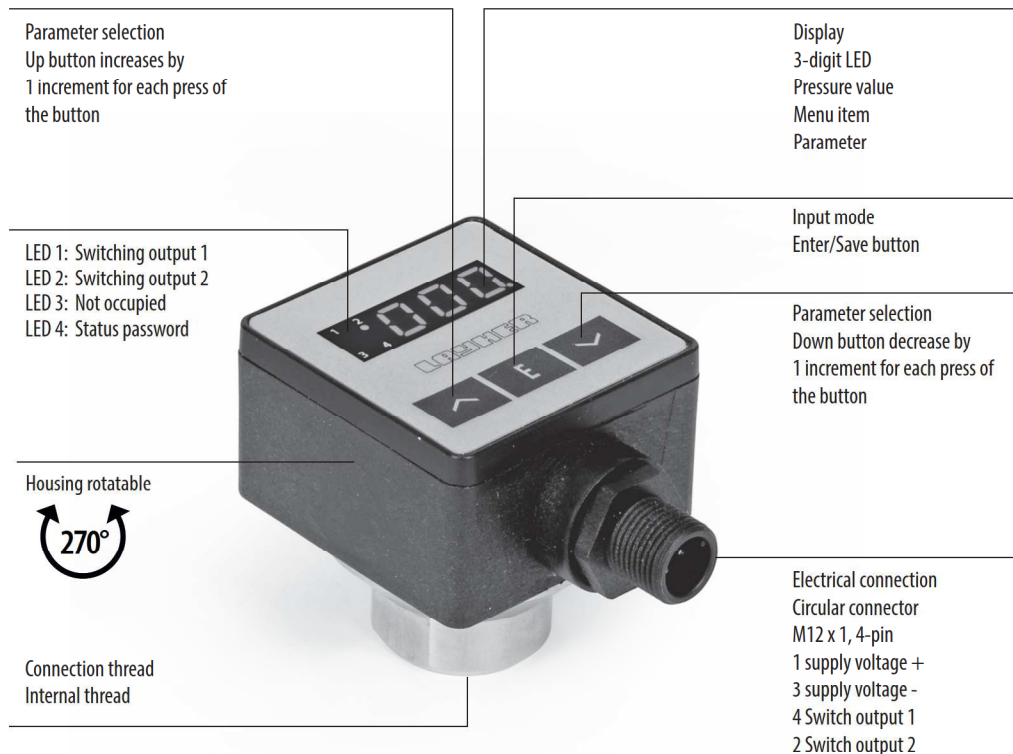


## Operating instructions for Pressure Sensor Type 930



### 1 Operation

The ceramic measuring cell records the system pressure and switches the outputs when the set value is reached.

### 2 Intended use



Observe the specifications and information in the data sheet and the operating instructions.

- The pressure sensor can be used for monitoring liquids and gaseous media such as air, hydraulic oil, oil emulsions and water.
- Take into account the operating conditions (temperature, humidity, etc.) and comply with the limit values specified in the data sheet.
- Only use the product in the original condition. Do not make any unauthorised changes.
- Eliminate mechanical loading due to heavy knocks or vibrations.
- Make sure that the protection class (IPxx) specified in the data sheet corresponds with your environmental and operating conditions.
- Observe the specified pressure range. Avoid static or dynamic overpressures that exceed the specified pressure range. Exceeding the pressure range causes changes to the behaviour and service life or damage.

ding the pressure range causes changes to the behaviour and service life or damage.

- Responsibility of the user: The specifications described in the data sheet and these operating instructions are based on basic tests during product development and empirical values. These can not be applied to all applications. It is the responsibility of the user to determine whether our products are suitable for the respective application and in case of doubt can only be verified by suitable practical tests.

### 3 Safety regulations



To ensure proper and safe use of the pressure sensor, the regulations of the government safety organisations (e.g. BGV A3), the Association of Electrical Engineering (e.g. VDE 0702) or the relevant national regulations as well as these operating instructions must be observed.

### 4 Assembly

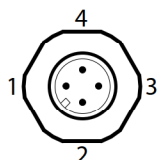
Remove all transportation provisions such as protective films, caps or cardboard boxes. The individual materials can be disposed of in recycling collection containers. Only work with tools that comply with regulations.

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Screw the pressure sensor in the pressure connection provided. For this purpose, use the spanner flat at the pressure sensor and use a spanner (acc. to DIN 894 or similar). The tightening torque complies with the connection thread used. The correct tightening torque depends on the size, material and form of the seal used. For the pressure switch, it is dependent on the size and the material of the pressure connection thread as well taking into consideration the material of the counterpart. Connect the electrical line to the contacts provided. Make sure that the cable is not crushed, bent or stretched when laid.

