
0 ... 1,6	10	0,16	0,20	1.4404	B	G 1/2	184 12 15
0,5 ... 4	20	0,50	0,55	1.4404	B	G 1/2	184 14 15
0,5 ... 6	20	0,60	0,70	1.4404	B	G 1/2	184 15 15
0,5 ... 10	20	0,70	0,90	1.4404	B	G 1/2	184 16 15
1 ... 16	50	1,00	1,40	1.4404	F	G 1/2	184 17 15
1 ... 25	50	1,30	1,80	1.4404	F	G 1/2	184 18 15
5 ... 63	150	2,00	5,00	1.4404	H	G 1/2	184 19 15

*¹⁾ Atmospheric air pressure.

*²⁾ Short term pressure peaks should not exceed this value. Normal operation should be within switching pressure range.
Over pressure equals maximum test pressure.

20D Allfluid ATEX - adjustable switching pressure difference

Operating pressure range ^{*1)} (bar)	Over pressure ^{*2)} (bar)	Switching pressure difference typical value			Pressure sensor material	Sensor	Fluid port (male)	MODELS
		Lower range (bar)	Upper range Min. (bar)	Max. (bar)				
-1 ... 0	10	0,19	0,25	0,80	1.4404	B	G1/2	185 01 15
-1 ... 1	10	0,20	0,30	1,00	1.4404	B	G1/2	185 02 15
-1 ... 2,5	10	0,20	0,28	2,50	1.4404	B	G1/2	185 04 15
0,05 ... 1	10	0,16	0,18	0,80	1.4404	B	G1/2	185 11 15
0 ... 1,6	10	0,10	0,16	1,00	1.4404	B	G1/2	185 12 15
0,1 ... 2,5	10	0,18	0,22	2,00	1.4404	B	G1/2	185 13 15
0,5 ... 4	20	0,50	0,60	2,50	1.4404	B	G1/2	185 14 15
0,5 ... 6	20	0,60	0,70	5,00	1.4404	B	G1/2	185 15 15
0,5 ... 10	20	0,70	0,90	8,00	1.4404	B	G1/2	185 16 15
1 ... 16	50	1,60	1,90	12,00	1.4404	F	G1/2	185 17 15
1 ... 25	50	1,60	2,20	20,00	1.4404	F	G1/2	185 18 15
5 ... 63	150	2,00	5,00	20,00	1.4404	H	G1/2	185 19 15

*1) Atmospheric air pressure.

*2) Short term pressure peaks should not exceed this value. Normal operation should be within switching pressure range.
Over pressure equals maximum test pressure.

ACCESSORIES

Brackets



0574772 (steel)
0553908 (stainless steel)
0551894 (stainless steel G1/2)

Surge damper



0553258 (stainless steel G1/4)
0574773 (brass/steel) G1/4)

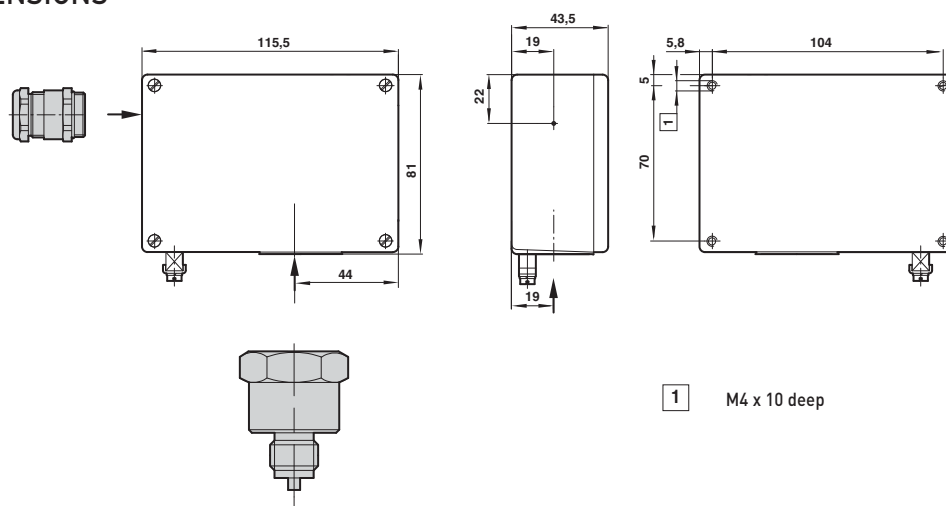
Pressure port – reducing nipple



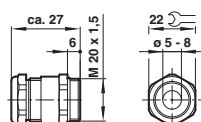
0553831 (G1/2 – 1/2 NPT)
0550083 (G1/4 – G1/2)
0574764 (G1/4 – G3/8)
0574765 (G1/4 – 1/4 NPT)

Switching capacity, spark quenching / intrinsically safe with d.c. voltage, see standard 20D of page 5-017

BASIC DIMENSIONS



Electrical connector M20 x 1,5
conforming to EEx e (ATEX),
Nickel plated brass for cable Ø 5 ... 8 mm (Model: 0588819)



Electro-mechanical allfluid pressure switch ATEX certified

20D Allfluid -1 ... 63 bar

G1/2 (male)

Sensor combinations

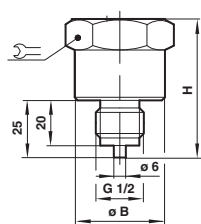
Operating pressure range Code	Sensor type
01	B
02	B
04	B
11	B
12	B
13	B
14	B
15	B
16	B
17	F
18	F
19	H

Sensor dimensions

Sensor type	H	B	ϕ
B	75	42	32
F	37	32	41
H	53	37	32

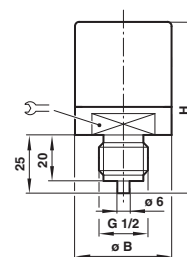
Sensor type

F+H



Sensor type

B



ACCESSORIES

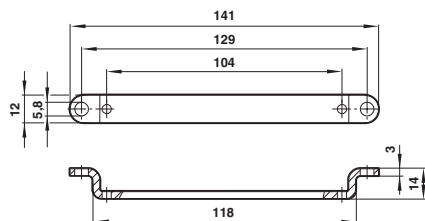
Brackets (2 brackets and 4 screws)

Steel

Model: 0574772

Stainless steel 1.4301 (AISI 304)

Model: 0553908



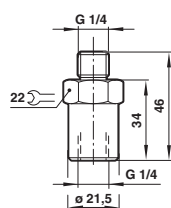
Surge damper

Stainless steel 1.4301 (AISI 304)

Model: 0553258

Brass/steel

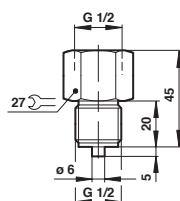
Model: 0574773



Stainless steel 1.4301

(AISI 304)

Model: 0551894



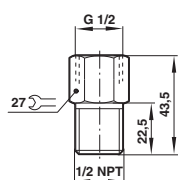
Pressure port/Reducing nipple

G1/2 I ... G1/2 NPT A

Stainless steel 1.4305

(AISI 303/304 S)

Model: 0553831

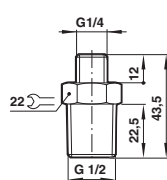


G1/4 A ... G1/2 A

Stainless steel 1.4305

(AISI 303/304 S)

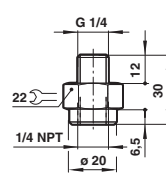
Model: 0550083

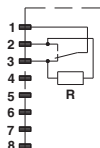


G1/4 A ... 1/4 NPT

Brass

Model: 0574765





Terminals 1 – 3: with rising control value contact closing

Pressure sensor: all parts made of stainless steel 1.4301 or 1.4404 wetted parts.

5-030

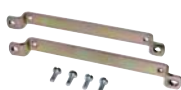
ACCESSORIES

Surge dampers



0551894

Bracket



0574772

Switching capacity – Microswitch with gold plated contacts

Current type current I [A]	Load type	Switching voltage US max. 24 V	Switching 48 V
a.c.	ohmic	10	10
a.c.	inductive, $\cos \varphi \approx 0,7$	4	2,5
a.c.	inductive, spark extinction with RC element	6	4
d.c.	ohmic	2	0,9
d.c.	inductive L/R ≈ 10 ms	1	0,3
d.c.	inductive, spark extinction with diode	1,5	0,7

Microswitch with gold plated contacts

I_{min} and I_{max} no limits,
useful upper limit:

U_{max} approx.. 48 V, I_{max} approx. 20 mA;

Operating the pressure switch with $U > 48$ V d.c.
and/or $I > 20$ mA the gold layer the contacts will be damaged. The
pressure switch can only be utilized for currents exceeding 20 mA .

The switching capacity with the remaining silver jump contacts is
indicated in the table.

Reference switching number: 60/min

Reference temperature: + 30 °C

(with + 70 °C max. switching current 50% of the table values).

Contact durability

referred to max. switching current $\approx 1 \times 10^6$ switchings
(with 50% of the max. switching current approximately 3-times longer
durability)

The creep and air distance as per VDE 0110 of the insulation group B
(except the contact distance of the micro switch).

