Advantages / Benefits

- *Easy* to commission with TEACH-IN function
- *Easy* to install with SIMULATION function
- *Easy* system integration by Easy LINK provides low Total Cost of Ownership
- Unsensitive against polluted fluids

Design

The conductivity transmitter compactly combines a conductivity sensor and a transmitter with display in splash-proof plastic IP 65 enclosure.

The sensor component consists of a pair of magnetic coils in a PVDF enclosure. In order to measure conductivity, an AC voltage source is connected to the primary magnetic coil. The magnetic field induced generates a current in the secondary magnetic coil. The intensity of the induced current is a direct function of the conductivity of the solution.

The temperature sensor for automatic compensation is a standard feature in the sensor housing.

The transducer component converts the measured signal and displays the actual value.

The transducer type 8226 functions in a 3-wire circuit and requires a power supply of 12-30 VDC. A 4-20mA standard signal is available as output signal, proportional to the conductivity or the temperature of the fluid. The setpoint values of the relays are freely adjustable.

A wide range of stainless steel, brass and plastic fittings available. (see corresponding ordering data)

Application

Conductivity measurements

Waste engineering

Contaminated liquids

Liquids with particles

Liquids with coating and sealing build up

bürkert
Easy Fluid Control Systems

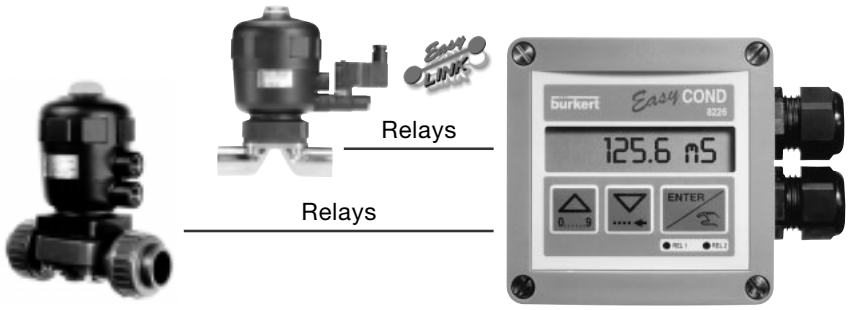
The Easy conductivity - control system

ON / OFF process control

Description:
On / Off valve

8226 transmitter

Applications:
Neutralization
Dosing
Waste water processing

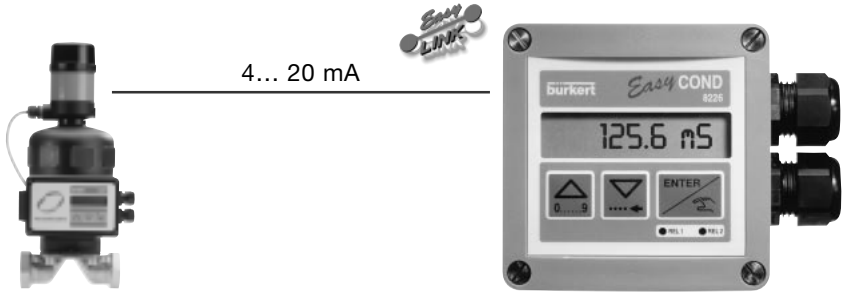


Continuous process control

Description:
Continuous control valve

8226 transmitter

Applications:
Water monitoring
Continuous chemical dosing
Waste water treatment



Design

The conductivity measuring system is available as a compact version type 8226. The cell constant is an average value over the hole measuring range. It can be readjusted depending on application. The temperature sensor for automatic compensation is a standard feature in the conductivity sensor housing.
The 8226 inductive conductivity transmitter output signal is a standard 4 – 20 mA signal. Optional with two freely adjustable relay outputs.

Principle of operation

The concudtivity is defined as the ability of a solution to conduct electrical current. The load carriers are ions (e.g. dissolved salts or acids). In order to measure conductivity, an AC voltage source is connected to the primary magnetic coil. The magnetic field induced generates a current in the secondary magnetic coil. The intensity of this induced current is a direct function of the conductivity of the solution.
The transmitter without relays or with 2 additional relays functions in a 3-wire circuit. Limit values are freely adjustable.

