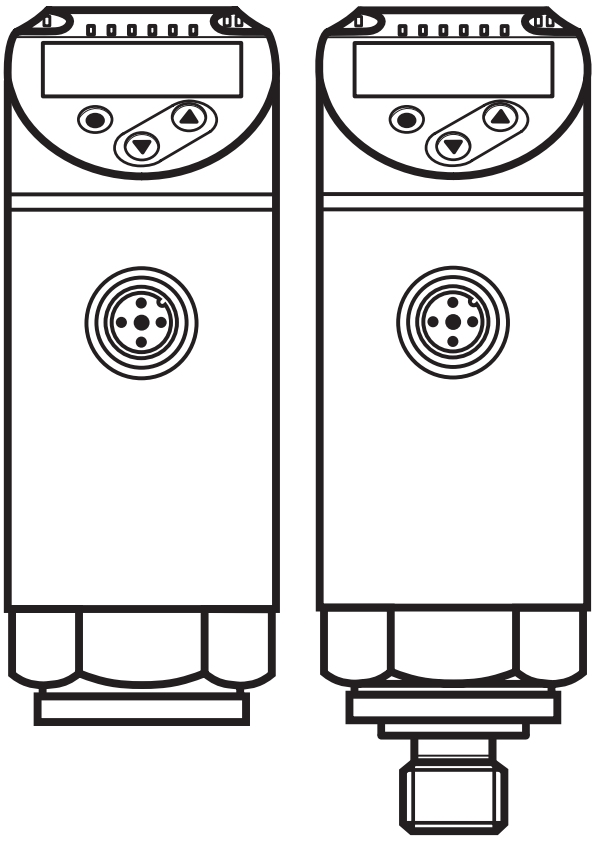
Operating instructions
Electronic pressure sensor
PE2xxx

UK



80268781 / 00 06 / 2017

Inhalt

1 Preliminary note

1.1 Symbols used

▶ Instructions

> 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

- 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 (→ 12 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, operation and maintenance of the product must be carried out by qualified personnel authorised by the machine operator.
- Protect units and cables against damage.

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 result in a loss of the warranty claims.

3 Functions and features

The device monitors the system pressure of machines and installations.

3.1 Applications

Type of pressure: relative pressure

Order number	Measuring range		Pressure rating (max. permissible pressure) *)		Bursting pressure	
	bar	psi	bar	psi	bar	psi
Pressure sensors with G¼ internal thread						
PE2091	0…250	0…3625	400	5800	850	12300
PE2092	0…100	0…1450	300	4350	650	9400
PE2093	-1…25	-14.5…362.5	150	2175	350	5075
PE2094	-1…10	-14.6…145	75	1087	150	2175
PE2096	-0.125…2.5	-1.8…36.25	20	290	50	725
PE2099	-1…1	-14.5…14.5	20	290	50	725
Pressure sensors with G¼ external thread						
PE2591	0…250	0…3625	400	5800	850	12300
PE2592	0…100	0…1450	300	4350	650	9400
PE2593	-1…25	-14.5…362.5	150	2175	350	5075
PE2594	-1…10	-14.6…145	75	1087	150	2175
PE2596	-0.125…2.5	-1.8…36.25	20	290	50	725
PE2599	-1…1	-14.5…14.5	20	290	50	725
*) With static overload pressure or max. 100 million pressure cycles.						
MPa = (measured value in bar) ÷ 10 kPa = (measured value in bar) x 100						

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. ATTENTION: Risk of injury!

Use in gases up to 25 bar.
In case of pressures >25 bar, please contact our technical sales staff.

The units are vacuum resistant.

Because of the EPDM cell sealing, the sensor cannot be used with oils.

For oils and other media that are not suited for EPDM, the PN series is the best choice.

The user is responsible for the durability.

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 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 laid out 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 parameter setting → 4.4.

4.1 Communication, parameter setting, evaluation

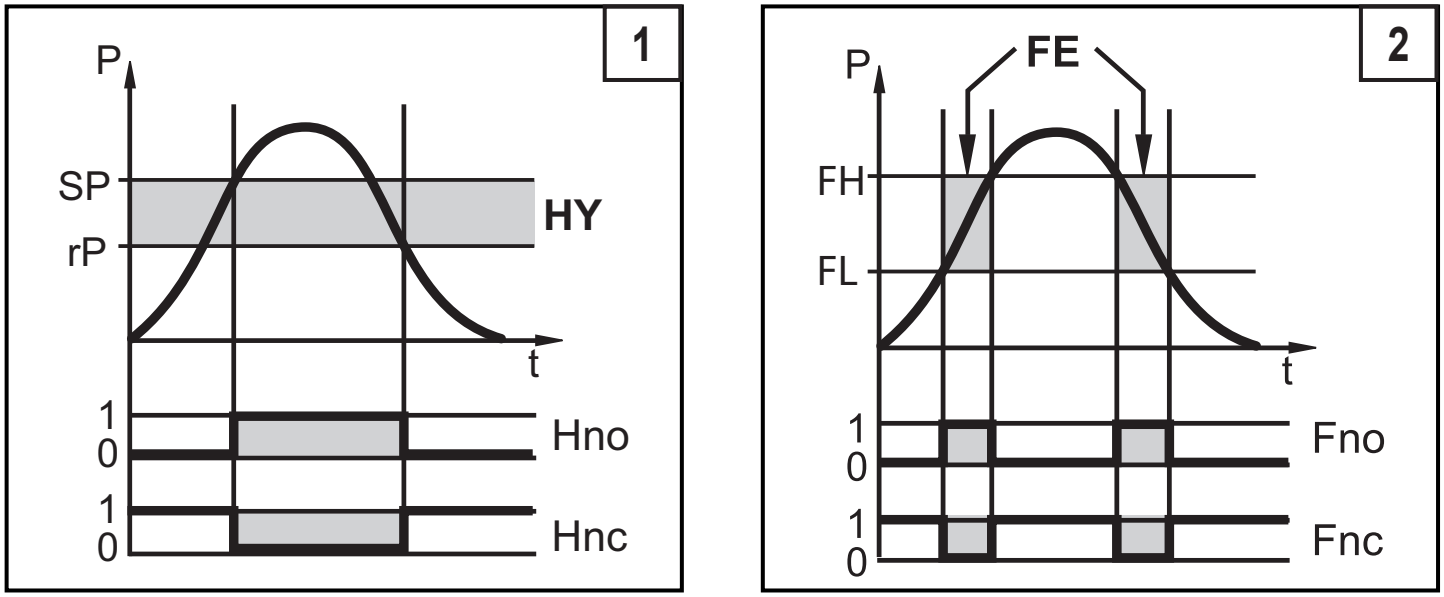
OUT1 (pin 4)	• Switching signal for system pressure limit • Communication via IO-Link
OUT2 (pin 2)	• Switching signal for system pressure limit • Analogue signal 4...20 mA / 0...10 V

