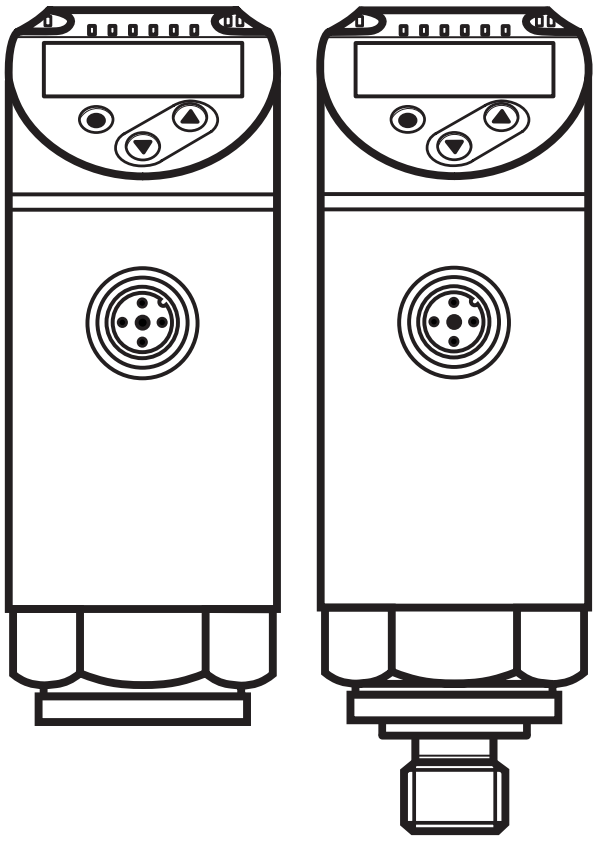
CE

Operating instructions
Electronic pressure sensor
PN3

UK



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1 Preliminary note

1.1 Symbols used

▶ Instruction

> Reaction, result

[…] Designation of keys, buttons or indications

→ Cross-reference

Important note
Non-compliance may result in malfunction or interference

Information
Supplementary note

2 Safety instructions

- The device described is a subcomponent for integration into a system.
  - The manufacturer is responsible for the safety of the system.
  - The system manufacturer undertakes to perform a risk assessment and to create a documentation in accordance with legal and normative requirements to be provided to the operator and user of the system. This documentation must contain all necessary information and safety instructions for the operator, the user and, if applicable, for any service personnel authorised by the manufacturer of the system.
- Read this document before setting up the product and keep it during the entire service life.
- The product must be suitable for the corresponding applications and environmental conditions without any restrictions.
- Only use the product for its intended purpose (→ Functions and features).
- Only use the product for permissible media (→ Technical data).
- If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.
- The manufacturer assumes no liability or warranty for any consequences caused by tampering with the product or incorrect use by the operator.
- Installation, electrical connection, set-up, programming, configuration, operation and maintenance of the product must be carried out by personnel qualified and authorised for the respective activity.
- Protect units and cables against damage.
- If the devices are used in gas applications with pressures > 25 bar, the information in chapter 3.1 for devices with the marking **) must be absolutely observed!

3 Functions and features

The device monitors the system pressure of machines and installations.

3.1 Application area

Type of pressure: relative pressure

Information on pressure rating and bursting pressure → data sheet.

Avoid static and dynamic overpressure exceeding the indicated pressure rating 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. CAUTION: Risk of injury!

The units are vacuum resistant.

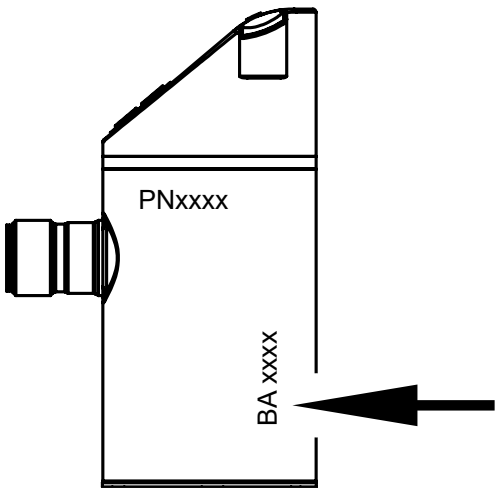
Pressure Equipment Directive (PED):
The units comply with the Pressure Equipment Directive and are designed and manufactured for group 2 fluids in accordance with the sound engineering practice.
Use of media from group 1 fluids on request.

4 Function

- The unit displays the current system pressure.
- It generates output signals according to the operating mode and the parameter setting.
- It moreover provides the process data via IO-Link.
- The unit is designed for fully bidirectional communication.
  So, the following options are possible:
  - Remote display: reading and display of the current system pressure.
  - Remote parameter setting: reading and changing the current parameter setting.
  - IO-Link parameter setting (→ 4.5).

4.1 Operating modes

Operating mode 2	
Description	Operating mode on delivery.
Application	Standard applications.
Designation IODD	Example PN3070 Factory setting / (CMPT=2): At www.ifm.com in the download area of the corresponding article.

Operating mode 3	
Description	High IO-Link process value and parameter resolution (device-specific: see operating mode of the corresponding IODD). The menu points [ou1] and [ou2] are extended by the setting option [OFF] (→ 9.4.1). IO-Link standard command "flashing" is available (→ 4.5.2). This operating mode is available as from device status BA. The device status is indicated on the unit. 
Application	Better controllability via IO-Link. Highly granular setting of switch-on and switch-off points.
Designation IODD	Example PN3070 Status_B High Resolution / (CMPT=3): At www.ifm.com in the download area of the corresponding article.

Manual operating mode selection, see (→ 9.1),
selection of the operating mode via IO-Link interface see
→ Additional document: Selection of the operating mode, at www.ifm.com.

4.2 Communication, parameter setting, evaluation

OUT1 (pin 4)	• Switching signal for system pressure limit • Communication via IO-Link
OUT2 (pin 2)	• Analogue signal 4...20 mA / 0...10 V

