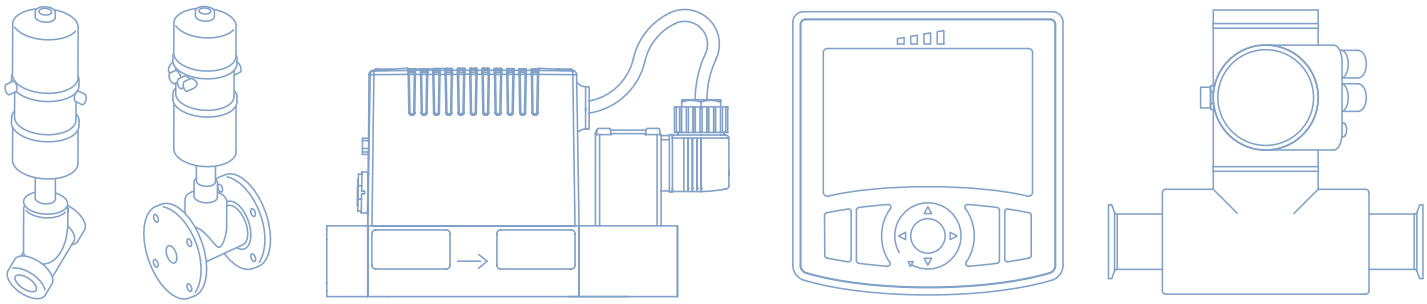
bürkert

FLUID CONTROL SYSTEMS

short form CATALOG



We make ideas flow.

Thank you for using the Burkert USA Short Form Catalog!

This catalog is designed to be a simple, friendly guide to enable you to quickly find the most suitable solution for your needs.

This condensed layout only allows us to show a small portion of our capabilities. If you do not see what you need give us a call or search our internet site. We would love to make you feel at home in the Bürkert world of fluid fascination.

The main thing to remember is that we are here to help. If you need any assistance please do not hesitate to contact us. If you're out of the US and need our help we have included a list of Bürkert offices around the world.

Our well trained team can answer any technical product questions and they also have experience in many process applications.

Online ordering is also available 24/7 at www.burkert-usa.com

We look forward to being your fluid control solution provider and working with you soon!

Phone: 1-800-325-1405
Fax: 949-223-3198
sales.us@burkert.com
www.burkert-usa.com

Quick Delivery Program

It is said that Good Things Come to Those Who Wait but that certainly does not help anyone when there is a production line down.

Burkert is pleased to offer the Quick-Delivery program, with over 500 of our top selling items in the most frequently used sizes and options including: Control Valve Packages, Diaphragm Valves, Process Transmitter/Controllers, Angle Seat Valves, Universal Control Tops, Flow Meters, and Control Cabinets - all assembled to meet your application requirements.

While this stocking program is not intended to “stock the shelves”, it is specifically targeted to assist our customers and partners with keeping their business up and running smoothly.

Products featured in this program are kept in-stock in practical quantities, and ship out the door ASAP to arrive to you in 5 days or less. (Note: If a large order depletes our inventory, standard lead time will apply until we can restock.)

There is NO additional cost to order Quick Delivery Items.

To ensure quick delivery, simply mark "Quick Delivery" next to the item number on your order or PO, or mention to your inside sales representative.

Part numbers included in this program are highlighted in this catalog for easy identification.

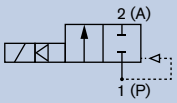
USA Select

2/2-way hard-coupled Solenoid Valve

0290

NPT 1/2" - NPT 2"

- Switches without differential pressure
- Operates on vacuum
- Process proven rugged and reliable design



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FOR DATA SHEET

One of the ever reliable workhorses of the Burkert solenoid range this hard-coupled solenoid valve with plunger piloted rugged diaphragm seal is perfect for vacuum, neutral gases and liquids. The high-performance design is available in brass and stainless steel with a range of diaphragm and seal materials.

Technical Data

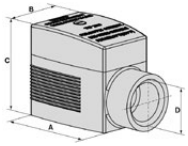
Medium temperature [1]	NBR	14 °F to 176 °F (-10 °C to +80 °C)
	FKM	32 °F to 248 °F (0 °C to +120 °C)
	EPDM	-22 °F to 248 °F (-30 °C to +120 °C)
Ambient temperature	131 °F (+55 °C), max.	
Voltage tolerance	±10%	
Duty cycle	100% continuous rating	
Body material	Brass, stainless steel 1.4581	
Seal material	FKM (NBR or EPDM on request)	
Coil material	Epoxy (Class H)	
Protection class	IP65 (with cable plug)	
Electrical connection	Cable plug acc. to DIN EN 175301-803, Form A (included)	
Accreditations	UL Listed	

[1] Max. medium temperature for versions with high power electronics (with coding... /UC) withstands 194 °F (90 °C)

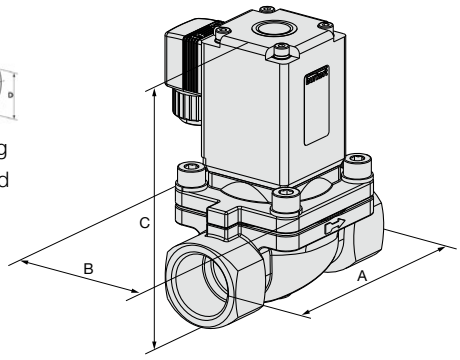
Orifice	Power consumption		Response times[2]	
[mm]	UC [W]	UC [W]	Opening [ms]	Closing [ms]
12	120	8.5	100 to 250	700 to 2000
20	145	10		
25	145	10		

[2] Measured at valve outlet at 87 PSI (6 bar) and 68 °F (+20 °C), pressure rise 0 to 90%, pressure drop 100 to 10%

Envelope Dimensions [inch] (see datasheet for details)



2509 cable plug
Form A included



Size	A	B	C
NPT 1/2"	2.93	2.75	3.75
NPT 3/4"	3.93	2.75	4.80
NPT 1"	4.52	2.75	5.15
NPT 1 1/4"	4.96	2.75	5.70
NPT 1 1/2"	4.96	2.75	6.06
NPT 2"	6.45	2.75	8.30

Options

- Cable plug with LED and varistor
- Oxygen version
- UR/cURus approval
- Flange connection acc. to DIN 2501 (DN25-50 mm)
- 24V/60 Hz, 240V/60 Hz

Ordering Chart

Port connection	Orifice	Cv	Pressure range	Power consumption		Item no. Voltage/Frequency [V/Hz]	
[inch]	[mm]		[PSI]	Inrush [W]	Hold [W]	24 V AC/DC	120 V AC/DC
Brass							
NPT 1/2	12	2.1	0-232	100	25	298109	298110
NPT 3/4	20	5.8	0-232	120	32	298115	298116
NPT 1	25	11.7	0-232	120	32	298119	298120
Stainless steel							
NPT 1/2	12	2.1	0-232	100	25	298112	298113
NPT 3/4	20	5.8	0-232	120	32	298117	298118
NPT 1	25	11.7	0-232	120	32	298122	298123

= Quick Delivery Items

Pivot Operated 3/2-way Solenoid Valve in brass or stainless steel

NPT 1/4"

- Isolating separating diaphragm design
- Long service life
- Handles slightly contaminated fluids with ease
- Manual override as standard

Direct-acting 3/2-way normally closed and normally open solenoid valves with pivoted armature and isolating diaphragm. This flexible valve series includes many options, various body materials, diaphragm and sealing materials and a range of electrical connections to suit many applications.

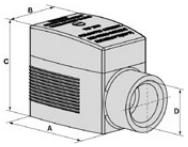
Technical Data

Temperature media	32 °F to 176 °F (0 °C to +80 °C)
Ambient temperature	131 °F (+55 °C), max.
Viscosity	Max. 37 mm^2/s
Voltage tolerance	±10%
Duty cycle	100% continuous rating
Body material	Brass (stainless steel on request)
Seal material	FKM
Coil material	Epoxy (Class H)
Power consumption	DC: 8 W, AC: 30 VA (inrush), 15 VA (hold)
Protection class	IP65, NEMA 4X for stainless steel only (with cable plug)
Electrical connection	Cable plug acc. to DIN EN 175301-803, Form A (included)
Accreditations	UL Listed

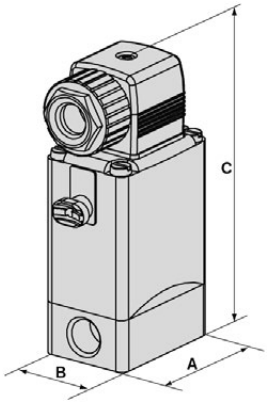
Orifice	Response times			
	AC		DC	
[mm]	Opening [ms]	Closing [ms]	Opening [ms]	Closing [ms]
2-4	8-15	8-15	10-20	10-20

Response times [ms]: Measured at valve outlet at 87 PSI (6 bar) and 68 °F (+20 °C)
Opening: pressure relief 0 to 90%, Closing: pressure relief 100 to 10%

Envelope Dimensions [inch] (see datasheet for details)



2509 cable plug
Form A included



Size	A	B	C
NPT 1/4"	1.81	1.33	3.93

Options

- Electrical position feedback
- Impulse coil
- Vacuum version
- Cable plug with LED and varistor
- Flange version Type 0331 with manifold mounting
- ATEX approval
- Version with higher purity and tightness (analysis model)
- CSA and FM approval
- Buna, EPDM, FFKM on request
- PVDF or Polypropylene on request
- 24V/60 Hz, 240/60 Hz

Ordering Chart

Port connection	Orifice	Cv	Pressure range [1]		Voltage/Frequency [V/Hz]			
					Brass		Stainless steel	
[inch]	[mm]		AC [PSI]	DC [PSI]	24/DC	120/60	24V/DC	120V/60
3-way normally closed configuration								
NPT 1/4	2	0.13	0-174	0-174	341670	327520	327518	327522
NPT 1/4	3	0.27	0-145	0-145	327249	327244	327532	327599
3-way normally open configuration								
NPT 1/4	2	0.13	0-174	0-174	327737	327739	328196	328016
NPT 1/4	3	0.27	0-145	0-145	327504	327251	-	-

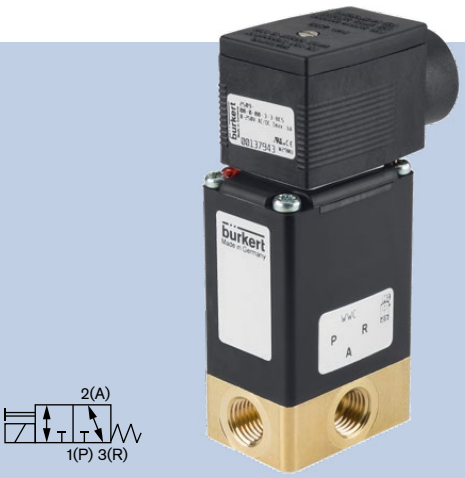
[1] Pressure range for DC valves is 25% less than stated in the table.

Pivot Operated 3/2-way Universal Solenoid Valve in brass or stainless steel

0330

NPT 1/4", 0-174 PSI max.

- Universal flow function
- Isolating separating diaphragm design
- Handles slightly contaminated fluids with ease
- Manual override as standard
- Long lifetime



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Direct-acting 3/2-way universal function (E) solenoid valves with pivoted armature and isolating diaphragm. This flexible valve series includes many options, various body materials, diaphragm and sealing materials and a range of electrical connections to suit many applications.

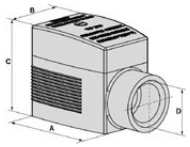
Technical Data

Temperature media	32 °F to 176 °F (0 °C to +80 °C)
Ambient temperature	131 °F (+55 °C), max.
Viscosity	Max. 37 mm^2/s
Voltage tolerance	±10%
Duty cycle	100% continuous rating
Body material	Brass or Stainless steel 1.4401
Seal material	FKM (FFKM, NBR and EPDM on request)
Coil material	Epoxy (Class H)
Power consumption	DC: 8 W, AC: 30 VA (inrush), 15 VA (hold)
Protection class	IP65, NEMA 4X for stainless steel only (with cable plug)
Electrical connection	Cable plug acc. to DIN EN 175301-803, Form A (included)
Accreditations	UL Listed

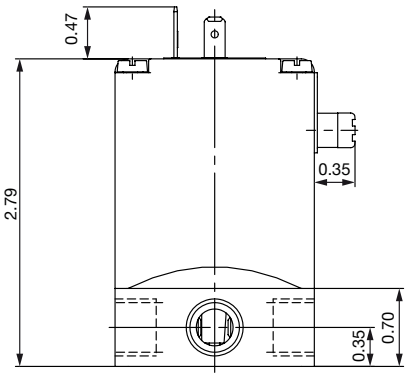
Orifice	Response times			
	AC		DC	
[mm]	Opening [ms]	Closing [ms]	Opening [ms]	Closing [ms]
2-4	8-15	8-15	10-20	10-20

Response times [ms]: Measured at valve outlet at 87 PSI (6 bar) and 68 °F (+20 °C)
Opening: pressure relief 0 to 90%, Closing: pressure relief 100 to 10%

Envelope Dimensions [inch] (see datasheet for details)



2509 cable plug
Form A included



Options

- Electrical position feedback
- Impulse coil
- Vacuum version
- Cable plug with LED and varistor
- Flange version Type 0331 with manifold mounting
- ATEX approval
- Version with higher purity and tightness (analysis model)
- CSA and FM approval
- Buna, EPDM, FFKM on request
- PVDF or Polypropylene on request
- 24V/60 Hz, 240/60 Hz
- HazLoc Class 1 Div. 2

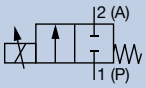
Ordering Chart

Port connection	Orifice	Cv	Pressure range [1]		Voltage/Frequency [V/Hz]	
[inch]	[mm]		AC [PSI]	DC [PSI]	24/DC	120/60
Brass valve body						
NPT 1/4	3	0.27	0-85	0-85	327514	327509
NPT 1/4	4	0.33	0-42	0-42	327895	341669
Stainless steel valve body						
NPT 1/4	3	0.27	0-85	0-85	327927	327816
NPT 1/4	4	0.33	0-42	0-42	341668	327820

[1] Pressure range for DC valves is 25% less than stated in the table.

Direct-acting 2-way standard solenoid control valve

- Excellent range
- Neutral gases and liquids
- Compact valve design
- Orifice sizes 0.05 ... 2.0 mm
- Port connection 1/8” or sub-base



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The direct-acting solenoid control valve Type 2871 is used as the regulating unit in control loops. Due to an elastomeric seat seal the valve closes tight (integrated shut-off function) ,up to the DN specific nominal pressure. The plunger of the valve is assembled frictionless, which leads to an extraordinary adjustment characteristic. This valve is particularly suitable for demanding control tasks (high control range, dry gases, etc.).

Technical Data

Setting range	1:200: DN 0.8 – 2.0mm, 1:500: DN 0.05 – 0.6mm
Materials	Brass, Stainless Steel
Actuating time	<15 ms
Pressure range	0 – 12 bar (vacuum on request)
Operating voltage	12V, 24V DC
Medium temperature	14 °F to 194 °F (-10 °C to +90 °C) (with FKM) -22 °F to 194 °F (-30 °C to +90 °C) (with EPDM)
Degree of protection	IP65

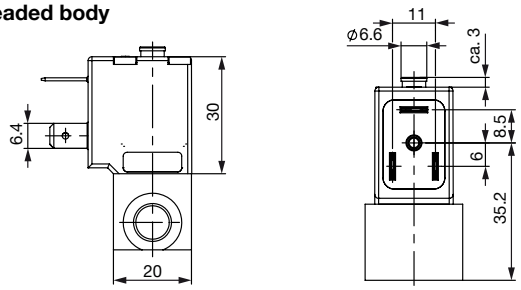
Options

- Manifold mount
- Vacuum rating
- Flying leads
- O2 cleaning
- UL recognized
- FDA conformity
- USP Class VI
- High differential pressure

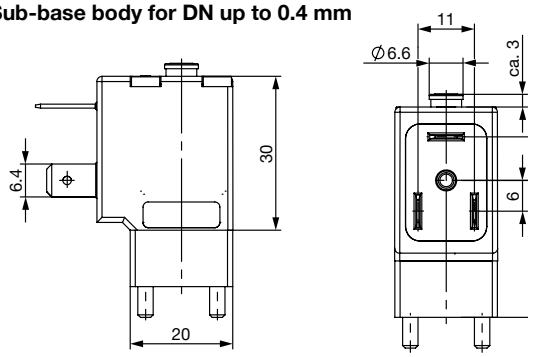
Note:
– All valves with FKM seals, others available on request
– DN 0.05 and DN 0.1 with PCTFE seat seal
– Please note that the cable plug must be ordered separately, see datasheet for Type 2507

Dimensions [mm] (see datasheet for details)

Threaded body



Sub-base body for DN up to 0.4 mm

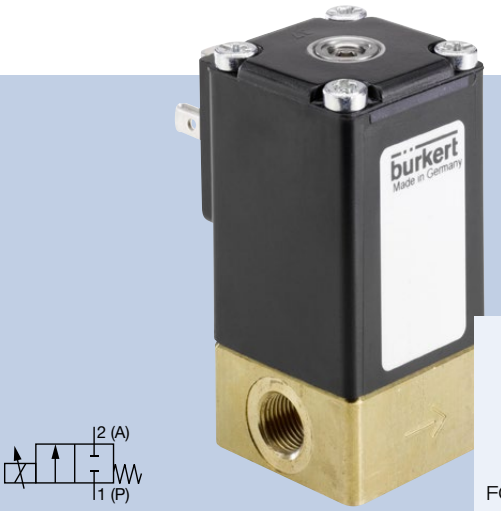


Ordering Chart

Orifice [mm]	Port connection	Kvs-value water [m³/h]	Nominal pressure [bar]	Maximum differential pressure [bar]	Item no. Brass Body	Item no. S.S. Body
0.05	NPT 1/8	0.00006	10	10	254968	254971
0.1	NPT 1/8	0.00025	10	10	254972	254973
0.2	NPT 1/8	0.001	10	10	254974	254975
0.3	NPT 1/8	0.002	10	10	254977	254978
0.4	NPT 1/8	0.004	8	8	254979	254980
0.6	NPT 1/8	0.01	6	6	254981	254982
0.6	NPT 1/8	0.01	12	12	-	360155
0.8	NPT 1/8	0.018	12	6	235996	235997
0.8	NPT 1/8	0.018	12	12	255598	255600
1.0	NPT 1/8	0.027	10	5	236002	236003
1.0	NPT 1/8	0.027	10	10	255604	255606
1.2	NPT 1/8	0.038	8	4	236263	236264
1.2	NPT 1/8	0.038	8	8	255611	255614
1.6	NPT 1/8	0.055	6	3	236269	236270
1.6	NPT 1/8	0.055	6	6	255620	255623
2.0	NPT 1/8	0.09	3	1.5	236275	236276
2.0	NPT 1/8	0.09	3	1.5	255623	255636

Direct-acting 2-way standard solenoid control valve

- Excellent range
- Neutral gases and liquids
- Compact valve design
- Orifice sizes 0.8 ... 6 mm
- Optional: Explosion-protected coil



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The direct-acting solenoid control valve Type 2873 is used as the regulating unit in control loops. Due to an elastomeric seat seal the valve closes tight (integrated shut-off function), up to the DN specific nominal pressure. The plunger of the valve is assembled frictionless, which leads to an extraordinary adjustment characteristic. This valve is particularly suitable for demanding control tasks (high control range, dry gases, etc.).

Technical Data

Setting range	1:200
Materials	Brass, Stainless Steel
Actuating time	<20 ms
Pressure range	0 – 16 bar (vacuum on request)
Operating voltage	12V, 24V DC
Medium temperature	14 °F to 194 °F (-10 °C to +90 °C) (with FKM) -22 °F to 194 °F (-30 °C to +90 °C) (with EPDM)
Degree of protection	IP65

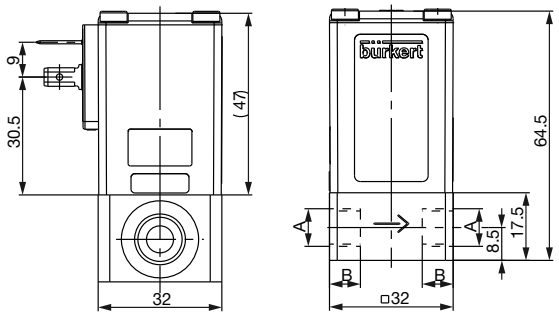
Options

- Manifold mount
- Vacuum rating
- Flying leads
- O2 cleaning
- UL recognized
- FDA conformity
- USP Class VI
- High differential pressure
- ATEX

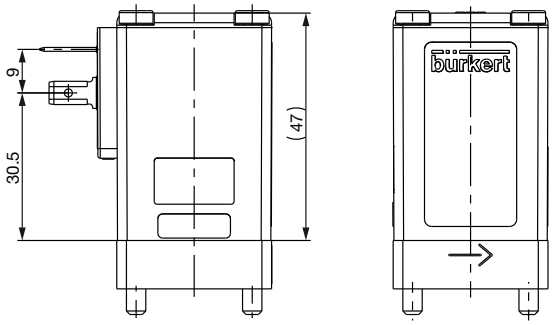
Note:
– All valves with FKM seals, others available on request
– Please note that the cable plug must be ordered separately, see datasheet for Type 2518 (cable plug Type 2518, form A DIN 175301-803)
– For liquids, select version for high differential pressure (NF64)
– Type 8605 PWM controller needed with device

Dimensions [mm] (see datasheet for details)

Threaded body



Sub-base body



Ordering Chart

Orifice [mm]	Port connection	Kvs-value water [m³/h]	Nominal pressure [bar]	Maximum differential pressure [bar]	Item no. Brass Body	Item no. S.S. Body
0.8	NPT 1/8	0.018	16	8	236229	236230
0.8	NPT 1/8	0.018	16	16	255643	255646
1.2	NPT 1/8	0.040	12	6	236231	236232
1.2	NPT 1/8	0.040	12	12	255654	255656
1.5	NPT 1/8	0.060	10	5	236233	236234
1.5	NPT 1/8	0.060	10	10	255658	255659
2.0	NPT 1/4	0.100	8	4	236237	236238
2.0	NPT 1/4	0.100	8	8	254369	255670
2.5	NPT 1/4	0.150	5	2.5	236239	236241
2.5	NPT 1/4	0.150	5	5	255674	255676
3.0	NPT 1/4	0.220	3.5	1.75	236242	236243
3.0	NPT 1/4	0.220	3.5	3.5	255683	255685
4.0	NPT 1/4	0.320	2	1	236244	236245
4.0	NPT 1/4	0.320	2	2	255692	255693

Direct-acting 2-way standard solenoid control valve

- Excellent range
- Neutral gases and liquids
- Compact valve design
- Orifice sizes 2 ... 9.5 mm
- Optional: Explosion-protected coil

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The direct-acting solenoid control valve Type 2875 is used as the regulating unit in control loops. Due to an elastomeric seat seal the valve closes tight (integrated shut-off function), up to the DN specific nominal pressure. The plunger of the valve is assembled frictionless, which leads to an extraordinary adjustment characteristic. This valve is particularly suitable for demanding control tasks (high control range, dry gases, etc.).

Technical Data

Setting range	1:200
Materials	Brass, Stainless Steel
Actuating time	<25 ms
Pressure range	0 – 25 bar (vacuum on request)
Operating voltage	12V, 24V DC
Medium temperature	14 °F to 194 °F (-10 °C to +90 °C) (with FKM) -22 °F to 194 °F (-30 °C to +90 °C) (with EPDM)
Degree of protection	IP65

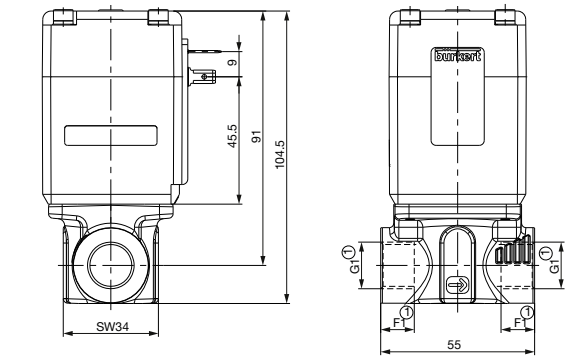
Options

- Manifold mount
- Vacuum rating
- Flying leads
- O2 cleaning
- UL recognized
- FDA conformity
- USP Class VI
- High differential pressure
- ATEX

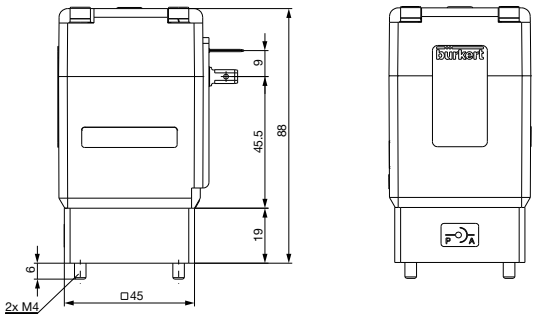
Note:
– All valves with FKM seals, others available on request
– Please note that the cable plug must be ordered separately, see datasheet for Type 2518 (cable plug Type 2518, form A DIN 175301-803)
– For liquids select version with high differential pressure (NF64)
– Type 8605 PWM controller needed with device

Dimensions [mm] (see datasheet for details)

Threaded body



Sub-base body



Ordering Chart

Orifice [mm]	Port connection	Kvs-value water [m³/h]	Nominal pressure [bar]	Maximum differential pressure [bar]	Item no. Brass Body	Item no. S.S. Body
2.0	NPT 3/8	0.12	25	12.5	-	236900
2.0	NPT 3/8	0.12	25	25	255705	255707
3.0	NPT 3/8	0.25	10	5	236902	236904
3.0	NPT 3/8	0.25	10	10	251069	255713
4.0	NPT 1/2	0.45	8	4	236909	236913
4.0	NPT 1/2	0.45	8	8	255728	255732
6.0	NPT 1/2	0.8	4	2	236917	236921
6.0	NPT 1/2	0.8	4	4	255742	255745
8.0	NPT 1/2	1.1	2	1	236923	236925
8.0	NPT 1/2	1.1	2	2	255751	255752
9.5	NPT 1/2	1.4	0.7	0.35	314555	314559
9.5	NPT 1/2	1.4	0.7	0.7	314556	314560

2/2 way Proportional Valve (motor-driven)

3285

- Actuator isolated from flow path
- Excellent range and fast response times
- Low power consumption
- Orifice sizes 8 to 25 mm
- Versions: Standard, positioner, process controller

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FOR DATA SHEET

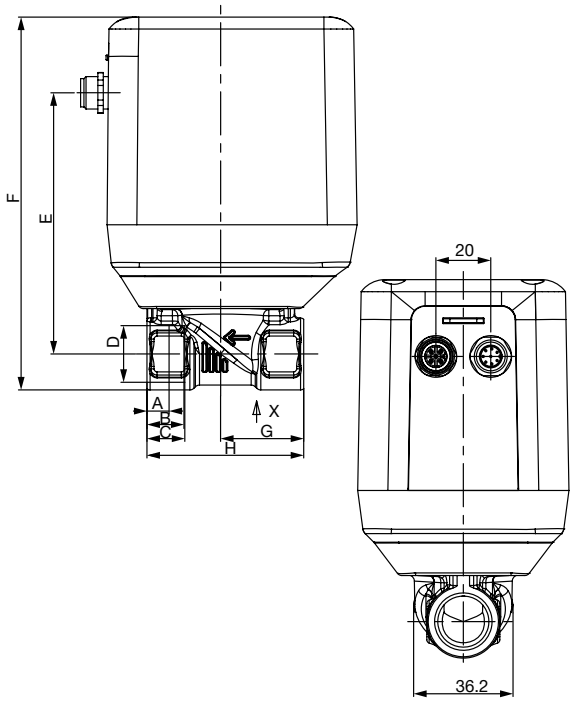
The direct-acting motor valve of type 3285 is used for dosing of liquids and gases in closed or open control loops. The valve features a stepper motor as the actuator. The integrated electronics simplifies the process integration; additional actuation modules are not necessary. The motor's power consumption to hold a specific opening position of the valve is zero. This key feature can reduce the energy consumption of a plant dramatically and thus make it more efficient. Type 3285 is available as a standard ON/OFF or proportional valve, as a version with integrated positioner and as a version with integrated process controller.

Technical Data

Setting range	1:100
Materials	Brass, Stainless Steel
Actuating time	4 s (0-100% open)
Pressure range	0 – 6 bar
Operating voltage	12V, 24V DC
Medium temperature	32 °F to 158 °F (0 °C to 70 °C)
Degree of protection	IP50

Note:
– All vales are process controller version with 4-20mA/bus input and 4-20mA output signals

Dimensions [mm] (see datasheet for details)



A	B	C	D	E	F	G	H	H
8.2	13.7	-	NPT ½	97	138	31	58	26.6
-	-	14	G ½	97	138	31	58	26.6
8.6	14	-	NPT ¾	103.5	147	43	80	32
-	-	16	G ¾	103.5	147	43	80	32
10.2	16.8	-	NPT 1	108.5	156.5	49	95	41
-	-	18	G 1	108.5	156.5	49	95	41

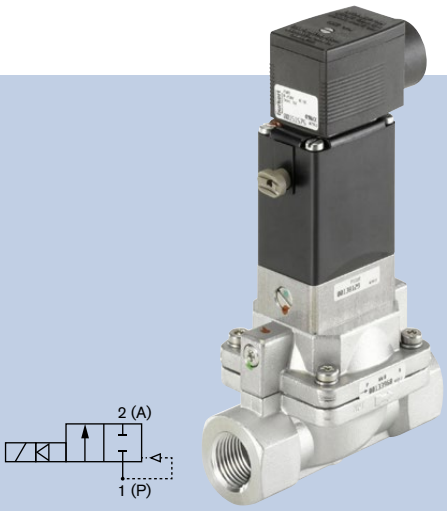
Ordering Chart

Orifice [mm]	Port connection	Kvs-value water [m³/h]	Nominal pressure [bar]	Item no. Brass Body	Item no. S.S. Body
8.0	NPT 1/2	1.8	6	287902	287908
10.0	NPT 1/2	2.5	6	287903	287909
12.0	NPT 3/4	3.9	6	287904	287910
15.0	NPT 3/4	5.4	6	287905	287911
20.0	NPT 1	8.1	6	287906	287912
25.0	NPT 1	9.6	6	287907	287913

2/2-way Servo-Assisted Solenoid Valve with Isolated Pilot

NPT 1/2" - NPT 2"

- Unique isolated technology for slightly contaminated fluids
- Independently adjustable open / close rate
- Easily configurable for normally open
- Manual override



CLICK ME

FOR DATA SHEET

Completely unique servo-assisted solenoid valve with isolated pivoted armature pilot. This valve design is much less sensitive to fluid contamination than plunger operated valves and therefore offers many advantages in the process environment. The pilot section can be rotated in the field to make the valve normally open.

Technical Data

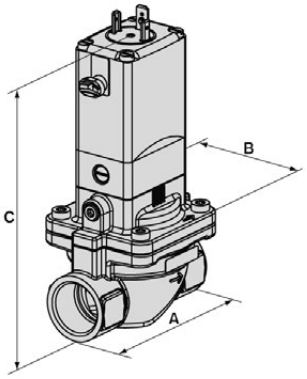
Pressure range	2.9 -145 PSI (0.2-10 bar)
Temperature media	32 °F to 194 °F (0 °C to +90 °C)
Ambient temperature	131 °F (+55 °C), max.
Body material	Brass or Stainless steel
Seal material	NBR with brass, FKM with Stainless
Coil material	Epoxy (Class H)
Power consumption	DC: 8 W, AC: 21 VA (inrush), 12 VA (hold)
Protection class	IP65 (with cable plug)
Electrical connection	Cable plug acc. to DIN EN 175301-803 Form A (included)
Accreditations	UL Listed

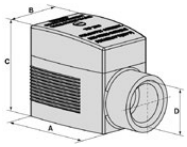
To open the full cross-section a pressure difference of 7.2 PSI (0.5 bar) is required.
The switching times can be changed by turning the flow control screw (on the cover).

Response times[1)]	
Opening [s]	**Closing [s]**
0.1-0.8	1.0-4.0

[1)] Measured at valve outlet at 87 PSI (6 bar) and 68 °F (+20 °C)
Opening: pressure rise 0 to 90%, *Closing*: pressure drop 100 to 10%

Envelope Dimensions [inch] (see datasheet for details)





2509 cable plug
Form A included

Size	A	B	C
1/2"	2.56	1.57	4.84
3/4"	3.94	2.36	5.16
1"	4.53	2.76	5.55
1 1/4"	4.96	3.35	5.79
1 1/2"	4.96	3.35	6.14
2"	6.46	4.53	6.97
2 1/2"	7.09	4.53	7.28

Ordering Chart

Port connection [inch]	Orifice [mm]	Cv	Pressure range [PSI]	Item no. Voltage/Frequency [V/Hz] 24 V DC	120 V/50-60 Hz
Brass					
NPT 1/2	13	4.66	2.9-145	329291	329285
NPT 3/4	20	5.83	2.9-145	329299	329293
NPT 1	25	11.65	2.9-145	329288	329286
NPT 1 1/4	32	23.30	2.9-145	341697	329333
NPT 1 1/2	40	23.30	2.9-145	329303	329311
NPT 2	50	46.60	2.9-145	329298	329284
Stainless steel					
NPT 1/2	13	4.66	2.8-145	329304	329282
NPT 3/4	20	5.83	2.8-145	329294	329314
NPT 1	25	11.65	2.8-145	329310	329290
NPT 1 1/4	32	23.30	2.8-145	329337	329328
NPT 1 1/2	40	23.30	2.8-145	329305	329292
NPT 2	50	46.60	2.8-145	329323	329324

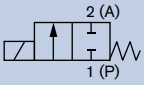
Options

- Normally open
- Electrical position feedback
- Impulse coil
- Cables plug with LED
- Cable plug with varistor
- FM Class 1, Div 1&2, CSA
- Ex-version available
- Atex version available
- Range of diaphragm seals to suit aggressive media
- 24V/60 Hz, 240V/60 Hz
- HazLoc Class 1 Div. 2

Plunger Operated 2/2-way Solenoid Valve

NPT 1/8" or manifold mounting

- Brass or stainless steel
- FKM seal as standard
- Slip over coil can be rotated in 4 x 90 degrees



Shown without plug

CLICK ME

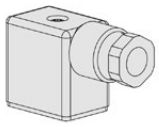
FOR DATA SHEET

Direct-acting miniature solenoid valve which is plunger operated for neutral gases, liquids and technical vacuum. Available in standalone or manifold mount versions, there is also an “analysis” version which is manufactured under cleanroom conditions.

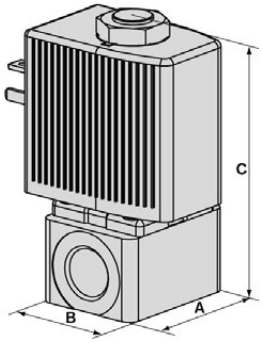
Technical Data

Body material	
Type 6011	Brass, polyamide (PA), SS 1.4305
Type 6011 A	Brass, SS 1.4305
Sealing material	FKM
Temperature media	14 °F to 212 °F (-10 °C to +100 °C)
Ambient temperature	131 °F (+55 °C), max.
Body material	Brass or stainless steel 1.4305
Seal material	FKM
Coil material	Epoxy (Class H)
Viscosity	max. 21 mm^2/s
Port connection	
Type 6011	NPT 1/8
Voltage tolerance	±10%
Duty cycle	
Single valve	100% continuous rating
Power consumption	DC: 6.5 W, AC: 4.5 W
Protection class	IP65 (with cable plug)
Electrical connection	Cable plug Type 2507 Form B Industry standard (included)
Accreditations	UL Recognized

Envelope Dimensions [inch] (see datasheet for details)



2507 cable plug
Form B included



Size	A	B	C
1/8"	.98	.78	1.98

Orifice [mm]	Response times[1] Opening [ms]	Closing [ms]
1.2	8-12	14-16
1.6		
2.0	8-12	14-16
2.4		

[1] Measured at valve outlet at 87 PSI (6 bar) and 68 °F (+20 °C)
Opening: pressure rise 0 to 90%, *Closing*: pressure drop 100 to 10%

Ordering Chart

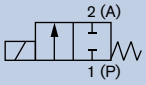
Port connection [inch]	Orifice [mm]	Cv	Pressure range [PSI] [AC]	[DC]	Item no. Voltage/Frequency [V/Hz] 24 V DC	120 V/60 Hz
Brass						
NPT 1/8	1.6	0.07	0-174	0-87	461767	461769
NPT 1/8	2.0	0.13	0-116	0-65	461771	461773
NPT 1/8	2.4	0.15	0-87	0-43	461775	461777
Stainless steel						
NPT 1/8	1.6	0.07	0-174	0-87	461779	461781
NPT 1/8	2.0	0.13	0-116	0-65	461783	461785
NPT 1/8	2.4	0.15	0-87	0-43	461787	461789

Direct-acting 2/2-way plunger valve

NPT 1/8" or manifold mounting

- Brass or stainless steel
- FKM seal as standard
- Slipped over coil system
- Simple and fast flange or manifold mounting

CE



Shown without plug

CLICK ME

FOR DATA SHEET

The 7011 valve is a direct-acting plunger valve. The stopper and the core guide tube are welded together to enhance pressure resistance and leak-tightness. Various body and seal material combinations are available depending on the actual application.

Technical Data

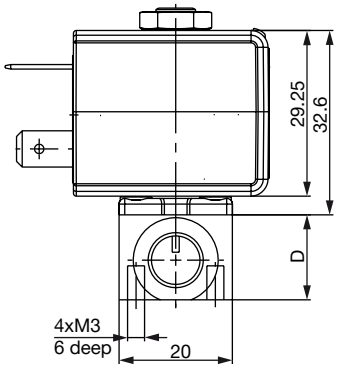
Body material	Brass or stainless steel 1.4305
Seal material	FKM
Coil material	Epoxy (Class H)
Temperature media	14 °F to 212 °F (-10 °C to +100 °C)
Ambient temperature	131 °F (+55 °C), max.
Viscosity	max. 21 mm^2/s
Port connection	NPT 1/8
Voltage tolerance	±10%
Duty cycle Single valve	 100% continuous rating
Power consumption	DC: 7 W, AC: 6 W
Protection class	IP65 (with cable plug)
Electrical connection	Cable plug Type 2507 Form B Industry standard (included)
Accreditations	CE

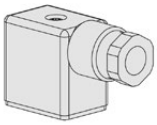
Orifice [mm]	Response times[1] Opening [ms]	Closing [ms]
1.2	8-15	10-17
1.6		
2.0	8-15	10-17
2.4		

[1] Measured at valve outlet at 87 PSI (6 bar) and 68 °F (+20 °C)
Opening: pressure rise 0 to 10%, *Closing*: pressure drop 100 to 90%

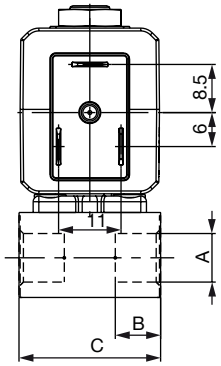
Envelope Dimensions [inch] (see datasheet for details)

Threaded version





2507 cable plug
Form B not included



Port connection	A	B	C	D
Thread	NPT 1/8	8	25	15

Ordering Chart

Port connection [inch]	Orifice [mm]	Cv	Pressure range [PSI] [AC]	[DC]	Item no. Voltage/Frequency [V/Hz] 24 V DC	120 V/60 Hz
Brass						
NPT 1/8	1.6	0.07	0-435	0-188	20009651	20009665
NPT 1/8	2.0	0.13	0-319	0-130	20009653	20009667
NPT 1/8	2.4	0.15	0-188	0-73	20009655	20009668
Stainless steel						
NPT 1/8	1.6	0.07	0-435	0-188	20009656	20009669
NPT 1/8	2.0	0.13	0-319	0-130	20009657	20009670
NPT 1/8	2.4	0.15	0-188	0-73	20009658	20009671

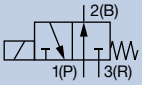
Direct-acting 3/2-way plunger valve

7012

NPT 1/8" or manifold mounting

- Brass or stainless steel
- FKM seal as standard
- Slipped over coil system
- Simple and fast push-in, flange or manifold mounting

CE



Shown without plug

CLICK ME

FOR DATA SHEET

The 7012 valve is a direct-acting plunger valve. The stopper and the core guide tube are welded together to enhance pressure resistance and leak-tightness. Various body and seal material combinations are available depending on the actual application.