Recommended Circuit - Spark quenching / Intrinsically safe operation
with d.c. voltage

1. Diode D in parallel to inductive load.
Observance of correct polarity (positive pole to cathode).

Dimensioning specifications for erasing diode:

Nominal voltage of the diode $U_D \geq 1,4 \times U_s$

Nominal current of the diode $I_N \geq I_{Load}$

Select fast switching diodes

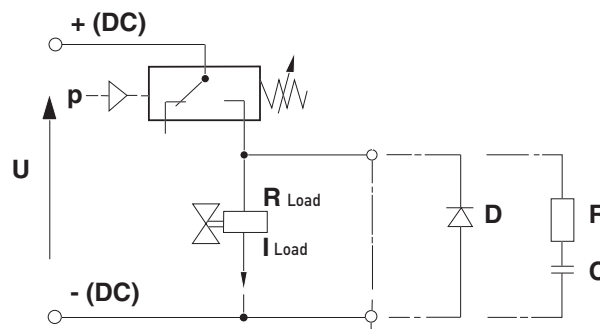
(blocking recovery time $t_{rr} \leq 200$ ms)

2. RC element parallel to the load
(or parallel to the switching contact).
Suitable for direct voltage and alternating voltage.

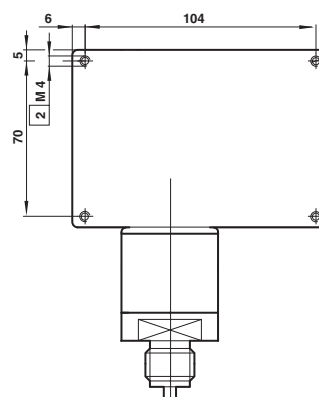
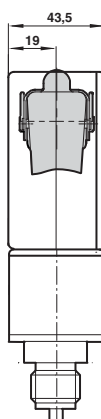
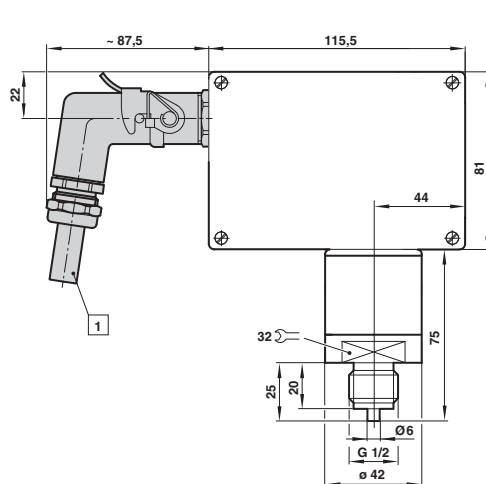
Dimensioning principles:

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

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



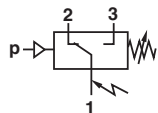
BASIC DIMENSIONS



- 1 75° offset
- 2 x 10 deep

Electro-mechanical hydraulic pressure switches

20D 3 ... 420 bar
G1/4



Switching function:
microswitch SPDT
(commutator)

Terminals 1 - 3:
contacts close on
rising pressure

Terminals 1 - 2:
contacts open on
rising pressure

High accuracy
Microswitch with gold plated contacts
Intrinsically safe operation
Electrical connection:
DIN EN 175 301-803, (DIN 43650)
form A or M20x1,5 (DIN 46320)
Robust metal housing

TECHNICAL DATA

Medium:
Hydraulic oil, lubricated compressed air and
other non-inflammable fluids with sliding
properties

Operation:
Piston

Temperature:
Fluid Ambient
0°C ... +80°C 0°C ... +80°C
at switching element
+80°C max.

Media viscosity:
Up to 1000 mm²/s

Switching pressure difference/hysteresis:
Fixed - option
Adjustable - option

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

Degree of protection:
IP65 (conforming to DIN 40050)

Mounting position:
Vertical down

Allowable vibrations (avoid if possible):

Max. 4 g (sinusoidal), 5 Hz max.

Sealing:
≤ 10⁻⁷ mbar • l • s⁻¹

Switching cycles:
Max. 20/min.

MATERIALS

Housing: aluminium die cast
(standard)

Sensor: brass and stainless steel

Electrical connection/sensor
combinations: see below

Sealing: steel piston with perbunan,
lip seal or o-ring

20D Hydraulic - fixed switching pressure difference

Switching pressure range ^{*1)}	Over pressure ^{*2)}	Switching pressure difference (typical)		MODELS
[bar]	[bar]	Lower range [bar]	Upper range [bar]	
3 ... 40	300	5	9	1816200
5 ... 63	300	6	13	1816300
5 ... 100	300	6	16	1816400
5 ... 160	300	7	19	1816500
10 ... 220	300	10	25	1816600 0000 001 00
10 ... 420	550	18	42	1816700 0000 002 00

20D Hydraulic - adjustable switching pressure difference

Switching pressure range ^{*1)}	Over pressure ^{*2)}	Switching pressure difference (typical)			MODELS
[bar]	[bar]	Lower range [bar]	Upper range Min. [bar]	Max. [bar]	
3 ... 40	300	8	13	25	1806200
5 ... 63	300	10	16	40	1806300
5 ... 100	300	11	16	80	1806400
5 ... 160	300	13	22	120	1806500
10 ... 220	300	14	28	120	1806600 0000 001 00
10 ... 420	550	20	40	330	1806700 0000 002 00

^{*1)} Atmospheric air pressure

^{*2)} Short term pressure peaks should not exceed this value. Normal operation should be within switching pressure range.
Final value/over pressure equals maximum test pressure. In applications where vibration is present install a surge damper.

For further information



www.norgren.com/info/en5-032

OPTIONS SELECTOR

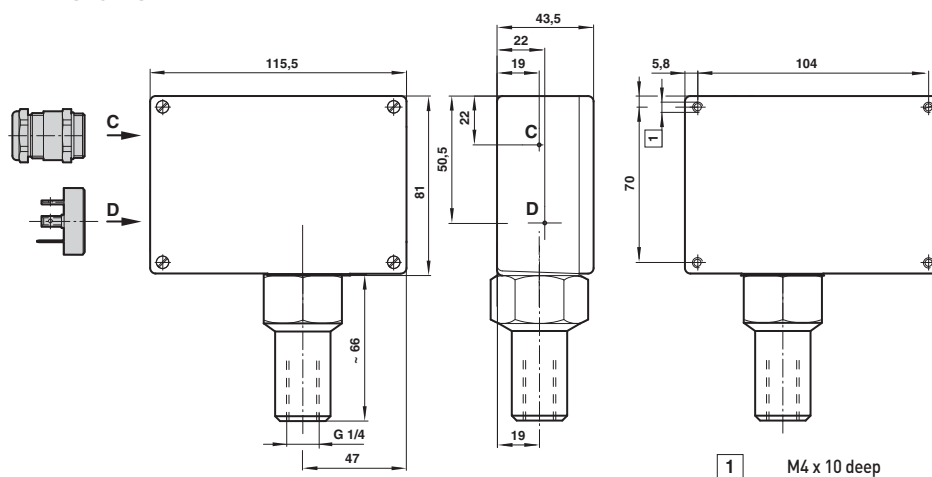
		18★	★	★	00		
Switching pressure difference	Substitute					Electrical connection	Substitute
Adjustable	0					DIN EN 175 301-803, form A	00
Fixed	1					M20 x 1,5	05
Switching pressure range (bar)	Substitute						
3 ... 40	62						
5 ... 63	63						
5 ... 100	64						
5 ... 160	65						
10 ... 220	66						
10 ... 420	67						

ACCESSORIES

Connector	Connector	Brackets	Surge damper	Pressure port reducing nipple
				
0585418 (with LED)	0570110	0574772 (steel) 0553908 (stainless steel)	0553258 (stainless steel G1/4) 0574773 (brass/steel) G1/4)	0550083 (G1/4 ... G1/2) 0574764 (G1/4 ... G3/8) 0574765 (G1/4 ... 1/4 NPT)

Accessories dimensional drawings - see standard 20D on page 5-033

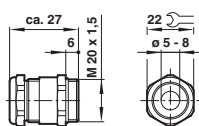
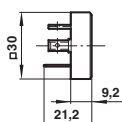
BASIC DIMENSIONS



Electrical connection

Connector conforming to DIN EN 175301-803 (form A)

Connector M20 x 1,5 conforming to DIN 46320

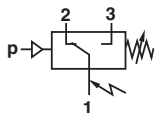


Electro-mechanical hydraulic pressure switches

ATEX certified

20D 5 ... 400 bar

G 1/4



Switching function:
Microswitch SPDT
(commutator)

Terminals 1 - 3:
Contacts close on
rising pressure

Terminals 1 - 2:
Contacts open on
rising pressure

For Ex zones 1 and 2 (gases) as well as
Ex zones 21 and 22 (dusts) category II2G,
type of protection EEx de IIC T6
Microswitch with gold plated contacts
Electrical connection: connector M20 x 1,5
Robust metal housing in weather-resisting
version

TECHNICAL DATA

Medium:

For neutral, self lubricating fluids, hydraulic oil,
lube oil, light fuel oil

Operation:

Piston

Temperature:

Fluid/Ambient: -10* ... +75°C

*Please contact our technical service for use below +2°C

Media viscosity:

Up to 1000 mm²/s

Switching pressure difference/hysteresis:

Fixed - option

Adjustable - option

Repeatability:

±1% of final value

(depending on regulating pressure)

Switching element:

Microswitch with gold plated contacts

Degree of protection:

IP65 (DIN 40050)

Mounting:

Optional

Shock vibration (avoid if possible):

4 g max. (sinusoidal), max. 5 Hz

Sealing:

≤10⁻⁷ mbar • l • s⁻¹

Pulsations:

Not permitted

Switching cycles:

Max. 20/min

MATERIALS

Housing: aluminium diecast,
anodised

Sensor: brass or steel

Sealing: steel piston (NBR or FKM)

20D Hydraulic ATEX - fixed switching pressure difference

Switching pressure range *1)	Max. over pressure *2)	Switching pressure difference (typical)		Fluid contact parts	Sensor	Port size	MODELS
		Lower range (bar)	Upper range (bar)				
5 ... 160	300	5,00	9,00	Brass, steel, NBR	K	G 1/4	1846505
10 ... 400	550	7,00	18,00	Brass, steel, FKM	K	G 1/4	1846705

20D Hydraulic ATEX - adjustable switching pressure difference

Switching pressure range *1)	Max. over pressure *2)	Switching pressure difference (typical)			Fluid contact parts	Sensor	Port size	MODELS
		Lower range (bar)	Upper range min. (bar)	max. (bar)				
5 ... 160	300	8,00	22,00	120,00	Brass, steel, FKM	K	G1/4	1856505
10 ... 400	550	15,00	40,00	300,00	Brass, steel, FKM	K	G1/4	1856705

*1) Atmospheric air pressure

*2) Short term pressure peaks should not exceed this value. Normal operation should be within switching pressure range.
Final value/over pressure equals maximum test pressure.