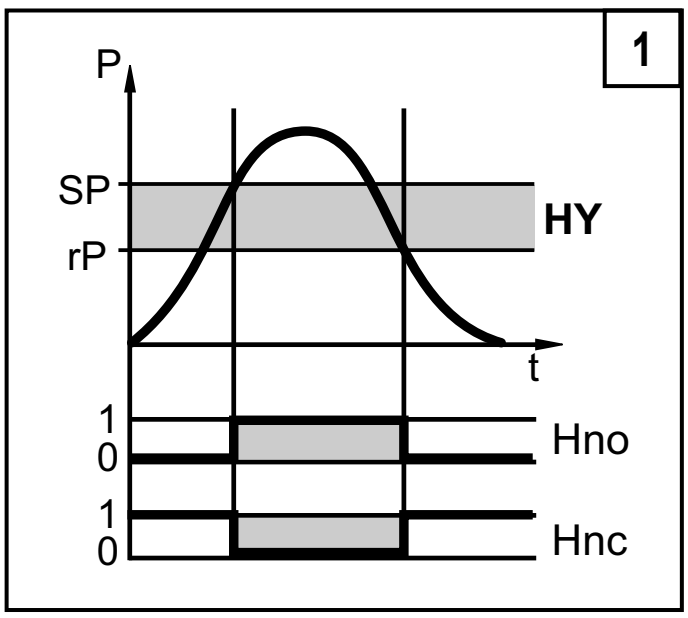
4.3 Switching function

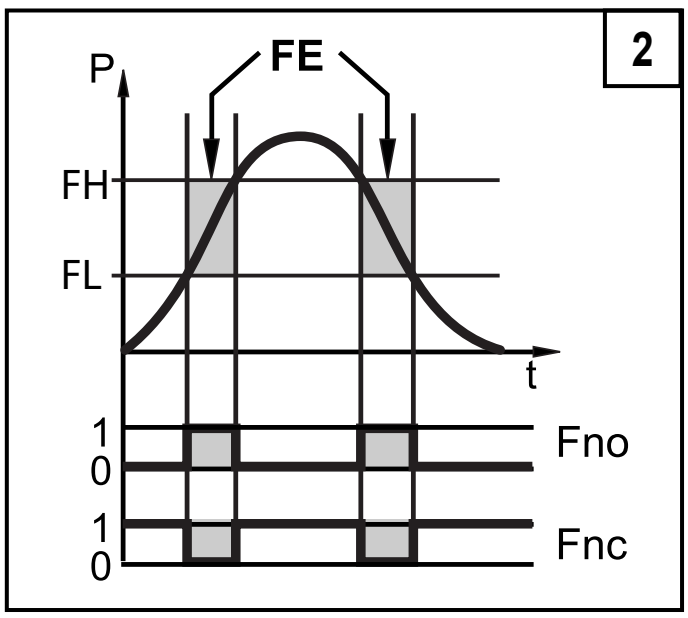
OUT1 changes its switching state if it is above or below the set switching limits (SP1, rP1). The following switching functions can be selected:

- Hysteresis function normally open: [ou1] = [Hno] (→ Fig. 1).
- Hysteresis function normally closed: [ou1] = [Hnc] (→ Fig. 1).

  First set the set point (SP1), then the reset point (rP1).

  The resulting hysteresis remains even if SP1 is changed again.
- Window function normally open: [ou1] = [Fno] (→ Fig. 2).
- Window function normally closed: [ou1] = [Fnc] (→ Fig. 2).
  The width of the window can be set by means of the difference between FH1 and FL1. FH1 = upper value, FL1 = lower value.





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

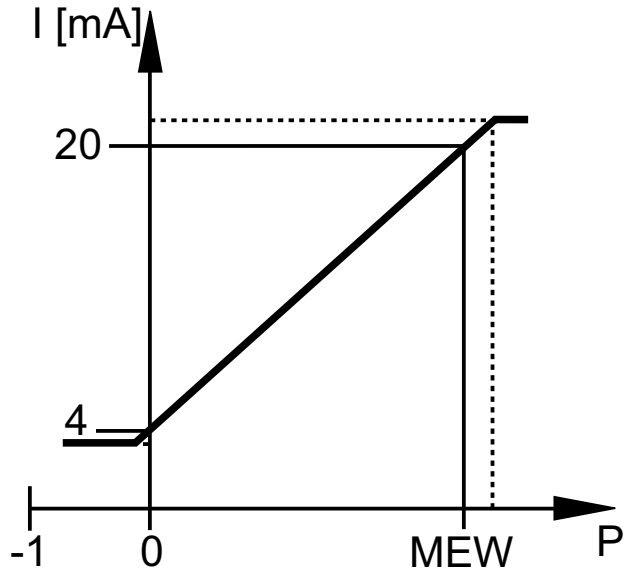
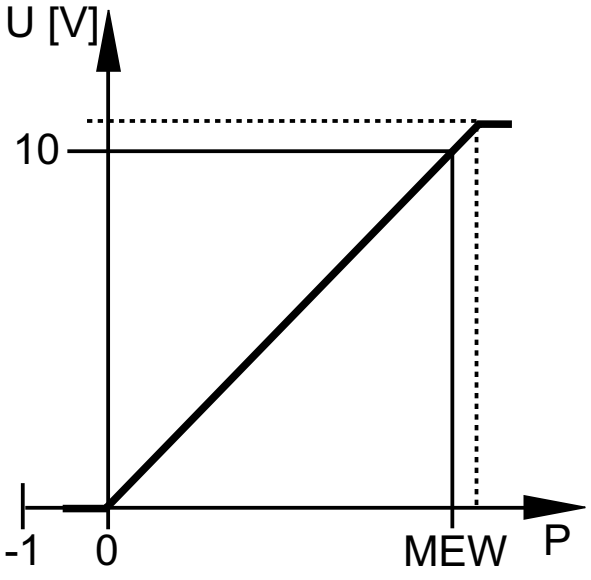
When set to the window function, the set and reset points have a fixed hysteresis of 0.25 % of the measuring span.

4.4 Analogue function

OUT2 is an analogue output:

- [ou2] defines whether the set measuring range is provided as 4...20 mA ([ou2] = [I]) or as 0...10 V ([ou2] = [U]).

PN3094 and PN3594:
Analogue signal 4...20 mA / 0...10 V corresponds with the measuring range of 0...10 bar.
Negative pressure values cannot be represented via the analogue output for the indicated units.

<table>
<tr><th>Current output 4...20 mA</th><th>Voltage output 0 ... 10 V</th></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td colspan="2">P = System pressure
MEW = final value of the measuring range</td></tr>
<tr><td>In the measuring range of the corresponding unit, the output signal is between 4 and 20 mA.
The green LED also indicates:
• System pressure above the measuring range: 20...20.5 mA
- Fault indication from 21.5 mA.
• System pressure below the measuring range: 4...3.8 mA</td><td>In the measuring range of the corresponding unit, the output signal is between 0 and 10 V.
The green LED also indicates:
• System pressure above the measuring range: 10...10.3 V
- Fault indication from 11 V.</td></tr>
</table>

4.5 IO-Link

4.5.1 General information

This device has an IO-Link communication interface that requires an IO-Link capable module (IO-Link master) for operation.

The IO-Link interface enables direct access to the process and diagnostic data and provides the possibility to set the parameters of the unit during operation.

In addition, communication is possible via a point-to-point connection with a USB adapter cable.

The IODDs necessary for the configuration of the unit, detailed information about process data structure, diagnostic information, parameter addresses and the necessary information about the required IO-Link hardware and software are available at www.ifm.com.

4.5.2 Functions that are only available via IO-Link communication

- HIPC: number of overload processes (→ 9.6.2).
- HIPS: threshold for the overload counter (→ 9.6.2).
- Flashing: The sensor can be localised in the plant via this standard command. When the command is used, the switching status LEDs will flash and the device display will signal "IO-L".
  (Function is only available in operating mode [3]).
- Application Specific Tag: Freely definable text, assigned to the device.
- Plant identification code: Freely definable text, describes the device function in the plant. (Function is only available in operating mode [3]).
- Location identification code: Freely definable text, describes the installation location in the plant. (Function is only available in operating mode [3]).

