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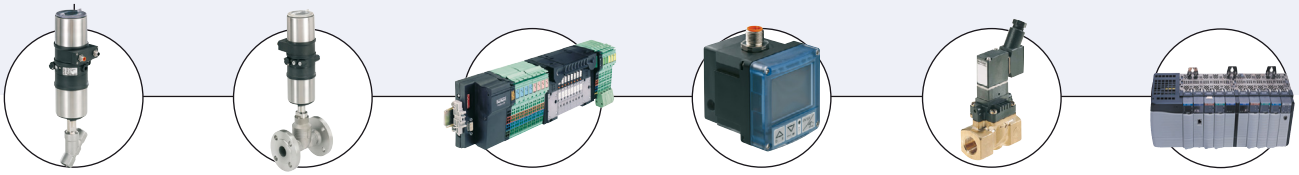
ДАТЧИКИ И РЕЛЕ ДАВЛЕНИЯ

bürkert
FLUID CONTROL SYSTEMS

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

- 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

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

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 fittings (G ½, NPT ½, 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 (Al_2O_3)
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 ½"
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

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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 Switch version	 < 30 mA (+ 700 mA max. per transistor output used) < 750 mA (with load - PNP output configuration) < 80 mA (with load - Relay version)
Output Transmitter 2-wire version Transistor (programmable) Process value Switch version Transistor (programmable) Optional relay (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 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) open collector, NPN / PNP, 700 mA max., NPN: 0.2-30 V DC ; PNP: (V+) protected against short circuit 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 Low voltage Pressure Vibration Shock	 Transmitter version: EN 50081-1, 61000-6-2 Switch version: EN 50081-1 ,50082-2 Transmitter version: EN 61010-1 Switch version: EN 61010-1 Complying with article 3 of §3 from 97/23/CE directive.* EN 60068-2-6 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

Large digital display with 8 characters (4 digital and 4 alphanumeric characters)

Bargraph (always activated)

3 keys to go through the menus and program the device

Software main features

Switch and transmitter

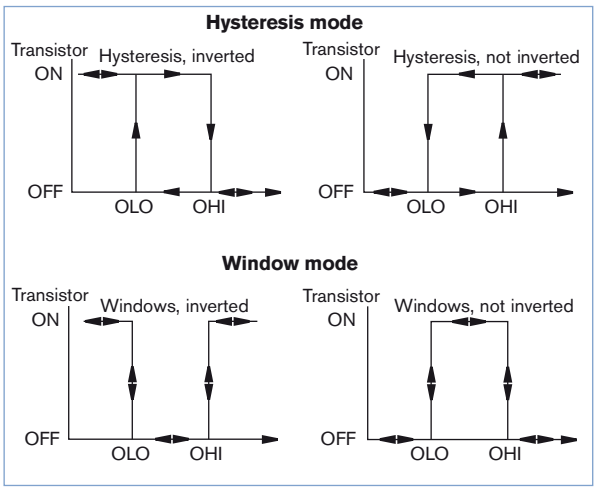
- International measuring units
- 10-segment bargraph
- Teach-In for an improved accuracy
- Simulation mode to test the programming of the switching points, in dry conditions

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.

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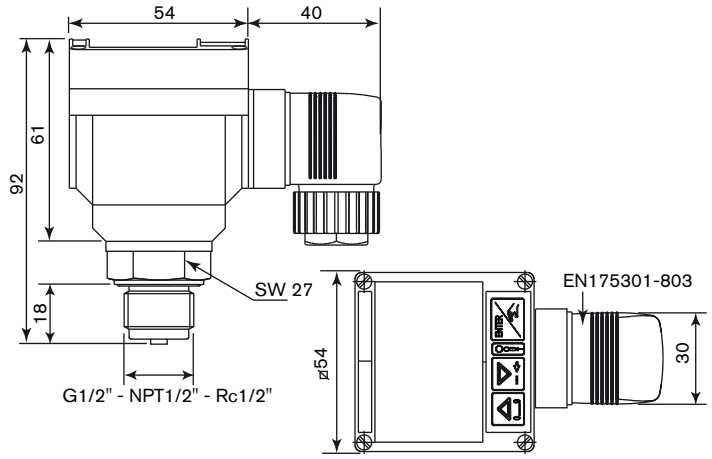
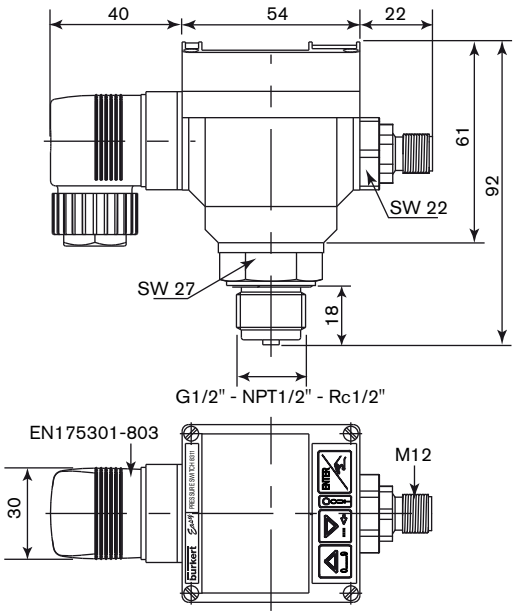
Dimensions

