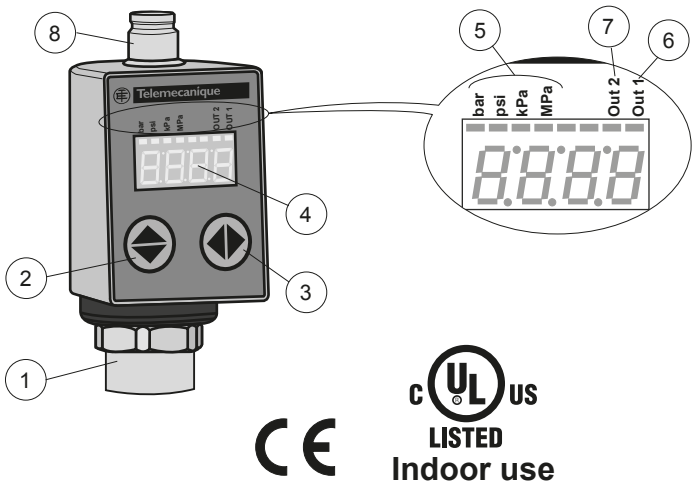
XMLR••• Electronic pressure switch

www.tesensors.com



1	Fluid entry
2	Button to scroll from a menu to another. Also button to increase a value or change a parameter
3	Button to display a value or a parameter. Also button to save selected value or parameter and return to the menu
4	4 digits, 7 segments display
5	4 Green LEDs to indicate the selected pressure unit
6	Yellow LED to indicate output 1 status: LED On = “Out 1” On
7	Yellow LED to indicate output 2 status: LED On = “Out 2” On
8	Electrical connection : M12 male 4 or 5 pin connector

c UL us LISTED

Indoor use

Note: You can download this user guide, plus other languages from our website at: www.tesensors.com
We welcome your comments about this document. You can reach us by e-mail at: customer-support@tesensors.com

⚠ CAUTION

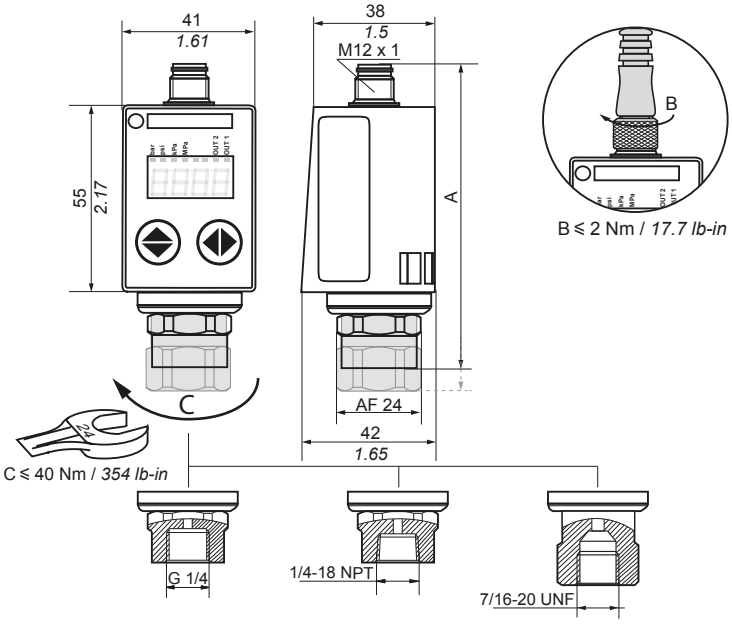
UNINTENDED EQUIPMENT OPERATION

- Read the user guide before the first installation.
- Reduce pressure to zero and take the appropriate protective measures in regard of measured fluid before disconnecting device from pressure source.
- Use the equipment within the characteristics mentioned in catalogue.
- Use insulated SELV(*) or PELV(**) power supply.
- Keep the fluid entry screwed thanks to a wrench when the product head is turned in the counter clock wise.

