

## Pressure Switches

# Product series DSA, DSB, DSC, DSD

For oil, fluid grease and grease

For use in SKF centralized lubrication systems, hydraulic and compressed-air systems

DSA



DSB



DSC



SKF pressure switches monitor the pressure of a centralized lubrication system to assess and help to ensure its proper function. Important monitoring parameters in an intermittently operated centralized lubrication system with SKF MonoFlex single-line distributors are pressure buildup, pressure head, and pressure reduction.

In SKF CircOil circulating-oil lubrication systems, the pressure of the pipe system and thereby the function of the centralized lubrication system are monitored.

Depending on the design, SKF pressure switches can be used for oil, fluid greases of NLGI Grades 000, 00, and 0, and NLGI Grade 1-2 greases.

**SKF pressure switches are available as NC contacts, NO-contacts, or changeover contacts and monitor:**

- Function of a lubrication pump unit (pressure buildup and reduction)
- Function of a directional control valve (zoned centralized lubrication systems)
- Function of a filter (degree of contamination)
- Piping (leakproof closure, etc.)

# Product group DSx

## Overview

### Product series DSA



### Product series DSB



### Product series DSC



### Product series DSD



# Product group DSx

## Selection table

Product series	Lubricant			Switching pressure range [bar]	Electrical limit values	Temperature range [°C]	Contact type / signal output	Page
	Oil	Fluid grease	Grease					
DSA	•	•		1 – 30	250 V AC / 30 V DC	+10 to 60	Mechanical	4
DSB			•	20 – 300	30 V AC / 36 V DC	–25 to +80	Mechanical	6
DSC	•	•		1 – 100	9 – 35 V DC	–10 to +80	Electronic	10
DSD	•	•		0.5 – 45	250 V AC / 36 V DC	–10 to +100	Mechanical	14

An important criterion for the proper function of a centralized lubrication system is the period of time between starting the lubrication pump unit or the directional control valve when filling the system and the time at which the pressure switch responds. Similarly, an important criterion of pressure relief of the centralized lubrication system is the time between switching off the device and achieving a minimum residual pressure. The control unit or the machine control unit evaluates the electrical signal from the pressure switch. This data can be used for purposes such as warning messages or switching the machine off.

SKF pressure switches are available in a wide range of versions. They can therefore be used in many applications and fields, for example in machine tools and printing machines and the wind, vehicle, steel and heavy industries.

### DSA pressure switches:

- For oil, fluid grease, and oiled compressed air
- Reliable switching function using microswitches
- Changeover contact
- Available with DIN or M12x1 plug
- Any mounting position
- Gold-plated contacts
- Membrane material FKM (FPM)
- Used in SKF MonoFlex single-line systems

### DSB pressure switches:

- For grease
- Adaptable to lubricant distributors of product series VR due to same hole pattern, same wall distance, and same connections (G1/4)
- Changeover contact
- Gold-plated contacts
- No grease bleeding at measuring point, as the pressure switch permits continuous lubricant flow without dead space
- Used in SKF MonoFlex single-line systems and SKF DuoFlex dual-line systems

### DSC pressure switches:

- For oil and fluid grease
- Various pressure units selectable
- Dual output with digital display for pressure and switching point
- Used in SKF MonoFlex single-line systems

### DSD pressure switches:

- For oil and fluid grease
- Cost-effective and space-saving
- Available as NO-contact, NC-contact or CO-contact
- Used in SKF MonoFlex single-line systems

### CAUTION

The important information on product usage located on the back cover applies to all systems described in this brochure.



### Note

During installation, ensure that both the pressure switch is attached and the connected piping are installed without stress.

# DSA pressure switches

DSA1-...-1M1A



DSA1-...-1L1A



DSA1-...-1M2A



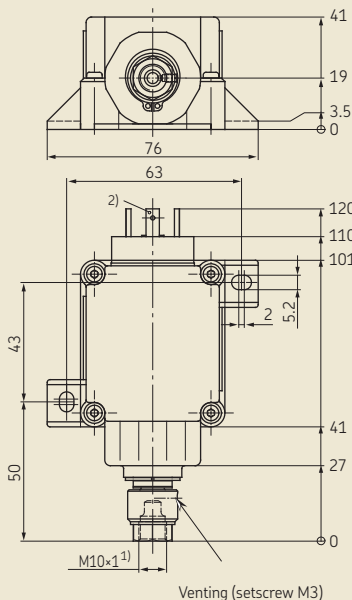
SKF pressure switches of the DSA series are inexpensive mechanical diaphragm pressure switches. The microswitch is designed as a changeover switch and can therefore be used as both a normally closed contact (NC) and a normally open contact (NO). They are available for rising and falling pressures from 1 to 30 bar and have non-adjustable increments.

## Design

The pressure cell containing the membrane and the pressure plunger is assembled with the microswitch in a compact plastic housing. The housing contains mounting feet so that the pressure switch can be mounted in any position. The electrical contacts of the microswitch are gold-plated. The membrane is made of FKM (FPM). The pressure switch housing is made of glass fiber-reinforced polyamide.