Installation

Ⓐ The inductive conductivity transmitter type 8226 is mounted in vertical position (max. ±90°) into a horizontal pipe.

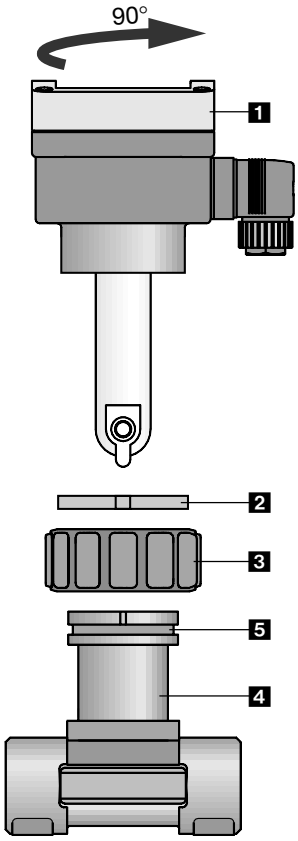
Ⓑ The inductive conductivity transmitter 8226 can be easily installed into pipes using our specially designed fitting system:

1. The fitting **4** must be installed into the pipe acc. to the installation specifications.
2. Insert plastic nut **3** into fitting and let plastic ring **2** snap into guide bush **5**.
3. Carefully insert transmitter 8226 **1** into fitting. If installed properly, the transmitter cannot be rotated.
4. Tighten transmitter housing to fitting with plastic nut **3**.

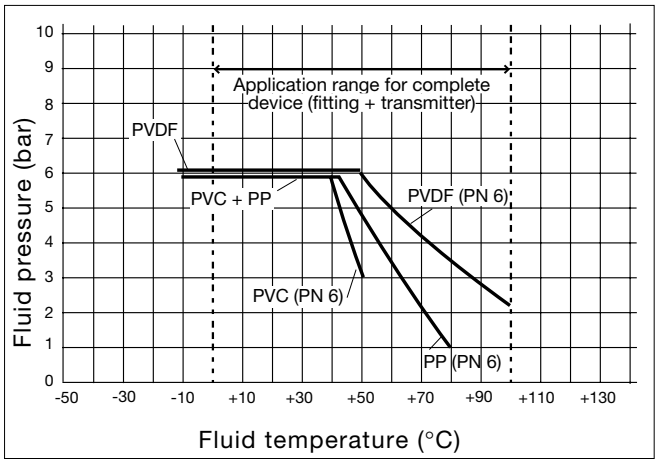
Ⓒ The device must be protected against constant heat radiation and other environmental influences, such as magnetic fields or direct exposure to sunlight.

Important!

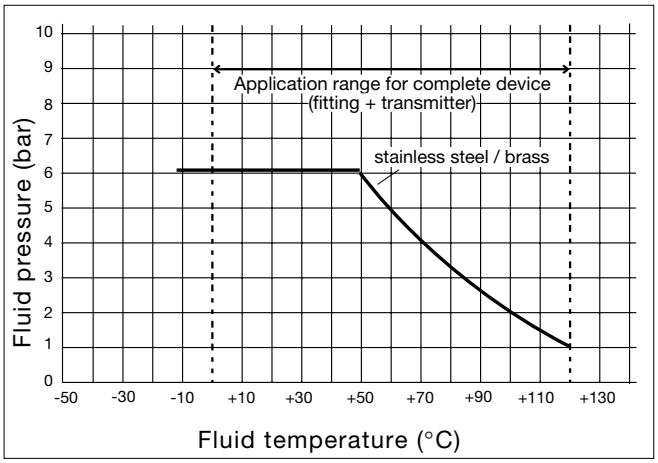
When mounted, the transmitter is being turned by 90°



Pressure-Temperature-Diagram (plastic fittings):



Pressure-Temperature-Diagram (metal fittings):



Operation / Commissioning

Customized adjustments, such as measuring ranges, engineering units and alarm setpoints can be carried out menu-supported on site via a multi-lingual display. Please consider the respective operating instructions prior to commissioning the devices.