Failure to follow these instructions can result injury or equipment damage.

(*) SELV: Safety extra low voltage
(**) PELV: Protected extra low voltage

Dimensions and tightening torques:



Reference	Fluid entry	Pressure Range	A mm / in.
XMLR•••••••5	G1/4A female	From -1...0 bar to 0...40 bar	93 / *3.66*
		From 0...100 bar to 0...600 bar	88 / *3.46*
XMLR•••••••6	1/4” - 18NPT female	From -1...0 bar to 0...40 bar	100 / *3.94*
		From 0...100 bar to 0...600 bar	88 / *3.46*
XMLR•••••••9	SAE 7/16-20UNF female	From -1...0 bar to 0...40 bar	100 / *3.94*
		From 0...100 bar to 0...600 bar	94 / *3.7*

Electrical equipment should be installed, operated and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

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XMLR●●● Electronic pressure switch

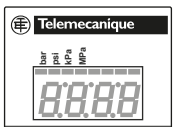
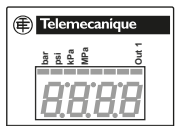
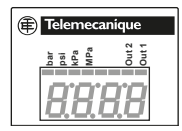
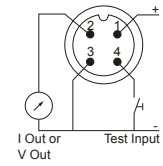
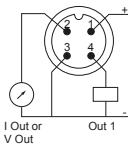
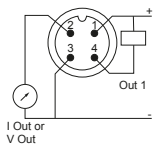
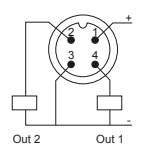
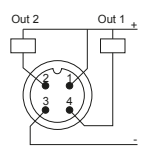
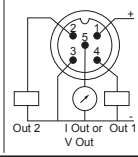
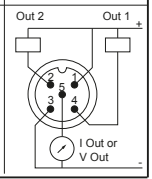
Main characteristics:

	Pressure range: Look at the reference on the right side of the product: **XMLRxyz●●●** where **xyz** is the nominal pressure range in «bar»												
	M01	**001**	**2D5**	**006**	**010**	**016**	**025**	**040**	**100**	**160**	**250**	**400**	**600**
Pressure range	-1...0 bar -14,5...0 psi -100...0 kPa	0...1 bar 0...14,5 psi 0...100 kPa	0...2,5 bar 0...36 psi 0...250 kPa	0...6 bar 0...87 psi 0...600 kPa	0...10 bar 0...145 psi 0...1 MPa	0...16 bar 0...232 psi 0...1,6 MPa	0...25 bar 0...362 psi 0...2,5 MPa	0...40 bar 0...580 psi 0...4 MPa	0...100 bar 0...1450 psi 0...10 MPa	0...160 bar 0...2320 psi 0...16 MPa	0...250 bar 0...3625 psi 0...25 Mpa	0...400 bar 0...5800 psi 0...40 MPa	0...600 bar 0...8700 psi 0...60 MPa
Overpressure	3 bar 43 psi 300 kPa	7,5 bar 109 psi 750 kPa	12 bar 174 psi 1200 kPa	25 bar 362 psi 2500 kPa	40 bar 580 psi 4 MPa	62 bar 900 psi 6,2 MPa	100 bar 1450 psi 10 MPa	150 bar 2175 psi 15 MPa	300 bar 4350 psi 30 MPa	480 bar 6960 psi 48 Mpa	750 bar 10875 psi 75 MPa	1200 bar 17400 psi 120 MPa	1500 bar 21750 psi 150MPa
Burst pressure	3 bar 43 psi 300 kPa	7,5 bar 109 psi 750 kPa	12 bar 174 psi 1200 kPa	25 bar 362 psi 2500 kPa	40 bar 580 psi 4 MPa	62 bar 900 psi 6,2 MPa	100 bar 1450 psi 10 MPa	150 bar 2175 psi 15 MPa	600 bar 8700 psi 60 MPa	960 bar 13920 psi 96 MPa	1 500 bar 21750 psi 150 MPa	2400 bar 34800 psi 240 MPa	2 500 bar 36250 psi 250 MPa

