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Fine Controls have been supplying process controls & instrumentation equipment since 1994, & now serves an ever expanding customer base, both in the UK & globally.

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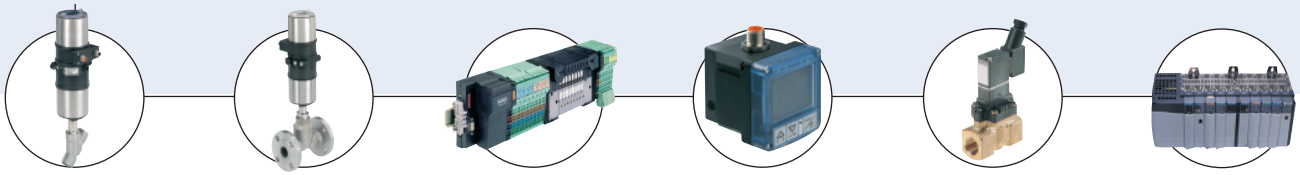
burkert
FLUID CONTROL SYSTEMS

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 (G1/2, NPT1/2, 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 (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	50m, 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

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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	< 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	open collector, NPN / PNP, 700 mA max.,
Transistor (programmable)	NPN: 0.2 - 30 VDC ; PNP: (V+) protected against short circuit
Optional relay (programmable)	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

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

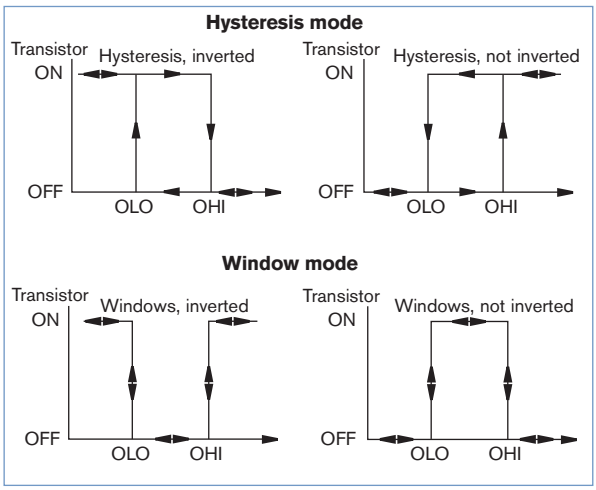
- International measuring units
- 10-segment bargraph
- Teach-In for an improved accuracy
- Simulation mode to test the programming of the switching points, in dry conditions

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

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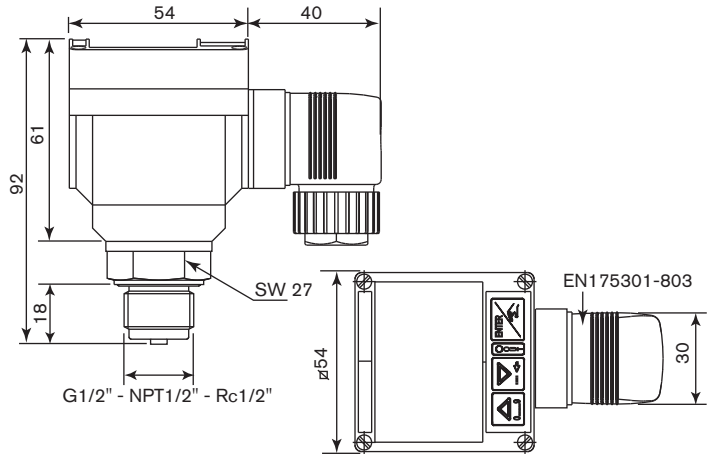
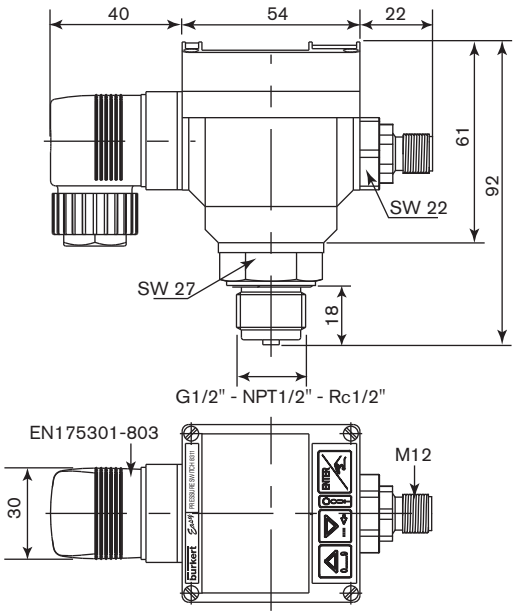
Dimensions

