EPT4000
MANUAL

Version V-01.00
Date 27-03-2024

E

SOLUTIONS

EPT4000

Version V-01.00
Date 27-03-2024

IHR PARTNER FÜR MESSTECHNISCHE SYSTEMLÖSUNGEN

eom-solutions GmbH
Energy Optimizing Monitoring

eom SOLUTIONS

CONTENT

1 GENERAL INFORMATION

This instruction manual applies to the electronic pressure switch EPT4000 and contains important information about the device and its operation.
Please read this instruction manual carefully before using the device. Check the compatibility of the product material with the medium.
This can prevent damage to the device as well as incorrect handling.

Also included are:

- A step-by-step guide
- An installation guide
- A connection guide
- A component overview
- A menu overview

WARNING

May cause injury.

ATTENTION

May cause damage to the appliance.

This instruction manual may differ depending on the configuration of the device you have purchased and/or may contain information that is not relevant.

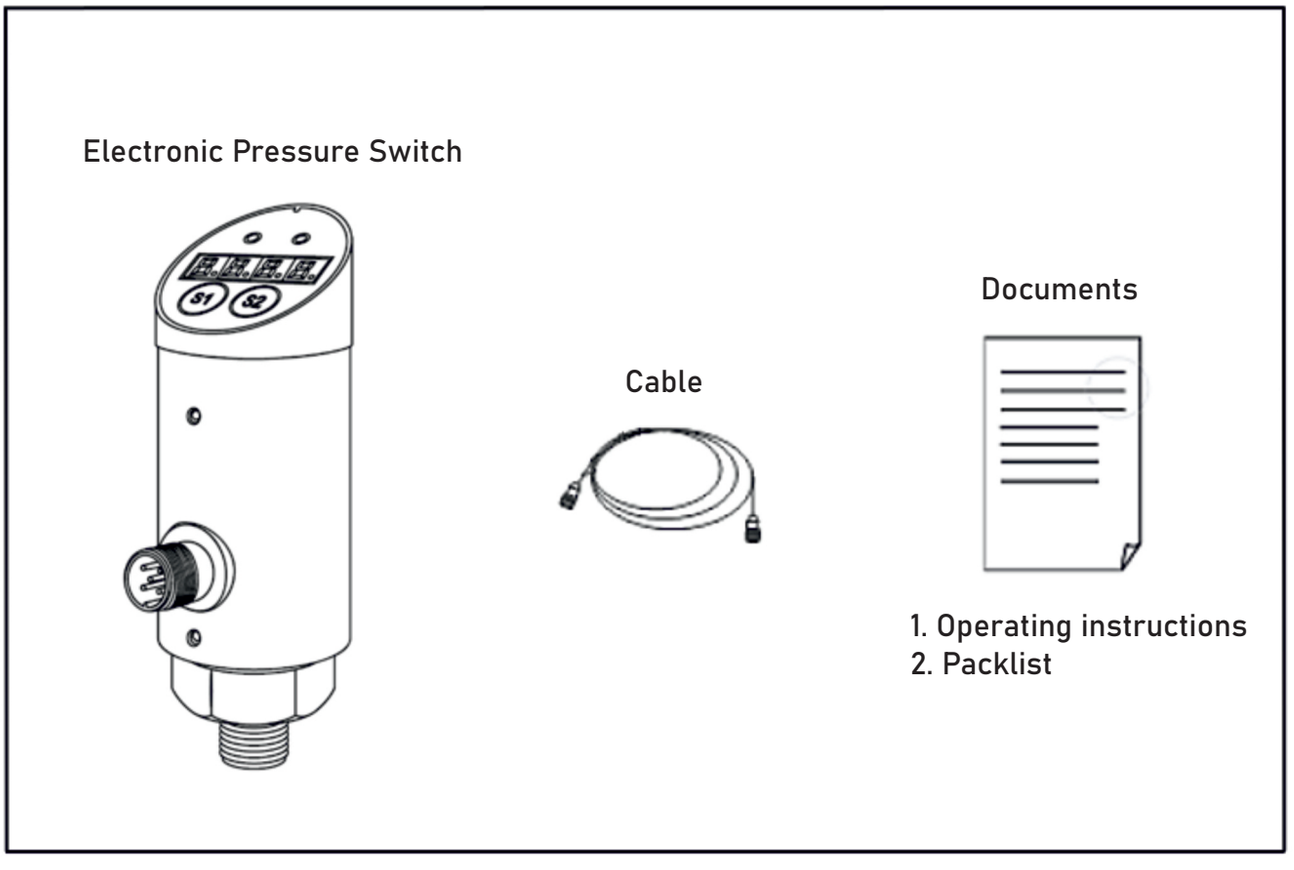
The responsibility for the suitability and use of the product for the respective application lies with the operator.
The manufacturer assumes no responsibility for the consequences of improper use on the part of the operator. Improper installation and incorrect use will result in invalid warranty claims.