Technical Data

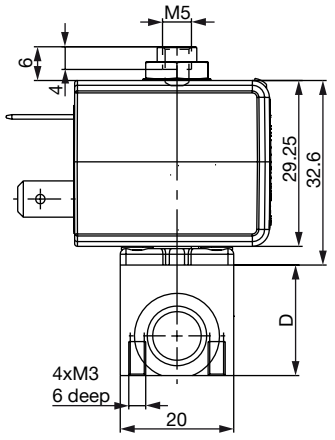
Body material	Brass or stainless steel 1.4305
Seal material	FKM
Temperature media	14 °F to 212 °F (-10 °C to +100 °C)
Ambient temperature	131 °F (+55 °C), max.
Coil material	Epoxy (Class H)
Viscosity	max. 21 mm^2/s
Port connection	NPT 1/8
Voltage tolerance	±10%
Duty cycle Single valve	100% continuous rating
Power consumption	DC: 7 W, AC: 6 W
Protection class	IP65 (with cable plug)
Electrical connection	Cable plug Type 2507 Form B Industry standard (included)
Accreditations	CE

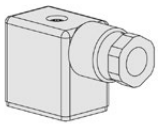
Orifice [mm]	Response times[1] Opening [ms]	Closing [ms]
1.2	8-12	8-12
1.6		
2.0	8-12	8-12
2.4		

[1] Measured at valve outlet at 87 PSI (6 bar) and 68 °F (+20 °C)
Opening: pressure rise 0 to 10%, *Closing*: pressure drop 100 to 90%

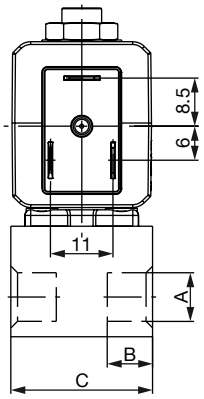
Envelope Dimensions [mm] (see datasheet for details)

Threaded version





2507 cable plug
Form B not included



Port connection	A	B	C	D
Thread	NPT 1/8	8	25	19.5

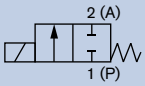
Ordering Chart

Port connection [inch]	Orifice [mm]	Cv	Pressure range [PSI] [AC]	[DC]	Item no. Voltage/Frequency [V/Hz] 24 V DC	120 V/60 Hz
Brass						
NPT 1/8	1.2	0.05	0-188	0-188	20009660	20009672
NPT 1/8	1.6	0.07	0-109	0-109	20009661	20009673
Stainless steel						
NPT 1/8	1.2	0.05	0-188	0-188	20009662	20009674
NPT 1/8	1.6	0.07	0-109	0-109	20009664	20009675

Plunger Operated 2/2-way Solenoid Valve

NPT 1/8" - NPT 1/4"

- Normally close
- With threaded body in brass or SS
- Slip over coil can be rotated in 4 x 90 degrees
- FKM seal material with high quality standard



Supplied as shown

CLICK ME

FOR DATA SHEET

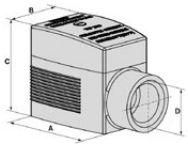
Direct-acting small solenoid valve which is plunger operated for neutral gases, liquids and technical vacuum. Special versions are also available for use with steam.

Technical Data

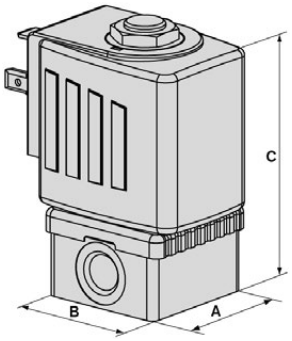
Body material	
Type 6013	Brass, Stainless steel 1.4305
Seal material	FKM, (PTFE/Graphite EPDM on request)
Temperature media	14 °F to 212 °F (-10 °C to +100 °C)
Ambient temperature	131 °F (+55 °C), max.
Viscosity	Max. 21 mm^2/s
Voltage tolerance	±10%
Duty cycle	Single valve 100% ED
Body material	Brass or Stainless steel 1.4305
Seal material	FKM
Coil insulation class	Epoxy (class H)
Power consumption	AC: 24 VA (inrush), 17 VA (hold) DC: 8 W
Protection class	IP65
Electrical connection	Cable plug acc. to DIN EN 175301-803, Form A (included)
Response times[1]	
Opening	20 ms
Closing	30 ms
Accreditations	UL Listed

[1] Measured at valve outlet at 87 PSI (6 bar) and 68 °F (+20 °C)
Opening: pressure rise 0 to 90%, *Closing*: pressure drop 100 to 10%

Envelope Dimensions [inch] (see datasheet for details)



2509 cable plug
Form A included



Size	A	B	C
1/8"	1.28	1.37	2.59
1/4"	1.92	1.37	2.82

Options

- Normally open
- Impulse version
- Cable plug with LED and varistor
- PTFE/graphite seal to 356 °F
- SIL certificate
- UL / UR
- ATEX version
- 24V/60 Hz, 240V/60 Hz

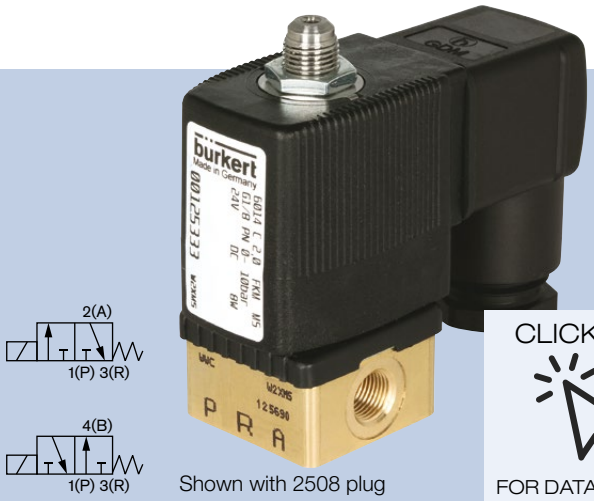
Ordering Chart

Port connection [inch]	Orifice [mm]	Cv	Pressure range [PSI] [AC]	Pressure range [PSI] [DC]	Item no. Voltage/Frequency [V/Hz] 24 V DC	Item no. Voltage/Frequency [V/Hz] 120 V/60 Hz
Brass						
NPT 1/8	2	0.14	0-362	0-174	332772	341755
NPT 1/8	2.5	0.19	0-232	0-145	332761	341756
NPT 1/8	3	0.27	0-145	0-87	332775	332762
NPT 1/4	3	0.27	0-145	0-87	332773	332758
NPT 1/4	4	0.35	0-58	0-22	332750	332757
Stainless steel						
NPT 1/8	2	0.14	0-362	0-174	332768	332753
NPT 1/8	3	0.27	0-145	0-87	341751	332755
NPT 1/4	3	0.27	0-145	0-87	332770	332769
NPT 1/4	4	0.35	0-58	0-22	341753	341757

Compact Plunger Operated 3/2-way Valve

NPT 1/8" & NPT 1/4"

- Reliable double seated plunger operation
- Threaded or flange version
- High quality FKM seal as standard
- Slip over coil can be rotated in 4 x 90 degrees



Shown with 2508 plug

CLICK ME

FOR DATA SHEET

Direct-acting 3/2-way, normally closed or normally open solenoid valve. It is for neutral gases and liquids and it is also suitable for technical vacuum.

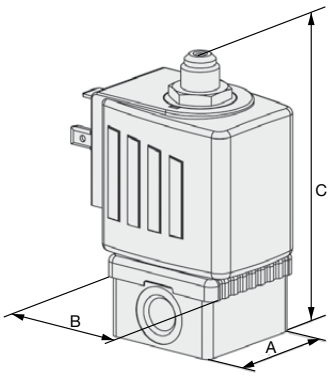
Technical Data

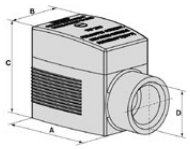
Temperature media	14 °F to 212 °F (-10 °C to +100 °C)
Ambient temperature	14 °F to 131 °F (-10 °C to +55 °C)
Viscosity	Max. 21 mm²/s
Voltage tolerance	+10%
Duty cycle	
Single valve	100% continuous rating
for block mounting on sub-base	Intermittent 60% (30 min)
Body material	Brass, Polyamide (Flange), (SS optional)
Seal material	FKM (EPDM on request)
Coil insulation class	Polyamide class B (Epoxy class H on request)
Coil material	Polyamide (Class B)
Protection class	IP65, NEMA 4 (with cable plug)
Electrical connection	Cable plug acc. to DIN EN 175301-803 Form A (included)
Accreditations	UL Listed

Orifice [mm]	Power consumption Inrush AC	Power consumption Hold AC	Response times Opening [ms]	Response times Closing [ms]
1.5	24 VA	17 VA (8 W)	10-15	15-20
2.0	24 VA	17 VA (8 W)	10-15	15-20
2.5	24 VA	17 VA (8 W)	15-20	10-22

Response times [ms]: Measured at valve outlet at 87 PSI (6 bar) and 68 °F (+20 °C)
Opening: pressure build-up 0 to 90%, *Closing*: pressure relief 100 to 10%

Envelope Dimensions [inch] (see datasheet for details)





2509 plug Form A

Size	A	B	C
NPT 1/8"	1.25	1.37	2.88
NPT 1/4"	1.81	1.37	3.08

Options

- Cable plug with LED and varistor
- Impulse version
- Oxygen version
- Vacuum version
- Analysis version
- 24V/60 Hz, 240/60 Hz
- Hazardous area approvals
- Explosion-proof version
- Further circuit functions
- SIL - certificated
- UL and CSA approvals

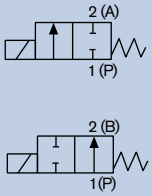
Ordering Chart

Port connection [inch]	Circuit function	Orifice [mm]	Cv	Pressure range [PSI]	Item no. Voltage/Frequency [V/Hz] 24 V DC	120 V/60 Hz
Brass						
NPT 1/8	C (3/2-way normally closed)	1.5	0.08	0-232	332738	332733
NPT 1/8		2.0	0.13	0-145	332727	332724
NPT 1/4		2.0	0.13	0-145	332737	332739
NPT 1/4		2.5	0.18	0-87	332722	-
NPT 1/8	D (3/2-way normally open)	1.5	0.08	0-232	332742	-
NPT 1/8		2.0	0.13	0-145	332732	-
NPT 1/4		2.0	0.13	0-145	332721	-
NPT 1/4		2.5	0.18	0-87	332723	-
Stainless steel						
NPT 1/8	C (3/2-way NC)	1.5	0.08	0-232	332720	-
NPT 1/4		2.0	0.13	0-145	332741	332728
NPT 1/8	T (universal)	1.5	0.08	0-101	332729	-

Direct-acting 2/2-way plunger valve

NPT 1/4"

- Direct-acting, powerful valve with diameter of up to DN 12
- Vibration-proof, bolted coil system
- Increased leak-tightness with welded plunger guiding tube
- Explosion proof versions



CLICK ME

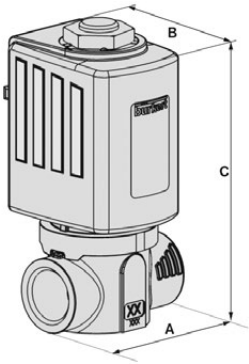
FOR DATA SHEET

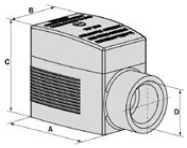
Direct-acting plunger valve. The stopper and plunger guiding tube are welded together to enhance pressure resistance and leak-tightness.

Technical Data

Medium temperature	
normally closed	-10 °C to +140 °C
normally open	-10 °C to +100 °C
Ambient temperature	-10 °C to +55 °C
Viscosity	Max. 21 mm²/s
Voltage tolerance	±10%
Duty cycle	Single valve 100% ED
Body material	Brass or stainless steel 1.4404 (316L)
Coil material	Epoxy (Class H)
Seal material	FKM, (PTFE/FKM and PTFE/graphite for high temperature versions, EPDM on request)
Electrical connection	According to DIN EN 175301-803 Form A for cable plug Type 2508 (not included)
Protection class	IP65 with Cable Plug
Accreditations	UL Listed

Envelope Dimensions [inch] (see datasheet for details)





2509 cable plug Form A included

Size	A	B	C
1/4"	2.20	2.22	3.92
3/8"	2.20	2.22	4.05
1/2"	2.36	2.22	4.12

Options

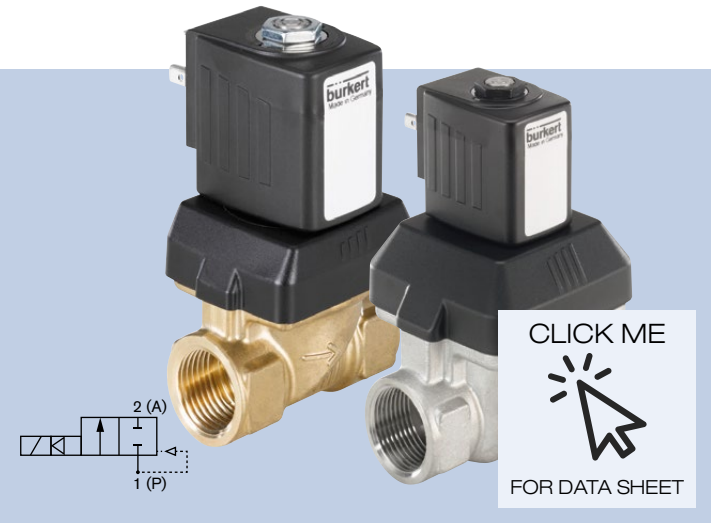
- Vacuum version
- Analysis version
- 24V/60 Hz, 240/60 Hz
- Atex, UL Recognized, NEMA 4X
- High pressure versions up to 350 bar

Ordering Chart

Port connection [inch]	Circuit function	Orifice [mm]	Cv	Pressure range [PSI] DC	Pressure range [PSI] AC	Item no. Voltage/Frequency [V/Hz] 24 V DC	Item no. Voltage/Frequency [V/Hz] 120 V/60 Hz
Brass							
NPT 1/4	normally closed	3.0	0.32	0-435	0-406	307748	307780
NPT 1/4		4.0	0.62	0-174	0-188.5	307749	307781
NPT 1/4		6.0	1.09	0-44	0-79.7	307750	307782
NPT 3/8		3.0	0.32	0-435	0-406	307751	307783
NPT 3/8		4.0	0.62	0-174	0-188.5	307752	307784
NPT 3/8		6.0	1.09	0-44	0-79.7	307753	307785
NPT 3/8		8.0	1.84	0-15	0-33	307754	307786
NPT 1/2		6.0	1.09	0-44	0-87	307755	307787
NPT 1/2		8.0	1.84	0-15	0-43.5	307756	307788
NPT 1/2		10.0	2.08	0-6	0-18.85	307757	307789
Stainless steel							
NPT 1/4	normally closed	3.0	0.32	0-435	0-406	307764	307796
NPT 1/4		4.0	0.62	0-174	0-188.5	307765	307797
NPT 1/4		6.0	1.09	0-44	0-79.7	307766	307798
NPT 3/8		3.0	0.32	0-435	0-406	307767	307799
NPT 3/8		4.0	0.62	0-174	0-188.5	307768	307800
NPT 3/8		6.0	1.09	0-44	0-79.7	307769	307801
NPT 3/8		8.0	1.84	0-15	0-33	307770	307802
NPT 1/2		6.0	1.09	0-44	0-87	307771	307803
NPT 1/2		8.0	1.84	0-15	0-43.5	307772	307804
NPT 1/2		10.0	2.08	0-6	0-18.85	307773	307805
NPT 1/2		12.0	2.31	-	0-14.5	307774	307806

2/2-way Solenoid Valve for liquids and gases

- Coupled spring diaphragm system opened
- Waterhammer free and low noise
- Flow-optimized housing and diaphragm geometry for high flow



Type 6213 EV is a 2/2-way normally closed solenoid valve with a spring coupled diaphragm system. It is universally used for liquids. A minimum differential pressure of 1.5 PSI is required for full opening.

Technical Data

Orifice	Standard DN10-40 mm
Body material	Brass acc. to DIN EN 50930-6, stainless steel 1.4408 (316)
Inner part of valve	
Brass body	Brass, stainless steel and PPS
SS body	Stainless steel and PPS
Seal material	NBR, FKM, (EPDM on request)
Medium	
NBR	Neutral fluids, water, hydraulic oil, oil without additives
FKM	Per-solutions, hot oils with additives
EPDM	Oil and fat-free fluids and gases
Ambient temperature	131 °F (+55 °C), max.
Medium temperature	
NBR	14 °F to 176 °F (-10 °C to +80 °C)
FKM	32 °F to 194 °F (0 °C to +90 °C) with polyamide coil 32 °F to 248 °F (0 °C to +120 °C) with epoxy coil
EPDM	-22 °F to 194 °F (-30 °C to +90 °C) with polyamide coil -22 °F to 212 °F (-30 °C to +100 °C) with epoxy coil
Voltages	24V/DC, 120/60, (24/60, 240/60 on request)
Voltage tolerance	±10%
Duty cycle	100% continuous rating
Electrical connection	Cable plug acc. to DIN EN 175301-803, Form A (included)
Protection class	IP65 with cable plug
Installation	As required, preferably with actuator upright
Response times[1]	0.1-4 seconds (depending on orifice and differential pressure)
Accreditations	UL Listed

[1] Measured at valve outlet at 87 PSI (6 bar) and 68 °F (+20 °C)
Opening: pressure build-up 0 to 90%, *Closing*: pressure drop 100 to 10%

Ordering Charts

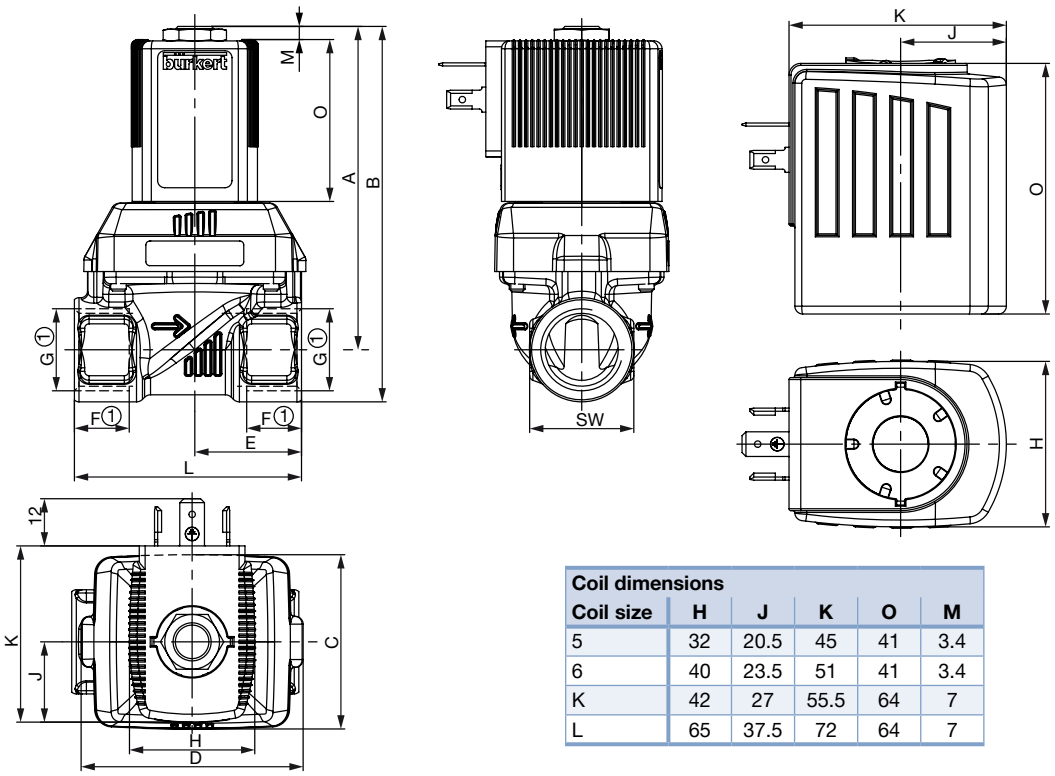
Port connection [inch]	Orifice [mm]	Cv	Pressure range [PSI]	Power consumption Inrush [VA]	Hold [VA]	Hold [W]	Item no. Voltage/Frequency [V/Hz] 24 V DC	110 V/50 Hz
Brass UL Listed								
NPT 3/8	10	2.4	1.5 – 145	34	14	8	280512	280511
NPT 1/2	13	4.2	1.5 – 145	36	14	8	280508	280506
NPT 3/4	20	9.8	1.5 – 145	38	14	8	280502	280500
NPT 1	20	9.8	1.5 – 145	160	38	18	280486	276442
Stainless steel UL Listed								
NPT 1/4	10	2.4	1.5 – 145	34	14	8	280432	280431
NPT 3/8	10	2.4	1.5 – 145	34	14	8	280426	280425
NPT 1/2	13	4.2	1.5 – 145	36	14	8	280420	280418
NPT 3/4	20	9.8	1.5 – 145	38	14	8	280415	280413
NPT 1	20	9.8	1.5 – 145	38	14	8	280411	280409

Options

- Cables plug with LED
- Cables plug with varistor
- HazLoc Class 1 Div. 2

Port connection [inch]	Orifice [mm]	Cv	Pressure range [PSI]	Weight [lbs]	Item no. Voltage/Frequency [V/Hz] 24 V DC	120 V/60 Hz
Brass UL Recognized						
NPT 1 1/4	25	12.9	1.5 – 145	4.8	273558	333885
NPT 1 1/2	40	35.1	1.5 – 87	8.8	273559	333912
NPT 2	40	35.1	1.5 – 87	9.2	273560	333915
Stainless steel UL Recognized						
NPT 1 1/4	25	12.9	1.5 – 145	4.9	273643	333906
NPT 1 1/2	40	35.1	1.5 – 87	8.2	273645	333933
NPT 2	40	35.1	1.5 – 87	9.1	273646	333939

Dimensions [inch] (see datasheet for details)

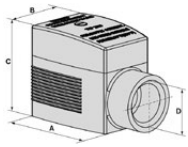


Coil dimensions					
Coil size	**H**	**J**	**K**	**O**	**M**
5	32	20.5	45	41	3.4
6	40	23.5	51	41	3.4
K	42	27	55.5	64	7
L	65	37.5	72	64	7

① The dimensions F1 and G 1 apply to G-threads
The dimensions F2 and G 2 apply to NPT-threads
The dimensions F3 and G 3 apply to RC-threads

② only as brass - thread port version

③ only as stainless steel - thread port version



2509 plug Form A included

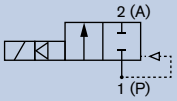
DN	A	B	C	D	E (MS/VA)	* NPT F2 ①	* NPT G 2 ①	L (MS/VA)	SW	coil size
10	2.84	3.28	1.44	1.84	.88	.40	NPT 1/4	2	.88	5 and 6
						.41	NPT 3/8			
10 ②	2.92	3.46			.98	.52	NPT 1/2	2	1.0	
10 ③								2.2		
13 ②	3.30	3.83	1.78	2.27	1.10	.54	NPT 1/2	2.32	1.08	5 and 6
13 ③					1.3			2.6		
13	3.38	4.02			1.3	.56	NPT 3/4	2.6	1.28	
20	3.88	4.52	2.6	3.06	37	.56	NPT 3/4	3.06	1.28	5 and 6
20	3.98	4.80			1.5	.67	NPT 1	3.2	1.64	
13 ②	4.37	4.91	1.9	2.2	1.09	.54	NPT 1/2	2.32	1.08	K and L
13 ③					1.3			2.6		
13	4.45	5.09			1.3	.56	NPT 3/4	2.6	1.28	
20	4.95	5.59	2.6	3.06	1.4	.56	NPT 3/4	3.06	1.28	K and L
20	5.06	5.87			1.5	.67	NPT 1	3.2	1.6	
25	5.73	6.53	3.08	3.52	1.8	.67	NPT 1	3.8	1.6	K and L
25	5.93	6.93			1.8	.69	NPT 1 1/4	3.8	2	
40 ②	6.15	7.15	4.18	4.7	2.44	.69	NPT 1 1/4	5.04	2	K and L
40	6.37	7.57			2.44	.69	NPT 1 1/2	5.04	2.4	
40	6.61	8.01			2.56	.70	NPT 2	5.28	2.8	

Servo-Assisted Solenoid Valve with Plunger Pilot

6281 EV

NPT 1/2" - NPT 2", 2.9-232 PSI

- Waterhammer-free
- Rugged molded diaphragm
- Compact design with high flow rates



Supplied as shown

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Servo-assisted brass plunger piloted solenoid valve with un-coupled rugged diaphragm. This valve is designed for neutral gases and liquids where a rugged and reliable solution is required.

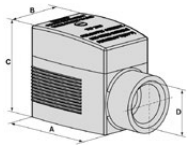
Technical Data

Pressure range	2.9-232 PSI max.
Temperature media	+14 °F to +176 °F
Ambient temperature	131 ºF, max.
Body material	Brass, Stainless steel
Seal material	FKM
Coil material	Epoxy (Class H)
Power consumption	DC: 8 W, AC: 21 VA (inrush), 12 VA (hold)
Protection class	IP65 (with cable plug)
Electrical connection	Cable plug acc. to DIN EN 175301-803, Form A (included)
Accreditations	UL Listed

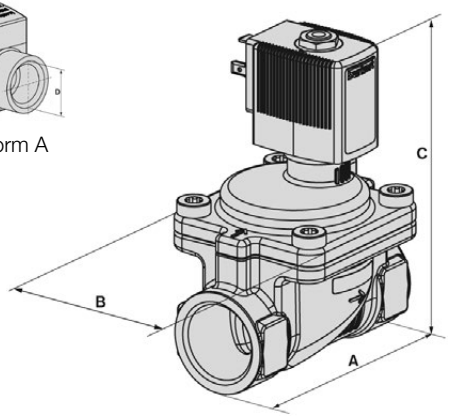
Options

- Normally open
- Cable plug with LED
- Cable plug with varistor
- UL Recognized version
- BUNA and EPDM seal materials on request
- HazLoc Class 1 Div. 2

Envelope Dimensions [inch] (see datasheet for details)



2509 plug Form A



Size	A	B	C
1/2"	2.6	1.68	4.18
3/4"	3.2	2.4	4.62
1"	3.8	2.8	5.08
1-1/4"	3.8	2.8	5.46
1-1/2"	5.04	4	6.22
2"	6.56	4.6	6.19

Ordering Chart

Port connection [inch]	Orifice [mm]	Cv	Pressure range [PSI]	Item no. Voltage/Frequency [V/Hz] 24 V DC	120 V/60 Hz
Brass					
NPT 1/2	13	4.66	2.9-232	306547	306617
NPT 3/4	20	10.00	2.9-232	306548	306618
NPT 1	25	14.11	2.9-232	306552	306619
NPT 1 1/4	25	14.11	2.9-232	306560	306620
NPT 1 1/2	40	23.30	2.9-232	306561	306621
NPT 2	50	46.60	2.9-232	306562	306622
Stainless steel					
NPT 1/2	13	4.66	2.9-232	306563	306623
NPT 3/4	20	10.00	2.9-232	306564	306624
NPT 1	25	14.11	2.9-232	306566	306625
NPT 1 1/4	25	14.11	2.9-232	306567	306626
NPT 1 1/2	40	23.30	2.9-232	306568	306627
NPT 2	50	46.60	2.9-232	306569	306629

Servo-Assisted 2/2-way Steam Piston Valve

NPT 1/2" - NPT 1 1/2", 0-145 PSI

- Up to diameter DN50
- Vibration-resistant, push-over coil
- Energy-saving double coil technology with Kick and Drop electronics

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FOR DATA SHEET

Servo-assisted piston valve. The fix coupling between pilot valve and piston provides an opening of the valve without pressure difference. This valve is suitable for or media such as gas and steam. As well as liquids with low operating temperature below 32 °F.

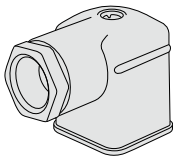
Technical Data

Orifice	DN13-DN50
Pressure range	0-145 PSI max.
Temperature media	32 °F to 302 °F (0 to 150°C)
Ambient temperature	32 °F to 113 °F (0 to 45°C)
Body material	Brass
Seal material	PTFE/graphite
Coil material	Epoxy (Class H)
Switch function	On/Off
Flow	Above seat
Viscosity	Max. 21 mm²/s
Protection class	IP65 (with cable plug)
Electrical connection	Cable plug acc. to DIN EN 175301-803, Form A

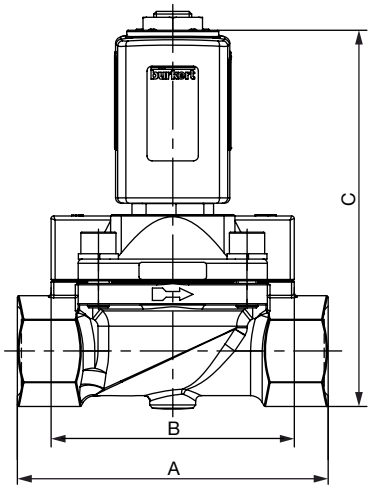
Orifice [mm]	Response times	
	Opening [ms]	Closing [ms]
13	30	250
20	30	250
25	60	700
32	80	900
50	500	2000

Measured with water at valve outlet at 87.02 PSI and 68 °F
Opening: pressure build-up 0 to 90 %, closing: pressure relief 100 to 10 %
(depending on the application conditions, deviations are possible)

Dimensions [inch] (see datasheet for details)



2518 cable plug
Item no. 314 802



Size	A	B	C
1/2"	2.6	1.6	5.3
3/4"	4	2.4	5.42
1"	4.6	2.8	5.84
1-1/4"	5.04	3.4	6.7
1-1/2"	5.04	3.4	7

Ordering Chart

Port connection [inch]	Circuit function	Orifice [mm]	Kv value water [m³/h][1)]	Pressure range [PSI]	Item no. Voltage/Frequency [V/Hz] 24 V AC/DC	110-120 V AC[3)]
Brass body, seal combination PTFE/Graphite						
NPT 1/2	A NC, normally closed	13	3.7	0-145	320874	320863
NPT 3/4		20	5.6	0-145	320875	320864
NPT 1		25	10.0	0-145	320876	320865
NPT 1 1/4		32	16.0	0-145	330421	330425
NPT 1 1/2		32	16.0	0-145	330442	330443

PWM Control Electronics for Solenoid Control Valves

- Programmable digital electronics
- Converts an analogue input signal into a PWM output signal
- Adjustable PWM frequency
- Digital communication possible (büS)
- Optional integrated time control and digital/ analogue input signals

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FOR DATA SHEET

The digital control electronics Type 8605 are used to operate proportional solenoid control valves in a power range from 40-2000 mA. The electronics convert an external standard signal into a pulse-width modulated (PWM) signal, which enables infinite adjustment of the opening of the proportional valve and hence a fluidic output parameter (e.g. flow rate). An internal current control with the duty cycle of the PWM signal as an actuating variable ensures that every value of the input signal, irrespective of the thermal state of the coil, is unambiguously assigned a given value of the effective coil current. A display and operating keys allow the electronics to be easily adapted to a particular proportional valve and to the specific conditions of an application. In order to integrate the control unit - and thus also the proportional valve - into a higher-level controller, the CAN-based variant of the control unit (called büS) is required. Parameterisation and configuration of the proportional valve can be performed quickly and easily using the Bürkert Communicator software. Furthermore, the büS control electronics enables the integration of shut-off valves into büS/CAN systems. By using the integrated time control function, a shut-off valve can be opened or closed for a certain period of time. This enables, for example, batch control solutions in filling processes. Optionally, Type 8605 can be equipped with an additional I/O board. This allows the connection of external sensors or switches. The valve behaviour on these input signals can be configured (e.g. 2-point control).

Ordering Chart

Type 8605 control for proportional valves

Note:
– For two possible current ranges, the smaller one should be preferred.
– When using the control electronics in combination with valves from other manufacturers, make sure that these valves do not fall below a minimum load of 7Ω. Activation of valves with lower minimum load will damage the Type 8605 electronic control unit.

Version	Max. coil current range [mA]	Item no.	2861, 2871 24 V DC	2861, 2871 12 V DC	2863, 2873 24 V DC	2863, 2873 12 V DC	2865, 2875 24 V DC	2865, 2875 12 V DC	2836 24 V DC	6024 24 V DC	6024 12 V DC	6223 24 V DC	6223 12 V DC
Cable plug with PG gland	200...1000	316530			x	x	x			x		x	
Cable plug with M12 connection	200...1000	316528			x	x	x			x		x	
Cable plug with PG gland	500...2000	316529				x	x	x	x	x	x		x
Cable plug with M12 connection	500...2000	316526				x	x	x	x	x	x		x
Cable plug with PG gland without control unit	200...1000	316521			x	x	x			x		x	
Cable plug with M12 connection without control unit	200...1000	316522			x	x	x			x		x	
Cable plug with PG gland without control unit	500...2000	316523				x	x	x	x	x	x		x
Cable plug with M12 connection without control unit	500...2000	316525				x	x	x	x	x	x		x
DIN rail	40...220	316531	x										
DIN rail	200...1000	316532	x	x	x	x	x			x		x	
DIN rail	500...2000	316533				x	x	x	x	x	x		x
Cable plug with M12 connection büS PWM	200...1000	355655			x	x	x			x		x	
Cable plug with M12 connection büS PWM	500...2000	364714				x	x	x	x	x	x		x

Type 8605 (büS) control for shut-off/solenoid valves

Version	Item no.
Cable plug with M12 connection	302988
Cable plug with M12 connection and sensor input (M12)	302990

Accessories - Analogue version

Accesory	Item no.
Control unit for Type 8605 Cable plug	582878
Right-angle plug M12 4-pol.	784301
M12 connecting cable 4-pol. 5 m length	918038
Cover set (for control electronics without control unit)	670549

Digital Timer

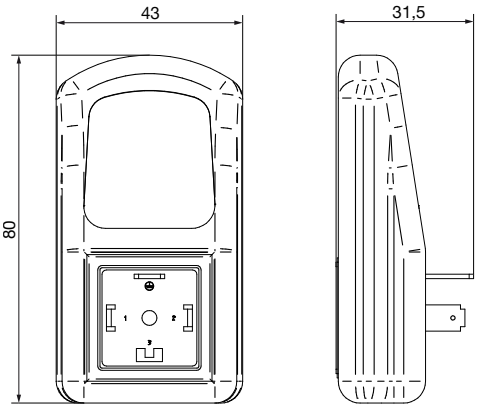
- Digital version with bright LED display
- Analogue version with LED illumination to indicate switching status
- Connection according to DIN EN 175301-803 (form A)
- Protection class IP65 (NEMA 4)

Technical Data

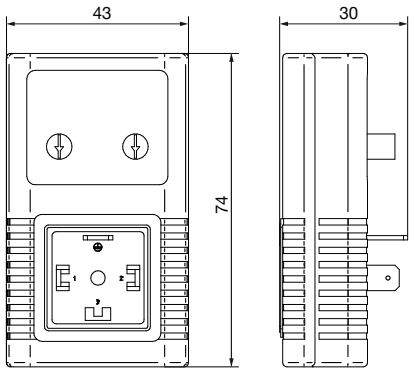
Product properties	Digital version	Analogue version
Timer PCB	SMT	SMT
Cycle display time	bright LED display	bright LED display
Housing material	ABS plastic	ABS plastic
Test function	Yes	Yes
Electrical data		
Voltage	10…48 V AC/DC 50/60 Hz 240 V AC/DC 50/60 Hz	24…240 V AC/DC 50/60 Hz 48…380 V AC/DC 50/60 Hz
Switching current	Max. 2,0 A Max. 1,0 A (cURus approved)	Max. 2,0 A Max. 1,0 A (cURus approved)
Performance data		
Timer cycle (on/off)	0.01 seconds up to 99 hours (ON) 0.01 seconds up to 99 hours (OFF)	0.5…10 seconds (ON) 0.5…45 minutes (OFF)
Approvals and Certificates		
Protection class	IP65 (NEMA 4)	IP65 (NEMA 4)
Product connections		
Plug connection	DIN EN 175301- 803 (Form A)	DIN EN 175301- 803 (Form A)
Enviroment and installation		
Ambient temperature	-40 °C…+55 °C (-40 °F…+131 °F)	-40 °C…+55 °C (-40 °F…+131 °F)

Dimensions [mm] (see datasheet for details)

Digital version



Analogue version



Ordering Chart

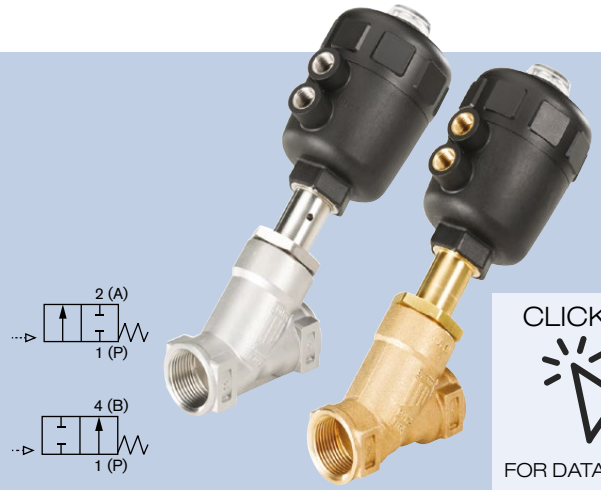
Timer	Approval	Product code	Voltage range	Item no.
Analogue	cURus	1087-A-BCH-UC- 28	10…30 V AC/DC	348906
Analogue	cURus	1087-A-BDK-UC- 28	24…240 V AC/DC	348907
Digital	cURus	1087-A-BFW-UC- 29	10…48 V AC/DC	348908
Digital	cURus	1087-A-BDX-UC- 29	110…240 V AC/DC	348909

On-Off Pneumatically Operated 2/2-way Angle Valve for Liquids

2000

NPT 1/2" - NPT 2 1/2"

- Waterhammer-free
- High flow rates
- Self adjusting double packing
- Optical position indicator is standard
- Rotating power head to orient air control connections



The angle seat valve consists of a pneumatically actuated piston-drive and a 2-way valve body. Depending on the ambient temperature the drive is available in two different materials, PA and PPS. The self reliable gland packing ensures a good seal. The 2/2-way flow valve body made of bronze or stainless steel precision casting allows high flow rates. These durable and robust valves can be retrofitted with a comprehensive range of accessories for position indication, stroke limitation or manual override.

Technical Data

Pressure range	See Ordering Chart
Viscosity	max. 600 mm²/s
Stuffing socket (with silicone grease)	PTFE V-Rings with spring compensation
Temperature media	14 °F to 356 °F (-10 °C to +180 °C)
Ambient temperature	
for PA-Actuator	14 °F to 140 °F (-10 °C to +60 °C)
for PPS-Actuator[1] Ø 40-80	41 °F to 284 °F (+5 °C to +140 °C)
for PPS-Actuator[1] Ø 100-125	41 °F to 194 °F (+5 °C to +90 °C), temporary up to 284 °F (+140 °C)
Body material	Gunmetal or stainless steel 316L
Seal material	PTFE
Actuator material	Polyamide or PPS
Control medium	Instrument air at 87 PSI
Flow direction	Under seat
Safe position	Normally closed or normally open
Pilot air port	1/4" (Actuator Ø 40 = 1/8")

Options

- Double acting
- Solenoid pilot valves
- Vacuum version
- Feedback switches
- Cleaned for oxygen service
- Seal material NBR, FKM, EPDM
- GL, SIL approvals
- Stroke limiter

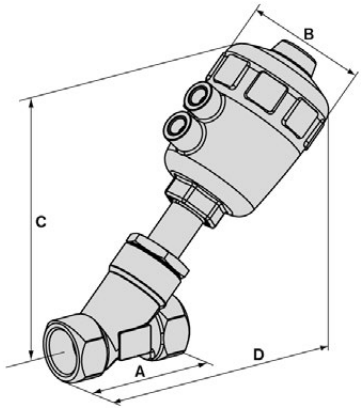
Accessories for 2000

8697 feedback for classic actuators

6012P pilot valve

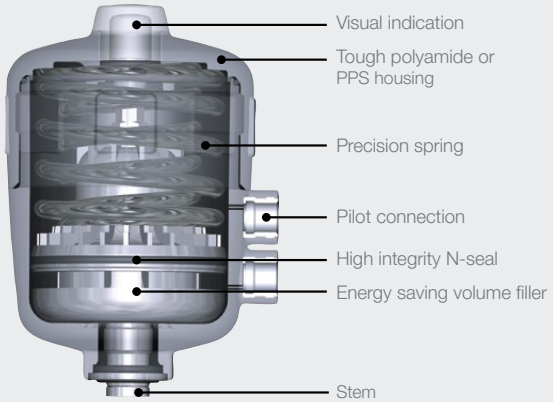
7012P pilot valve

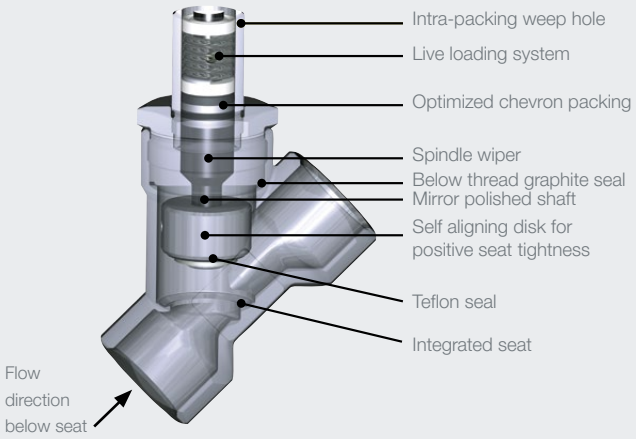
Envelope Dimensions [inch] (see datasheet for details)



Size	Actuator [mm]	A	B	C	D
NPT 1/2"	40	2.55	2.08	4.52	5.47
NPT 1/2"	50	2.55	2.51	5.51	6.41
NPT 3/4"	50	2.95	2.51	5.66	6.73
NPT 3/4"	63	2.95	3.14	6.73	7.79
NPT 1"	50	3.54	2.51	5.98	7.12
NPT 1"	63	3.54	3.14	6.96	8.11
NPT 1"	80	3.54	3.97	7.79	8.97
NPT 1 1/4"	63	4.33	3.14	7.20	8.62
NPT 1 1/4"	80	4.33	3.97	8.07	9.44
NPT 1 1/2"	63	4.72	3.14	7.40	8.74
NPT 1 1/2"	100	4.72	5.00	10.23	11.61
NPT 1 1/2"	125	4.72	6.22	11.37	12.75
NPT 2"	80	5.90	3.97	8.85	10.62
NPT 2"	100	5.90	5.00	10.70	12.48
NPT 2"	125	5.90	6.22	11.88	13.66
NPT 2 1/2"	80	7.28	3.97	9.40	11.65
NPT 2 1/2"	100	7.28	5.00	11.29	13.54
NPT 2 1/2"	125	7.28	6.22	12.48	14.72

Sectional Drawings





Ordering Charts

Standard PA Actuator

2000 for liquids	Actuator [mm]	Cv	Pressure	Item no. Bronze	Item no. Stainless Steel
Normally closed					
NPT 1/2"	40	4.3	217	468156	468186
NPT 1/2"	50	4.9	232	468157	468187
NPT 3/4"	50	9.8	160	468158	468041
NPT 3/4"	63	10.4	232	468159	468188
NPT 1"	63	20.8	160	468039	468043
NPT 1"	80	20.8	232	468160	468189
NPT 1 1/4"	80	31.3	203	468161	468190
NPT 1 1/2"	80	43.9	131	468162	468044
NPT 1 1/2"	100	46.3	181	468216	468217
NPT 1 1/2"	125	46.3	232	468163	468191
NPT 2"	100	63.6	104	468131	468134
NPT 2"	125	63.6	145	468142	468045
NPT 2 1/2"	125	104.1	75	468132	468135
NPT 2 1/2"	125	104.1	151	468453	468454
Normally open					
NPT 1/2"	40	4.3	232	468164	468192
NPT 1/2"	50	4.9	232	468165	468193
NPT 3/4"	50	9.8	232	468166	468194
NPT 1"	50	11.6	232	468167	468195
NPT 1 1/4"	63	28.9	232	468168	468464
NPT 1 1/2"	63	40.5	232	468169	468196
NPT 1 1/2"	80	43.9	232	468218	468219
NPT 2"	63	56.7	188	468133	468449
NPT 2"	80	60.1	232	468143	468144
NPT 2 1/2"	80	89.1	217	468451	468450

PPS Actuator for high temperatures and severe washdown environment

2000 for liquids	Actuator [mm]	Cv	Pressure	Item no. Bronze	Item no. Stainless Steel
Normally closed					
NPT 1/2"	40	4.3	218	468176	468204
NPT 1/2"	50	4.9	232	468177	468205
NPT 3/4"	50	9.8	160	468178	468206
NPT 3/4"	63	10.4	232	468455	468207
NPT 1"	63	20.8	160	-	468208
NPT 1"	80	31.2	232	468456	468465
NPT 1 1/4"	80	31.2	203	468457	468466
NPT 1 1/2"	80	43.9	131	468458	468467
NPT 2"	100	63.6	105	468473	468474
NPT 2"	125	63.6	145	468452	468475
Normally open					
NPT 1/2"	40	4.3	232	468179	468468
NPT 1/2"	50	4.9	232	468459	468209
NPT 3/4"	50	9.8	232	468460	468469
NPT 1"	50	11.6	232	468461	468470
NPT 1 1/4"	63	28.9	232	468462	468471
NPT 1 1/2"	63	40.6	232	468463	468472
NPT 2"	63	56.8	188	468476	468477
NPT 2"	80	60.3	218	468478	468479

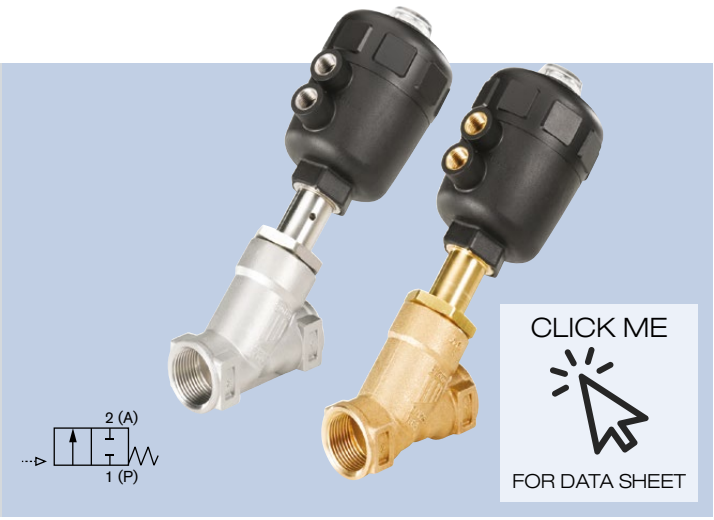
= Quick Delivery Items

On-Off Pneumatically Operated 2/2-way Angle Valve for Steam and Gases

2000

NPT 1/2" - NPT 2 1/2"

- Flow direction above seat
- PPS actuator for hot environments
- Optical position indicator is standard
- Self adjusting double packing
- High flow rates
- Rotating power head to orient air control connections



Burkert's classic angle seat valve for steam applications. With this product and its longevity is it world wide dependable. These valves with flow direction above the seat for steam and gas are equipped with maintenance-free gland packing.