Power supply	⎓ 24 Vdc SELV or PELV(*) - Power supply, operating range from 17 to 33 Vdc	
Current consumption	⩽ 50mA	
Switching outputs	Switching capacity	⩽ 250 mA with short-circuit & overload protection
	Voltage drop	⩽ 2V
Analogue output	4...20 mA: load ⩽ 500 Ω	
	0...10 V : load ⩾ 10 kΩ	
Operating temperature range	-20 to 80 °C *(-4 to 176 °F)*	
Degree of protection	IP65,IP67 conforming to EN/IEC 60529 tested by ENL Testing Laboratory Registration No.: STS 009	
Overall accuracy (analogue, digital output, display)	< 1% of the measuring range	
Response time	⩽ 5 ms	

(*) SELV: Safety extra low voltage / PELV: Protected extra low voltage

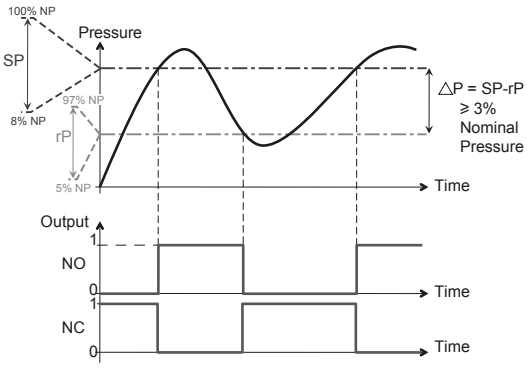
Output configuration:

Reference	**XMLR●●●●0T2●**	**XMLR●●●●0T7●**	**XMLR●●●●1P2●**	**XMLR●●●●1P7●**	**XMLR●●●●1N2●**	**XMLR●●●●1N7●**	**XMLR●●●●2P0●**	**XMLR●●●●2N0●**	**XMLR●●●●2P2●**	**XMLR●●●●2N2●**
Front face caption										
Analogue output	4...20 mA	0...10 V	4...20 mA	0...10 V	4...20 mA	0...10 V	No	No	4...20 mA	4...20 mA
Switching output	No	No	PNP	PNP	NPN	NPN	2 x PNP	2 x NPN	2 x PNP	2 x NPN
Test input (Diagnostic)	Yes	Yes	No	No	No	No	No	No	No	No
Connector wiring										

Output description:

Switching output:

Hysteresis mode:

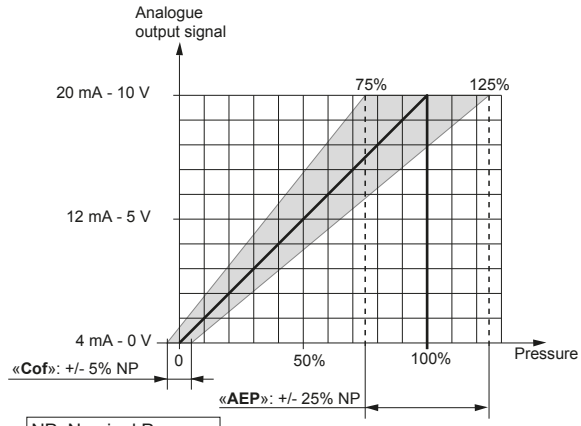


The hysteresis switching mode is typically used for the "pumping and/or emptying applications"

Analogue output:

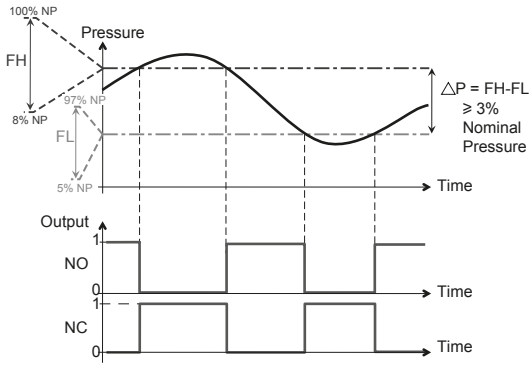
- The analogue curve can be adjusted from -25% to +25% of Nominal Pressure (see. **AEP** Configuration menu).
- An offset of +/-5% of Nominal Pressure can be compensated (see. **Cof** Configuration menu).

