

Pressure switches

SAUTER pressure switches can be used in any application for controlling and monitoring the pressure in liquids, gases and vapours. They detect changes in pressure in gaseous and/or liquid media and are used to switch pumps, valves or compressors.

Overview of pressure switches

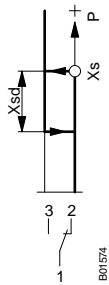
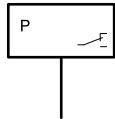


Type designation	DSA	DSB	DSF	DSL	DSH	DFC 17B	DFC 27B	DSD
Pressure monitors	•	•	•	–	–	•	•	–
Pressure limiters								
For rising pressure	–	–	–	–	•	•*)	•*)	–
For falling pressure	–	–	–	•	–	•*)	•*)	–
Differential pressure switch	–	–	–	–	–	–	–	•
Pressure sensors								
Of brass	•	•	–	•	–	•	–	–
Of stainless steel	–	–	•	–	•	–	•	•
Switching difference								
Fixed	•	–	–	•	•	–	–	•
Variable	–	•	•	–	–	•	•	–
Certification								
VdTÜV 100	–	•	•	•	•	•	•	–
EN 12952-11, EN 12953-9	–	•	•	•	•	•	•	–
Germanischer Lloyd (GL)	–	•	•	•	•	•	•	–
Lloyds Register	–	•	•	•	•	–	–	–
Can be used for aggressive media	–	–	•	–	•	–	•	–
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☛ *) Depending on approval



DSA14*F002



DSA: Pressure switch

Features

- For regulating and monitoring pressure in liquids, gases and vapours
- Especially suitable for applications in compact installations
- Upper switching point can be adjusted
- Fixed switching difference, no hysteresis setting is necessary
- Sealable
- Pressure sensor made of brass for non-aggressive media

Technical data

Power supply

Maximum load with gold-plated contacts ¹⁾	400 mA, 24 V, 10 VA
Minimum load with gold-plated contacts	4 mA, 5 V
Maximum load with silver-plated contacts	10(4) A, 250 V~, 50 W, 250 V=
Minimum load with silver-plated contacts	100 mA, 24 V

Parameters

Pressure connection	G½" male
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Ambient conditions

Admissible sensor temperature	70 °C
Ambient temperature	-20...70 °C

Construction

Fitting	Pipe and wall mounting
Housing	Transparent cover
Housing material	Impact-proof thermoplastic
Device plug	Standard plug with female cable connector for cable of Ø 6...10 mm

Standards and directives

Type of protection ²⁾	IP65 (EN 60529)
Protection class	I (IEC 60730)
CE conformity according to ³⁾	Low-Voltage Directive 2014/35/EU EN 60730-1, EN 60730-2-6
	EMC Directive 2014/30/EU EN 61000-6-1, EN 61000-6-2 EN 61000-6-3, EN 61000-6-4
	Machinery Directive 2006/42/EC EN ISO 12100 (according to Appendix II, 1B)

Overview of types

Type	Setting range	Switching difference	Maximum pressure	Admissible vacuum loading	Weight
DSA140F002	0.5...2.5 bar	0.25 bar	12 bar	-0.7 bar	0.5 kg
DSA143F002	0.5...6 bar	0.3 bar	16 bar	-0.7 bar	0.5 kg
DSA146F002	1...10 bar	0.4 bar	20 bar	-1.0 bar	0.4 kg

¹⁾ If the contacts are subjected to a load greater than specified, the gold plating will be destroyed. They are then classed merely as silver contacts and lose the properties of gold-plated contacts

²⁾ Depending on the fitting position, see the fitting instructions. The devices are not suitable for outdoor applications.

³⁾ Excluded from the Pressure Equipment Directive 97/23/EC (as per Art. 1.3.6)



☛ DSA: Pressure sensor made of brass for non-aggressive media; X_s = upper switching point

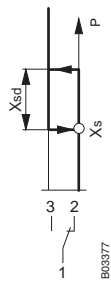
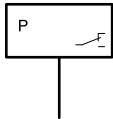
Accessories

