



Electronic Pressure Switch/ Transmitter - Type 8311

- Indication, monitoring, transmitting and continuous or On/Off control in one device
- Output signal 4...20 mA, 2-wire for continuous control
- Transistor or relay outputs for On/Off control or alarm function

Information

Ranges offered are for both switch and transmitter options: 0-1, 0-2, 0-5, 0-10, 0-20 and 0-50 Bar

Display

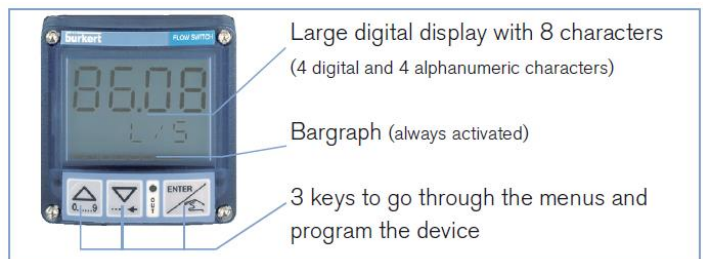
Easy to set up and gives a local indication of pressure and set points

Description

This intelligent mini transmitter/switch with an extra-large display is specially designed to switch alarms and to establish a monitoring system or an On/Off control loop. The switching points can be programmed with the three-key keypad under the display. In addition, the process value can be transmitted to the PLC (4-20 mA). The connection to the process in the piping is made using standard fitting G1/2.

Applications

Machine tool Industry
Processing
Dosing
Sprinkler Control
Pressure Alarms



Typical Interconnection



PLC 4-20mA Output



Control Valve
4-20mA Output



Solenoid Valve - Relay
Output



Angled Seat Control
Valve with Banjo Pilot-
Transistor Output





Type 8311 can be combined with..



Type 8802-YG
Process control valve



Type 8802-GD
Process control valve



Type 8644-P AirLINE
Valve island with electronic I/O



Type 8611
Universal PI controller eControl



Type 6213
Solenoid valve



PLC

Pressure transmitter (2 wire) / switch for continuous or On/Off Control

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The switching points can be programmed with the three-key keypad under the display. In addition, the process value can be transmitted to the PLC (4-20 mA).

The connection to the process in the piping is made using standard fittings (G 1/2, NPT 1/2, Rc1/2).

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

Cable plug: EN 175301-803 (provided)
Swivel 5 pin M12 male fixed connector for female 5 pin M12 cable plug (not provided)

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

bürkert
FLUID CONTROL SYSTEMS

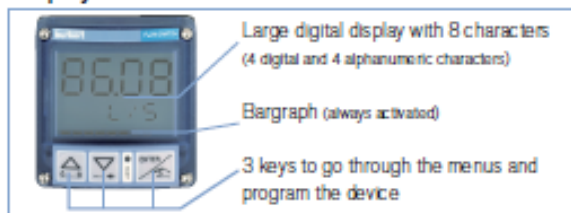
Electrical data	
Power supply	12-30 V DC, filtered and regulated
Overvoltage protection	Yes, for power supply and for transistor outputs
Current consumption	
Transmitter 2-wire version	< 30 mA (+ 700 mA max. per transistor output used)
Switch version	< 750 mA (with load - PNP output configuration) < 60 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 V DC; - 0 V DC PNP: 0.5 V DC - (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 V DC; 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 condensed
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 §9 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	DN≤25 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

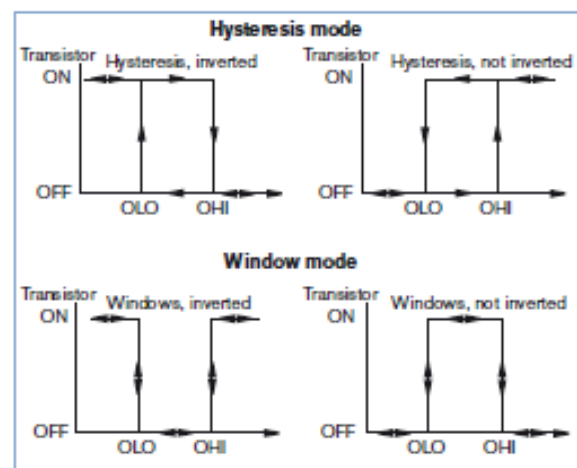
- International measuring units
- 10-segment bargraph
- Teach-In for an improved accuracy
- Simulation mode to test the programming of the switching points, in dry conditions

