

Pressure transmitter / Switch

8311

- Pressure measurement and switch in one device
- Switch for alarm or event logging
- Bar graph display for local monitoring
- Continuous or on/off control
- 2-wire transmitter



Programmable pressure sensor with switching and transmitting functions. It has a large display with bar graph and simple menu guided controls. Connection to the process with standard stainless steel connection. The process value can be transmitted to a PLC via a 4-20 mA signal.

Technical Data

General data

Materials

Housing, cover	PC, +20% glass fibre
Front panel folio / Screws	Polyester / Stainless steel
Cable plug/Multipin	PA
Materials wetted parts	Stainless steel
Seal	FKM (EPDM option)

Sensor element

Ceramic cell (Al₂O₃)

Service life of pressure cell

Min. 100 million cycles

Electrical connections

Adjustable 5-pin M12 connector for 5-pin Socket (included)

Voltage supply cable

50 m, shielded, 0.14 up to 0.5 mm² max.

Complete device data (pipe + electronic module)

Pipe diameter

Any pipe with sensor connection 1/2"

Measuring range

up to 1, 2, 5, 10, 20 or 50 bar

Medium temperature

-20 up to 100°C
(+100°C for an ambient temperature of max. 40°C)

Typical accuracy

Transmitter 2-wire version

for 0°C < T < 70°C	≤ ±1% of F.S.*
for -20°C < T < 0°C	≤ ±1% ± 0.03% of F.S.* / °C
for 70°C < T < 100°C	≤ ±1% ± 0.03% of F.S.* / °C

Switch version

≤ ±1.5% of F.S.*

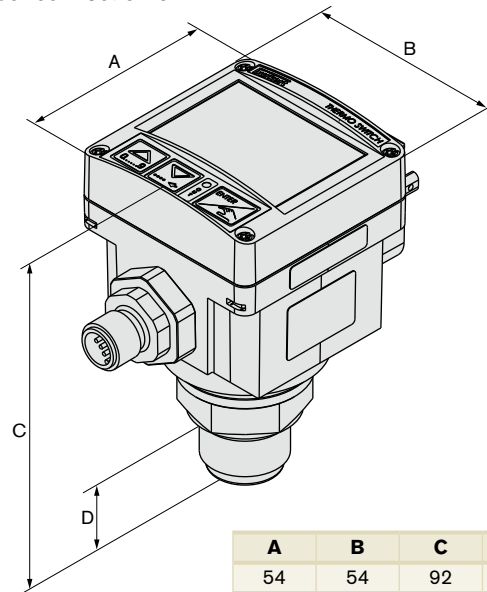
Typical repeatability

Transmitter 2-wire version	≤ ±0.06%
Switch version	≤ ±0.25%

* F.S. = Full scale

Envelope Dimensions [mm] (see datasheet for details)

Sensor connection G 1/2"



Options

- Cable plug, Type 2508, acc. to EN 175301-803
- Outputs: Relay 3 A/250 or 3 A/30 V DC

Technical Data (continued)

Electrical data	
Power supply	12-30 V DC, filtered and regulated
Overvoltage protection	Yes, for power supply and for transistor outputs
Current consumption	
Transmitter 2-wire version	< 30 mA (+700 mA max. per transistor output used)
Switch version	< 750 mA (with load - PNP output configuration) < 80 mA (with load - Relay version)
Output	
Transmitter 2-wire version	
Transistor (programmable)	open collector, 2 NPN or 2 PNP, 700 mA max., NPN: [(V+) minus 0.5 VDC] - 0 VDC PNP: 0.5 VDC - (V+) protected against short circuit
Process value	4-20 mA, Loop resistance: 800 Ω at 30 V DC, 550 Ω at 24 V DC, 300 Ω at 18 V DC (For more details, see instruction manual)
Switch version	
Transistor (programmable)	open collector, NPN / PNP, 700 mA max., NPN: 0.2 - 30 VDC ; PNP: (V+) protected against short circuit
Optional relay (programmable)	Normally open/normally closed 3 A / 250 V AC or 3 A / 30 V DC (relay)
Reversed polarity of DC	Protected (for power supply and all outputs)
Environment	
Ambient temperature	0 up to 60°C (operating and storage)
Relative humidity	≤ 80%, non condensated