Connection diagram: Circular connector M12 x 1, 4-pin

- 1 Positive power supply +
- 3 Negative power supply -
- 4 Switch output 1
- 2 Switch output 2



## 5 Designation of LEDs

LED 1: Status of switching output 1  
LED 2: Status of switching output 2  
LED 3: Not reserved Password  
LED 4: Status Password



## 6 Configuration of parameters

Three keys are used for operation:

"^" The selected parameter increases by 1 each time the key is pressed. The value increases automatically when the key is pressed for longer than 2 seconds.

"E" The set value is applied.

"v" The selected parameter decreases by 1 each time the key is pressed. The value decreases automatically when the key is pressed for longer than 2 seconds.

### Input:

If the "E" key is pressed from the basic state, input mode is accessed. This is indicated by the flashing display. The desired menu item is selected using the "Up" / "Down" keys and confirmed with "E". The value to be changed is then shown flashing on the display and can be entered using the "Up" / "Down" keys. When the desired value is displayed, it can be permanently transferred to the memory using the "E" key.

## 7 Removal

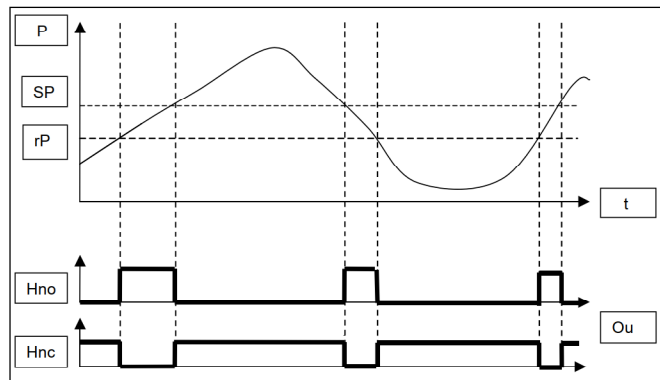


Proceed in the reverse order for disassembly. Remove the cable from the connection point and unscrew the pressure sensor using a spanner (acc. to DIN 894 or similar) over the spanner flat attachment.

Caution: When disassembling, make sure that the system in which the pressure sensor is situated is in a depressurised state and disconnected from the power supply.

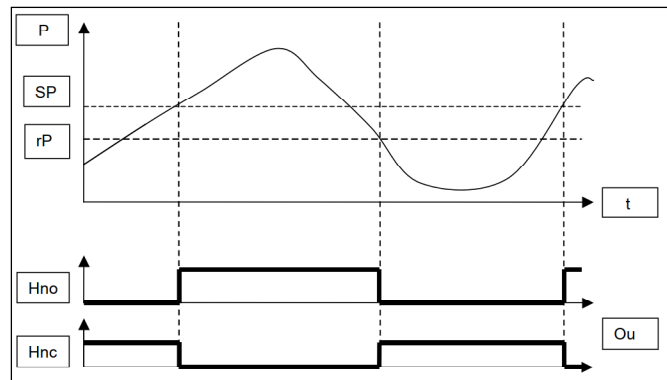
For additional technical data see data sheet

## 8 Switching functions



### Window function:

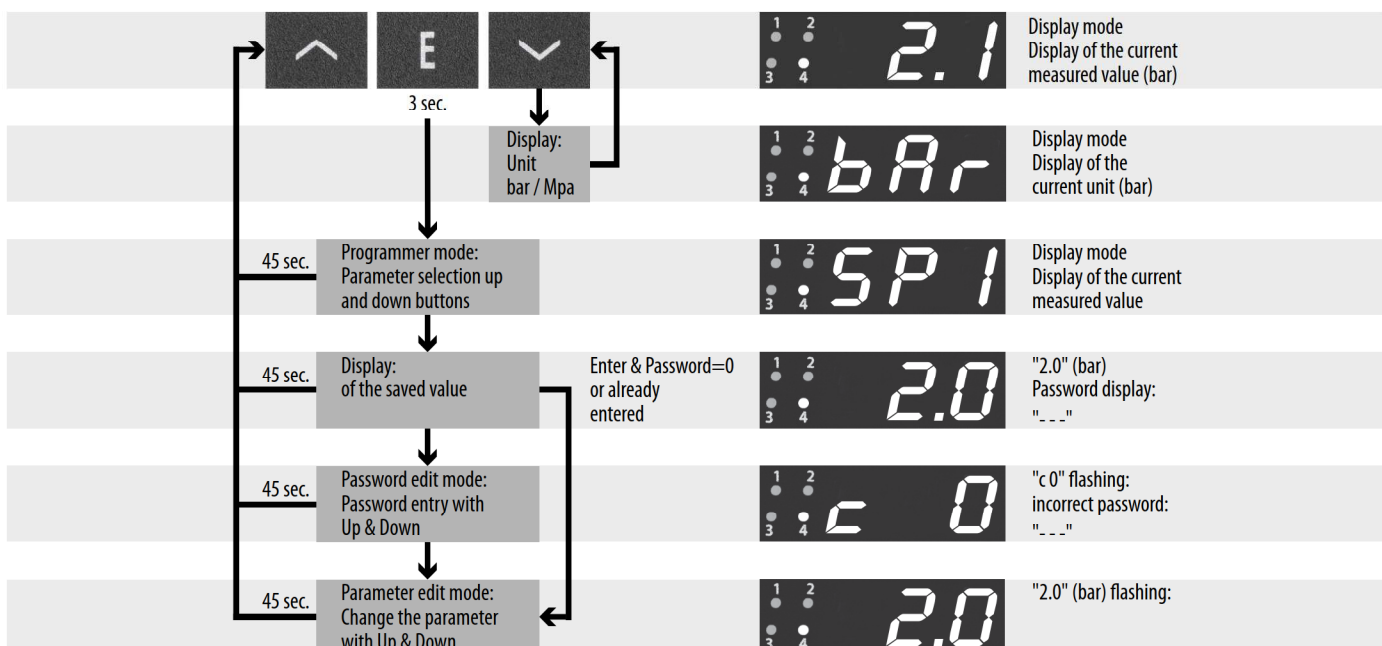
The output changes for the input and output of the switching window (parameter SP.. and rP..). Switch-on and switch-off times can be delayed (parameter dS.. or dr..).