Pressure sensors monitor system pressure in systems and for end devices. Appropriate measures must therefore be taken to ensure that the static and dynamic pressures do not exceed the overload pressure or burst pressure of the sensor. Exceeding the burst pressure, even for a short time, can damage the sensor.

2 SCOPE OF DELIVERY

Before installing the electronic pressure switch, please check that there has been no damage to the device. If any damage is apparent, please contact the eom-solutions GmbH.

Illus. 2.1



3 INSTALLATION OF THE EPT4000

This chapter describes the installation of the EPT4000 electronic pressure switch.

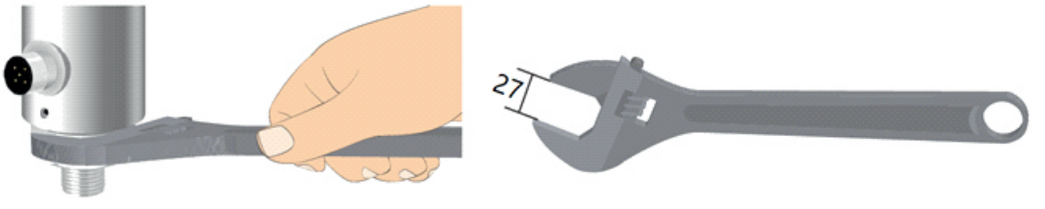
3.1 Installation and fastening

WARNING

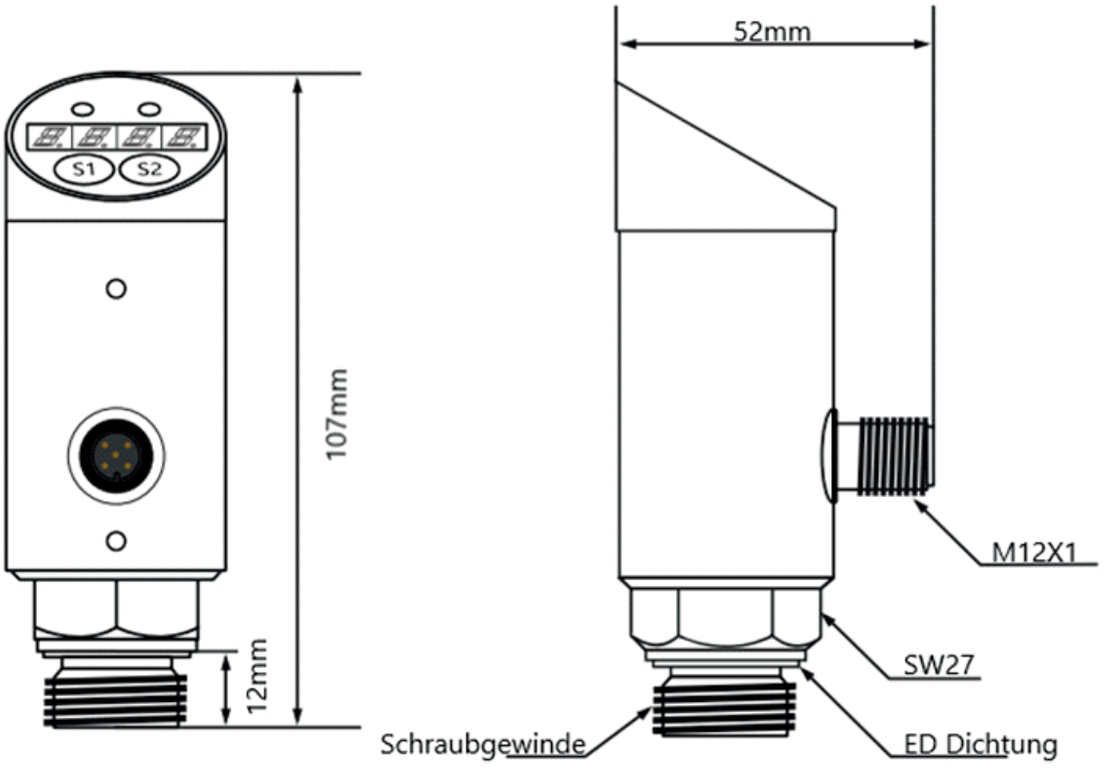
Ensure that the system is not under pressure before installing or uninstalling.