Installation

The operation of the conductivity transmitter is classified in the following 3 different menus:

Main menu
- Conductivity
- Temperature
- Output current
- HOLD function

Calibration menu
- Language
- Engineering units
- Cell constant
- Temperature compensation
- Measuring range 4... 20 mA
- Relay function
- Filter selection

Test menu
- Offset
- Span
- Conductivity non compensated
- Simulation of conductivity

Display type 8226
- 8 digits alphanumeric

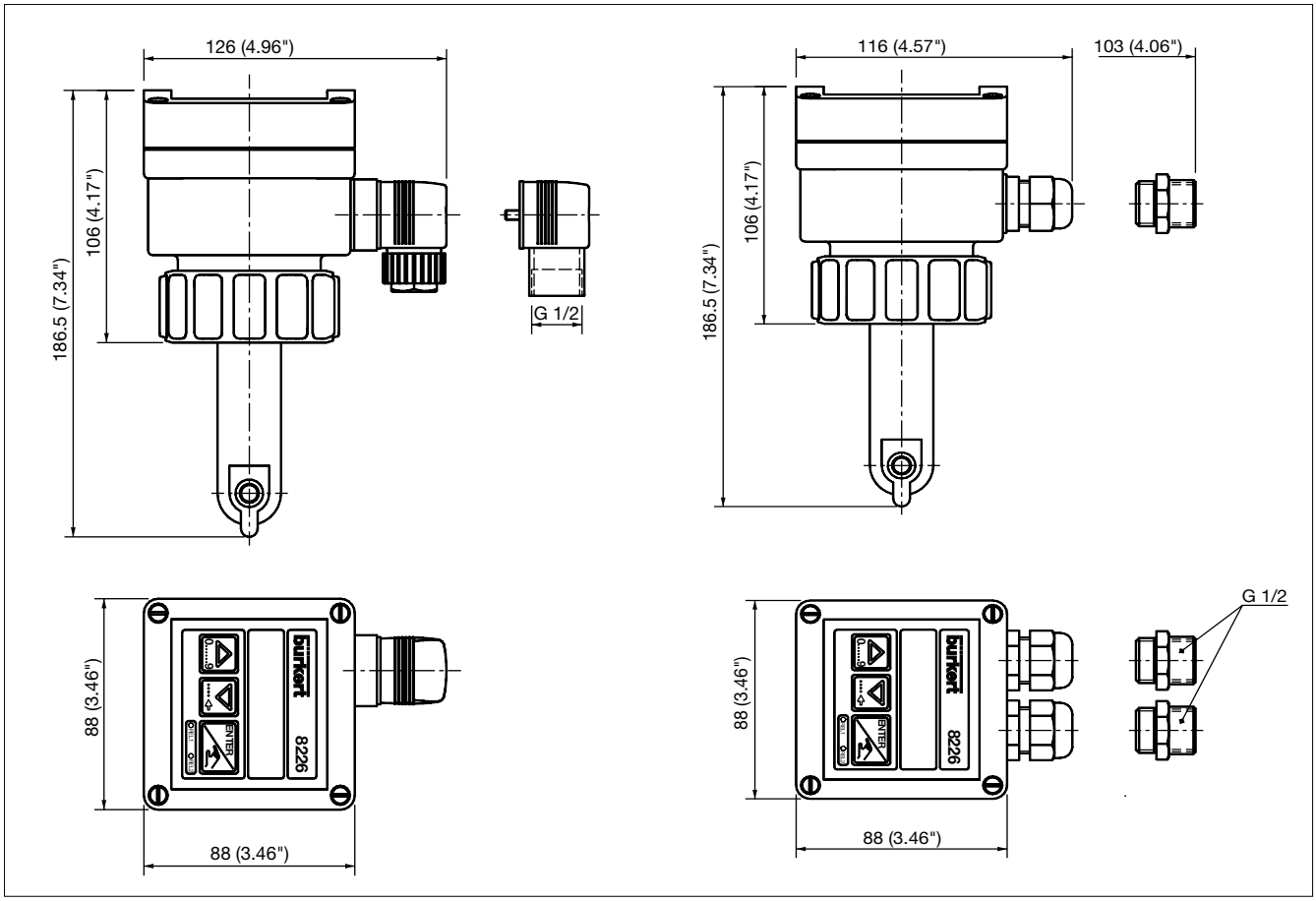
Description of buttons
- Acceptance of chosen parameter or adjusted value
- LED relay 2 (contact closed)
- LED relay 1 (contact closed)
- Direction downwards in menu or sidewards for digit selection
- Display selection and increasing key (numeric values) impulses or automatic