For detailed information, please view the device-specific
IO Device Description PDF at www.ifm.com.

5 Installation

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

▶ Insert the unit in a G¼ process connection.

▶ Tighten firmly. Recommended tightening torque:

Pressure range in bar	Tightening torque in Nm
-1...400	25...35
600	30...50
Depends on lubrication, seal and pressure load.	

The sensor housing can be rotated by 345° with regard to the process connection.

Do not rotate past the end stop!

6 Electrical connection

The device must be connected by a qualified electrician.

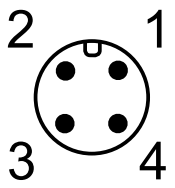
The national and international regulations for the installation of electrical equipment must be adhered to.

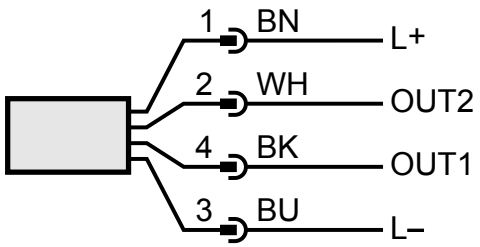
Voltage supply according to EN 50178, SELV, PELV.

▶ Disconnect power.

▶ Connect the device as follows:

Core colours	
BK	black
BN	brown
BU	blue
WH	white





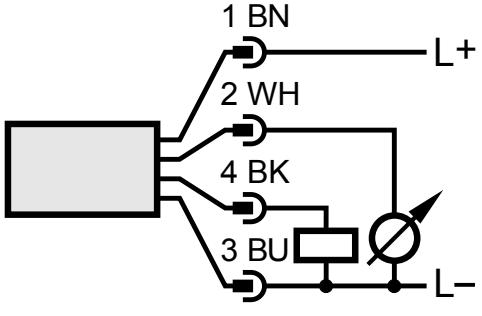
OUT1: switching output or IO-Link

OUT2: analogue output

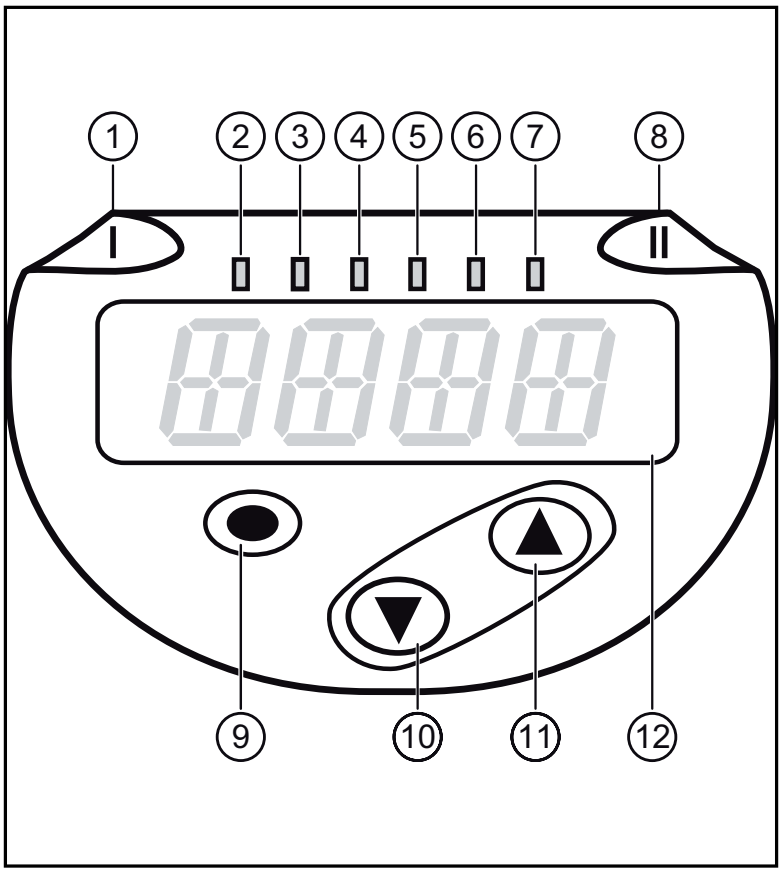
Colours to DIN EN 60947-5-2

Wiring example

1 x positive switching / 1 x analogue



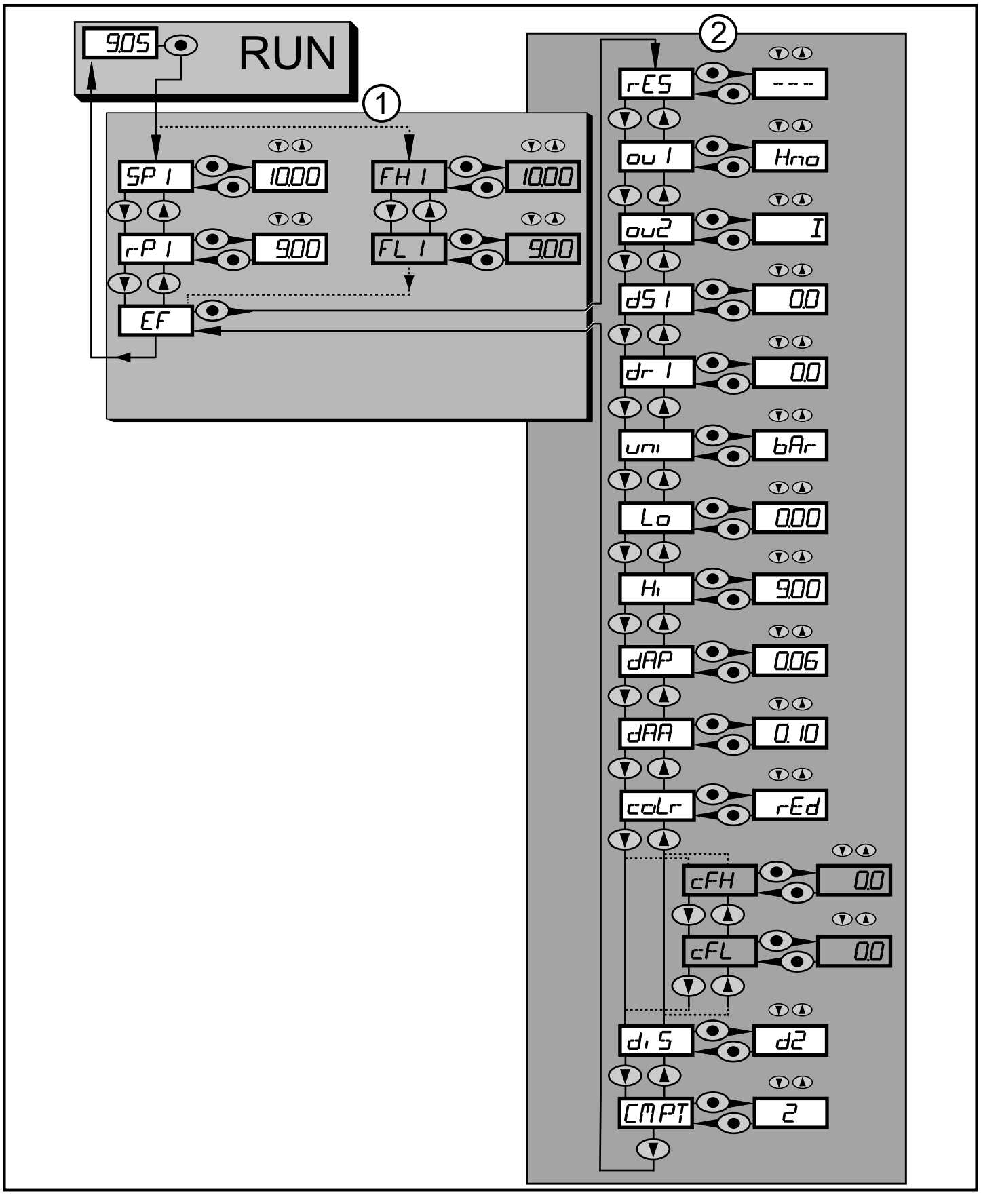
7 Operating and display elements



1 to 8: Indicator LEDs	
LED 1	Switching status OUT1 (on if output 1 is switched).
LED 8	No function
LEDs 2 - 7	System pressure in the indicated unit of measurement.
9: Enter button [•]	
- Selection of the parameters and acknowledgement of the parameter values.	
10 to 11: Arrow keys up [▲] and down [▼]	
- Setting of the parameter values (scrolling by holding pressed, incrementally by pressing once).	
12: Alphanumeric display, 4 digits	
- Display of the current system pressure. - Display of the parameters and parameter values.	

8 Menu

8.1 Menu structure: Main menu



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

8.2 Explanation of the menu

8.2.1 Explanation of menu level 1

SP1/rP1	Upper / lower limit value for system pressure at which OUT1 switches with hysteresis setting. SP1/rP1 is displayed if the parameter [Hno] or [Hnc] was set for OUT1 in the menu Extended Functions "EF".