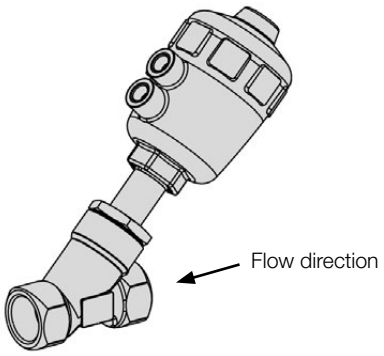
Technical Data

Pressure range	See Ordering Chart	
Temperature media	14 °F to 356 °F (-10 °C to +180 °C)	
Viscosity	max. 600 mm²/s	
Stuffing socket (with silicone grease)	PTFE V-Rings with spring compensation	
Ambient temperature max.		
PA actuator	14 °F to 140 °F (-10 °C to +60 °C)	
PPS actuator Ø 40-80	284 °F (+140 °C)	
PPS actuator Ø 100-125	194 °F (+90 °C)	
Body material	Gunmetal or stainless steel 316L	
Seal material	PTFE	
Actuator material	Polyamide or PPS	
Control medium	Instrument air at 87 PSI	
Flow direction	Over seat to minimise actuator size	
Safe position	Normally closed	
Max. pilot pressure		
Actuator size Ø 40-80	PA and PPS	145 PSI
Actuator size Ø 100	PA	145 PSI
Actuator size Ø 100	PPS	101 PSI
Actuator size Ø 125	PA and PPS	101 PSI
Pilot air port	1/4" (Actuator Ø 40 = 1/8")	

Options

- Normally open
- Double acting
- Solenoid pilot valves
- Vacuum version
- Feedback switches
- Cleaned for oxygen service
- Stroke limiter
- Seal material NBR, FKM, EPDM

Flow Direction



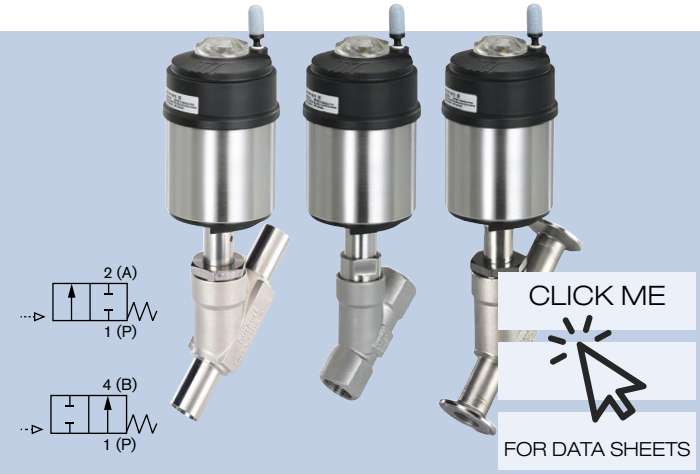
Ordering Chart

Connection	Actuator [mm]	Cv	Item no. Bronze	Item no. Stainless Steel
Normally closed polyamide head				
1/2" NPT	50	4.9	468170	468197
3/4" NPT	40	8.1	468171	468198
3/4" NPT	50	9.8	468172	468199
1" NPT	50	11.6	468173	468200
1" NPT	63	20.8	468031	468201
1 1/4" NPT	63	28.9	468174	468202
1 1/2" NPT	63	40.5	468175	468203
2" NPT	80	60.8	468137	468140
2 1/2" NPT	80	90	468138	468141
Normally closed, high ambient temperature PPS actuator				
1/2" NPT	50	4.9	468180	468210
3/4" NPT	50	9.8	468181	468211
1" NPT	50	11.6	468182	468212
1" NPT	63	20.8	468183	468213
1 1/4" NPT	63	28.9	468184	468214
1 1/2" NPT	63	40.6	468185	468215
2" NPT	80	60.1	468145	353068
2 1/2" NPT	100	104.1	468569	468568

On-Off Pneumatically Operated 2/2-way ELEMENT Angle Valve

NPT 1/2" - NPT 2 1/2"

- Perfect for clean applications
- Wide range of accessories
- Compressed air recycling control function with ELEMENT control tops
- With flow direction below or above seat
- High flow rates
- High cycle life



2100 ELEMENT angle seat valves are designed for unmatched life cycle performance. Shown on this page in a normally closed configuration, with underseat flow for liquids, these valves exhibit live loaded packing with all of the advantages of the ELEMENT platform: Intelligent, Integrated and Beautiful.

Technical Data

Pressure range	See Ordering Chart
Viscosity	max. 600 mm^2/s
Temperature media	14 °F to 365 °F (-10 °C to +185 °C)
Ambient temperature	32 °F to 131 °F (0 °C to +55 °C) (with integrated control) 32 °F to 140 °F (0 °C to +60 °C) (connector hose air supply) 32 °F to 212 °F (0 °C to +100 °C) (threaded piping)
Body material	316L stainless steel
Seal material	PTFE
Medium	Water, alcohol, oils, fuels, hydraulic fluids, salt solution, alkali solutions, organic solvents, steam, optional fuel gas, (EC Gas Appliances Directive 2009/142/EG)
Actuator material	Actuator PPS Cover stainless steel 1.4561 (316Ti)
Control medium	Neutral gases, air
Max. pilot pressure	max. 145 PSI; actuator size 130 mm, 101 PSI
Pilot air ports	Threaded ports G1/8 stainless steel
Port connection	Threaded, weld end, clamp
Spindle packing	PTFE seal with spring compensation
Safe position	Normally closed, normally open

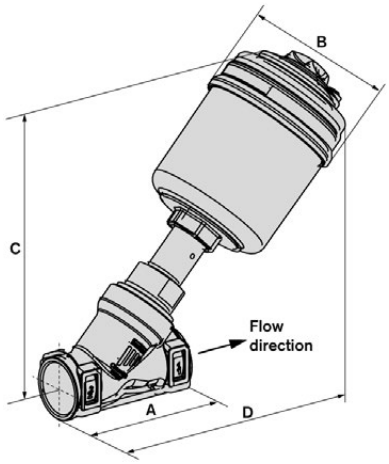
Ordering Chart

Stainless Steel 316L, NPT Threaded					
Size	**Orifice [mm]**	**Actuator [mm]**	**Pressure [PSI]**	**Cv**	**Item no.**
1/2"	15	50	362	5.6	213644
1/2"	15	70	362	5.8	213645
3/4"	20	70	290	12.7	213646
1"	25	70	232	20.8	213647
1 1/4"	32	70	123	31.2	213648
1 1/4"	32	90	232	32.4	213649
1 1/2"	40	70	87	44.0	213650
1 1/2"	40	90	232	46.3	213651
2"	50	90	145	63.6	188641
2"	50	130	232	71.7	188642
2 1/2"	65	90	73	98.3	239457
2 1/2"	65	130	232	109.9	239473

Envelope Dimensions [inch] (see datasheet for details)

Dimensions shown for threaded version for others please see datasheet

Pilot air ports for 6/4 mm tubing

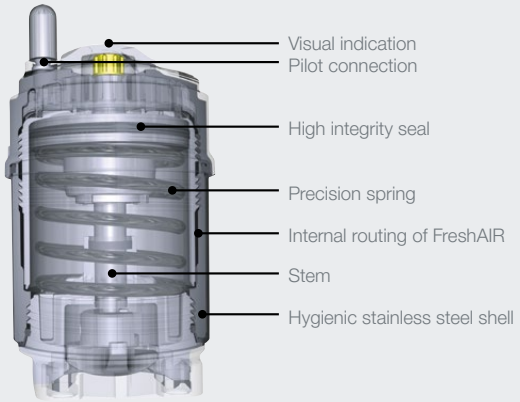


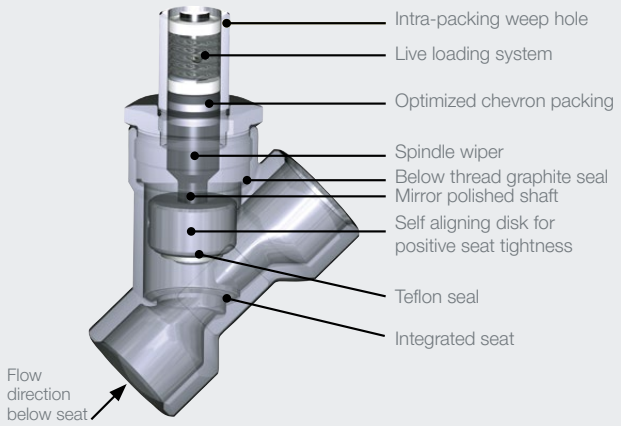
Port connection	**Actuator [mm]**	**A**	**B**	**C**	**D**
NPT 1/2"	50	2.55	2.53	6.22	7.28
NPT 1/2"	70	2.55	3.58	6.81	7.91
NPT 3/4"	50	2.95	2.53	6.53	7.67
NPT 3/4"	70	2.95	3.58	7.12	8.30
NPT 1"	50	3.54	2.53	6.77	8.03
NPT 1"	70	3.54	3.58	7.36	8.66
NPT 1 1/4"	70	4.33	3.58	7.67	9.25
NPT 1 1/4"	90	4.33	4.72	9.44	10.90
NPT 1 1/2"	70	4.72	3.58	7.75	9.29
NPT 1 1/2"	90	4.72	4.72	9.52	10.94
NPT 2"	70	5.90	3.58	8.42	10.31
NPT 2"	90	5.90	4.72	10.03	11.85
NPT 2"	130	5.90	6.25	12.04	13.81

Options

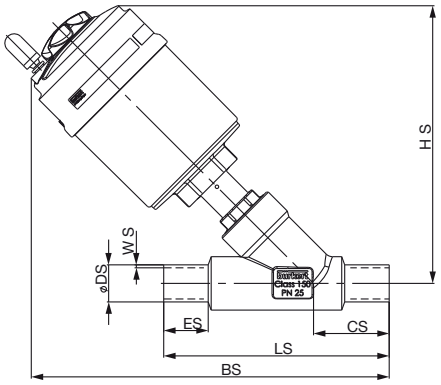
- Double acting
- Solenoid pilot valves
- Vacuum version
- Feedback switches

Sectional Drawings

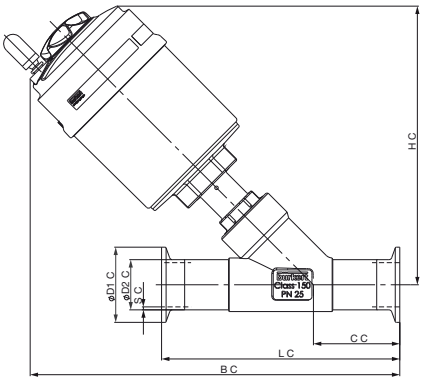




Dimensions [inch] (see datasheet for further details)



Weld End OD Tube							
Size	HS	BS	CS	LS	ES	ØDS	WS
1/2"	6.42	8.35	1.81	5.32	1.18	0.5	0.06
	7.01	8.98					
3/4"	7.32	9.49	2.05	5.71	1.18	0.75	0.06
1"	7.40	9.53	2.01	5.98	1.18	1.00	0.06
1-1/2"	7.91	10.39	2.36	7.17	1.18	1.50	0.06
	9.65	12.09					
2"	10.28	12.83	2.52	8.27	1.18	2.00	0.06
	12.28	14.80					
2-1/2"	10.75	12.99	2.20	9.06	1.02	2.50	0.06
	12.76	14.96					

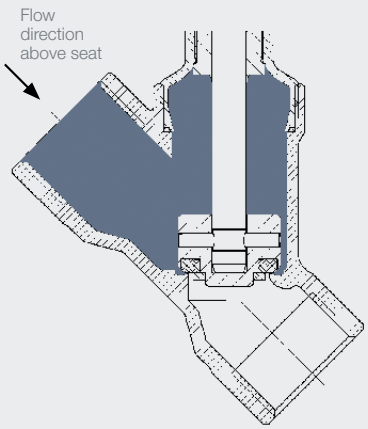


Clamp							
Size	HC	BC	CC	LC	Ø D1C	Ø D2C	SC
1/2"	6.42	8.46	1.93	5.12	1.00	0.50	0.6
	7.01	9.09					
3/4"	7.32	9.69	2.22	5.91	1.00	0.75	0.6
1"	7.40	9.80	2.28	6.30	2.00	1.00	0.6
1-1/2"	7.91	9.57	2.72	7.87	2.00	1.50	0.6
	9.65	12.44					
2"	10.28	13.39	3.05	9.06	2.52	2.00	0.6
	12.28	15.31					
2-1/2"	10.28	13.39	3.31	11.26	2.52	2.50	0.6
	12.28	15.31					

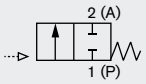
Ordering Charts

Stainless Steel 316L, Weld end acc. to ASME BPE					
Size	Orifice [mm]	Actuator [mm]	Pressure [PSI]	Cv	Item no.
1/2"	15	50	362	5.6	187077
1/2"	15	70	362	5.8	188726
3/4"	20	70	290	12.7	188727
1"	25	70	232	20.8	188728
1 1/2"	40	70	87	44.0	188729
1 1/2"	40	90	232	46.3	188730
2"	50	90	145	63.6	188731
2"	50	130	232	71.7	188732
2 1/2"	65	90	73	98.3	239461
2 1/2"	65	130	232	109.9	239478

Stainless Steel 316L, Clamp acc. to ASME BPE					
Size	Orifice [mm]	Actuator [mm]	Pressure [PSI]	Cv	Item no.
1/2"	15	50	362	5.6	187103
1/2"	15	70	362	5.8	188806
3/4"	20	70	290	12.7	188807
1"	25	70	232	20.8	188808
1 1/2"	40	70	87	44.0	188809
1 1/2"	40	90	232	46.3	188810
2"	50	90	145	63.6	188811
2"	50	130	232	71.1	188812
2 1/2"	65	90	73	98.3	293842
2 1/2"	65	130	232	109.9	329535



Control function A



Pneumatically operated on/off valve, normally closed by spring force, flow direction above seat

Attention!
Valves with flow above the seat are only usable for compressible medium. There is danger of waterhammer!

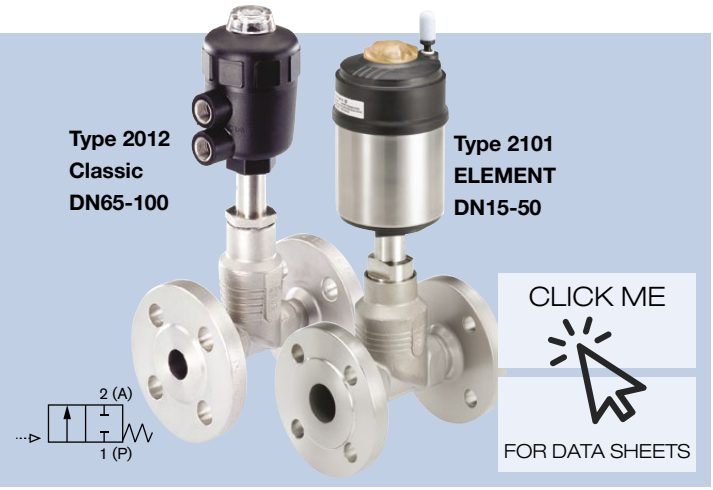
Ordering Charts

Stainless Steel 316L, NPT Threaded					
Size	**Orifice [mm]**	**Actuator [mm]**	**Pressure [PSI]**	**Cv**	**Item no.**
1/2"	15	50	232	5.6	213652
1/2"	15	70	232	5.8	213653
3/4"	20	70	232	12.7	213655
1"	25	70	232	20.8	213657
1 1/4"	32	70	232	31.2	213658
1 1/2"	40	70	232	44.0	213659
1 1/2"	40	90	232	46.3	213660
2"	50	70	174	60.2	188649
2"	50	90	232	63.6	188650
2 1/2"	65	90	116	98.3	463893
Stainless Steel 316L, Weld end acc. to ASME BPE					
Size	**Orifice [mm]**	**Actuator [mm]**	**Pressure [PSI]**	**Cv**	**Item no.**
1/2"	15	50	232	5.6	187078
1/2"	15	70	232	5.8	188733
3/4"	20	70	232	12.7	188734
1"	25	70	232	20.8	188735
1 1/2"	40	70	232	44.0	188736
1 1/2"	40	90	232	46.3	188737
2"	50	70	174	60.2	188738
2"	50	90	232	63.6	188739
2 1/2"	65	90	116	98.3	467543
Stainless Steel 316L, Clamp acc. to ASME BPE					
Size	**Orifice [mm]**	**Actuator [mm]**	**Pressure [PSI]**	**Cv**	**Item no.**
1/2"	15	50	232	5.6	187104
1/2"	15	70	232	5.8	188813
3/4"	20	70	232	12.7	188814
1"	25	70	232	20.8	188815
1 1/2"	40	70	232	44.0	188816
1 1/2"	40	90	232	46.3	188817
2"	50	70	174	60.2	188818
2"	50	90	232	63.6	188819

Pneumatically Operated 2/2-way Globe Valves

1/2" - 4"

- Flow direction below seat
- Long life
- Flow optimized stainless steel body 316L
- Perfect replacement for flanged ball valves



The externally piloted globe valve consists of a pneumatically operated piston actuator and a 2-way angle valve body. Sealing integrity is guaranteed by the proven self adjusting gland. These maintenance-free and robust valves can be retrofitted with a comprehensive range of accessories for position indication, stroke limitation or manual override.

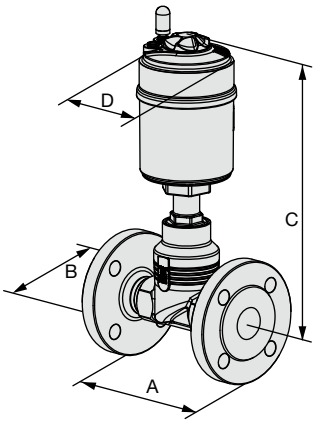
Technical Data

Pressure range	see Ordering Chart
Nominal pressure	PN25 (body)
Temperature media	14 °F to 356 °F (-10 °C to +180 °C) (CLASSIC) / 365 °F (+185 °C) (ELEMENT)
Ambient temperature	
Actuator size up to Ø 125	14 °F to 140 °F (-10 °C to +60 °C)
Actuator size Ø 175-225	14 °F to 122 °F (-10 °C to +50 °C)
ELEMENT	32 °F to 131 °F (0 °C to +55 °C) (with integrated control)
CLASSIC	32 °F to 140 °F (0 °C to +60 °C) (connector hose air supply) 14 °F to 140 °F (-10 °C to +60 °C)
Body material	Cast stainless steel 316L
Viscosity	Max. 600 mm^2/s
Seal material	PTFE
Actuator material	PPS and St.st. 316L (ELEMENT), PA (Classic)
Control medium	Neutral gases, air
Flow direction	Under seat anti water-hammer
Port connection	Flange DIN EN 1092-1
Pilot air port	for ELEMENT connector hose for plastic hose, 6/4 mm for Classic, NPT 1/4"

Options

- Normally open
- Double acting
- Solenoid pilot valves
- Vacuum version
- Feedback switches
- High temperature actuator
- Chemically resistant actuator
- Stroke limiter
- JIS and DIN flanges
- Type 2101 with threaded air connection for ambient temp. up to 212 °F (+100 °C)

Envelope Dimensions [inch] (see datasheet for details)



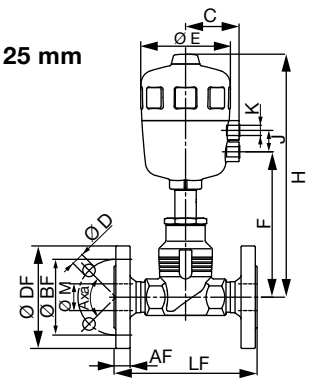
Dimensions shown for 2101 for exact 2012 dimensions please see datasheet

Size (DN) [mm]	Actuator [mm]	A	B	C	D
15	50	5.11	3.74	9.29	2.53
20	50	5.90	4.13	9.52	2.53
20	70	5.90	4.13	10.07	3.58
25	50	6.29	4.52	9.64	2.53
25	70	6.29	4.52	10.19	3.58
32	70	7.08	5.51	11.02	3.58
32	90	7.08	5.51	13.38	4.72
40	70	7.87	5.90	11.22	3.58
40	90	7.87	5.90	13.58	4.72
50	90	9.05	6.49	13.81	4.72
50	130	9.05	6.49	15.86	6.25

2012 Dimensions [inch] (see datasheet for further details)

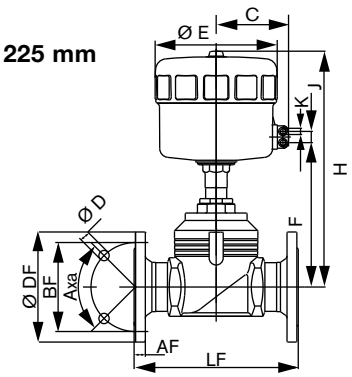
DN 10-65

Actuator size 40-125 mm



DN 65-100

Actuator size 175 and 225 mm



ANSI flange														
DN	**Actuator [mm]**	**C**	**ØE**	**F**	**H**	**K**	**J**	**ØDF**	**LF**	**ØBF**	**AF**	**ØD**	**AxD**	**ØM**
1/2"	50	1.73	2.52	5.16	8.31	G1/4	0.95	3.50	7.24	2.38	0.44	0.62	4x90°	0.63
3/4"	63	2.05	3.15	6.10	9.72	G1/4	0.95	3.90	7.24	2.75	0.50	0.62	4x90°	0.83
1"	80	2.36	3.98	6.46	10.75	G1/4	0.95	4.25	7.24	3.12	0.56	0.62	4x90°	1.06
1 1/2"	125	3.39	6.18	8.66	15.63	G1/4	1.18	5.00	8.74	3.82	0.69	0.62	4x90°	1.61
2"	125	3.39	6.18	10.00	16.93	G1/4	1.18	7.01	10.87	5.50	0.88	0.75	4x90°	2.48
2 1/2"	125	3.39	6.18	10.00	16.93	G1/4	1.18	7.01	10.87	5.50	0.88	0.75	4x90°	2.48
	175	5.12	8.31	11.38	19.33									
3"	175	5.12	8.31	11.65	19.61	G1/4	0.95	7.48	11.73	6.00	0.94	0.75	4x90°	3.07
	225	6.10	10.28	11.77	19.45									
4"	175	5.12	8.31	12.05	20.00	G1/4	0.95	9.02	13.86	7.50	0.94	0.75	8x45°	4.02
	225	6.10	10.28	12.17	19.84									

Ordering Charts

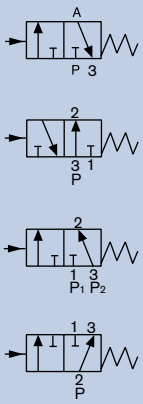
Port Connection flange [inch]	Actuator [mm]	Cv	Minimum pilot pressure CFA [PSI]	Maximum operating pressure (PSI)	Item no. ELEMENT, Type 2101
Type 2101 ELEMENT					
1/2"	50	5.4	75	363	203095
1/2"	70	5.4	70	363	466863
3/4"	70	9.4	70	290	203097
1"	70	15.0	70	232	203099
1 1/2"	70	35.9	70	87	203100
1 1/2"	90	35.9	73	232	203101
2"	90	52.1	73	145	203102
2"	130	52.1	73	232	218419
2 1/2"	90	75.2	73	73	239525
2 1/2"	130	75.2	81	232	219535
3"	130	127.3	81	145	239529
4"	130	190.9	81	87	239532

Port Connection flange [inch]	Actuator [mm]	Cv	Minimum pilot pressure CFA [PSI]	Maximum operating pressure (PSI)	Item no. CLASSIC, Type 2012
Type 2012 CLASSIC					
1/2"	50	5.4	57	232	146258
3/4"	63	9.4	65	232	146294
1"	80	15.0	73	232	146572
1 1/2"	125	35.9	46	232	146338
2"	125	52.1	46	145	146356
2 1/2"	125	84.5	81	174	152742
2 1/2"	175	84.5	65	232	152760
3"	175	127.3	65	145	152778
3"	225	127.3	48	232	152796
4"	175	179.3	65	102	152814
4"	225	179.3	70	232	152832

3/2-way Globe Valve, pneumatically operated

NPT 1/2" - NPT 1 1/2"

- Different flow circuit functions and control functions
- Long life actuator
- Optical display as standard in series
- Rotary actuator aligns the pilot air ports



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FOR DATA SHEET

The externally piloted globe valve consists of a pneumatically operated piston actuator and a 3-way valve body. The drive is manufactured as standard in PPS. High flow rates are attained with the self proven stainless steel body. A reliable self-adjusting packing gland provides high sealing integrity. Various fluidic circuit functions can be obtained by a simple exchange of the pressure and service ports. These maintenance-free and robust valves can be retrofitted with a comprehensive range of accessories for position indication, stroke limitation or manual override.

Technical Data

Pressure range	See Ordering Chart
Temperature media	14 °F to 365 °F (-10 °C to +185 °C)
Ambient temperature	14 °F to 212 °F (-10 °C to +100 °C)
Viscosity	Max. 600 mm²/s
Body material	Stainless steel
Seal material	PTFE
Actuator material	PPS
Stuffing socket (with silicone grease)	PTFE V-Rings with spring compensation
Max. pilot pressure	145 PSI, 101 PSI with actuator size Ø 130
Control medium	Instrument air at 87 PSI
Safe position	Normally closed or normally open

Ordering Chart

Stainless Steel NPT Threaded A 3/2-way, normally closed (NC) (port 1)

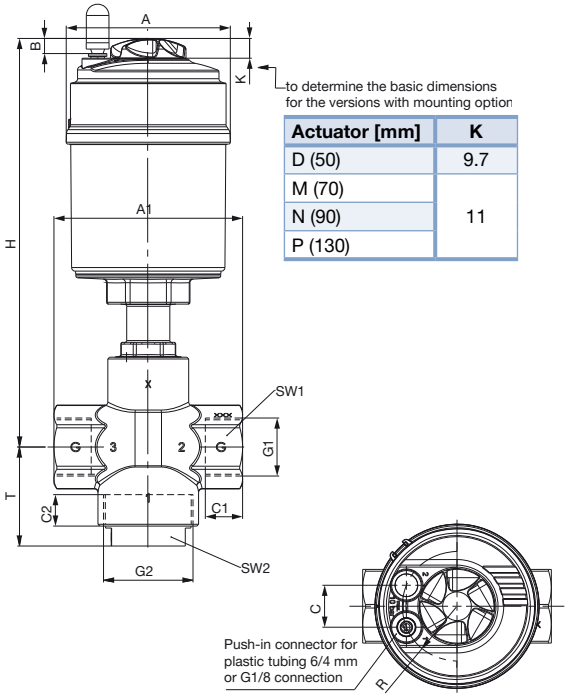
Size	Orifice [mm]	Actuator Size Ø [mm]	Cv		Max. operating pressure [PSI]		Item no.
			1 to 2	2 to 3	1 to 2	2 to 3 3 to 1	
1/2"	15	50	8.1	5.2	232	232	292478
1/2"	15	70	8.1	5.2	232	232	292531
3/4"	20	50	10.4	7.2	232	232	292532
3/4"	20	70	10.4	7.2	232	232	292533
1"	25	50	19.7	12.7	131	160	292534
1"	25	70	19.7	12.7	232	232	292535
1 1/4"	32	70	37.0	24.3	116	160	292536
1 1/4"	32	90	37.0	24.3	160	232	292537
1 1/2"	40	70	40.5	27.7	101	160	292538
1 1/2"	40	90	40.5	27.7	174	232	292539
2"	50	90	59.0	40.5	131	116	292540
2"	50	130	59.0	40.5	232	232	292541

Options

- Double acting
- Feedback switches
- Stroke limiter

Dimensions [inch] (see datasheet for details)

Pilot air ports 6mm or 1/4" push-in-tube



Actuator [mm]	K
D (50)	9.7
M (70)	11
N (90)	
P (130)	

G 1	Actuator Size Ø [mm]	Ø A	B	C	R	H	NPT C1/C2
NPT 1/2"	D (50)	2.54	0.24	0.78	0.78	7.97	0.54
NPT 1/2"	M (70)	3.58	0.33	0.92	1.20	7.97	0.54
NPT 3/4"	D (50)	2.54	0.24	0.78	0.78	7.97	0.55
NPT 3/4"	M (70)	3.58	0.33	0.92	1.20	7.97	0.55
NPT 1"	D (50)	2.54	0.24	0.78	0.78	8.95	0.66
NPT 1"	M (70)	3.54	0.33	0.92	1.20	8.95	0.66
NPT 1 1/4"	M (70)	3.58	0.33	0.92	1.20	9.24	0.68
NPT 1 1/4"	N (90)	4.72	0.33	0.92	1.20	11.59	0.68
NPT 1 1/2"	M (70)	3.58	0.33	0.92	1.20	9.24	0.68
NPT 1 1/2"	N (90)	4.72	0.33	0.92	1.20	11.59	0.68
NPT 2"	N (90)	4.72	0.33	0.92	1.20	12.23	0.69
NPT 2"	P (130)	6.26	0.33	0.92	1.20	13.93	0.69

OEM Replacement Diaphragms

- Suitable for CIP (cleaning in place), SIP (sterilization in place) and vacuum applications
- Independently tested by BioProcess Institute to comply with ASME BPE Standard requirements for Standard Process Test Conditions (SPTC)
- Internationally certified for use in stringent pharmaceutical, aseptic, sterile and sanitary food applications

Technical Data

Material	Burkert code	DIAPH size	Temperature			Approvals				Vacuum	ADI/TSE free
			min.	max.	Steam sterilization	FDA	EC 1935/2004	3A	USP Class VI		
EPDM	AD	8 to 100	-10°C	+143°C	+150°C for 60 min	yes	yes	yes	yes	yes	yes
PTFE/EPDM 2 - pieces	EA	8 to 100	-10°C	+130°C	+140°C for 60 min	yes	yes	-	yes	yes	yes
Advanced PTFE/EPDM 2 - pieces	EU	8 to 100	-5°C	+143°C	+150 °C for 60 min	yes	yes	-	yes	yes	yes

Connection Types

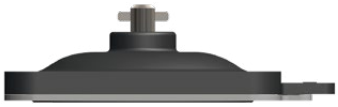
Button

Elastomer button for connecting to the actuator.

Thread

Pin with thread - the pin is screwed into the actuator.

Bayonet



Radial arm pin: The pin is fixed in the pressure piece of the actuator via a quarter-turn - significantly easier, error-free assembly.

Ordering Charts

Diameter	Connection	EPDM spare ID number
DN 08	Button	688421
DN 15		688422
DN 20		688423
DN 15	Bayonet	693163
DN 20		693166
DN 25	Thread	688424
DN 32		688425
DN 40		688426
DN 50		688427
DN 65		688428
DN 80		688429
DN 100		688430

Diameter	Connection	PTFE/EPDM ID number	Advanced PTFE/EPDM ID number
DN 08	Button	677674	679540
DN 15	Bayonet	677675	679541
DN 20		677676	679542
DN 25		677677	679543
DN 32		677678	679544
DN 40		584378	584379
DN 50		584386	584387
DN 65		677681	679743
DN 80		677682	679744
DN 100		677683	679745

Pneumatically Operated 2/2-way Diaphragm Valve ELEMENT for Decentralized Automation

2103 forged On/Off

- Optimized flow and zero deadleg
- Diaphragm hermetically separates the fluids from the operating mechanism
- Easy integration of ELEMENT automation units
- SS body with clamp or weld ends
- Internationally certified for pharmaceutical, aseptic, sterile and sanitary food applications

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FOR DATA SHEET

The externally piloted diaphragm valve type 2103 consists of a pneumatically operated piston actuator, a diaphragm and a 2-way valve housing made of forged stainless steel. The high quality actuator with a stainless steel cover is designed for usage in hygienic or aggressive environments. The flow optimized and zero dead volume valve body makes high flow rates possible and a variety of applications to be realized.

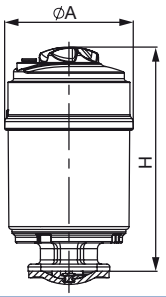
The design enables the easy integration of automation modules whether they are electrical/optical position feedback, pneumatic control units or an integrated fieldbus interface. The fully integrated system has a compact and smooth design, integrated pneumatic lines, IP65/67, NEMA Type 4X protection class and superior chemical resistance.

Technical Data

Port connection	1/2" to 2 1/2" available (port connection only)
Diaphragm size	1/2" to 2" (DN15 to DN50; DN08 available on request)
Port connections	
Weld ends	ASME BPE
Clamps	ASME BPE (other piping standards available on request)
Materials	
Body	Stainless Steel 316L /1.4435 / BN2
Diaphragm materials	PTFE/EPDM (EA), EPDM (AD), EPDM Laminated (ER) on request: advanced PTFE/EPDM (EU), FKM (FF)
Actuator / Cover	PPS / Stainless Steel 1.4561 (316Ti)
Media	Neutral gases and liquids, high-purity, sterile, aggressive or abrasive fluids
Viscosity	Up to viscous
Surface finish	Wetted surfaces: Ra <= 0.5µm (ASME BPE SF1) & External surfaces (fluidic body): Ra <= 1.6µm
Mechanically polished:	
Electro polished: (more available on request)	Wetted surfaces: Ra <= 0.38µm (ASME BPE SF4) & External surfaces (fluidic body): Ra <= 0.76µm
Medium temperature	
PTFE/EPDM (EA)	14 to 266°F (steam sterilization 284°F for 60 min)
EPDM (AD), advanced PTFE/ EPDM (EU)	23 to 289°F (steam sterilization 302°F for 60 min)
EPDM laminated (ER)	23 to 266°F (steam sterilization 140°C for 60 min)
FKM (FF)	32 to 266°F (not recommended for steam)
Ambient temperature	+41°F to +140°F
Control medium	Neutral gases; air
Max. pilot pressure	max. 145 PSI (101 PSI with actuator size130mm)

Dimensions [inch]

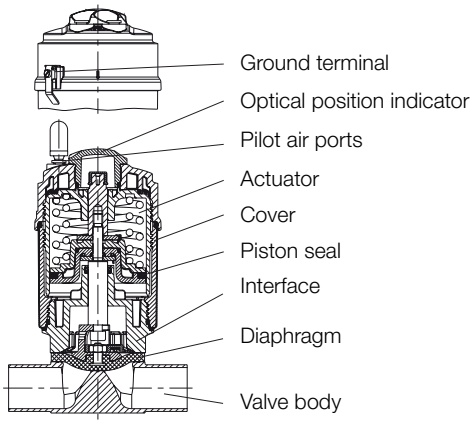
Actuator



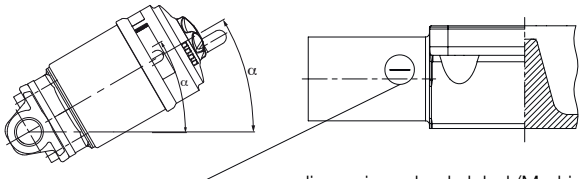
Diaphragm size	Actuator size Ø [mm]	ØA	H
1/2"	70	3.58	6.26
3/4"	70	3.58	6.26
1"	90	4.72	7.78
1-1/2"	130	6.26	10.51
2"	130	6.26	10.81

2103 with 360° rotatable interface, stainless steel

Materials



Installation for self-draining operation



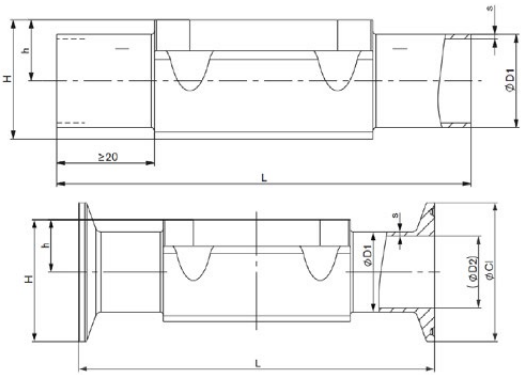
marking for self-drain angle

α =see dimensions, body label (Marking must face upwards, 12 o'clock position) plus 3° to 5° inclination to the pipe axis. Drain marks permanently marked on both sides of the valve body show the correct mounting position to optimize drain ability.

