

Operating instructions

Intelligent pressure switch

Model: MVIPS



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1 Preliminary note

1.1 Symbols used

► Instructions

> Reaction, result

[...] Designation of keys, buttons or indications

→ Cross-reference



Important note

Non-compliance can result in malfunction or interference



Information



2 Safety instructions

· Please read this document prior to set-up of the unit, Ensure that the product is suitable for your application without any restriction.

· If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property can occur.

· Check the compatibility of the product materials with the media to be measured in all applications.

· Correct condition of the device for the operating time can only be guaranteed if the device is only used for media to which the wetted materials are sufficiently resistant.



The responsibility whether the measurement device is suitable for the respective application lies with the operator, The manufacturer assumes no liability for consequences of misuse by the operator, Improper installation and use of the devices results in a loss of the warranty claims.



MV Endüstriyel Ölçüm Cihazları Anonim Şirketi

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3 Functions and features



The device monitors the system pressure of machines and installations. Avoid static and dynamic over pressure exceeding the specified overload pressure by taking appropriate measures.

The indicated bursting pressure must not be exceeded.

Even if the bursting pressure is exceeded only for a short time, the unit may be destroyed! **ATTENTION: Risk of injury!**

4 Function

- The unit displays the current system pressure.
- It generates output signals according to the operating mode and the parameter setting.

4.1 Communication, parameter setting, evaluation

OUT1 (pin 4)	· Switching signal for system pressure limit value
OUT2 (pin 2)	· Switching signal for system pressure limit value

4.2 Switching function

OUTx changes its switching state if it is above or below the set switching limits (SPx, rPx), The following switching functions can be selected:

- Hysteresis function / normally open: [OUx] = [Hno] (→ fig. 1).
- Hysteresis function / normally closed: [OUx] = [Hnc] (→ fig. 1).

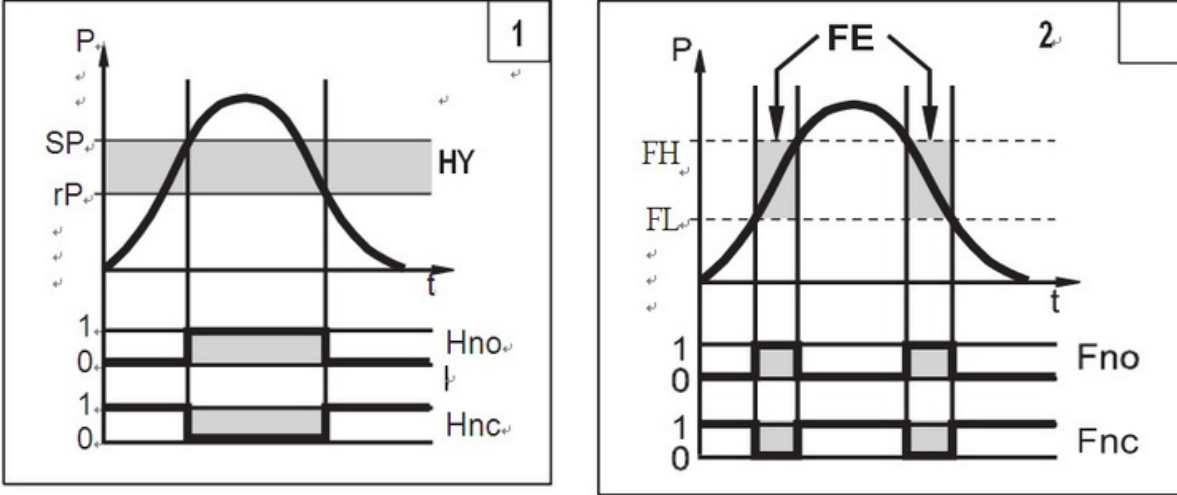
First the set point (SPx) is set, then the reset point (rPx).

The hysteresis defined remains even if SPx is changed again.

- Window function / normally open: [OUx] = [Fno] (→ fig. 2).
- Window function / normally closed: [OUx] = [Fnc] (→ fig. 2).

The width of the window can be set by means of the difference between FHx

and FLx, FHx = upper value, FLx = lower value.