- Connect the sensor device to the optional process interface
- Recommended tightening torque range: 25 to 35 Nm
- For critical applications (e.g. systems in which heavy impacts or shocks can occur), mechanical decoupling can be achieved via hoses.

Illus. 3.1



Illus. 3.2



3.2 Electrical connections

This chapter describes the connections on the device.

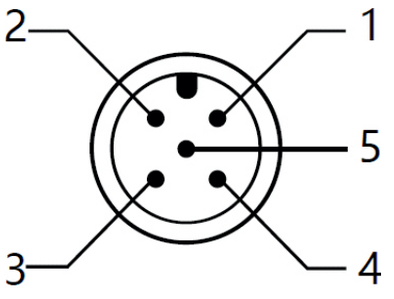
ATTENTION

The product must be connected by certified specialist personel and national and international guidelines and specifications must be observed. The supply voltage must comply with the standards of EN50178 as well as SELV and PELV.

Steps of the electrical installation:

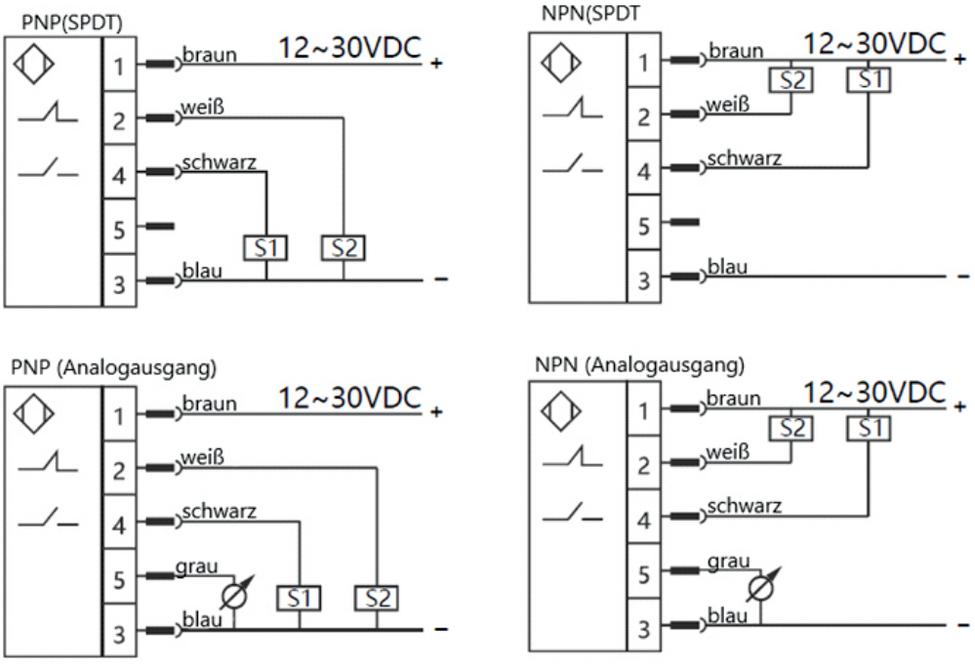
- Switch off the power supply
- Wire the product according to the corresponding wiring method in the following figure.