Analogue output curve:



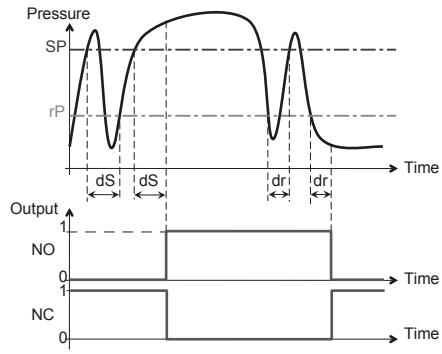
NP: Nominal Pressure

Window mode:



The window switching mode is typically used for the "pressure regulation applications"

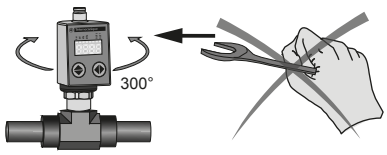
Time delay:



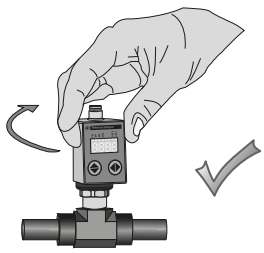
The Time Delay (see **dS** and **dr** menu) is typically used to filter out the fast pressure transients.
The output only switches after a time "dS" and "dr" adjustable from 0 to 50s

Usage precautions:

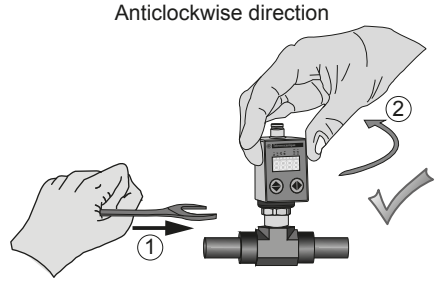
Setting Head position



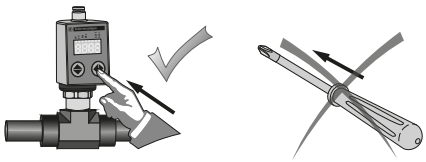
Clockwise direction



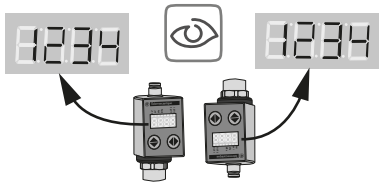
Anticlockwise direction



Buttons

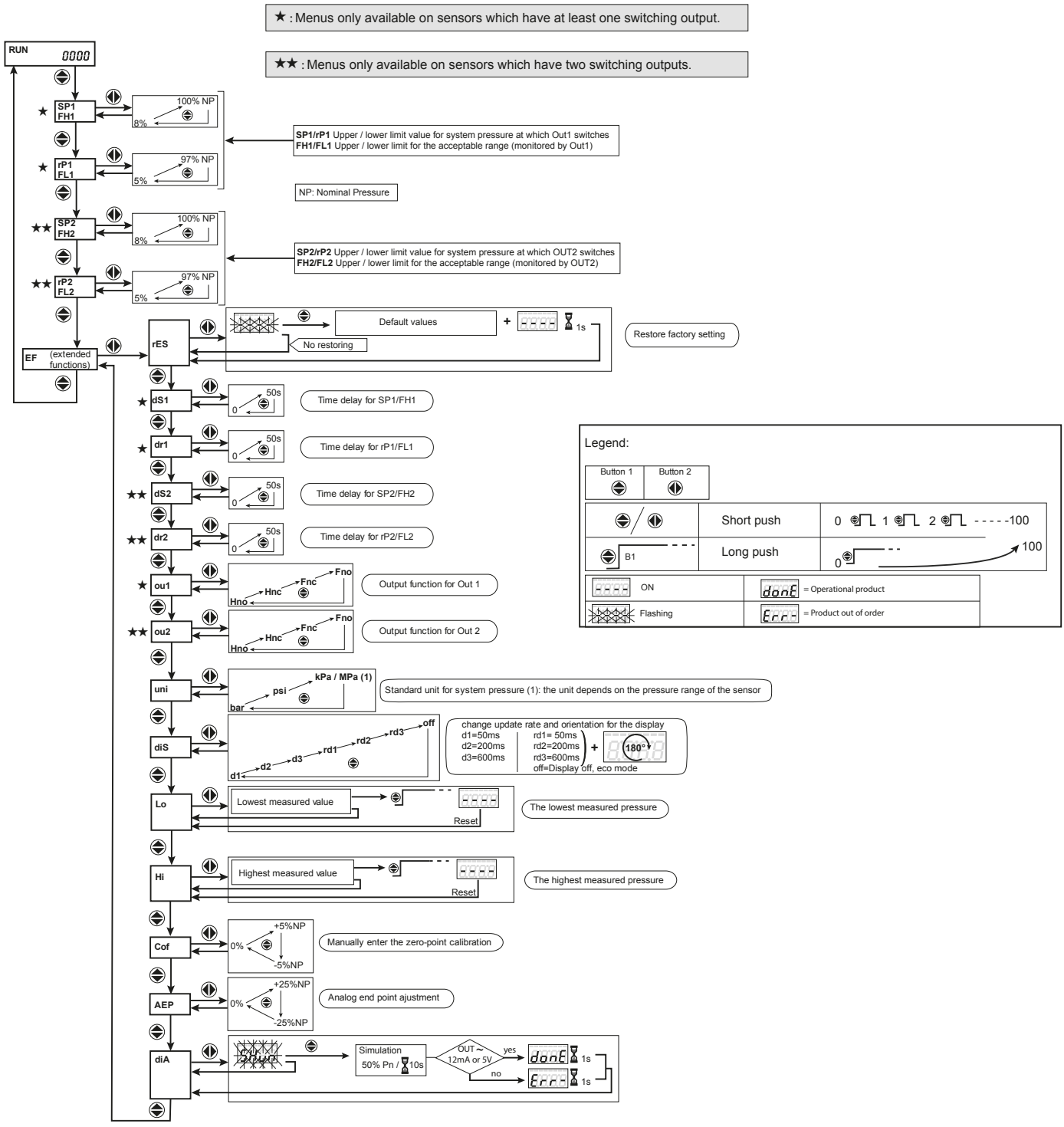


Reversed display function:



Display can be reversed in order to be adapted to the product positioning (See **diS** configuration menu).
Note: it can be easier to reverse the display before mounting.

Configuration menu structure:



Finish the parameter setting:
Press button1 until the current measured value is displayed or press buttons 1 & 2 simultaneously and briefly or wait for ~60s.

Locking/unlocking:
- **Locking**: Press simultaneously buttons 1 & 2 for 5 seconds: The device is locked and «Loc» is briefly displayed on the 7 segments display. When the device is locked. If one of the 2 buttons is pressed: Loc is briefly displayed.
- **Unlocking**: Press simultaneously buttons 1 & 2 for 5 seconds: The device is unlocked and «uLoc» is briefly displayed on the 7 segments display.

Note: This feature only is active at RUN menu level.

Timeout:
If no button is pressed for ~60 seconds while the parameters are being set, the unit returns to the operating mode with unchanged values.