Technical data (continued)

Port connection DN		Diaphragm size	Actuator size Ø	Pilot pressure	Max. media pressure [PSI]		Cv [gpm]
[mm]	[inch]		[mm]	[PSI]	EPDM FKM	PTFE, advanced PTFE	ASME BPE
15	1/2"	1/2"	70	73-145	145	145	3.59
20	3/4"	3/4"	70	73-145	145	145	9.83
25	1"	1"	90	73-145	145	116	16.77
40	1-1/2"	1-1/2"	130	73-102	145	102	42.79
50	2"	2"	130	73-102	145	102	76.34

Flow rate: Cv value [gpm] for elastomer diaphragms measured at +68°F and 1 PSI pressure drop at mean operating pressure | **Pressure valves:** Overpressure to the atmospheric pressure, valve closes dynamical against max. operating pressure



Forged body - weld end

Port connection DN		DIAPH size	ØD1	s	h	H	L	Self-drain angle [°]
[mm]	[inch]							
ASME BPE								
15	1/2"	1/2"	0.5	0.065	0.315	0.787	4.252	41
20	3/4"	3/4"	0.75	0.065	0.63	1.181	4.606	29
25	1"	1"	1	0.065	0.748	1.157	5.0	27
40	1-1/2"	1-1/2"	1.5	0.065	1.102	2.047	6.26	24
50	2"	2"	2	0.065	1.417	2.677	7.48	20

Forged body - clamp

Port connection DN		DIAPH size	ØD1	s	Cl	ØD2	h	H	L	Self-drain angle [°]
[mm]	[inch]									
ASME BPE										
15	1/2"	1/2"	0.5	0.065	0.984	0.37	0.315	0.827	3.504	41
20	3/4"	3/4"	0.75	0.065	0.984	0.62	0.63	1.142	4.016	29
25	1"	1"	1	0.065	1.988	0.87	0.748	1.732	4.488	27
40	1-1/2"	1-1/2"	1.5	0.065	1.988	1.37	1.102	2.087	5.512	24
50	2"	2"	2	0.065	2.52	1.87	1.417	2.677	6.26	20

Ordering Charts

Welded connection acc. ASME BPE

Inspection Certificate 3.1 acc. to EN 10204 - Material Test Report (included in delivery)

Port connection DN		Diaphragm size	Actuator size Ø [mm]	Cv [gpm]	Pilot pressure [PSI]	Max. operating pressure [PSI]	Item no. mechanically polished Ra ≤ 0.5 µm	Item no. electropolished Ra ≤ 0.38 µm
[mm]	[inch]							
Diaphragm material EPDM (AD)								
15	1/2"	1/2"	70	3.59	70-145	145	325900	325905
20	3/4"	3/4"	70	9.83	70-145	145	325901	325906
25	1"	1"	90	17.93	73-145	145	325902	325907
40	1-1/2"	1-1/2"	130	42.79	73-102	145	328459	328460
50	2"	2"	130	76.34	73-102	145	325904	325909
Diaphragm material PTFE/EPDM (EA)								
15	1/2"	1/2"	70	3.59	70-145	145	295873	325911
20	3/4"	3/4"	70	9.83	70-145	145	295875	325912
25	1"	1"	90	16.77	73-145	116	325910	325913
40	1-1/2"	1-1/2"	130	43.37	73-102	145	295878	325914
50	2"	2"	130	76.34	73-102	102	295880	325915

Clamp connection acc. ASME BPE

Inspection Certificate 3.1 acc. to EN 10204 - Material Test Report (included in delivery)

Port connection DN		Diaphragm size	Actuator size Ø [mm]	Cv [gpm]	Pilot pressure [PSI]	Max. operating pressure [PSI]	Item no. mechanically polished Ra ≤ 0.5 µm	Item no. electropolished Ra ≤ 0.38 µm
[mm]	[inch]							
Diaphragm material EPDM (AD)								
15	1/2"	1/2"	70	3.59	70-145	145	325932	325938
20	3/4"	3/4"	70	9.83	70-145	145	325933	325939
25	1"	1"	90	17.93	73-145	145	325935	325940
40	1-1/2"	1-1/2"	130	42.79	73-102	145	328461	328462
50	2"	2"	130	76.34	73-107	145	325937	325942
Diaphragm material PTFE/EPDM (EA)								
15	1/2"	1/2"	70	3.59	70-145	145	325943	325947
20	3/4"	3/4"	70	9.83	70-145	145	325944	325948
25	1"	1"	90	16.77	73-145	116	266735	325949
40	1-1/2"	1-1/2"	130	43.37	73-102	145	266734	325950
50	2"	2"	130	76.34	73-107	102	325946	325951

Pneumatically Operated 2/2-way Diaphragm Valve ELEMENT for Decentralized Automation

- Hydroformed pharmaceutical grade tube valve body
- Optimal design for hygienic environments
- Easy integration of automation units with ELEMENT
- Reduced mass up to 75% allows for optimized heating and cooling cycles

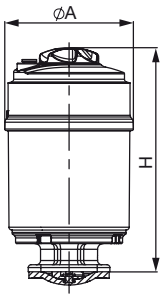
The externally piloted diaphragm valve consists of a pneumatically operated piston actuator, a diaphragm and a 2-way tube valve body. Burkert's patented hydroforming technology allows the manufacturing of a flow optimized stainless steel valve body with high surface quality. A laser-welded mounting interface ensures robustness and hygienic design. The actuator design enables the easy integration of automation units whether they are electrical/optical position feedback, pneumatic control units, an integrated fieldbus interface or even explosion proof device versions. The fully integrated system has a compact and smooth design, integrated pneumatic lines, IP65/67, NEMA Type 4X protection class and superior chemical resistance. The diaphragm valve with tube body is perfect for hygienic applications in the food and beverage, pharma, and cosmetic industries. It is designed in accordance with ASME BPE 2016 guidelines and is certified by EHEDG.

Technical Data

Port connection	1/2" to 2"
Diaphragm size	1/4" to 1-1/2"
Port connections	
Weld ends	ASME BPE
Materials	
Body	Stainless Steel 316L /1.4435 / BN2
Diaphragm materials	PTFE/EPDM (EA), EPDM (AD), EPDM Laminated (ER) on request: advanced PTFE/EPDM (EU), FKM (FF)
Actuator / Cover	PPS / Stainless Steel 1.4561 (316Ti)
Media	Neutral gases and liquids, high-purity, sterile, aggressive or abrasive fluids
Viscosity	Up to viscous
Surface finish	
Internally electropolished	Ra ≤ 15 Ra (ASME BPE SF4)
Medium temperature	
PTFE/EPDM (EA)	14 to 266°F (steam sterilization 284°F for 60 min)
EPDM (AD), advanced PTFE/EPDM (EU)	23 to 289°F (steam sterilization 302°F for 60 min)
EPDM laminated (ER)	23 to 266°F (steam sterilization 284°F for 60 min)
Ambient temperature	+41°F to +140°F
Control medium	Neutral gases; air
Max. pilot pressure	max. 145 PSI, 100 PSI with actuator size130mm
Pilot air ports	Push-in connector for external Ø 6 mm or ¼" tube, thread G1/8 (on request)

Dimensions [inch]

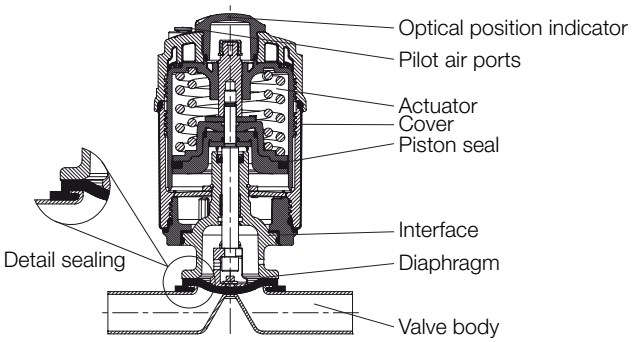
Actuator



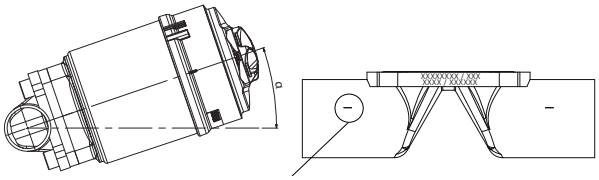
Diaphragm size	Actuator size Ø [mm]	ØA	H
1/4"	50	2.54	5.35
1/2"	70	3.58	6.26
3/4"	70	3.58	6.26
1-1/4"	90	4.72	8.89
1-1/2"	130	6.26	10.81

2103 with 360° rotatable interface, stainless steel

Materials



Installation for self-draining operation



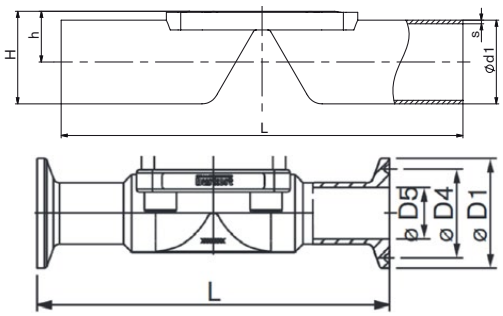
marking for self-drain angle

α = 15 up to 35° plus 3° to 5° inclination to the pipe axis. Drain marks permanently marked on both sides of the valve body show the correct mounting position to optimize drainability.

Technical data (continued)

Port connection DN		Diaphragm size	Actuator size Ø	Pilot pressure	Max. operating pressure for seal material [PSI]		Cv [gpm]
[mm]	[inch]		[mm]	[PSI]	EPDM	PTFE, advanced PTFE	ASME BPE
8	1/2"	1/4"	50	73-145	145	145	2.54
15	3/4"	1/2"	70	73-145	145	145	7.52
20	1"	3/4"	70	73-145	145	145	14.69
32	1-1/2"	1-1/2"	90	73-145	116	87	37.01
40	2"	2"	130	73-145	145	145	53.20

Flow rate: Cv value [gpm] measured at +60°F , 1 PSI pressure at valve inlet and free outlet



Weld end port connections

Port connection DN		Diaphragm size	ØD1	s	h	H	L
[mm]	[inch]						
ASME BPE							
15	1/2"	1/4"	0.5	0.06	0.35	0.63	3.54
20	3/4"	1/2"	0.75	0.06	0.51	0.91	4.61
25	1"	3/4"	1.0	0.06	0.63	1.14	5.0
40	1-1/2"	1-1/4"	1.5	0.06	0.91	1.65	6.26
50	2"	1-1/2"	2.0	0.06	1.22	2.20	7.48

Clamp port connections

Port connection DN		Diaphragm size	ØD1	ØD4	ØD5	L
[mm]	[inch]					
ASME BPE						
15	1/2"	1/4"	0.98	0.81	0.37	3.50
20	3/4"	1/2"	0.98	0.81	0.62	4.02
25	1"	3/4"	1.99	1.71	0.87	4.49
40	1-1/2"	1-1/4"	1.99	1.71	1.36	5.51
50	2"	1-1/2"	2.52	2.22	1.87	6.26

Ordering Charts

Welded connection ASME BPE

electropolished Ra ≤ 15 Ra and Inspection certificate 3.1 acc. to EN-ISO 10204 (included in delivery)

Port connection DN		Diaphragm size	Actuator size [mm]	Cv [gpm]	Pilot pressure [PSI]	Max. operating pressure [PSI]	Item no. interface 360° rotatable, stainless steel
[mm]	[inch]						
Diaphragm material EPDM (AD)							
15	1/2"	1/4"	50	2.54	54-145	145	321038
20	3/4"	1/2"	70	7.52	70-145	145	324754
25	1"	3/4"	70	14.69	70-145	145	321066
40	1-1/2"	1-1/4"	90	37.01	73-145	116	321082
50	2"	1-1/2"	130	53.20	73-102	145	324809
Diaphragm material PTFE/EPDM (EA)							
15	1/2"	1/4"	50	2.54	64-145	145	290514
20	3/4"	1/2"	70	7.52	70-145	145	290516
25	1"	3/4"	70	14.69	70-145	145	290518
40	1-1/2"	1-1/4"	90	37.01	73-145	87	290520
50	2"	1-1/2"	130	53.20	73-102	145	290525

Clamp connection ASME BPE

electropolished Ra <= 15 Ra micrometer and Certification of Conformity for Raw Material EN-ISO 10204 3.1 (included in delivery)

Port connection DN		Diaphragm size	Actuator size [mm]	Cv [gpm]	Pilot pressure [PSI]	Max. operating pressure [PSI]	Item no. interface 360° rotatable, stainless steel
[mm]	[inch]						
Diaphragm material EPDM (AD)							
15	1/2"	1/4"	50	2.54	54-145	145	317717
20	3/4"	1/2"	70	7.52	70-145	145	317719
25	1"	3/4"	70	14.69	70-145	145	317721
40	1-1/2"	1-1/4"	90	37.01	73-145	116	317723
50	2"	1-1/2"	130	53.20	73-102	145	317727
Diaphragm material PTFE/EPDM (EA)							
15	1/2"	1/4"	50	2.54	64-145	145	317718
20	3/4"	1/2"	70	7.52	70-145	145	317720
25	1"	3/4"	70	14.69	70-145	145	317722
40	1-1/2"	1-1/4"	90	37.01	73-145	87	317724
50	2"	1-1/2"	130	53.20	73-102	145	317728

2/2-way Diaphragm Valve, Manually Operated, Forged Valve Body

3233

OD Tube Butt Weld and Clamp Port Connections 1/4"-2"

- Hermetical separation of fluid from operating mechanism by diaphragm
- Zero dead volume
- Various surface finishes
- Quality certifications FDA

CLICK ME

FOR DATA SHEET

The manually-operated diaphragm valve in compact form of the Type 3233 consists of a flow-optimized stainless steel body and a manual actuator. The material combinations are selectable. The diaphragm is both a switch element and a sealing element to the outside. It can be easily replaced. The flow can be continually adjusted with the handwheel. The valves have no dead volume and can be mounted to be self-draining. This enables high flow capacities and a variety of applications to be realized. The valves are autoclavable.

Technical Data

Port connection	1/4" to 2 1/2" (stock program) or up to 4" (generally)
Diaphragm size	8-50 and 1/4" to 2 1/2" (stock) or 8-100 and 1/4" to 4" (generally)
Port connections	
Weld ends acc.	ASME BPE
Clamps acc.	ASME BPE (further port connections on request)
Materials	
Body	Stainless Steel 316L /1.4435 / BN2
Actuator	Hand wheel / bonnet PPS / Stainless steel
Diaphragm materials	PTFE/EPDM (EA), EPDM (AD), EPDM Laminated (ER) on request: advanced PTFE/EPDM (EU), FKM (FF)
Media	Neutral gases and liquids, high-purity, sterile, aggressive or abrasive fluids
Viscosity	Up to viscous
Surface finish	
Mechanically polished:	Wetted surfaces: Ra <= 0.5µm (ASME BPE SF1) & External surfaces (fluidic body): Ra <= 1.6µm
Electro polished: (more available on request)	Wetted surfaces: Ra <= 0.38µm (ASME BPE SF4) & External surfaces (fluidic body): Ra <= 0.76µm
Medium temperature	
PTFE/EPDM (EA)	14° to 266°F (steam sterilization 284°F for 60 min)
EPDM (AD), advanced PTFE/EPDM (EU)	23° to 289°F (steam sterilization 302°F for 60 min)
EPDM Laminated (ER)	23° to 266°F (steam sterilization 284°F for 60 min)
FKM (FF)	32° to 266°F (not recommended for steam)
Ambient temperature	Up to +266°F (briefly up to +302°F)
Installation	As required, best with actuator in upright position

Applications

■ Pharma ■ Biotechnology ■ Food industry

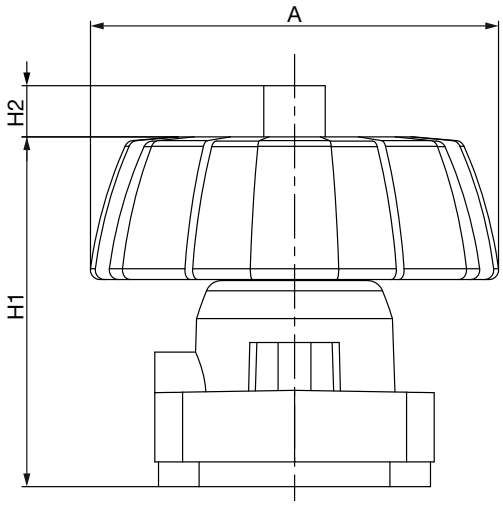
Technical data, pressure

Port connection DN [mm]	[inch]	Diaphragm size	Max. media pressure [PSI]	Cv [gpm] ASME BPE
8	1/4"	1/4"	145	0.8
10	3/8"	1/4"	145	2.1
15	1/2"	1/2"	145	3.6
20	3/4"	3/4"	145	9.8
25	1"	1"	145	16.8
40	1-1/2"	1-1/2"	145	43.4
50	2"	2"	145	76.3

Flow rate: Cv value [gpm] for elastomer diaphragms measured at +60°F and 1 PSI pressure drop at mean operating pressure | **Pressure values:** Overpressure to the atmospheric pressure. valve closes dynamically against max. operating pressure

Dimensions [inch]

Diaphragm size 1/4"- 2"

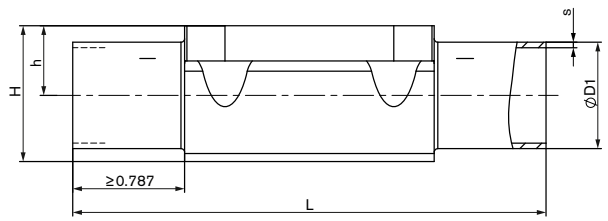


Diaphragm size	H1	H2	ØA
1/4"	1.83	-	1.38
1/2"	2.76	0.28	3.39
3/4"	2.87	0.43	3.39
1"	2.95	0.47	3.39
1-1/2"	3.46	0.75	4.49
2"	3.82	0.98	4.49

Dimensions [inch]

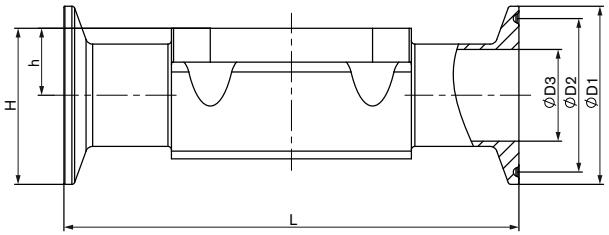
Forged body - weld end

Port connection [mm]	[inch]	DIAPH size	ØD1	s	h	H	L	Self-drain angle [°]
DIN EN ISO 1127 / ISO 4200 / DIN 11866 B								
8	1/4"	1/4"	0.250	0.035	0.236	0.591	3.071	48
10	3/8"	1/4"	0.375	0.035	0.236	0.591	3.504	39
15	1/2"	1/2"	0.500	0.065	0.315	0.787	4.252	41
20	3/4"	3/4"	0.750	0.065	0.630	1.181	4.606	29
25	1"	1"	1.000	0.065	0.748	1.457	5.000	27
40	1 1/2"	1 1/2"	1.500	0.065	1.102	2.047	6.260	24
50	2"	2"	2.000	0.065	1.417	2.677	7.480	20



Forged body - clamp

Port connection [mm]	[inch]	DIAPH size	ØD1	s	Cl	ØD2	h	H	L	Self-drain angle [°]
ASME BPE										
8	1/4"	1/4"	0.250	0.035	0.984	0.180	0.236	0.709	2.520	48
10	3/8"	1/4"	0.368	0.035	0.984	0.305	0.236	0.709	3.504	39
15	1/2"	1/2"	0.500	0.065	0.984	0.370	0.315	0.827	3.504	41
20	3/4"	3/4"	0.750	0.065	0.984	0.620	0.630	1.142	4.016	29
25	1"	1"	1.000	0.065	1.988	0.870	0.748	1.732	4.488	27
40	1 1/2"	1 1/2"	1.500	0.065	1.988	1.370	1.102	2.087	5.512	24
50	2"	2"	2.000	0.065	2.520	1.870	1.417	2.677	6.260	20



Ordering Charts

Welded connection acc. ASME BPE

(Actuator material handwheel / bonnet: PPS / Stainless steel)

Port connection DN [mm]	[inch]	Diaphragm size	Cv [gpm]	Max. operating pressure [bar]	Item no. Mechanical polished, Ra ≤ 0.5µm	Item no. Electropolished Ra ≤ 0.38 µm
Diaphragm material EPDM (AD)						
8	1/4"	1/4"	0.9	145	325820	325827
10	3/8"	1/4"	1.9	145	325821	325828
15	1/2"	1/2"	3.6	145	325822	325829
20	3/4"	3/4"	9.8	145	325823	325830
25	1"	1"	17.9	145	325824	325831
40	1 1/2"	1 1/2"	42.8	145	325825	325670
50	2"	2"	76.3	145	325826	325832
Diaphragm material PTFE/EPDM (EA)						
8	1/4"	1/4"	0.9	145	447997	447998
10	3/8"	1/4"	2.1	145	448002	448003
15	1/2"	1/2"	3.6	145	446299	446300
20	3/4"	3/4"	9.8	145	446304	446305
25	1"	1"	16.8	145	446309	446310
40	1 1/2"	1 1/2"	43.4	145	446314	446315
50	2"	2"	76.3	145	446319	446320

Clamp connection acc.ASME BPE

(Actuator material handwheel / bonnet: PPS / Stainless steel)

Port connection DN [mm]	[inch]	Diaphragm size	Cv [gpm]	Max. operating pressure [bar]	Item no. Mechanical polished, Ra ≤ 0.5µm	Item no. Electropolished Ra ≤ 0.38 µm
Diaphragm material EPDM (AD)						
8	1/4"	1/4"	0.9	145	318870	325864
10	3/8"	1/4"	1.9	145	325859	325695
15	1/2"	1/2"	3.6	145	318923	325866
20	3/4"	3/4"	9.8	145	325860	325867
25	1"	1"	17.9	145	325861	325868
40	1 1/2"	1 1/2"	42.8	145	325862	325869
50	2"	2"	76.3	145	325863	325870
Diaphragm material PTFE/EPDM (EA)						
8	1/4"	1/4"	0.9	145	446547	446548
10	3/8"	1/4"	2.1	145	446552	446553
15	1/2"	1/2"	3.6	145	446557	446558
20	3/4"	3/4"	9.8	145	446562	446563
25	1"	1"	16.8	145	446567	446568
40	1 1/2"	1 1/2"	43.4	145	446572	446573
50	2"	2"	76.3	145	446577	446578

Manually operated 2-way Diaphragm Valve, Tube Valve Body

3233

OD Tube Butt Weld and Clamp Port Connections 1/2"-2"

- Light tube valve body
- Flow optimized body in stainless steel
- Zero dead volume
- Easy to weld

CLICK ME

FOR DATA SHEET

One of the most common necessities for manufacturing pharmaceuticals, cosmetics, food and beverages are diaphragm valves. What used to be a dull two-way race between forged and cast body variants is now being challenged by an exciting, ground-breaking technology. The hydroformed, light-weight diaphragm tube valve body will change the way you think about plant design and operation – as it helps you create more sustainable processes while meeting the industry's demanding regulations. And during operation, it can increase overall productivity of your plant. The diaphragm valve with tube body is perfect for hygienic application in the food and beverage, pharma, and cosmetic industries. It is designed with zero dead leg and a high cleanability certified by EHEDG.

Technical Data

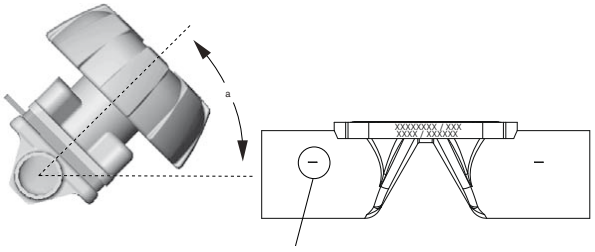
Port connection	1/2" - 2"
Diaphragm size	1/4" to 1-1/2"
Port connections	
Weld ends acc.	ASME BPE
Clamps acc.	ASME BPE
	(further port connections on request)
Materials	
Body	Stainless Steel 316L
Actuator	PPS hand wheel and stainless steel bonnet
Seal	PTFE/EPDM (EA), EPDM (AD), EPDM laminated (ER)
	on request: advanced PTFE/EPDM (EU), FKM (FF)
Fluid	Natural gases and liquids, high-purity, sterile, aggressive or abrasive fluids
Viscosity	Up to viscous
Viscosity	Up to viscous
Surface finish (inner surface)	
Electro polished	Ra ≤ 0.38 µm (ASME BPE SF4)
Medium temperature	
PTFE/EPDM (EA)	14° to 266°F (steam sterilization 284°F for 60 min)
EPDM (AD), advanced PTFE/ EPDM (EU)	23° to 289°F (steam sterilization 302°F for 60 min)
EPDM Laminated (ER)	23° to 266°F (steam sterilization 284°F for 60 min)
FKM (FF)	32° to 266°F (not recommended for steam)
Ambient temperature	Up to 266°F (briefly up to 302°F)
Options	Locking function

Technical data, pressure

Port connection DN [mm]	[inch]	Diaphragm size	Max. media pressure [PSI]	Cv [gpm] ASME BPE
15	1/2"	1/4"	145	2.3
20	3/4"	1/2"	145	7.5
25	1"	3/4"	145	14.5
40	1-1/2"	1-1/4"	145	34.7
50	2"	1-1/2"	145	46.3

Flow rate: Cv value [gpm] measured at +60°F, 1 PSI pressure at valve inlet and free outlet
Pressure values [bar]: Overpressure to the atmospheric pressure

Installation for self-drainning operation

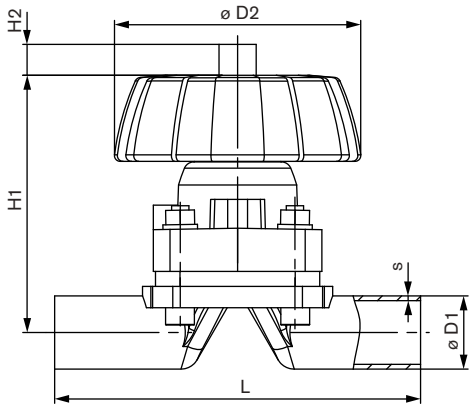


α = 15 up to 35° plus 3° to 5° inclination to the pipe axis. Drain marks permanently marked on both sides of the valve body show the correct mounting position to optimize drainability.

Dimensions [inch]

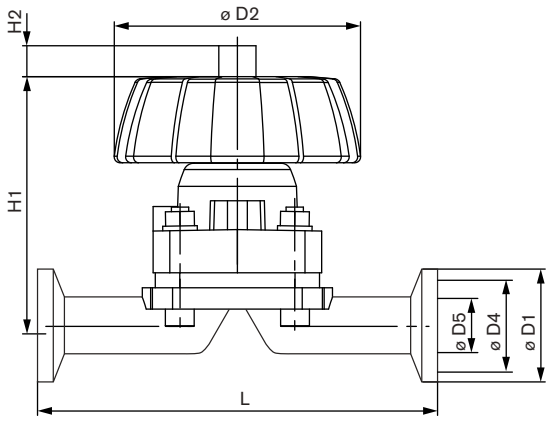
Weld ends port connection

Port connection [mm]	[inch]	DIAPH size	L	H1	H2	ØD2	ØD1	s
ASME BPE								
15	1/2"	1/4"	3.54	2.20	-	1.38	0.50	0.06
20	3/4"	1/2"	4.61	3.27	0.28	3.15	0.75	0.06
25	1"	3/4"	5.00	3.50	0.43	3.15	1.00	0.06
40	1 1/2"	1 1/4"	6.26	4.45	0.75	4.49	1.50	0.06
50	2"	1 1/2"	7.48	4.65	0.75	4.49	2.00	0.06



Clamp port connection

Port connection [mm]	[inch]	DIAPH size	L	H1	H2	ØD2	ØD1	ØD4	ØD5
ASME BPE									
15	1/2"	1/4"	3.50	2.20	-	1.38	0.98	0.81	0.37
20	3/4"	1/2"	4.02	3.27	0.28	3.15	0.98	0.81	0.62
25	1"	3/4"	4.49	3.50	0.43	3.15	1.99	1.71	0.87
40	1 1/2"	1 1/4"	5.51	4.45	0.75	4.49	1.99	1.71	1.36
50	2"	1 1/2"	6.26	4.65	0.75	6.26	2.52	2.22	1.87



Ordering charts

Welded connection ASME BPE

(PPS Handwheel & Stainless steel bonnet, electropolished Ra ≤ 0.38 µm and Inspection certificate 3.1 acc. to EN-ISO 10204 (included in delivery)

Port connection DN [mm]	[inch]	Diaphragm size	Cv [gpm]	Max. operating pressure [PSI]	Item no. EPDM (AD) seal material	Item no. PTFE/ EPDM (EA) seal material
15	1/2"	1/4"	2.31	145	295770	275865
20	3/4"	1/2"	7.52	145	295772	299776
25	1"	3/4"	14.46	145	295778	299777
40	1-1/2"	1-1/4"	34.70	145	295782	299778
50	2"	1-1/2"	46.26	145	295773	299779

Clamp connection ASME BPE

PPS Handwheel & Stainless steel bonnet, electropolished Ra ≤ 0.38 µm and Inspection certificate 3.1 acc. to EN-ISO 10204 (included in delivery)

Port connection DN [mm]	[inch]	Diaphragm size	Cv [gpm]	Max. operating pressure [PSI]	Item no. EPDM (AD) seal material	Item no. PTFE/ EPDM (EA) seal material
15	1/2"	1/4"	2.31	145	317523	317524
20	3/4"	1/2"	7.52	145	325847	325851
25	1"	3/4"	14.46	145	325848	325852
40	1-1/2"	1-1/4"	34.70	145	325849	325853
50	2"	1-1/2"	46.26	145	325850	325854

8681

Universal attachment for hygienic process valves

- 3 switching points
- Color status display
- Manual override to be used with closed housing
- Communication interface AS-Interface (option)

CLICK ME

FOR DATA SHEET

Type 8681 control head is optimized for decentralised automation of hygienic process valves. Thanks to its universal adapter it can be combined with all normal commercial butterfly valves, ball valves, single and double seated valves. With a decentralised automation concept, the control head takes over all pneumatic actuation, feedback and diagnostic functions up to and including field bus communication. The housing is easy to clean and features proven electrical IP protection and chemically resistant materials for use in hygienic processing in food, beverage and pharmaceutical industries.

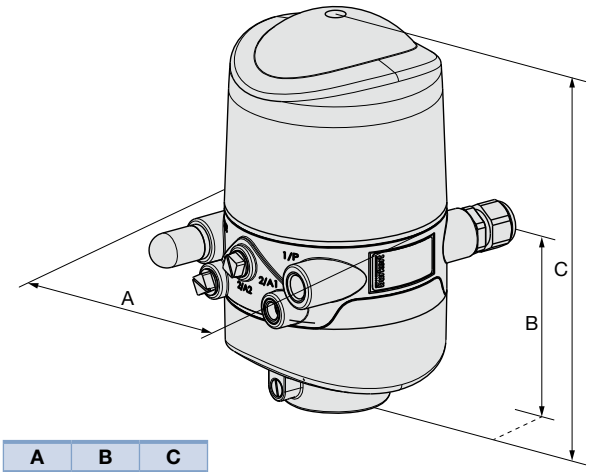
Technical Data

Material	
Body	PA, PPO, VA
Cover	PC
Seal	CR, EPDM
Control medium	neutral gases, air DIN ISO 8573-1 (filter 5 µm recommended)
Dust concentration	class 5 (<40 µm particle size)
Particle density	class 5 (<10 mg/m³)
Pressure condensation point	class 3 (<-4 °F (-20°C))
Oil concentration	class 5 (<25 mg/m³)
Supply pressure	36.25 to 116 PSI
Air capacity solenoid valve[1] (supply and exhaust air per solenoid valve adjustable)	110 l_N/min - for pressurization and exhaust, lifting device 110 l_N/min - delivery condition 200 l_N/min - max. typical flow rate (throttle)
Pilot air ports	
Air inlet and outlet	G 1/4"
Service ports	G 1/8"
Position sensor	Non-contact Position Sensor, 3 self-regulated switching points PNP (Teach-In-function) closer (normally open), PNP-output short-circuit proof, with clocking short-circuit protection
Outlet current	Max. 100 mA per feedback signal
Stroke range	0 to 80 mm
Resolution	≤ 0.1 mm
Total error	± 0.5 mm - when using a target for the dimensional drawing, material 1.4021 and a piston rod (Ø 22 mm, material 1.4301) (error refers to the reproducibility of a teach-position)
Ambient temperature	14 °F to 131 °F 41 °F to 131 °F (ATEX II 3G Ex nA IIC T4; ATEX II 3G Ex tD A22 T135°C)
Installation	As required, preferably with actuator in upright position

[1] QNn-value acc. to the definition with decrease in pressure from 7 to 6 bar absolute with 68°C.

= Quick Delivery Items

Envelope Dimensions [mm] (see datasheet for details)



A	B	C
106.7	79	195.5

Technical Data (continued)

Type of protection	IP 65/67 acc. to EN 60529
Protection class	3 acc. to VDE 0580
Fieldbus communication	AS-Interface
EG-Conformity	EMV2004/108/EG; ATEX 94/9/EG
Ignition protection	ATEX II 3G Ex nA IIC T4 ATEX II 3G Ex tD A22 T135°C

Options

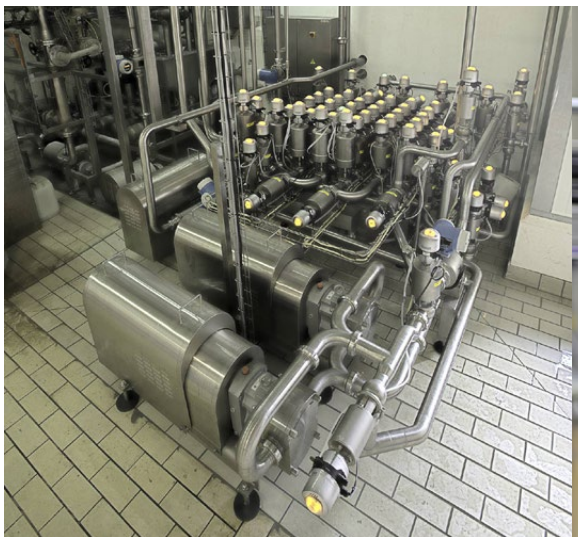
- Class 1 Div. 2

Ordering Chart

Communication	Supply voltage	Connection	FM CL1D2 NI	Quantity of solenoid valves	Feedback	Item no.
without	12 to 28 V DC	cable gland	no	0	3 int. + 1 ext.	196410
			no	1	3 int. + 1 ext.	196411
			no	3	3 int. + 1 ext.	196413
		without	yes	0	3 int. + 1 ext.	267358
		without	yes	1	3 int. + 1 ext.	261483
		without	yes	3	3 int. + 1 ext.	261484
without	12 to 28 V DC	M12, 12-pin, cable 80 cm	no	0	3 int. + 1 ext.	196420
			no	1	3 int. + 1 ext.	196421
			no	3	3 int. + 1 ext.	196423
without	120 VAC	cable gland	no	0	3 int. + 1 ext.	196470
			no	1	3 int. + 1 ext.	196471
			no	3	3 int. + 1 ext.	196473
AS-Interface v3.0 (62 slaves)	29.5 to 31.6 V DC	Version with ASI flat cable clip	no	0	3 int. + 1 ext.	196430
			no	1	3 int. + 1 ext.	196431
			no	3	3 int. + 1 ext.	196433
		without	yes	0	3 int. + 1 ext.	20013509
		without	yes	1	3 int. + 1 ext.	261485
		without	yes	3	3 int. + 1 ext.	261486
büS/CANopen	via Bus	M12, 5-pin, cable 80 cm	no	0	3 int. + 1 ext.	on request
			no	1	3 int. + 1 ext.	363140
			no	3	3 int. + 1 ext.	363163
IO-Link	via Bus	Multipole 4-pin, cable 10 cm (port class A)	no	0	3 int. + 1 ext.	359167
			no	1	3 int. + 1 ext.	358578
			no	3	3 int. + 1 ext.	358579
			yes	0	3 int. + 1 ext.	20013513
			yes	1	3 int. + 1 ext.	20002932
			yes	3	3 int. + 1 ext.	20003427
PMO Versions (for Alfa Laval valves)						
without	12 to 28 V DC	M12, 12-pin, cable 80 cm	no	3	3 int. + 1 ext.	326752
AS-Interface (62 slaves)	29.5 to 31.6 V DC	Version with ASI flat cable clip and cable 80 cm	no	3	3 int. + 1 ext.	326754
büS/CANopen	via Bus	M12, 5-pin, cable 80 cm	no	3	3 int. + 1 ext.	20002262
IO-Link	via Bus	Multipole 4-pin, cable 10 cm (Port class A)	no	3	3 int. + 1 ext.	378706

Notes:
- UL and ATEX zone 2/22 cat. 3 versions available upon request
- 2 solenoid versions available upon request
- FM versions always come without an electrical connection!
- FM versions of feedback units are always with pneumatic housing (ports are plugged)
- IO-Link Port class B available upon request

6 optimized LED colors: green, yellow, red, orange, white, and blue to indicate valve positions, error messages and warnings. In addition, the user has 6 different LED display modes to choose from.



Control Head for decentralized automation of ELEMENT process valves

8691

- Contact-free inductive valve position registration (teach function)
- Colored illuminated status display
- Integrated control air routing
- Fieldbus AS-Interface, IO-Link or büS (CANopen)

CLICK ME

FOR DATA SHEET

Technical Data

Materials	
Body	PPS, stainless steel
Cover	PC
Sealing	EPDM
Control medium	neutral gases, air, quality classes acc. to ISO 8573 - 1
Dust concentration	Class 7 (< 40 µm particle size)
Particle density	Class 5 (< 10 mg/m³)
Pressure condensation point	Class 3 (<- 20 °C)
Oil concentration	Class X (< 25 mg/m³)
Supply pressure	3 to 7 bar[1)]
Air input filter	exchangeable
Mesh aperture	~0.1 mm
Pilot air ports	Threaded ports G ⅛, stainless steel
Position feedback	Analogue position sensor (contact-free) with teach function; switchpoint (PNP) (NPN on request)
Stroke range valve spindle	2.5 to 45 mm
Ambient temperature	
with pilot valve	- 10 to + 55 °C
without pilot valve	- 20 to + 60 °C

Status Shown Through Colored LEDs

6 optimized LED colors: green, yellow, red, orange, white and blue for display of three valve positions (upper, middle and lower), error message and warnings. Visible even under dirty or dark environments.

Technical Data (continued)

Installation	As required, preferably with actuator upright
Protection type	IP65/IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard
Protection class	3 acc. to DIN EN 61140
Fieldbus communication	AS-Interface, IO-Link, büS - Bürkert System Bus (based on CANopen)
Conformity	EMC directive 2014/30/EU
Ignition protection	II 3D Ex tc IIIC T135 °C Dc II 3G Ex ec IIC T4 Gc

Ordering Chart

Control head for decentralized automation of ELEMENT On/Off process valves Type 21xx

Communication	Electrical connection	Control function pilot valve system	Pilot air ports threaded ports	Item no. Standard
AS-Interface Slave profile: S-B.A.E (A/B slave, max. 62 slaves)	M12 multipole connector	single-acting	G ⅛	227254
		double-acting	G ⅛	227240
	M12 multipole connector / Flat cable clip / 80 cm cable	single-acting	G ⅛	227258
		double-acting	G ⅛	227244
IO-Link	M12 multipole connector	single-acting	G ⅛	307371
		double-acting	G ⅛	307368
		without	G ⅛	307377
büS - Bürkert System Bus	M12 multipole connector	single-acting	G ⅛	307375
		double-acting	G ⅛	307373
		without	G ⅛	307379
Without fieldbus communication	M12 multipole connector	single-acting	G ⅛	227262
		double-acting	G ⅛	227248
		without	G ⅛	246211
	Cable gland	single-acting	G ⅛	227260
		without	G ⅛	264943

Digital electropneumatic Positioner/Controller for the integrated mounting on process control valves

- Integrated PID Control (8693)
- Compact, robust stainless Steel design
- Easy start-up by automatic X-Tune function
- Contact-free position sensor
- Integrated control air routing with spring chamber aeration
- Available as 4-20 mADC/0-10 VDC or Ethernet I/P (with AOP)

CLICK ME

FOR DATA SHEET

Technical Data

Materials	
Body	PPS, stainless steel
Cover	PC
Sealing	EPDM
Power supply	24 V DC ± 10 % cULus Listed NEC Class 2
Setpoint setting	0/4 to 20 mA and 0 to 5/10 V
Output resistance	0/4 to 20 mA: 180 Ω 0 to 5/10 V: 19 k Ω
Ambient temperature	- 10 to + 55 °C
Supply pressure	43.51 to 101.52 PSI

Air input filter	Exchangeable (mesh aperture~0.1 mm)
Actuator system	
Actuator series Type 23xx	Low air flow rate : Ø Actuator 70/90 mm High air flow rate: Ø Actuator 130 mm
Actuator series Type 27xx	High air flow rate: Ø Actuator 175/225 mm
Position detection module	Contact-free, wear-free

Ordering Chart

Control function Pilot valve system	Communication	Electrical connection	Analogue input 0/4 - 20 mA	Analogue feedback 0/4 - 20 mA + 2 binary outputs	Diagnostic function[1)]	PID Software	Binary inputs	Pilot air threaded ports	Item no.
8692 Positioner for Burkert series Type 23xx (FA03)									
Low air capacity single-acting (E1) size Ø 70/90 mm	24 V DC	cable gland	yes	yes	yes	no	yes	G ⅛	307005
		M12 multipole connector	yes	yes	yes	no	yes	G ⅛	307123
	EtherNet/IP		via Bus	via Bus	yes	no		G ⅛	306849
High air capacity single acting (E2) Size Ø 130 mm	24 V DC	cable gland	yes	yes	yes	no	yes	G ⅛	307007
		M12 multipole connector	yes	yes	yes	no	yes	G ⅛	307126
	EtherNet/IP		via Bus	via Bus		no		G ⅛	306850
8692 Positioner for 175mm and 225mm Burkert series Type 27xx and 3rd party valves (FA05)									
Low air capacity single-acting (E1) size Ø 70-90 mm	24 V DC	cable gland	yes	yes	yes	no	yes	G ⅛	306918
		M12 multipole connector	yes	yes	yes	no	yes	G ⅛	307030
	EtherNet/IP		via Bus	via Bus	yes	no		G ⅛	382296
High air capacity single acting (E2) size Ø 130 mm	24 V DC	cable gland	yes	yes	yes	no	yes	G ⅛	306927
		M12 multipole connector	yes	yes	yes	no	yes	G ⅛	307043
	EtherNet/IP		via Bus	via Bus		no		G ⅛	313266
8693 Controller for Burkert series Type 23xx (FA03)									
Low air capacity single-acting (E1) size Ø 70/90 mm	24 V DC	cable gland	yes	yes	yes	yes	yes	G ⅛	306965
		M12 multipole connector	yes	yes	yes	yes	yes	G ⅛	307105
	EtherNet/IP		via Bus	via Bus	yes	yes		G ⅛	306867
High air capacity single acting (E2) Size Ø 130 mm	24 V DC	cable gland	yes	yes	yes	yes	yes	G ⅛	306973
		M12 multipole connector	yes	yes	yes	yes	yes	G ⅛	307113
	EtherNet/IP		via Bus	via Bus		yes		G ⅛	306868
8693 Controller for 175mm and 225mm Burkert series Type 27xx and 3rd party valves (FA05)									
Low air capacity single-acting (E1) size Ø 70/90 mm	24 V DC	cable gland	yes	yes	yes	yes	yes	G ⅛	306942
		M12 multipole connector	yes	yes	yes	yes	yes	G ⅛	307058
	EtherNet/IP		via Bus	via Bus	yes	yes		G ⅛	20002484
High air capacity single acting (E2) size Ø 130 mm	24 V DC	cable gland	yes	yes	yes	yes	yes	G ⅛	306952
		M12 multipole connector	yes	yes	yes	yes	yes	G ⅛	307070
	EtherNet/IP		via Bus	via Bus		yes		G ⅛	313276

Digital Electropneumatic Positioner SideControl and Digital Electropneumatic Process Controller SideControl

- Integrated PID Control (8793)
- Compact and robust design
- Easy start-up by automatic X-Tune function
- Integrated diagnostic functions for valve monitoring
- Dynamic positioning system with no air consumption in controlled state
- Available as 4-20 mADC or Ethenet I/P (with AOP), AS-i 3.0 or IO Link (with AOI)

Can be combined with yoke type actuators and rotary actuators.