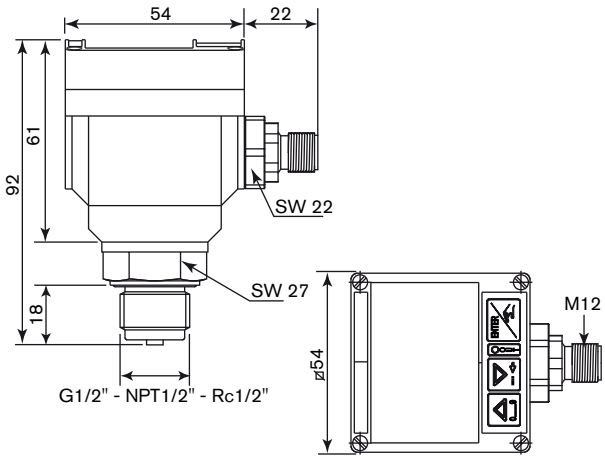
Transmitter
EN 175301-803 plug



Transmitter / Switch
M12 & EN 175301-803 plugs



Transmitter / Switch
M12 plug



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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 ½"	Article no. sensor connection NPT ½"	Article no. sensor connection Rc ½"
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*	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*	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*	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*	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*	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*	444637	444761	551738

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

* Acc. EN175301-803 Europe / Asia (G / Rc) : with cable gland
USA / CDN (NPT) : with reduction NPT ½

Switch version

Nominal pressure range [bar]	Pressure max. [bar]	Burst pressure [bar]	Power supply	Output signal	Electrical connection	Article no. sensor connection G ½"	Article no. sensor connection NPT ½"	Article no. sensor connection Rc ½"
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*	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*	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*	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*	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*	439959	439967	439963

* Acc. EN175301-803 Europe / Asia (G / Rc) : with cable gland
USA / CDN (NPT) : with NPT ½ reduction

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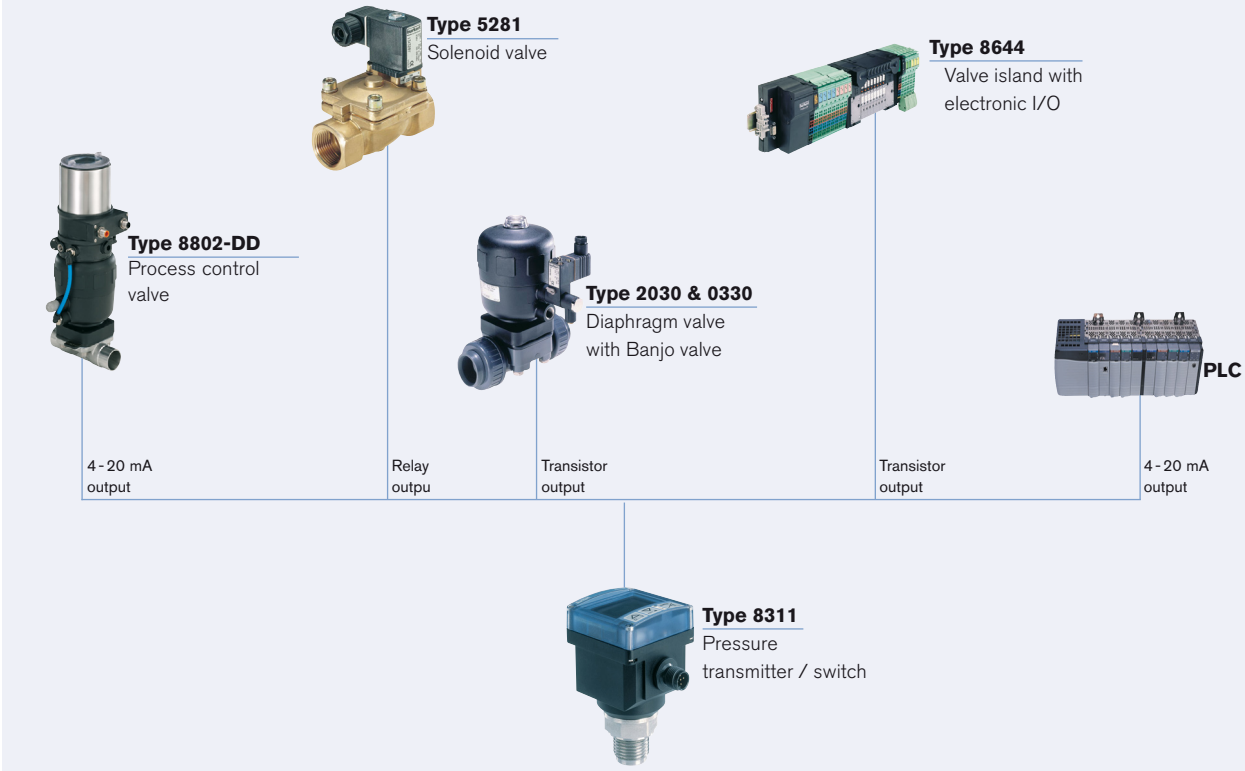
Ordering chart for accessories

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 ½" reduction without cable gland (Type 2509 - to be ordered separately)	162673

Interconnection possibilities with other Bürkert products



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