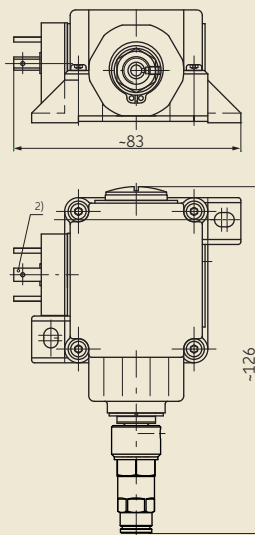
The electrical connection is established with an M12x1 circular plug or a DIN plug per DIN EN 175301-803A. Its position on the housing can be selected according to the specifics of the installation. The hydraulic connection is available as a plug connector or a solderless pipe union (DIN 3862) for pipes with diameters of 6 mm.

DSA1-...-1M1A



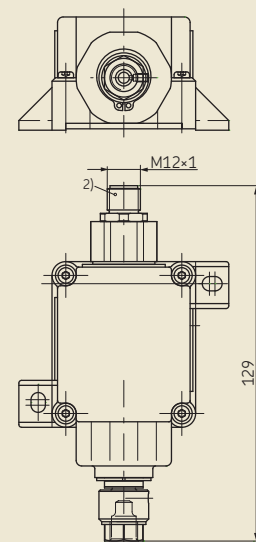
DSA1-...-2L1A

For missing dimensions, see Figure 1



DSA1-...-1M2A

For missing dimensions, see Figure 1

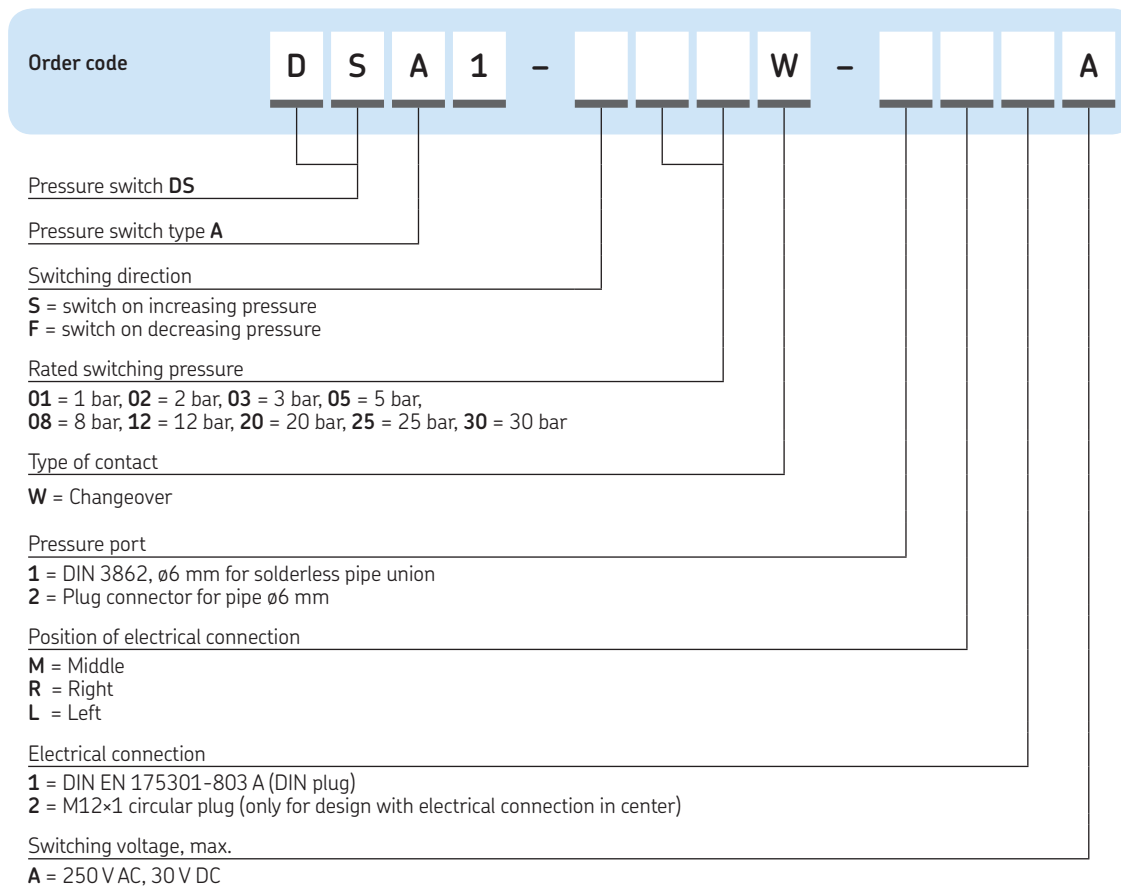


<sup>1)</sup> Pipe thread with counterbore for solderless pipe union, pipe  $\varnothing$  6

<sup>2)</sup> For connector plugs per DIN EN 175301-803A and circular plugs, cable sockets must be ordered separately; see brochure 1-1730-EN.