Technical data

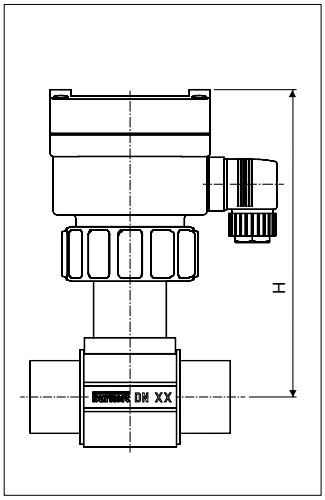
Measuring range	100 µS/cm ... 2 S/cm	Electronic housing	PC
Measuring error	± 2% of measured value	Sensor housing	PVDF; O-rings FPM / EPDM
Temperature compensation	automatic with standardized integrated temperature sensor with reference temperature 25°C (77°F)	Voltage supply	12...30 VDC
		Consumption	max. 250 mA
		Display	15 x 60 mm LCD 8 digits, alphanumeric
Fluid temperature	0 up to 120°C (32 up to 248°F) (depending on fitting, see Pressure-Temperature-Diagram)		15 segments, 9 mm high
		Analog output signal	4...20 mA programable, proportional to the conductivity or temperature
Ambient temperature	0 up to 60°C (32 up to 140°F)	Load	< 1000 Ω at 30 V
			< 800 Ω at 24 V
Storage temperature	0 up to 60°C (32 up to 140°F)		< 450 Ω at 15 V
			< 330 Ω at 12 V
Fluid pressure	(depending on temperature, see Pressure-Temperature-Diagram)	Relay output (optional)	2 relays, 3 A / 230 V; freely adjustable
Pressure class	PN 6		
Enclosure	IP 65 (NEMA 4)		
	Relative humidity max. 80%		

Dimensions [mm (inch)]

Conductivity transmitter type 8226 compact



Dimensions [mm] - fittings S020, DN 15 - 50 for transmitter 8226

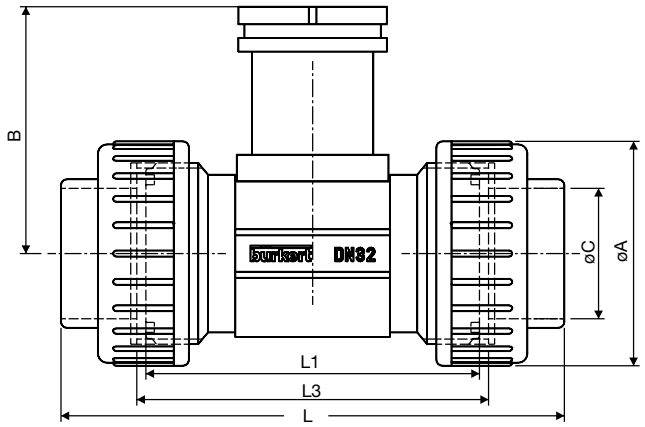


Variable Dimensions [mm]

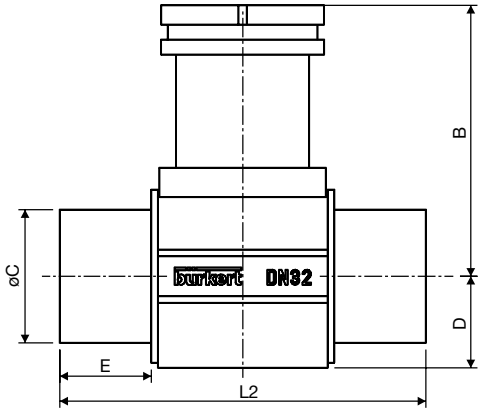
DN	H
15	177
20	177
25	177
32	177
40	178
50	184

Applicable for all fitting materials DN 15 ...50 sizes and process connections.

