

**Operating Instructions**  
**Electronic Pressure Switch UDS1V2**



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CONTROL PRODUCTS

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Specifications are subject to changes  
without notice!

## 1 Intended Applications


The pressure switch serves for monitoring a pressure system and has one or two switching outputs.


 <b>DANGER</b>
<p>The switch may only be used in the specified fields of application. The stated pressures and electrical load values must not be exceeded. Observe also the applicable national safety instructions for assembly, commissioning and operation of the switch. The switch is not designed to be used as the only safety relevant element in pressurized systems according to DGR 97/23/EC.</p>


## 2 Safety Instructions


The safety instructions are intended to protect the user from dangerous situations and/or material damage.


In the operating instructions the seriousness of the potential risk is designated by the following signal words:

 <b>DANGER</b>
<p>Refers to imminent danger to men. Nonobservance may result in fatal injuries.</p>

 <b>WARNING</b>
<p>Refers to a recognizable danger. Nonobservance may result in fatal injuries, and destroy the equipment or plant parts.</p>

 <b>CAUTION</b>
<p>Refers to a danger. Nonobservance may result in light injuries and material damage to the switch and/or to the plant.</p>

 <b>IMPORTANT</b>
<p>Refers to important information essential to the user.</p>

 <b>Disposal</b>
<p>The switch must be disposed of correctly in accordance with the local regulations for electric/electronic equipment. The switch must not be disposed of with the household garbage!</p>

## 3 Standards

The standards applied during development, manufacture and configuration are listed in the CE conformity and manufacturer's declaration.

## 4 Warranty/Guaranty

### Warranty

Our scope of delivery and services is governed by the legal warranties and warranty periods.

### Terms of guaranty

We guaranty for function and material of the pressure switch under normal operating and maintenance conditions in accordance with the statutory provisions.


### Loss of guaranty


**The agreed guaranty period will expire in case of:**


- incorrect use
- incorrect installation or
- incorrect handling or operation contrary to the provisions of these operating instructions

No liability is assumed for any damage resulting therefrom, or any consequential damage.

## 5 Installation/Commissioning

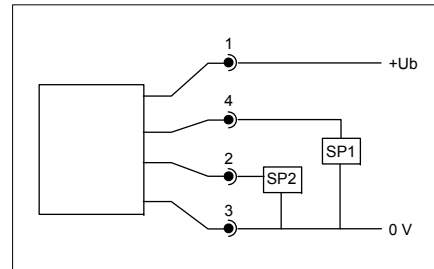
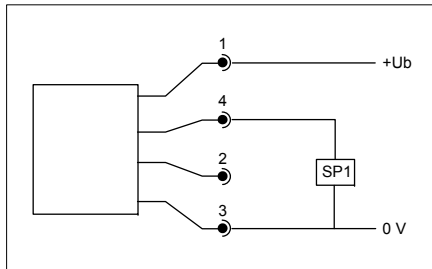
 <b>DANGER</b>
<p>Only install or uninstall the switch when deenergized (electrically and hydraulically/pneumatically). Pressure connection and electrical connection must be carried out by trained or instructed personnel according to state-of-the-art standards. The switch must only be installed in systems where the maximum pressure <math>P_{max}</math> is not exceeded (see type label).</p>

 <b>WARNING</b>
<p>Be aware of the fact that in case of operation with higher temperatures the casing surface may become very hot!</p>

 <b>CAUTION</b>
<p>Mount the pressure switch from the bottom to the fitting with a wrench SW 24 and tighten to a torque of 45 Nm torque. Do not put the switch into operation when the switch itself or the connection cable is damaged. Avoid impact and severe vibration during transport. Even if the switch housing remains undamaged inside parts may be damaged and cause malfunctions.</p>

Electrical connection is to be carried out dependent on the type of switch (see type label) according to the chart below. Wrong assignment of the connections may cause malfunctions or incorrect switch outputs.

Plug M 12x1 4-pin	Version with 1 switching output (1 switch point SP1)	Version with 2 switching outputs (2 switch points SP1/SP2)
Pin 1 brown	+Ub (12... 32 V DC)	+Ub (12... 32 V DC)
Pin 2 white	-	SP2 (0.2 A max.) NO
Pin 3 blue	0 V	0 V
Pin 4 black	SP1 (0.2 A max.) NO	SP1 (0.2 A max.) NO



**WARNING**

Check the operation of the switch regularly. If the switch does not work properly, stop operation immediately!

**6 Maintenance/Cleaning**

The switch requires no maintenance.

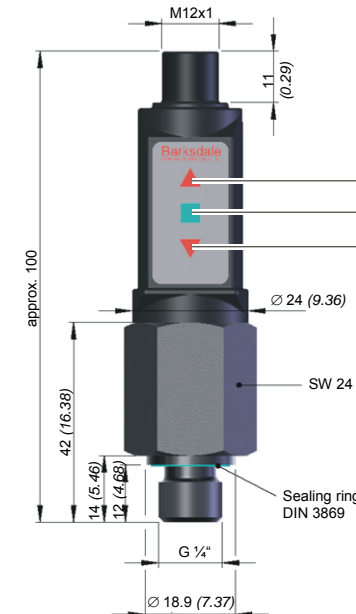
**CAUTION**

The membrane keys may be damaged by the use of unsuitable cleaning agents. Do not use any cleaning agents containing solvents or abrasive additives.