# DSA pressure switches

## Configurator

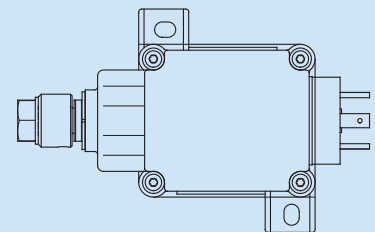


### Technical data

Rated switching pressure	1 to 30 bar
Switching pressure tolerance	1 bar <sup>+0.3</sup> ; 2 bar <sup>+0.5</sup> ; 3 bar <sup>-0.5</sup> ; 5 bar <sup>±0.5</sup> ; ≥ 8 bar <sup>+0.5/-1.5</sup>
Permissible operating pressure <sup>1)</sup>	45 bar
Contact rating, max.	125 VA
Switching voltage, max.	250 V AC / 30 V DC
Switched current	2 mA min. / 300 mA max.
Safety class IEC 61140	II
Operating temperature	+10 to 60 °C
Type of contact	Changeover
Switching rate, max.	30 per min
Mechanical service life	5 x 10 <sup>6</sup> switching cycles
Protection class (with cable box)	IP 65
Housing material	PA6 6GF30
Contact material / switch module	AuAg25Pt6
Membrane material	FKM (FPM)
Lubricant	Oil and fluid grease of NLGI Grades 000, 00, 0
Mounting position	Any

<sup>1)</sup> A pressure regulating valve must be installed in the system to prevent operating pressure from exceeding the permissible level.

### Order example



#### DSA1-S01W-1M1A

- Pressure switch type A
- Switches on increasing pressure
- Rated switching pressure 1 bar
- Changeover contact
- Pressure port per DIN 3862, ø6 mm for solderless pipe union
- Electrical connection in middle
- DIN plug DIN EN 175301-803 A
- Switching voltage 250 V AC, 30 V DC

# DSB pressure switches

DSB1 pressure switch



DSB1 pressure switch with measurement connector for a test gauge



DSB1 pressure switch with pressure gauge



DSB1 pressure switch Dual design for monitoring pressure build-up and relief pressure



DSB1 pressure switch Dual design with measurement connector for a test gauge



DSB1 pressure switch Dual design with pressure gauge



SKF pressure switches of product series DSB are mechanical piston pressure switches that are specially designed for use with NLGI Grade 1-2 greases. The location of the actuating piston inside the pressure switch housing helps to ensure a continuous exchange of grease around the measuring point (pressurization point between grease and actuating piston). This reliably prevents the same grease from being pressurized repeatedly, which could cause grease bleeding (separation of the soap skeleton of the grease from the stored oil). Pressure switches of product series DSB are designed for corrosivity category C3 or C5M per ISO 12944 and are certified by Germanischer Lloyd.

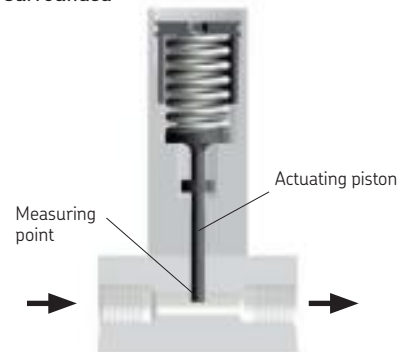
## Design

Based on the application, the pressure switch can be configured as a single or double design and with or without a measurement connector. The microswitch is designed as a changeover contact. This allows the circuitry to operate as an NC contact or NO-contact.

DSB pressure switches are available for rising and falling pressures from 20 to 300 bar in 10-bar increments. The pressure switch housing and the mounting rail are made of aluminum. The electrical contacts of the microswitch are gold-plated. The electrical connection is established via a DIN plug per DIN EN 175301-803A. The hydraulic connection is designed as a female thread G<sup>1</sup>/<sub>4</sub>.

The fastening holes, wall distance, and hydraulic connections are identical with SKF MonoFlex single-line distributors of product series V.

Pressure switch, measuring point surrounded



# DSB pressure switches

## Configurator

**Order code** **D S B 1** - [ ] [ ] [ ] [ ] [ ] [ ] [ ] - **1** [ ] - **0 1**

**Pressure switch DS**

**Pressure switch type B**  
(for grease, 20–300 bar)

**Pressure switch I**  
**S** = switch on increasing pressure  
**F** = switching on decreasing pressure

**Pressure switch I**  
**02** = 20 bar, **03** = 30 bar, **04** = 40 ... (in 10-bar increments up to) **30** = 300 bar

**Pressure switch II**  
**0** = no pressure switch  
**S** = switch on increasing pressure  
**F** = switching on decreasing pressure

**Pressure switch II**  
**00** = no pressure switch  
**02** = 20 bar, **03** = 30 bar, **04** = 40 ... (in 10-bar increments up to) **30** = 300 bar

**Measurement connector**  
**A** = measurement connector for pressure gauge M16×2    **H** = with pressure gauge 400 bar  
**G** = with pressure gauge 250 bar                                    **X** = no measurement connector

**Electrical connection**  
**1** = DIN EN 175301-803 A (DIN plug)

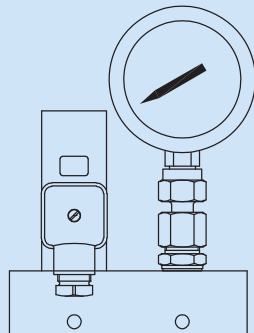
**Design**  
**A** = standard, based on corrosivity category C3 per ISO 12944, certified by Germanischer Lloyd  
**B** = based on corrosivity category C5M per ISO 12944, certified by Germanischer Lloyd, suitable for offshore applications