P = system pressure; HY = hysteresis; FE = window

5. Installation



Before installing and removing the unit: Make sure that no pressure is applied to the system

- Insert the unit in a G $\frac{1}{4}$ process connection
- Tighten firmly



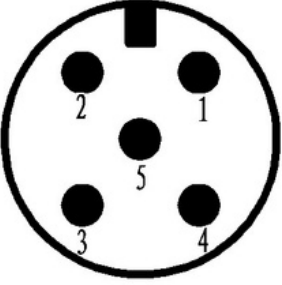
Recommended tightening torque: 25 to 35 Nm

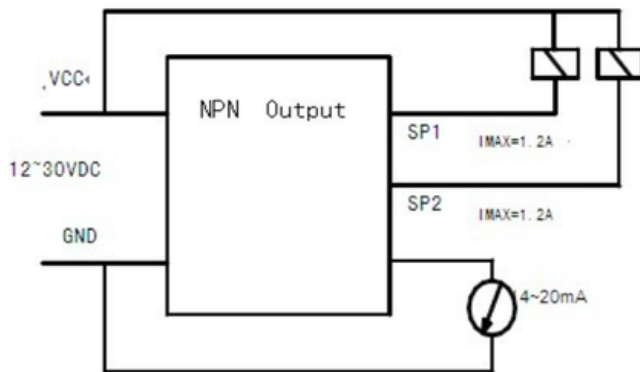
6. Electrical connection



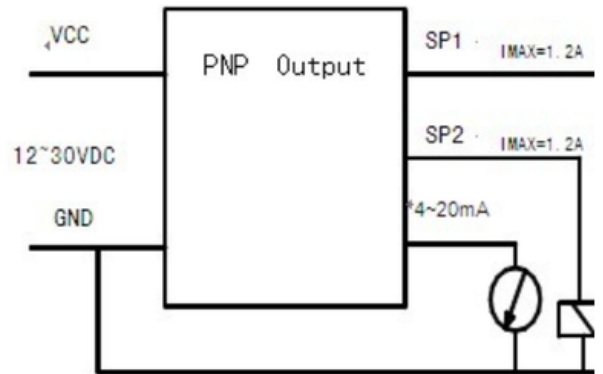
The unit must be connected by a qualified electrician
The national and international regulations for the installation of electrical equipment must be adhered to
Voltage supply according to EN 50178, SELV, PELV

► Connect the unit as follows:

<i>M12X1 Air Plug</i>	<i>Pin Define</i>	<i>Wire Color</i>
	1: VCC (power+)	Brown
	2: SP2 (switch 2)	White
	3: GND (power-)	Blue
	4: SP1 (switch 1)	Black
	5: 4~2mA	Grey