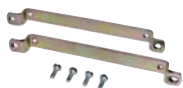
For further information



www.norgren.com/info/en5-034

ACCESSORIES

Brackets



0574772 (steel)
0553908 (stainless steel)
0551894 (stainless steel G1/2)

Surge damper



0553258 (stainless steel G1/4)
0574773 (brass/steel) G1/4

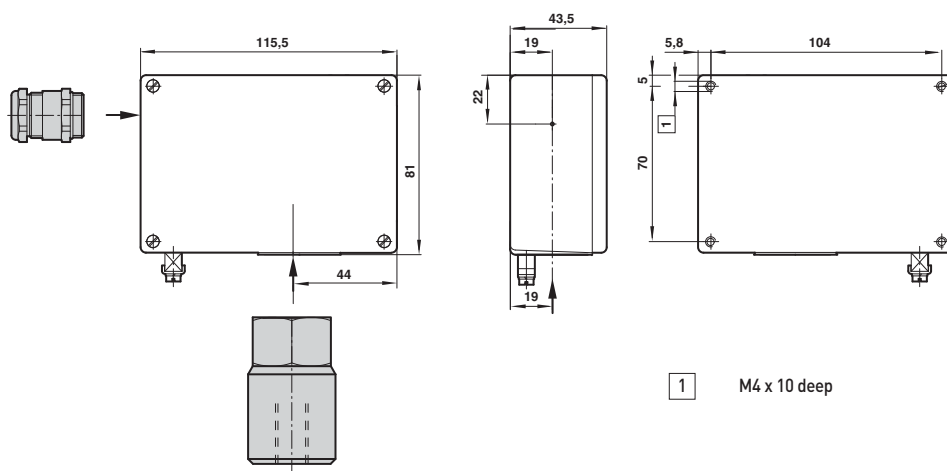
Pressure port reducing nipple



0553831 (G1/2 ... 1/2 NPT)
0550083 (G1/4 ... G1/2)
0574764 (G1/4 ... G3/8)
0574765 (G1/4 ... 1/4 NPT)

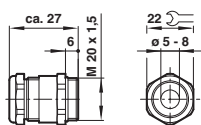
Switching capacity, spark quenching / intrinsically safe with d.c. voltage see page 5-017

BASIC DIMENSIONS



Electrical connection

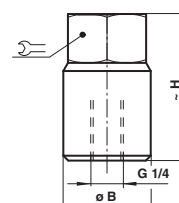
Connection M20 x 1,5 conforming to EEx e (ATEX),
Brass nickel-plated for cable Ø 5 ... 8 mm (Model: 0588819)



Sensor dimensions

Switching pressure range code	H	B	⌀
65	61,5	37	32
67	66	37	32

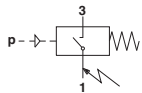
Sensor



Electro-mechanical pneumatic pressure switches

Mini series

2 ... 6,2 bar (rising pressure, non-adjustable)



Very small construction
Screw-in type
AMP E-terminals 2,8 x 0,8

TECHNICAL DATA

Medium:
Lubricated air, oil and other neutral lubricated fluids

Mounting position:
Optional

Ambient temperature:
-10 ... +60 °C

Fluid temperature:
0 ... +80 °C

Consult our Technical Service for use below +2°C.

Switching element:
Switch - non adjustable

Switching pressure difference/hysteresis:
Fixed

Degree of protection:
IP 00

Vibration:
Max. 4 g (sinusoidal)

MATERIALS

Housing: steel
Seal: plastic piston

General information

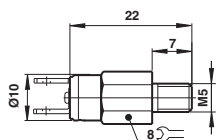
Pressure range (bar)	Switching range falling pressure p _{vu} (bar)	Rising pressure p _{vo} (bar)	Max. pressure (bar)	Switching cycles (1/min)	Materials Housing	Seal	Process connection external thread	Weight (kg)	MODELS
0 ... 10	1,5 ... 2,5	2,0 ... 3,5	20	20	1.4104 (Perbunan)	NBR/Delrin	M 5	0,004	9950501
0 ... 10	2,5 ... 3,7	3,0 ... 5	20	20	1.4104 (Perbunan)	NBR/Delrin	M 5	0,004	9950502
0 ... 10	3,5 ... 5,1	4,7 ... 6,2	20	20	1.4104 (Perbunan)	NBR/Delrin	M 5	0,004	9950509

Above values at 20 cycles minute and 30°C

Capacity

Type of current	Load	I max. (A)	Voltage (V)	U min (W/VA)	Contact life
a.c.	Inductive cos φ ≈ 0,7	0,75	24	18	20.000
d.c.	Inductive cos φ ≈ 0,7	0,5	24	12	20.000

DIMENSIONS



For further information



www.norgren.com/info/en5-036

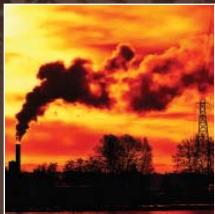
“Of all utilities, compressed air represents one of the largest opportunities for immediate energy savings on any site”

The Carbon Trust

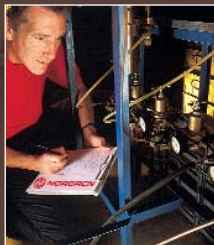
Because compressed air systems are safe, reliable and versatile, they are usually taken for granted with no regard for cost.

An essential resource for industry, business and public sector, compressed air is often referred to as the fourth utility after electricity, gas and water. However, unlike the other three, compressed air is generated on site, and users therefore have much more control over usage costs. It is worth investing time and effort in reducing compressed air costs because:

- » In a typical industrial system, compressed air accounts for 10% of the total electricity bill
- » Over a 10-year life of a compressor, the cost of energy is 73% to run the system and far outweighs the capital investment
- » The greatest energy savings, typically up to 30%, can be made by reducing avoidable waste and without the need for capital investment in new technologies



REDUCE ENERGY
POLLUTION



REDUCE ENERGY
CONSUMPTION



REDUCE ENERGY WASTE
AND CUT COSTS

**Leakage / Misuse / Over pressurisation /
Pressure drop / Energy and safety/ Generation**

»» **REDUCE IT** Waste, Energy Consumption, Carbon Emissions

‘It makes sense’

By highlighting issues within manufacturing units or processes, Norgren’s skilled and experienced engineers can help save substantial amounts of energy costs and money by identifying and eliminating waste, improve the reliability and performance of the compressed air system and reduce the environmental impact through reduced electricity consumption and consequent carbon emissions.

For details and information visit norgren.com

Electronic pressure switches

50D pneumatic

0 ... 10 bar, 0 ... 6 bar, -1 ... 0 bar, -1 ... 1 bar



Easy to use pressure switch
with clear display and intuitive programming
Fast error detection via multi-colour display
Flexible mounting - DIN Rail or wall
mounting
Optional connection; rear or base
LABS free materials, conforming to RoHS.
ATEX conforming to Zone 2, gases (Cat. II 3G,
Ex nA II T6 X) and
Zone 22, dusts (Cat. II 3G, Ex tD A22 IP65
T80°C X).

TECHNICAL DATA

Medium:

Compressed air, filtered
(40 µm), lubricated and
non-lubricated

Mounting:

Optional

Pressure range:

0 ... 6 bar, 0 ... 10 bar,
-1 ... 0 bar, -1 ... 1 bar

Temperature:

Fluid: 0°C ... +60°C

Ambient: 0°C ... +60°C

Please consult our technical service
for use below +2°C

Accuracy:

± 2% FS* (incl. temperature drift)

± 1,5% (+10 ... 30°C)

Switching pressure difference/hysteresis:

Programmable

Repeatability:

± 0,2% FS*

Switching point:

Adjustable up to 100% FS*

Reset point:

Adjustable up to 100% FS*

Display:

Pressure units bar, psi, kPa,
InHg Vacuum

Linearity analogue port:

± 0,5% FS*

Degree of protection conforming to EN 60529:

IP65 (with plug mounted)

Shockproof:

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

Vibrationproof:

5 g, 10 ... 150 Hz, syz,
DIN EN 60068-2-6

Weight:

0,05 kg

* full scale (FS)

Standard variants

Pressure switch

Pressure range	Output signal	Port size	MODELS
0 ... 6 bar	2 x PNP	Push-In fitting Ø 4 mm G 1/4	DS-E1P06P4B2PR00 DS-E1P06F4B2PR00
0 ... 10 bar	2 x PNP	Push-In fitting Ø 4 mm G 1/4	DS-E1P10P4B2PR00 DS-E1P10F4B2PR00
0 ... 6 bar	1 x PNP + 1 x analogue	Push-In fitting Ø 4 mm G 1/4	DS-E1P06P4BPAR00 DS-E1P06F4BPAR00
0 ... 10 bar	1 x PNP + 1 x analogue	Push-In fitting Ø 4 mm G 1/4	DS-E1P10P4BPAR00 DS-E1P10F4BPAR00

Vacuum switch

Pressure range	Output signal	Port size	MODELS
-1 ... 0 bar	2 x PNP	Push-In fitting Ø 4 mm G 1/4	DS-E1V10P4B2PR00 DS-E1V10F4B2PR00
-1 ... 1 bar	2 x PNP	Push-In fitting Ø 4 mm G 1/4	DS-E1V11P4B2PR00 DS-E1V11F4B2PR00

Electrical specification

Electrical connection: M 12 x 1

Power supply:

U_B = 24 V d.c. (17 ... 30 V d.c.)