FH1/FL1	Upper / lower limit for system pressure at which OUT1 switches with window setting. FH1/FL1 is displayed if the parameter [Fno] or [Fnc] was set for OUT1 in the menu Extended Functions "EF".
EF	Extended functions / opening of menu level 2.

8.2.2 Explanation of menu level 2

rES	Restore factory setting.
ou1	Output function for OUT1: • Switching signal for the pressure limits: hysteresis function [H ..] or window function [F ..], either normally open [. no] or normally closed [. nc]. • Output off [OFF] (function is only available in operating mode [3]).
ou2	Output function for OUT2: • Analogue signal for the current system pressure: 4…20 mA [I] or 0…10 V [U] • Output off [OFF] (function is only available in operating mode [3]).
dS1	Switch-on delay for OUT1.
dr1	Switch-off delay for OUT1.
uni	Standard unit of measurement for system pressure (display): [bAr] / [mbar] / [MPA] / [kPA] / [PSI] / [inHG]. The selectable units of measurement depend on the respective unit. See table with setting ranges (→ 11.1.1).
Lo	Minimum value memory for system pressure.
Hi	Maximum value memory for system pressure.
dAP	Damping of the switch point / process data flow (IO-Link communication) and the display.
dAA	Damping of the analogue output.
coLr	Assignment of the display colours "red" and "green" within the measuring range.
cFH / cFL	Upper / lower value for colour change. Parameter only active after selection of a freely definable colour window in the coLr parameter: [r-cF] or [G-cF].
diS	Update rate and orientation of the display.
CMPT	Selection of the operating mode

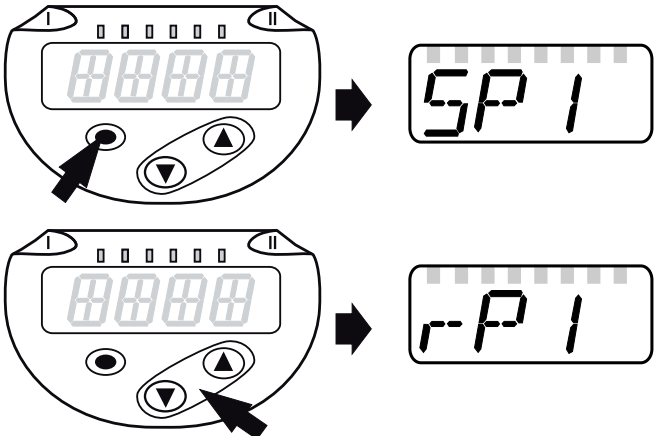
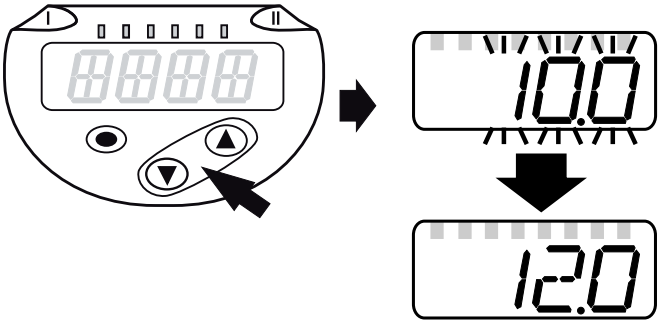
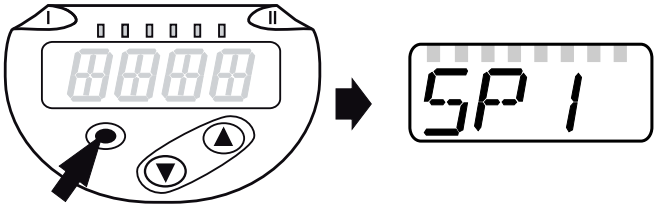
9 Parameter setting

During parameter setting the unit remains in the operating mode. It continues its monitoring functions with the existing parameters until the parameter setting has been completed.

9.1 Parameter setting in general

3 steps must be taken for each parameter setting:

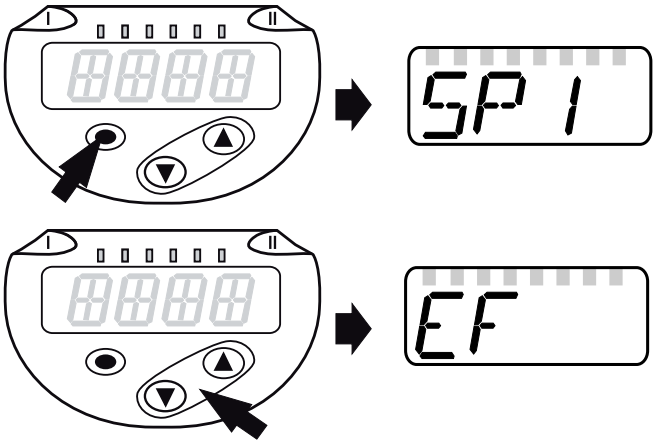
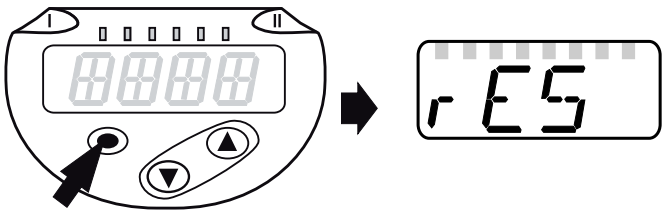
<table>
<tr><td>1</td><td>Select parameter
▶ Press [●] to get to the menu.