True union - PVC, PP, PVDF



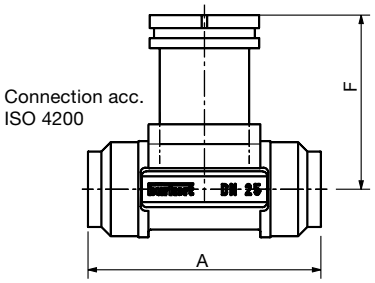
Solvent spigot - PVC, PP, PVDF



True union										Solvent spigot					
B	øA	L			øC			L1	L3	DN	D	L2		E	
		DIN	ANSI	JIS	(DIN)	(ANSI)*	(JIS)*					PVC	PP/PVDF	PVC	PP/PVDF
81.4	74	148	---	---	20	---	---	110	116	**15**	---	---	---	---	---
81.4	74	154	---	---	25	---	---	110	116	**20**	---	---	---	---	---
81.4	74	160	---	---	32	---	---	110	116	**25**	---	---	---	---	---
81.4	74	168	170.0	169	40	42.2	38.60	110	116	**32**	27.5	110	100	27.5	20
85.2	83	188	190.2	190	50	48.3	48.70	120	127	**40**	31.5	120	106	30.0	23
91.5	103	212	213.6	213	63	60.3	60.80	130	136	**50**	39.5	130	110	37.0	27

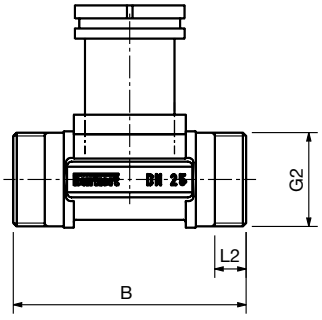
* only for PVC with true union

Weld ends - Stainless steel



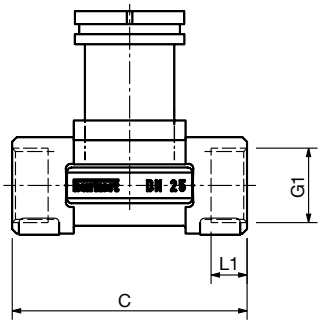
Material Stainless steel:
DIN 1.4404; BS 316L

Male threaded port - Stainless steel / Brass



Material Stainless steel:
DIN 1.4404; BS 316L

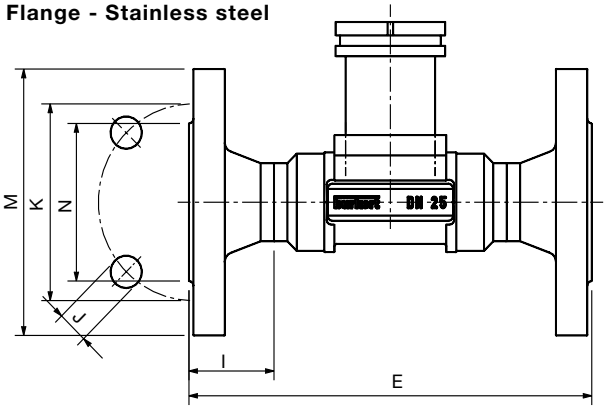
Female threaded port Stainless steel / Brass -



Material Stainless steel:
DIN 1.4404; BS 316L

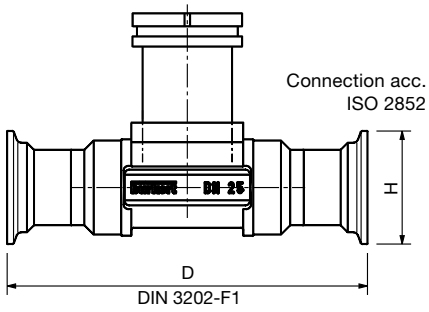
Dimensions [mm] - fittings S020, DN 15 - 50

Flange - Stainless steel



Material:
DIN 1.4404; B.S. 316 L

Tri-Clamp



Material:
DIN 1.4404; B.S. 316 L

Variable dimensions [mm] for Weld ends, Male threaded port, Female threaded port, Flange, Tri-Clamp