Current consumption < 50 mA

Allowed load resistance:

≤ 600 Ω (analog power output)

Contact rating:

I_{max} = 200 mA (short-circuit proof)

Switching time: < 5 ms

Electromagnetic compatibility:

Emission EN 61000-6-3 (2007)

Immunity EN 61000-6-2 (2005)

Electrical connection M12 x 1



PIN-No.	Signal	Cable colour
1	+UB 24 V d.c.	brown
2	Out 2 (PNP; NPN; analogue 4-20 mA/0-10 V)	white
3	0 V	blue
4	Out 1 (PNP; NPN)	black

For further information



www.norgren.com/info/en5-038

OPTIONS SELECTOR

Pressure range (bar)		Output signal	
1 ... 0	V10	2 x PNP	2P
-1 ... 1	V11	2 x NPN	2N
0 ... 6	P06	PNP + analogue	PA
0 ... 10	P10	NPN + analogue	NA

Port size	
G1/4	F4
Ø 4 mm Push-In fitting	P4

Ordering example

Electronic pressure switch, pressure range 0 ... 6 bar,
port size G 1/4, output signal 2 x PNP

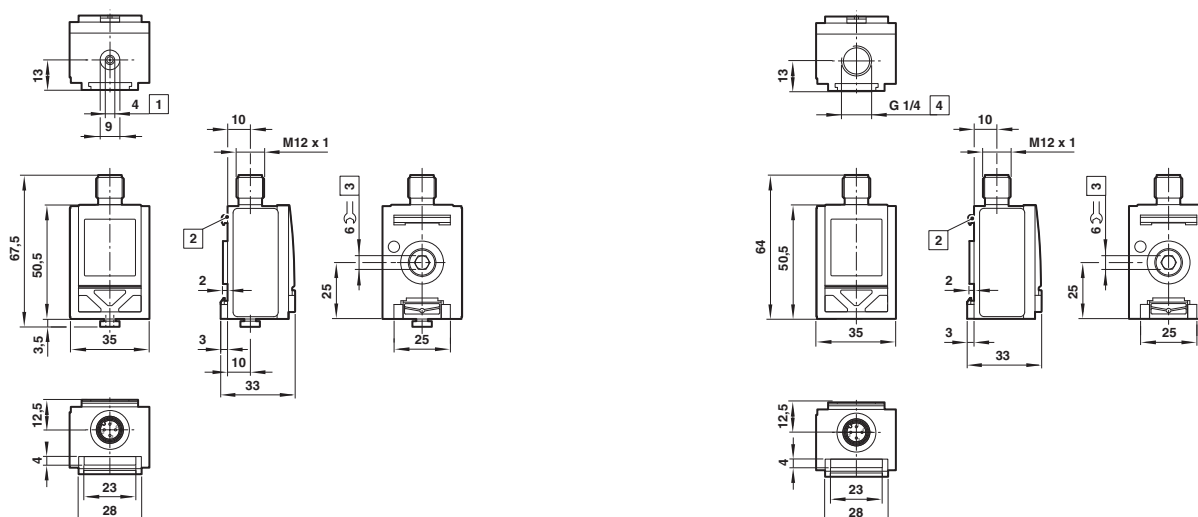
Model: DS-E1P06F4B2PR00

ACCESSORIES

Wall clip	DIN rail (35 x 7,5)	Adaptor	NPT-adaptor
			
0523962 (plastic)	V10009-C00 (1 m)	0523951 (G1/4 ... G1/4) 0523950 (G1/4 ... G1/8)	0523953 (G1/4 ... 1/4 NPTF) 0523952 (G1/4 ... 1/8 NPTF)

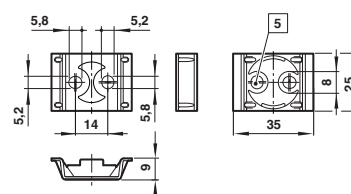
Connector M 12 x 1 90°	Connector M 12 x 1 90°	Connector M 12 x 1 straight	Connector M 12 x 1 straight
			
0523058 (2 m cable, 4-pin) 0523053 (5 m cable, 4-pin)	0523056 (without cable)	0523057 (2 m cable, 4-pin) 0523052 (5 m cable, 4-pin)	0523055 (without cable)

BASIC DIMENSIONS



- 1 Integrated PNEUFIT push-in fitting
- 2 Wall clip for DIN panel DIN EN 60715 (35 x 7,5; 35 x 15)
- 3 Optional fluid ports G1/4, 9,5 deep, maximum starting torque for threaded inserts: 2,0 ±0,5 Nm
- 4 Fluid port, 9,5 deep
- 5 The bolts for the wall clip conform to DIN EN ISO4762 (M5 x 20), delivery included

Wall clip



Electronic pressure switches

33D Pneumatic -1 ... 16 bar / 33D Allfluid/Hydraulic 0 ... 630 bar



Display of system pressure
(Units - bar, PSI, MPa, programmable)
Compact and robust design
Easy programming of switchpoints
and extra functions
Economic solution for industrial
applications

Electronic lock
Switching status indicated by LCD
Standard M12 x 1 connection (IP65) -
connector ordered separately
With digital and analogue output
Application: not for outdoor use

TECHNICAL DATA

Medium:

Pneumatic: filtered, lubricated or non lubricated compressed air and neutral gases
Hydraulic/allfluid: neutral and aggressive, gaseous and liquid fluids

Mounting:

Optional

Temperature:

Fluid/ambient

-10 ... + 80°C/-10 ... + 60°C

Please contact our technical service for use below +2°C

Temperature sensitivity:

Zero point

±0,4% of full scale (FS) per 10° Kelvin

Range

±0,4% of full scale (FS) per 10° Kelvin

Switching pressure difference/hysteresis:

Programmable

Switching point:

Adjustable between

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

(smallest adjustable pressure switching difference between switching point and reset point ≥ 0,5% of full scale (FS))

Reset point:

Adjustable between

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

Display:

LCD 4 digits, illuminated, pressure unit programmable bar, PSI, MPa
(customer specific pressure unit available on request)

Total accuracy:

±1,5% of full scale (FS) (without temperature sensitivity)

Linearity:

±0,2% + 1 indicator step

Degree of protection conforming to DIN 40050:

IP65 (with plug mounted)

Shockproof:

30 g, xyz, DIN EN 60068-2-27

Vibrationproof:

3 g, 5 ... 500 Hz, xyz, DIN EN 60068-2-6

Weight:

0,09 kg

MATERIALS

Pneumatic version

Sensor (fluid-affected parts): silizium/aluminium

Housing: aluminium/stainless steel/polyester film

Hydraulic/allfluid

Sensor (fluid-affected parts):

stainless steel 1.4571 (0 ... 250 bar), stainless steel 1.4542 (400 ... 630 bar)

For further information



www.norgren.com/info/en5-040

Electrical specification

Electrical connection:

M 12 x 1

Power supply:

UB = 10 ... 32 V d.c.

15 ... 32 V d.c. (analogue) polarity safe

Permissible residual ripple:

10% (within UB)

Current consumption:

< 50 mA

Switching mode:

PNP, potential-bound

open collector switching to + UB

Output signal:

Digital: UB minus 1,5 V

Analogue: 4 ... 20 mA

Contact rating:

I_{max} = 500 mA (short-circuit proof)

Switching time:

< 10 ms

Signal delay:

On/off 0 ... 20 s

Service life:

Min. 100 million switching cycles

Switching function:

N.O./N.C. programmable

Operating mode:

Standard, hysteresis and window mode separately selectable for each output

Electromagnetic compatibility:

Interface emission EN 61326

Interface emission EN 61326, part 1

33D Pneumatic

Output signal 1 x PNP

Switching pressure range (bar)	Over pressure* (bar)	Fluid connection	Output signal	Display step size (bar)	MODELS
- 1 ... + 1	10	G 1/4	1 x PNP	0,005	0863012
- 1 ... + 1	10	Flange	1 x PNP	0,005	0863016
0 ... 16	30	G 1/4	1 x PNP	0,050	0863212
0 ... 16	30	Flange	1 x PNP	0,050	0863216

Output signal 2 x PNP

Switching pressure range (bar)	Over pressure* (bar)	Fluid connection	Output signal	Display step size (bar)	MODELS
- 1 ... + 1	10	G 1/4	2 x PNP	0,005	0863022
- 1 ... + 1	10	Flange	2 x PNP	0,005	0863026
0 ... 16	30	G 1/4	2 x PNP	0,050	0863222
0 ... 16	30	Flange	2 x PNP	0,050	0863226

Output signal 1 x PNP/1 x analogue 4 ... 20 mA

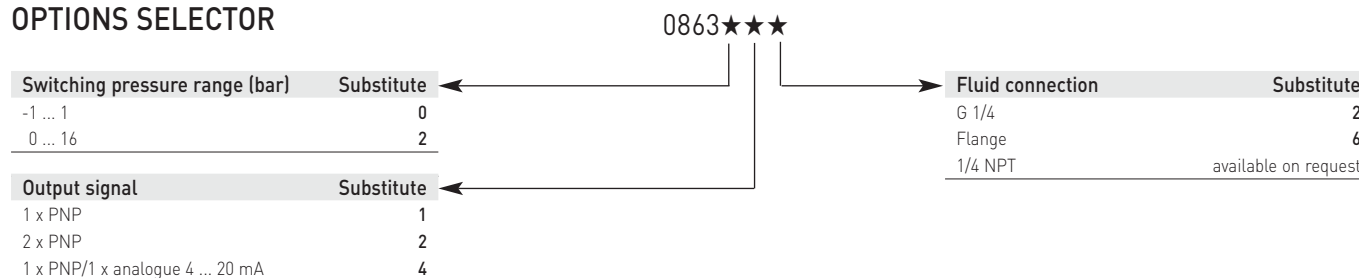
Switching pressure range (bar)	Over pressure* (bar)	Fluid connection	Output signal	Display step size (bar)	MODELS
- 1 ... + 1	10	G 1/4	1 x PNP/4 ... 20 mA	0,005	0863042
- 1 ... + 1	10	Flange	1 x PNP/4 ... 20 mA	0,005	0863046
0 ... 16	30	G 1/4	1 x PNP/4 ... 20 mA	0,050	0863242
0 ... 16	30	Flange	1 x PNP/4 ... 20 mA	0,050	0863246

* Short term pressure peaks should not exceed this value.