▶ Press [▲] or [▼] until the required parameter is displayed.</td><td>  </td></tr>
<tr><td rowspan="2">2</td><td>Set parameter value
▶ Press [●] to edit the selected parameter.
▶ Press [▲] or [▼] for at least 1 s.
> After 1 s: setting value can be changed: incrementally by pressing the button once or continuously by keeping the button pressed.</td><td>  </td></tr>
<tr><td colspan="2">Numerical values can be incremented continuously with [▲] or decremented with [▼].</td></tr>
<tr><td>3</td><td>Acknowledge parameter value
▶ Briefly press [●].
> The parameter is displayed again. The new setting value is saved.</td><td>  </td></tr>
<tr><td colspan="3">Set other parameters
▶ Press [▲] or [▼] until the required parameter is displayed.</td></tr>
<tr><td colspan="3">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.</td></tr>
</table>

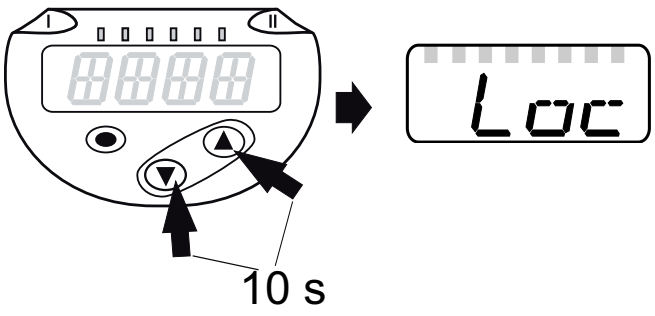
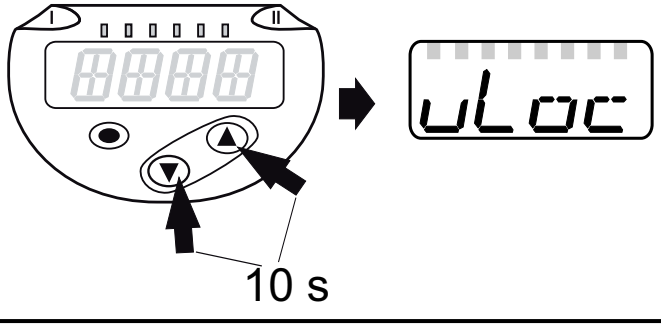
If [C.Loc] is displayed when an attempt is made to modify a parameter value, IO-Link communication is active (temporary locking).

If [S.Loc] is displayed, the sensor is permanently locked via software. This locking can only be removed with a parameter setting software.

- Change from menu level 1 to menu level 2:

▶ Press [●] to get to the menu. ▶ Press [▼] until [EF] is displayed.	
▶ Press [●] > The first parameter of the submenu is displayed (here: [rES]).	

- Locking / Unlocking
  The unit can be locked electronically to prevent unintentional settings.

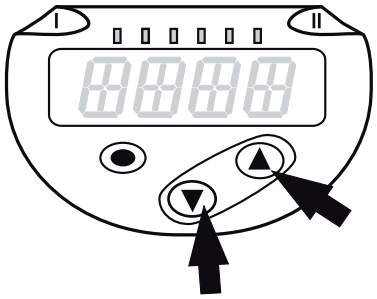
▶ Make sure that the unit is in the normal operating mode. ▶ Press [▲] + [▼] simultaneously for 10 s. > [Loc] is displayed.	
During operation: [Loc] is briefly displayed if you try to change parameter values.	
For unlocking: ▶ Make sure that the unit is in the normal operating mode. ▶ Press [▲] + [▼] simultaneously for 10 s. > [uLoc] is displayed.	

On delivery: not locked.

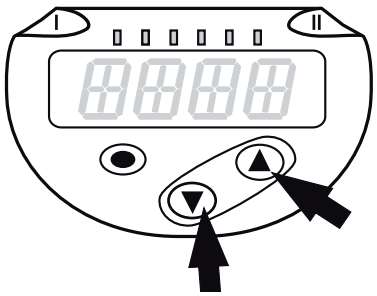
- Timeout:

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

- Exit parameter without applying the settings

To exit a parameter without applying the settings: ▶ [▲] + [▼] Press [▲] + [▼] simultaneously. > Return to the menu level.	

- Exit menu level

To exit the menu level: ▶ [▲] + [▼] Press [▲] + [▼] simultaneously. > Menu level 2 changes to level 1 or level 1 changes to display.	

9.2 Define the operating mode (optional)

▶ Select [CMPT] and set the required operating mode - [2] = operating mode 2 - [3] = operating mode 3	CMPT
Description of the operating modes, see (→ 4.1)	
If IO-Link is used, an IODD that corresponds with the operating mode must be used.	
If the operating mode is changed, all parameters will be reset to factory settings.	

9.3 Configure display (optional)

▶ Select [uni] and set the unit of measurement: - [bAr], [mbAr], - [MPA], [kPA], - [PSI], - [inHG]	uni
The selectable units of measurement depend on the respective unit. See table with setting ranges (→ 11.1.1).	
▶ Select [diS] and set the update rate and orientation of the display: - [d1]: update of the measured values every 50 ms. - [d2]: update of the measured values every 200 ms. - [d3]: update of the measured values every 600 ms. - [rd1], [rd2], [rd3]: display as for d1, d2, d3; rotated by 180°. - [OFF] = the measured value display is deactivated in the Run mode. The LEDs remain active even if the display is deactivated. Error messages are displayed even if the display is deactivated.	diS
Even with unsteady pressure characteristics [d1] provides optimum readability; the corresponding algorithms are stored.	