**Design key**  
**01** = basic design (with thread G<sup>1</sup>/<sub>4</sub>)

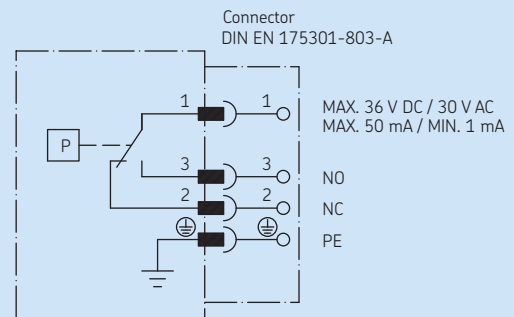
### Order example

#### DSB1-S25000H-1A-01

- DSB1 pressure switch with a pressure switch that switches on rising pressure
- Pressure switch 250 bar
- Pressure gauge 400 bar
- Standard design, based on corrosivity category C3 per ISO 12944



### Electrical connection for DSB1\*

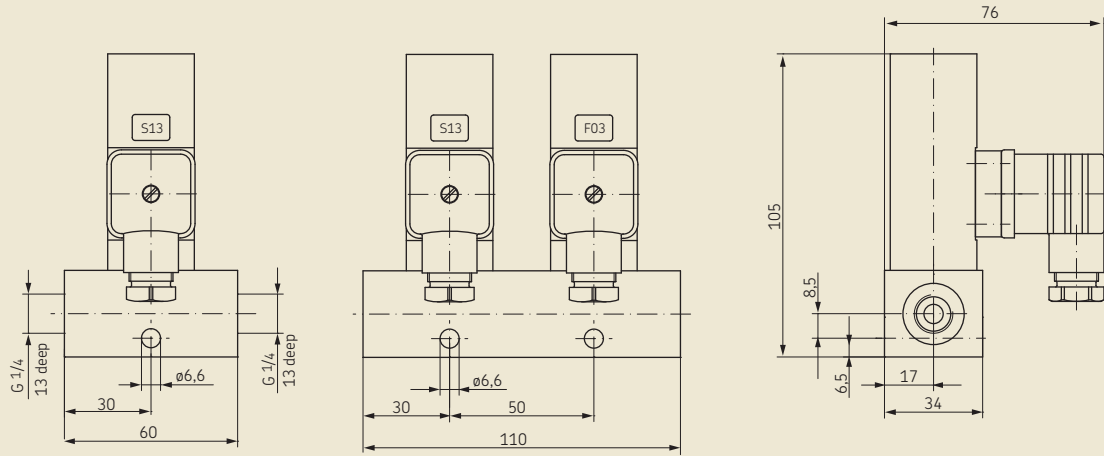


\* Drawing shows non-pressurized condition

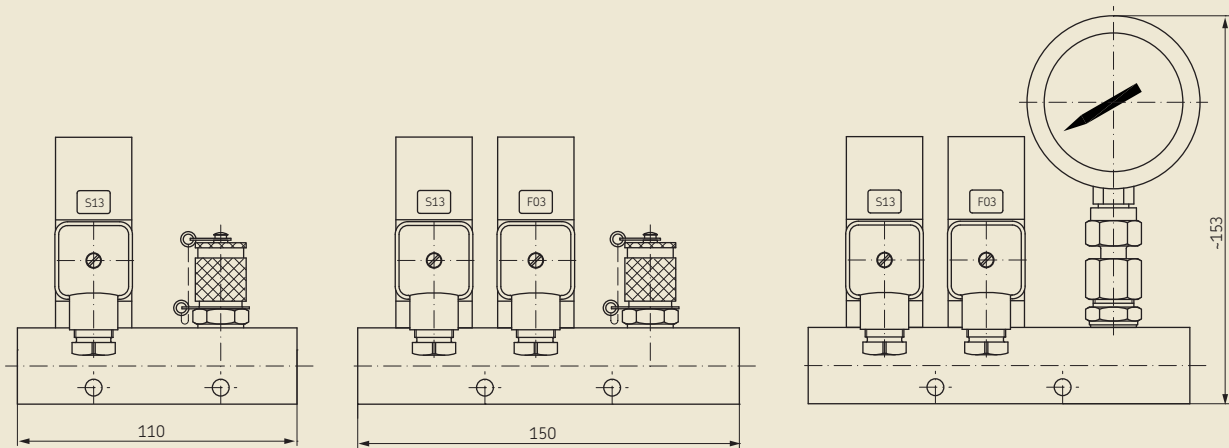
# DSB pressure switches

## Installation drawings

DSB1- ..