4.2 Switching function

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

- Hysteresis function / normally open: [ou1/ou2] = [Hno] (→ Fig. 1).
- Hysteresis function / normally closed: [ou1/ou2] = [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: [ou1/ou2] = [Fno] (→ Fig. 2).
- Window function / normally closed: [ou1/ou2] = [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

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

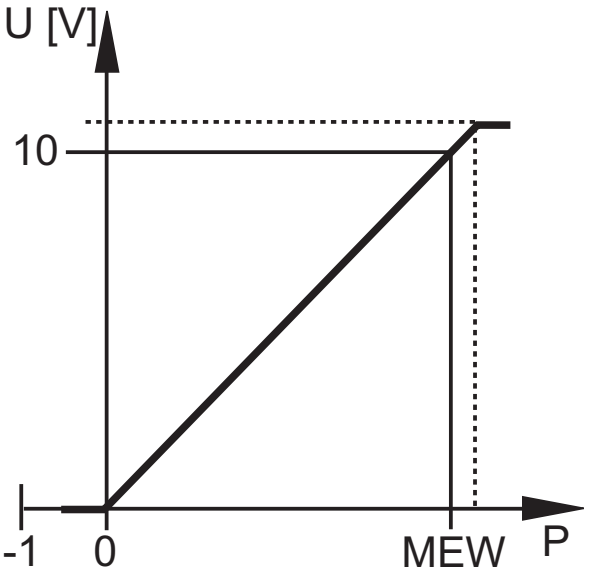
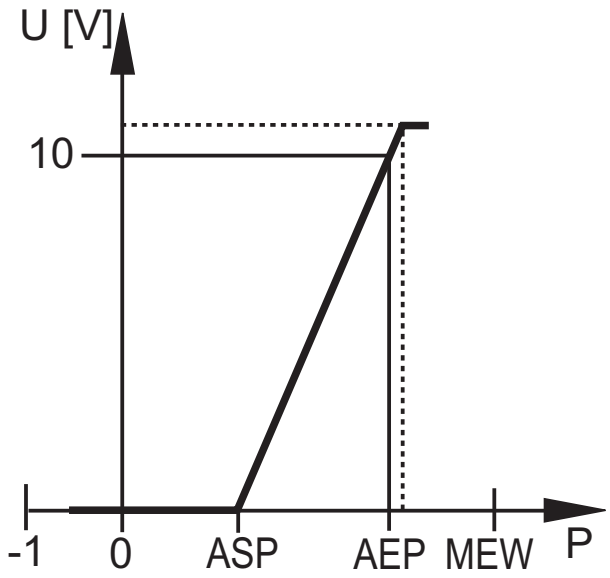
4.3 Analogue function

OUT2 is an analogue output:

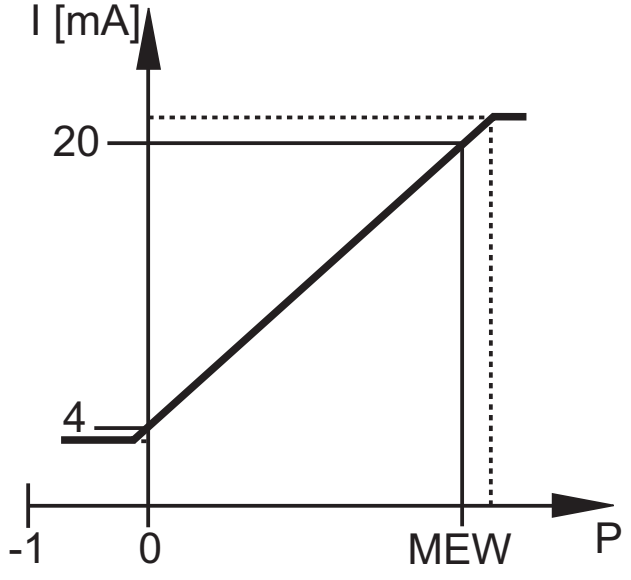
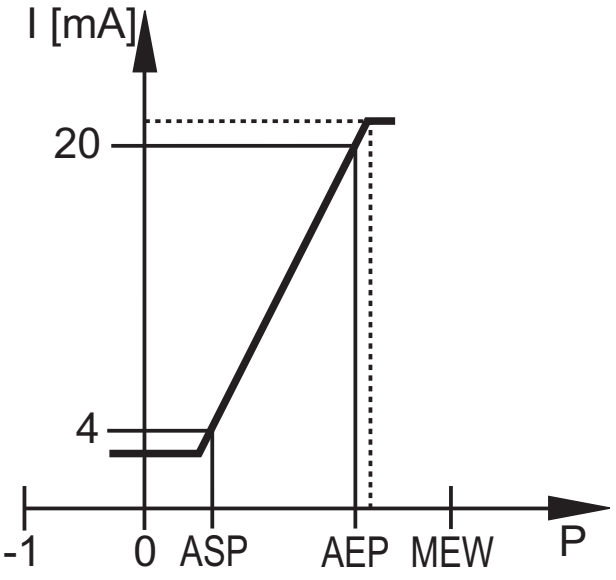
- [ou2] defines whether the set measuring range is provided as 4...20 mA ([ou2] = [I]) or as 0...10 V ([ou2] = [U).
- Analogue start point [ASP] determines at which measured value the output signal is 4 mA or 0 V.
- Analogue end point [AEP] determines at which measured value the output signal is 20 mA or 10 V.

Minimum difference between [ASP2] and [AEP2] = 20 % of the measuring span.

Voltage output 0...10 V:

Factory setting	Measuring range scaled
	
P = System pressure MEW = Final value of the measuring range ASP = Analogue start point [ASP2] AEP = Analogue end point [AEP2]	
In the measuring range of the respective unit, the output signal is between 0 and 10 V. It is also indicated: • System pressure above [AEP2]: 10...10.3 V • Fault indication according to Namur: 11 V	

Current output 4...20 mA

Factory setting	Measuring range scaled
	

P = System pressure
MEW = Final value of the measuring range
ASP = Analogue start point [ASP2]
AEP = Analogue end point [AEP2]

In the measuring range of the corresponding unit, the output signal is between 4 and 20 mA.

It is also indicated:
- System pressure above [AEP2]: 20...20.5 mA
- System pressure below [ASP2]: 4...3.8 mA
- Fault indication according to Namur: 21.5 mA.

4.4 IO-Link

General information

This unit has an IO-Link communication interface which 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.

Further information about IO-Link at www.ifm.com.

Device-specific information

You will find the IODDs necessary for the configuration of the IO-Link device and detailed information about process data structure, diagnostic information and parameter addresses at www.ifm.com.

Parameter setting tools

You will find all necessary information about the required IO-Link hardware and software at www.ifm.com.

5 Installation

Before installing and removing the unit: Ensure 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...250	25...35
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 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.