Normal operation should be within switching pressure range.

Over pressure equals maximum test pressure.

33D Pneumatic OPTIONS SELECTOR



Electronic pressure switches

33D Pneumatic -1 ... 16 bar / 33D Allfluid/Hydraulic 0 ... 630 bar

33D Allfluid/Hydraulic

Output signal 1 x PNP

Switching pressure range (bar)	Over pressure* (bar)	Fluid connection	Output signal	Display step size (bar)	MODELS
0 ... 10	40	G 1/4	1 x PNP	0,050	0863112
0 ... 10	40	Flange	1 x PNP	0,050	0863116
0 ... 40	100	G 1/4	1 x PNP	0,200	0863312 **
0 ... 40	100	Flange	1 x PNP	0,200	0863316
0 ... 100	200	G 1/4	1 x PNP	0,500	0863412 **
0 ... 100	200	Flange	1 x PNP	0,500	0863416
0 ... 160	300	G 1/4	1 x PNP	0,500	0863512
0 ... 160	300	Flange	1 x PNP	0,500	0863516
0 ... 250	500	G 1/4	1 x PNP	1,000	0863612 **
0 ... 250	500	Flange	1 x PNP	1,000	0863616
0 ... 400	750	G 1/4	1 x PNP	2,000	0863712 **
0 ... 630	1000	G 1/4	1 x PNP	2,000	0863812

Output signal 2 x PNP

Switching pressure range (bar)	Over pressure* (bar)	Fluid connection	Output signal	Display step size (bar)	MODELS
0 ... 10	40	G 1/4	2 x PNP	0,050	0863122
0 ... 10	40	Flange	2 x PNP	0,050	0863126
0 ... 40	100	G 1/4	2 x PNP	0,200	0863322
0 ... 100	200	G 1/4	2 x PNP	0,500	0863422 **
0 ... 100	200	Flange	2 x PNP	0,500	0863426
0 ... 160	300	G 1/4	2 x PNP	0,500	0863522
0 ... 160	300	Flange	2 x PNP	0,500	0863526
0 ... 250	500	G 1/4	2 x PNP	1,000	0863622 **
0 ... 400	750	G 1/4	2 x PNP	2,000	0863722 **
0 ... 630	1000	G 1/4	2 x PNP	2,000	0863822

Output signal 1 x PNP/1 x analogue 4 ... 20 mA

Switching pressure range (bar)	Over pressure* (bar)	Fluid connection	Output signal	Display step size (bar)	MODELS*
0 ... 10	40	G 1/4	1 x PNP / 4 ... 20 mA	0,050	0863142
0 ... 40	100	G 1/4	1 x PNP / 4 ... 20 mA	0,200	0863342
0 ... 100	200	G 1/4	1 x PNP / 4 ... 20 mA	0,500	0863442 **
0 ... 160	300	G 1/4	1 x PNP / 4 ... 20 mA	0,500	0863542
0 ... 250	500	G 1/4	1 x PNP / 4 ... 20 mA	1,000	0863642 **
0 ... 400	750	G 1/4	1 x PNP / 4 ... 20 mA	2,000	0863742
0 ... 630	1000	G 1/4	1 x PNP / 4 ... 20 mA	2,000	0863842

* Short term pressure peaks should not exceed this value.
Normal operation should be within switching pressure range.

Final value/over pressure equals maximum test pressure.

** Preferred model number - (best availability)

33D Allfluid/Hydraulic OPTIONS SELECTOR

Switching pressure range (bar)	Substitute	Fluid connection	Substitute	Output signal	Substitute
0 ... 10	1	G 1/4	2	1 x PNP	1
0 ... 40	3	Flange	6	2 x PNP	2
0 ... 100	4	1/4 NPT	available on request	1 x PNP/1 x analogue 4 ... 20 mA	4
0 ... 160	5				
0 ... 250	6				
0 ... 400	7				
0 ... 630	8				

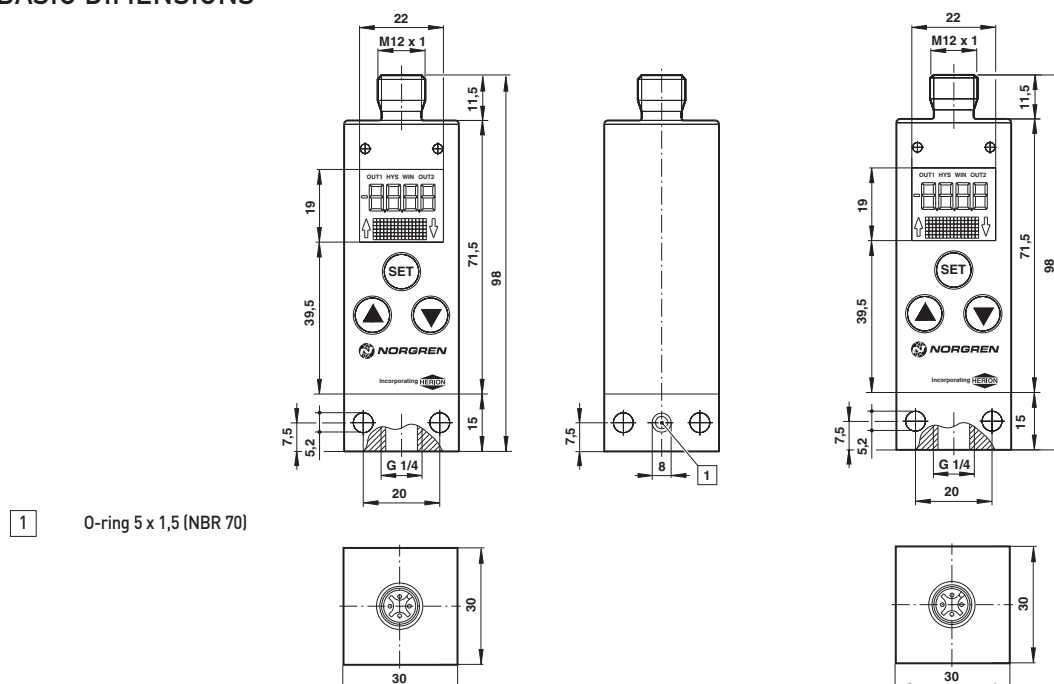
0863***

ACCESSORIES

Pressure port reducing nipple	Snubber	Connector M 12 x 1 90°	Connector M 12 x 1 90°	Connector M 12 x 1 straight	Connector M 12 x 1 straight
					
0574767 (brass)	0574773 (brass)	0523058 (2 m cable length, 4-pin)	0523056 (90° without cable)	0523057 (2 m cable length, 4-pin)	0523055 (without cable)
0550083 (stainless steel)	0553258 (stainless steel)	0523053 (5 m cable length, 4-pin)		0523052 (5 m cable length, 4-pin)	
		0799845 (2 m cable length, 5-pin, on PE-requirement *)			
		0250081 (5 m cable length, 5-pin, on PE-requirement *)			

* Cable with screening

BASIC DIMENSIONS



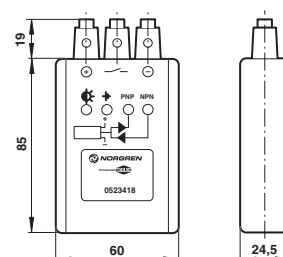
Electrical connection M 12 x 1



Pin	Signal	Cable
1	+ UB	brown
2	Out 2 (PNP) / analogue 4 ... 20 mA	white
3	0 Volt	blue
4	Out 1 (PNP)	black
5	PE	grey

Sensor tester

Incl. 2 x 9 V batteries for 33D demo
Model 0523418

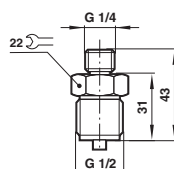


ACCESSORIES

Pressure port reducing nipple

Material: brass

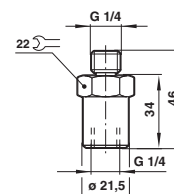
Model: 0574767



Snubber

Material: brass

Model: 0574773



Electronic pressure switches

33E Pneumatic 0 ... 16 bar / 33E Allfluid/Hydraulic 0 ... 400 bar



Thread and flange connections
Compact and robust design
Easy programming of switchpoint
Economic solution for industrial applications
Switching status indicated by LED
Free of lacquer impairing substances
Standard M12 x 1 connection (IP65) - connector ordered separately

TECHNICAL DATA

Medium:

Gaseous, aggressive and neutral, not-combustible

Mounting:

Optional

Temperature

Fluid/ambient

-25 ... +80°C/-20 ... +80°C

Please consult our technical service for use below +2°C

Temperature sensitivity (zero point):

0,4% of full scale (FS) per 10° Kelvin

Temperature sensitivity (range):

0,4% of full scale (FS) per 10° Kelvin

Switching pressure difference/hysteresis:

Programmable

Switching point:

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

(smallest adjustable pressure switching difference between switching point and reset point $\geq$ 0,8% of full scale (FS))

Reset point:

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

Weight:

0,06 kg

Accuracy:

$\leq$ 1,5% of full scale (FS)

(linearity, hysteresis, repeatability)

Degree of protection conforming to DIN 40050:

IP65 (with plug mounted)

Shockproof:

25 g, xyz, DIN EN 60068-2-27

Vibrationproof:

10 g, 5 ... 500 Hz, xyz, DIN EN 60068-2-6

MATERIALS

Housing: aluminium, stainless steel, polyester

Wetted parts: aluminium, ceramics, FKM, all parts free of lacquer impairing substances

Electrical specification

Electrical connection:

M12 x 1

Power supply:

UB = 18 ... 32 V d.c.,

polarity safe

Permissible residual ripple:

10% (within UB)

Current consumption:

< 30 mA (without load current)

Switching mode:

PNP, potential-bound open collector switching to UB

Switching function:

n.o. / n.c. programmable

Output signal:

UB minus 1,5 V

Contact rating:

I_{max} = 250 mA (short-circuit proof)

Switching time:

< 3 ms

Service life:

min. 50 million switching cycles

Electromagnetic compatibility

Interference emission conforming to EN 61326

Interference immunity conforming to EN 61326 Part 1

For further information



www.norgren.com/info/en5-044

Pneumatic versions

Pressure range (bar)	Over pressure (bar) *	Fluid connection	Output signal	MODELS
0 ... 2 bar	5	G1/4	1 x PNP	0860020
0 ... 2 bar	5	Flange	1 x PNP	0860026
0 ... 10 bar	25	G1/4	1 x PNP	0860030
0 ... 10 bar	25	Flange	1 x PNP	0860036
0 ... 16 bar	40	G1/4	1 x PNP	0860040
0 ... 16 bar	40	Flange	1 x PNP	0860046

* Short term pressure peaks should not exceed this value.
 Normal operation should be within switching pressure range.
 Final value/over pressure equals maximum test pressure.
 Note: 1/4 NPT available on request

Allfluid/Hydraulic versions

Pressure range (bar)	Over pressure (bar) *	Fluid connection	Output signal	MODELS
0 ... 40 bar	100	G1/4	1 x PNP	0860050
0 ... 40 bar	100	Flange	1 x PNP	0860056
0 ... 100 bar	175	G1/4	1 x PNP	0860060
0 ... 100 bar	175	Flange	1 x PNP	0860066
0 ... 160 bar	280	G1/4	1 x PNP	0860070
0 ... 160 bar	280	Flange	1 x PNP	0860076
0 ... 250 bar	350	G1/4	1 x PNP	0860080
0 ... 250 bar	350	Flange	1 x PNP	0860086
0 ... 400 bar	700	G1/4	1 x PNP	0860090
0 ... 400 bar	700	Flange	1 x PNP	0860096

* Short term pressure peaks should not exceed this value.
 Normal operation should be within switching pressure range.
 Final value/over pressure equals maximum test pressure.
 Note: 1/4 NPT available on request

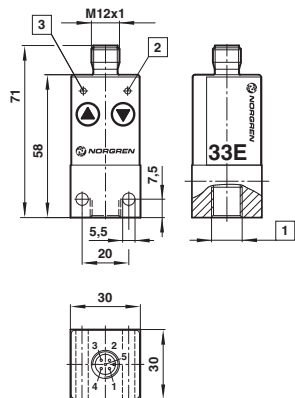
ACCESSORIES

Pressure port reducing nipple	Snubber	Connector M 12 x 1 90°	Connector M 12 x 1 90°	Connector M 12 x 1 90°	Connector M 12 x 1 straight, 5-pin	Connector M 12 x 1 straight, 4-pin
						
0574767	0574773	0799845 (2 m cable length) 0250081 (5 m cable length)	0523058 (2 m cable length) 0523053 (5 m cable length)	0523056 (without cable)	0523057 (2 m cable length) 0523052 (5 m cable length)	0523055 (without cable)

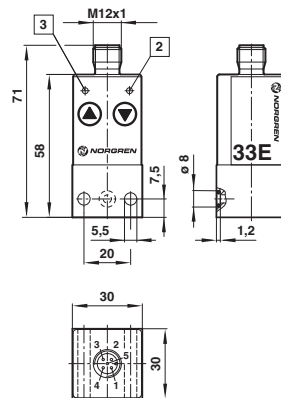
Electronic pressure switches

33E Pneumatic 0 ... 16 bar / 33E Allfluid/Hydraulic 0 ... 400 bar

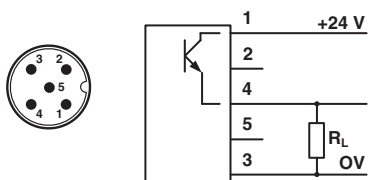
BASIC DIMENSIONS



- 1 G1/4, 12 deep or 1/4 NPT, 10 deep
- 2 LED – yellow; status Out 1
- 3 LED – green; power on



Electrical connection M 12 x 1



Electrical connection M 12 x 1

Pin	Signal	Cable
1	+Ub	brown
2	not used	white
3	0 Volt	blue
4	Out 1 (switching, PNP)	black
5	PE	grey

ACCESSORIES

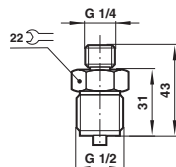
Pressure port reducing nipple

Material: brass

Model: 0574767

Material: stainless steel
(1.4301)

Model: 0550083



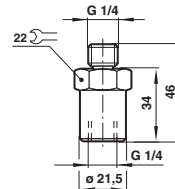
Snubber

Material: brass

Model: 0574773

Material: stainless steel
(1.4301)

Model: 0553258



Electronic pressure switches

33L Pneumatic -1 ... 16 bar / 33L Allfluid/Hydraulic 0 ... 600 bar



High visibility 3-colour LED display showing switching status
Diagnostic function conforming to DESINA
Display of system pressure in bar
Easy programming of switchpoints
Economic solution for industrial applications
Free of lacquer impairing substances
Application: not for outdoor use
Standard M12 x 1 connection (IP65) - connector ordered separately

TECHNICAL DATA

Medium:

Gases and liquids, aggressive and neutral, not-combustible

Mounting:

Optional

Temperature:

Fluid /ambient:
-25 ... + 80°C / -20 ... + 80°C

please consult our technical service for use below +2°C

Temperature sensitivity (zero point):

0,4% of full scale (FS) per 10° Kelvin

Temperature sensitivity (range):

0,4% of full scale (FS) per 10° Kelvin

Switching pressure difference/hysteresis:

Programmable

Switching point:

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

Reset point:

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

Display:

Green:

Pressure $\geq$ SP1 (increasing pressure)

Pink:

Pressure $\leq$ RP (decreasing pressure)

Pressure < SP (increasing pressure)

Red:

System fault - display

Accuracy:

$\leq$ 1,5% of full scale (FS)

(linearity, hysteresis, repeatability)

Degree of protection conforming to DIN 40050:

IP65 (< 10 bar), IP67 ($\geq$ 10 bar), with plug mounted

Shockproof:

30 g, xyz, DIN EN 60068-2-27

Vibrationproof:

10 g, 5 ... 500 Hz, xyz, DIN EN 60068-2-6

Materials:

Housing: aluminium, stainless steel, polyester

Wetted parts: aluminium, ceramics, FKM

all parts free of lacquer impairing substance

Electrical specification

Electrical connection:

M12 x 1

Power supply:

UB = 18 ... 32 V d.c., polarity safe

Permissible residual ripple:

10% (within UB)

Current consumption:

< 100 mA (without load current)

Switching mode:

PNP, potential-bound open collector switching to UB

Switching function, out 1 & 2:

n.o. / n.c. programmable

Output signal:

Out 1: switching: UB minus 1,5V / I_{max} 250 mA

Out 2: diagnostic/switching UB minus 1,5V / 250 mA

Surge and short-circuit protection (Out1/Out2)

Response time:

< 10 ms

Service life:

min. 50 million switching cycles

Electromagnetic compatibility

Interference emission conforming to EN 61326

Interference immunity conforming to EN 61326 Part 1

For further information



www.norgren.com/info/en5-047

Electronic pressure switches

33L Pneumatic -1 ... 16 bar / 33L Allfluid/Hydraulic 0 ... 600 bar

Pneumatic versions

Pressure range (bar)	Over pressure* (bar)	Fluid connection	Output signal**	Display step size (bar)	MODELS
-1 ... +1 bar	6	G1/4	2 x PNP	0,01	0860110
-1 ... +1 bar	6	Flange	2 x PNP	0,01	0860116
0 ... 10 bar	25	G1/4	2 x PNP	0,05	0860120
0 ... 10 bar	25	Flange	2 x PNP	0,05	0860126
0 ... 16 bar	40	G1/4	2 x PNP	0,1	0860130
0 ... 16 bar	40	Flange	2 x PNP	0,1	0860136

* Short term pressure peaks should not exceed this value.

Normal operation should be within switching pressure range.

Final value/over pressure equals maximum test pressure.