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9.4 Set output signals

9.4.1 Set output functions

▶ Select [ou1] and set the switching function: - [Hno] = hysteresis function/normally open - [Hnc] = hysteresis function / normally closed, - [Fno] = window function/NO, - [Fnc] = window function/NC. - [OFF] = output off.	ou1
Parameter [OFF] is only available in operating mode 3 ([CMPT] = [3])	

▶ Select [ou2] and set the analogue function: - [I] = current signal 4...20 mA, - [U] = voltage signal 0...10 V. - [OFF] = output off.	ou2
Parameter [OFF] is only available in operating mode 3 ([CMPT] = [3])	

9.4.2 Define switching limits for the hysteresis function

▶ [ou1] must be set as [Hno] or [Hnc]. ▶ Select [SP1] and set the value at which the output is set.	SP 1
▶ Select [rP1] and set the value at which the output is reset. rP1 is always lower than SP1. The unit only accepts values which are lower than SP1.	rP 1

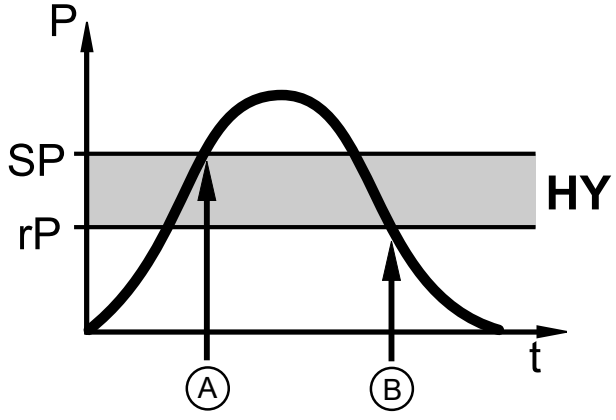
9.4.3 Set switching limits for the window function

▶ [ou1] must be set as [Fno] or [Fnc]. ▶ Select [FH1] and set the upper limit.	FH 1
▶ Select [FL1] and set the lower limit. FL1 is always lower than FH1. The device only accepts values that are lower than the value for [FH1].	FL 1

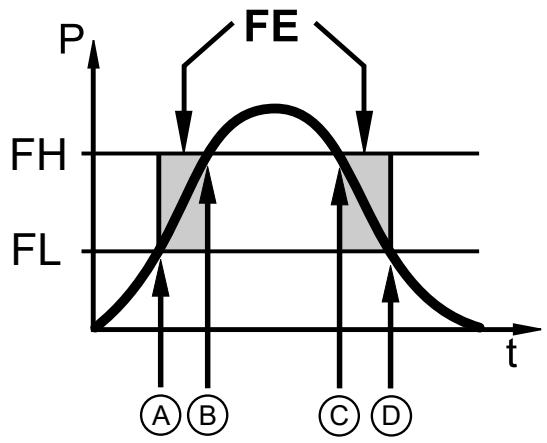
9.5 User settings (optional)

9.5.1 Defining the delay time for the switching output

[dS1] = on delay for OUT1. [dr1] = off delay for OUT1. ▶ Select [dS1] or [dr1] and set a value between 0 and 50 s (at 0, the delay time is not active).	dS 1 dr 1



Output function:	A:	B:
[Hno] / [Hnc]	dS	dr



Output function:	A:	B:	C:	D:
[Fno] / [Fnc]	dS	dr	dS	dr

P = system pressure; SP = set point; rP = reset point; HY = hysteresis;
FE = window; FH = upper value; FL = lower value.

For this unit, the assignment of the parameters [dSx] and [drx] to the set and reset points is strictly designed according to the VDMA guideline.

9.5.2 Set damping for the switching signal

▶ Select [dAP] and set the damping constant in seconds (τ value 63 %); setting range 0.000...4.000 s.	dAP
Damping [dAP] affects the switch point / process data flow (IO-Link communication) and the display.	

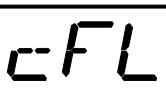
9.5.3 Set damping for the analogue output

▶ Select [dAA] and set the damping constant (rise time 10...90 %) in seconds; setting range 0.000...4.000 s.	dAA
Damping [dAA] only influences the analogue output / analogue signal path.	

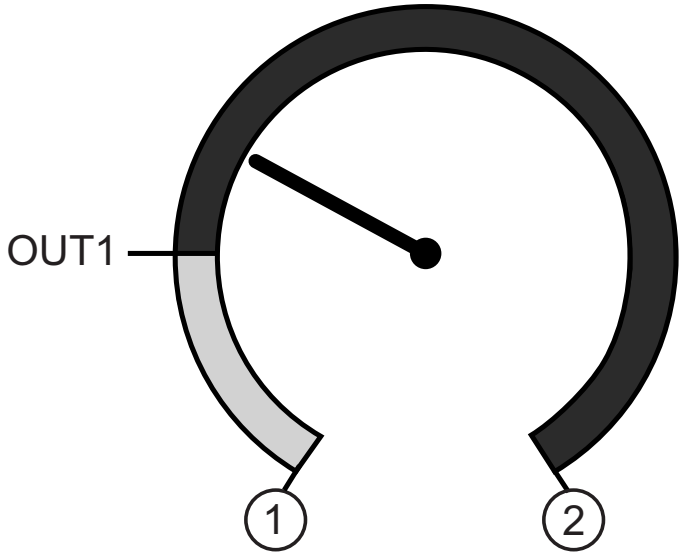
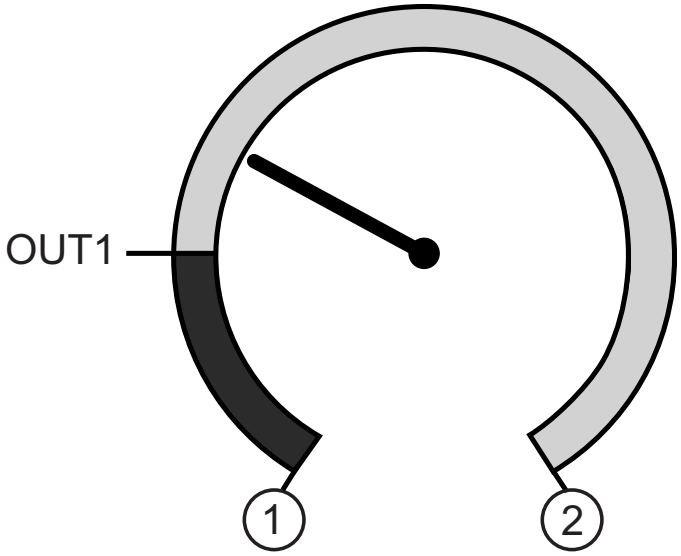
9.5.4 Reset all parameters to factory setting