DSB1 Connectivity



### Technical data

Switching pressure, max. ....	300 bar
Switching pressure tolerance .....	$\pm 15\%$ < 100 bar; $\pm 10\%$ > 100 bar
Permissible operating pressure .....	Max. 315 bar
Breaking capacity, ohm load .....	Max. 1.2 VA
Operating voltage .....	Max. 30 V AC / 36 V DC
Operating current .....	Max. 50 mA, min. 1 mA
Operating temperature .....	-25 to +80 °C

Type of contact .....	Changeover
Mechanical service life .....	$10^5$ switching cycles
Protection class per DIN EN 60529 .....	IP65

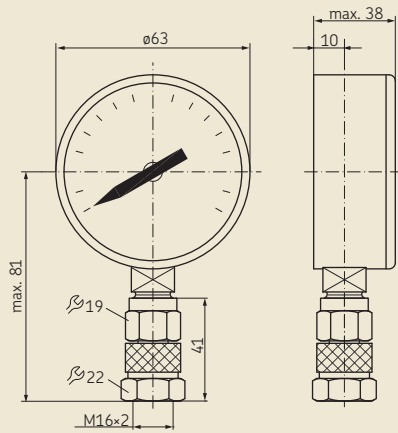
Housing material .....	Aluminum, anodized
Contact material .....	Silver alloy, hard gold plating
Connector socket 3+PE .....	DIN EN 175 301-803 A
Compatible electr. line .....	$\phi 4.5$ to 7 mm
Certification .....	Germanischer Lloyd (GL)
Lubricant .....	Greases of NLGI Grades 1 and 2
Mounting position .....	Any



# DSB pressure switches

## Accessories

169-125-003  
169-140-003

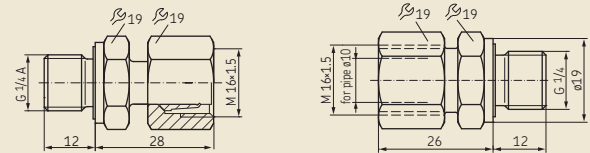


Order number Figure

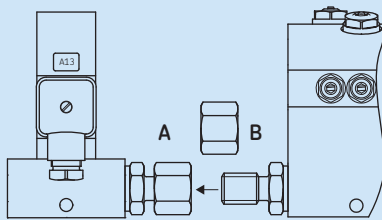
Test gauge 250 bar (with fitting for measurement connector)	169-125-003	6
Test gauge 400 bar (with fitting for measurement connector)	169-140-003	6
Threaded socket for pipe 10 mm (for connecting DSB1 and VR distributors)	471-010-161	7
Straight connector (for connecting DSB1 and VR distributors)	441-110-162	7

441-110-162 (A)

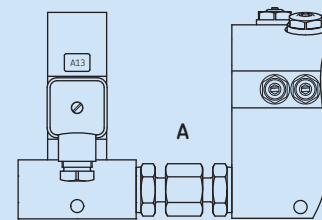
471-010-161 (B)



Straight connector 441-110-162 (A) and threaded socket 471-010-161 (B) for connecting DSB pressure switches and VR lubricant distributors



**1st step:** Screw the straight connector (A) tight into the pressure switch. Remove the union nut from the threaded socket (B). Screw the threaded socket (B) tight into the VR lubricant distributor.



**2nd step:** Screw both components together tight using the union nut of the straight connector (A) of the pressure switch.

## Spare parts

	Order number
Pressure gauge, 250 bar with fitting and sealing ring	169-125-000.U1
Pressure gauge, 400 bar with fitting and sealing ring	169-140-001.U1
Measurement connector	441-100-112
Connector socket	179-990-803



### Note

To obtain optimum performance from the pressure switch in a centralized lubrication system, the pressure switch must always be placed **before** the last distributor.

# DSC pressure switches

DSC1-A040A-1A2A



Product series DSC consists of electronic pressure switches with integrated digital display for relative pressure measurement. They are available in three different designs. They are used primarily for pressure monitoring; depending on the design, they can also assume control functions. Pressure switch points, pressure indication, and the switching logic can be configured and programmed easily.

The system pressure can be indicated in the pressure units bar, Psi and Mpa. Two independently programmable signal outputs can be used as normally open (NO) and normally closed (NC) contacts.

DSC2-A100E-2A2B



## Product series DSC1

### Design

DSC1 pressure switches are suitable for rising and falling pressure from 0 to 40 bar in 0.2-bar increments. Their housing is made of stainless steel and the control panel is made of polycarbonate. The values are shown by LEDs on a backlit, four-digit liquid crystal display. The electrical connection is established via an M12x1 plug connector (IP 65) and the hydraulic connection is established via a female thread of size G<sup>1</sup>/<sub>8</sub>. The DSC1 can operate in switching point, hysteresis, and window function modes and can be separately programmed for each output.

### Features

- Encodable access protection
- Digital and analog output
- UL certification

## Product series DSC2

### Design

DSC2 pressure switches are suitable for rising and falling pressures from 0 to 100 bar in 0.5-bar increments. Their housing is made of aluminum and stainless steel. The control panel is made of a polyester film. The display is a four-digit digital display that indicates switching with LEDs. The electrical connection is established via an M12x1 plug connector (IP 67) and the hydraulic connection is established via a female thread of size G<sup>1</sup>/<sub>4</sub>. The DSC2 can operate in switching point, hysteresis, and window function modes. The switching mode can be separately programmed for each output.