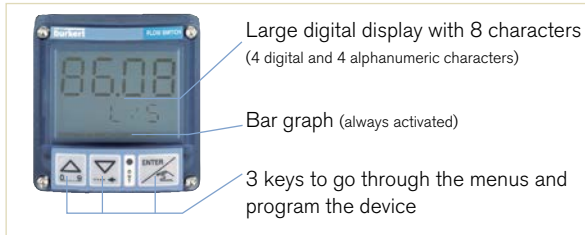
Standards, directives and approvals	
Protection class	IP65 with connector plug-in
Standards and directives	
EMC	Transmitter version: EN 50081-1, 61000-6-2 Switch version: EN 50081-1, 50082-2
Low voltage	Transmitter version: EN 61010-1 Switch version: EN 61010-1
Pressure	Complying with article 3 of §3 from 97/23/CE directive.*
Vibration	EN 60068-2-6
Shock	EN 60068-2-27

* For the 97/23/CE pressure directive, the device can only be used under following conditions (depend on max. pressure, pipe diameter and fluid).

Type of fluid	Conditions
Fluid group 1, §1.3.a	DN25 only
Fluid group 2, §1.3.a	DN ≤ 32, or DN > 32 and PN*DN ≤ 1000
Fluid group 1, §1.3.b	DN ≤ 25, or DN > 25 and PN*DN ≤ 2000
Fluid group 2, §1.3.b	DN ≤ 200

Main features

Display



Software main features

Switch and transmitter

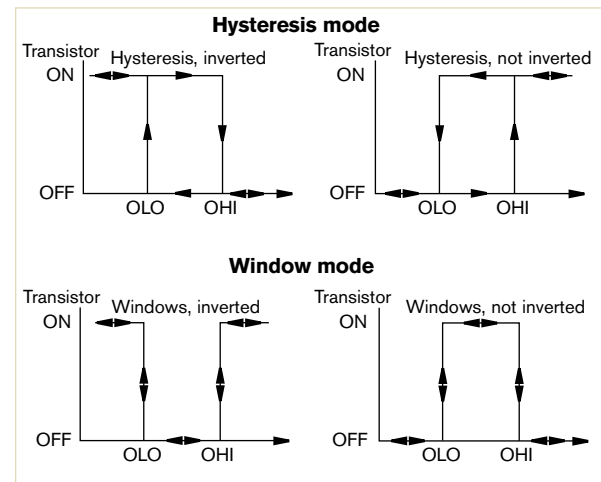
- International measuring units
- 10-segment bar graph
- Teach-In for an improved accuracy
- Simulation mode to test the programming of the switching points, in dry conditions

Transmitter

- Simulation mode to test the programming of 4-20 mA output, in dry conditions
- Display and storage of min/max value
- Protection by code against unauthorized access
- Reset function to default parameters
- Alarm output programmable as internal default alarm

Working mode of alarm outputs

- 2 switching modes for the output, either hysteresis or window, inverted or not



- Programmable delay before switching
- Output available as transistor NPN or PNP, relay (up to 3A)
- Outputs can be programmed as internal default alarm.

Ordering Chart

Pressure range	Electrical connection	Output	Burst Pressure [bar]	Max. Pressure [bar]	Item no. Sensor connection G 1/2
Transmitter					
0 - 1	Free positionable 5-pin, M12	4 - 20 mA + 2 NPN or 2 PNP ¹⁾	4	2	557 934
0 - 2	Free positionable 5-pin, M12	4 - 20 mA + 2 NPN or 2 PNP ¹⁾	7	4	444 507
0 - 5	Free positionable 5-pin, M12	4 - 20 mA + 2 NPN or 2 PNP ¹⁾	12	10	444 506
0 - 10	Free positionable 5-pin, M12	4 - 20 mA + 2 NPN or 2 PNP ¹⁾	25	20	444 503
0 - 20	Free positionable 5-pin, M12	4 - 20 mA + 2 NPN or 2 PNP ¹⁾	50	40	444 504
0 - 50	Free positionable 5-pin, M12	4 - 20 mA + 2 NPN or 2 PNP ¹⁾	120	100	444 505

¹⁾ PNP standard, can be change in NPN with jumpers on electronic board

Accessories

Description	Item no.
5-pin M12 female cable connector with plastic threaded locking ring	917 116
5-pin M12 female connector moulded on cable (2 m, shielded)	438 680

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