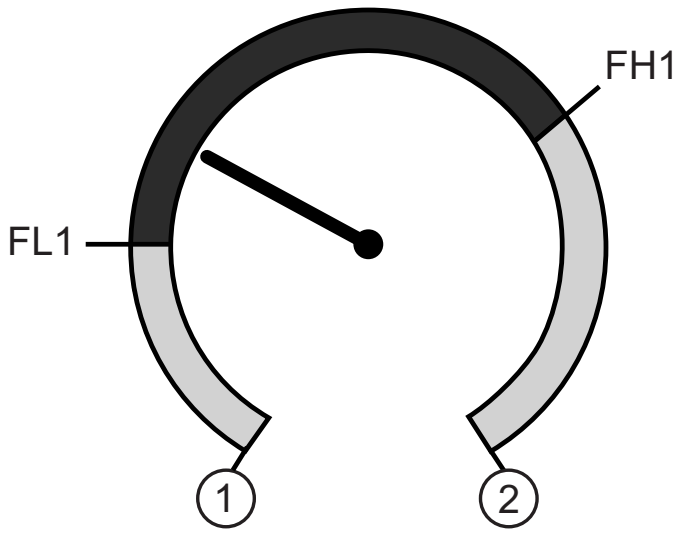
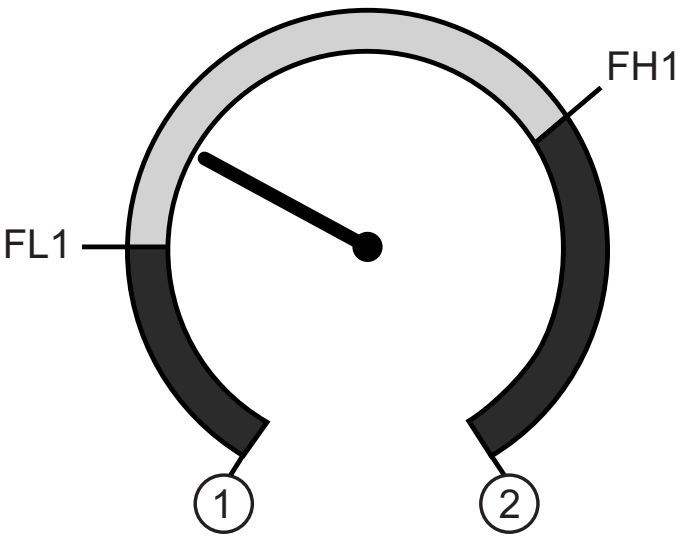
▶ Select [rES]. ▶ Press [•]. ▶ Press [▲] or [▼] and keep pressed until [----] is displayed. ▶ Briefly press [•]. We recommend noting down your own settings before carrying out a reset (→ 12 Factory setting).	rES
Also the operating mode [CMPT] is reset to the factory setting ([CMPT]=[2]).	

9.5.5 Set colour change of the display

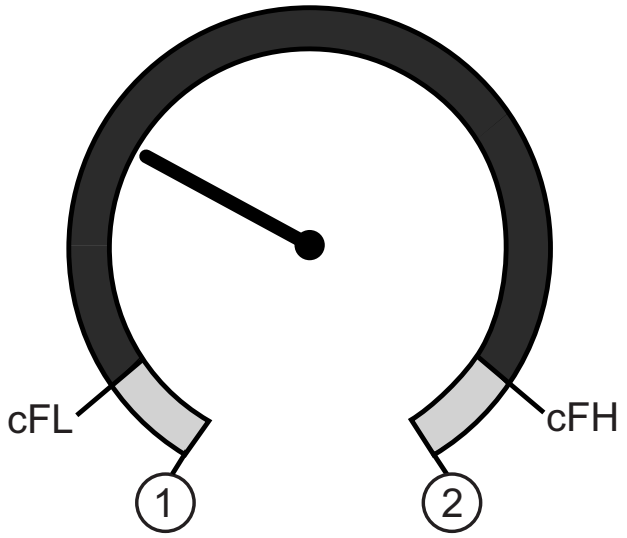
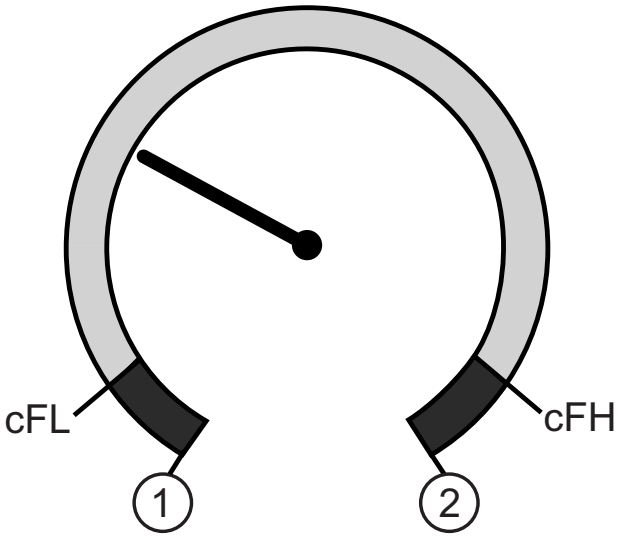
▶ Select [coLr] and set the function: - [rEd] = display colour red (independent of the measured value). - [GrEn] = display colour green (independent of the measured value). - [r1ou] = display colour red when OUT1 switches. - [G1ou] = display colour green when OUT1 switches. - [r-cF] = display colour is red if the measured value is between the freely definable limits [cFH*) and [cFL]*). - [G-cF] = display colour is green if the measured value is between the freely definable limits [cFL]*) and [cFH]*). *) The parameters [cFH] and [cFL] can only be selected in the menu tree if [r-cF] or [G-cF] has been activated.	
▶ Select [cFL] and set the lower limit (only possible if [r-cF] or [G-cF] has been activated). > The setting range corresponds to the measuring range and its maximum limit is [cFH].	
▶ Select [cFH] and set the upper limit (only possible if [r-cF] or [G-cF] has been activated). > The setting range corresponds to the measuring range and its minimum limit is [cFL].	

9.5.6 Graphical depiction of the colour change of the display

Display colour change with parameter **[r1ou]**, mode **hysteresis function**	Display colour change with parameter **[G1ou]**, mode **hysteresis function**
	
Measured value > switch point OUT1; Display = red	Measured value > switch point OUT1; Display = green

Display colour change with parameter **[r1ou]**, **window function** mode	Display colour change with parameter **[G1ou]**, **window function** mode
	
Measured value between FL1 and FH1; Display = red	Measured value between FL1 and FH1; Display = green

	Colour change display green
	Colour change display red
1	Initial value of the measuring range
2	final value of the measuring range

Display colour change with parameter **[r-cF]** independent of OUT1.	Display colour change with parameter **[G-cF]** independent of OUT1.
	
Measured value between cFL and cFH; Display = red	Measured value between cFL and cFH; Display = green

	Colour change display green
	Colour change display red
1	Initial value of the measuring range
2	Final value of the measuring range
cFL	Lower limit (independent of the output function)
cFH	Upper limit (independent of the output function)

9.6 Diagnostic functions

9.6.1 Read min/max values for the system pressure

▶ Select [HI] or [Lo] and briefly press [●]. [Hi] = maximum value, [Lo] = minimum value. Delete memory: ▶ Select [Hi] or [Lo]. ▶ Press [▲] or [▼] and keep pressed until [----] is displayed. ▶ Briefly press [●].	

9.6.2 Reading the overload processes

• HIPC: Number of overload processes HIPC counts how often the HIPS threshold has been exceeded. The value must exceed the threshold for at least 0.5 ms. • HIPS: Setting of the threshold for the overload counter.	HIPC HIPS
The parameters HIPC and HIPS are only available via IO-Link communication. In case of a voltage interruption, the counter events of the last 10 minutes can be lost.	

10 Operation

After power on, the unit is in the RUN mode (= normal operating mode). It carries out its measurement and evaluation functions and provides output signals according to the set parameters.

Operation indication (→ 7 Operating and display elements).

10.1 Read the set parameters

▶ Press [●]

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

▶ Briefly press [●].

> The unit displays the corresponding parameter value for approx. 30 s; then it changes to the process value display.