DSC3-A100K-3A2B



## Features

- Diagnostic output based on the DESINA specification
- UL certification

## Product series DSC3

DSC3 pressure switches made of plastic are suitable for rising and falling pressures from 1 to 100 bar in 0.5-bar increments. They have a pivoted, four-digit digital display. The electrical connection is established via an M12x1 plug connector (IP 67) and the hydraulic connection is established via a T-connector with two female threads of size G<sup>1</sup>/<sub>8</sub>. This allows the DSC3 to be integrated ideally into a lubrication line. It can be operated in switching point or window function modes and can be separately programmed for each output.

## Features

- Programming lock to protect against unauthorized adjustment of the device
- Switching displayed using LEDs

# DSC pressure switches

## Technical data

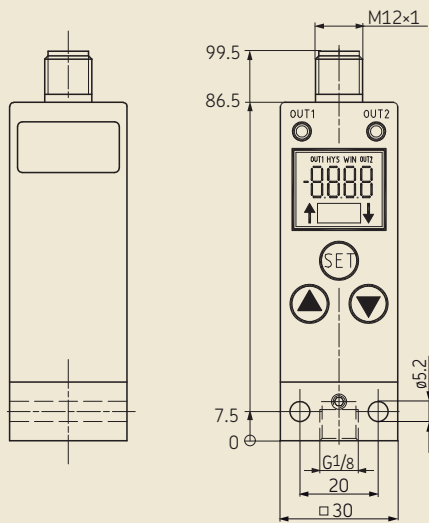
### Technical data

Order No. ....	DSC1-A040A-1A2A	DSC2-A100E-2A2B	DSC3-A100K-3A2B
Rated pressure range .....	1–40 bar in 0.2 increments	1–100 bar in 0.5 increments	1–100 bar in 0.5 increments
Permissible overpressure .....	100 bar	200 bar	300 bar
Burst pressure .....	> 150 bar	> 650 bar	> 500 bar
Ambient temperature .....	–10 to +80 °C	–20 to +80 °C	–25 to +80 °C
Vibration resistance, max. ....	10 g (5–500 Hz)	20 g (10–2000 Hz)	10 g (5–500 Hz)
Service life .....	100×10 <sup>6</sup> pressure changes	100×10 <sup>6</sup> pressure changes	100×10 <sup>6</sup> pressure changes
Protection class .....	IP65	IP67	IP67
Material .....	Aluminum	Stainless steel	Plastic
Mounting position .....	Any	Any	Any
<b>Electrical characteristics</b>			
Operating voltage .....	10–32 V DC	18–36 V DC	9–35 V DC
Power consumption, max. ....	50 mA	50 mA	35 mA
Current-carrying capacity .....	0.5 A	0.25 A	1.2 A
Number of signal outputs .....	2	2	2
Type of signal outputs .....	PNP transistor stages	PNP/NPN	PNP transistor stages
Electrical connection M12×1 .....	5-pin	4-pin	4-pin
Pressure port .....	G <sup>1</sup> / <sub>8</sub>	G <sup>1</sup> / <sub>4</sub>	G <sup>1</sup> / <sub>8</sub>

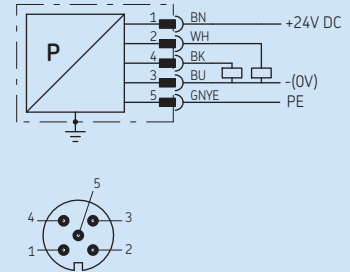
# DSC pressure switches

## Installation drawings

DSC1-A040A-1A2A



Electrical connection for DSC1

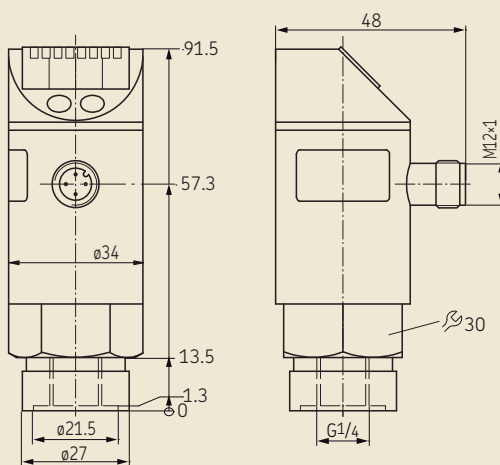


DSC1 connector pin assignment

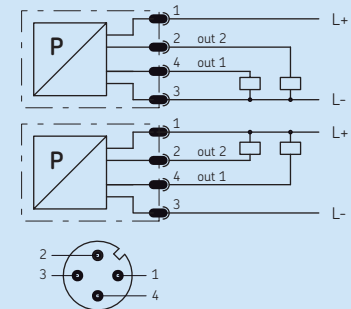
Pin	Function	Wire color *)
1	(+)	Brown (BN)
2	Output 2	White (WH)
3	(-)	Blue (BU)
4	Output 1	Black (BK)
5	PE	Green/yellow (GR/YE)

\*) When using a customized cable with cable socket, see brochure 1-1730-EN.