Illus. 3.3



01	brown	12~30VD
02	white	Switch 2
03	blue	GND
04	black	Switch 1
05	grey	mA/pulseP

Illus. 3.4

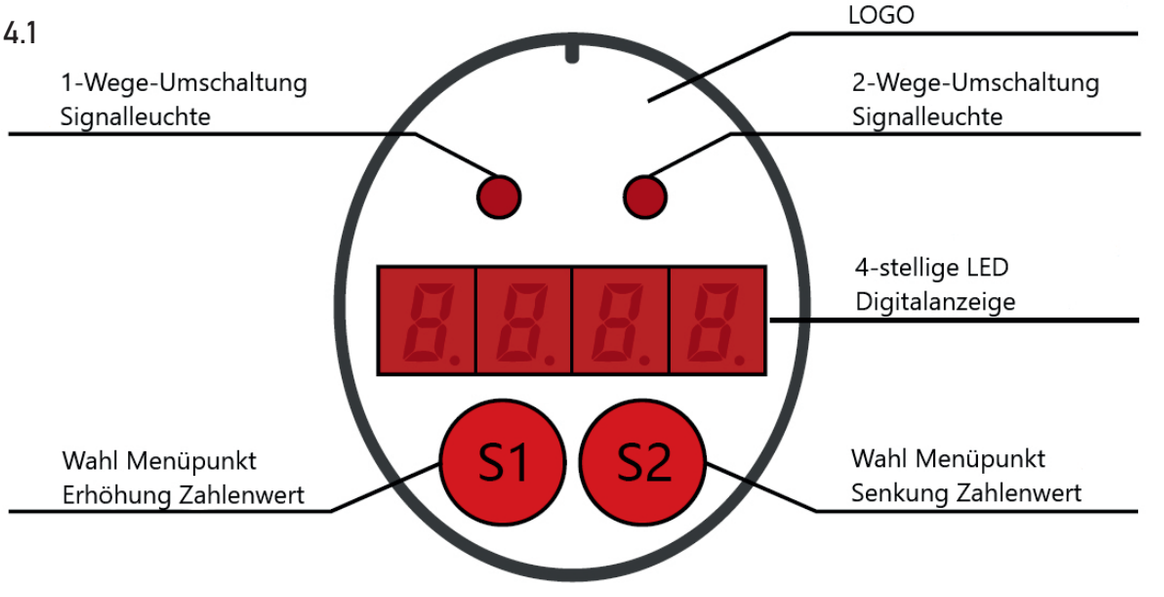


4 CONTROL PANEL

TASTENFUNKTIONEN

BUTTON S1	Menu item	→	Increase numerical value
BUTTON S2	Menu item	→	Decrease numerical value
BUTTON S1 BUTTON S2	Press simultaneously	→	Enter menu or Exit menu
BUTTON S2	Reset value (5s)	→	Check that there is no pressure before resetting