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FOR DATA SHEETS

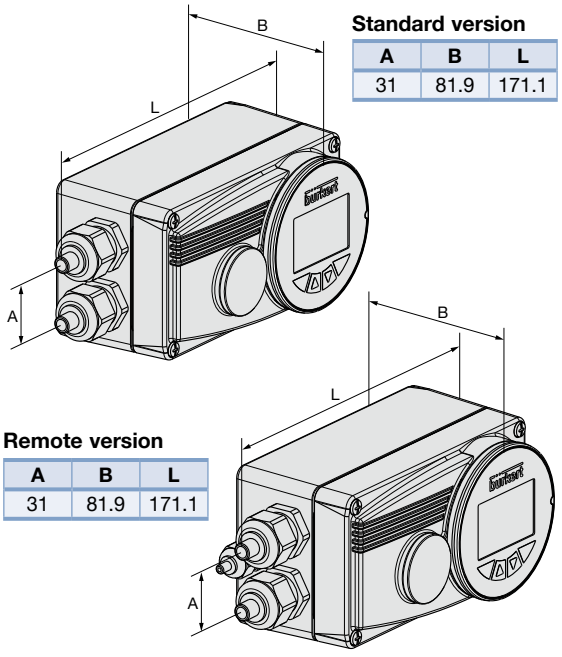
The type 8791, 8792 and 8793 are designed to standardization acc. to IEC 60534-6-1 or VDI/VDE 3845 (IEC 60534-6-2) for assembly with linear and rotary actuators. In addition, the remote versions can be combined with Bürkert process control valves. They can be operated with the usual current and voltage standard signals and can also be equipped with the fieldbus interface. They are equipped with additional diagnostic functions to monitor the state of the valve. This allows planned maintenance and optimizes plant availability. The pilot valve system can be used equally for single and double-acting actuators.

Technical Data

Material Body Seal	 Aluminium plastic-coated EPDM, NBR, FKM
Operating voltages	24 V DC ± 10 %
Residual ripple	Max. 10%
Input resistance	0/4-20 mA: 180 Ω
Analogue feedback	4-20 mA, 0-20 mA
Binary input	Galvanically isolated, 0-5 V = log "0", 10-30 V = log "1"
Binary output	Galvanically separated 100 mA
Ambient temperature	14 °F to 140 °F; -10 °C...+60 °C (no Ex-Approval) 32 °F to 140 °F; 0 °C...+60 °C (with ATEX/IECEx-Approval)
Pilot air ports	Threaded ports G ¼
Supply pressure	7.25-14.50 PSI (1.4...7 bar) [1)2)]

[1)] The supply pressure has to be 7.25-14.50 PSI above the minimum required pilot pressure for the valve actuator [2)] Pressure specifications: Overpressure with respect to atmospheric pressure

Envelope Dimensions [mm] (see datasheets for details)



Standard version

A	B	L
31	81.9	171.1

Remote version

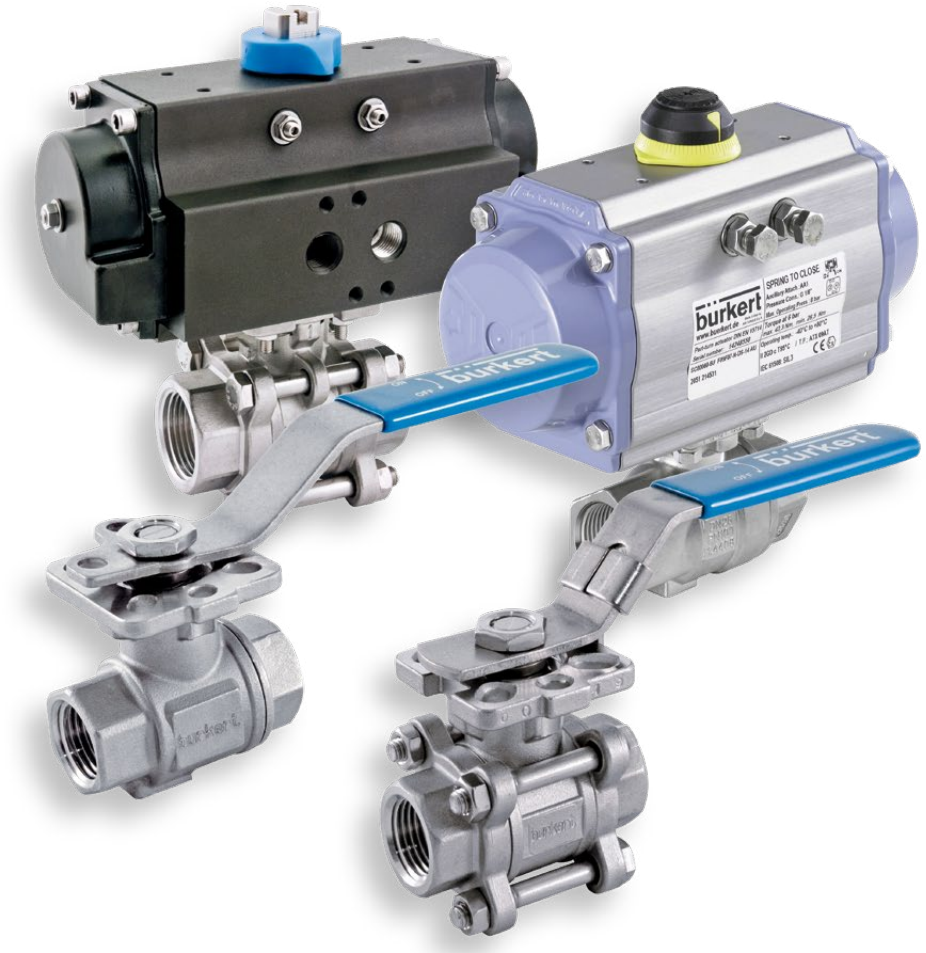
A	B	L
31	81.9	171.1

Ordering Chart

Control function pilot valve system	Communication	Electrical connection	Analog Input 0/4-20 mA	Analog feedback (output) 0/4-20 mA	2 binary outputs	Diagnostic function 1)	PID Software	Binary input	Item no.
8791 BLIND Positioner for 1/4 turn and Yoke Syle valves, NAMUR Mount (requires adapter)									
Universal, Single and Double Acting	24VDC	M12 multipole connector	yes	yes	no	yes	no	yes	323216
	AS-I 3.0		via Bus	via Bus	via Bus	yes	no	yes	239617
	IO Link, Class B		via Bus	via Bus	via Bus	yes	no	yes	323207
8792 DISPLAY Positioner for 1/4 turn and Yoke Syle valves, NAMUR Mount (requires adapter)									
Universal, Single and Double Acting	24VDC	M12 multipole connector	yes	no	yes	yes	no	yes	317990
	24VDC		yes	yes	yes	yes	no	yes	317989
	EtherNet/IP		via Bus	via Bus	via Bus	yes	no	yes	317933
8793 DISPLAY Controller for 1/4 turn and Yoke Syle valves, NAMUR Mount (requires adapter)									
Universal, Single and Double Acting	24VDC	M12 multipole connector	yes	yes	yes	yes	yes	yes	317980
	EtherNet/IP		via Bus	via Bus	via Bus	yes	yes	yes	317931

Ball Valve Configurator

Use the simple Ball Valve Configurator to select item number with the right parameters and call-in your order for Quick Delivery Options - even faster than the delivery times offered online.



BALL VALVE
Configurator

bürkert

Angle Seat Valve System for on/off Control and Globe Valve System for on/off Control

- Long service life
- Easy integration of automation units with ELEMENT
- Stainless steel housing
- Suitable for 10 bar(g)/145 PSI steam

CLICK ME

FOR DATA SHEET

The design of the System Type 8801 On/Off ELEMENT enables the easy integration of automation units whether they are electrical/optical position feedback, pneumatic control units or an optional integrated fieldbus interface. The fully integrated system with valve and automation system has a compact and smooth design, integrated pneumatic lines, IP65/67/NEMA4X protection class and superior chemical resistance.

2100 - In line with Burkert's philosophy for modular valves and sensors the construction of the 2100 angle-seat valve fulfills tough criteria for process environments. Unrivalled cycle life and sealing integrity is guaranteed by the proven self adjusting spindle packing with V-seals.

2101 - The globe valve Type 2101 is specially optimized for decentralized process automation and fulfills tough criteria for process environments.
The design enables the easy integration of automation units whether they are electrical/optical position feedback, pneumatic control units or an integrated fieldbus interface. Unrivalled service life and sealing integrity is guaranteed by the proven self-adjusting spindle packing with chevron seals.

8691 - The Control Head Type 8691 is optimized for integrated mounting on the 21XX process valve series. The registration of the valve end position is done through a contact-free analog position sensor, which automatically recognizes and saves the valve end position through the Teach function when starting up. The integrated pilot valve controls single acting actuators and provides two position feedback via two PNP transistors.

Technical Data

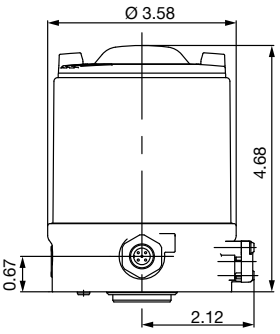
	2100 Angle Seat	2101 Globe
Orifice	0.5" (DN15) to 2.5" (DN65)	0.5" (DN15) to 4" (DN100)
Medium temperature	-10°C to +185°C; 14°F to 365°F	
Ambient temperature	-10ºC to +60ºC; 14°F to 140°F (push-in air ports) -10ºC to +100ºC; 14°F to 212°F (threaded air ports)	
Body material	316L stainless steel	
Sealing material	PTFE	
Actuator material		
Actuator	PPS	
Cover	Stainless steel 1.4561 (316Ti)	
Control medium	Instrument air at 75-100 PSI	
Flow direction	Under seat anti water-hammer/ above seat for steam and gases	
Port connection	2100 NPT/OD Tube/Clamp and 2301ANSI Flanged*	
Safe position	Normally closed	

*other options available

8691 Technical Data

Material	
Body	0.5" (DN15) to 2.5" (DN65)
Cover	PC
Sealing	EPDM
Control medium	neutral gases, air, quality classes acc. to ISO 8573-1
Dust concentration	Class 7 (<40µm particle size)
Particle density	Class 5 (<10mg/m³)
Pressure condensation	Class 3 (<-20°C)
Oil concentration	Class X (<25mg/m³)
Supply pressure	43.5-101.5 PSI
Pilot air ports	316L stainless steel
Seal material	PTFE
Position feedback	Analogue position sensor (contact-free) with teach function; switchport (PNP)
Ambient temperature	
with pilot valve	14°F to 131°F; -10°C to 55°C
Protection type	IP65 and IP67 according to EN 60529, Type 4X
Approvals	cULus Cert. No 238179

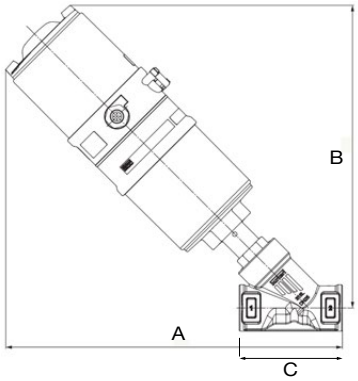
8691 Dimensions [inch] (see datasheet for more details)



Actuator size Ø [mm]	Ø A
70	3.58
70	3.58
90	4.72
130	6.26
130	6.26

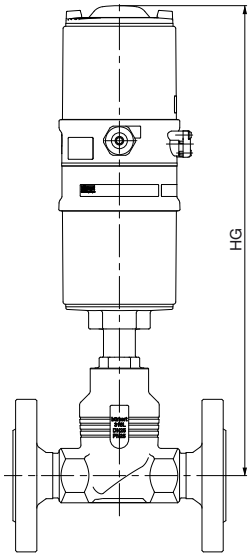
Dimensions [inch] (see datasheet for details)

8801 NPT end



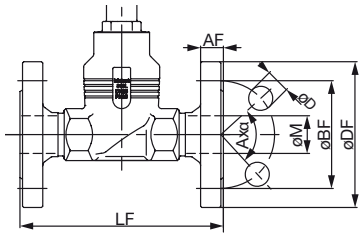
Connection	Actuator [mm]	A	B	C
1/2"	70	9.9	11.0	2.58
3/4"	70	10.2	11.4	2.95
1"	70	10.4	11.7	3.54
1 1/2"	130	14.0	15.4	4.72
2"	130	14.5	16.3	5.91
2 1/2"	130	15.1	17.3	7.28

2101 flanged body



Orifice [mm]	Orifice [inch]	Actuator [mm]	HG [inch]
15	1/2"	70	13.622
20	3/4"	70	13.858
25	1"	70	13.976
40	1 1/2"	90	17.362
50	2"	130	19.646
65	2 1/2"	130	20.787
80	3"	130	22.087
100	4"	130	22.48

2101 flanged body



Port size (tube) [inch]	Actuator size [mm]	Actuator [mm] ØDF	LF	ØBF	AF	ØD	ØMF
1/2	70	3.50	7.24	2.38	0.41	0.61	0.61
3/4	70	3.89	7.24	2.75	0.50	0.61	0.81
1	70	4.25	7.24	3.11	0.55	0.61	1.05
1-1/2	90	5.00	8.74	3.88	0.68	0.61	1.05
2	130	5.98	10.00	4.75	0.75	0.75	2.07
2 1/2	130	7.00	10.86	5.50	0.87	0.75	2.48
3	130	7.48	11.73	6.00	0.94	0.75	3.07
4	130	9.01	13.85	7.50	0.94	0.75	4.01

Ordering charts

Angle Seat-Valve System On/Off (2100 + 8691)

Size	Actuator [mm]	Cv	Min. pilot pressure [PSI]	Max. pressure [PSI]	NPT	Tube	Clamp
Flow from below the seat (liquids)							
1/2"	70	5.8	73	363	303637	286261	290366
3"4"	70	12.7	73	363	302452	274542	302523
1"	70	20.8	73	232	464795	253137	295044
1 1/2"	90	46.2	73	232	307516	302457	302526
2"	130	71.7	73	232	302455	302521	302527
2 1/2"	130	109.8	81	218	302456	302522	302529
Flow from above the seat (steam and other gases)							
1/2"	70	5.9		232	295043	306674	
3"4"	70	13.87		232	306647	268818	
1"	70	21.96		232	294405	306675	
1 1/2"	90	46.34		232	306672	306676	
2"	90	63.58		232	295174	306677	
2 1/2"	90	98.26		232	306673		

Valve System On/Off (2101 + 8691)

Size	Actuator [mm]	Min. pilot pressure [PSI]	Max. pressure [PSI]	Item no. ANSI Flange
Flow direction below the seat (gases and liquids)				
1/2"	70	70	362	305469
3/4"	70	70	290	305470
1"	70	70	232	261751
1 1/2"	90	72.5	232	305472
2"	130	72.5	232	305473
2 1/2"	130	82	232	305474
3"	130	82	145	305475
4"	130	82	87	305477

Angle Control Valve and Globe Control Valve

2/2-way continuous control, 1/2" to 4"

- High cycle life and maintenance-free operation
- Stainless IP65 and 67, NEMA4 protection
- Excellent control characteristics and impact resistance
- Simple to install and commission

ELEMENT Control Valves

As part of a remarkable range of attractive and process control components our hardworking angle control valves offer high flows for large capacity heat exchange operations while our globe valves offer extreme precision and quiet operation. Both can be incorporated in the superlative 8802 control valve system. The 8802 Continuous ELEMENT architecture enables the easy integration of three levels of automation modules: a simple blind Positioner; a positioner with display; and a fully functional process controller. A range of fieldbus interfaces (AS-i, Profibus) can be added with ease.

Simple, intuitive, multilingual menu driven HMI allows you to control your loop with the minimum time investment.

Threaded , OD tube weld ends, clamp, and flanged connections make this an easily installed part of your control loop. These control valves offer unmatched life cycle performance. Truly Intelligent, Integrated and Beautiful.

Technical Data

	2300 Angle Seat	2301 Globe
Orifice	1/2" (DN15) to 2 1/2" (DN65)	3/8" (DN10) to 4" (DN100)
Medium temperature	14°F to 365°F; -10°C to +185°C	
Ambient temperature	Max. 55ºC; 131°F	
Body material	316L stainless steel	
Sealing material	PTFE/stainless steel	
Actuator material	PPS/stainless steel band	
Control medium	Instrument air at 85-100 PSI	
Flow direction	Under seat anti water-hammer	
Port connection	2300/2301 NPT/OD Tube/Clamp and 2301 ANSI Flanged	
Safe position	Normally closed	

8692 Technical Data

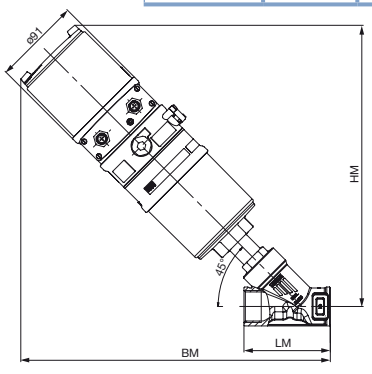
Material	
Body	PPS, stainless steel
Cover	PC
Sealing	EPDM
Control medium	neutral gases, air, quality classes acc. to ISO 8573-1
Dust concentration	Class 7 (<40µm particle size)
Particle density	Class 5 (<10mg/m³)
Pressure condensation	Class 3 (<-20°C)
Oil concentration	Class X (<25mg/m³)
Supply pressure	Low air flow rate 0-101.52 PSI (0 to 7 bar [1]) High air flow rate 43.5-101.52 PSI (3 to 7 bar)
Pilot air ports	Threaded ports G1/8 stainless steel
Seal material	EPDM
Electrical Connection	
Multipole connection	M12, 8-pins or 4-pins
Cable gland	2xM16 × 1.5 (cable-Ø 5 – 10 mm) with connection terminals for cable cross-sections 0.14 – 1.5 mm²
Ambient temperature	-10°C to 55°C; 14°F to 131°F
Protection type	IP65/IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard

[1] The supply pressure has to be 7.25-14.05 bar above the minimum required pilot pressure for the valve actuator.

Dimensions [inch] (see datasheet for more details)

8802 NPT end

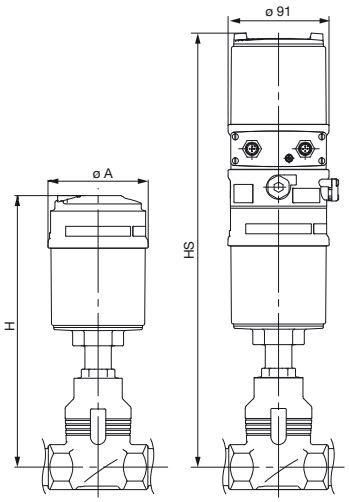
Connection	Actuator [mm]	HM	BM	LM
1/2"	70	11.02	12.13	2.56
3/4"	70	11.34	12.52	2.95
1"	70	13.03	14.25	3.54
1 1/2"	130	15.12	15.08	4.72
2"	130	15.63	17.40	5.91
2 1/2"	130	16.93	19.17	7.28



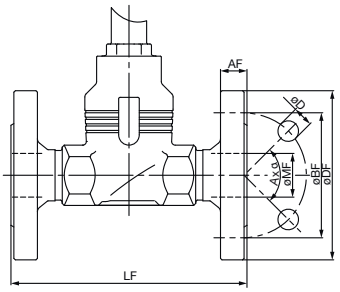
Dimensions [inch] (see datasheet for more details)

2301 without and with TopControl Type 8692

Size	Actuator [mm]	ØA	H	HS with 8692
1/2"	70	3.58	9.40	15.07
3/4"	70	3.58	9.64	15.31
1"	90	4.72	11.85	17.52
1 1/2"	130	6.26	15.19	20.86
2"	130	6.26	15.43	21.10
2 1/2"	130	6.26	17.55	23.22
3"	130	6.26	17.87	23.54
4"	130	6.26	18.26	23.93



2301 flanged body



Port size (tube) [inch]	Actuator size [mm]	Actuator [mm] ØDF	LF	ØBF	AF	ØD	ØMF
1/2	70	3.50	7.24	2.38	0.41	0.61	0.61
3/4	70	3.89	7.24	2.75	0.50	0.61	0.81
1	70	4.25	7.24	3.11	0.55	0.61	1.05
1-1/2	90	5.00	8.74	3.88	0.68	0.61	1.05
2	130	5.98	10.00	4.75	0.75	0.75	2.07
2 1/2	130	7.00	10.86	5.50	0.87	0.75	2.48
3	130	7.48	11.73	6.00	0.94	0.75	3.07
4	130	9.01	13.85	7.50	0.94	0.75	4.01

Ordering charts

Angle Control Valve (2300 + 8692)

Size	Orifice [mm]	Cv	Pressure	NPT PTFE/St.st.	NPT St.st./St.st.	Tube PTFE/St.st.	Tube St.st./St.st.	Clamp PTFE/St.st.	Clamp St.st./St.st.
1/2"	15	5.8	232	336492	337376	336509	337391	337343	336461
3"4"	20	11.6	232	336494	467877	336511	337395	337344	337420
1"	25	18.5	232	336495	337378	336512	337402	337346	338033
1 1/2"	40	41.6	232	336496	467878	337313	337408	337373	338034
2"	50	61.3	232	336504	467874	337314	336458	333086	338036
2 1/2"	65	104.1	232	336508	337287	337315	337412	337375	333091

Globe Control Valve (2301 + 8692)

Size	Orifice [mm]	Cv	Pressure	Flange PTFE/St.st.	Flange St.st./St.st.	NPT PTFE/St.st.	NPT St.st./St.st.
1/2"	15	5	232	338037	337323	337384	467880
3"4"	20	8.3	232	338038	337324	338073	337413
1"	25	13.9	232	338039	337338	467881	337134
1 1/2"	40	27.7	232	338042	337339	338075	337414
2"	50	43	232	338045	467872	338124	337416
2 1/2"	65	75.6	232	338049	333067	338216	337419
3"	80	116.3	145	338070	333059	-	-
4"	100	162.8	87	338072	337340	-	-

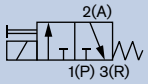
Size	Orifice [mm]	Cv	Pressure	Tube PTFE/St.st.	Tube St.st./St.st.	Clamp PTFE/St.st.	Clamp St.st./St.st.
1/2"	10	3.1	232	338227	337316	-	-
	15	5	232	-	-	338255	333093
3"4"	15	5	232	338234	337317	337288	338257
1"	20	8.3	232	338239	336479	337289	338249
1 1/2"	32	20.7	232	338242	336459	337290	338259
2"	40	27.7	232	336462	336474	338256	338253
2 1/2"	50	43	232	338244	338223	-	-
3"	65	75.58	232	338246	337320	-	-
4"	100	162.8	87	338248	336350	-	-

Direct mounting pilot valve for pneumatic actuators

NPT 1/8" or NPT 1/4"

- Simple to connect to valve and air supply
- Low power
- Tough and reliable
- Manual override as standard

CE



Type 6014 P

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FOR DATA SHEET

Direct-acting, 3/2-way, normally closed solenoid valve is plunger operated and designed to fit simply and securely to process valves. Type 6012 P has a compact design and a 1.2 mm orifice. Type 6014 P with a higher air capacity because of the 2 mm orifice. For the Type 7012 P a banjo connection with banjo bolt is the ideal solution for easy direct mounting on a pneumatic actuator.

Technical Data

	6012 P	6014 P	7012 P
Pressure range	0-145 PSI max.	0-145 PSI max.	0-188 PSI max
Temperature media	14 °F to 140 °F (-10 °C to +60 °C)	14 °F to 140 °F (-10 °C to +60 °C)	14 °F to 140 °F (-10 °C to +60 °C)
Ambient temperature	14 °F to 104 °F (-10 °C to +40 °C)	14 °F to 104 °F (-10 °C to +40 °C)	14 °F to 104 °F (-10 °C to +40 °C)
Body material	Polyamide	Brass and aluminium	Polyamide
Banjo bolt material	Brass, nickel plated	Brass, nickel plated	Brass, nickel plated
Seal material	Banjo screw: NBR Valve: FKM	FKM	FKM
Coil material	Epoxy (Class H)	Polyamide	Epoxy (Class H)
Voltage tolerance	±10%	±10%	±10%
Power consumption	DC: 4 W, AC: 9 VA (inrush), 6 VA (hold)	DC: 8 W, AC: 24 VA (inrush), 17 VA (hold)	DC: 7 W, AC: 4 W
Protection class	IP65 (with cable plug)	IP65, NEMA 4 (with cable plug)	IP65 (with cable plug)
Electrical connection	Cable plug, Type 2507, Form B acc. to industry standard (not included)	Cable plug, Type 2518, Form A acc. to DIN EN 175301-803 (not included)	Cable plug, Type 2507, Form B acc. to industry standard (not included)
Response times [1]			
DC opening	7-12 ms	ca. 18 ms	7-12 ms
DC closing	7-12 ms	ca. 22 ms	7-12 ms
AC opening	7-10 ms	ca. 18 ms	7-12 ms
AC closing	9-12 ms	ca. 22 ms	7-12 ms

[1] Measured at valve outlet at 87 PSI (6 bar) and 68 °F (+20 °C)
Opening: pressure rise 0 to 90%, *Closing*: pressure drop 100 to 10%

Options

6012 P
- Normally open
- Cable plug with LED and varistor
- Other voltages on request

6014 P
- Normally open
- Cable plug with LED and varistor
- Hazardous area approvals

7012 P
- Normally open
- Other voltages on request

Type 6012 P

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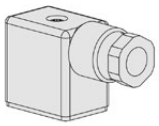
FOR DATA SHEET

Type 7012 P

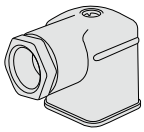
CLICK ME

FOR DATA SHEET

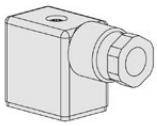
Envelope Dimensions [inch] (see datasheet for details)



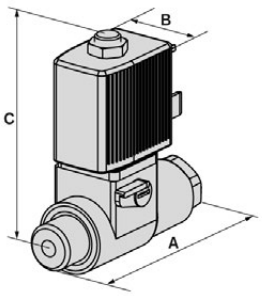
2507 cable plug
Form B
(not included)



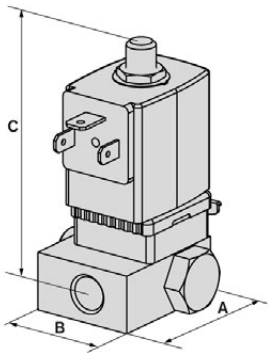
2518 cable plug
Item no. 314 802
(not included)



2507 cable plug
Form B
(not included)

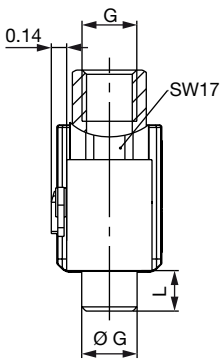


Type 6012 P

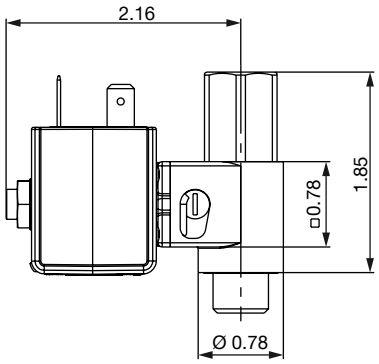


Type 6014 P

Type	A	B	C
6012 P	1.85	0.78	2.04
6014 P	1.77	1.41	3.11



Type 7012 P



Threaded version for compressed air

Type	G	L
7012 P	G 1/8	0.25
7012 P	G 1/4	0.37

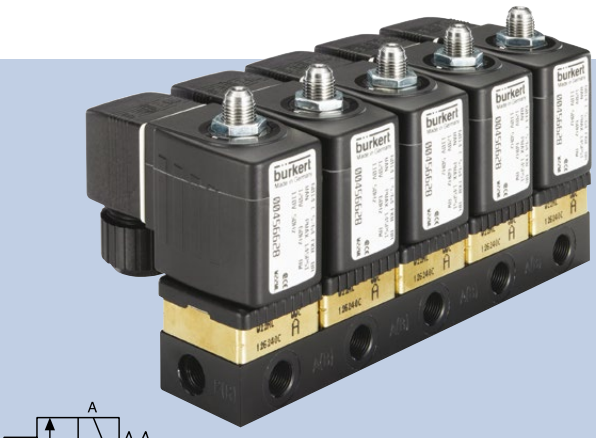
Ordering Chart

Connection Actuator/Air	Orifice [mm]	Cv	Pressure range [PSI]	Item no. Voltage/Frequency [V/Hz] 24 V DC	120 V/60 Hz
6012 P					
1/8" BSP / 1/4" NPT	1.2	1.7	0-145	552275	552277
1/4" BSP / 1/4" NPT				552279	552281
6014 P					
1/8" BSP / 1/4" NPT	1.6	0.08	0-230	429142	429144
1/4" BSP / 1/4" NPT				429130	429132
1/8" BSP / 1/4" NPT	2.0	0.13	0-140	429146	429148
1/4" BSP / 1/4" NPT				429134	429136
7012 P					
1/8" BSP / 1/8" NPT	1.2	0.05	0-188	390864	20009676
1/4" BSP / 1/4" NPT				390916	20009677

Heavy Duty 3/2-way Pilot Valve Blocks

NPT 1/4", 0-145 PSI

- Extremely rugged
- Slip over coil design
- Manual override



Shown with 2508 plugs

Plug and play, pre-assembled and tested manifold solutions featuring our direct-acting 3/2-way normally closed solenoid valve. The valves are plunger operated and designed to work in process environments with double FKM seals and a strong 32mm coil. These small flexible systems are engineered specifically for process compressed air however Burkert specializes in custom manifolds to suit any fluid purpose from 0.05mm to 4".

Technical Data

Pressure range	0-145 PSI, max.
Temperature media	14 °F to +212 °F
Ambient temperature	131 °F, max.
Manual override	Yes
Body material	Brass
Manifold material	Anodized aluminum
Connections	NPT 1/4"
Valves	24 VDC (466 359) or 120 VAC (467 127)
Orifice	2 mm
Cv	0.13
Seal material	FKM
Coil material	Epoxy
Power consumption	DC: 8 W, AC: 24 VA (inrush), 17 VA (hold)
Protection class	IP67 with cable plug
Electrical connection	2518 Cable plug Form A (included)
Accreditations	CSA, CE, UR

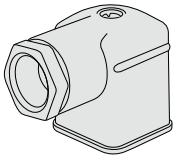
Options

- Manifolds of many engineering materials
- Intrinsically safe range (1 option shown in table as example)

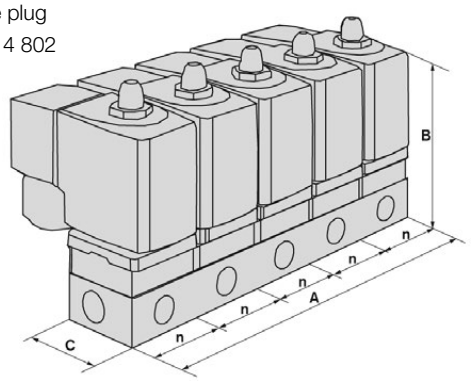
Ordering Chart for manifold mount valves

Voltage	Item no. standard
24 VDC	125375
120 VAC	467127

Envelope Dimensions [inch] (see datasheet for details)



2518 cable plug
Item no. 314 802



No. of blocks	A	B	C
2	2.56	1.77	3.30
3	3.86	1.77	3.30
4	5.16	1.77	3.30
5	6.46	1.77	3.30
6	7.76	1.77	3.30
7	9.06	1.77	3.30
8	10.35	1.77	3.30
9	11.65	1.77	3.30
10	12.95	1.77	3.30

Ordering Chart for manifold

Positions	Item no.
2	006104
3	613828
4	006106
5	613829
6	613598
8	613831
10	613833

5/2 on 3/2-way Convertible Solenoid Valve for pneumatics, NAMUR version

NPT 1/4", NAMUR

- High flow rate
- Low power consumption
- High switching reliability
- Manual override as standard
- Corrosion-resistant construction

CLICK ME

FOR DATA SHEET

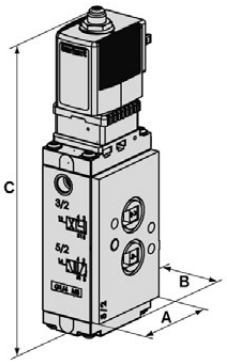
The solenoid valve, Type 6519 NAMUR, is provided with a NAMUR standard flange for easy, direct mounting to pneumatic actuators. It is manufactured from high-quality man-made materials.

Technical Data

Orifice	DN6.0 mm
Body Materials	
Pilot valve and main valve	Polyamide (PA)
Thread insert material	Brass, nickel-plated or stainless steel
Seal material	NBR and PUR
Pneumatic connection	
Supply ports 1, 3, 5	Threaded port NPT 1/4"
Service ports 2 and 4	NAMUR flange
Electrical connection	Tag connector acc. to DIN EN 175301-803 Form A for cable plug Type 2518 (not included)
Power consumption	AC 11 VA (inrush), 6 VA (hold), DC 2 W
Protection	IP65 with cable plug
Operating voltage	024/DC, 024/230 V, 50-60 Hz
Voltage tolerance	±10%
Duty cycle	100 % continuous rating
Ambient temperature	-13 °F to 131 °F (-25 °C to +55 °C)
Mediums	Compressed air, nitrogen, instrument air
Environmental conditions	Slightly aggressive, also open air
Response times [1]	
Opening	20 ms
Closing	40 ms

[1] Measured at valve outlet at 87 PSI (6 bar) and 68 °F (+20 °C) acc. to ISO 12238.
Opening: pressure rise 0 to 90%, *Closing*: pressure drop 100 to 10%

Envelope Dimensions [mm] (see datasheet for details)



For plug details please see datasheet and table below. Class 1 Div I valves are supplied with flying leads and conduit connector.

Size	A	B	C
1/4"	1.81	1.38	3.12

Ordering Chart

Type	Connections mechanical / electrical	Approvals	Item No. 24/DC	120/60	EX-i
Standard	NPT1/4" Nickel-plated / 2518 plug	UR (cURus)	296425	296428	
Standard	NPT1/4" Nickel-plated / 2509 plug	UL (cULus)	296478	296488	
Hazloc	NPT 1/4" Nickel-plated ports / 3 meter molded cable version	(UL Class I Div 2 + Atex)	377092	377091	
Hazloc	NPT 1/4" Nickel-plated ports / junction box version	(UL Class I Div 2 +Atex)	373244	373249	
FM	NPT 1/4" Nickel-plated ports / 1/2" NPT Metal Conduit with 19 inch leads	(cFMus Class 1 Div 1 T6 + T4)	20009258	20012736	
Intrinsically Safe	NPT 1/4" Nickel-plated ports / 2518 plug/ requires barrier	EX-i			20000918

8615

16, 24 and 48 station manifolds double 3/2-way NC

- Reduced space requirement in the control cabinet
- Makes it possible to use more compact control cabinets
- Hose connections directly at the bottom of the switch cabinet

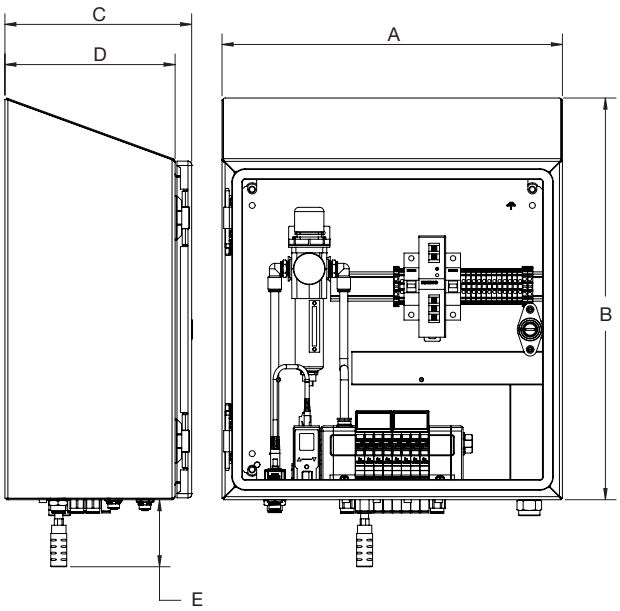
The Type 8615 AirLINE PANEL is a ready-to-mount, hygienic control cabinet with standardised connection options for many applications

Technical Data

Width/station	11 mm
Circuit functions	C 2 x 3/2-way (NC/NC)
Flow rate	310 l/min[1)]
Pressure range	Vac. up to 145.03 PSI
Outlet port	Plug-in coupling diameter 6 mm, D 1/4"
Connection air supply	Plug-in coupling diameter 10 mm, D 3/8"
Max. number of modules	Up to 6 modules possible
Valve positions per module	4 valve positions (max. 8 valve functions)
Max. number valve functions	24 (later up to 48 valve functions possible)
Communication interfaces	PROFIBUS DP Industrial Ethernet (PROFINET I/O, EtherNet IP, Modbus TCP, EtherCAT)
Electrical modules	Type ME43
Operating voltage	24 V DC
Voltage tolerance	±10%
Nominal power per valve	0.7 W (0.1 W after power reduction)
Rated current per valve	29 mA (10 mA after power reduction)
Ambient temperature	14 °F to 131 °F; -10 °C to +55 °C
Storage temperature	14 °F to 140 °F; -10 °C to +60 °C
Protection class	NEMA 4x
Enclosure	316 stainless steel slope top

[1)] Maximum flow depending on the valve function

Dimensions [inch] (see datasheet for details)



Description	A	B	C	D	E
16 station panel	16.00	18.87	8.78	8.00	3.15
24 station panel	16.00	18.87	8.78	8.00	3.15
48 station panel	24.00	27.00	8.78	8.00	3.15

Ordering Chart

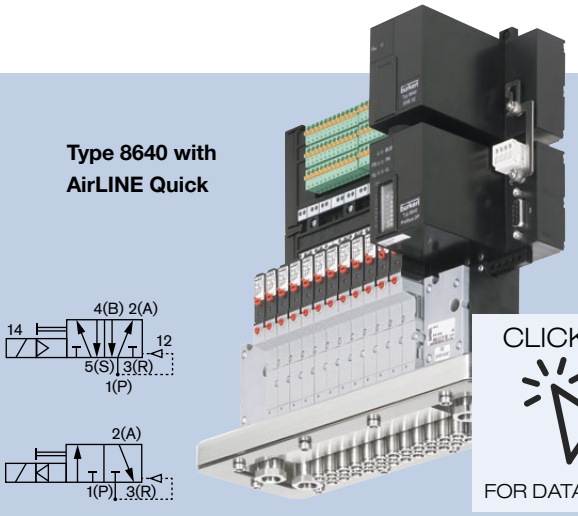
Description	Item no.
16 station panel	98134761
24 station panel	98134800
48 station panel	98134993

Modular pneumatic valve unit

AirLINE and AirLINE Quick

- Compact design
- Modular configuration
- Cost savings in the control cabinet with AirLINE Quick
- Simple exchange of valves

CE

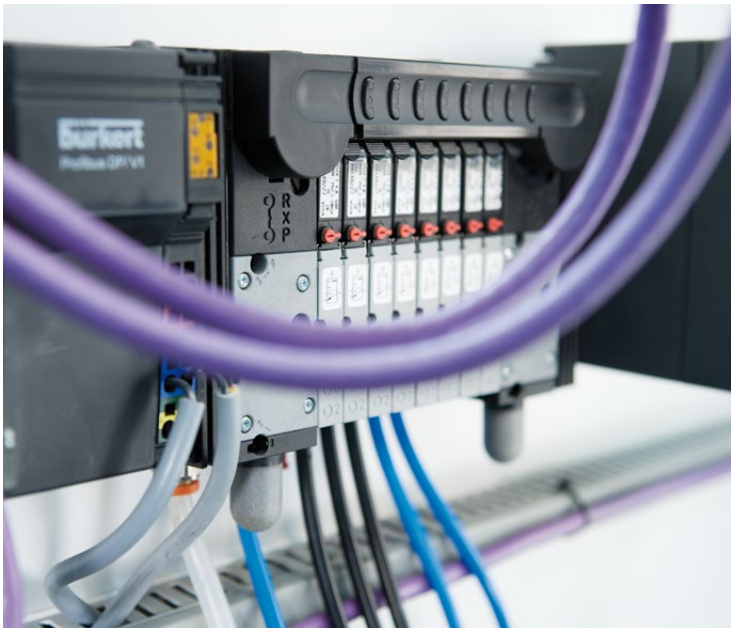


The versatile operational capability of the valve terminal, Type 8640, in the food and beverage industry will push in extended connections for hygienic applications by AirLINE Quick adapter plate with stainless steel and stainless steel. Installation and commissioning times are reduced to a minimum. For general applications AirLINE Quick is available in aluminum.