For marine applications (if approval available for the device), additional surge protection is required.

- ▶ Disconnect power.
- ▶ Connect the unit as follows:

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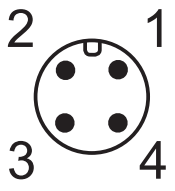
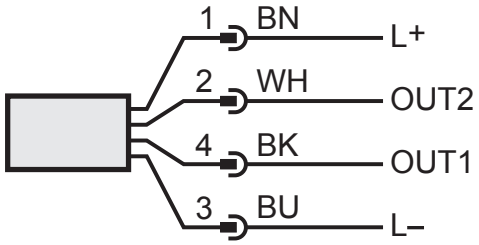
Core colours	
BK	black
BN	brown
BU	blue
WH	white





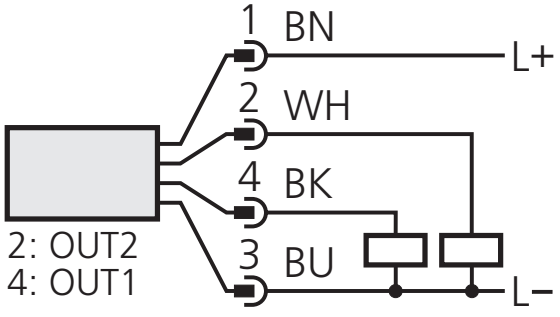
OUT1: switching output or IO-Link

OUT2: switching outputs or analogue output

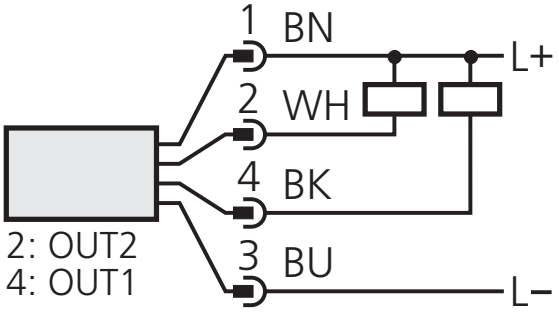
Colours to DIN EN 60947-5-2

Wiring example

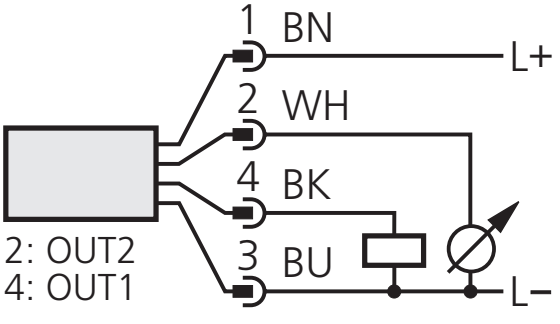
2 x positive switching



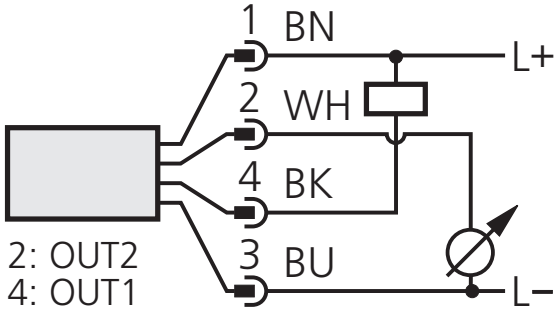
2 x negative switching



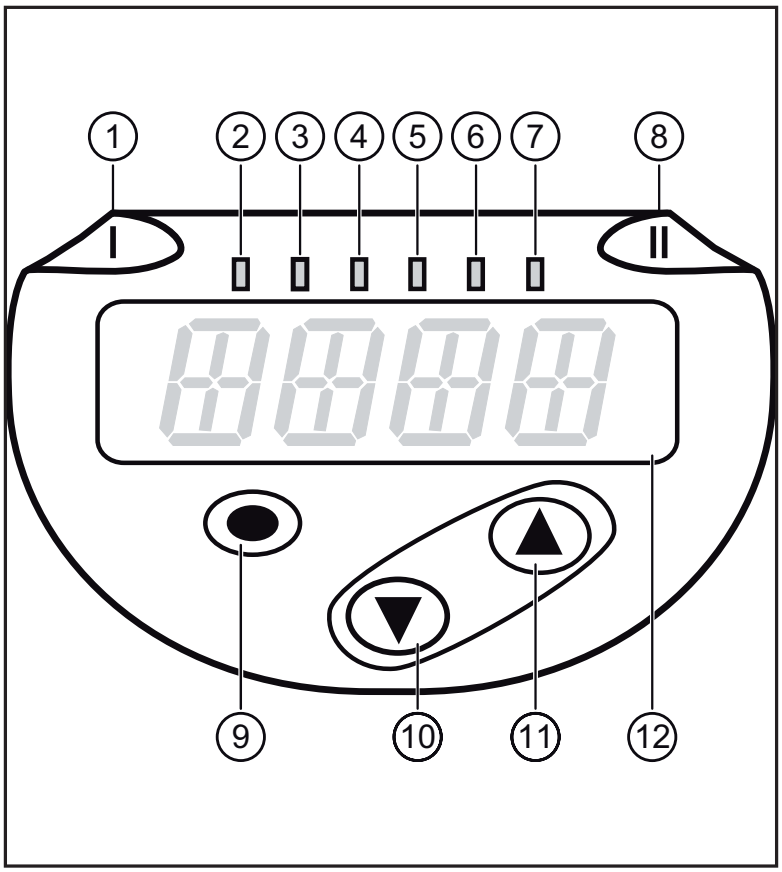
1 x positive switching / 1 x analogue



1 x negative switching / 1 x analogue



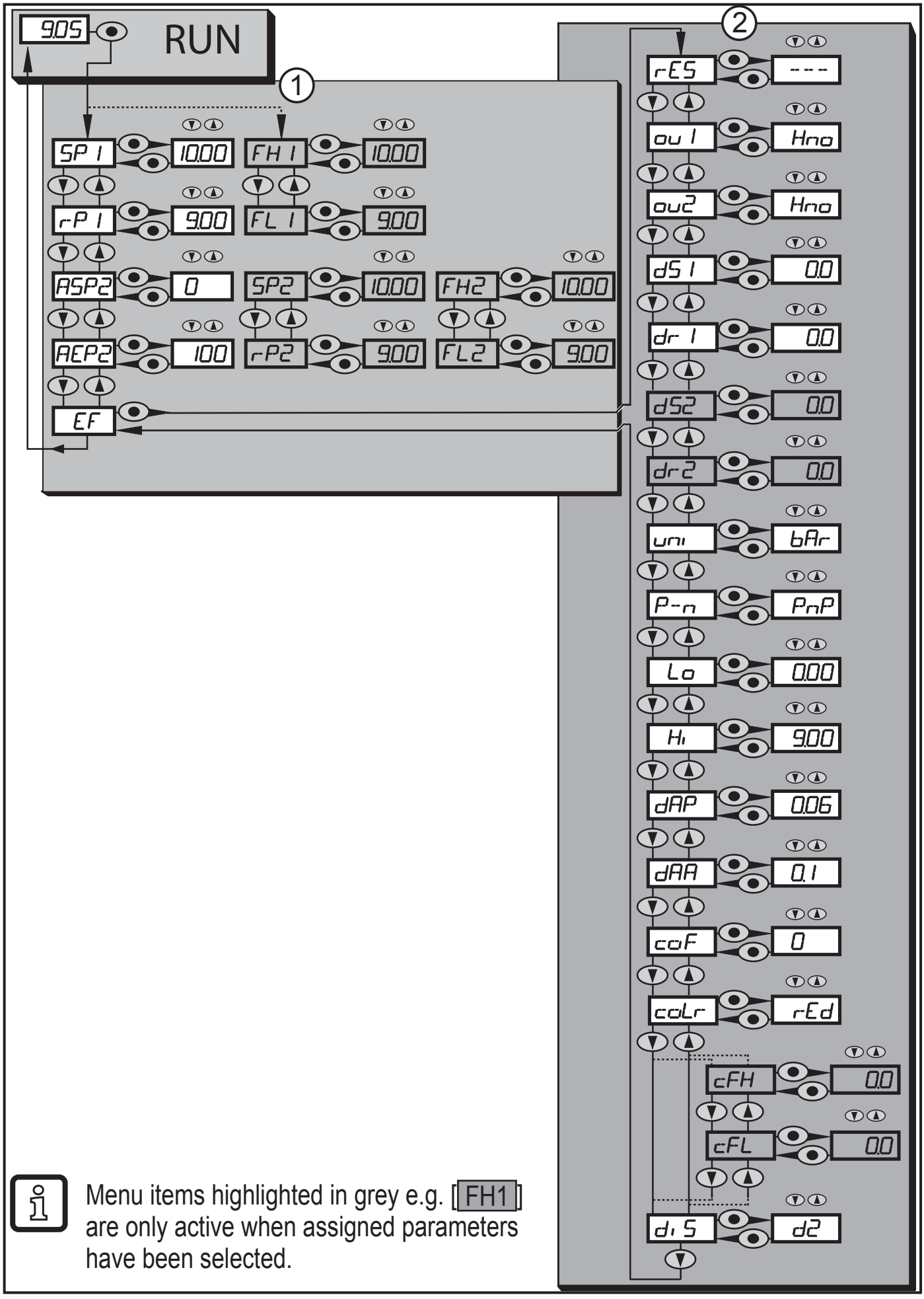
7 Operating and display elements



1 to 8: Indicator LEDs	
LED 1	Switching status OUT1 (lights when output 1 is switched).
LED 8	Switching status OUT2 (lights when output 2 is switched).
LEDs 2 - 7	System pressure in the indicated unit of measurement (type of connection is device-specific).
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. - Indication 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 when assigned parameters have been selected.

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8.2 Explanation of the menu

8.2.1 Explanation of menu level 1

SPx / rPx	Upper / lower limit value for system pressure at which OUTx switches with hysteresis setting. Condition: OUTx setting is [Hno] or [Hnc].