Illus. 4.1



5 OPERATION

5.1 Menu and settings

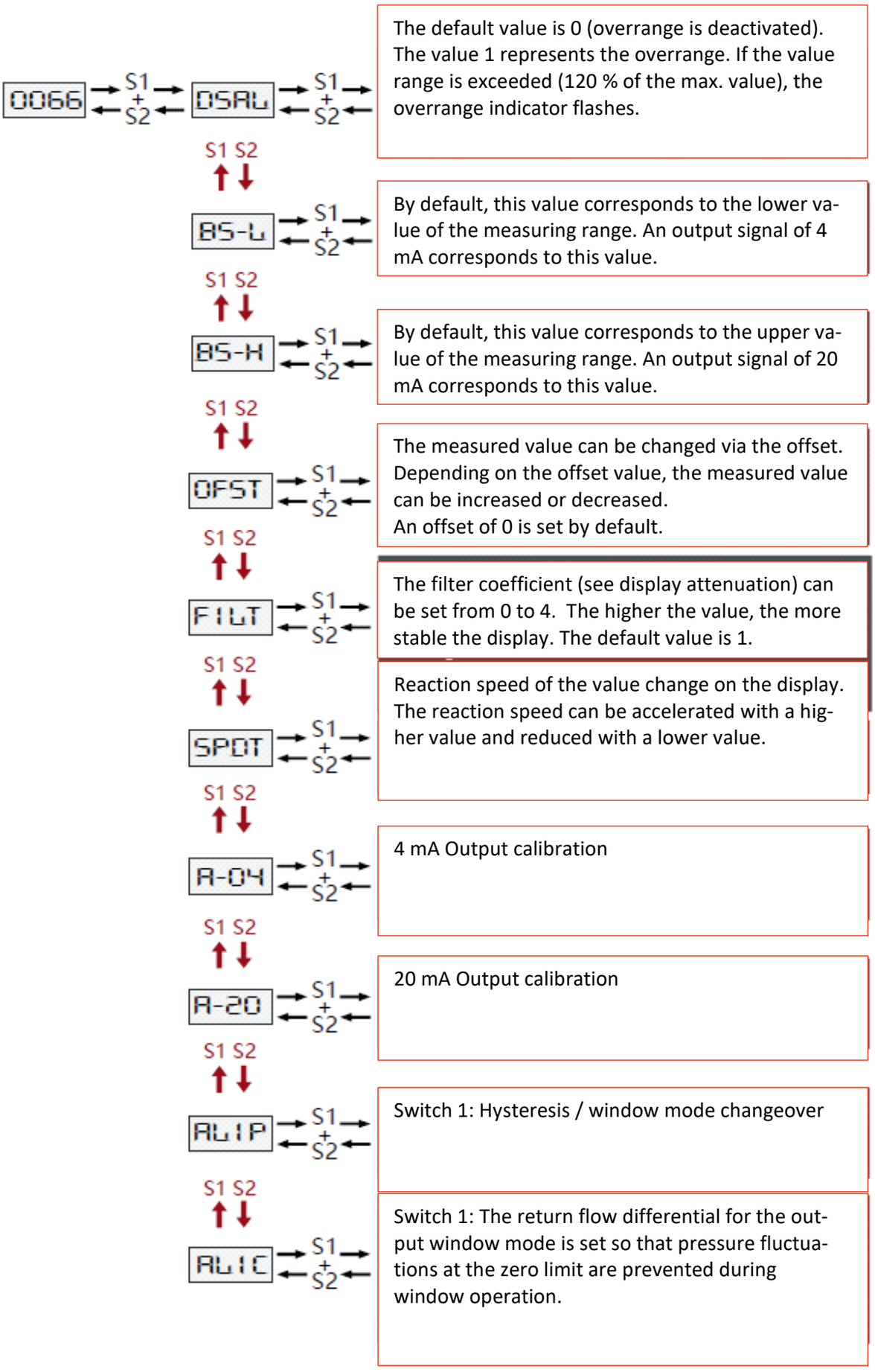
To access the menu, press S1 + S2 simultaneously. The text "LOCK" then appears on the display. By pressing S1 or S2, it is possible to navigate up or down through the menu items. Menu items 0001 (switching value menu) and 0066 (top menu) are available for selection and parameter input.
To change parameters, select the desired menu (parameter menu) and open it by pressing S1+S2. You can now navigate through the parameters and if you want to change a parameter, you must select the parameter by pressing S1+S2 and then set the desired value using S1 or S2. To confirm the entry, press S1+S2 again.
To end the parameter settings, navigate to the "-End" menu item in the parameter menu and press S1+S2.