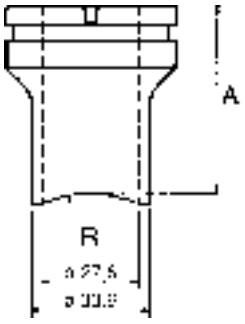
DN	Weld ends ø outside	Weld ends Wall-thickness	Length dimensions A	B	C	D	E (DIN) (ANSI)	E (JIS)	F	Thread G1	L1	G2	L2	Tri-Clamp H	Flange dimensions Norm*	I	J	K	M	N
										G 11/4	23.5				DIN	31.0	4x18.0	100.0	140	78.0
32	42.4	2.0	119	119	120	180	180	178	81.6	NPT 11/4	21.0	G 1/2	18.0	50.5	ANSI	31.0	4x15.8	88.9	117	63.5
										Rc	21.0				JIS	31.0	4x19.0	100.0	135	76.0
										G 11/2	23.5				DIN	36.0	4x18.0	110.0	150	88.0
40	48.3	2.0	129	129	130	200	200	190	85.4	NPT 11/2	20.0	M55x2	19.0	64.0	ANSI	36.0	4x15.8	98.4	127	73.0
										Rc 11/2	19.0				JIS	36.0	4x19.0	105.0	140	81.0
										G 2	27.5				DIN	41.0	4x18.0	125.0	165	102.0
50	60.3	2.6	149	149	150	230	230	216	91.5	NPT 2	24.0	M64x2	20.0	77.5	ANSI	41.0	4x19.0	120.6	152	92.1
										Rc 2	24.0				JIS	41.0	4x19.0	120.0	155	96.0

* Flange: DIN 2501/2633, length according to DIN 3201-F1;
ANSI B16-5-1988, length according to DIN 3201-F1
JIS 10K, length according to ANSI B16-10

Dimensions [mm] - fittings DN 65 - 100

Weld-o-let fittings with radius - Stainless steel

Material: 1.4404 (DIN),
316L (B.S.)



Variable Dimensions [mm]

DN	A	R
65	54.52	36.65
80	53.07	44.45
100	50.71	57.15

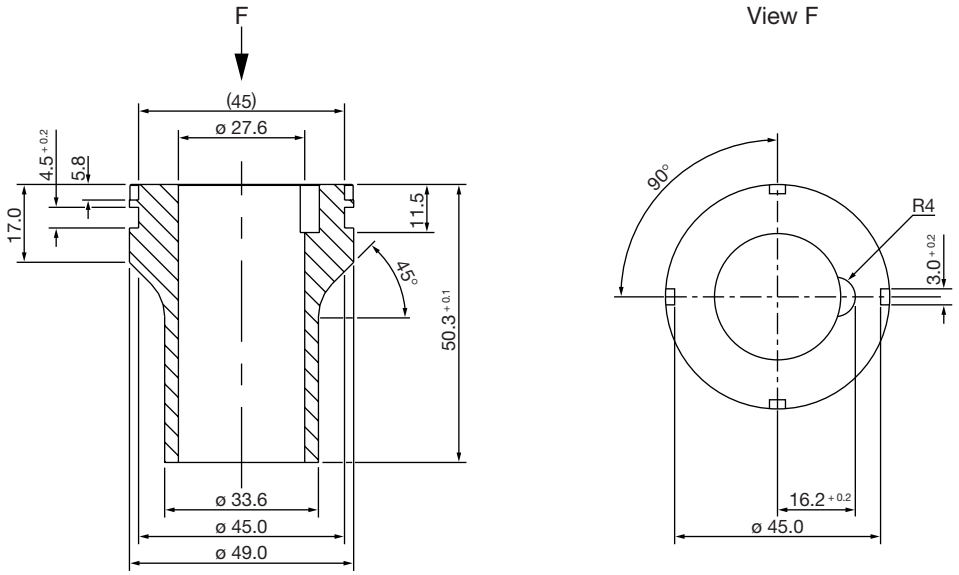
Dimensions [mm] - fittings DN 65 - 100

Weld-o-let fittings - PE, PP, PVDF

Variable Dimensions [mm]