FHx / FLx	Upper / lower limit for system pressure at which OUTx switches with window setting. Condition: OUTx setting is [Fno] or [Fnc].
ASP2	Analogue start point for system pressure: measured value at which 4 mA / 0 V are provided. Condition: OUT2 setting is [I] or [U].
AEP2	Analogue end point for system pressure: measured value at which 20 mA / 10 V are provided. Condition: OUT2 setting is [I] or [U].
EF	Extended functions / opening of menu level 2.

8.2.2 Explanation of menu level 2

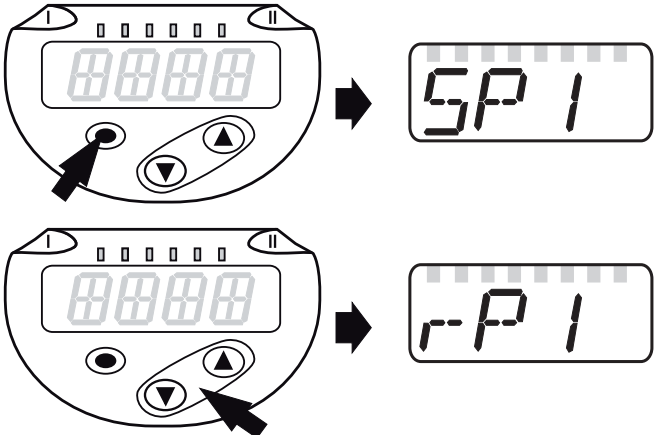
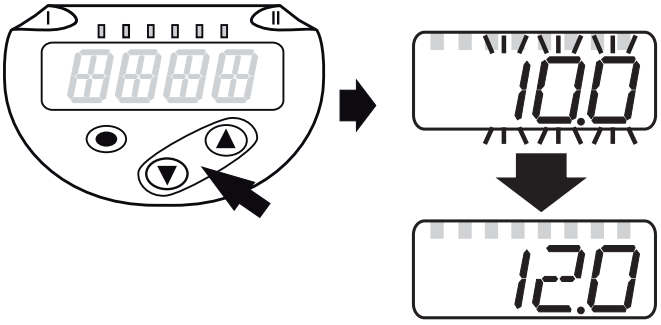
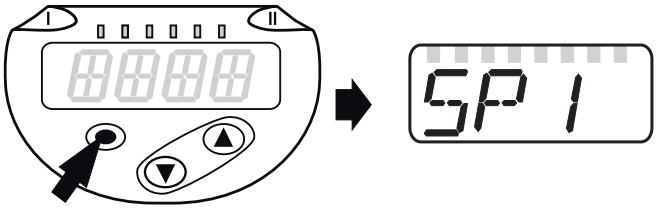
rES	Restore factory setting.
ou1	Output function for OUT1: • Switching signal for the pressure limits: hysteresis function [H ..] or window function [F ..], either normally open [. no] or normally closed [. nc].
ou2	Output function for OUT2: • Switching signal for the pressure limits: hysteresis function [H ..] or window function [F ..], either normally open [. no] or normally closed [. nc]. • Analogue signal for the current system pressure: 4...20 mA [I] or 0...10 V [U].
dS1 / dS2	Switching delay for OUT1 / OUT2.
dr1 / dr2	Switch-off delay for OUT1 / OUT2.
uni	Standard unit of measurement for system pressure (display): [bAr] / [mbar] / [MPA] / [kPA] / [PSI] / [inHG] / [iH2O] / [mmWS] .
P-n	Output logic: pnp / npn.
Lo	Minimum value memory for system pressure.
Hi	Maximum value memory for system pressure.
dAP	Damping of the switch point.
dAA	Damping of the analogue output. Condition: OUT2 setting is [I] or [U].
coF	Zero-point calibration.
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.