** Output 2 is programmable; conforming to DESINA or a standard output (n.o./n.c.)

Note: NPT and PSI versions available on request

Factory Setting

Setting	Code	Pressure unit	OUT 1 Switching function (n.o. / n.c.)	Switch point (% of range)	Reset point (% of range)	OUT 2 switching function (n.o./n.c.)	Switch point (% of range)	Reset point (% of range)	Display zero point suppression (% of range)	Colour	Brightness
NORGREN	none	bar	n.o.	80%	79%	DESINA (n.c.)	-	-	2%	Yellow	50%

Allfluid/Hydraulic versions

Pressure range* (bar)	Over pressure* (bar)	Fluid connection*	Output signal**	Display step size (bar)	MODELS
0 ... 40 bar	100	G1/4	2 x PNP	0,2	0860140
0 ... 40 bar	100	Flange	2 x PNP	0,2	0860146
0 ... 100 bar	175	G1/4	2 x PNP	0,2	0860150
0 ... 100 bar	175	Flange	2 x PNP	0,2	0860156
0 ... 160 bar	280	G1/4	2 x PNP	1,0	0860160
0 ... 160 bar	280	Flange	2 x PNP	1,0	0860166
0 ... 250 bar	400	G1/4	2 x PNP	1,0	0860170
0 ... 250 bar	400	Flange	2 x PNP	1,0	0860176
0 ... 400 bar	700	G1/4	2 x PNP	2,0	0863180
0 ... 400 bar	700	Flange	2 x PNP	2,0	0860186
0 ... 600 bar	1000	G1/4	2 x PNP	3,0	0860190
0 ... 600 bar	1000	Flange	2 x PNP	3,0	0860196

* Short term pressure peaks should not exceed this value.

Normal operation should be within switching pressure range.

Final value/over pressure equals maximum test pressure.

** Output 2 is programmable; conforming to DESINA or a standard output (n.o./n.c.)

Note: NPT and PSI versions available on request

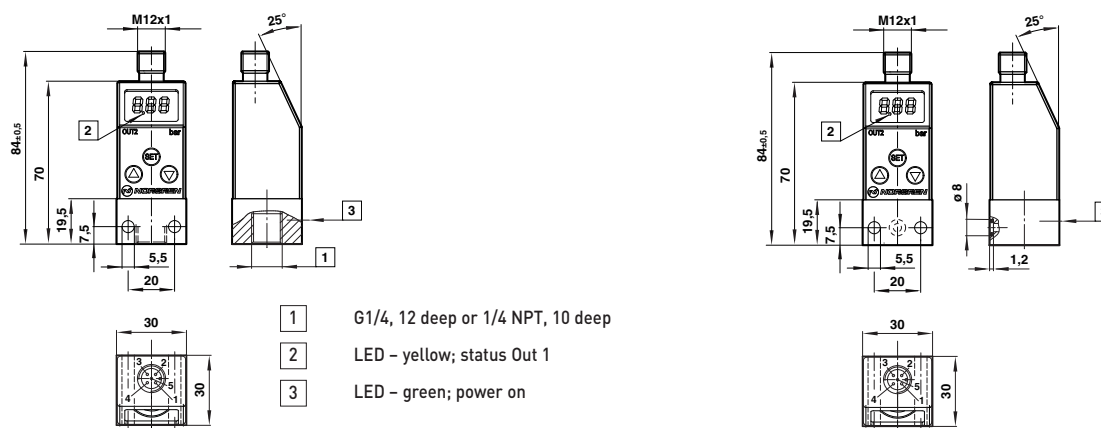
Factory setting

Setting	Code	Pressure unit	OUT 1 switching function (n.o. / n.c.)	Switch point (% of range)	Reset point (% of range)	OUT 2 switching function (n.o./n.c.)	Switch point (% of range)	Reset point (% of range)	Display zero point suppression (% of range)	Colour	Brightness
NORGREN	none	bar	n.o.	50%	48%	DESINA (n.c.)	-	-	2%	Yellow	50%

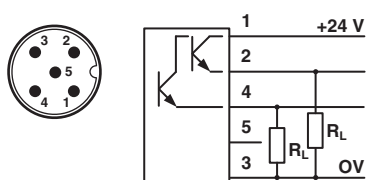
ACCESSORIES

Pressure port reducing nipple	Snubber	Connector M 12 x 1 90°	Connector M 12 x 1 90°	Connector M 12 x 1 90°	Connector M 12 x 1 straight, 5-pin	Connector M 12 x 1 straight, 4-pin
						
0574767	0574773	0799845 (2 m cable length) 0250081 (5 m cable length)	0523058 (2 m cable length) 0523053 (5 m cable length)	0523056 (without cable)	0523057 (2 m cable length) 0523052 (5 m cable length)	0523055 (without cable)

BASIC DIMENSIONS



Electrical connection M 12 x 1



Pin	Signal	Cable
1	+Ub	brown
2	Out 2 (PNP) or DESINA	white
3	0 V	blue
4	Out 1 (PNP)	black
5	not used	grey

ACCESSORIES

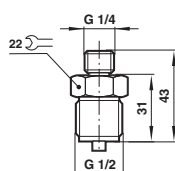
Pressure port reducing nipple

Material: brass

Model: 0574767

Material: stainless steel
(1.4301)

Model: 0550083



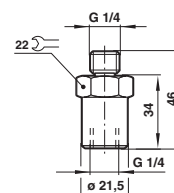
Snubber

Material: brass

Model: 0574773

Material: stainless steel
(1.4301)

Model: 0553258



Electronic pressure switches

40D Pneumatic
-1 ... 10 bar



Space saving design
Easy programming of set points
Options with and without display
Special selectable functions
Optional analogue (1 ... 5V) and digital outputs, as n.o. / n.c. programmable
Display can be rotated through 180°
Not for outdoor application
Pneumatic connection optional
G1/8 male or M5 female

TECHNICAL DATA

Medium:
For non aggressive gases and dry, non lubricated compressed air

Operation:
Pressure sensors are converting a fluidic signal into digital output and a proportional analogue voltage output signal

Ambient and fluid temperature:
0°C ... + 50°C

Display:
7 segments display, 3 digits

Switching pressure difference/hysteresis:
Programmable

Switching indication:
LED red

Linearity:
< 1% Full Scale (FS)

Repeatability:
± 0,2 % of measuring range

Degree of protection:
IP65 (conforming to DIN 40050)

Shock:
10 g, xyz

Vibration proof:
10 ... 55 Hz, 1,5 mm, xyz, 2 hours

Electrical connection:
M8 x 1 with 4-pin

Voltage supply:
UB = 10,8 ... 30 V d.c., max. 10% residual ripple within UB

Power consumption:
≤ 35 mA

Output signal:
Digital: UB minus 1,5 V,
analogue: 1 ... 5 V

Contact rating:
I_{max} = 125 mA

Switching time:
< 2,5 ms

Output closing/release delay:
Programmable 0 ... 180 s

Electromagnetic compatibility:
Interference immunity
conforming to EN 50081. part 1
Interference immunity
conforming to EN 50082. part 2

MATERIALS

Housing: plastic ABS - PC
Fluid ports: brass nickel plated

40D Pneumatic switch

MODELS	Pressure range	Over pressure*	Display	Output signal
0862440	- 1 ... 0 bar	5 bar	no	1 x PNP / analogue 1 ... 5 V
0862441	- 1 ... 0 bar	5 bar	yes	2 x PNP
0862442	0 ... 10 bar	12 bar	yes	2 x PNP

All models not suitable for outdoor applications

* Over pressure, short-term pressure peaks should not to exceed this value during operation
Connector is not included.

ACCESSORIES

Connector, M8x1,
straight



0523449
(4-pin, 1,5 m cable)
0523447
(4-pin, 5 m cable)

Connector, M8x1,
90°



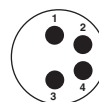
0523446
(4-pin, 1,5 m cable)
0523448
(4-pin, 5 m cable)

Mounting bracket including
adaptor flange



0523426
(complete with fixing screws
and o-rings)

Electrical connection (M8x1)



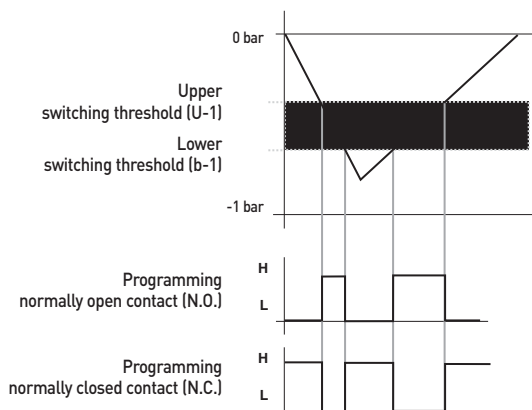
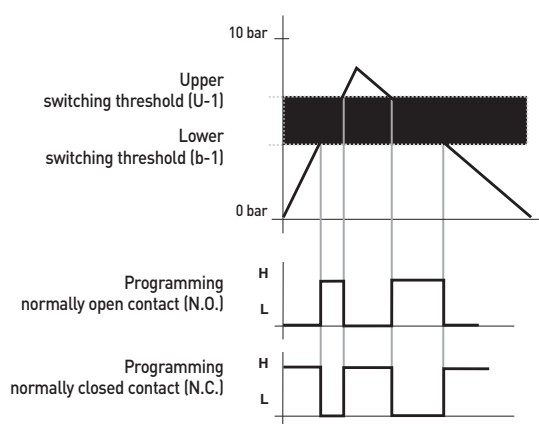
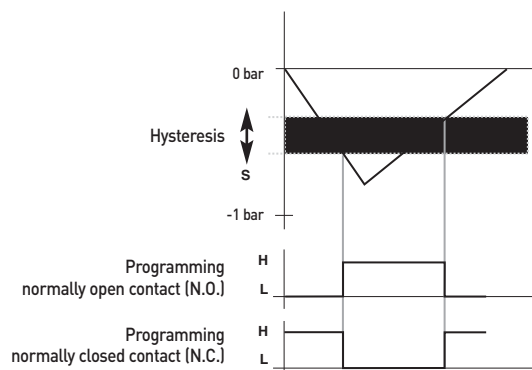
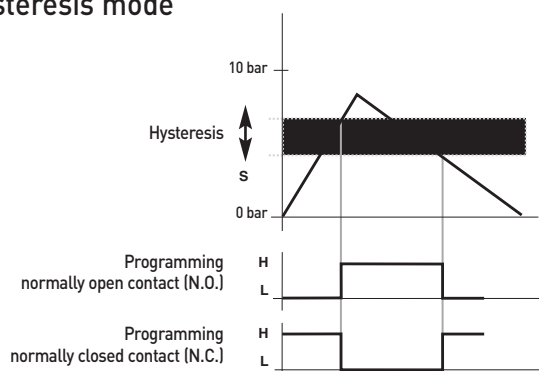
Signal	PIN	Cable
+ UB	1	brown
PNP 2/analogue 1 ... 5 V	2	white
0 V	3	blue
PNP 1	4	black