Technical Data

Body material	PA (Polyamide)
Seal material	FKM, NBR
Medium	Lubricated and non-lubricated dry air; neutral gases (5 µm filter)
Manual override	Yes
Voltage	24 V DC
Voltage tolerance	±10%
Nominal power	1 W per valve
Duty cycle	Continuous operation (100% ED)
QNn	300 l/min
Pilot method	Flipper pilot valve
Circuit function	3/2-way, normally closed, 5/2-way
Pressure range	36.2-145 PSI
Width/station	11 mm
Ambient temperature	32 °F to 131 °F
Protection class	3 acc. to VDE 0580
Type of protection	IP20 with terminal
Orifice	4 mm
Pneumatic connection	6 mm Push-in

Our fieldbus modules (Profinet IO, Profibus DP, Modbus TCP) can be combined under a bus address each with up to 7 RIO slave modules. Valve terminals with Modbus TCP on request.



Ordering Chart

Communication	Item no. 16 valves (8 x (2 x 3/2-way))	Item no. 24 valves (12 x (2 x 3/2-way))
Individually wired (common ground)	217928	217934
Multipole 25 pin connector	217930	217935
Profibus DPV 1	217932	217937

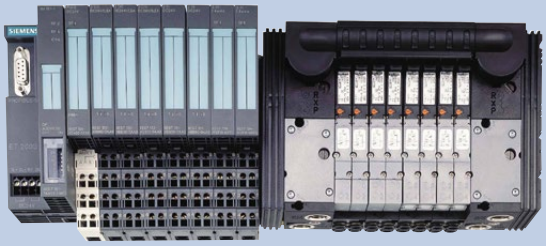
This chart shows only 6 simple configurations. The 8640 can be configured in a vast array of possibilities. Please visit the website for the configurators or call our experienced technical support.

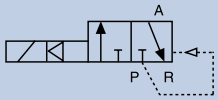
8644

3/2-way or 5/2-way valves plus analog and digital I/O, bus or conventional communication

- Combines fieldbus, I/O and pneumatic pilots
- Extreme application flexibility

CE





Stemming from our expertise in the supervision and control of complete loops AirLINE is more than a valve island. It accepts a wide array of digital and analogue field inputs and sends digital and analogue outputs for exact control where it matters.

This unique device marries virtually any combination of valve island functionality and electronic signals to the widest range of fieldbus connectivity.

AirLINE leaves the freedom to choose between electronic modules as it creates a fully integrated fieldbus communication, process valve actuation and control platform.

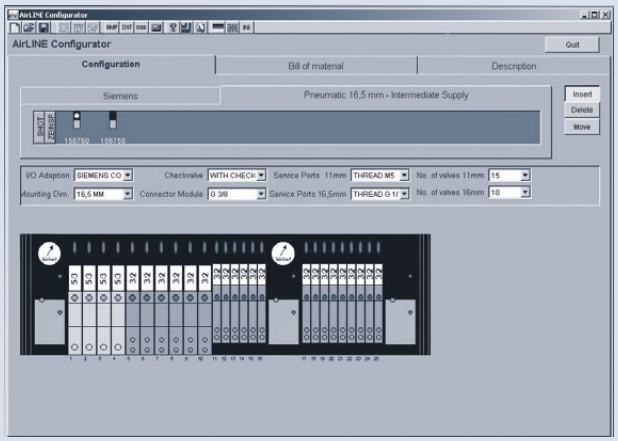
Special features make Burkert AirLINE unique:

- Burkert's exceptional process pneumatics designed and manufactured in Germany for valve actuation in the process environment
- Our ground-breaking modular system fit in your world and in your cabinet
- AirLINE I/O System 750 and AirLINE with Siemens ET 200S can be used in hazardous applications in Zone 2
- With integrated P shut-off you are able to replace a valve even during operation
- Additional integrated check valves give a better protection for your installation
- Perfect process pneumatics with multiple communication possibilities

Technical Data

Body material	PA (polyamide)
Seal material	FKM, NBR
Media	Lubricated and non-lubricated dry air, neutral gases (5 µm-Filter)
Manual override	Yes
Voltage 24 V DC	24 V DC
Nominal power	2 x 1 W
Duty cycle	Continuous operation (100% ED)
Cv	0.28 / QNn = 300l/min
Pilot method	Flipper pilot
Circuit function	C 3/2-way normally closed
Pressure range	36.25-145 PSI
Orifice size	4 mm
Pneumatic outlet	Push in 1/4" tube

Configuration Software



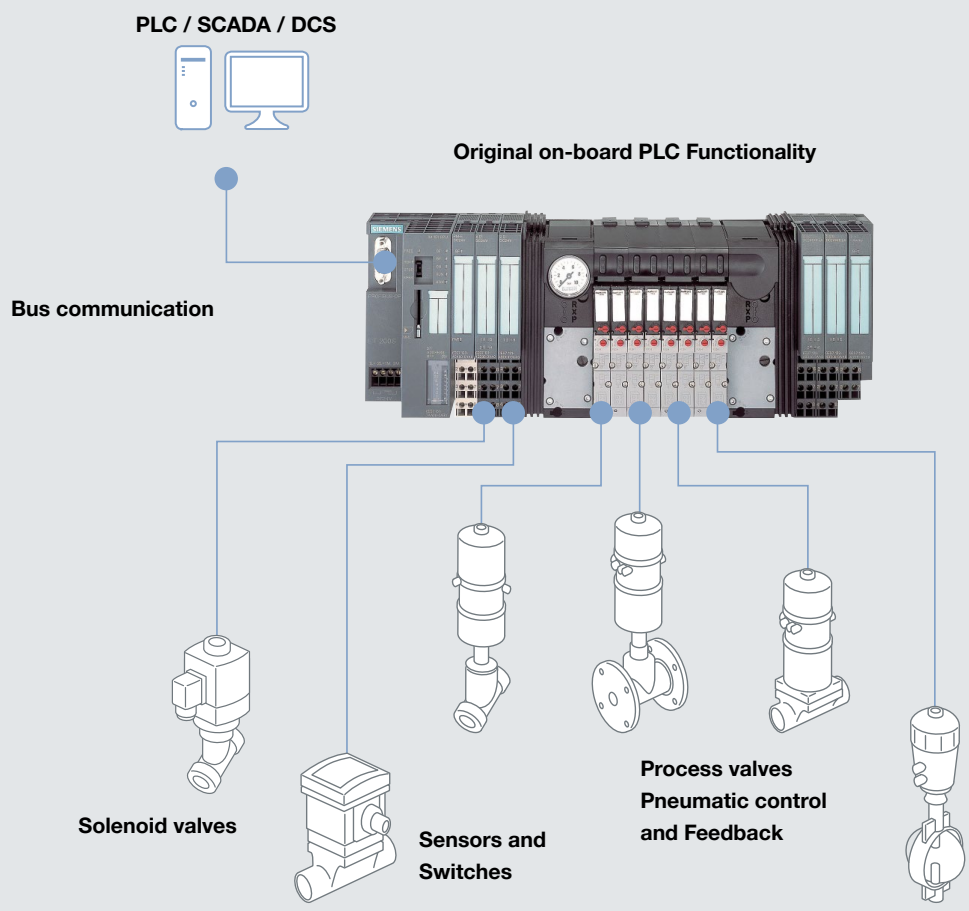
AirLINE is a system of modular design which is precisely adapted to the specific requirements of the customer. Burkert offers a software programme, the simple, precise generation of the required configuration of each AirLINE system.

The Burkert Configurator defines
- Number and types of valves
- Type of (intermediate) supplies
- Combination of Fieldbus, pilot valves and I/O modules

The results supplied by the Configurator
- Bill of materials, incl. list prices
- Illustration
- Drawings

Options

- Further valves
- Allen Bradley, Phoenix Contact, Siemens compatible islands
- Circuit function D (normally open 3/2-way valves)
- Circuit function H (5/2-way valves)
- 16mm wide valves with Cv of 0.64 / 600l/min
- Cover plates for open slots
- Fully installed in one piece cabinet



Ordering Chart

Communication	Item no. 16 valves (8 x (2 x 3/2-way))	Item no. 24 valves (12 x (2 x 3/2-way))
AB	98127373	98123841

This chart shows only 4 simple configurations. The 8644 can be configured in a vast array of possibilities. Please visit the website for the configurators or call our experienced technical support.

- Compact design
- Easy diagnostics by LC display
- Process reliability through pneumatic functions
- Optimized for installation at the bottom of the control cabinet

CLICK ME

FOR DATA SHEET

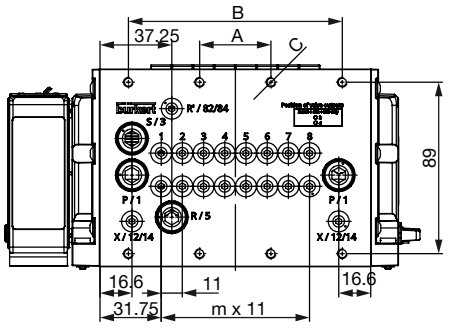
The valve island Type 8652 AirLINE has been especially developed for applications in process automation. New diagnostic functions can be visualized at the LC display, both in clear text as well as symbols. This makes it easy to relate to the shown messages and helps to save time during start-up and maintenance. Furthermore the diagnostic message is also available in the control. This therefore enables a fast overview of the plant status. The hardware is optimized for installation at the bottom of the control cabinet. Of course it is also possible to fix the AirLINE to top hat rail. Moreover, key pneumatic functions ensure increased process reliability. For instance, the non-return valves in the exhaust air ducts make sure there is no unplanned actuation due to pressure peaks.

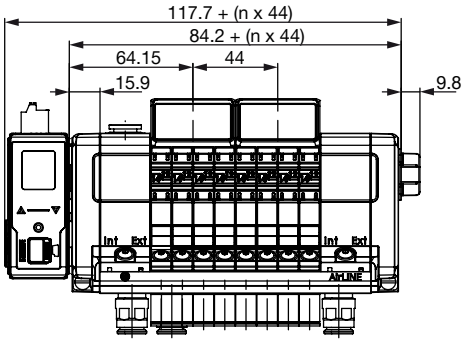
Technical Data

Body material	PA (polyamide)
Seal material	NBR, PUR
Width/station	11 mm
Manual override	Yes
Pressure range	Vac. to 10 bar
Max. number of modules	6
Number of valve slots per module	4 valve slots (max. 8 valve functions)
Max. number of valve functions	48
Degree of protection	IP 20
Manual override	Available and lockable
Operating voltage	24 V DC
Voltage tolerance	±10%
Nominal power per valve	0.7 W (0.175 W after power reduction)
Nominal current per valve	29 mA (10 mA after power reduction)
Valve island flow	310 l/min[1)]
Approvals	cULus

[1)] Maximum flow depending on the valve function

Dimensions [mm] (see datasheet for details)





Version	A	B	C	m	n
4x	66	-	4 x M5	3	1
8x	37	111	8 x M5	7	2
12x	77	154	10 x M5	11	3

Ordering Chart

Description	Item no.
16 station cULus manifold EtherNet	20007245
24 station cULus manifold EtherNet	20007250
48 station cULus manifold EtherNet	20007252

AirLINE Field - the valve island

- Compact field-mount design
- Easy to read LCD display
- LED Status indication
- Supports IO-Link (AOI), CANopen or buS
- IP 65/67 wash-down rated
- Configurable with COMMUNICATOR software

CLICK ME

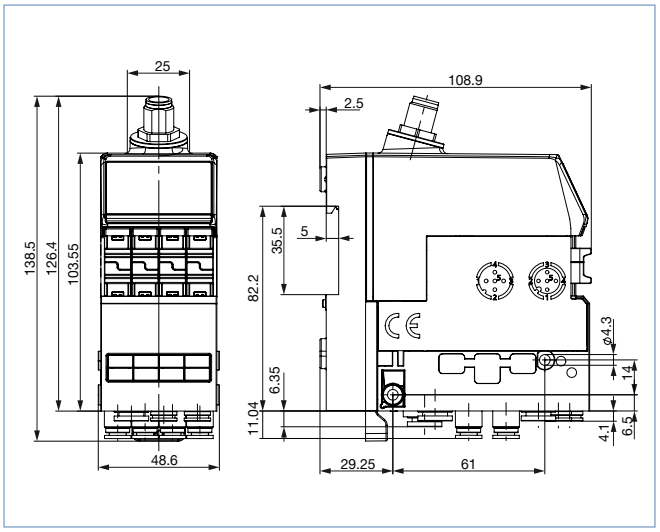
FOR DATA SHEET

The valve island Type 8653 AirLINE Field comes with diagnostic functions that can be visualized at the LC display, both in clear text as well as symbols. This makes it easy to relate to the shown messages and helps to save time during startup and maintenance. Furthermore the diagnostic message is also available at the control. This enables a fast overview of the plant status. The hardware structure is optimized for installation close to the actuator.

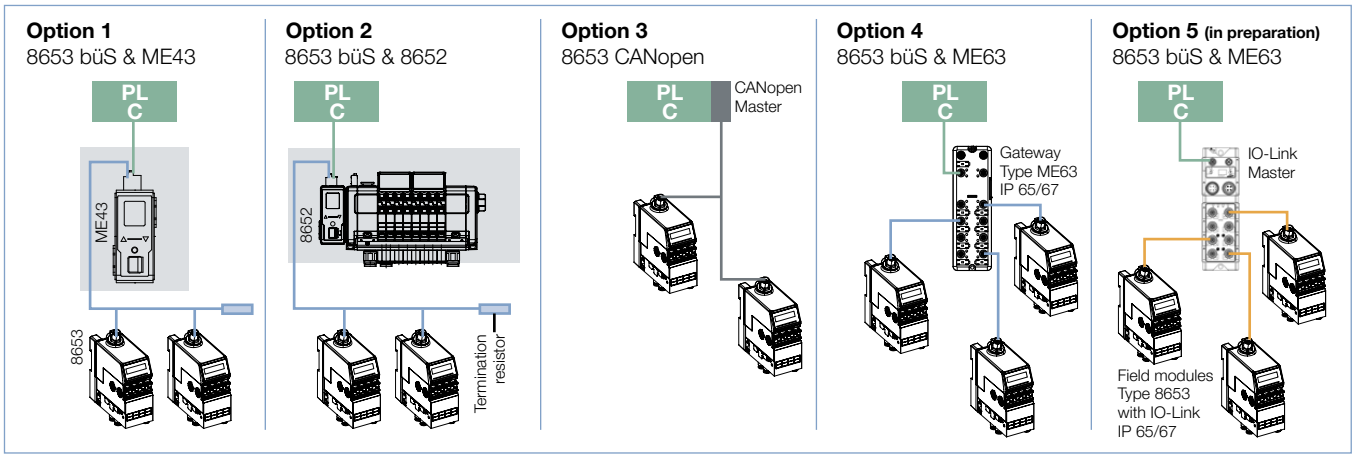
Technical Data

Body material	PA (polyamide)
Seal material	NBR and PUR
Communications	IO Link, CAN/bUs
Width/station	11 mm
Manual override	Available and lockable
Pressure range	Vac. to 8 bar
Valve slots per module	4
Max. valve functions	8
Product connections Working port Air supply connection	 Plug-in coupling diameter 6 mm, D¼" Plug-in coupling diameter 8 mm, 5/16"
Degree of protection	IP65/67

Dimensions [mm] (see datasheet for details)



Type 8653 AirLINE Field Communication



Ordering Chart

Communication	Electrical connection	No. of valves	Function of valves	Total no. of outputs	Flow rate [l/min]	Latchable manual override	Pilot supply connection	Valve output connection	Item no.
CAN/Burkert bUs	M12 x 5 pin Multipol	4	(2x) 3/2 type C	8	270	yes	5/16" Tubing	1/4" Tubing	20004273
IO-Link Port Class B	M12 x 5 pin Multipol	4	(2x) 3/2 type C	8	270	yes	5/16" Tubing	1/4" Tubing	20008554

Flow Transmitter/Pulse Divider

- Microprocessor-controlled electronics
- 2-wire (4-20 mA) / 3-wire (NPN/PNP) - operation
- Removable display unit
- Pluggable to flow sensor 8020 and 8030

CLICK ME

FOR DATA SHEET

The electronic module Type 8022 operates either as a flow transmitter (only with sensors pulse "Low Power" version Type 8020 and 8030) or as a pulse divider (with all versions of sensors of Type 8020 and 8030). The module operates the output of the sensors, displays the flow value and converts it to the signal output in mA or pulse. In operation as a flow transmitter, the frequency signal of the sensor is converted in a 4-20 mA signal (2-wire operation). In operation as a pulse divider, the input frequency is converted into an adjustable output frequency. The use of the display unit allows the switching between the two modes.

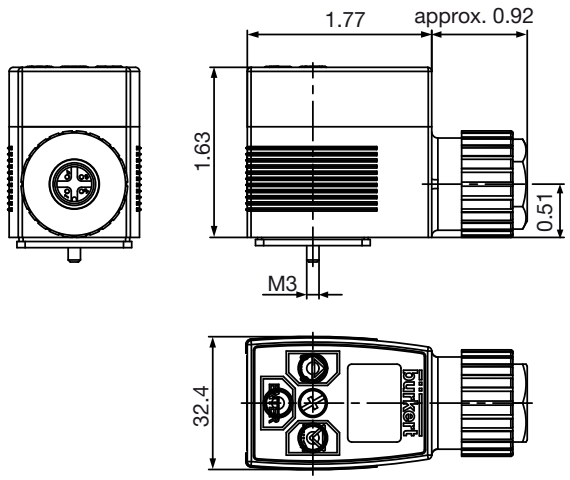
Technical Data

Power supply	12-30 V DC, filtered and regulated, SELV (safety extra low voltage) circuit with a non dangerous energy level
Voltage tolerance	± 10 %
Residual ripple	< 5 %
Power consumption max.	
Flow transmitter (4-20 mA output, 2-wire operation)	0.6 W
Pulse divider (NPN/PNP output, 3-wire operation)	3.2 W with • 0.2 W from the device • 1.5 W max. from the flow sensor* • 1.5 W max. from the PNP/NPN output*
Ambient temperature	14 °F to 140 °F (-10 to +60 °C)
Frequency input	1-600 Hz
4-20 mA output	Accuracy ± 1.5 % of full scale max. loop impedance: 1000 W at 30 V DC ; 700 W at 24 V DC; 100 W at 12 V DC
NPN/PNP output	Accuracy ± 1 % of measured value 1-600 Hz, "open collector", max. 50 mA
Electrical connection	Terminal strip 4 pins or male M12 connector
Housing material	Polyamide / PC

* depending on the customer configuration

Dimensions [inch] (see datasheet for details)

With display unit-
Version with PG gland



Functions

- Microprocessor-controlled electronics
- Scalable 4-20 mA signal
- Pulse divider operation: Transforms the input to an adjustable output frequency (3-wire operation)
- Displays the flow in a selectable unit
- Removable display unit (is only required to configure or to display)
- Transmitter operation: conversion of the input frequency into a 4-20 mA signal (2-wire operation)

Ordering Chart

Description	UL certification	*Item no.
Flow transmitter / pulse divider Type 8022 without display unit, PG connection	No	215644
Flow transmitter / pulse divider Type 8022 with display unit, PG connection	No	215645
Flow transmitter / pulse divider Type 8022 without display unit, PG connection	Recognized	563223
Flow transmitter / pulse divider Type 8022 with display unit, PG connection	Recognized	563224
Flow transmitter / pulse divider Type 8022 without display unit, male M12 connector	No	215646
Flow transmitter / pulse divider Type 8022 with display unit, male M12 connector	No	215647
Display unit for Type 8022	No	562876
Cover set (for operating without display unit)	No	670549
Right-angle female M12 connector, 4 pins	No	784301
Straight female M12 connector, 4 pins, with 5 m cable	No	918038

Batch Controller for panel or wall mounting

7 batch sizes, 2 relay outputs

- Controls 7 batches automatically
- Fast fill and fine control for accuracy
- Shows both flow rate and volume

See flow sensor 8020, 8030, 8070

(Panel version)

CLICK ME

FOR DATA SHEETS

The remote 8025 batch controller can be connected (with pulse output signal) with Burkert flowmeters Type 8020, 8030, 8070 or other flow sensor devices which emit a frequency signal. The 8025 is a batch controller with display, available in wall-mounted and panel versions:

The panel version is made up of an electronics integrated in an open housing with display. The electrical connection is carried out on the terminal blocks of the electronics board

The wall-mounted version is made up of an electronics board which is integrated in a housing with a cover and display. The electrical connection is made via the terminal blocks of the electronic board via 5 cable glands.

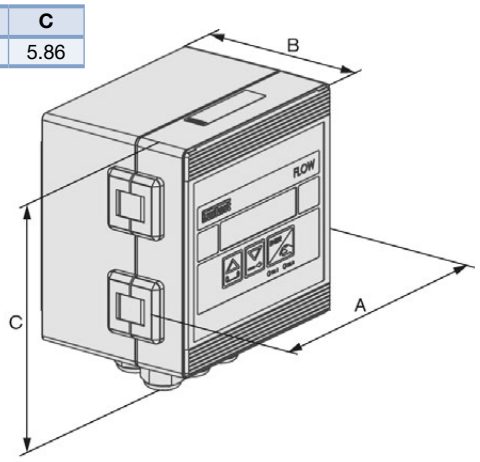
Technical data 8025

Housing material	ABS, PC* (* Panel mount version)
Front panel foil	Polyester
Screws	Stainless Steel
Cable plug / gland	PA
Ambient temperature	32 °F to 140 °F
Display	15 x 60mm, 8–digit LCD, alphanumeric, 15 segments, 9mm high
Voltage supply	12–30 VDC or 115/230 VAC, 50-60 Hz
Current consumption Max.	≤ 70 mA without consumption of inputs/outputs
Electrical Protection	Reversed polarity of DC protected
Compatibility with Burkert sensors	Any Burkert flow sensor with frequency output (8020, 8030, 8030HT, 8041, 8031, 8070, 8071)
Compatibility with other sensors	Any open collector NPN, coil, TTL, CMOS
Electrical connections	PG Cable glands
Outputs	2 relays, freely programmable, 3A, 230V
Flow input frequency	2.5 Hz up to 700 Hz
Sensor power supply	12...30, or 0...18 VDC, 100 mA Max. (24V Version); +15 V or +27V , 25 mA Max. (115V version)
Ingress protection	IP65

Envelope Dimensions [mm] (see datasheet for details)

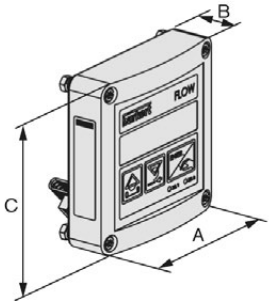
Wall Mount

A	B	C
4.96	3.54	5.86



Panel Mount

A	B	C
3.46	0.98	3.46



Ordering Chart Type 8025 Remote Batch Controller

Description	Totalizers	Relays	Connection	Item no. 12-30 V DC	Item no. 115-230 V AC
Wall mount	2	2 x 3 A	5 x PG 13.5 cable gland	433740	433741
Panel mount (CSA)	2	2 x 3 A	Terminal strip	419536	–

Type SE35 Compact Batch Controller Electronic (requires S030 fitting)

Description	Voltage supply	Sensor version	Certification	Electrical connection	Item no.
Transmitter - batch controller	12...36 V DC	Hall	-	2 cable glands	443360
		Hall	UL Recognized for US and Canada	2 cable glands	564398
	115/230 V AC	Hall	-	2 cable glands	423926

Insertion Flow Transmitter for continuous measurement

8026

For pipe > 2", 0-145 PSI

- Up and download of the data through removable display
- Pipe sizes 1/2" to 16"
- Preferably, for pipe diameter greater than 2"

Please see fitting S020

CLICK ME

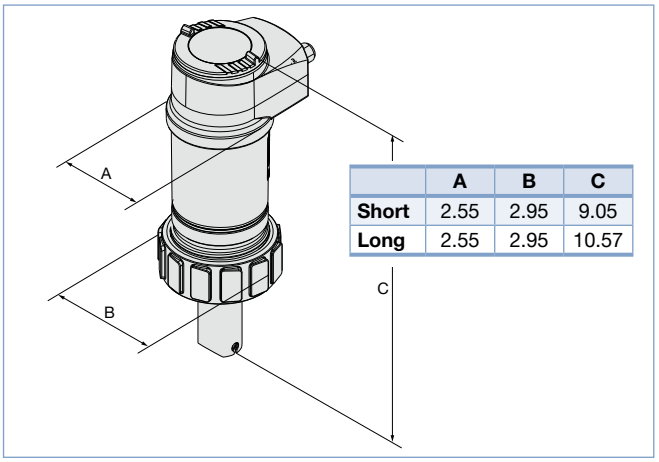
FOR DATA SHEET

The insertion style flow meter provides a 4-20 mA output directly proportional to flow. A range of fittings from weld-o-lets to saddles makes these ELEMENT style transmitters perfect for neutral, solid free liquids. A backlit removable display with joystick programming makes commissioning a breeze.

Technical Data

Insertion Flow Meter	
Size range	1/2" - 16"
Display	Removable dot matrix 128 x 64 with backlight
Measuring ranges	1 to 33 fps
Measuring error (teach in)	≤ ± 1% o.FS (at 33fps)
Measuring error (std. k-factor)	≤ ±(0.5% o.FS + 2.5% o.R)
Linearity	≤ ± 0.5% o.FS (at 33fps)
Repeatability	0.4% o.R.
Housing material	Stainless steel, PPS, PC
Paddle wheel	PVDF
Axis and bearing	Ceramic
O-rings	FKM as standard
Max. Fluid Temperature	212 °F (depending on fitting)
Ambient temperature range	14 °F to 140 °F
Max. fluid pressure	145 PSI
Voltage supply	14...36 VDC for 2-wire models
Electrical Protection	Short circuit protection Reversed polarity of DC protected
Electrical connections	M12
Outputs	4-20 mA for flow rate Transistor output NPN and PNP, 700 mA
Output Load	< 1100 Ω at 36 V < 610 Ω at 24 V < 180 Ω at 14 V
Ingress protection	IP65 and 67, NEMA4X Accreditations - CE, CSA, UR

Envelope Dimensions [inch] (see datasheet for details)



	A	B	C
Short	2.55	2.95	9.05
Long	2.55	2.95	10.57

Accessories

Description	Item no.
Display/programming module	559168
Electrical connector, 5-pin M12 male, plug only	560946
Electrical connector, 5-pin M12 male, 2 m prewired	559177
Electrical connector, 5-pin M12 female, plug only	917116
Electrical connector, 5-pin M12 female, 2 m prewired	438680

Options

- Various sealing materials
- Individual calibration certificate
- Pre-wired connection ports, M12 plug and cable

Note: Type 8026, a complete flow transmitter with integrated paddle, consists of Type 8026 which is a compact ELEMENT Flow Transmitter, a removable display/programming module and Type S020, an INSERTION fitting (the latter must be ordered separately)

Ordering Chart

Output	Electrical connection	Item no. (UR approved) Short	Long
with display			
1 x transistor NPN + 1 x 4-20 mA (2-wire)	5-pin M12 male	561863	561873
2 x transistor NPN / PNP + 1 x 4-20 mA (2-wire)	5-pin M12 male	561864	561874
2 x transistor NPN / PNP + 2 x 4-20 mA (3-wire)	5-pin M12 male and 5-pin M12 female	561865	561875
without display			
1 x transistor NPN + 1 x 4-20 mA (2-wire)	5-pin M12 male	560863	560873
2 x transistor NPN / PNP + 1 x 4-20 mA (2-wire)	5-pin M12 male	560864	560874
2 x transistor NPN / PNP + 2 x 4-20 mA (3-wire)	5-pin M12 male and 5-pin M12 female	560865	560875

INLINE Flowmeter for continuous flow measurement

For use with fitting S030, 1/2" to 2"

- Turn and lock bayonet fitting isolates sensor from media
- Economic integration in pipe systems
- 3-wire frequency version for direct connection to PLC (PNP and NPN)
- Connection to Burkert remote electronics

Please see fitting S030

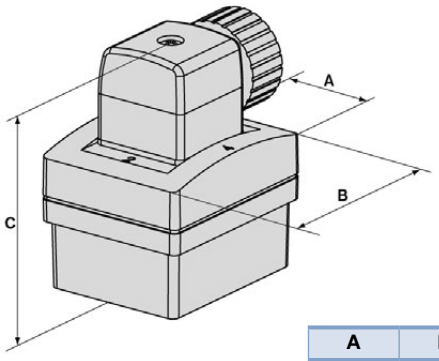
CLICK ME
FOR DATA SHEET

Unique bayonet style flow meter constructed from an SE30 sensor and an S030 flow fitting. Perfect for neutral, solid free liquids. A hall-effect sensor produces a square wave frequency proportional to the flow rate.

Technical Data

SE30 Housing material	Polycarbonate
Ambient temperature	5 °F to 140 °F
Voltage supply / Current	12-36 VDC ≤ 30 mA
Max. cable length	164' shielded
Electrical connections	Cable plug
Outputs	Transistor PNP and NPN, Max. 100mA
Protection and Approvals	IP65, CE
Sensor size range	1/2" to 2" with bayonet fitting
Measuring ranges	1 to 33 fps
Measuring error (stand. k-factor)	≤ ±(0.5% o.FS + 2.5% o.R)
Linearity, Repeatability	≤ ± 0.5% o.FS (at 33fps), 0.4% o.R.
Fitting materials	Brass, Stainless* (NPT), PVC (ASTM Union)
Sensor materials	PVDF paddle wheel with ceramic bearings
O-rings	FKM
Max. fluid temperature	212 °F (Metallic), 122 °F (PVC)
Max. fluid pressure	232 PSI (metal), 145 PSI (PVC)

Envelope Dimensions [inch] (see datasheet for details)



A	B	C
1.73	2.12	2.59

Options

- High temperature version to 275 °F
- Hygienic clamp and ASME weld end connections
- ANSI flange connection
- PVDF and PP fittings.
- High flow fittings (8020) to DN350 mm
- Various sealing materials
- Individual calibration certificate

Ordering Chart

Description	Item no.
SE30 Hall Effect	423913
SE30 Low Power Hall Effect (only for use with Type 8022 xmtr or remote 8025 electronics)	423914

Note: The electronic module, SE30 and the fitting, S030 must be ordered separately

In-Line Flow Transmitter for continuous measurement

For use with fitting S030, 1/2" to 2"

- Up and download of the data through removable display
- Automatic calibration: TEACH-IN
- All output signals without presence of flow

Please see fitting S030

CLICK ME

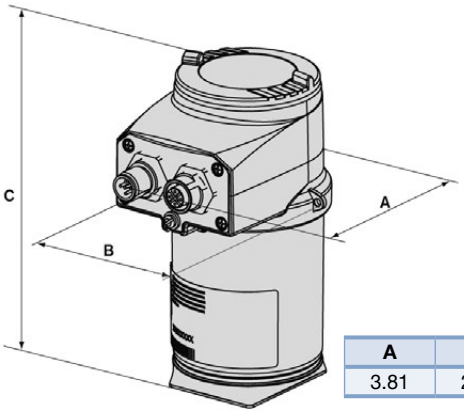
FOR DATA SHEET

Unique bayonet style flow meter constructed from an SE36 sensor and any of the S030 fittings. This two-wire 4-20 mA INLINE flow meter is manufactured to provide true, reliable flow for neutral, solid free liquids. A backlit removable display allows the system to be flexible and adds more value.

Technical Data

Electronic module	
Housing material	Stainless steel, PPS, PC
Display	Removable dot matrix 128 x 64 with backlight
Ambient temperature	32 °F to 140 °F
Voltage supply	14...36 VDC for 2-wire models
Electrical Protection	Short circuit protection Reversed polarity of DC protected
Electrical connections	M12
Outputs	4-20 mA for flow rate Transistor output NPN and PNP, 700 mA
Output Load Max.	< 1100 Ω at 36 V < 610 Ω at 24 V < 180 Ω at 14 V
Ingress protection	IP65 and 67, NEMA4X
Approvals	UL Recognized, CSA through cURus, CE
Integrated sensor and fitting module	
Size range	1/2" to 2" with bayonet fitting
Measuring ranges	1 to 33 fps
Measuring error (teach in)	≤ ± 1% o.FS (at 33fps)
Measuring error (Std. k-factor)	≤ ±(0.5% o.FS + 2.5% o.R)
Linearity	≤ ± 0.5% o.FS (at 33fps)
Repeatability	0.4% o.R.
Fitting Materials	PVC, PVDF, PP, Brass, Stainless, Stainless HT
Paddle wheel	PVDF
Axis and bearing	Ceramic
O-rings	FKM
Max. fluid temperature	212 °F (metal), 122 °F (PVC)
Ambient temperature range	0 to 140 °F
Max. fluid pressure	232 PSI (metal), 145 PSI (PVC)

Envelope Dimensions [inch] (see datasheet for details)



A	B	C
3.81	2.75	5.15

Options

- High flow rate (8026) to DN350 mm
- Hygienic clamp & weld end connections
- Individual calibration certificate
- Various sealing materials
- ANSI/DIN flange connection

Accessories

Description	Item no.
Display/programming module	559168
Electrical connector, 5-pin M12 male, plug only	560946
Electrical connector, 5-pin M12 male, 2 m prewired	559177
Electrical connector, 5-pin M12 female, plug only	917116
Electrical connector, 5-pin M12 female, 2 m prewired	438680

Ordering Chart

Specifications	Output	Electrical connection	Item no. (UR approved) without display	Item no. (UR approved) with display
2 outputs	1 x transistor + 1 x 4-20 mA (2 wire)	5-pin M12 male fixed connector	560883	561883
3 outputs	2 x transistor + 1 x 4-20 mA (2 wire)	5-pin M12 male fixed connector	560884	561884
4 outputs	2 x transistor + 2 x 4-20 mA (3 wire)	5-pin M12 male and 5-pin M12 female	560885	561885

Note: The following items must be ordered separately
The SE36 electronic module and the S030 fitting
M12 cable plugs (only female for single 4-20 mA, 1 male + 1 female for dual 4-20 mA transmitter)

Blind INSERTION Magmeter

For use with fitting 1/2" to 16"

- Solid state technology
- Clean in place (CIP)
- FDA approved

Please see fitting S020

CLICK ME

FOR DATA SHEET

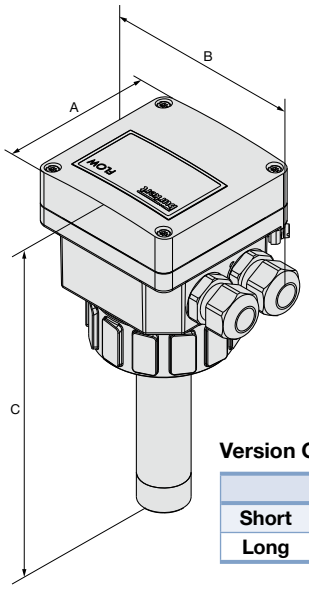
The insertion magmeter constructed from a PVDF finger and high quality blind electronic module. Perfect for contaminated or aggressive fluids it has both 4-20 mA and pulse output, with optional 3A relays, making this a flexible solution for flow control or batching.

Technical Data

Size range	1/2" - 16"
Measuring ranges	0.7 - 33 ft/s
Measuring error (teach in)	≤ ±2% o.R. (3.28-32.81 ft/s)
Measuring error (standard k-factor)	≤ ±4% o.R. (3.28-32.81 ft/s)
Linearity	≤ ±(1% o.R. + 0.1% o.FS)
Repeatability	±0.25% o.R.
Housing material	PC+20% glass fibre
Electrode material	316L SS
Mag-sensor material	PVDF or SS
O-rings	FKM
Max. fluid temperature PVDF sensor version SS sensor version	 176 °F (depending on fitting) 302 °F* (depending on fitting)
Ambient temperature range	14 °F to 140 °F
Max. fluid pressure	145 PSI (PVDF & SS version with S020 plastic fitting) 232 PSI (SS version with S020 metal fitting)
Fluid conductivity	> 20 µS (Micro-Siemens)
Storage temperature	-4 °F to 140 °F
Voltage supply	18-36 VDC
Current consumption Max.	≤ 220 mA
Electrical protection	Short circuit protection Reversed polarity of DC protected
Electrical connections	M20 cable glands (optional 1/2" conduit)
Outputs	4-20 mA Transistor, Max. 100mA, frequency 0...240 Hz Relay output 3 A/250 VAC
Output load	Max. 1100 Ω at 36 V Max. 330 Ω at 18 V
Ingress protection	IP65

*302 °F with SS finger and S020 metal fitting

Envelope Dimensions [inch] (see datasheet for details)



Version G 2" connection

	A	B	C
Short	3.46	4.56	6.37
Long	3.46	4.56	7.83

Options

- Hastelloy C Electrodes
- Tri-Clamp connection

Ordering Chart Transmitter Type 8041

Voltage supply	Output	Relay	Housing material	Seal material	Sensor version	Electrical connection	Item no.
18...36 V DC	4-20 mA, frequency	1	PC	FKM	short, PVDF	2 cable glands	558064
					long, PVDF	2 cable glands	558065
			PPA	FKM	short, stainless steel	2 cable glands	552779
					long, stainless steel	2 cable glands	552780

Note: 1 Kit 558 102, 1 relay connection kit 552 812 and 1 EPDM seal are supplied with each transmitter. | To select a complete device the following items need to be ordered: • Prod. no. of the desired flow meter for Type 8041 • Prod. no. of the Type S020 fitting, for gauges with G 2" connector, must be ordered separately

INSERTION Magmeter with display

For use with fitting 1/2" to 16"

- Simple to read display
- Easy push button menu
- Clean in place (CIP)
- FDA approved

Please see fitting S020

CLICK ME

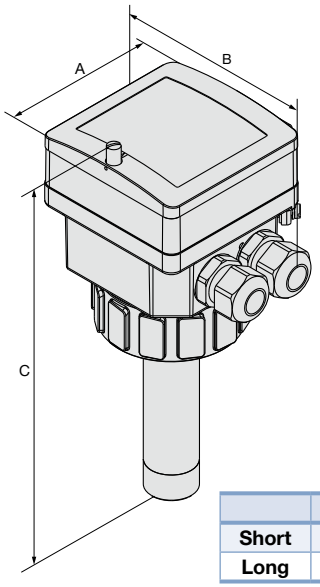
FOR DATA SHEET

With a stainless steel insertion finger and high quality electronic display module this unit is perfect for contaminated or aggressive fluids. 4-20 mA and pulse output with optional 3A relays makes this a flexible solution for flow control, batching or CIP control in FDA applications.

Technical Data

Size range	1/2" - 16"
Measuring ranges	0.7 - 33 ft/s
Measuring error (teach in)	≤ ±2% o.R. (3.28-32.81 ft/s)
Measuring error	≤ ±4% o.R. (3.28-32.81 ft/s)
Linearity	≤ ±(1% o.R. + 0.1% o.FS)
Repeatability	±0.25% o.R.
Housing material	PPA
Electrode Material	316L SS
Mag-sensor Material	316L SS (FDA compliant)
O-rings	FKM
Max. Fluid Temperature	230 °F (depending on fitting)
Ambient temperature range	14 °F to 140 °F
Max. fluid pressure	232 PSI (depending on fitting)
Fluid conductivity	> 20 µS (Micro-Siemens)
Voltage supply	18-36 VDC
Current consumption Max.	≤ 300 mA
Electrical Protection	Short circuit and reversed polarity protected
Electrical connections	M20 cable glands (optional 1/2" conduit)
Outputs	4-20 mA Transistor, Max. 100mA, frequency 0...240 Hz Relay output 3 A/250 VAC
Output Load	Max. 1300 Ω at 36 V Max. 700 Ω at 18 V
Ingress protection	IP65

Envelope Dimensions [inch] (see datasheet for details)



	A	B	C
Short	3.46	4.56	7.12
Long	3.46	4.56	8.58

Options

- PVDF finger
- Hastelloy electrodes
- Tri-Clamp connection

Ordering Chart (please order fitting separately)

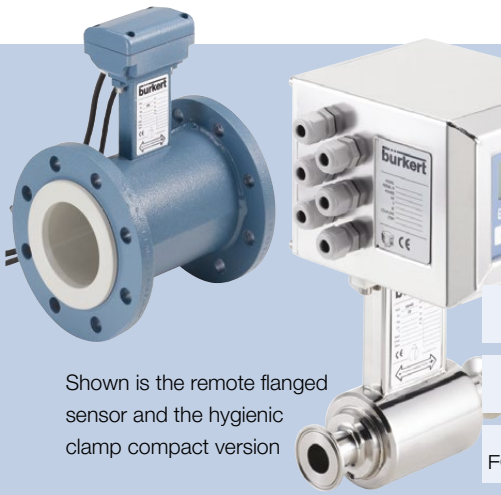
Voltage supply	Relays	Housing material	Sensor version	Item no.
18...36 V DC	No	PPA	Short, Stainless Steel (FDA)	449670
			Long, Stainless Steel (FDA)	449672
	2		Short, Stainless Steel (FDA)	449671
			Long, Stainless Steel (FDA)	449673

Note: Delivered with 1 set 551 775 and 1 EPDM seal.
To select a complete device the following items need to be ordered:
- Product no. of the desired flow meter for Type 8045
- Product no. of the Type S020 fitting, for gauges with G 2" connector, must be ordered separately

Full bore INLINE Magmeter

1/2" to 6", Up to 232 PSI

- Full bore section
- High frequency sampling
- Flow or batch control



Shown is the remote flanged sensor and the hygienic clamp compact version

These full bore magmeters accurately measure the flow of liquids with conductivities as low as 5 µS/cm with or without solids. Varied application environments such as water, wastewater, sludge, slurries, pastes, acids, alkalis, juices, fruit pulp can easily be handled. This extremely robust, time tested design incorporates the latest electronics and when combined with a valve as the actuating element they can control high-precision dosing operations. A simple HMI and a wide range of materials, measuring tube liners and process connections makes this a simple choice.