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

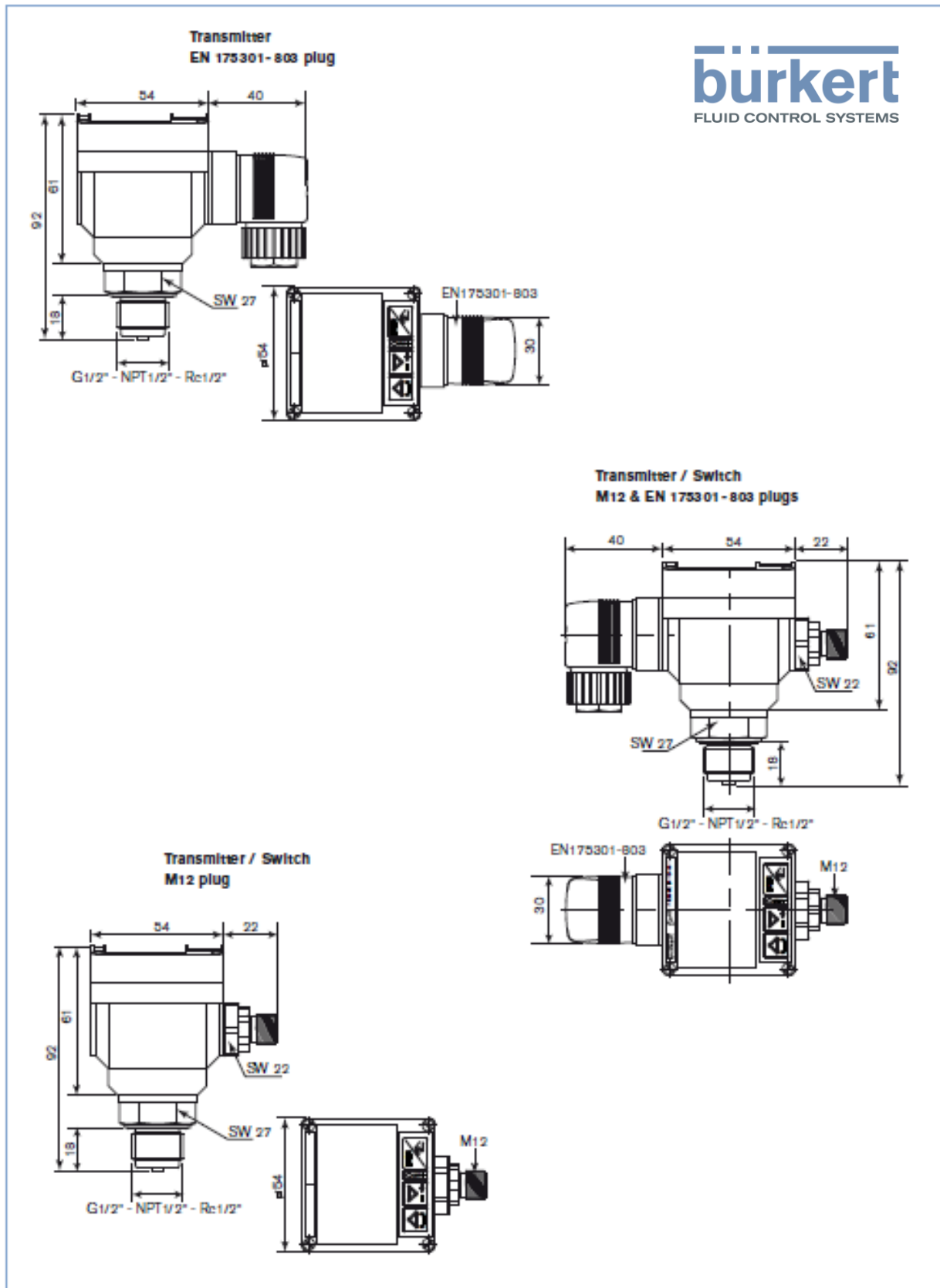
Working mode of alarm outputs

- 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 3 A)
- Outputs can be programmed as internal default alarm.