9 Parameter setting

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.

9.1 Parameter setting in general

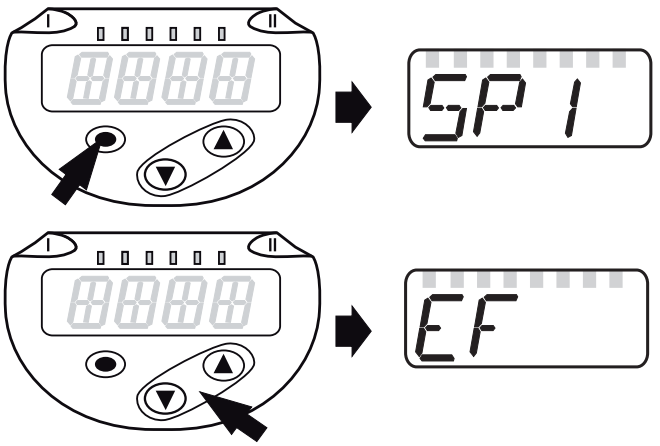
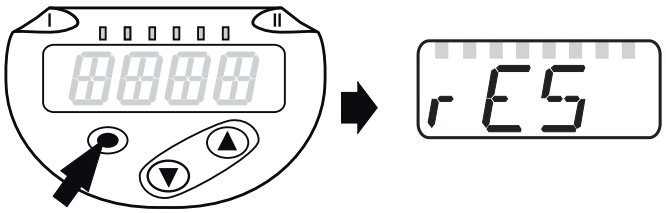
3 steps must be taken for each parameter setting:

1	**Select parameter** ▶ Press [●] to get to the menu. ▶ Press [▲] or [▼] until the required parameter is displayed.	
2	**Set parameter value** ▶ Press [●] to edit the selected parameter. ▶ Press [▲] or [▼] for at least 1 s. > After 1 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 required 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.		

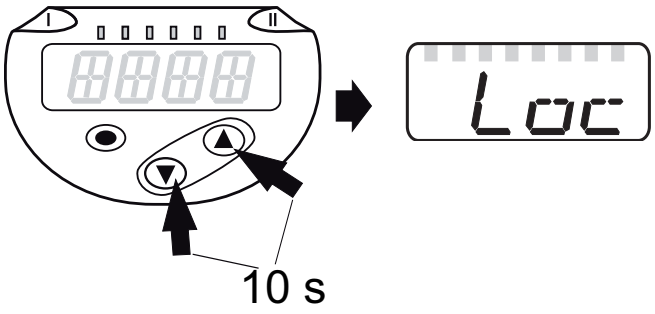
If [C.Loc] is displayed when an attempt is made to modify a parameter value, a parameter setting process is active via the IO-Link communication (temporary locking).

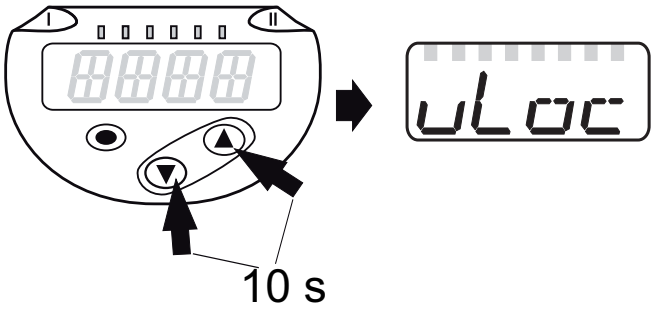
If [S.Loc] is displayed, the sensor is permanently locked via software. This locking can only be removed with a parameter setting software.

- 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.	

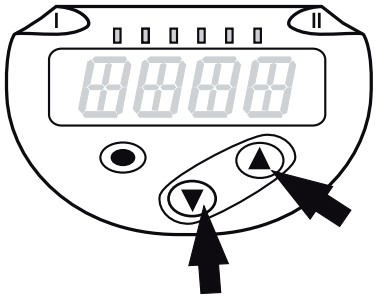
For unlocking: ▶ Make sure that the unit is in the normal operating mode. ▶ Press [▲] + [▼] simultaneously for 10 s. > [uLoc] is displayed.	

On delivery: not locked.

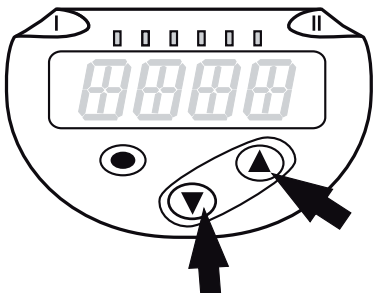
- Timeout:

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 Configuring the display (optional)

▶ Select [uni] and set the unit of measurement: - [bAr], [mbAr], - [MPA], [kPA], - [PSI], - [inHg], - [iH2O], - [mmWS]	uni
The selectable units of measurement depend on the respective unit.	

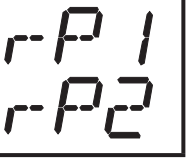
▶ Select [diS] and set the update rate and orientation of the display: - [d1]: update of the measured values every 50 ms. - [d2]: update of the measured values every 200 ms. - [d3]: update of the measured values every 600 ms. - [rd1], [rd2], [rd3]: display as with d1, d2, d3; rotated by 180°. - [OFF] = The display is switched off in the operating mode. When one of the buttons is pressed, the current measured value is displayed for 30 s. The LEDs remain active even if the display is deactivated.	
Even with unsteady pressure characteristics [d1] provides optimum readability; the corresponding algorithms are stored.	

9.3 Setting output signals

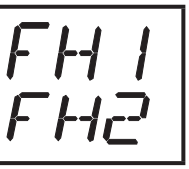
9.3.1 Setting output functions

▶ Select [ou1] and set the switching function: - [Hno] = hysteresis function/NO, - [Hnc] = hysteresis function/NC, - [Fno] = window function/NO, - [Fnc] = window function/NC.	
▶ Select [ou2] and set the analogue function: - [Hno] = hysteresis function/NO, - [Hnc] = hysteresis function/NC, - [Fno] = window function/NO, - [Fnc] = window function/NC. - [I] = current signal 4...20 mA, - [U] = voltage signal 0...10 V.	

9.3.2 Defining switching limits for the hysteresis function

▶ [ou1] / [ou2] must be set as [Hno] or [Hnc]. ▶ Select [SPx] and set the value at which the output is set.	
▶ Select [rPx] and set the value at which the output resets. rPx is always lower than SPx. The unit only accepts values which are lower than the value for SPx.	

9.3.3 Defining switching limits for the window function

▶ [ou1] / [ou2] must be set as [Fno] or [Fnc]. ▶ Select [FHx] and set the upper limit.	

