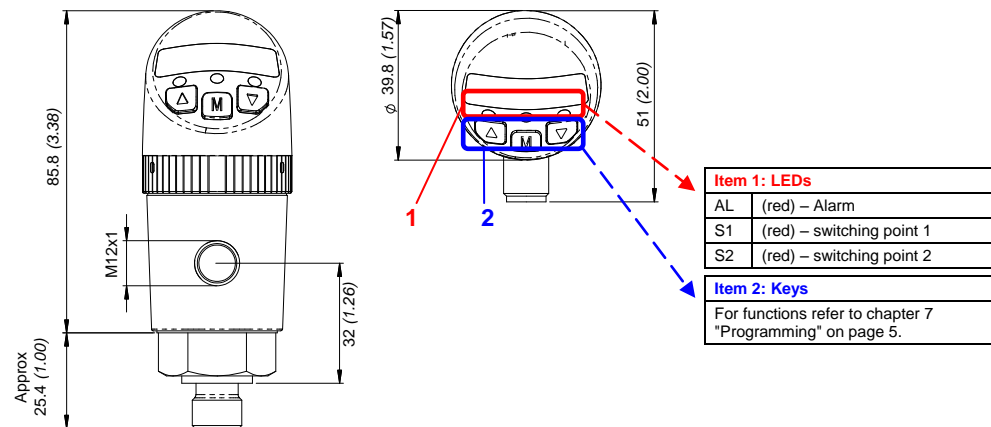


10 Technical Data

BPS3000	
Measuring element	Ceramic sensor optional: piezoresistive sensor at 600 bar (9000 psi): piezoresistive sensor only
Measuring ranges	0 ... 0.2 bar to 0 ... 600 bar, 0 ... 3 psi to 0 ... 9000 psi, gauge pressure 0 ... 1 bar to 0 ... 10 bar, 0 ... 15 psi to 0 ... 150 psi, absolute
Display	4-digit 14-segment LED display, red, digit height 9 mm
Transistor switching outputs PNP	1 or 2 x NO/NC function (programmable), adjustable switching time delay 0 ... 50 s
Operating temperature range	-10 ... +70 °C / +14 ... +158 °F
Media temperature range	-25 ... +100 °C / -13 ... +212 °F
Storage temperature range	-30 ... +80 °C / -22 ... + 176 °F
Process connection	G 1/4" M, G 1/2" front-flush, 1/4" NPT, 1/2" NPT, 7/16 – 20 UNF JIC 37°, 7/16 SAE-4
Protection system/class	IP65/IP67/III NEMA 6
Electrical connection	Plug 4/5-pin, M 12x1
Auxiliary power	15... 32 V DC
For further technical data and options please refer to the data sheets	

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



Operating Instructions
Dual Pressure Switch BPS3000



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Art. no.: 923-1966
Index C, 24.15.2014
Software version: 1.2 or higher
Specifications are subject to changes without notice!



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1 Intended Applications

The dual pressure switch monitors system pressures and has up to two switching outputs and one analog output.

DANGER

The switch may only be used in the specified fields of application.
The temperature ranges must be within the permissible limits. Do not exceed rated pressure and electrical load values.
Observe also the applicable national and local safety instructions for assembly, commissioning and operation of the switch.
The switch is not designed to be used as the only safety device in pressurized systems according to "Pressure Equipment Directive 97/23/EC (PED)".

2 Safety Instructions

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

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

DANGER

Refers to imminent danger to users.
Nonobservance may result in fatal injuries.

WARNING

Refers to a recognizable danger.
Nonobservance may result in fatal injuries, and destroy the equipment or plant parts.

CAUTION

Refers to a danger.
Nonobservance may result in light injuries and material damage to the switch and/or to the plant.

IMPORTANT

Refers to important information essential to the user.

Disposal

The switch must be disposed of correctly in accordance with the national or local regulations for electric/electronic equipment.

The switch must not be disposed of with the household garbage!

3 Standards

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

4 Warranty/Guarantee

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

Terms of guarantee

We guaranty for function and material of the dual 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.

See also Barksdale "Standard Terms and Conditions"

5 Installation

CAUTION

Jolts and heavy vibrations must be avoided during transport. Even if the switch casing remains undamaged, inside parts may be damaged and cause malfunctions.