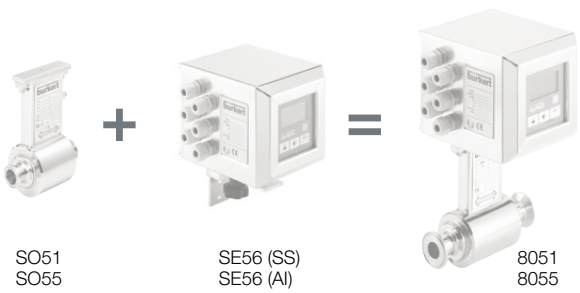
Technical Data

Housing material	Die cast aluminum or 304 Stainless steel
Ambient temperature	-4 °F to 140 °F
Voltage supply	90-265 VAC
Electrical connections	PG glands
Outputs	1 x 4-20 mA 2 x transistor (40VDC, 100mA, Fmax=1250Hz) Standard input 1 x digital (0 up to 40 VDC)
Ingress protection	IP65 and 67, NEMA4X
Approvals	CE
Size range	1/4" to 6"
Measuring ranges	1 to 33 fps
Measuring error (teach in)	± 0.2% of Reading (for liquid velocity > 3 ft/s)
Measuring error (std. k-factor)	± 0.2% of Reading (for liquid velocity > 3 ft/s)
Linearity	≤ ± 0.5% o.FS (at 33fps)
Repeatability	Repeatability better than 0.1%
Electrode material	SS 316L (optional 3 x SS 316L or 4 x Hastelloy C / Titanium / Tantal / Platinum - Rhodium)
Axis and bearing	Minimum conductivity 5 µS/cm
O-rings	FKM
Max. fluid temperature	212 °F (PTFE lining), 140 °F (PP lining)
Ambient temperature range	-4 to 140 °F
Max. fluid pressure	Fluid pressure Max. 232 PSI

Options

- 10-35 VDC electronic
- Various sealing materials
- Larger sizes
- Individual calibration certificate
- Other options Remote versions (10/20m cable, IP68), blind version
- SS body and 300# flanges S055
- PTFE lining and PN40 pressure class for S051 and S055
- 2 relay outputs NO/NC 2A-250VAC, 60W 125VA
- Hart, Profibus, RS232, RS485

System Architecture



SO51 SO55 SO56	SE56 (SS) SE56 (Al)	8051 8055 8056

For dimensions please see datasheet

Ordering Chart

Transmitter / Batch Controller Electronics - SE56				**Item no.**
Stainless steel				558306
Aluminum				558747

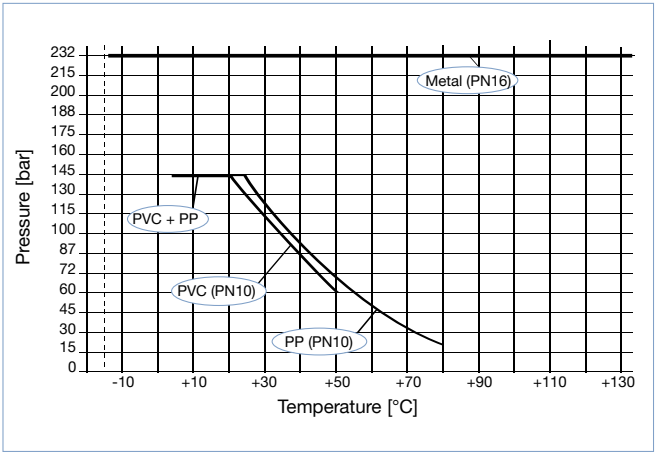
INLINE Flow Meter				
Connection	**Orifice [mm]**	**Flow Rate [GPM]**	**Lining**	**Item no.**
NPT INLINE Meter Fittings - S051				
1/4"	3	0.04 - 1.10	PTFE	554213
3/8"	6	0.17 - 4.40	PTFE	555892
1/2"	10	0.53 - 13.20	PTFE	555111
3/4"	15	1.05 - 26.4	PTFE	557659
1"	20	2.2 - 55.00	PTFE	553663
ANSI 150# INLINE Meter Fittings - S055				
1"	25	3.17 - 79.25	PP	554353
2"	50	12.7 - 317.00	PP	554354
3"	80	31.7 - 792.52	PP	554351
4"	100	49.31 - 1232.80	PP	554352
6"	150	112.7 - 2817.8	PP	561426
Hygienic Clamp INLINE Meter Fittings - S056				
1/2"	3	0.04 - 1.10	PTFE	559786
1/2"	6	0.17 - 4.40	PTFE	553325
1/2"	10	0.53 - 13.20	PTFE	554350
3/4"	15	1.05 - 26.4	PTFE	553533
1"	20	2.2 - 55.00	PTFE	553534
1"	25	3.17 - 79.25	PTFE	553535
1 1/2"	40	7.92 - 198.13	PTFE	553536
2"	50	12.7 - 317.00	PTFE	553537
2 1/2"	65	21.13 - 528.34	PTFE	553538
3"	80	31.7 - 792.52	PTFE	559791

Tee Fittings and Adaptors

- Simple installation guaranteed
- Range of chemically compatible materials
- Modular concept for pH, ORP and conductivity

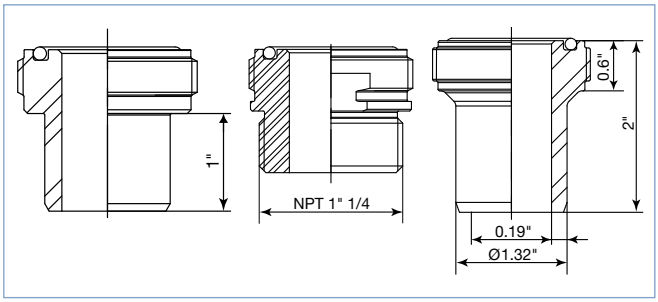
Fittings to connect the compact analytical transmitters to the media. Materials included are PVC-U, PP, Stainless steel, and PVC thread. For chemical resistance details please download our chemical resistance booklet from our website www.burkert-usa.com.

Pressure / temperature chart



Note: Always take lowest Max. medium temp. of both adapter and used ELEMENT transmitter.

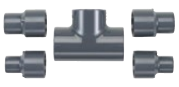
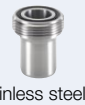
Envelope Dimensions [inch] (see datasheet for details)



Ordering Chart for insertion fitting for connection on pipe (ASTM True Union)

	Materials Body / Seal	Type of Installation or DN	Item no.
	PVC/FKM	15	560691
		20	560692
		25	560693
		32	560694
		40	560695
		50	560696

Ordering Chart for insertion adapter for connection into T-fitting or pipe

Adaptor S022	Piping systems	DN	Description	Materials Body / Seal	Type of Installation	Item no.
 PVC-U, PP metric or ASTM		32 up to 110 (06 up to 25 with reduction)	ASTM solvent adaptor with G1 1/2" external threaded for ELEMENT transmitter connection	PVC-U / FKM, EPDM	Solvent weld on 1"x1" to 3"x1" Tee fitting	561227
 Stainless steel **		Respect recommendations of installation	Welding adaptor with G 1½" external threaded for ELEMENT transmitter connection	Stainless steel / FKM, EPDM	To weld directly on pipe	561232
 PVC-U, G or NPT 1 $^{1}/_{4}$" screw-on		Respect recommendations of installation	NPT 1 $^{1}/_{4}$" screw-on adaptor with G 1½" external threaded for ELEMENT transmitter connection	PVC-U / FKM, EPDM	To screw on tank or pipe	561228

** see Type S022 datasheet for Tee Fittings

Positive Displacement Sensor Fitting for continuous flow measurement

DN15 - DN100

- INLINE Quarter-Turn technology
- Electronics available for indication, monitoring, transmitting, On/Off control and batch control

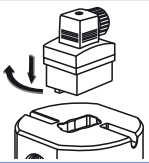
This positive displacement sensor fitting is specially designed for flow measurement and/or batch control of highly viscous fluids like glue, honey or oil. This measuring element must be associated to a transmitter SE30, SE32, SE35, SE36 with hall sensor principle only, quickly and easily connected together by a Quarter-Turn. The design of this fitting is based on the oval rotor principle. This has proven to be a reliable and highly accurate volumetric method of measuring flow. Exceptional repeatability and high accuracy over a wide range of viscosities and flow rates are features of that design. The low pressure drop and high pressure rating make it suitable for both gravity and pump (inline) applications.

Technical Data

General data	
Compatibility	With transmitter SE30, SE32, SE35, SE36 with Hall sensor principle (see separate data sheet)
Wetted parts materials	
Body	Aluminium, stainless steel 316L (1.4401)
Rotor	PPS, aluminium, stainless steel 316L (1.4401)
Shaft	Stainless steel 316L (1.4401)
Seal	FKM or FEP/PTFE encapsulated
Complete device data	
Pipe diameter	DN15 - DN100
Thread connection	½"; 1"; 1½"; 2"; 3" (NPT)
Flange connection	1"; 1½; 2"; 3" or 4" ANSI 150LB flange
Medium temperature max.	
Aluminium body:	-4 °F to 176 °F (-20 to +80 °C)
Stainless steel body:	-4 °F to 248 °F (-20 to +120 °C)
Medium pressure max.	
DN15	798.05 PSI (threaded process connection)
DN25	798.05 PSI*
DN40 or DN50	261.18 PSI
DN80 / DN100	174.12 PSI/10 bar (145.1 PSI)
Viscosity	1 Pa.s max. (higher on request)
Repeatability	± 0.03 % of Reading
Environment	
Ambient temperature	32 °F to 140 °F (0 °C to +60 °C) (operation and storage)

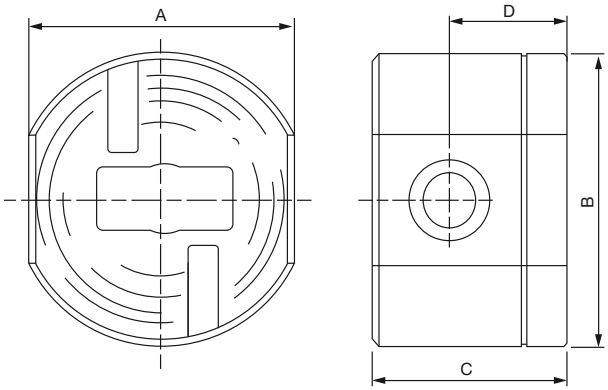
* or in accordance to the value of the used flanges

Burkert Quarter-turn Technology



Dimensions [mm]

Dimensions shown for threaded version for flanged connection please see datasheet



Orifice DN	A St. St.	A Alu	B	C	D
15	81	81	87	49	28
25	100	100	112	75	45
40	120	120	137	103	61
50	140	140	163	124	72
80	260	302	220	180	80

Ordering Chart

DN	Connection	Body material	Seal	Item no.
15	NPT ½"	Al	FKM	567225
		SS	FEP/PTFE	567226
25	NPT 1"	Al	FKM	567229
		SS	FEP/PTFE	567230
	1" ANSI 150 LB flange	Al	FKM	567233
		SS	FEP/PTFE	567234
40	NPT 1½"	Al	FKM	567237
		SS	FEP/PTFE	567238
	1½" ANSI 150 LB flange	Al	FKM	567241
		SS	FEP/PTFE	567242
50	NPT 2"	Al	FKM	567244
	2" ANSI 150 LB flange	Al	FKM	567247
		SS	FEP/PTFE	567248
80	NPT 3"	Al	FKM	567250
	3" ANSI 150 LB flange	Al	FKM	567252
100	4" ANSI 150 LB flange	Al	FKM	567254

FLOWave SAW Flowmeter

8098

- Without any parts in the measuring tube
- Conforms to hygienic requirements CIP/ SIP capable
- Ideal for liquids with low or no conductivity
- Compact, lightweight and low energy consumption
- Digital communication, parameter setting via communicator, display and Wi-Fi

CLICK ME

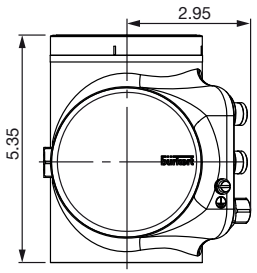
FOR DATA SHEET

The Type 8098 FLOWave flowmeter from Burkert opens up entirely new possibilities for hygienic and process applications. With its unique SAW technology (Surface Acoustic Waves), the device has no sensor elements in the measuring tube and makes it easy to fulfil very high hygienic requirements. This is achieved by using: - suitable stainless steel materials - a measuring tube free of any wetted parts except for the actual tube - the ideal outer hygienic design. FLOWave offers a range of integrated functions, including the advantages of flexibility, ease of cleaning, compact dimensions, lightweight, easy installation and handling, and is compliant with numerous standards. Optimal measurement results can be achieved with homogeneous, air and solid free liquids. Integrated viscosity compensation can be used for higher viscous liquids. Gas and steam cannot be measured; however, their flow does not have any negative effect on the device or its operation. Other liquids flowing through again afterwards are measured correctly as before. Special functions derived from further process values (density factor, acoustic transmission factor) offer additional information about the particular liquid in use (for details, see data sheet).

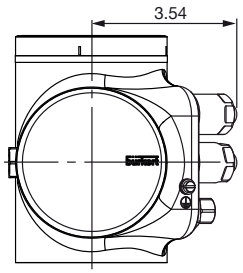
Technical Data

Fluids	Non dangerous liquids complying with article 4 §1 of 2014/68/EU directive
Ambient temperature	-4 °F to 140 °F
Process connection/pipe size acc. to DIN 32676 series C (ASME BPE)	¾", 1", 1½", 2" (2½" & 3" available upon request)
Electrical connections	2 x M20 × 1.5 cable glands and 1×5 pin M12 male fixed connector (A-coded) or 2×4 pin M12 female fixed connectors (D-coded) and 1×5 pin M12 male fixed connector (A-coded)
Sensor housing	Stainless steel 304/1.4301
Blind cover	Stainless steel 304/1.4301
Seal	VMQ silicone
Surface finish[4)]	
Measurement tube (inner surface)	Ra < 0.8 µm (32 µin.) or Ra < 0.4 µm (15 µin.) (electro-polished)
Meas. tube (outer surface), housing	Ra < 1.6 µm (excluding welding seams)
Display module	2.4", monochrome graphic (240 × 160 pixels) German, English, French languages
Temperature measurement	
Measurement range	-4 to 284 °F (-20 to +140 °C)
Measurement deviation for	
T° ≤ 100 °C	±1 °C
100 °C < T° < 140 °C	±1.5 %
Refresh time	1 s

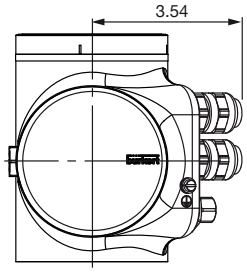
Transmitter SE98 Dimensions [inch]



Ethernet version with 2 x 4 pin M12 female connectors and 1 x 5 pin M12 male connector



with 2 x M20 x 1.5 cable glands in stainless steel and 1 x 5 pin M12 male connector



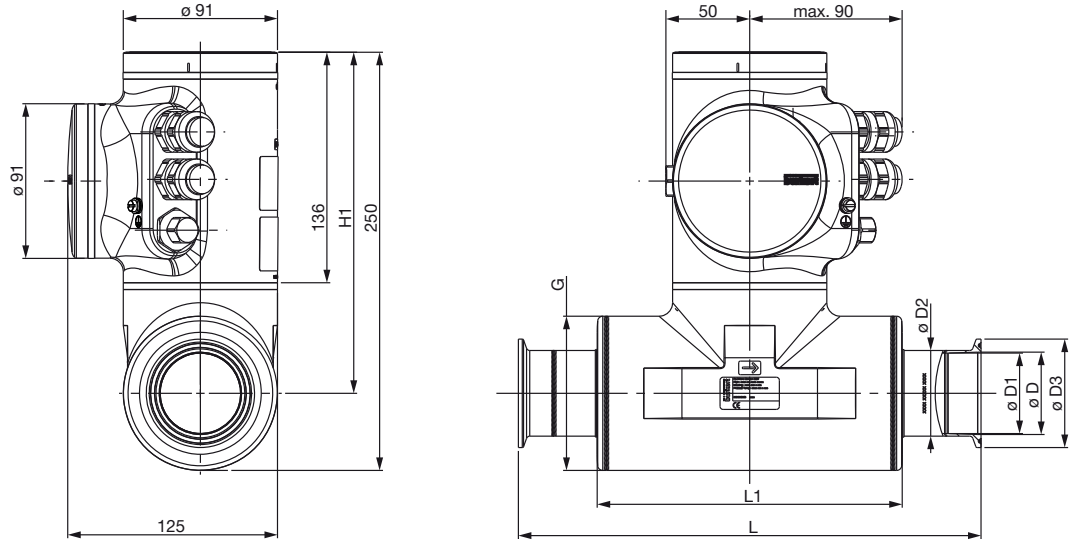
with 2 x M20 x 1.5 cable glands in nickel plated brass and 1 x 5 pin M12 male connector

Blind 8098 "S" OEM version

Available upon request

Dimensions [inch] (see datasheet for details)

Flowmeter 8098 with clamp according to DIN 32676 series



Clamp/pipe size	Standard		H1	D1	D	D2	D3	G	L1	L
	Clamp	Process pipe								
3/4"	DIN 32676 series C (ASME BPE)	DIN 11866 series C (ASME BPE)	8.66	0.62	0.62	0.75	0.98	2.37	4.13	5.62
1"	DIN 32676 series C (ASME BPE)	DIN 11866 series C (ASME BPE)	8.66	0.87	0.87	1	1.98	2.37	4.13	5.62
1 1/2"	DIN 32676 series C (ASME BPE)	DIN 11866 series C (ASME BPE)	7.87	1.37	1.37	1.5	1.98	3.58	7.08	10.74
2"	DIN 32676 series C (ASME BPE)	DIN 11866 series C (ASME BPE)	7.87	1.87	1.87	2	2.51	3.58	7.08	10.74

Ordering Chart

NOTE: To set up a device without a display, please use the USB-büS interface, Type 8920 (has to be ordered separately). Device with Wi-Fi interface available on request.

Clamp acc. to DIN 32676 series C (ASME BPE) process connection for pipe acc. to DIN 11866 series C (ASME BPE)

All these versions are 3A and EHEDG certified and equipped with the special functions ATF (acoustic transmission factor) and DF (density factor)

Clamp and pipe size	Measurement tube (inner surface)	Operating voltage	Maximal flow rate	Electrical connection	Display	Item no.
3/4"	0.8 µm	12-35 V DC	7 m³/h	2 cable glands* M20 × 1.5 + 1 × 5 pin M12 male connector	Yes	566203
	0.8 µm				No	566207
	0.4 µm				Yes	566211
	0.4 µm				No	566215
	0.4 µm				Yes	569675**
	0.4 µm			2 × 4 pin M12 female connectors + 1 × 5 pin M12 male connector (Ethernet version)	Yes	569679
1"	0.8 µm	12-35 V DC	14 m³/h	2 cable glands* M20 × 1.5 + 1 × 5 pin M12 male connector	Yes	566204
	0.8 µm				No	566208
	0.4 µm				Yes	566212
	0.4 µm				No	566216
	0.4 µm				Yes	569676**
	0.4 µm			2 × 4 pin M12 female connectors and 1 × 5 pin M12 male connector (Ethernet version)	Yes	569680
1 1/2"	0.8 µm	12-35 V DC	35 m³/h	2 cable glands* M20 × 1.5 + 1 × 5 pin M12 male connector	Yes	566205
	0.8 µm				No	566209
	0.4 µm				Yes	566213
	0.4 µm				No	566217
	0.4 µm				Yes	569677**
	0.4 µm			2 × 4 pin M12 female connectors and 1 × 5 pin M1 male connector (Ethernet version)	Yes	569681
2"	0.8 µm	12-35 V DC	64 m³/h	2 cable glands* M20 × 1.5 + 1 × 5 pin M12 male connector	Yes	566206
	0.8 µm				No	566210
	0.4 µm				Yes	566214
	0.4 µm				No	566218
	0.4 µm				Yes	569678**
	0.4 µm			2 × 4 pin M12 female connectors and 1 × 5 pin M12 male connector (Ethernet version)	Yes	569682

*Cable gland in nickel plated brass
**UL Listed

1/2", 3/4" or 1" NPT and clamp 2"

- For universal use as overfill or dry run protection system
- Hygienic surface finish
- Extension tubes available

Type 8110

Type 8111

CLICK ME

FOR DATA SHEETS

Level switch for liquids with a tuning fork as a sensor element. Simple setup without adjustment makes this perfect for deployment into process environments. This device provides peace of mind from overfill or run dry

Type 8110 - The small tuning fork (40 mm length) can be used in vessels, tanks or pipes.

Type 8111 - SuperBRIGHT visual output lets the user know the status from a distance.

Technical Data

Type	8110	8111
Process Connection	1/2" NPT, 3/4" NPT, 1" NPT or 2" hygienic clamp	3/4" NPT, 1" NPT or 2" hygienic clamp
Max. Fluid Temperature	212 °F NPT 302 °F clamp	302 °F NPT 302 °F clamp
Materials	Stainless / PBT housing Stainless steel forks Klingersil seal	Stainless / PEI housing Stainless steel forks Klingersil seal
Max. fluid pressure	928 PSI	928 PSI
Voltage supply	10-55 VDC / Max. 0.5 W	20-253 VAC (5 A), 50-60 Hz, or 20-72 VDC
Electrical connections	M12	M20 cable glands (optional 1/2" conduit)
Outputs	Transistor output PNP, 250 mA	Relay (DPDT), 2 floating SPDTs
Ingress protection	IP66 and 67, NEMA 4X	IP66 and 67, NEMA4X

Options

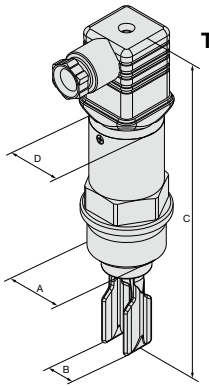
8110

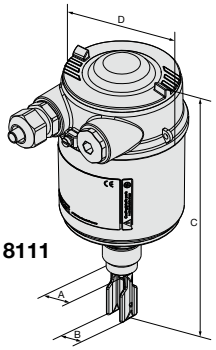
- DIN 11851, Flange, SMS
- Higher temperatures on request

8111

- ATEX approvals
- DIN 11851, Flange, SMS
- ECTFE, enamel, Hastelloy C4 or PFA
- Higher temperatures on request

Envelope Dimensions [inch] (see datasheet for details)





Type	A	B	C	D
8110	1/2" NPT	0.5"	6.20"	1.25"
	3/4" NPT	0.6"	6.24"	1.25"
	1" NPT	0.6"	6.36"	1.25"
	2" clamp	0.6"	6.48"	1.25"
8111	3/4" NPT	0.6"	8.28"	5.34"
	1" NPT	0.6"	8.40"	5.34"
	2" clamp	0.6"	8.40"	5.34"

Ordering Chart

Process connection	Electrical connection	Item no.
8110		
NPT 1/2"	Multipin M12	563555
NPT 3/4"	Multipin M12	557154
NPT 1"	Multipin M12	557155
Clamp 2"	Multipin M12	555294

Process connection	Electrical connection	Item no.
8111		
NPT 3/4"	2 x M20 glands	558111
NPT 1"	2 x M20 glands	558113
Clamp 2"	2 x M20 glands	558114

Extension tubes are available (see datasheet Type 8112).

Radar Level Transmitter for Liquids

NPT thread or flange connection

- For filling level measurement up to 33 ft.
- High pressure version
- Two-wire version
- Adjustable via display and buttons as well as PC-Tool with DTM


Type 8137


Type 8138

CLICK ME

FOR DATA SHEETS

Radar level transmitter for aggressive media and high pressure. A sleek, compact stainless steel design incorporates a 2-wire HART transmitter which is easily PC configurable.

Technical Data

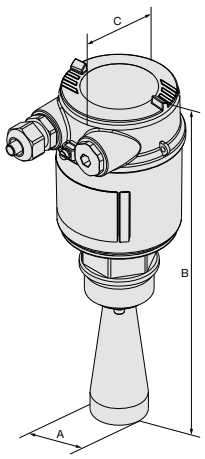
Housing / Cover	PBT, Stainless steel 316L / PC
Seal ring / Ground terminal	NBR / Stainless steel 316Ti/316L (1.4571/1.4435)
Seal	Klingersil C-4400 (8137), EPDM (8138)
Antenna / cone	Stainless steel 316L (8137), Advanced PTFE-PTFE (8138) / PTFE (Advanced PTFE 1600 PTFE) (8137)
Seal (antenna system)	FKM
Display	LCD in full dot matrix
Ambient temperature	-40 °F to 176 °F
Voltage supply	2-wire, 14 to 36 V DC
Current consumption Max.	22 mA
Electrical connections	Cable glands M20 x 1.5
Outputs	4-20 mA/HART
Output Load Max.	See datasheet
Dead zone	2"
Measuring range (40mm antenna)	2" to 30'
Accuracy	± 3 mm
Min. Dielectric	εr > 1.6
Temperature coefficient	0.03%/10K
Ingress protection	IP66, IP67, NEMA4X
Approvals	CSA, CE, Optional EEx ia IIC T6

Ordering Chart

Area of application	Process connection	Electrical connection	Item no.
8137			
Standard	NPT 1 1/2"	M20 cable gland	560159
	Flange 2" ANSI B16.5	M20 cable gland	560163
8138			
Standard	Clamp 2"	M20 cable gland	560169

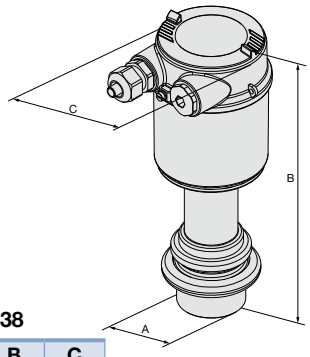
Note: Display/programmer (559279) not included, must be ordered separately (see accessories)

Envelope Dimensions [inch] (see datasheet for details)



Type 8137

Standards	DN	A	B	C
DIN 2501	50 [mm]	1.57	10.98	3.16
DIN 2501	100 [mm]	2.95	15.55	3.16
ANSI B16.5	2"	1.57	10.98	3.16
ANSI B16.5	4"	2.95	15.55	3.16



Type 8138

A	B	C
1.73	8.58	3.16

Option

- Other hygienic fittings
- 98 ft. max with 75 mm antenna

Accessories

Description	Item no.
Set with 2 M20 x 1.5 / NPT½" -Reductions + 2 Neoprene gaskets for cable gland M20 x 1.5 + 2 sealing plugs	551782
HART-USB Modem	560177
Set with a display/configuration module, a transparent cover and a seal ring	559279
Set with a transparent cover and a sealing ring	561006

NPT and G thread process connection

- Two-wire version
- Reliable non-contact measurement
- HART communication

CLICK ME

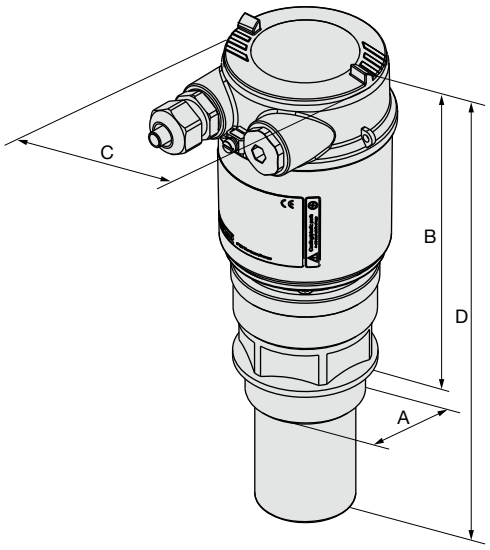
FOR DATA SHEET

Ultrasonic level transmitters for non-contact measurement of process liquids and solids. Standard HART and 4-20 mA HART compatible output.

Technical Data

Housing/Cover	PBT, Stainless steel 316L / PC
Seal ring/Ground terminal	NBR / Stainless steel 316Ti/316L (1.4571/1.4435)
Seal	EPDM
Transducer	PVDF
Display	LCD in full dot matrix
Ambient temperature	-4 °F to 158 °F
Voltage supply	2-wire, 14 to 36 V DC
Current consumption Max.	22 mA
Electrical connections	Cable glands M20 x 1.5
Outputs	4-20 mA/HART
Output Load Max.	See datasheet
Beam angle	11°
Accuracy	< 0.2% or ± 4 mm
Process temperature	-40 °F to 176 °F
Temperature coefficient	0.06%/10K
Ingress protection	IP66, IP67, NEMA4X
Approvals	CSA, CE, Optional EEx ia IIC T6

Envelope Dimensions [inch] (see datasheet for details)



A	B	C	D
NPT 2"	4.84	3.16	10.78

Option

- Process connection clamp 2", 3", 4"

Ordering Chart (versions with display)

Area of application	Process connection [inch]	Range (liquids)	Range (solids)	Electrical connection	Item no.
8177					
Standard	NPT 2"	1.3 ft - 26.2 ft	1.3 ft - 11.5 ft	M20 cable gland	559244

Note: Display/programmer (559279) not included, must be ordered separately (see accessories)

Accessories for Type 8177

Description	Item no.
Set with 2 reductions M20 x 1.5/NPT½" + 2 neoprene flat seals for cable gland + 2 screw-plugs M20 x 1.5	551782
Set with a display/configuration module, a transparent cover and a seal ring	559279
Set with a transparent cover and a seal ring	561006

Microwave Level Transmitter for General Application

- Universal level measurement device for fluids
- Liquid interface measurement
- Insensitive to dust and steam
- 4-20 mA/HART - 2 wires, ATEX/IECEx approvals Ex

CLICK ME

FOR DATA SHEETS

Level measurement devices designed for continuous level measurement. The units are suitable to liquids, for industrial use in all areas of process technology.

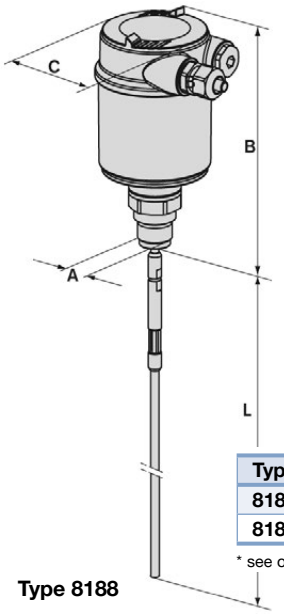
Technical Data

Housing / Cover	PBT, Stainless steel 316L / PC
Seal ring / Ground terminal	NBR / Stainless steel 316L
Display	LCD in full dot matrix
Ambient temperature	-4 to 176 °F
Current limitation	21.5 mA (max. output current)
Electrical connections	Cable gland M20 x 1.5
Output signal	4-20 mA/HART
Output Load Max.	See datasheet
Deviation	± 2 mm (See drawing in datasheet)
Min. Dielectric	Rod and cable εr > 1.6 Coax.-ø 21.3 mm εr > 1.4
Process temperature	-40 to 302 °F
Temperature drift	0.03% /10K
Measurement type	Level of liquids
Protection	IP66/IP67 with M20 x 1.5 gland mounted and tightened

Options

- ATEX/IECEx versions
- Other hygienic fittings

Envelope Dimensions [inch] (see datasheet for details)



Type	A	B	C	L
8188	4.84"	3.17"	3.58"	*
8189	2" Clamp	7.48	3.17	*

* see ordering chart

Type 8188

Ordering Chart

Specification	Operating voltage	Output	Probe	Length	Electrical connection	Item no.
Type 8188						
NPT 3/4" mounting thread, PN6, temp. max 80 °C	9.6-35 V DC	4-20 mA/HART (2 wires)	Rod	1 m	Cable gland M20 x 1.5	565801
				2 m	Cable gland M20 x 1.5	565805
			Cable	5 m	Cable gland M20 x 1.5	565813
				10 m	Cable gland M20 x 1.5	565817
			Coax	1 m	Cable gland M20 x 1.5	565827
				2 m	Cable gland M20 x 1.5	565828
NPT 1" mounting thread, PN40, temp. max 150 °C	9.6-35 V DC	4-20 mA/HART (2 wires)	Rod	1 m	Cable gland M20 x 1.5	565803
				2 m	Cable gland M20 x 1.5	565807
			Cable	5 m	Cable gland M20 x 1.5	565815
				10 m	Cable gland M20 x 1.5	565819
			Coax	1 m	Cable gland M20 x 1.5	565829
				2 m	Cable gland M20 x 1.5	565830
Type 8189						
Specifications	**Voltage supply**	**Output**	**Probe**	**Length**	**Electrical connection**	**Item no.**
Clamp 2"	9.6-35 V DC	4-20 mA/HART (2 wires)	Rod	1 m	Cable gland M20 x 1.5	565850
				2 m	Cable gland M20 x 1.5	565852

Note: Display/programmer (559279) included

pH Transmitter

8202 ELEMENT

- Accepts all standard pH probes
- Removable programming puck
- Data upload/download via puck
- With temperature compensation
- Diagnostic function

Please see S022 fittings and 8203 pH electrodes

CLICK ME

FOR DATA SHEET

pH transmitter with programmable outputs. pH and temperature output via single or dual analog 4-20 mA. Two transistor outputs are also included. Transmitters are engineered for a wide scope of measuring ranges and can be delivered in 2-wire or 3-wire configurations. Intelligent, integrated, beautiful design fits perfectly with an assortment of easily configured fittings.

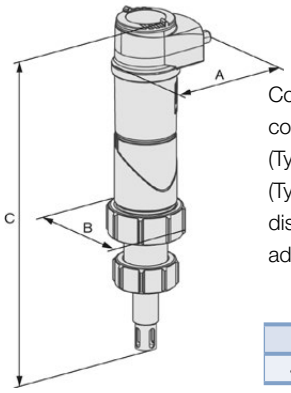
Technical Data

Measuring range	2 ... 14pH
Measuring error	± 0.02pH
Temperature compensation	Automatic via integrated temperature sensor
Temperature Performance (via integrated Pt1000)	Measuring range -40 °F to 266 °F Measuring error ± 1.8 °F
Available Fitting Materials	Stainless, PP, PVC
Housing material	Stainless steel, PPS, PC
Insertion finger	PVDF
Gasket seal	EPDM
Max. Fluid Temperature	-40 °F to 266 °F (depending on fitting)
Max. fluid pressure	232 PSI
Ambient temperature	14 °F to 140 °F
Storage temperature	14 °F to 140 °F (without probe)
Ingress protection	IP65, IP67, NEMA4X
Voltage supply	14...36 VDC for 2-wire models 12...36 VDC for 3-wire models
Protection	Reversed polarity of DC and peak protected
Current consumption Max.	1 A Max. (with transistor load)
Electrical connections	1 x 5pin M12 male (2-wire) 1 x 5pin M12 male + 1 x 5 pin M12 female (3-wire)
Outputs	4-20 mA configurable temperature or pH 2 Transistors, configurable, open collector, 700 mA Max., 0.5 A Max. per transistor if the 2 transistor output are wired
Output Load	< 1100 Ω at 36 V < 610 Ω at 24 V < 180 Ω at 14 V
Approval	UL-Recognized for US and Canada

Options

- Blind version (Neutrino)
- ORP: see datasheet 8202

Envelope Dimensions [inch] (see datasheet for details)



Complete pH transmitter consists of a pH Transmitter (Type 8202) a pH probe (Type 8203) a detachable display / control unit and an adapter (Type S022).

A	B	C
4.37	2.95	13.30

Ordering Chart

Wiring	Outputs	Nut	M12	Item no.
Transmitter				
2-wire	2 x transistors + 1 x 4-20 mA	PVC	5-pin male	559634
		PVDF	5-pin male	559636
3-wire	2 x transistors + 2 x 4-20 mA	PVC	5-pin male + female	559635
		PVDF	5-pin male + female	559637

Note: Display/programmer (559168) not included. Must be ordered separately.

Probe Type 8203 (additional versions available)	Item no.
pH probe 32 °F to 266 °F, 0-232 PSI, pH 0-14 - UNITRODE PLUS pH 120 mm	560376
pH probe 32 °F to 176 °F, 0-87 PSI, pH 0-14 - FLATRODE pH 120 mm	561025

Accessories

Description	Item no.
Display/programming module	559168
Electrical connector, 5-pin M12 male, plug only	560946
Electrical connector, 5-pin M12 male, 2 m prewired	559177
Electrical connector, 5-pin M12 female, plug only	917116
Electrical connector, 5-pin M12 female, 2 m prewired	438680

Note: For a complete transmitter the following items must be ordered:
– Transmitter, Type 8202 ELEMENT
– pH or ORP probe, Type 8203
– Display/programmer module
– M12 cable socket, cable connector (only cable socket for a 4-20 mA current output, cable and cable connector for two 4-20 mA current outputs)

For use with 8202 pH transmitter

- For many different types of installations and applications

CLICK ME

FOR DATA SHEET

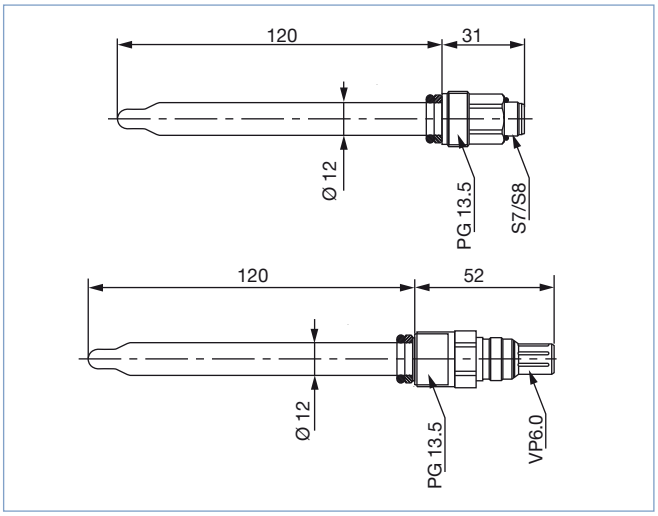
The pH Bürkert meter is a modular device designed for the measurement of: - the pH in clean liquids or liquids containing solids, sulfides or proteins.

Technical Data

General data	
pH probe Measuring range	0 ... 14 pH
Medium temperature	Temperature limits may depend on the inserted probe. Refer to the relevant instruction manual or technical data. If the temperature ranges given for the- holder and the inserted probe are different, use the most restrictive range.
Medium pressure	Pressure limits may depend on the inserted probe. Refer to the relevant instruction manual or technical data. If the pressure ranges given for the holder and the inserted probe are different, use the most restrictive range.
Temperature compensation	Automatic (integrated Pt100 or Pt1000) or manual compensation reference temperature 77 °F (25 °C)
Electrical connection	Coaxial shielded cables with connector for pH/ ORP and 4-wire cable for Pt1000/Liquid earth rod
Electrical data	
Output	Analog signal, to be connected to ELEMENT or ELEMENT neutrino pH meter Type 8202 or multi-CELL transmitter/controller Type 8619
Environment	
Ambient temperature	Temperature limits may depend on the inserted probe. Refer to the relevant instruction manual or technical data.

OPR Electrodes also available (see 8203 datasheet for details)

Dimensions [mm]



Ordering Chart

Probe	Item no.
PLASTRODE pH 120 mm	560377
FLATRODE pH 120 mm	561025
LOGOTRODE pH 120 mm	427114
UNITRODE PLUS pH 120 mm	560376
CERATRODE pH 120 mm	418319
FERMTRODE pH 120 mm	561727

pH Probe - Technical Data (see datasheet for details)

Type	PLASTRODE	FLATRODE	LOGOTRODE	UNITRODE PLUS	CERATRODE	FERMTRODE
Medium	Cost effective probe for drinking water, aquarium, swimming-pool...	Contaminated (viscous, suspended solids, paints, cosmetics, foodstuffs)	Clean (drinking water, cooling-water, aquarium, swimming-pool...)	- Contaminated - Containing sulfides/ proteins	- High pressure, high flowrate applications	Biotechnology, pharma, food industry
Medium temperature	14 °F to 104 °F (-10 °C to +40 °C)	32 °F to 176 °F (0 °C to +80 °C)	14 °F to 140 °F (-10 °C to +60 °C)	32 °F to 266 °F (0 °C to +130 °C)	32 °F to 266 °F (0 °C to +130 °C)	32 °F to 284 °F (0 °C to +140 °C)
Minimal conductivity	50 µS/cm	50 µS/cm	2 µS/cm	2 µS/cm	3 µS/cm	1 µS/cm
Max. pressure at max. temperature	87 PSI (6 bar)	58 PSI (4 bar)	87 PSI (6 bar)	145 PSI (10 bar)	87 PSI (6 bar)	87 PSI (6 bar)
No. of diaphragms	1	1	1	2	3	1
Diaphragms	“single pore™”	Annular and centered, in High Density Polyethylen	“single pore™”	“single pore™”	HP ceramics	HP-COATRAMIC

Conductivity transmitter with removable operating unit

- Intuitive menu structure
- Removable programming puck
- Data upload / download via puck
- Diagnostic function

Please see S022 fittings + adapters

CLICK ME

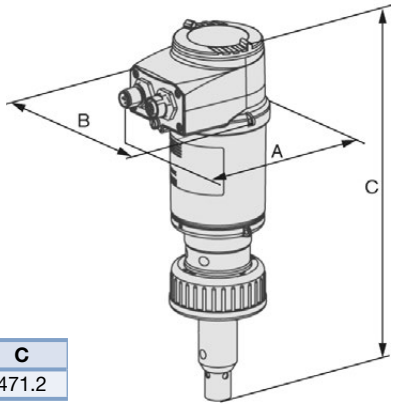
FOR DATA SHEET

Conductivity transmitter with programmable outputs. Conductivity and temperature output via single or dual analog 4-20 mA. Two transistor outputs are also included. Transmitters are engineered for a wide scope of measuring ranges and can be delivered in 2-wire or 3-wire configurations. Intelligent, integrated, beautiful design fits perfectly with an assortment of easily configured fittings.