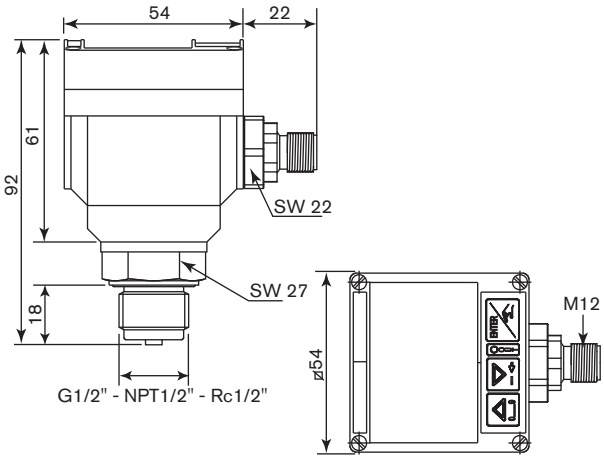
Transmitter
EN 175301-803 plug



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	Item no. sensor connection G 1/2"	Item no. sensor connection NPT 1/2"	Item no. sensor connection Rc 1/2"
0 - 1	2	4	12 - 30 VDC	4-20 mA + 2 NPN or 2 PNP[1)]	Swivel 5-pin M12 male fixed connector	557 934	557 935	on request
				4-20 mA	Female cable plug Type 2508*	550 350	557 937	on request
0 - 2	4	7	12 - 30 VDC	4-20 mA + 2 NPN or 2 PNP[1)]	Swivel 5-pin M12 male fixed connector	444 507	444 762	551 739
				4-20 mA	Female cable plug Type 2508*	444 635	444 640	444 768
0 - 5	10	12	12 - 30 VDC	4-20 mA + 2 NPN or 2 PNP[1)]	Swivel 5-pin M12 male fixed connector	444 506	444 763	551 740
				4-20 mA	Female cable plug Type 2508*	444 636	444 641	444 769
0 - 10	20	25	12 - 30 VDC	4-20 mA + 2 NPN or 2 PNP[1)]	Swivel 5-pin M12 male fixed connector	444 503	444 764	551 741
				4-20 mA	Female cable plug Type 2508*	550 338	444 642	444 770
0 - 20	40	50	12 - 30 VDC	4-20 mA + 2 NPN or 2 PNP[1)]	Swivel 5-pin M12 male fixed connector	444 504	444 765	551 742
				4-20 mA	Female cable plug Type 2508*	550 339	444 760	551 737
0 - 50	100	120	12 - 30 VDC	4-20 mA + 2 NPN or 2 PNP[1)]	Swivel 5-pin M12 male fixed connector	444 505	444 767	551 743
				4-20 mA	Female cable plug Type 2508*	444 637	444 761	551 738

[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 NPT1/2

Switch version

Nominal pressure range [bar]	Pressure max. [bar]	Burst pressure [bar]	Power supply	Output signal	Electrical connection	Item no. sensor connection G 1/2"	Item no. sensor connection NPT 1/2"	Item no. sensor connection Rc 1/2"
0 - 2	4	7	12 - 30 VDC	NPN / PNP	Swivel 5-pin M12 male fixed connector	439 908	439 916	439 912
				Relay	Swivel 5-pin M12 male fixed connector + Female cable plug Type 2508*	439 911	439 919	439 915
0 - 5	10	12	12 - 30 VDC	NPN / PNP	Swivel 5-pin M12 male fixed connector	439 920	439 928	439 924
				Relay	Swivel 5-pin M12 male fixed connector + Female cable plug Type 2508*	439 923	439 931	439 927
0 - 10	20	25	12 - 30 VDC	NPN / PNP	Swivel 5-pin M12 male fixed connector	439 932	439 940	439 936
				Relay	Swivel 5-pin M12 male fixed connector + Female cable plug Type 2508*	439 935	439 943	439 939
0 - 20	40	50	12 - 30 VDC	NPN / PNP	Swivel 5-pin M12 male fixed connector	439 944	439 952	439 948
				Relay	Swivel 5-pin M12 male fixed connector + Female cable plug Type 2508*	439 947	439 955	439 951
0 - 50	100	120	12 - 30 VDC	NPN / PNP	Swivel 5-pin M12 male fixed connector	439 956	439 964	439 960
				Relay	Swivel 5-pin M12 male fixed connector + Female cable plug Type 2508*	439 959	439 967	439 963