The pressure switch may only be installed and electrically connected by instructed staff.


DANGER

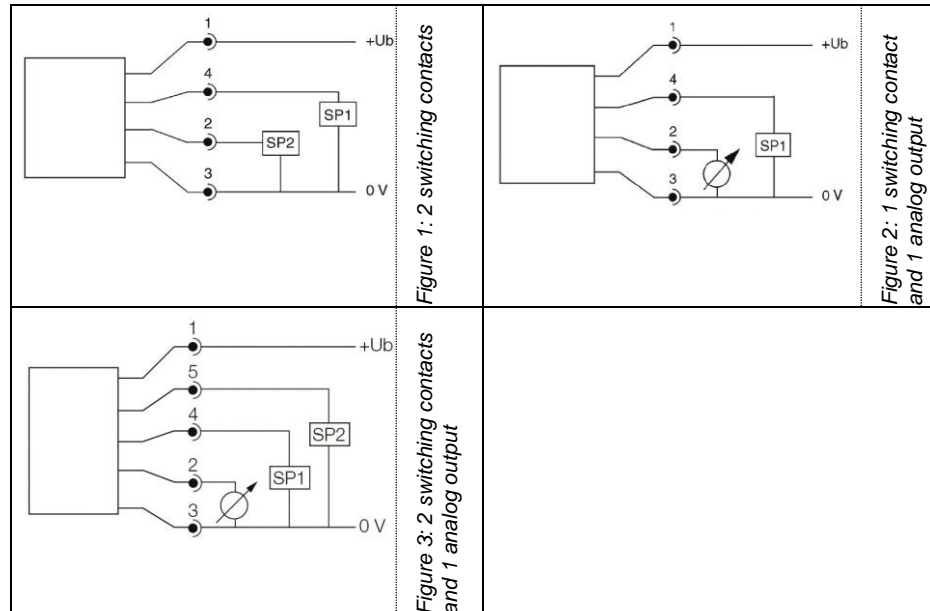
The switch may only be installed in systems where the maximum pressure P_{max} is not exceeded (see type label).

Only install the switch when deenergized (electrically and hydraulically/pneumatically).

Mount the pressure switch from the bottom to the fitting using a wrench SW 27 and tighten it to a torque of 45 Nm.


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

Plug M 12x1 4/5-pin 	Model with 1 switching contact	Model with 2 switching contacts	Model with 1 switching contact and 1 analog output	Model with 2 switching contacts and 1 analog output
Pin 1 brown	+Ub (15 ... 32 V DC)	+Ub (15 ... 32 V DC)	+Ub (15 ... 32 V DC)	+Ub (15 ... 32 V DC)
Pin 2 white	-	SP2 (0.5 A max.)	analog: 4... 20 mA or 0... 10 V	analog: 4... 20 mA or 0... 10 V
Pin 3 blue	0 V	0 V	0 V	0 V
Pin 4 black	SP1 (0.5 A max.)	SP1 (0.5 A max.)	SP1 (0.5 A max.)	SP1 (0.5 A max.)
Pin 5 gray	-	-	-	SP2 (0.5 A max.)




6 Commissioning/Operation

The pressure switch may only be commissioned and operated by authorized staff.



 **CAUTION**


Do not put the switch into operation when the switch itself or the connection cable is damaged.

 **WARNING**

Be aware of the fact that in case of operation with higher temperatures the casing surface may become very hot!

After having been switched on the switch runs through a self-test. If the software recognizes an error during the self-test or during operation, this is signalled in the display by "Err" and the corresponding message, refer to Error list on page 7. The red LEDs S1 and S2 signal the activity of the two switching points.







Operation is menu-driven via three keys: ,  and **M**

 **CAUTION**

Do not use any pointed, hard objects for making entries. The keys may be damaged by pointed, hard objects.

For information about the factory settings for the parameters and how to change them please refer to the next chapter 7 "Programming".