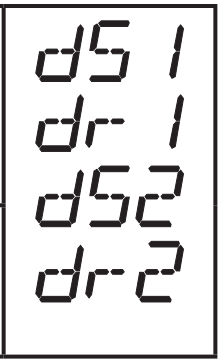
▶ Select [FLx] and set the lower limit. FLx is always lower than FHx. The unit only accepts values which are lower than the value for FHx.	

9.3.4 Scaling the analogue value

▶ Select [ASP2] and set the value at which 4 mA / 0 V is provided.	
▶ Select [AEP2] and set the value at which 20 mA / 10 V is provided. Minimum difference between [ASP2] and [AEP2] = 20 % of the measuring span (scaling factor 5).	

9.4 User settings (optional)

9.4.1 Setting the 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 50 s (at 0 the delay time is not active).	
For this unit the parameters [dSx] and [drx] for the set and reset points are designed strictly to the VDMA guideline.	

9.4.2 Setting output logic for the switching outputs

▶ Select [P-n] and set [PnP] or [nPn].	

9.4.3 Setting the damping for the switching signal

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

9.4.4 Setting the 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.	
Damping [dAA] only influences the analogue output / analogue signal path.	

9.4.5 Zero-point calibration

▶ Select [coF] and set a value between -5 % and 5 % of the final value of the measuring range (PE2x99 ±5 % of the measuring span). The internal measured value "0" is shifted by this value.	

9.4.6 Reading 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 [●].	

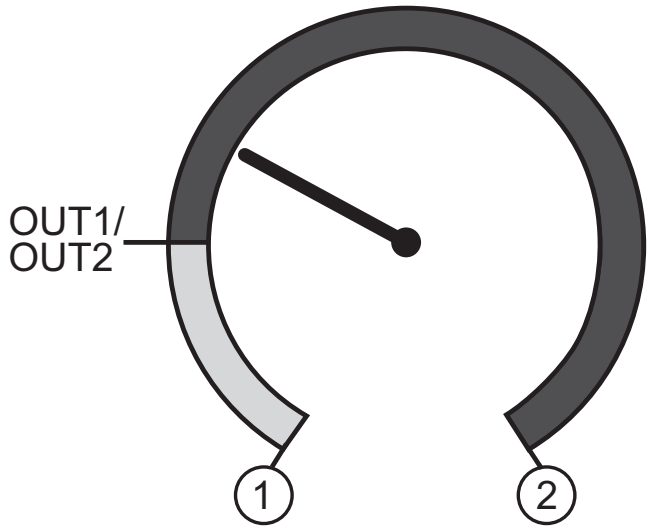
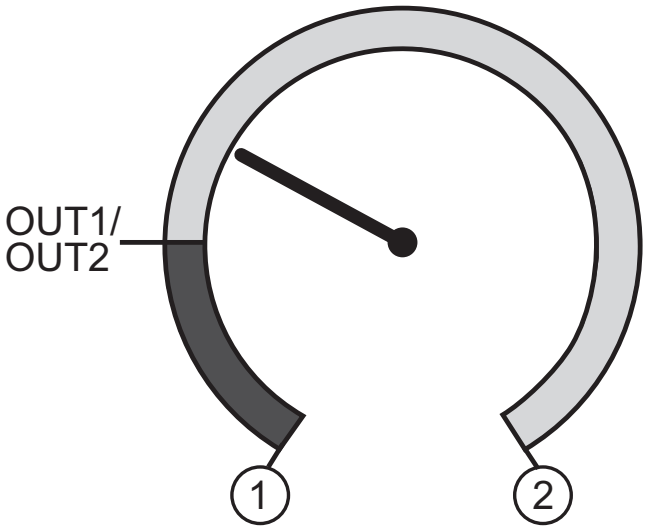
9.4.7 Resetting all parameters to factory setting

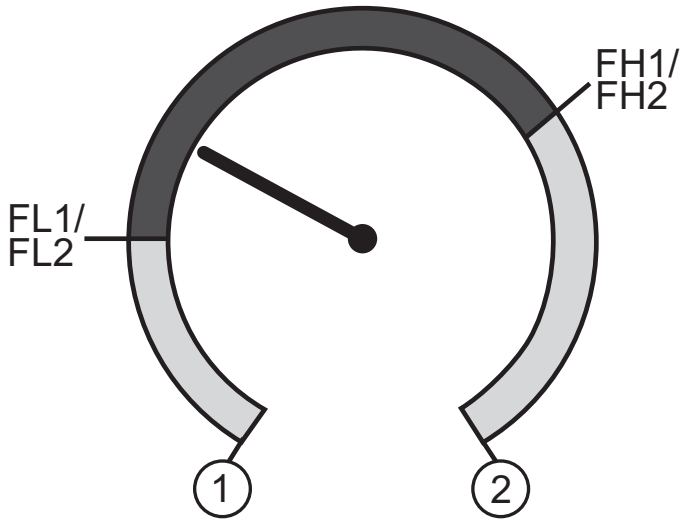
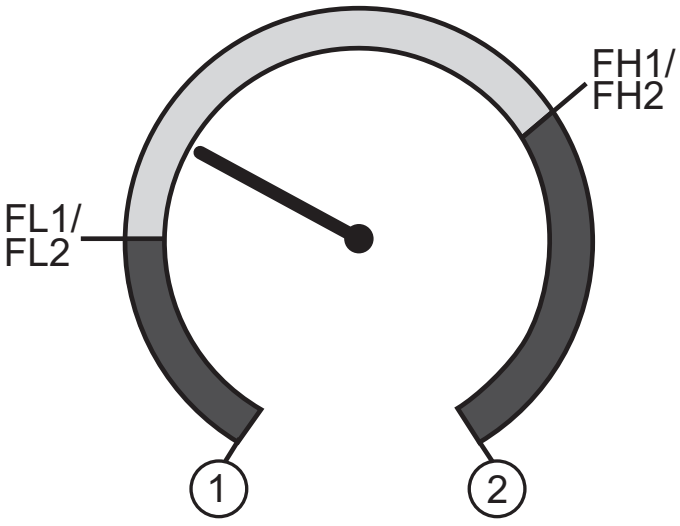
▶ Select [rES]. ▶ Press [●]. ▶ Press [▲] or [▼] and keep pressed until [----] is displayed. ▶ Briefly press [●]. We recommend noting down your own settings before carrying out a reset (→ 12 Factory setting).	