Type	Description
0035465000	Throttle screw for absorbing pressure surges, brass
0192222000	Cap nut with solder connector
0192700000	1 m capillary tube for absorbing pressure surges, copper
0214120000	Throttle screw for absorbing pressure surges, stainless steel
0259239000	Reduction nipple G $\frac{1}{2}$ " on 7/16" 20-UNF-2A for copper tubes of \varnothing 6 mm, brass
0292001000	Setpoint adjuster according to customer's wishes (setting accuracy: $\pm 3\%$ of the setting range, but a minimum of ± 0.2 bar)
0292004000	Setpoint adjuster sealed (with accessory 0292001 only)
0292018001	Damping screw for absorbing pressure surges in low viscosity media
0292150001	Fixing bracket for wall mounting
0296936000	Fixing brackets for rail: top-hat rail EN 60715, 35 \times 7.5 mm and 35 \times 15 mm
0311572000	Screw fitting for copper tubes of \varnothing 6 mm, brass
0381141001	Profile sealing ring, copper, for G $\frac{1}{2}$ "

☛ 0296936000: With accessory 0292150001 only



DSB1**F001



DSB, DSF: Pressure monitors and pressure switches

Features

- For regulating and monitoring pressure in liquids, gases and vapours
- Adjustable lower switching point
- Adjustable switching difference
- Sealable
- Pressure sensor made of brass for non-aggressive media (DSB)
- Pressure sensor made of stainless steel for aggressive media (DSF)
- SIL 2 certified as per EN 61508
- Approved for marine applications (GL and LR certified)

Technical data

Power supply

Maximum load with gold-plated contacts ¹⁾	400 mA, 24 V, 10 VA
Minimum load with gold-plated contacts	4 mA, 5 V
Maximum load with silver-plated contacts	10(4) A, 250 V~, 50 W, 250 V=
Minimum load with silver-plated contacts	100 mA, 24 V

Parameters

Pressure connection	G½" male
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Ambient conditions

Ambient temperature	-20...70 °C
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Construction

Housing	Transparent cover
Housing material	Impact-proof thermoplastic
Device plug	Standard plug with female cable connector for cable Ø 6...10 mm

Standards, directives

Type of protection ²⁾	IP65 (EN 60529)	
Protection class	I (IEC 60730)	
Test mark ³⁾	TÜV DWFS (SDBFS) ID: 0000006024	
PED 2014/68/EU	VdTÜV pressure information sheet 100 cat. IV (as SDBFS) EN 12952-11, EN 12963-9	
Ship-approved	Germanischer Lloyd (GL) Lloyds Register	
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-6
	Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100
SIL-conformity as per SIL 2	Standards	IEC 61508 parts 1-2 and 4-7

- ¹⁾ If the contacts are subjected to a load greater than specified, the gold plating will be destroyed. They are then classed merely as silver contacts and lose the properties of gold-plated contacts
- ²⁾ Depending on the fitting position, see the fitting instructions. The devices are not suitable for outdoor applications.
- ³⁾ DWFS (SDBFS): As a safety pressure limiter when an external electrical locking facility is fitted downstream in the circuit. Certificates can be downloaded from www.certipedia.com



Overview of types

Type	Setting range	Switching difference	Maximum pressure	Max. sensor temp.	Admissible vacuum loading	Weight
DSB138F001	0...1.6 bar	0.25...0.65 bar	12 bar	70 °C	-0.7 bar	0.5 kg
DSB140F001	0...2.5 bar	0.25...0.75 bar	12 bar	70 °C	-0.7 bar	0.5 kg
DSB143F001	0...6 bar	0.3...1.6 bar	16 bar	70 °C	-0.7 bar	0.5 kg
DSB146F001	0...10 bar	0.8...3.7 bar	30 bar	70 °C	-1 bar	0.4 kg
DSB152F001	6...16 bar	1...4 bar	30 bar	70 °C	-1 bar	0.4 kg
DSB158F001	0...25 bar	1...7.5 bar	60 bar	70 °C	-1 bar	0.4 kg
DSB170F001	5...40 bar	1.4...7.5 bar	60 bar	70 °C	-1 bar	0.4 kg
DSF125F001	-1...1.5 bar	0.25...0.75 bar	12 bar	110 °C	-1 bar	0.5 kg
DSF127F001	-1...5 bar	0.3...1.5 bar	16 bar	110 °C	-1 bar	0.5 kg
DSF135F001	0...0.6 bar	0.12...0.60 bar	12 bar	110 °C	-1 bar	0.5 kg
DSF138F001	0...1.6 bar	0.25...0.7 bar	12 bar	110 °C	-1 bar	0.5 kg
DSF140F001	0...2.5 bar	0.25...0.75 bar	12 bar	110 °C	-1 bar	0.5 kg
DSF143F001	0...6 bar	0.3...1.5 bar	16 bar	110 °C	-1 bar	0.5 kg
DSF146F001	0...10 bar	0.8...3.0 bar	18 bar	110 °C	-1 bar	0.5 kg
DSF152F001	0...16 bar	1.2...3.8 bar	60 bar	110 °C	-1 bar	0.3 kg
DSF158F001	0...25 bar	1.5...8.0 bar	60 bar	110 °C	-1 bar	0.3 kg
DSF170F001	15...40 bar	1.7...8.2 bar	60 bar	110 °C	-1 bar	0.3 kg

☛ DSB: Pressure sensor made of brass for non-aggressive media; X_S = lower switching point.