For further information



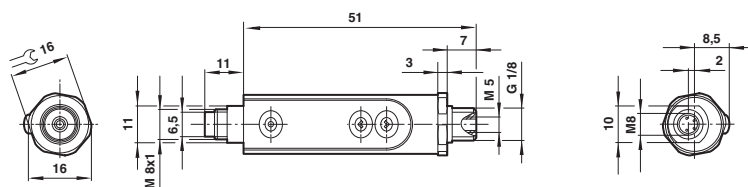
www.norgren.com/info/en5-050

Functional diagram of switching outputs (example output 1)

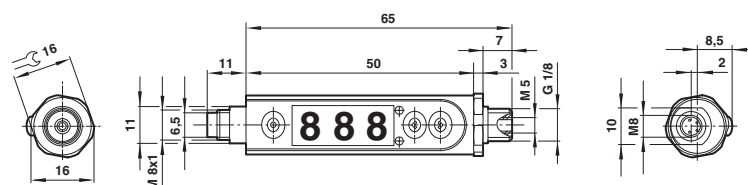


DIMENSIONS

Model 0862440



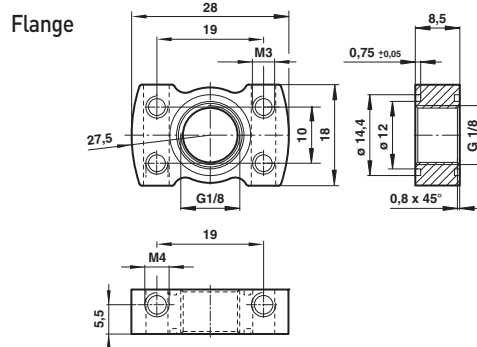
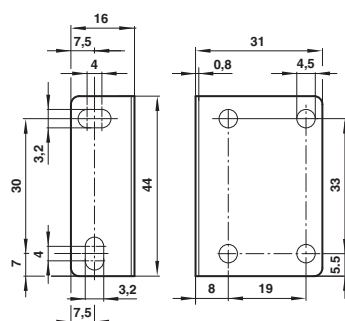
Model 0862441 & 0862442



Mounting bracket including adaptor flange, fixing screws and o-rings

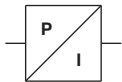
Model: 0523426

Mounting bracket



Electronic pressure sensors

18S Pneumatic
-1 ... 25 bar



Robust sensor for industrial applications

Linearity $\pm 0,5 \%$

For vacuum and pressure

High safety overpressure

Temperature compensated

2-pin technology (4 ... 20 mA)

Fluid connection with internal threaded or flange

Not for outdoor application

TECHNICAL DATA

Medium:

Compressed air, filtered, lubricated or non-lubricated

Mounting position:

Optional

Temperature:

Fluid Ambient
-10 ... +85°C -10 ... +85°C

Please contact our technical service for use below -2°C

Interference emission:

EN 50081-1

Interference immunity:

EN 50082-2

Degree of protection (conforming to DIN 40050):

IP 65 (with mounted connector)

Supply voltage:

10 ... 32 V d.c.

Residual ripple (max.):

10% (within supply voltage at 10 ... 32 V)

Output signal:

4 ... 20 mA (2-pin technology)

Load resistance:

See diagram

Electrical connection:

Plug (DIN EN 175301-803, form A)
M 12 x 1 (IEC 947-5-2)

Polarity:

protected

Measure range:

See table overleaf

Linearity:

$\pm 0,5\%$ (depending on measure range)

Hysteresis:

$< \pm 0,15\%$ (depending on measure range)

Temperature sensitivity:

Zero point $< \pm 0,3\%$ Full Scale (FS)
per 10° Kelvin

Range $< \pm 0,4\%$ Full Scale (FS)
per 10° Kelvin

Weight:

0,15 kg

MATERIALS

Housing: aluminium anodized

Sensor: silicon piezo-resistive

(with passive side to fluid)

O-ring: NBR (flange version only)

18S Pneumatic with DIN plug connection (conforming to DIN EN 175301-803 form A)

Sensor range (relative pressure) bar	Over pressure* bar	Port size	Output signal	Dimensions no.	MODELS
-1 ... +1	10	G 1/4	4 ... 20	1	0862081
-1 ... +1	10	Flange	4 ... 20	2	0862085
0 ... 10	30	G 1/4	4 ... 20	1	0862181
0 ... 10	30	Flange	4 ... 20	2	0862185
0 ... 25	40	G 1/4	4 ... 20	1	0862381
0 ... 25	40	Flange	4 ... 20	2	0862385

All models not suitable for outdoor applications

* Over pressure, short-term pressure peaks should not to exceed this value during operation

Connector is not included.

18S Pneumatic with M12 x 1 electrical connection

Sensor range (relative pressure) bar	Over pressure* bar	Port size	Output signal	Dimensions no.	MODELS
-1 ... +1	10	G 1/4	4 ... 20	3	0862082
-1 ... +1	10	Flange	4 ... 20	4	0862086
0 ... 10	30	G 1/4	4 ... 20	3	0862182
0 ... 10	30	Flange	4 ... 20	4	0862186
0 ... 25	40	G 1/4	4 ... 20	3	0862382
0 ... 25	40	Flange	4 ... 20	4	0862386

All models not suitable for outdoor applications

* Over pressure, short-term pressure peaks should not to exceed this value during operation

Connector is not included.

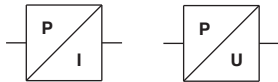
For further information



www.norgren.com/info/en5-052

Electronic pressure sensors

18S Allfluid
0 ... 800 bar



Robust sensor for hydraulic applications
Small, space saving construction
Robust stainless steel housing
High overpressure
Temperature compensated
3-pin technology (0 ... 10 V)
2-pin technology (4 ... 20 mA)
Excellent long-term stability
Stainless steel measuring element
not oil-filled

TECHNICAL DATA

Medium:

For neutral and aggressive gases or fluids

Mounting position:

Optional

Temperature:

Fluid

-20°C ... +85°C / -40°C ... +125°C*

Ambient

-20°C ... +85°C / -40°C ... +110°C*

*on request

Please consult our technical service for use below +2°C

Interference emission:

EN 50081-1

Interference immunity:

EN 50082-2

Degree of protection (conforming to DIN 40050):

IP65 (with mounted plug)

Shock protection:

30 g, xyz, DIN EN 60068-2-27

Vibration protection:

3 g, 5 ... 500 Hz, xyz, DIN EN 60068-2-6

Supply voltage:

12 ... 30 V d.c. (current output)

15 ... 30 V d.c. (voltage output)

Residual ripple (max.):

10% (within supply voltage) at 50 Hz

Output signal:

4 ... 20 mA (2-pin technology)

0 ... 10 V (3-pin technology)

Frequency output on request

Load resistance:

See diagram

Electrical connection:

M12 x 1

Polarity:

Short-circuit proof

Measuring range:

See table overleaf

Linearity:

± 0,5% Full scale (FS)

Hysteresis:

< ± 0,1% (depending on measuring range)

Temperature sensitivity:

Zero point < ± 0,4% Full Scale (FS)

per 10° Kelvin - typical

Range < ± 0,2% Full Scale (FS)

per 10° Kelvin - typical

Weight:

0,070 kg

MATERIALS

Housing: stainless steel

1.4571/1.4542

Sensor: stainless steel membrane

1.4542

18S Allfluid with M12 x 1 electrical connection

Sensor range (relative pressure) bar	Over pressure bar	Fluid connection	Output signal	MODELS
0 ... 10	40	G 1/4	4 ... 20 mA	0862170
0 ... 10	40	G 1/4	0 ... 10 Volt	0862180
0 ... 25	50	G 1/4	4 ... 20 mA	0862370
0 ... 25	50	G 1/4	0 ... 10 Volt	0862380
0 ... 100	200	G 1/4	4 ... 20 mA	0862470
0 ... 100	200	G 1/4	0 ... 10 Volt	0862480
0 ... 250	500	G 1/4	4 ... 20 mA	0862670
0 ... 250	500	G 1/4	0 ... 10 Volt	0862680
0 ... 400	750	G 1/4	4 ... 20 mA	0862770
0 ... 400	750	G 1/4	0 ... 10 Volt	0862780
0 ... 800	1000	G 1/4	4 ... 20 mA	0862970
0 ... 800	1000	G 1/4	0 ... 10 Volt	0862980

Plug not included. Please see below.

Alternative sensor ranges available on request.

For further information



www.norgren.com/info/en5-054