0001 Menu „ Switching value menu“

AL1H	Switch 1: Switching value (If the pressure reaches this value, a signal is output)
AL1F	Switch 1: Release value (If the pressure reaches this value, no signal is output)
AL1D	Switch 1: Action delay (resolution: 0.1 seconds)
OUT1	Switch 1: Switch over Normally open / Normally close (NO/NC)
AL2H	Switch 2: Switching value (If the pressure reaches this value, a signal is output)
AL2F	Switch 1: Release value (If the pressure reaches this value, no signal is output)
AL2D	Switch 2: Action delay (resolution 0.1 s)
OUT2	Switch 2: Switch over Normally open / Normally close (NO/NC)
END	Exit after parameter setting

0066 Top menu	
DSAL	The default value is 0 (overrange is deactivated). The value 1 represent the overrange. If the value range is exceeded (120 % of the max. value), th overrange indicator flashes
BS-L	By default, this value corresponds to the lower value of the measurin range. An output signal of 4 mA corresponds to this value.
BS-H	By default, this value corresponds to the upper value of the measurin range. An output signal of 20 mA corresponds to this value.
OFST	The measured value can be changed viathe offset. Depending on the offse value, the measured value can be increased or decreased. An offset of 0 is set by default.
FILT	The filter coefficient or display attenuation can be set from 0 to 4. The higher the value, the more stable the display. The default value is 1.
SPDL	Reaction speed of the value change on the display. The reaction speed ca be accelerated with a higher value and reduced with a lower value.
A-04	4mA Output calibration
A-20	20mA Output calibration
AL1P	Switch 1: Hysteresis / window mode changeover
AL1C	Switch 1: The return flow differential for the output window mode is set so that pressure fluctuations at the zero limit are prevented during windo operation.
AL2P	Switch 2: Hysteresis / window mode changeover
AL2C	Switch 2: The return flow differential for the output window mode is set so that pressure fluctuations at the zero limit are prevented during windo operation.
BACK	Restore factory settings
END	Exit

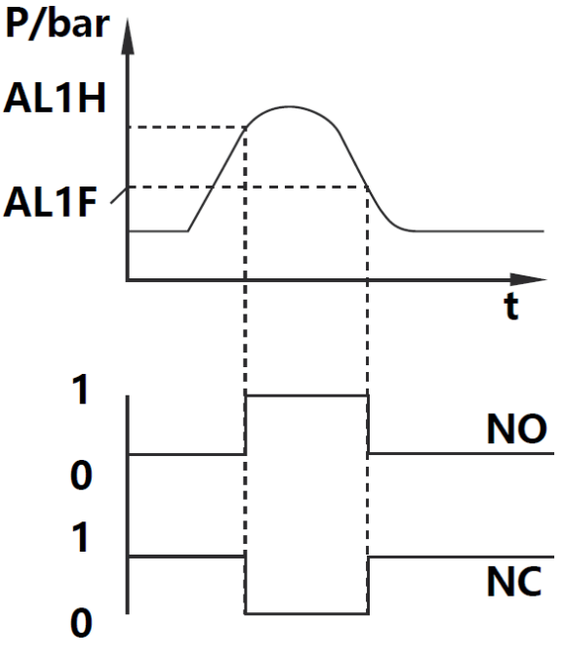

display
S1 + S2
LOCK
S1 S2
0001
AL1H
Switch 1: Switchingvalue
Signal output when pressure reaches this value
AL1F
Switch 1: Release value
Signal output is terminated when pressure reaches this value
AL1D
Switch 1: Action delay (resolution: 0.1 s)
OUT1
Switch 1: Switchover Normally open / Normally close (NO/NC)
AL2H
Switch 2: Switchingvalue
Signal output when pressure reaches this value
AL2F
Switch 2: Release value
Signal output is terminated when pressure reaches this value
AL2D
Switch 2: Action delay (resolution: 0.1 s)
OUT2
Switch 2: Switchover Normally open / Normally close (NO/NC)
END
Save & exit after parameter setting