9.4.8 Setting the 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. - [r2ou] = display colour red when OUT2 switches ([ou2] = [Hxx] / [Fxx]). - [G2ou] = display colour green when OUT2 switches ([ou2] = [Hxx] / [Fxx]). - [r-12] = display colour red when the measured value is between the limit values of OUT1 and OUT2 ([ou2] = [Hxx] / [Fxx]). - [G-12] = display colour green when the measured value is between the limit values of OUT1 and OUT2 ([ou2] = [Hxx] / [Fxx]). - [r-cF] = display colour green when the measured value is between the freely definable limit values [cFH]*) and [cFL]*). - [G-cF] = display colour green when the measured value is between the freely definable limit values [cFH]*) and [cFL]*). *) The parameters [cFH] and [cFL] can only be selected in the menu tree when [r-cF] or [G-cF] has been activated.	
▶ 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].	
▶ 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].	

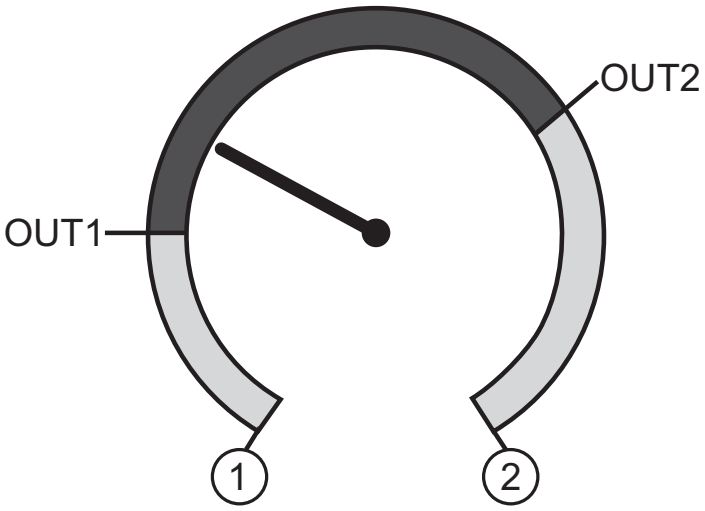
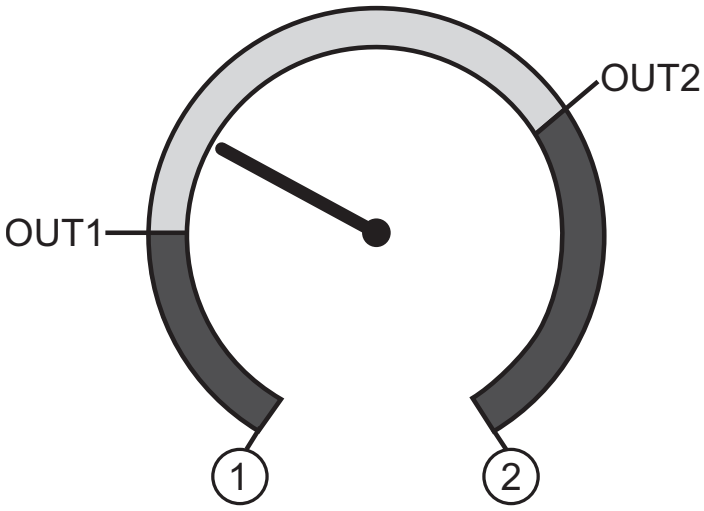
9.4.9 Graphical depiction of the colour change of the display

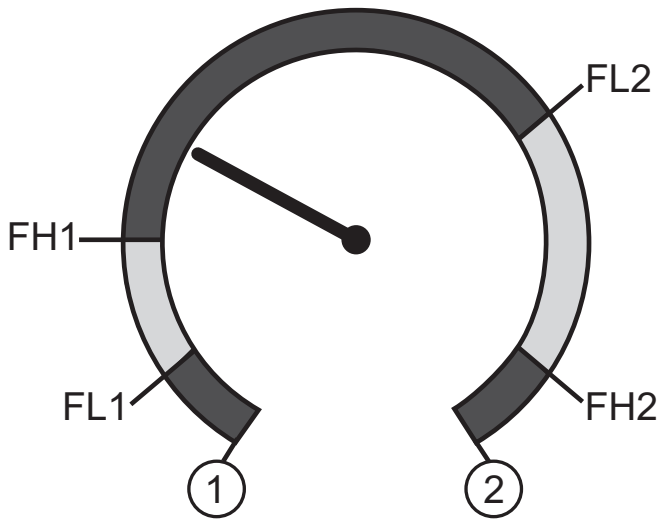
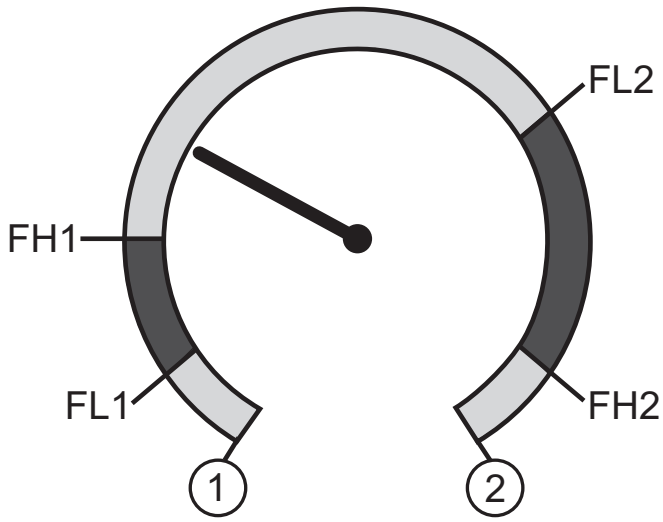
Display colour change for the parameters **[r1ou]** / **[r2ou]**, mode **hysteresis function**	Display colour change for the parameters **[G1ou]** / **[G2ou]**, mode **hysteresis function**
	
Measured value > switch point OUT1/OUT2; Display = red	Measured value > switch point OUT1/OUT2; Display = green

Display colour change for the parameters **[r1ou]** / **[r2ou]**, mode **window function**	Display colour change for the parameters **[G1ou]** / **[G2ou]**, mode **window function**
	
Measured value between FL1/FL2 and FH1/FH2; Display = red	Measured value between FL1/FL2 and FH1/FH2; Display = green