Test input:
this input allows a remote activation of diagnostic function thanks to a PLC as example for carrying out an automatic test. When "Test" input is connected to 0 V, the analogue output must be close to 50% of the span (12 mA or 5 V) if the sensor is operating correctly. At the opposite if the value is far from 50% of the span, the sensor must be replaced.

Parameters description:

Menu name	Description	Factory Setting	Customer Setting
SP1 (★) **FH1**	Set point of output 1: SP1 in hysteresis mode, FH1 in window mode is the high switching point. It can be adjusted from 8 to 100% of the nominal pressure.	50% Nominal Pressure	
rP1 (★) **FL1**	Reset point of output 1: rP1 in hysteresis mode, FL1 in window mode is the low switching point. It can be adjusted from 5 to 97% of the nominal pressure.	25% Nominal Pressure	
SP2 (★★) **FH2**	Set point of output 2: SP2 in hysteresis mode, FH2 in window mode is the high switching point. It can be adjusted from 8 to 100% of the nominal pressure.	60% Nominal Pressure	
rP2 (★★) **FL2**	Reset point of output 2: rP2 in hysteresis mode, FL2 in window mode is the low switching point. It can be adjusted from 5 to 97% of the nominal pressure.	30% Nominal Pressure	
EF	Extended functions: this menu allows to go in the following sub menu.		
rES	Reset all the parameters and values to come back to factory setting		
dS1 (★)	Time delay on Set point of output 1: It can be adjusted from 0 to 50s by step of 1s	0	
dr1 (★)	Time delay on Reset point of output 1: It can be adjusted from 0 to 50s by step of 1s	0	
dS2 (★★)	Time delay on Set point of output 2: It can be adjusted from 0 to 50s by step of 1s	0	
dr2 (★★)	Time delay on Reset point of output 2: It can be adjusted from 0 to 50s by step of 1s	0	
Ou1 (★)	Switching mode of Output 1. 4 different mode s can be selected: Hno Hysteresis mode, Normally Open contact (NO) Hnc Hysteresis mode, Normally Close contact (NC) Fno Window mode, Normally Open contact (NO) Fnc Window mode, Normally Close contact (NC)	Hno	
Ou2 (★★)	Switching mode of Output 2: Same modes as Ou1	Hno	
Uni	Pressure unit for the display; 3 different units can be selected: bar, Psi, Pascal (kPa from -100 to 600 kPa and MPa from 1 MPa to 60 MPa)	bar	
diS	Display reaction time & orientation. Reaction time is the time to update the displayed value. 7 different display modes can be selected: **d1** = 50ms , normal orientation **rd1** = 50ms , 180°reversed orientation **d2** = 200ms, normal orientation **rd2** = 200ms , 180°reversed orientation **d3** = 600ms, normal orientation **rd3** = 600ms , 180°reversed orientation **Off**= display Off -Eco mode	d2	
Lo	Lower pressure: This menu allows to display the lower pressure it happened since the last reset. To reset press “up down” button till “- - - ” is displayed	0	
Hi	Higher pressure: This menu allows to display the lower pressure it happened since the last reset. To reset press “up down” button till “- - - ” is displayed	0	
CoF	Offset Compensation: The zero point can be adjusted between +/-5% of nominal pressure. in order to compensate a residual vacuum or pressure offset.	0	
AEP	Analogue endpoint : The analogue curve end point can be adjusted from -25% to +25% around the nominal pressure.	Nominal Pressure	
diA	Diagnostic function: This menu allows to activate or disactivate the “SHUn” function in order to test the product operation. When “SHUn” is activated the analogue value must be 50% of span (12mA for 4-20mA, 5V for 0-10V). If not the product is out of order and has to be replaced.		

Maintenance:

At each power on, all the display segments are simultaneously lit up briefly.
This allows the operator to check that all segments are well operating. A diagnostic function can be activate at any time when product is powered (See **diA** configuration menu).
This function allows the operator to check that the whole sensing and electronic components are well operating.

Cleaning