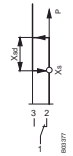
☛ DSF: Pressure sensor made of stainless steel for aggressive media; X_S = lower switching point.

☛ The switching difference must be within the setting range of the switching point. The minimum values of the switching difference are only possible in the lower setting range.

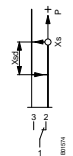
Accessories

Type	Description
0259239000	Reduction nipple G $\frac{1}{2}$ " on 7/16" 20-UNF-2A for copper tubes of \varnothing 6 mm, brass
0292001000	Setpoint adjuster according to customer's wishes (setting accuracy: $\pm 3\%$ of the setting range, but a minimum of ± 0.2 bar)
0292002000	Switching difference according to customers' wishes (setting accuracy: $\pm 5\%$ of the setting range, but a minimum of ± 0.05 bar, with accessory 0292001 only)
0292004000	Setpoint adjuster sealed (with accessory 0292001 only)
0292150001	Fixing bracket for wall mounting
0296936000	Fixing brackets for rail: top-hat rail EN 60715, 35 \times 7.5 mm and 35 \times 15 mm
0311572000	Screw fitting for copper tubes of \varnothing 6 mm, brass
0381141001	Profile sealing ring, copper, for G $\frac{1}{2}$ "

☛ 0296936000: With accessory 0292150001 only



DSL1**F001



DSH1**F001



DSL, DSH: Specially designed pressure limiter

Features

- Switching point can be adjusted
- Sealable
- Pressure sensor made of brass for non-aggressive media (DSL)
- Pressure sensor made of stainless steel for aggressive media (DSH)
- Locking type: With falling pressure (DSL) or with rising pressure (DSH)
- SIL 2 certified as per EN 61508
- Approved for marine applications (GL and LR certified)

Technical data

Power supply

Maximum load with gold-plated contacts ¹⁾	400 mA, 24 V, 10 VA
Minimum load with gold-plated contacts	4 mA, 5 V
Maximum load with silver-plated contacts	10(4) A, 250 V~, 50 W, 250 V=
Minimum load with silver-plated contacts	100 mA, 24 V

Parameters

Pressure connection	G $\frac{1}{2}$ " male
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Ambient conditions

Ambient temperature	-20...70 °C
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Construction

Housing	Transparent cover
Housing material	Impact-proof thermoplastic
Device plug	Standard plug with female cable connector for cable of \varnothing 6...10 mm

Standards and directives

Type of protection ²⁾	IP65 (EN 60529)	
Protection class	I (IEC 60730)	
Test mark ³⁾	TÜV DSL: SDBF ID: 0000006022 DSH: SDB ID: 0000006023 PED: 2014/68/EU, cat. IV	
Ship-approved	Germanischer Lloyd (GL) Lloyds Register	
CE conformity according to	EMC Directive 2014/30/EU	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4
	Low-Voltage Directive 2014/35/EU	EN 60730-1, EN 60730-2-6
	PED 2014/68/EU	VdTÜV pressure information sheet 100, cat. IV EN 12952-11 EN 12953-9
	Machinery Directive 2006/42/EC (according to Appendix II, 1B)	EN ISO 12100
SIL-conformity as per SIL 2	Standards	IEC 61508 parts 1-2 and 4-7

¹⁾ If the contacts are subjected to a load greater than specified, the gold plating will be destroyed. They are then classed merely as silver contacts and lose the properties of gold-plated contacts

²⁾ Depending on the fitting position, see the fitting instructions. The devices are not suitable for outdoor applications.