DN	A	PE		PP		PVDF	
		B	C	B	C	B	C
65-100	72.5	13	---	13	---	10.4	---

Weld-o-let fittings for side-wall mounting



Ordering chart for inductive conductivity transmitter 8226

Conductivity transmitter compact 4...20mA output; without relays

Type description	Gasket	Cable connection	Voltage	Item-No.
Compact transmitter 8226 with 4...20mA	FPM	Cable plug PG9	12-30 VDC	431 673 U
Compact transmitter 8226 with 4...20mA	FPM	Cable gland PG13.5	12-30 VDC	631 674 V
Compact transmitter 8226 with 4...20mA	EPDM	Cable plug PG9	12-30 VDC	431 675 W
Compact transmitter 8226 with 4...20mA	EPDM	Cable gland PG13.5	12-30 VDC	431 676 X
Compact transmitter 8226 with 4...20mA	FPM	2x Cable gland PG13.5	115-230VAC	431 677 Y
Compact transmitter 8226 with 4...20mA	EPDM	2x Cable gland PG13.5	115-230VAC	431 678 H
Compact transmitter 8226 with 4...20mA	FPM	Cable plug G 1/2	12-30 VDC	431 683 P
Compact transmitter 8226 with 4...20mA	EPDM	Cable plug G 1/2	12-30 VDC	431 684Q
Compact transmitter 8226 with 4...20mA	FPM	2x Cable gland G 1/2	115-230VAC	431 685 R
Compact transmitter 8226 with 4...20mA	EPDM	2x Cable gland G 1/2	115-230VAC	431 686 J

Conductivity transmitter compact 4...20mA output; with 2 relays

Type description	Gasket	Cable connection	Voltage	Item-No.
Compact transmitter 8226 with 4...20mA	FPM	2x Cable gland PG13.5	12-30 VDC	431 679 A
Compact transmitter 8226 with 4...20mA	EPDM	2x Cable gland PG13.5	12-30 VDC	431 680 Y
Compact transmitter 8226 with 4...20mA	FPM	2x Cable gland PG13.5	115-230VAC	431 681 M
Compact transmitter 8226 with 4...20mA	EPDM	2x Cable gland PG13.5	115-230VAC	431 682 N
Compact transmitter 8226 with 4...20mA	FPM	2x Cable gland G 1/2	12-30 VDC	431 687 K
Compact transmitter 8226 with 4...20mA	EPDM	2x Cable gland G 1/2	12-30 VDC	431 688 U
Compact transmitter 8226 with 4...20mA	FPM	2x Cable gland G 1/2	115-230VAC	431 689 V
Compact transmitter 8226 with 4...20mA	EPDM	2x Cable gland G 1/2	115-230VAC	431 690 S

Ordering data of stainless steel fittings S020

Diameters	Materials	Item-No.
SS - Female G-Threaded Ports		
DN 32	SS, FPM	428 739 B
DN 40	SS, FPM	428 740 Q
DN 50	SS, FPM	428 741 D
SS - Female NPT-Threaded Ports		
DN 32	SS, FPM	428 745 H
DN 40	SS, FPM	428 746 A
DN 50	SS, FPM	428 747 B
SS - Female ISO7 (JIS) Threaded Ports		
DN 32	SS, FPM	428 751 F
DN 40	SS, FPM	428 752 G
DN 50	SS, FPM	428 753 H
SS- Male G Threaded Ports		
DN 32	SS, FPM	428 757 D
DN 40	SS, FPM	428 758 N
DN 50	SS, FPM	428 759 P
SS - Weld Ends		
DN 32	SS, FPM	428 763 B
DN 40	SS, FPM	428 764 C
DN 50	SS, FPM	428 765 D
SS - Tri-Clamp (ISO 2852)		
DN 32	SS, FPM	428 769 R
DN 40	SS, FPM	428 770 N
DN 50	SS, FPM	428 771 B
SS - DIN Flanges (DIN 2501)		
DN 32	SS, FPM	428 775 F
DN 40	SS, FPM	428 776 G
DN 50	SS, FPM	428 777 H
SS - Flanges (JIS 10K)		
DN 32	SS, FPM	431 056 M
DN 40	SS, FPM	431 057 N
DN 50	SS, FPM	431 058 X
SS - ANSI Flanges (ANSI B16-5-1988)		
DN 32	SS, FPM	428 781 W
DN 40	SS, FPM	428 782 X
DN 50	SS, FPM	428 783 Y
SS - Weld-o-let		
DN 65	SS	418 112 M
DN 80	SS	418 113 N
DN 100	SS	418 114 P
SS - Weld-o-let for side-wall mounting		
–	SS	415 294 R