**7 Technical Data**

	UDS1V2
Measuring element	Piezoresistive silicon measuring cell with internal stainless steel diaphragm or ceramic measuring cell
Measuring ranges	0 ... 10 bar to 0 ... 600 bar 0 ... 150 psi to 0 ... 9000 psi relative pressure
Transistor switching outputs PNP	1 or 2 x NO contacts
Operating temperature range	-10... +70 C / +14... +158 °F
Media temperature range	-25 ... +100°C / -13 ... +212 °F
Process connection (fitting "A" without adapter)	G1/4
Protection system/class	IP65/III
Electrical connection	Plug 4-pin, M 12x1
Auxiliary power	12...32 V DC
For further technical data and options please refer to the data sheets	

**Operating and display elements/Dimensions** Dimensions (example) in mm




Item 1: LED	
green	Operational status indicator
red	

Item 2: Membrane keys	
▲ T1	Programming keys "Up" and "Down"
▼ T2	


## 8 Operation

The switch may only be put into service and operated by authorized persons. Do not use any hard objects for making entries. A self-test is performed on first commissioning.

The pressure switch is operated via two membrane keys. These must not be touched by means of hard objects.



 <b>IMPORTANT</b>
When power supply is switched on the operational status of the switch is indicated by a green LED. The switching function is not optically indicated.

## 9 Programming


 <b>IMPORTANT</b>
The pressure switch is programmed by means of the membrane keys ▲ (T1) and ▼ (T2).

### 9.1 Version with one switch point

- \* The switch point SP is set to the measuring range end value.
- \*\* The re-actuation point RS is set to the measuring range end value.



Function	Membrane keys	LED
Activate teaching	Press the membrane keys ▲ (T1) and ▼ (T2) for 4 s.	The LED flashes alternately for 12 s red and green. Subsequently the LED shines green.
SP teaching	Press the membrane key T1 for 4 s. The current value for the SP is transferred to the pressure switch.  <b>NOTE</b> When the operation is aborted, the SP is not updated.	The LED shines red for 4 s. The LED flashes red 3x, after the pressure switch has updated the SP. Subsequently the LED shines green.
RS teaching	Press the membrane key T2 for 4 s. The current value for the RS is transferred to the pressure switch.  <b>NOTE</b> When the operation is aborted, the RS is not updated.	The LED shines green for 4 s. The LED flashes green 3x, after the pressure switch has updated the RS. Subsequently the LED shines green.
Activate/actuate Reset SP *	Switch the pressure switch on while pressing the membrane key T1. Press the membrane keys T1 and T2 for 4 s.	The LED flashes for 12 s red and green at the ratio of 1:3. Subsequently the LED shines green.

Function	Membrane keys	LED
Activate/actuate Reset RS**	Switch the pressure switch on while pressing the membrane key T2. Press the membrane keys T1 and T2 for 4 s.	The LED flashes for 12 s green and red at the ratio of 1:3. Subsequently the LED shines green.
Error		The LED flashes alternately red and green. The LED shines green, when the fault has been eliminated.

 <b>IMPORTANT</b>
SP > RS: increasing pressure evaluation SP < RS: decreasing pressure evaluation

### 9.2 Version with two switch points

- \*\*\* Re-actuation hysteresis 15 %, increasing pressure evaluation

Function	Membrane keys	LED
Activate teaching	Press the membrane keys ▲ (T1) and ▼ (T2) for 4 s.	The LED flashes alternately for 12 s red and green. During these 12 s SP1 and/or SP2 have to be taught. Subsequently the LED shines green.
SP1 teaching ***	Press the membrane key T1 for 4 s. The current value for SP1 is transferred to the pressure switch.  <b>NOTE</b> When the operation is aborted, SP1 is not updated.	The LED shines red for 4 s. The LED flashes red 3x, after the pressure switch has updated SP1. Subsequently the LED shines green.
SP2 teaching ***	Press the membrane key T2 for 4 s. The current value for SP2 is transferred to the pressure switch.  <b>NOTE</b> When the operation is aborted, SP2 is not updated.	The LED shines green for 4 s. The LED flashes green 3x, after the pressure switch has updated the SP2. Subsequently the LED shines green.
Activate/actuate Reset SP1	Switch the pressure switch on while pressing the membrane key T1. Press the membrane keys T1 and T2 for 4 s.	The LED flashes for 12 s red and green at the ratio of 1:3. Subsequently the LED shines green.
Activate/actuate Reset SP2	Switch the pressure switch on while pressing the membrane key T2. Press the membrane keys T1 and T2 for 4 s.	The LED flashes for 12 s green and red at the ratio of 1:3. Subsequently the LED shines green.
Error		The LED flashes alternately red and green. The LED shines green, when the fault has been eliminated.