NPN wiring diagram



PNP wiring diagram

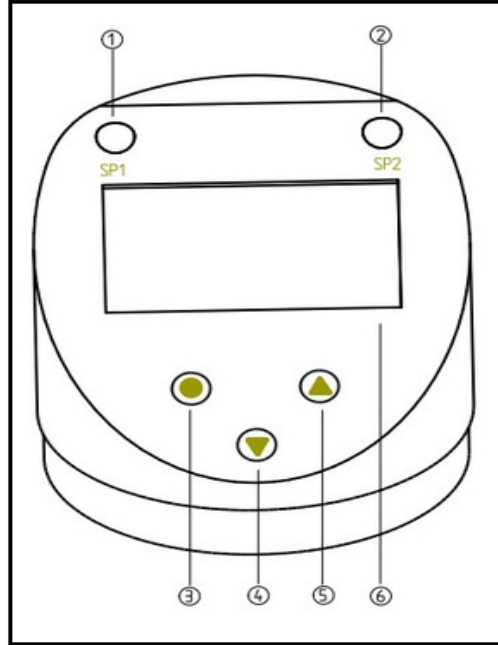
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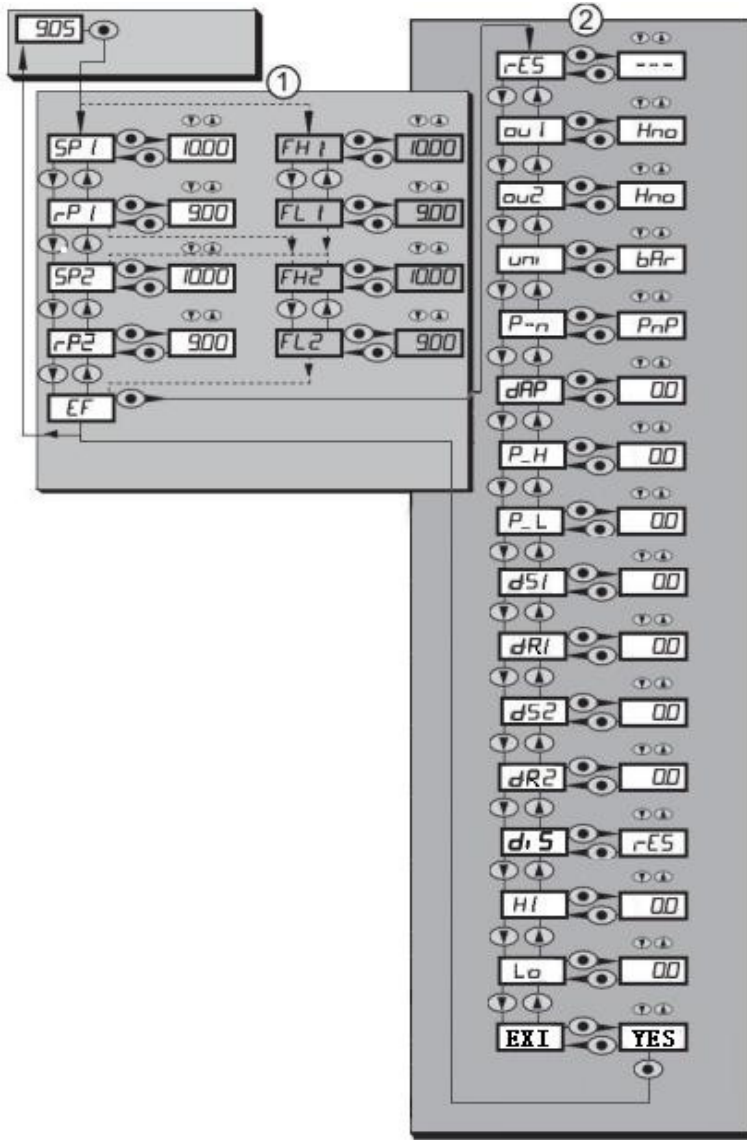
7 Operating and display elements



1	SP1	Switching status OUT1 (lights when output 1 is switched)
2	SP2	Switching status OUT2 (lights when output 2 is switched)
3	[Enter] button [●]	Selection of the parameters and acknowledgement of the parameter values
4,5	Arrow keys up [▲] and down [▼]	Setting of the parameter values (scrolling by holding pressed; incremental by pressing once)

8 Menu

8.1 Menustructure



! Menu items highlighted in grey e.g.[FH1] are only assigned active when parameters have been selected.

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8.2 Explanation of the menu 8.2.1

Explanation of the menu level 1

Spx / rPx	Upper / lower limit value for system pressure at which OUT1 switches with hysteresis setting,SPx/rPx is displayed if the parameter [Hno] or [Hnc] for OUTx was set in the extended functions "EF" menu.
FHx / FLx	Upper / lower limit value for system pressure at which OUT1 switches with window setting, FHx/FLx is displayed if the parameter [Fno] or [Fnc] for OUTx was set in the extended functions "EF" menu.
EF	Extended functions / opening of menu level 2.

8.2.2 Explanation of the menu level 2

RES	Restore factory setting
OU1	Output function for OUT1: · Switching signal for the pressure limit values: hysteresis function [H..] or window function [F..], either normally open [.no] or normally closed [.nc]
OU2	Output function for OUT2: · Switching signal for the pressure limit values: hysteresis function [H..] or window function [F..] as normally open (. no) or normally closed (.nc)
DS1	Switching delays for OUT1
dr1	Switch-off delay for OUT1
DS2	Switching delays for OUT2

dr2	Switch-off delay for OUT2
UNI	Standard unit of measurement for system pressure (display): [MPa] / [kPa]
P-N	Output logic: pnp / npn
LO	Minimum value memory for system pressure
HI	Maximum value memory for system pressure
DIS	orientation of the display
Exi	Exit

9Parameter setting

9.1 Parameter settingin general

During parameter setting the unit remains in the operating mode, It continues to monitor with the existing parameters until the parameter setting has been Completed.