Dimensions



Ordering chart for Type 8311 (other versions on request)

Transmitter version

Nominal pressure range [bar]	Pressure max. [bar]	Burst pressure [bar]	Power supply	Output signal	Electrical connection	Article no. sensor connection G 1/2"	Article no. sensor connection NPT 1/2"	Article no. sensor connection Rc 1/2"
0-1	2	4	12-30 V DC	4-20 mA + 2 NPN or 2 PNP ¹⁾	Swivel 5 pin M12 male fixed connector	557934	557935	on request
				4-20 mA	Female cable plug Type 2508 ²⁾	550350	557937	on request
0-2	4	7	12-30 V DC	4-20 mA + 2 NPN or 2 PNP ¹⁾	Swivel 5 pin M12 male fixed connector	444507	444762	551739
				4-20 mA	Female cable plug Type 2508 ²⁾	444635	444640	444768
0-5	10	12	12-30 V DC	4-20 mA + 2 NPN or 2 PNP ¹⁾	Swivel 5 pin M12 male fixed connector	444506	444763	551740
				4-20 mA	Female cable plug Type 2508 ²⁾	444636	444641	444769
0-10	20	25	12-30 V DC	4-20 mA + 2 NPN or 2 PNP ¹⁾	Swivel 5 pin M12 male fixed connector	444503	444764	551741
				4-20 mA	Female cable plug Type 2508 ²⁾	550338	444642	444770
0-20	40	50	12-30 V DC	4-20 mA + 2 NPN or 2 PNP ¹⁾	Swivel 5 pin M12 male fixed connector	444504	444765	551742
				4-20 mA	Female cable plug Type 2508 ²⁾	550339	444760	551737
0-50	100	120	12-30 V DC	4-20 mA + 2 NPN or 2 PNP ¹⁾	Swivel 5 pin M12 male fixed connector	444505	444767	551743
				4-20 mA	Female cable plug Type 2508 ²⁾	444637	444761	551738

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





²⁾Acc. EN175301-803

Europe / Asia (G / Rc) : with cable gland
USA / CDN (NPT) : with reduction NPT 1/2"

Switch version

Nominal pressure range [bar]	Pressure max. [bar]	Burst pressure [bar]	Power supply	Output signal	Electrical connection	Article no. sensor connection G 1/2"	Article no. sensor connection NPT 1/2"	Article no. sensor connection Rc 1/2"
0-2	4	7	12-30 V DC	NPN / PNP	Swivel 5 pin M12 male fixed connector	439908	439916	439912
				Relay NO/NC	Swivel 5 pin M12 male fixed connector + Female cable plug Type 2508 ²⁾	439911	439919	439915
0-5	10	12	12-30 V DC	NPN / PNP	Swivel 5 pin M12 male fixed connector	439920	439928	439924
				Relay NO/NC	Swivel 5 pin M12 male fixed connector + Female cable plug Type 2508 ²⁾	439923	439931	439927
0-10	20	25	12-30 V DC	NPN / PNP	Swivel 5 pin M12 male fixed connector	439932	439940	439936
				Relay NO/NC	Swivel 5 pin M12 male fixed connector + Female cable plug Type 2508 ²⁾	439935	439943	439939
0-20	40	50	12-30 V DC	NPN / PNP	Swivel 5 pin M12 male fixed connector	439944	439952	439948
				Relay NO/NC	Swivel 5 pin M12 male fixed connector + Female cable plug Type 2508 ²⁾	439947	439955	439951
0-50	100	120	12-30 V DC	NPN / PNP	Swivel 5 pin M12 male fixed connector	439956	439964	439960
				Relay NO/NC	Swivel 5 pin M12 male fixed connector + Female cable plug Type 2508 ²⁾	439959	439967	439963

²⁾ Acc. EN175301-803 Europe / Asia (G / Rc) : with cable gland
USA / CDN (NPT) : with NPT 1/2 reduction

Description	Article no.
5 pin M12 female cable connector with plastic threaded locking ring (to be ordered separately)	917116 
5 pin M12 female connector moulded on cable (2 m, shielded - to be ordered separately)	438680 
Cable plug EN 175301-803 with cable gland (Type 2508 - included)	438811 
Cable plug EN 175301-803 with NPT 1/2" reduction without cable gland (Type 2509 - to be ordered separately)	162673 



Temperature Switch



Flow Switch



Level Switch

If you want to Switch then look no further. We offer free advice on switching products for systems, that interconnect with our valves. Economically priced and readily available. Typical application diagrams are available for your use.