### Hysteresis function:

The output (Ou..) changes when exceeding the switching point (parameter: SP..) and exceeding the reset point (parameter rP..). Switch-on and switch-off times can be delayed (parameter dS.. or dr..).

## 9 Commissioning, operation, menu, programming



First menu level	Second menu level	Parameter Function	Quantization	Minimum value	Maximum value	Factory settings	Information
SP1		Switch-point 1	0.1 bar 0.01 Mpa	[rP1] [rP1]	[P11] [P11]	2.0 bar 0.2 Mpa	Function VDMA 24574-1 Hysteresis function: SP1 Window function: FH1
rP1		Reset-point 1	0.1 bar 0.01 Mpa	[P01] [P01]	[P11] [P11]	1.0 bar 0.1 Mpa	Function VDMA 24574-1 Hysteresis function: RP1 Window function: FL1
SP2		Switch-point 2	0.1 bar 0.01 Mpa	[rP2] [rP2]	[P11] [P11]	3.0 bar 0.3 Mpa	Function VDMA 24574-1 Hysteresis function: SP2 Window function: FH2
rP2		Reset-point 2	0.1 bar 0.01 Mpa	[P01] [P01]	[P11] [P11]	2.5 bar 0.25 Mpa	Function VDMA 24574-1 Hysteresis function: RP2 Window function: FL2
EF	rES	Factory settings	no yes	-	-	-	Function VDMA 24574-1
	dS1	Switch-on delay 1	0.1s	0s	30s	0s	Function VDMA 24574-1
	dr1	Switch-off delay 1	0.1s	0s	30s	0s	Function VDMA 24574-1
	dS2	Switch-on delay 2	0.1s	0s	30s	0s	Function VDMA 24574-1
	dr2	Switch-off delay 2	0.1s	0s	30s	0s	Function VDMA 24574-1
	Ou1	Configuration Output 1	Hno hysteresis normally closed Hnc hysteresis normally open	-	-	Hno	Function VDMA 24574-1 Normally closed: active high Normally open: Active low
	Ou2	Configuration Output 2	Hno hysteresis normally closed Hnc hysteresis normally open	-	-	Hno	Function VDMA 24574-1 Normally closed: active high Normally open: Active low
	uni	Mode	bar MPa  Roll text Diagnostics function	-	-	bar	Function VDMA 24574-1 Pressure  Presentation Diagnostics function
	dis	Display contrast	20%	20%	100%	80%	Function VDMA 24574-1
	cod	Password	1	0	99	0	0: no password and delivery state.  Password expires after 60s of inactivity.
	P00 *	Measuring point 0	Increments of the analogue system 1023 Inc = 5.000V 1 Inc = 0.005V	0 Inc (0 Volt)	999 Inc (4.883 Volt)	102 Inc (0.498 Volt)	only for pressure mode P00=0: Reference input active P00<>0: Reference input inactive
	P01 *	Display point 0	0.1 bar 0.01MPa	0.0 bar 0.00 MPa	25 bar 2.50 Mpa	0.0 bar 0.00 MPa	only for pressure mode
	P10 *	Measuring point 1	Increments of the analogue system 1023 Inc = 5.000V 1 Inc = 0.005V	0 Inc (0 Volt)	999 Inc (4.883 Volt)	920 Inc (4.497 Volt)	only for pressure mode
	P11 *	Display point 1	0.1 bar 0.01 MPa	0.0 bar 0.00 MPa	25 bar 2.50 MPa	10.0 bar 1.00 MPa	only for pressure mode
	P20 *	Sensor selection	10 bar 25 bar 100 bar 250 bar	-	-	-	Sensor selection

\*P00 – P20: Functions for calibration at the factory. Calibration is lost if operated improperly!

Technical data subject to change without notice.

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