³⁾ Certificates can be downloaded from www.certipedia.com

Overview of types

i Min. change for reset: Average values

Type	Setting range	Min. change for reset	Maximum pressure	Admissible sensor temperature	Admissible vacuum loading	Weight
DSL140F001	0...2.5 bar	0.4 bar	12 bar	70 °C	-0.7 bar	0.5 kg
DSL143F001	0...6 bar	0.5 bar	16 bar	70 °C	-0.7 bar	0.5 kg
DSL152F001	6...16 bar	1.2 bar	30 bar	70 °C	-1.0 bar	0.4 kg
DSH127F001	-1...5 bar	-0.4 bar	16 bar	110 °C	-1.0 bar	0.5 kg
DSH143F001	0.5...6 bar	-0.45 bar	16 bar	110 °C	-0.7 bar	0.5 kg
DSH146F001	1...10 bar	-0.8 bar	18 bar	110 °C	-1.0 bar	0.5 kg
DSH152F001	2...16 bar	-1.5 bar	60 bar	110 °C	-1.0 bar	0.3 kg
DSH158F001	5...25 bar	-1.8 bar	60 bar	110 °C	-1.0 bar	0.3 kg
DSH170F001	15...40 bar	-2.0 bar	60 bar	110 °C	-1.0 bar	0.3 kg

☛ DSL: Locks when the pressure falls (SDBF); pressure sensor made of brass for non-aggressive media.

☛ DSH: Locks when the pressure rises (SDB); pressure sensor made of stainless steel.

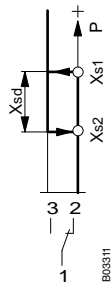
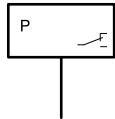
Accessories

Type	Description
0259239000	Reduction nipple G $\frac{1}{2}$ " on 7/16" 20-UNF-2A for copper tubes of \varnothing 6 mm, brass
0292001000	Setpoint adjuster according to customer's wishes (setting accuracy: $\pm 3\%$ of the setting range, but a minimum of ± 0.2 bar)
0292004000	Setpoint adjuster sealed (with accessory 0292001 only)
0292150001	Fixing bracket for wall mounting
0296936000	Fixing brackets for rail: top-hat rail EN 60715, 35 \times 7.5 mm and 35 \times 15 mm
0311572000	Screw fitting for copper tubes of \varnothing 6 mm, brass
0381141001	Profile sealing ring, copper, for G $\frac{1}{2}$ "

☛ 0296936000: With accessory 0292150001 only



DFC17B76F001



DFC 17B, 27B: Heavy-duty pressure switch

Features

- For regulating and monitoring pressure in liquids, gases and vapours
- Especially suitable for installations subject to vibrations
- Contact rating 1 mA/6 V to 10 A/400 V
- Gold-plated silver contacts, vibration-proof snap-action switch with single-pole change-over switch
- Upper and lower switching points can be set independently of each other
- Sealable
- Splashproof
- DFC17B**F001: Pressure sensor made of brass for non-aggressive media
- DFC27B**F002: Pressure sensor made of stainless steel for aggressive media

Technical data

Power supply

Maximum load with gold-plated contacts ¹⁾	200 mA, 50 V
Minimum load with gold-plated contacts	1 mA, 6 V
Maximum load with silver-plated contacts ²⁾	10(2) A, 400 V~ (25 W), 250 V=
Minimum load with silver-plated contacts	100 mA, 24 V

Ambient conditions

Temperature of medium	≤ 110 °C
Ambient temperature	-40...70 °C

Construction

Housing	Transparent cover
Housing material	Light metal
Cable inlet	PG 13.5
Screw terminals	For electrical cables of up to 2.5 mm ²
Pressure connection	G½" male

Standards and directives

Type of protection	IP44 (EN 60529)
Protection class	I (IEC 60730)
Test mark ³⁾	TÜV DWFS (SDBF) ID: 0000006018 DWFS (SDB) ID: 0000006019 DB (SDBF) ID: 0000006017
Mode of operation	Type 2 B (EN 60730)
CE conformity according to	Low-Voltage Directive 2014/35/EU EN 60730-1, 60730-2-6
	EMC Directive 2014/30/EU EN 61000-6-1, EN61000-6-2 EN 61000-6-3, EN 61000-6-4
	PED 2014/68/EU VdTÜV pressure information sheet 100, sheet 1, cat. IV, DIN 3398 T4 EN 12952-11, EN 12953-9

¹⁾ If the contacts are subjected to a load greater than 200 mA, 50 V, the gold plating will be destroyed. They are then classed merely as silver contacts and lose the properties of gold-plated contacts