10.2 Self-diagnostics / fault indications

The unit has many self-diagnostic options.

- It monitors itself automatically during operation.
- Warnings and faults are displayed (even if the display is deactivated), in addition they are available via IO-Link.

Display	Status LED OUT1	Type of fault *)	Fault / warning	Corrective measures
none		F	Supply voltage too low.	▶ Check / correct the supply voltage.
SC1 flashing	flashing	F	Excessive current at switching output OUT1 **).	▶ Check switching output ou1 for short-circuit or excessive current; Remove the fault.
Loc		W	Parameter setting locked via pushbuttons.	▶ Unlock buttons (→ 9.1 Parameter setting in general) →"Lock / unlock".
C.Loc		W	Parameter setting locked via pushbuttons, parameter setting is enabled via IO-Link communication (→ 9.1).	▶ Wait until parameter setting via IO-Link is finished.
S.Loc		W	Setting buttons locked via parameter software. Parameter change is rejected (→ 9.1).	▶ Unlocking only possible via IO-Link interface / parameter setting software.
OL		W	Process value too high (measuring range exceeded).	▶ Check / reduce system pressure / select unit with corresponding measuring range.
UL		W	Process value too low (value below measuring range).	▶ Check / increase system pressure / select unit with corresponding measuring range.
Err flashing		F	Internal fault / malfunction.	▶ Contact the manufacturer.

*) F = fault
W = warning

**) The output remains deactivated as long as the excessive current / short circuit continues.

11 Technical data and scale drawing

11.1 Setting ranges

The setting ranges differ depending on the operating mode (→ 4.1).

11.1.1 Setting ranges in operating mode 2

		rP / SP		cFL / cFH		ΔP
		Setting range	min. distance	Setting range	min. distance	
PN3160 PN3560	bar	2…600	2	0…600	2	2
	psi	20…8700	40	0…8700	40	20
	MPa	0.2…60	0.2	0…60	0.2	0.2
PN3070 PN3570	bar	2…400	2	0…400	2	2
	psi	20…5800	40	0…5800	40	20
	MPa	0.2…40	0.2	0…40	0.2	0.2
PN3071 PN3571	bar	1…250	2	0…250	2	1
	psi	20…3620	20	0…3620	20	20
	MPa	0.1…25	0.2	0…25	0.2	0.1
PN3092 PN3592	bar	0.5…100	0.5	0…100	0.5	0.5
	psi	5…1450	10	0…1450	10	5
	MPa	0.05…10	0.05	0…10	0.05	0.05
PN3093 PN3593	bar	0.1…25	0.2	0…25	0.2	0.1
	psi	2…362	2	0…362	2	2
	MPa	0.01…2.5	0.02	0…2.5	0.02	0.01
PN3094 PN3594	bar	-0.95…10	0.05	-1…10	0.05	0.05
	psi	-14…145	1	-14.5…145	1	0.5
	MPa	-0.095…1	0.005	-0.1…1	0.005	0.005
PN3096 PN3596	bar	0.01…2.5	0.02	0…2.5	0.02	0.01
	psi	0.2…36.2	0.2	0…36.2	0.2	0.2
	kPa	1…250	2	0…250	2	1

ΔP = step increment

		rP / SP		cFL / cFH		ΔP
		Setting range	min. distance	Setting range	min. distance	
PN3097 PN3597	mbar	5…1000	5	0…1000	5	5
	psi	0.05…14.5	0.1	0…14.5	0.1	0.05
	kPa	0.5…100	0.5	0…100	0.5	0.5
	inHG	0.1…29.5	0.2	0…29.5	0.2	0.1
PN3129 PN3529	mbar	-995…0	5	-1000…0	5	5
	psi	-14.45…0	0.1	-14.5…0	0.1	0.05
	kPa	-99.5…0	0.5	-100…0	0.5	0.5
	inHG	-29.4…0	0.2	-29.5…0	0.2	0.1

ΔP = step increment

11.1.2 Setting ranges in operating mode 3

		rP / SP		cFL / cFH		ΔP
		Setting range	min. distance	Setting range	min. distance	
PN3160 PN3560	bar	2…600	2	0…600	2	1
	psi	26…8702	21	0…8702	27	1
	MPa	0.2…60	0.2	0…60	0.2	0.1
PN3070 PN3570	bar	1…400	2	0…400	2	1
	psi	20…5802	30	0…5802	30	1
	MPa	0.1…40	0.2	0…40	0.2	0.1
PN3071 PN3571	bar	1…250	2	0…250	2	1
	psi	12…3626	19	0…3626	19	1
	MPa	0.1…25	0.2	0…25	0.2	0.1
PN3092 PN3592	bar	0.3…100	0.5	0…100	0.5	0.1
	psi	5…1450	8	0…1450	8	1
	MPa	0.03…10	0.05	0…10	0.05	0.01
PN3093 PN3593	bar	0.1…25	0.2	0…25	0.2	0.1
	psi	1…363	2	0…363	2	1
	MPa	0.01…2.5	0.02	0…2.5	0.02	0.01

ΔP = step increment

		rP / SP		cFL / cFH		ΔP
		Setting range	min. distance	Setting range	min. distance	
PN3094 PN3594	bar	-0.97…10	0.05	-1…10	0.05	0.01
	psi	-14…145	0.8	-14.5…145	0.8	0.1
	MPa	-0.097…1	0.005	-0.1…1	0.005	0.001
PN3096 PN3596	bar	0.01…2.5	0.02	0…2.5	0.02	0.01
	psi	0.1…36.3	0.2	0…36.3	0.2	0.1
	kPa	1…250	2	0…250	2	1
PN3097 PN3597	mbar	3…1000	5	0…1000	5	1
	psi	0.05…14.5	0.08	0…14.5	0.08	0.01
	kPa	0.3…100	0.5	0…100	0.5	0.1
	inHG	0.1…29.5	0.2	0…29.5	0.2	0.1
PN3129 PN3529	mbar	-997…0	5	-1000…0	5	1
	psi	-14.45…0	0.08	-14.5…0	0.08	0.01
	kPa	-99.7…0	0.5	-100…0	0.5	0.1
	inHg	-29.4…0	0.2	-29.5…0	0.2	0.1

ΔP = step increment

11.2 Further technical data

Further technical data and scale drawings at: www.ifm.com

12 Factory setting

	Factory setting	User setting
SP1 / FH1	25 % MEW*	
rP1 /FL1	23 % MEW*	
ou1	Hno	
ou2	I	
dS1	0.0	
dr1	0.0	
dAP	0.06	
dAA	0.0	
uni	bAr / mbAr	
coLr	rEd	
cFH	MEW	
cFL	MAW	
diS	d2	
HIPS**	MEW	
CMPT	2	

(MEW) final value of the measuring range, (MAW) initial value of the measuring range

* = The indicated percentage of the final value of the measuring range (MEW) of the respective sensor (for PN3xx9 the percentage of the measuring span) is set.

** = HIPS is only available via IO-Link communication

More information at www.ifm.com