7 Programming

Navigation function	Symbol (keys)
Menu descending	
Menu ascending	
Horizontal movement in menu, select menu item	M
Parameter change ascending	
Parameter change descending	
Adopt parameter change and return to current menu item	M
Return to measured value display	Press  +  simultaneously

7.1 Parameters

Parameter	14-segment display	Description
SP1/SP2*		Hysteresis function: Switching point of solid state contact
FH1/FH2*		Window function: Window High solid state contact
rP1/rP2*		Hysteresis function: Hysteresis of solid state contact
FL1/FL2*		Window function: Window Low solid state contact
EF		Extended programming functions
rES		Reset parameters to factory settings
dS1/dS2*		Switching time delay – the set contact rating must be permanently exceeded to trigger a switching function
dr1/dr2*		Switching time delay – the contact rating must be permanently lower than the set contact rating to trigger a switching function
Ou1/Ou2*		Switching function of solid state contact HNO = Hysteresis function, NO contact HNC = Hysteresis function, NC contact FNO = Window function, NO contact FNC = Window function, NC contact DIA = Diagnostic function, NO contact (only Ou2)
uni		Select unit: bar, PSI, MPa If the measuring range is outside the display range, unit selection is impossible. The parameter "uni" is not displayed.
OuA**		Analog output I = 4... 20 mA U = 0... 10 V I.INV = 20... 4 mA U.INV = 10... V
ASP**		Analog start value

Parameter	14-segment display	Description
AEP**		Analog end value
dPA**		Damping of analog output
ErS.A**		Error signal of analog output Values: < 3.6 or > 22 or Off
Hi		Saved value of highest pressure measured
Lo		Saved value of lowest pressure measured
COF		Offset correction (max. 10 % of measuring range)
ddis		Damping display
Fdis		Rotate display through 180°
udiS		Unit indication
Firm		Firmware version
Lock		Locking feature