3 steps must be taken for each parameter setting:

1	Select parameter ► Press [•] to get to the menu ► Press [▲] or [▼] until the requested parameter is displayed
----------	---

2 Set parameter value

- ▶ Press [●] to edit the selected parameter
- ▶ Press [▲] or [▼] for min >2 s.

> After 2 s: setting value is changed:

incrementally by pressing the button
once or continuously by keeping the
button pressed

Numerical values are incremented continuously with [▲] or decremented with [▼].

3 Acknowledge parameter value

- ▶ Briefly press [●].
- > The parameter is displayed again.
The new setting value is saved.

Set other parameters

- ▶ Press [▲] or [▼] until the requested parameter is displayed.

Finish parameter setting

- ▶ Press [▲] or [▼] several times until the current measured value is displayed or wait for 30 s.

> The unit returns to the process value display.

· Change from menu level 1 to menu level 2:

1	▶ Press [●] to get to the menu. ▶ Press [▲] or [▼] until [EF] is displayed.
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2	► Press [●]. > The first parameter of the submenu is displayed (here: [rES]).
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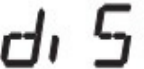
Change from menu level 1 to menu level 2 when a parameter setting software is used:

- Activate the [EF] button

· Timeout:

If no button is pressed for 30 s during parameter setting, the unit returns to the operating mode with unchanged values

9.2 Configure display (optional)

► Select [Uni] and set the unit of measurement: - [MPA], [kPA],  The selectable units of measurement depend on the respective unit	
► Select [diS] , set the orientation of the display : - [NOR]: normal display orientation	

9.3 Set output signals 9.3.1

Set output functions

► Select [OU1] and set the function: - [Hno] = hysteresis function/NO, - [Hnc] = hysteresis function/NC, - [Fno] = window function/NO, - [Fnc] = window function/NC.	ou 1
► Select [OU2] and set the function: - [Hno] = hysteresis function/NO, - [Hnc] = hysteresis function/NC, - [Fno] = window function/NO, - [Fnc] = window function/NC.	ou 2

9.3.2 Define switching limits for the hysteresis function

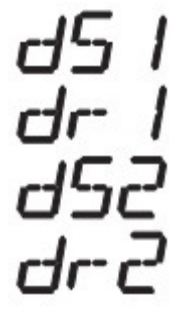
► [ou1] / [ou2] must be set as [Hno] or [Hnc]. ► Select [SP1] / [SP2] and set the value at which the output is set.	SP 1 SP 2
► Select [rP1] / [rP2] and set the value at which the output is reset, rPx is always smaller than SPx, The unit only accepts values which are	r-P 1 r-P 2

9.3.3 Define switching limits for the window function

► [ou1] / [ou2] must be set as [Fno] or [Fnc] ► Select [FH1] / [FH2] and set the upper limit value ► Select [FL1] / [FL2] and set the lower limit value,	FH 1 FH 2
FLx is always lower than FHx, The unit only accepts values which are lower than the value for FHx.	FL 1 FL 2

9.4 User settings (optional)

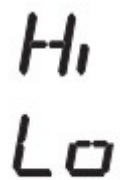
9.4.1 Set delay for the switching outputs

[dS1] / [dS2] = switching delay for OUT1 / OUT2, [dr1] / [dr2] = reset delay for OUT1 / OUT2, ► Select [dS1], [dS2], [dr1] or [dr2] and set a value between 0 and 5.0 s (at 0 the delay time is not active).  For this unit the parameters [dSx] und [drx] for the set and reset points are designed strictly to the VDMA guideline.	
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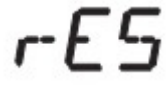
9.4.2 Set output logic for the switching outputs

► Select [P-n] and set [PnP] or [nPn].	
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9.4.3 Set damping for the switching signal

► Select [HI] or [LO] and briefly press [•]. [HI] = maximum value, [LO] = minimum value. Delete memory: ► Select [HI] or [LO]. ► Press and hold [▲] or [▼] until [----] is displayed.	
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9.4.4 Reset all parameters to factory setting

► Select [rES]  ► Press [•]. ► Press and hold [▲] or [▼] until [----] is displayed.	
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