Ordering data of brass fittings type S020

Diameters	Materials	Item-No.
Brass - Female G-Threaded Ports		
DN 32	Brass, FPM	428 715 T
DN 40	Brass, FPM	428 716 U
DN 50	Brass, FPM	428 717 V
Brass - Female NPT-Threaded Ports		
DN 32	Brass, FPM	428 721 Z
DN 40	Brass, FPM	428 722 S
DN 50	Brass, FPM	428 723 T
Brass - Female ISO7 (JIS) Threaded Ports		
DN 32	Brass, FPM	428 727 X
DN 40	Brass, FPM	428 728 G
DN 50	Brass, FPM	428 729 H
Brass - Male G/metric Threaded Ports		
DN 32	Brass, FPM	428 733 V
DN 40	Brass, FPM	428 734 W
DN 50	Brass, FPM	428 735 X

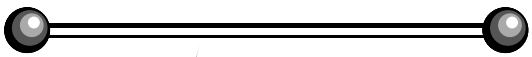
Ordering data of plastic fittings type S020

Diameters	Materials	Item-No.
PVC - True union DIN		
DN 15	PVC, FPM	430 837 L
DN 20	PVC, FPM	430 838 V
DN 25	PVC, FPM	430 839 W
DN 32	PVC, FPM	428 673 H
DN 40	PVC, FPM	428 674 A
DN 50	PVC, FPM	428 675 B
PVC - True union ASTM		
1" 1/4"	PVC, FPM	428 685 W
1" 3/4"	PVC, FPM	428 686 X
2"	PVC, FPM	428 687 Y
PVC - True union JIS		
DN 32	PVC, FPM	429 081 M
DN 40	PVC, FPM	429 082 N
DN 50	PVC, FPM	429 083 P
PVC - Solvent Spigot		
DN 32	PVC, FPM	428 679 P
DN 40	PVC, FPM	428 680 D
DN 50	PVC, FPM	428 681 S
PE - Weld-o-let		
DN 65-100	PE	418 642 G

Diameters	Materials	Item-No.
PP - True Union with Threaded Port		
DN 15	PP, FPM	430 840 B
DN 20	PP, FPM	430 841 Y
DN 25	PP, FPM	430 842 Z
DN 32	PP, FPM	428 691 U
DN 40	PP, FPM	428 692 V
DN 50	PP, FPM	428 693 W
PP - Weld Ends		
DN 32	PP, FPM	428 697 S
DN 40	PP, FPM	428 698 B
DN 50	PP, FPM	428 699 C
PP - Weld-o-let		
DN 65-100	PP	418 650 L
PVDF - True Union with Threaded Port		
DN 15	PVDF, FPM	430 843 S
DN 20	PVDF, FPM	430 844 T
DN 25	PVDF, FPM	430 845 U
DN 32	PVDF, FPM	428 703 G
DN 40	PVDF, FPM	428 704 H
DN 50	PVDF, FPM	428 705 A
PVDF - Weld Ends		
DN 32	PVDF, FPM	428 709 N
DN 40	PVDF, FPM	428 710 A
DN 50	PVDF, FPM	428 711 X
PVDF - Weld-o-let		
DN 65-100	PVDF	418 658 Q

Technical data

Easy **ON/OFF Control**



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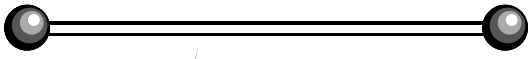
Easy **ON/OFF Control**



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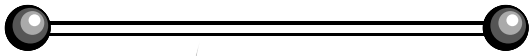
Easy **Continuous Control**



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