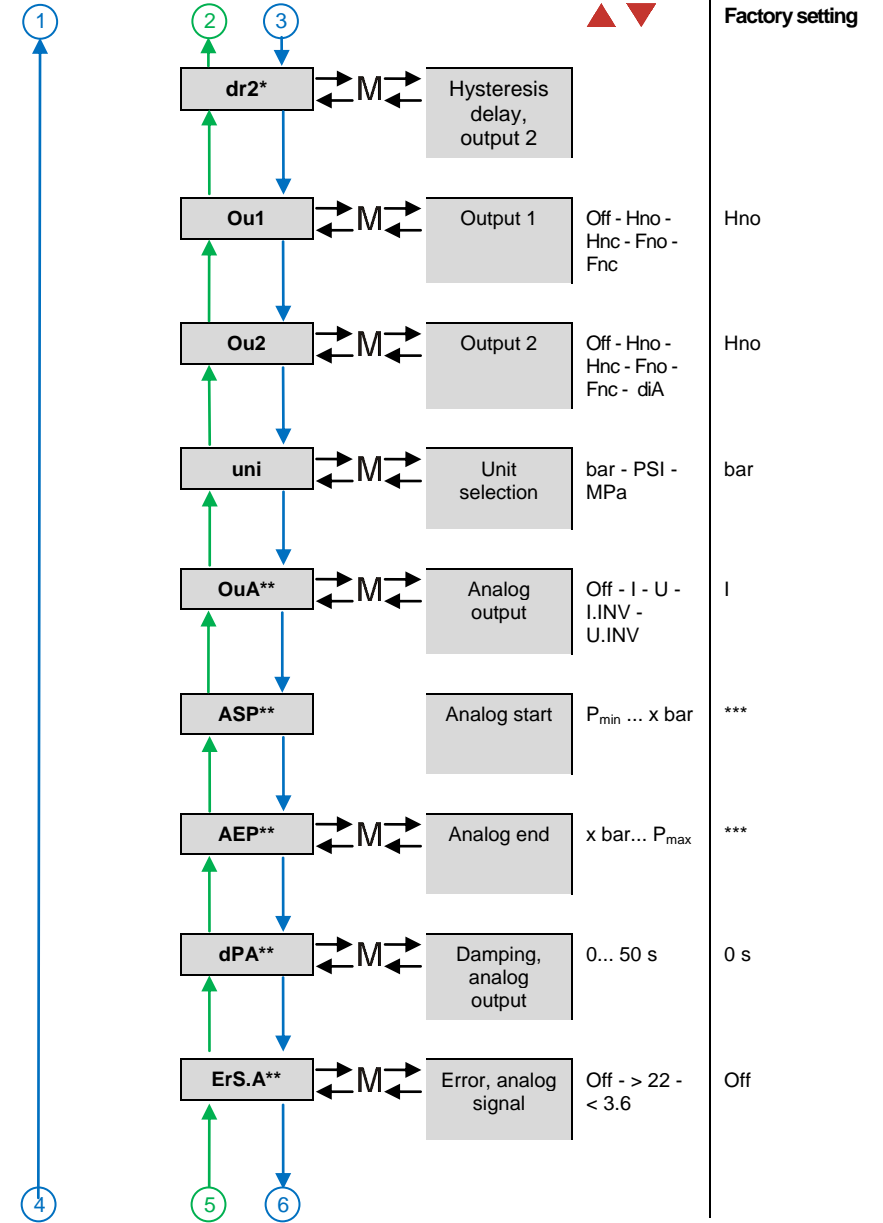
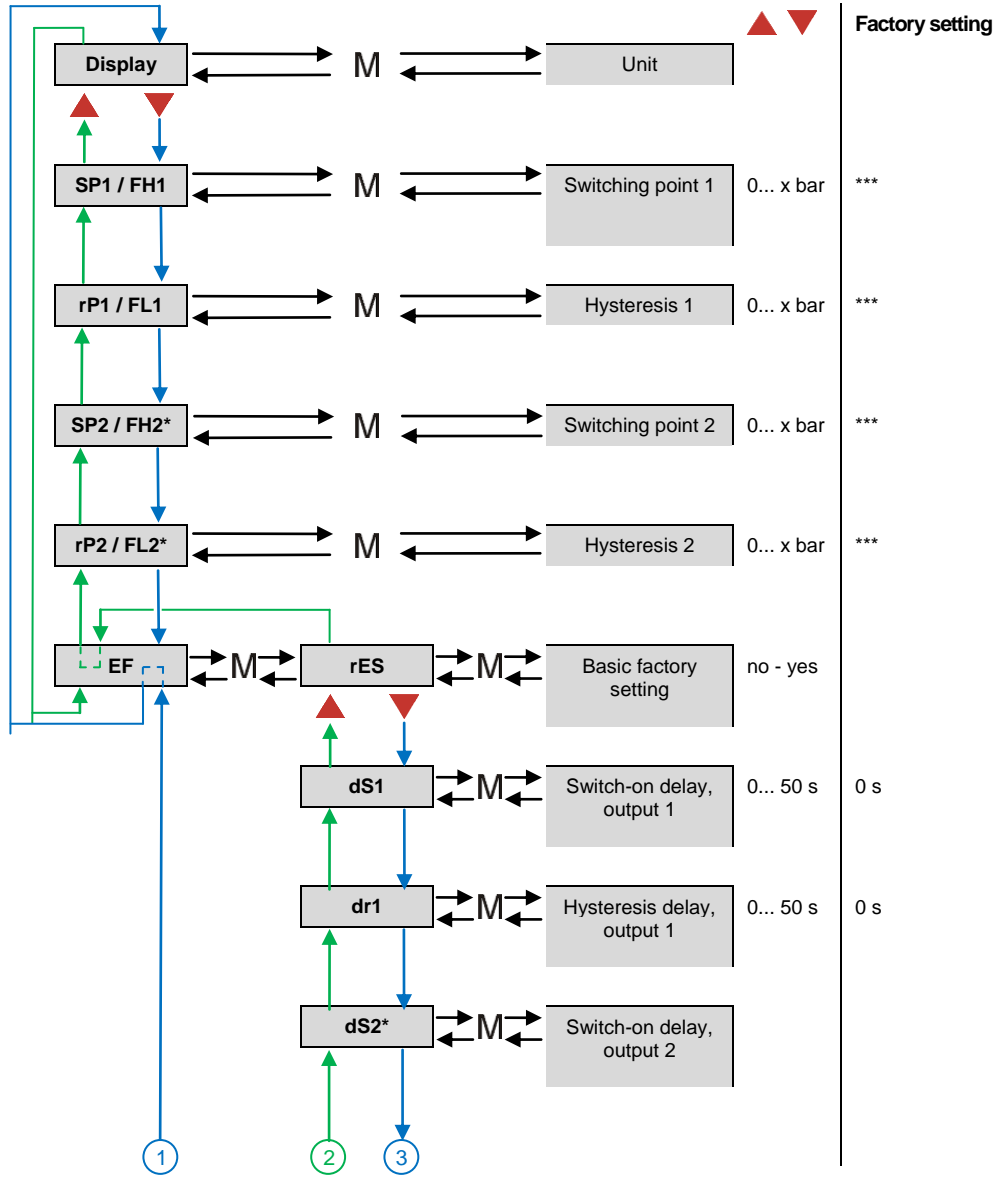
* only models with 2nd switching contact