* Acc. EN175301-803

Europe / Asia (G / Rc) : with cable gland
USA / CDN (NPT) : with NPT1/2 reduction

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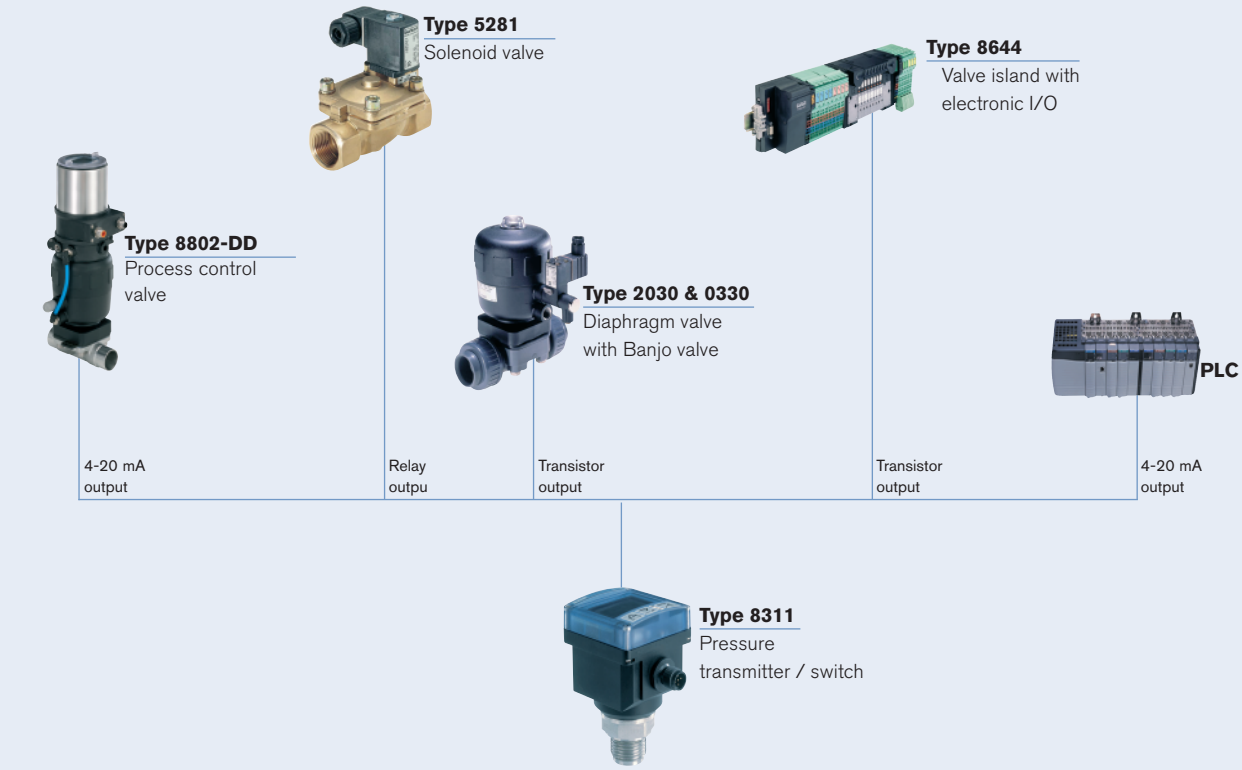
Ordering chart for accessories (to be ordered separately)

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
Cable plug EN 175301-803 with cable gland (Type 2508)	438 811
Cable plug EN 175301-803 with NPT1/2" reduction without cable gland (Type 2509)	162 673

Interconnection possibilities with other Bürkert products



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