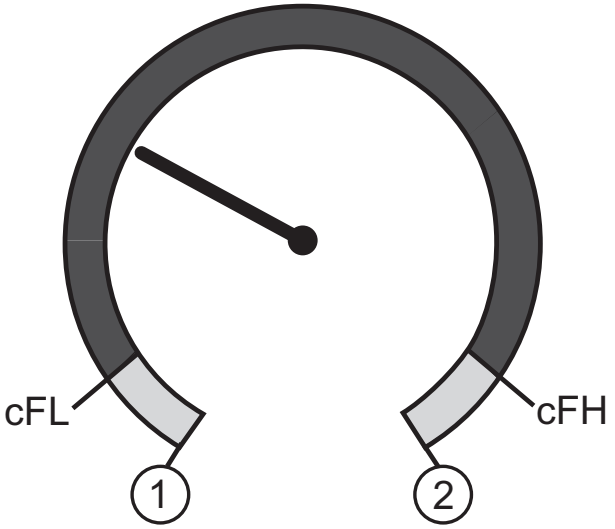
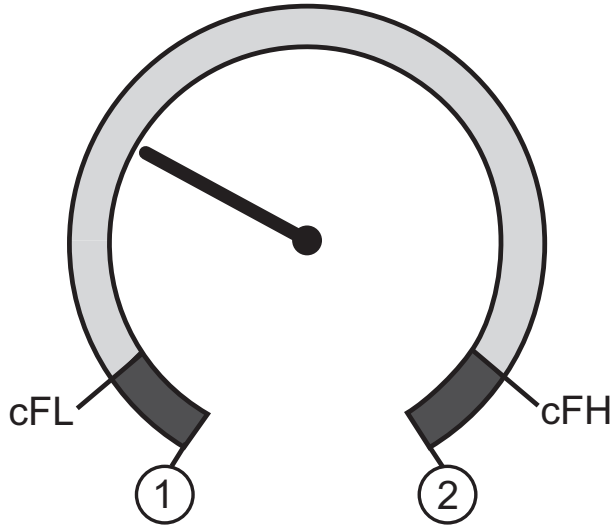
	Colour change display green
	Colour change display red
1	Initial value of the measuring range
2	Final value of the measuring range

Visualisation [r-12] / [G-12] only possible if [ou2] = switching output.

Display colour change for the parameters **[r-12],** mode **hysteresis function**	Display colour change for the parameters **[G-12]**, mode **hysteresis function**
	
Measured value between OUT1 and OUT2; Display = red	Measured value between OUT1 and OUT2; Display = green

Display colour change for the parameters **[r-12],** mode **window function**	Display colour change for the parameters **[G-12]**, mode **window function**
	
Measured value outside FL1...FH1 and FL2...FH2; Display = red	Measured value outside FL1...FH1 and FL2...FH2; Display = green

	Colour change display green
	Colour change display red
1	Initial value of the measuring range
2	Final value of the measuring range
FL1 / FL2	Lower limit value window function outputs OUT1 / OUT2
FH1 / FH2	Upper limit value window function outputs OUT1 / OUT2

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)

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.

Operating indications → Chapter 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 / error 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 the parameter setting software.

Display	Status LED OUT1	Status LED OUT2	Type of fault *)	Fault / warning	Corrective measures
none			F	Supply voltage too low.	▶ Check / correct the supply voltage.
SC flashes	flashes	flashes	F	Excessive current on switching outputs OUT1 and OUT2 **).	▶ Check switching outputs for short-circuit or excessive current; remove the fault.
SC1 flashes	flashes		F	Excessive current at switching output OUT1 **).	▶ Check switching output OUT1 for short-circuit or excessive current; remove the fault.
SC2 flashes		flashes	F	Excessive current at switching output OUT2 **).	▶ Check switching output OUT2 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 active 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.

Display	Status LED OUT1	Status LED OUT2	Type of fault *)	Fault / warning	Corrective measures
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 flashes			F	Internal fault / malfunction	▶ Contact the manufacturer.

*) F = fault
W = warning

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

11 Technical data and scale drawing

11.1 Setting ranges

		SP		rP		ASP2		AEP2		cFH		cFL		ΔP
		min	max	min	max	min	max	min	max	min	max	min	max	
PE2091 PE2591	bar	1.5	250	0.5	249	0	200	50	250	0	249	1	250	0.5
	psi	25	3625	10	3610	0	2900	725	3625	0	3610	15	3625	5
	MPa	0.15	25	0.05	24.9	0	20	5	25	0	24.9	0.1	25	0.05
PE2092 PE2592	bar	0.6	100	0.2	99.6	0	80	20	100	0	99.6	0.4	100	0.2
	psi	10	1450	4	1444	0	1160	290	1450	0	1444	6	1450	2
	MPa	0.06	10	0.02	9.96	0	8	2	10	0	9.96	0.04	10	0.02

ΔP = step increment

		SP		rP		ASP2		AEP2		cFH		cFL		ΔP
		min	max	min	max	min	max	min	max	min	max	min	max	
PE2093 PE2593	bar	-0.85	25	-0.95	24.9	-1	20	4	25	-1	24.9	-0.9	25	0.05
	psi	-12	362.5	-13.5	361	-14.5	290	58	362.5	-14.5	361	-13	362.5	0.5
	MPa	-0.085	2.5	-0.095	2.49	-0.1	2	0.4	2.5	-0.1	2.49	-0.09	2.5	0.005
PE2094 PE2594	bar	-0.94	10	-0.98	9.96	-1	8	1	10	-1	9.96	-0.96	10	0.02
	psi	-13.6	145	-14.2	144.4	-14.6	116	14.6	145	-14.6	144.4	-13.8	145	0.2
	MPa	-0.094	1	-0.098	0.996	-0.1	0.8	0.1	1	-0.1	0.996	-0.096	1	0.002
PE2096 PE2596	bar	-0.11	2.5	-0.12	2.49	-0.125	2.0	0.375	2.5	-0.125	2.49	-0.115	2.5	0.005
	psi	-1.6	36.25	-1.75	36.1	-1.8	29	5.45	36.25	-1.8	36.1	-1.65	36.25	0.05
	kPa	-11	250	-12	249	-12.5	200	37.5	250	-12.5	249	-11.5	250	0.5
PE2099 PE2599	mbar	-985	1000	-995	990	-1000	600	-600	1000	-1000	990	-990	1000	5
	psi	-14.3	14.5	-14.45	14.4	-14.5	8.7	-8.7	14.5	-14.5	14.4	-14.4	14.5	0.05
	kPa	-98.5	100	-99.5	99	-100	60	-60	100	-100	99	-99	100	0.5
	inH2O	-396	402	-400	398	-402	240	-240	402	-402	398	-398	402	2
	inHg	-29.2	29.5	-29.4	29.3	-29.5	17.7	-17.7	29.5	-29.5	29.3	-29.3	29.5	0.1

ΔP = step increment

11.2 Further technical data

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

12 Factory setting

	Factory setting	User setting
SP1	25 % MEW***	
rP1	23 % MEW***	
ou1	Hno	
ou2	I	
SP2	75 % MEW***	
rP2	73 % MEW***	
ASP2	0 (PE2x99: -996 mbar)	
AEP2	100% MEW*	
coF	0	
dsx	0.0	
drx	0.0	
P-n	PnP	
dAP	0.06	
dAA	0.1	
diS	d2	
uni	bAr / mbAr	
coLr	rEd	
cFH	MEW*	
cFL	MAW**	

* = Final value of the measuring range (MEW)
** = Initial value of the measuring range (MAW)
*** = The indicated percentage of the final value of the measuring range (MEW) of the respective sensor (for PN2xx99 the percentage of the measuring span) is set.

More information at www.ifm.com