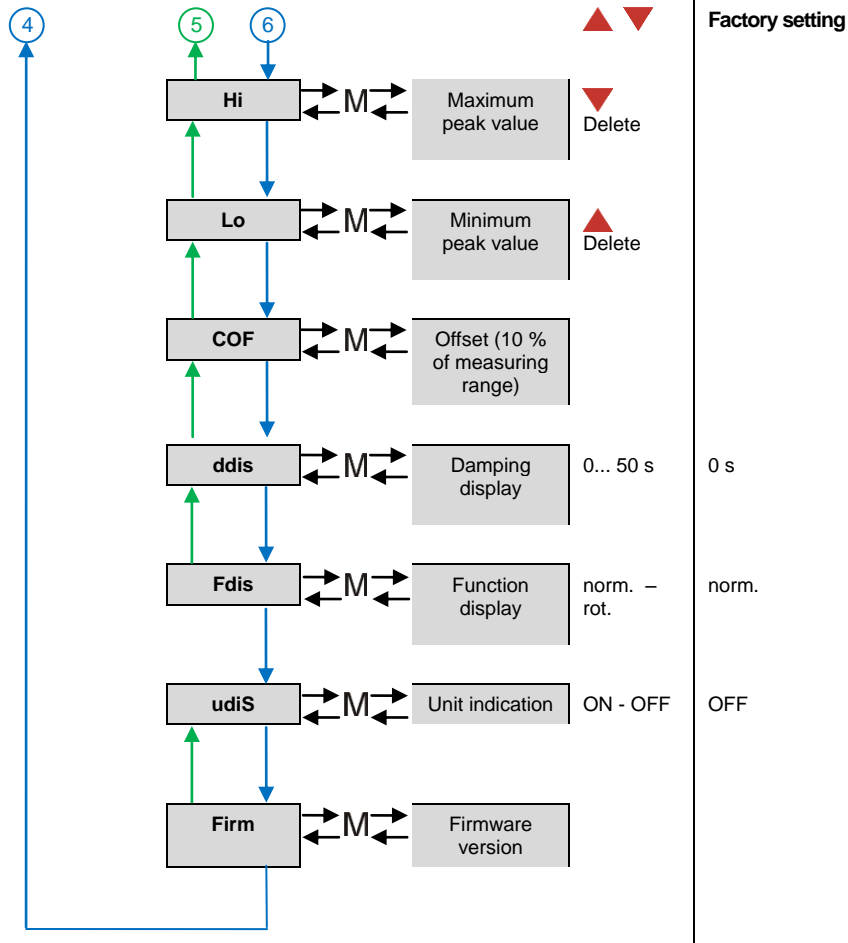
** only models with analog output

Error list

Parameter	14-segment display	Description
sens		Sensor defect
SC1		Short circuit, solid state contact 1
SC2		Short circuit, solid state contact 2
AOut		Open output, short circuit
OL		Sensor limit positive
UL		Sensor limit negative
KEY		Internal defect

7.2 Menu Structure





* only models with 2nd switching contact
 ** only models with analog output
 *** setting according to measuring range

Lock



8 Maintenance/Cleaning

Maintenance

The pressure switch requires no maintenance.



WARNING

Check the switch for functioning at regular intervals.

If the switch does not work properly, stop operation immediately.

Cleaning



CAUTION

The keys may be damaged by the use of unsuitable cleaning agents.

Do not use any cleaning agents containing solvents or abrasive additives.

9 Decommissioning



DANGER

Only remove the switch when deenergized (electrically and hydraulically/pneumatically).

Disconnection of the switch from pressure and power supply must be carried out by trained or instructed personnel according to state-of-the-art standards.



WARNING

Be aware of the fact that in case of operation with higher temperatures the casing surface may become very hot!