DSC2-A100E-2A2B



Electrical connection for DSC2



DSC2 connector pin assignment

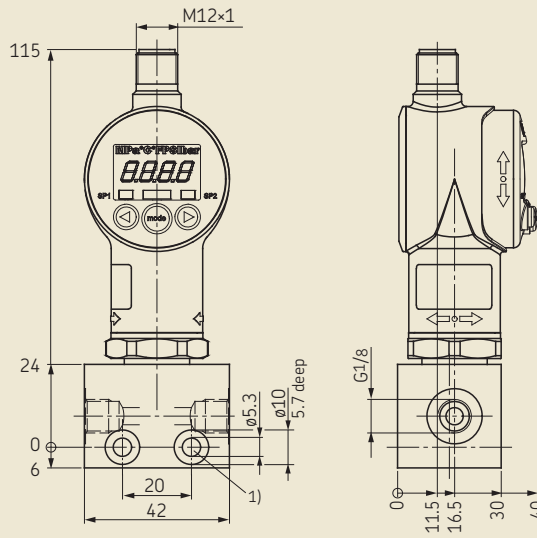
Pin	Function	Wire color *)
1	(+)	Brown (BN)
2	Output 2	White (WH)
3	(-)	Blue (BU)
4	Output 1	Black (BK)

\*) When using a customized cable with cable socket, see brochure 1-1730-EN.

# DSC pressure switches

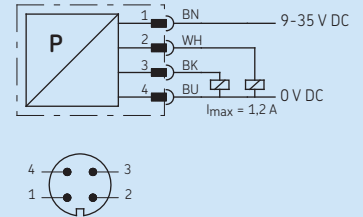
## Installation drawings

DSC3-A100K-3A2B



1) Counterbore per DIN 974-1 (2 M5 fastening bolts and lock washers are supplied detached)

### Electrical connection for DSC3



### DSC3 connector pin assignment

Pin	Function	Wire color *)
1	(+)	Brown (BN)
2	Output 2	White (WH)
3	(-)	Blue (BU)
4	Output 1	Black (BK)

\*) When using a customized cable with cable socket, see brochure 1-1730-EN.

# DSD pressure switches



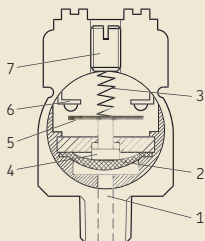
Product series DSD consists of mechanical diaphragm pressure switches. They are available as normally open (NO) or normally closed (NC) contacts for a pressure range from 0.5 to 45 bar with fixed increments. Their electrical contacts are silver-coated, the membranes are made of NBR, and the pressure switch housing is made of galvanized steel (Cr6-free). The electrical connection is established via screwed contacts, tab connectors, circular connectors, or rectangular plug connectors. The hydraulic connection is designed as a male thread M10x1 taper.

## Function of NO-contact

The membrane (2) is pressurized through the pressure port (1). If the resulting pressure is greater than the preloaded spring force of the pressure spring (3), a pressure plunger (4) that carries the contact washer (5) moves to the opposing contact (6) and closes the circuit.

If the pressure is reduced by the amount of hysteresis, the switch opens again. On an NC contact, contacts are made in the opposite way.

## Function of NO-contact



## Technical data

Rated switching pressure . . . . .	0.5 – 45 bar
Switching pressure tolerance for pressure switch <sup>1)</sup>	
with screwed contacts . . . . .	0.5 bar+0.3/-0.1; 2–8 bar±0.5; 12 bar+0.5/-1.5; 20 bar±1; 28 bar+2/-1; 45 bar±2
with tab connector/screwed contacts, circular and rectangular plug connector . . . . .	0.5 bar±0.1; 2–3 bar±0.3; 8 bar±0.5; 12–20 bar±1; 28–45 bar±2
Max. perm. operating pressure, static/dynamic	300 bar/150 bar
Max. contact rating for pressure switch	
with screwed contacts . . . . .	90 VA
with tab connector/screwed contacts and circular connector . . . . .	18 VA
with rectangular plug connector . . . . .	100 VA
Max. switching voltage/switched current <sup>2)</sup> for pressure switch	
with screwed contacts . . . . .	36 V DC / 2.5 A
with tab connector/screwed contacts and circular connector . . . . .	36 V DC / 0.5 A
with rectangular plug connector . . . . .	36 V DC / 2.5 A 250 V AC / 5 A
Operating temperature for pressure switch	
with screwed contacts . . . . .	–30 to +100 °C
with tab connector/screwed contacts, circular and rectangular plug connector . . . . .	–10 to +100 °C
Type of contact for pressure switch	
with screwed contacts, circular and tab connector/screwed contacts . . . . .	NC- or NO-contact
with rectangular plug connector . . . . .	CO-contact
Max. Switching rate for pressure switch <sup>3)</sup>	
with screwed contacts . . . . .	60 cycles/min
with tab connector/screwed contacts and circular connector . . . . .	5 (200) cycles/min
with rectangular plug connector . . . . .	5 (60) cycles/min
Mechanical service life . . . . .	10 <sup>6</sup> switching cycles
Type of protection housing . . . . .	IP 65
Type of protection connection terminals . . . . .	IP 00
Material	
Membrane material . . . . .	NBR
Housing material . . . . .	Steel, galvanized, Cr6-free
Contact material / switch module . . . . .	versilbert
Lubricant . . . . .	Oil and fluid grease of NLGI Grades 000, 00, 0
Mounting position . . . . .	Any

<sup>1)</sup>Tolerances at +20°C

<sup>2)</sup> Resistive load

<sup>3)</sup> Consider EMC measures at more than 5 cycles/min.