²⁾ Take the RC circuitry into account for inductive loads
230/400 V networks

From 70 °C media temperature, the current must be reduced to 6 A

³⁾ Certificates can be downloaded from www.certipedia.com



Overview of types

Type	Setting range (bar)	Min. switching difference (bar)	Maximum pressure (bar)	Max. temp., sensor (°C)	Admissible vacuum loading (bar)	Weight (kg)
DFC17B54F001	0...2.5	0.14	16	70	-0.7	1.2
DFC17B58F001	0...6.0	0.18	16	70	-1.0	1.2
DFC17B59F001	-1...5.0	0.20	16	70	-1.0	1.2
DFC17B76F001	0...10	0.50	40	70	-1.0	1.1
DFC17B78F001	0...16	0.50	40	70	-1.0	1.1
DFC17B79F001	16...32	0.80	42	70	-1.0	1.1
DFC17B96F001	0...25	1.70	100	70	-1.0	1
DFC17B97F001	25...50	2.00	100	70	-1.0	1
DFC17B98F001	0...40	1.80	100	70	-1.0	1
DFC27B26F002	-1...2.5	0.30	21	110	-1.0	0.9
DFC27B43F002	0.5...6.0	0.30	21	110	-1.0	0.9
DFC27B46F002	1...10	0.30	21	110	-1.0	0.9
DFC27B52F002	2...16	0.30	21	110	-1.0	0.9

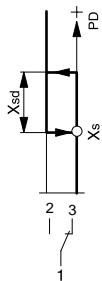
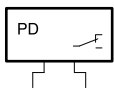
☛ The switching difference must be within the setting range of the switching point. The minimum values of the switching difference are only possible in the lower setting range.

Accessories

Type	Description
0259239000	Reduction nipple G $\frac{1}{2}$ " on 7/16" 20-UNF-2A for copper tubes of \varnothing 6 mm, brass
0311572000	Screw fitting for copper tubes of \varnothing 6 mm, brass
0035465000	Throttle screw for absorbing pressure surges, brass
0214120000	Throttle screw for absorbing pressure surges, stainless steel
0292018001	Damping screw for absorbing pressure surges in low viscosity media
0259189000	Holder for raised wall mounting
0259409000	Fixing bracket (provides 3-point fixing with accessory 0259189)
0292019001	Setpoint adjustment for each switching point according to customer's wishes (setting accuracy: $\pm 3\%$ of the setting range)
0292019002	Sealing of the adjustment screw for each switching point (only with accessory 0292019001)
0381141001	Profile sealing ring, copper, for G $\frac{1}{2}$ "



DSD1**F002



DSD: Differential pressure switch

Features

- For monitoring the differential pressure in liquids, gases and vapours
- For use in, for example, filter technology and plant and machine engineering
- Differential pressure setting ranges from 0.06 to 6 bar
- Up to 80 °C media temperature
- High repeat precision
- High overload protection
- Can be used in all neutral media, such as heating water, neutral gases, oils etc.
- Long serviceable life
- With fitting bracket

Technical data

Parameters

Min. load	0.1 A, 250 V~, 25 VA 0.1 A, 30 V=
Max. load	3(1) A, 250 V~, 250 VA 0.4 A, 30 V=, 10 W
Temperature dependence	1.5%/10 K
Accuracy	3% of the setting range
Hysteresis	5% of the setting range
Mechanical serviceable life	10 ⁶ switchings
Max. static operating pressure (positive and negative pressure)	16 bar

Ambient conditions

Ambient temperature	-10...70 °C
Temperature of medium	0...80 °C (non-freezing media)
Ambient humidity	45...75% rh

Construction

Power cable ¹⁾	3 x 0.5 mm ²
Diaphragms	Chromium-nickel steel 1.4310
Connecting thread	G 1/8" (female thread)
Weight	0.2 kg

Standards and directives

Type of protection	IP65 (EN 60529)
Protection class	II (EN 60730)

CE conformity according to	Low-Voltage Directive 2014/35/EU	EN 60730-1 / EN 60730-2-6
	EMC Directive 2014/30/EU	EN 55014 Click rate N < 0.2 Art. 4.2
	PED 97/23/EC	Art. 3.3
	PED 2014/68/EU	Art. 13, fluid group 2

Overview of types

Type	Setting range (bar)
DSD134F102	0.06...0.6
DSD137F002	0.10...1.0
DSD140F002	0.25...2.5
DSD143F002	0.6...6.0

¹⁾ 1 m long, fixed wiring



Accessories

Type	Description
0300360005	Cutting ring fitting G $\frac{1}{8}$ " to 6 mm pipe (2 pcs)
0300360006	Pneumatic fitting G $\frac{1}{8}$ " to 6 mm hose (2 pcs)
0300360016	Throttle screws G $\frac{1}{8}$ ", G $\frac{1}{4}$ " (2 pcs)