0066
S1 + S2
OSAL
The default value is 0 (overrange is deactivated). The value 1 represents the overrange. If the value range is exceeded (120 % of the max. value), the overrange indicator flashes.
S1 S2
BS-L
By default, this value corresponds to the lower value of the measuring range. An output signal of 4 mA corresponds to this value.
BS-H
By default, this value corresponds to the upper value of the measuring range. An output signal of 20 mA corresponds to this value.
OFST
The measured value can be changed via the offset. Depending on the offset value, the measured value can be increased or decreased.
An offset of 0 is set by default.
FILT
The filter coefficient (see display attenuation) can be set from 0 to 4. The higher the value, the more stable the display. The default value is 1.
SPDT
Reaction speed of the value change on the display. The reaction speed can be accelerated with a higher value and reduced with a lower value.
A-04
4 mA Output calibration
A-20
20 mA Output calibration
AL1P
Switch 1: Hysteresis / window mode changeover
AL1C
Switch 1: The return flow differential for the output window mode is set so that pressure fluctuations at the zero limit are prevented during window operation.

5.2 Hysteresis model

The hysteresis function is mainly to keep the output of the switch stable when the pressure value fluctuates around the set value. In the process of pressure increase, when the pressure value is greater than AL1H, a signal is output. When the pressure value is less than AL1F, no signal is output.

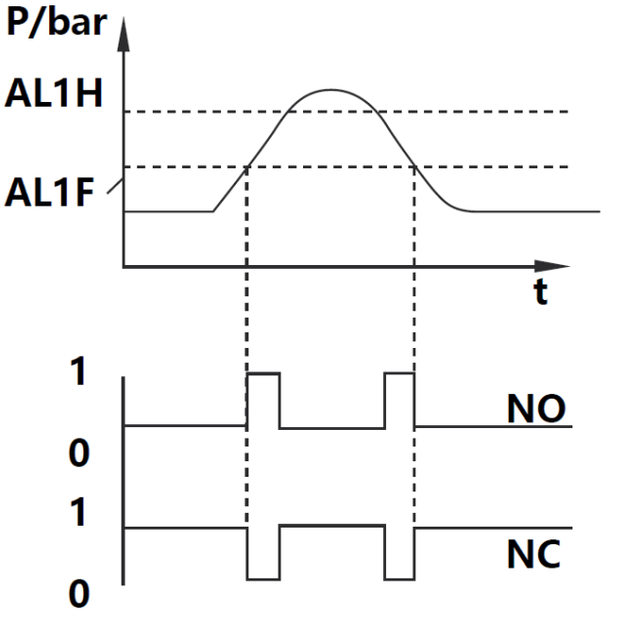
Illus. 5.3



5.3 Window mode

The window function enables the product to monitor whether the pressure value in a certain pressure range is exceeded or not reached. A signal is output in the range between AL1H and AL1F. No signal is output outside this range.

Illus. 5.4



6 PRODUCT LAUNCH

6.1 Product launch

The electronic pressure switch is used for intelligent regulation and control and has an integrated pressure measurement, a digital display and various output options. The output signal is processed by an amplifier with low temperature drift and converted into a digital signal for further processing in a high-precision A/D converter. The pressure switch can be used flexibly and is characterized by simple operation and fault diagnosis as well as safe and reliable operation. The main areas of application are in hydraulics and pneumatics, the oil and chemical industry, the mechanical engineering industry and the hydro energy sector.

6.2 Functional Specifications

- 4-digit display of the current print value
- High and low voltage protection
- Remote Print Detection
- Zero-point calibration
- Choice of hysteresis and windowed mode
- Wahl zwischen Normally Open (NO) und Normally Closed (NC)
- The product parameters can be changed according to the operating mode

7 ERROR CODE AND HANDLING

EREP	EEPROM data check error. Such an error occurs mainly during booting. A check or reset of the device is necessary to rectify the error.
Ero1	Switch 1 Output short-circuit -> Output deactivated Troubleshooting: Eliminate short circuit and switch on again.
Ero2	Switch 2 Output short-circuit -> Output deactivated Troubleshooting: Eliminate short circuit and switch on again.
Er12	Output short circuit at both outputs -> outputs deactivated Troubleshooting: Eliminate short circuit and switch on again.

During normal operation, the appliance monitors and controls according to the set parameters. Furthermore, the device has various options for self-diagnosis and can automatically carry out self-monitoring during operation.

8 CONTACT

We`re here to help you!

If you have any questions, please do not hesitate to contact us.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