# DSD pressure switches

## Configurator

<b>Order code</b>	<b>D</b>	<b>S</b>	<b>D</b>		<b>-</b>	<b>A</b>					<b>N</b>	<b>-</b>			<b>A</b>	<b>1</b>	
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Pressure switch **DS**

Pressure switch type **D**

Manufacturer marking  
**1** = Marking 1 (only with electrical connection **1**)  
**3** = Marking 3 (only with electrical connection **2-4**)

Type **A**

Rated switching pressure  
**0005** = 0.5 bar, **0020** = 2 bar, **0030** = 3 bar, **0080** = 8 bar  
**0120** = 12 bar, **0200** = 20 bar, **0280** = 28 bar, **0450** = 45 bar

Membrane material NBR = **N**

Type of contact  
**NC** = Closed (only with electrical connection **1-3** available)  
**NO** = Open (only with electrical connection **1-3** available)  
**CO** = Changeover (only with electrical connection **4** available)

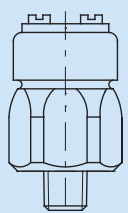
Contact material  
**A** = Silver contacts

Pipe thread  
**1** = M10×1 tap.

Electrical connection  
**1** = Screwed contacts M3  
**2** = tab connector 6,3×0,8/screwed contacts M3  
**3** = circular connector M12×1  
**4** = rectangular plug connector DIN EN 175301-803-A (only as changeover (CO) available)

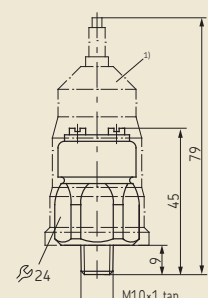
**Order example**  
**DSD1-A0005-NOA11**

- Pressure switch type D
- Manufacturer marking 1
- Typ A
- Switching pressure 0,5 bar
- Membran material NBR
- NC-contact
- Pipe thread M10×1 tap.
- Electrical connection screwed contacts



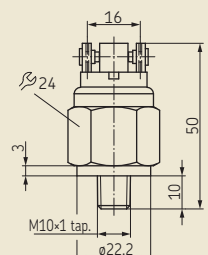
## Installation drawings

**DSD with screwed contacts (1)**

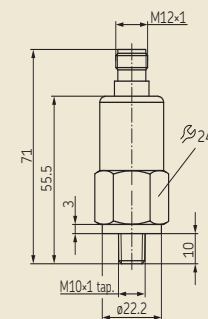


1) Cap, order No. 898-420-001, is ordered separately.

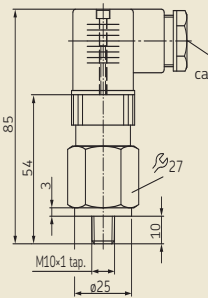
**DSD with tab connector/screwed contacts (2)**



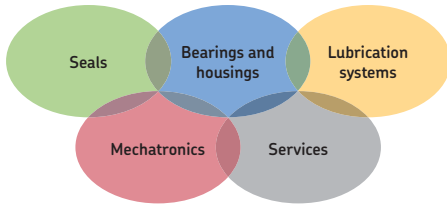
**DSD circular connector (3)**



**DSD rectangular plug connector (4)**



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### The Power of Knowledge Engineering

Combining products, people, and application-specific knowledge, SKF delivers innovative solutions to equipment manufacturers and production facilities in every major industry worldwide. Having expertise in multiple competence areas supports SKF Life Cycle Management, a proven approach to improving equipment reliability, optimizing operational and energy efficiency and reducing total cost of ownership.

These competence areas include bearings and units, seals, lubrication systems, mechatronics, and a wide range of services, from 3-D computer modelling to cloud-based condition monitoring and asset management services.

SKF's global footprint provides SKF customers with uniform quality standards and worldwide product availability. Our local presence provides direct access to the experience, knowledge and ingenuity of SKF people.



CAD models for the products shown in this brochure can be downloaded at: [skf-lubrication.partcommunity.com](http://skf-lubrication.partcommunity.com)

#### ! Important information on product usage

All products from SKF may be used only for their intended purpose as described in this brochure and the operating instructions. If operating instructions are supplied together with the products, they must be read and followed.

Not all lubricants can be fed using centralized lubrication systems. SKF can, on request, inspect the feedability of the lubricant selected by the user in centralized lubrication systems. Lubrication systems and their components manufactured by SKF are not approved for use in conjunction with gases, liquefied gases, pressurized gases in solution, vapors or such fluids whose vapor pressure exceeds normal atmospheric pressure (1 013 mbar) by more than 0,5 bar at their maximum permissible temperature.

In particular, we call your attention to the fact that hazardous materials of any kind, especially the materials classified as hazardous by EC Directive 67/548/EEC, Article 2, Para. 2, may only be filled into SKF centralized lubrication systems and components and delivered and/or distributed with the same after consultation with and written approval from SKF.

#### Further brochures:

- 1-0103-EN *Fittings and Accessories*
- 1-1730-EN *Electrical Plug-In Connections*
- 1-9201-EN *Transport of Lubricants in Centralized Lubrication Systems*

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