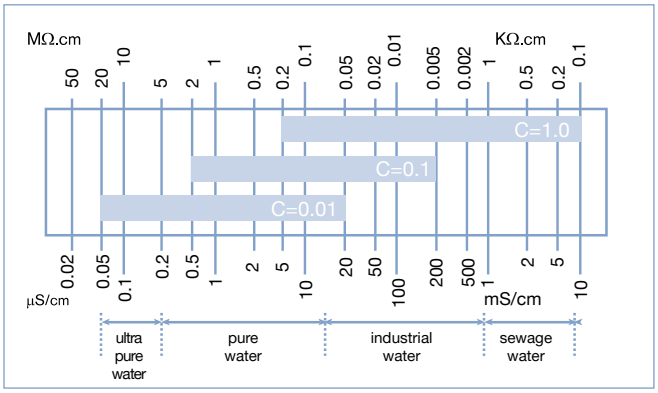
Technical Data

Measuring range	0.05 µS/cm ... 10 mS/cm , -4 °F to 266 °F
Measuring error	± 3% of measured value, ± 1.8 °F
Temperature compensation	Automatic via integrated temperature sensor acc. to a predefined graph (NaCl or ultra-pure water)
Available fitting materials	Stainless, PP, PVC
Housing material	Stainless steel, PPS, PC
Insertion finger	PVDF/SS for 0.01 or 0.1; graphite for 1.0
O-rings	EPDM
Fluid temperature	-4 °F to 212 °F (depending on fitting) (PVC 32 °F to 122 °F)
Max. fluid pressure	232 PSI (depending on fitting)
Ambient temperature	14 °F to 140 °F
Storage temperature	14 °F to 140 °F (without probe)
Ingress protection	IP65, IP67, NEMA4X
Voltage supply	14...36 VDC for 2-wire models 12...36 VDC for 3-wire models
Protection	Reversed polarity of DC and peak protected
Approval	UL-Recognized for US and Canada
Outputs	4-20 mA configurable temperature or conductivity 2 Transistors, configurable, open collector, 700 mA Max., 0.5 A Max. per transistor if the 2 transistor output are wired
Output load	< 1100 Ω at 36 V < 610 Ω at 24 V < 180 Ω at 14 V

Envelope Dimensions [inch] (see datasheet for details)



A	B	C
206.6	158	471.2



The electrode is selected according to the measuring range and medium by using this table.

Ordering Chart

Nut material	Cell constant	Electrical connection	Item no.
PVC	C = 0.01	5-pin M12 male and 5-pin M12 female	562394
	C = 0.1	5-pin M12 male and 5-pin M12 female	559624
	C = 1.0	5-pin M12 male and 5-pin M12 female	559638
PVDF	C = 0.01	5-pin M12 male and 5-pin M12 female	562396
	C = 0.1	5-pin M12 male and 5-pin M12 female	559626
	C = 1.0	5-pin M12 male and 5-pin M12 female	559622

Note: Display/programmer (559 168) not included. Must be ordered separately.

Note: For a complete transmitter the following items must be ordered:
– Transmitter, Type 8222 ELEMENT
– Display/programmer module
– INSERTION Adapters (see Type S022)
– M12 cable socket, cable connector (only cable socket for a 4-20 mA current output, cable and cable connector for two 4-20 mA current outputs)

Accessories (see page 68)

Options: Dual Analog 4-20 mA output

Inductive conductivity meter

- Configurable outputs: up to 2 transistor and up to 2 analogue 4-20 mA outputs
- Removable backlighted display
- Simulation of process values and diagnostic functions
- Sensor-versions available with PEEK, PVDF or PP

Please see fitting S020

CLICK ME

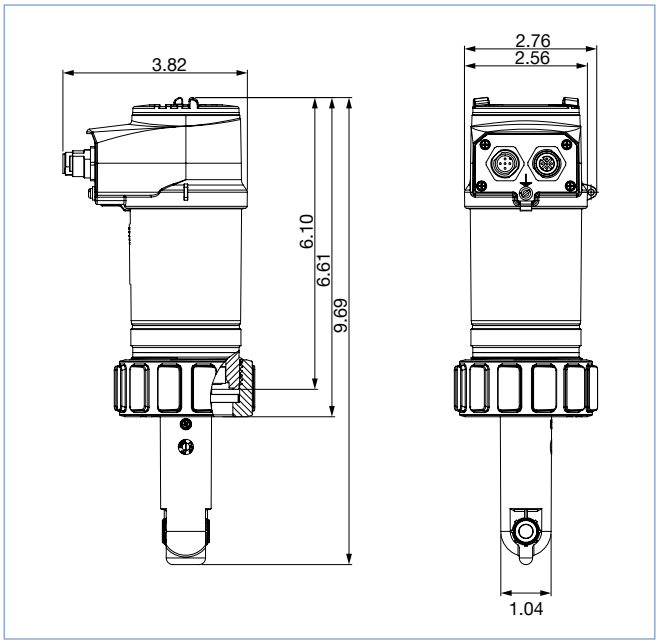
FOR DATA SHEET

The analysis gauge, Type 8228, includes a detachable display module. This is used for setup, configuration and calibration or required as a process value display. For temperature calibration, a temperature sensor is included as standard.

Technical Data

Complete device data (fitting + conductivity meter)	
Conductivity measurement	
Measuring range	100 µS/cm...2 S/cm
Resolution	0.1 µS/cm
Measurement deviation	±(2% of the measured value + 5 µS/cm)
Linearity	±2%
Repeatability	±(0.2% of the measured value + 2 µS/cm)
Response time t90	from 3 s (without filter) to 40 s (with slow filter)
Temperature measurement	
Measuring range	-40 °C to +150 °C (-40 to 302 °F)
Resolution	0.1 °C (0.18 °F)
Measuring uncertainty	±1 °C (1.8 °F)
Response time t90	< 280 s (without filter)
Temperature compensation	– none or – according to a predefined graph (NaCl, NaOH, HNO3 or H2SO4) or – according to a graph defined especially for your process
Approval	UL-Recognized for US and Canada
Environment	
Ambient temperature	-10 °C to +60°C (14 to 140 °F) (operating and storage)
Relative humidity	≤ 85%, without condensation
Height above see level	Max. 2000 m

Envelope Dimensions [inch] (see datasheet for details)



Options

- UL and CSA approvals
- Preparameterized conductivity meters
- CIP version
- Tri-clamp connection (2")

Ordering Chart

Specifications	Voltage supply	Output	Material		Electrical connection	Item no.	
			sensor holder	sensor seal		without display	with display
Compact conductivity meter	12...36 V DC	1 x transistor NPN/PNP + 1 x 4 to 20 mA	PP	FKM	5-pin M12 male fixed connector	565611	566611
			PVDF	FKM	5-pin M12 male fixed connector	565613	566613
			PEEK	FKM	5-pin M12 male fixed connector	565615	566615
		2 x transistor NPN/PNP + 2 x 4 to 20 mA	PP	FKM	5-pin M12 male and 5-pin M12 female fixed connectors	565612	566612
			PVDF	FKM	5-pin M12 male and 5-pin M12 female fixed connectors	565614	566614
			PEEK	FKM	5-pin M12 male and 5-pin M12 female fixed connectors	565616	566616

Note for ordering chart: For a complete conductivity unit the following items must be ordered:
- Transmitter Type 8228 - INSERTION Fitting Type S020
Further versions and information see datasheet type 8228.

Note:
Display/programmer (559168) not included. Must be ordered separately.

- Accurate, reliable pressure switching
- Switch for alarm or event logging
- Bar graph display for local monitoring

CLICK ME

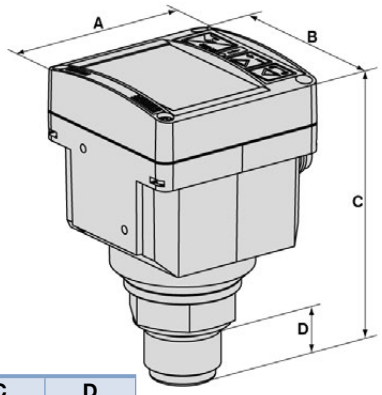
FOR DATA SHEET

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 and it can be set up with alarm, control or monitoring functions.

Technical Data

Measuring range	To 725 PSI
Switching accuracy ±.09 °F (0-176 °F)	±1.5% FS
Medium temperature	-4 °F to 212 °F (212 °F for an ambient temperature of Max. 104 °F)
Repeatability	0.25% FS
Housing, cover	PC+20% grass fiber
Sensor element	Ceramic
Wetted parts (NPT seal)	316L stainless steel, ceramic/FKM (EPDM optional)
Ambient temperature range	0 °F to 140 °F
Ingress protection	IP65
Voltage supply	12-30 VDC
Protection	Reversed polarity of DC protected
Current consumption max.	750 mA max (with load - PNP output configuration)
Electrical protection	Short circuit protection
Max. cable length	164' shielded
Electrical connections	Cable plug Multipin 5 pin, M12
Output	Transistor output NPN and PNP 5-30 VDC, 700 mA

Envelope Dimensions [inch] (see datasheet for details)



A	B	C	D
2.16"	2.16"	3.6"	0.72"

Options

- Cable plug 2508, DIN 43650A 1/2" conduit
- Outputs: Relay 3 A/250 or 3 A/30 VDC
- 4-20 mA output
- Two-wire loop powered

Ordering Chart

Pressure range	Electrical connection	Output	Burst Pressure [PSI]	Max. Pressure [PSI]	*Item no.
0-30	M12 plug	NPN/PNP	102	58	98108565
0-73	M12 plug	NPN/PNP	174	145	98108558
0-145	M12 plug	NPN/PNP	363	290	98108551

*Includes M12 cable plug

Accessories for Type 8311	Item no.
M12 female cable connector with plastic threaded locking ring	917116
5 pin M12 female connector moulded on cable (2 m, shielded)	438680

More Versions	Pressure [PSI]	Item no.
Transmitter Version is also available with 4-20 mA output in 8 pin M12 (please see datasheet for details)	0-30	444640
	0-73	444641
	0-145	444642

Pressure Measuring Device

- Ceramic/thick film measurement cell
- 2-wire version for 4-20 mA output
- Compact, stable construction for the highest operational reliability

CLICK ME

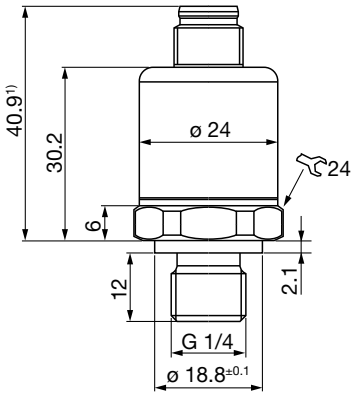
FOR DATA SHEET

The compact Type 8316 pressure measuring device meets the highest requirements with regard to mechanical loading, EMC characteristics and operational reliability. It is particularly suitable for demanding industrial applications. For aggressive media where stainless steel is not resistant, process connections in PVDF are available.

Technical Data

Body material	Stainless steel (1.4404)
Electrical connection	Round male connector M12 × 1
Process connection	NPT ¼" external
Measurement procedure	Relative pressure measurement
Measurement range	0 to 14.5, 58, 87, 145, 232, 580, or 1450 PSI (0…1, 4, 6, 10, 16, 40 or 100 bar)
Fluid temperature	5 to 257 °F (-15 to +125 °C)
Seal material	FKM
Voltage	8-33 volts
Accuracy	Sum of linearity, hysteresis and reproducibility, balancing accuracy of zero point and full scale: ≤ 0.5 % of Full Scale.
Certification UL-Listed for USA and Canada	c UL us LISTED Process Control Equipment E312665 UL 61010-1 + CAN/CSA-C22.2 No.61010-1

Dimensions [mm]



¹⁾ Keep in mind that the total length is increased by the cable connection

Further Versions on Request

- **Pressure**: other measuring ranges
- **Additional:** electrical outputs: 0-10 V DC, 0-5 V DC

Ordering Chart

Pressure connection	Pressure range	Operating voltage	Output signal	Electrical connection	Item no.
NPT ¼"	0 to 60 PSI	7-33 V DC	4-20 mA	M12 male connector	564466
UL-Listed for	0 to 150 PSI	7-33 V DC	4-20 mA	M12 male connector	564467
USA and Canada	0 to 300 PSI	7-33 V DC	4-20 mA	M12 male connector	564468

Accessories

Description	Item no.
5 pin M12 female cable connector with plastic threaded locking ring	917116
5 pin M12 female connector moulded on cable (2 m, shielded)	438680

Temperature Transmitter/Switch with display

8400

- Menu-guided configuration
- Wide choice of connections and outputs
- Large digital display
- Bar graph display for local monitoring
- Continuous On/Off control
- 2-wire transmitter

CLICK ME

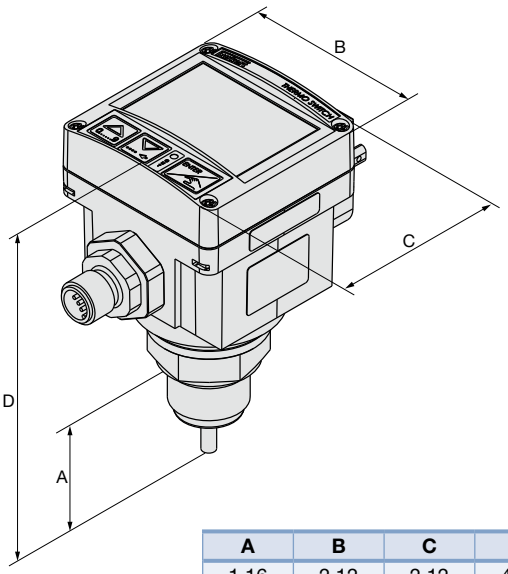
FOR DATA SHEET

This intelligent sensor / switch with a particularly large display is designed specifically for monitoring limit values or an on/off or continuous control loop. The switching points can be programmed directly via buttons on the display or optionally externally by a PLC via a 4-20 mA standard signal input. In addition, the process value can be transmitted via a 4-20 mA signal to the PLC.

Technical Data

Measuring range (ambient 32 °F to 104 °F)	-40 °F to 257 °F
Switching accuracy	±.09 °F (0 to 176 °F)
Switching activity	±2.7 °F
Repeatability	0.40%
Housing material, cover	PC+20% grass fiber
Sensor element	Pt100
Wetted parts (NPT seal)	316L stainless steel, FKM
Ambient temperature range	0 °F to 140 °F
Ingress protection	IP65
Voltage supply	12-30 VDC
Protection	Reversed polarity of DC protected
Current consumption max.	80 mA (no Load)
Max. cable length	328.1' shielded
Electrical connections	Cable plug Multipin 5 pin, M12
Output	Transistor output NPN and PNP open collector 5-30 VDC, 700 mA

Envelope Dimensions [inch] (see datasheet for details)



A	B	C	D
1.16	2.12	2.12	4.07

Option

- 8400: Outputs : Relay 3 A/250 or 3 A/30V DC

Ordering Chart

8400 Sensor/Switch for sensor connection NPT 1/2"	*Item no.
NPN and PNP, free positionable 5-pin M12	98108577
Transmitter Version with 4-20 mA output and relay with 8-pin M12 and cable plug EN175301-803	98108573
Relay version, free positionable 5-pin M12 and cable plug EN175301-803	98108576

*Includes electrical plug or moulded cable

Accessories

ON/OFF Temperature Control System 8400	Item no.
5-pin M12 female connector with moulded on cable (2 m long, shielded)	438680
5-pin M12 female cable connector with plastic threaded locking ring	917116

1/4" DIN Panel Mount

- Flexible analytical and flow transmitter
- Compatible with most flow , pH/ORP, chlorine and conductivity sensors
- Intuitive programming
- SD card for data logging and upload/ download

CLICK ME

FOR DATA SHEET

Burkert's 8619 transmitter/controller is the latest addition to the process control program. The 1/4DIN panel mounted transmitter/ controller incorporates a large backlit LCD display for adding up to 6 boards in a free mix for pH, conductivity incl. temperature, and output boards are connected to the digital inputs of the mainboard.

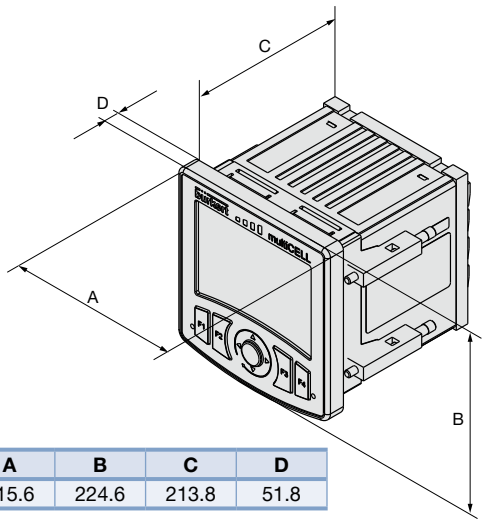
Optional software features can be simply activated when required by the application and an SD card is standard for data logging and up/ down loading of parameterization files.

Special integrated dosing and control functions allow use in a large range of applications without the need of additional devices.

Technical Data

pH input	-2.00...+16.00 (-600...+6000 mV)
ORP redox input	-2000...+2000 mV
Conductivity input	0 µS/cm ... 2 S/cm
pH/ORP/cond temp input	Pt100 / Pt1000
Digital input	Voltage: 5-36 V DC, 2 to 2500 Hz
Analog output	4-20 mA 1100 Ω at 36 V DC 610 Ω at 24 V DC 100 Ω at 12 V DC
Digital output	PNP/NPN Max. 700 mA Max. 2000 Hz
Cover, vision panel / overlay	PC / Silicone rubber
Display	Light blue backlighted; 128 x 168 pixels
Languages	English, French, German
Mounting panel	92mm x 92mm DIN cutout
Ambient temperature range	14 to 140 °F Limited at 32 to 140 °F if memory card is used
Ingress protection	IP65, NEMA 4X
Storage temperature	-4 °F to 140 °F
Voltage supply	12...36 VDC
Protection	Reversed polarity of DC and peak protected
Current consumption	100 mA at 12 V DC 50 mA at 24 V DC
Data logging	SD Card
Data retention	EEPROM, Real time clock

Envelope Dimensions [inch] (see datasheet for details)



A	B	C	D
215.6	224.6	213.8	51.8

Options

- Wall mount
- VAC powered
- PID function
- Data logger
- EtherNet, Modbus or PROFINET communication

Ordering Chart

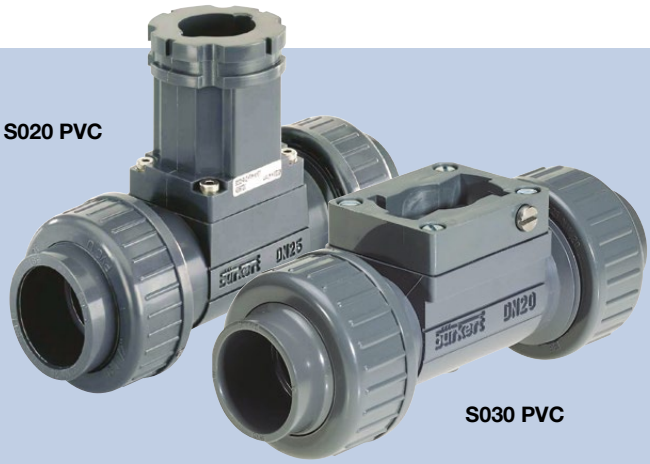
Description	Digital Inputs	Raw signals	RTD	Digital Outputs	Analog	Item no.
BASE unit	2	–	–	2	2	560213
pH/ORP transmitter	2	1 (pH/ORP)	1	2	2	560208
pH/ORP transmitter	2	2 (pH/ORP)	2	4	4	560210
CONDUCTIVITY transmitter	2	1 (Cond.)	1	2	2	560209
CONDUCTIVITY transmitter	2	2 (Cond.)	2	4	4	560211
pH/ORP and CONDUCTIVITY transmitter	2	1 (pH/ORP) + 1 (Cond.)	2	4	4	560212

Note for ordering the above multiCELL Transmitter / Controller:
In all the above variations are arithmetic, PASS, REJECT, DEVIAT, PROP, the On/Off function standard features. In the basic model, the flow measurement function is included. When a totalizer function is needed, then a flow meter via a digital input (main or input board) must be connected. Other optional features can be ordered later, see data sheet.

S030 and S020 flow fittings

1/2" to 14", 0-232 PSI

- Straight thru tube assures maximum accuracy
- Wide range of materials and connections
- Unique INLINE version isolates medium from measuring device



Ordering Chart

S030 (for SE30, SE32, SE35 and SE36)

Connection	PVC (ASTM)	Brass NPT	Stainless NPT	PVDF	SS Hygienic Clamp	SS OD Tube	ANSI B16-5
1/2"	423950	423986	424010	423968	–	–	424046
3/4"	423951	423987	424011	423969	443395	443369	424047
1"	423952	423988	424012	423970	443396	443370	424048
1 1/4"	423953	423989	424013	423971	–	–	424049
1 1/2"	423954	423990	424014	423972	443397	443372	424050
2"	423955	423991	424015	423973	443398	443373	424051
2 1/2"	–	–	–	–	443399	443374	–

Ordering Chart

S020 (for 8025, 8026, 8041, 8045) - Short sensor Long sensor

Connection	PVC (ASTM)	Brass NPT	Stainless NPT	SS weldolet	Steel saddle	Steel weldolet	PVC saddle
1/2"	428682	428718	428742				
3/4"	428683	428719	428743				
1"	428684	428720	428744				
1 1/4"	428685	428721	428745				
1 1/2"	428686	428722	428746				
2"	428687	428723	428747	418111	98146031	98146032	
2 1/2"				418112		98146034	413469
3"				418113	98146024	98146035	413470
4"				418114	98146025	98146020	98146019
5"				418115			
6"				418116	98146026	98146021	98146017
8"				418117	98146027	98146022	98146030
10"				418756	98146028	98146023	
12"				420070	98146029	98146036	
14"				416637	98109612		

= Quick Delivery Items

Mass Flow Controller for Gases (MFC)

Direct flow measurement by MEMS - technology for nominal flow rates from 10 ml_N/min to 80 l_N/min (N2)

- High accuracy
- Short settling time
- Compact design
- Digital communication via RS485

CLICK ME

FOR DATA SHEET

Type 8713 controls the mass flow of gases that is relevant for most applications in process technologies. The measured value will be compared in the digital control electronics with the predefined set point according to the signal; if a control difference is present, the control value output to the proportional valve will be modified using a PI-control algorithm. Due to the fact that the sensor is directly in contact with the gas a very fast response time of the MFC is reached. In this way, the mass flow can be maintained at a fixed value or a predefined profile can be followed, regardless of pressure variations or other changes in the system. Type 8713 can optionally be calibrated for two different gases, the user is able to switch between these two gases. As control element a direct-acting proportional valve guarantees a high sensitivity and a good control characteristics of the MFC. This instrument communicates digitally with master devices, no further A/D conversions needed. The MassFlowCommunicator software can be used for parameterization and diagnosis.

Technical Data

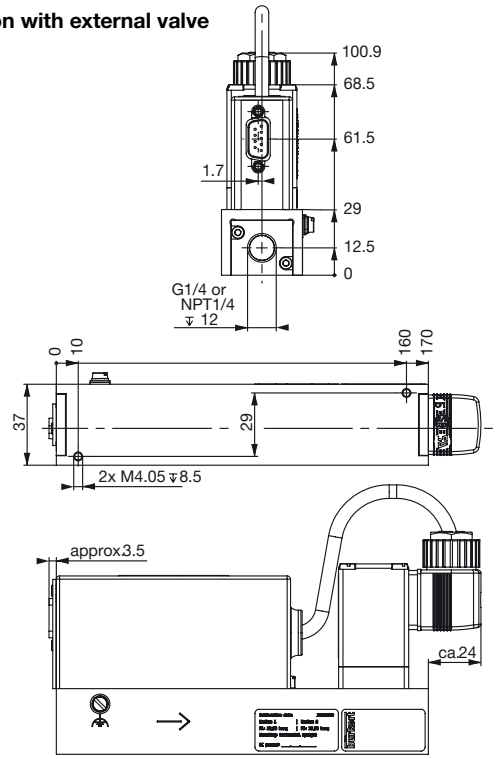
Turn-down ratio	1:50, higher turn-down ratio on request
Operating gas	Neutral, non-contaminated gases, others available on request
Calibration gas	Operating gas or air with conversion factor
Max operating pressure (inlet pressure)	145 PSI (10 bar) depending on the orifice of the valve
Gas temperature	14°F to 158°F (-10°C to 70°C) (-10°C to 60°C with oxygen)
Ambient temperature	14°F to 122°F (-10°C to 50°C)
Accuracy (after 1 min. warm up time)	±0.8% o. R. ±0.3% F.S.
Repeatability	±0.1% F.S.
Settling time ($t_{95\%}$)	<300 ms
Body material	Aluminium or stainless steel
Port connection	NPT 1/4", G 1/4", screw-in fitting or sub-base, others on request
Communication	Digital via RS485 (half-duplex or full duplex), RS422
Power supply	24 V DC
Voltage tolerance	±10%
Power consumption	3.5 W - 11.5 W (depending on control valve used)

Nominal Flow Ranges (other gases on request)

Gas	Min. Q_{nom} [l_N/min]	Max. Q_{nom} [l_N/min]
Air	0.01	80
Helium	0.01	500
Carbon dioxide	0.02	40

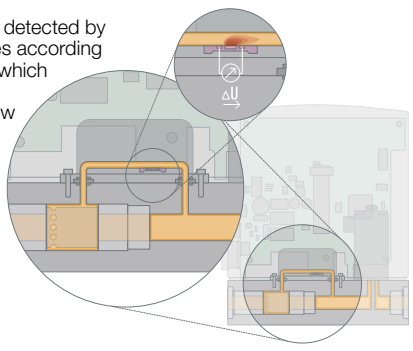
Dimensions [mm] (see datasheet for more details)

Version with external valve



Measuring Principle

The actual flow rate is detected by a sensor. This operates according to a thermal principle which has the advantage of providing the mass flow which is independent on pressure and temperature.



8741

Nominal flow ranges from 0.010 l_N/min to 160 l_N/min

- High accuracy and repeatability
- Very fast response times
- Easy device exchange through configuration memory
- Available in 2 versions: 8741 Standard and 8741 büS/CANopen

CLICK ME

FOR DATA SHEET

The mass flow controller (MFC) / meter (MFM) type 8741 for gases is available in two versions:

MFC / MFM type 8741 Standard: with Industrial Ethernet or analog interface, suitable for a wide range of applications.

MFC / MFM type 8741 büS / CANopen: suitable for the integration in existing CANopen networks, as well as Industrial Ethernet or fieldbus networks in combination with the fieldbus gateway of type ME43.

Type 8741 can be configured as MFM or MFC. Optional, up to four different gases can be calibrated. Type 8741 is especially designed for use in cabinets.

Technical Data

Turn-down ratio	50:1, optional 100:1
Operating medium	Neutral, non-contaminated gases, others available on request
Calibration gas	Operating gas or air
Max operating pressure (overpressure to the atmospheric pressure)	10 bar (145 PSI), with MFCs the max. pressure depends on the orifice of the valve
Medium temperature	14°F to 158°F (-10°C to 70°C) (-10°C to 60°C with oxygen)
Ambient temperature	14°F to 122°F (-10°C to 50°C) higher temperatures on request
Measuring accuracy (after 1 min. warm up time)	± 0.8 % o. R. ± 0.3 % F. S.
Repeatability	±0.1% F.S.
Settling time (MFC) / response (MFM) time ($t_{95\%}$)	<300 ms
Body material	Aluminium or stainless steel
Port connection	NPT 1/4", G 1/4", compression fittings or subbase, others on request
Power supply	24 V DC
Voltage tolerance	±10%
Voltage tolerance	±10%
Power consumption[1]	1-3 W (as MFM), Max. 3-12 W (as MFC, depending on type of solenoid control valve)

[1] Data refers to the typical power consumption (at 23 °C ambient temperature, nominal flow rate and 30 min control mode). The specifications according to UL 61010-1 can differ (see instruction manual).

Technical Data, continued (see datasheet for details)

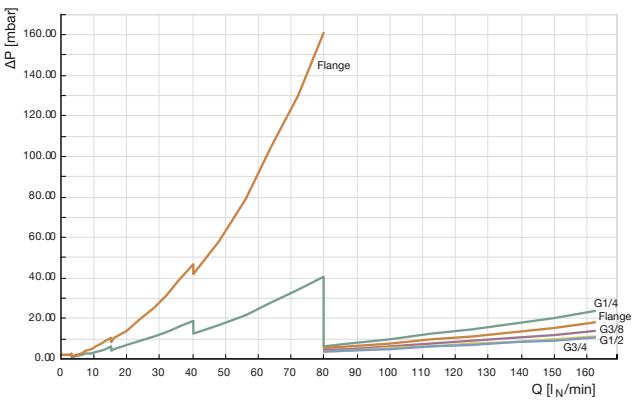
Elektrischer Anschluss	8741 Standard	8741 büS / CANopen
Industrial Ethernet	PROFINET, Ethernet/IP, EtherCAT, Modbus-TCP via 2 x RJ45 (Switch)[1]	-
Fieldbus	-	büS (CAN-based Bus) / CANopen via terminal block, 4 pin
Analog	4-20 mA, 0-20 mA, 0-10 V or 0-5 V via D-Sub9[2] or terminal block 6 pin	-
Input impedance	>20 kΩ (voltage), <300 Ω (current)	
Max. current (voltage output)	10 mA	
Max. load (current output)	600 Ω	

[1] Supply voltage via separate terminal block

[2] The analog version with D-Sub9 features an additional digital input and a relay output

Pressure Loss Diagram of a MFM (ref. to air)

Chip Sensor up to 160 l_N/min



The diagram shows exemplarily the pressure loss characteristics when air flowing through. For determining the pressure loss with another gas it needs to calculate the air equivalent and respect the fluidics needed with the other gas.

Measuring Principle

The actual flow rate is detected by a sensor. This operates according to a thermal principle which has the advantage of providing the mass flow which is independent on pressure and temperature.

Mass Flow Controller (MFC)/Mass Flow Meter (MFM) for Gases

Nominal flow ranges from 0.010 l_N/min to 160 l_N/min

- High accuracy and repeatability
- Protection class IP65 and IP67
- Optional: ATEX II Kat. 3G/D
- Communication via fieldbus based on CANopen

CLICK ME

FOR DATA SHEET

The mass flow controller (MFC) / meter (MFM) Type 8742 for gases is suitable for a wide range of applications. Type 8742 communicates via the Bürkert system bus (büS). This CANopen based interface is suitable for the integration into existing CANopen networks, as well as Industrial Ethernet or fieldbus networks in combination with the fieldbus gateway of Type ME43. The second option is tailor-made for applications with many control loops. Up to 32 MFC / MFM can be connected to one fieldbus gateway. Type ME43 translates the internal CANopen based communication to industry standards for both Industrial Ethernet and fieldbuses. The mass flow controller / meter can always be switched between büS and CANopen communication. Type 8742 can be configured as MFM or MFC. Optional, up to four different gases calibrations can be stored in the device. The thermal MEMS sensor is located directly in the gas stream and therefore reaches very fast response times. A direct-acting proportional valve as regulating unit guarantees high sensitivity. The integrated PI controller ensures outstanding control characteristics of the MFC / MFM. Type 8742 is especially designed for use in harsh environments due to high protection class and explosion-proof.

Technical Data

Turn-down ratio	50:1, optional 100:1
Operating medium	Neutral, non-contaminated gases, others on request
Calibration medium	Operating gas or air
Max operating pressure	145 PSI (10 bar), with MFCs the max. pressure depends on the orifice of the valve
Medium temperature	14°F to 158°F (-10°C to 70°C) (-10°C to 60°C with oxygen)
Ambient temperature	14°F to 122°F (-10°C to 50°C) (higher temperatures on request)
Accuracy (after 1 min. warm up time)	±0.8% o. R. ±0.3% F.S.
Repeatability	±0.1% F.S.
Settling(MFC)/ response (MFM) time ($t_{95\%}$)	<300 ms
Body material	Aluminium or stainless steel
Port connection	NPT 1/4", G 1/4", screw-in fitting or sub-base, others on request
Electr. connection	M12 plug, 5 pin
Power supply	24 V DC
Voltage tolerance	±10%
Power consumption[1)]	1-3 W (as MFM), Max. 3-12 W (as MFC, depending on type of solenoid control valve)

[1)] Data refers to the typical power consumption (at 23 °C ambient temperature, nominal flow rate and 30 min control mode). The specifications according to UL 61010-1 can differ (see instruction manual).

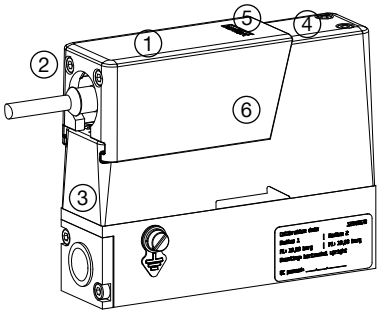
Features to fulfill the ATEX requirements

Devices with ATEX conformity meet protection class IP65

① Impact protection cap prevents damage of the M12 plug and all connected elements if mechanical stress is applie No particular ATEX sockets are required

② Screws prevent uncoupling of the M12 connection under tension

③ Diecast housing maintains IP protection under high mechanical stress



④ Standard requirements for cable glands are fulfilled for versions with external valve

⑤ LED display protected against mechanical stress

⑥ M12 plug achieves protection class IP65 and IP67 with ar without mounted counterpart

Nom. Flow Ranges of Typical Gases

(see datasheet for more)

Gas	Min. Q_{nom} [l_N/min]	Max. Q_{nom} [l_N/min]
Carbon dioxide	0.02	80
Air	0.01	160
Oxygen	0.01	160
Nitrogen	0.01	160
Hydrogen	0.01	1000

Measuring Principle

The actual flow rate is detected by a sensor. This operates according to a thermal principle which has the advantage of providing the mass flow which is independent on pressure and temperature.

Nominal flow ranges from 20 l_N/min to 2500 l_N/min

- High accuracy and repeatability
- Communication via standard signals or Industrial Ethernet
- Easy device exchange through configuration memory

CLICK ME

FOR DATA SHEET

The MFC / MFM type 8745 is suitable for the mass flow control of high flow rates. Type 8745 can be configured as MFM or MFC. Optional, four different gases can be calibrated. The thermal inline sensor is located directly in the main gas stream and therefore reaches very fast response times. A direct-acting proportional valve as regulating unit guarantees high sensitivity. The integrated PI controller ensures outstanding control characteristics of the MFC / MFM. Available in two versions: with electromagnetic proportional valve and with motor-driven proportional valve.

Type 8745 with solenoid proportional valve: Type 8745 can be configured as MFM or MFC. For MFCs the direct-acting proportional valves of Types 287x are used. These solenoid proportional valves are normally closed and stand for highest accuracy and repeatability with settling/response times of a few hundred milliseconds.

Type 8745 with motor-driven proportional valve: The Type 8745 with motor-driven valves is especially designed for applications with high inlet pressures. The motor's power consumption to hold a specific opening position is nearly zero. This key feature can reduce the energy consumption of a plant dramatically. Without electrical power the valve remains in its current position. The maximum duty cycle of the motor depends on the ambient temperature. The duty cycle does not refer to the duty cycle of the device but to the duty cycle of the motor.

Technical Data

General data	
Operating medium	Neutral, non-contaminated gases, others on request
Calibration medium	Operating gas or air with correction function
Medium temperature	14°F[1] to 158°F (-10°C to 70°C) (-10 °C[1] to +60 °C with oxygen)
Ambient temperature	14°F to 122°F (-10°C to 50°C) higher temperatures on request
Fluidics body materials	Aluminium
Seals materials	FKM or EPDM (depending on gas)[2]
Port connection	G or NPT 1/4", 3/8", 1/2", 3/4", 1" Sub-base
Operating voltage	24 V DC
Voltage tolerance	±10%
Configuration memory (included in delivery)	EEPROM (µSIM card: büS relevant data and information about spec. control loop in order to ease replacement)
Electrical connection	
Industrial Ethernet	PROFINET, Ethernet/IP, EtherCAT, Modbus-TCP via 2 x RJ45 (Switch)[3]
Analog	4-20 mA, 0-20 mA, 0-10 V or 0-5 V via D-Sub 9[4] or terminal block
Input impedance	>20 kΩ (voltage), <300 Ω (current)
Max. current (voltage output)	10 mA
Max. load (current output)	600 Ω

[1] When using a motor valve the minimum medium temperature is 0 °C.
[2] When using a motor valve additionally:
- Type 3280 DN4: Seat seal in PEEK
- Type 3285: Seat seal in Al_2O_3

[3] Supply voltage via separate terminal block.
[4] The analog version with D-Sub9 features an additional digital input and a relay output.

Technical Data Continued (see datasheet for details)

Type 8745	With solenoid proportional valve	With motor-driven proportional valve
Turndown ratio	50:1[1]	
Max. operating pressure Data in overpressure to atmospheric pressure	10 bar (with MFCs the max. pressure depends on the orifice of the valve) optional up to 25 bar for MFM	22 bar (with MFCs the max. pressure depends on the orifice of the valve)
Accuracy (after 15 min. warm up time)	±1.5 % o.R. ±0.3 % F.S.	±2 % o.R. ±0.5 % F.S.
Repeatability	±0.1 % F.S.	±0.5 % F.S.
Settling/Response time (t95 %)	<500 ms	<5 sec.
Proportional valve	(solenoid) normally closed, valve orifice range: 0.8…12mm, Kvs value range: 0.02…2.5m^3/h	(motor-driven) normally persisten, valve orifice range: 2…20mm, Kvs value range: 0.5…7.8m^3/h

[1] With vertical installation and flow downwards the turndown ratio is 10:1

Nominal flow ranges from 20 I_N/min to 2500 I_N/min

- High accuracy and repeatability
- Communication via fieldbus based on CANopen
- Optional: ATEX II Cat. 3G/D
- Electromagnetic and motor-driven valve actuation available

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FOR DATA SHEET

For a pure and flawless melt: The MFC 8746 mass flow controller is designed with a motor valve for regulation of pressures up to 20 bar and reliable operation even under the most stringent conditions. To ensure higher process reliability in the gas supply the valve can be regulated at full differential pressure. And the self-locking drive ensures that the motor valve is not affected by pressure fluctuations. In addition, the MFC 8746 features the latest digital technology – with the integrated bus interface, it is ready for Industry 4.0.

Technical Data

General data	
Operating medium	Neutral, non-contaminated gases, others on request
Calibration medium	Operating gas or air with correction function
Medium temperature	14°F[1] to 158°F (-10°C to 70°C) (-10 °C[1] to +60 °C with oxygen)
Ambient temperature	14°F to 122°F (-10°C to 50°C) higher temperatures on request
Materials Body Housing Seals	 Stainless steel or aluminium Aluminum diecasting (coated) FKM or EPDM (depending on the gas)[2]
Port connection	G or NPT 1/4", 3/8", 1/2", 3/4", 1" Sub-base
Electr. connection	M12 plug, 5 pin
Operating voltage	24 V DC
Voltage tolerance	±10%
Digital Comm.	CANopen or CAN based büS
Input-/Output signals	None, communication via bus

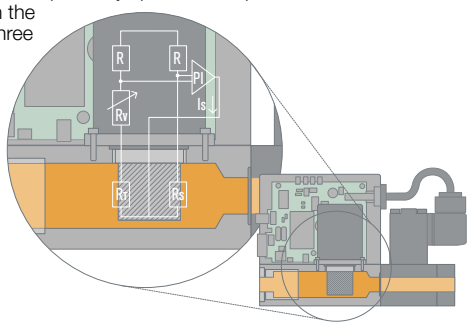
[1] When using a motor valve the minimum medium temperature is 0 °C.
[2] When using a motor valve additionally:
- Type 3280 DN4: Seat seal in PEEK
- Type 3285: Seat seal in Al_2O_3

Type 8746 with electromagnetic proportional valve: Type 8746 can be configured as MFM or MFC. For MFCs the direct-acting proportional valves of Types 287x are used. These solenoid proportional valves are normally closed and stand for highest accuracy and repeatability with settling/response times of a few hundred milliseconds.

Type 8746 with motor-driven proportional valve: The Type 8746 with motor-driven valves is especially designed for applications with high inlet pressures up to 22 bars or high flow rates (at a low pressure drop). The motor's power consumption to hold a specific opening position is nearly zero. This key feature can reduce the energy consumption of a plant dramatically. Without electrical power the valve remains in its current position. The maximum duty cycle of the motor depends on the ambient temperature. The duty cycle does not refer to the duty cycle of the device but to the duty cycle of the motor. The motor is not switched on unless the valve is to move. Frequent set-point value changes will drastically increase the duty cycle of the motor.

Measuring Principle

This sensor works as a hot-film anemometer in the so-called CTA operational mode (Constant Temperature Anemometer). To do this, two resistors with precisely specified temperature coefficients located directly in the media flow and three resistors located outside the flow are connected together to form a bridge.



Technical Data Continued (see datasheet for details)

Type 8746	With electromagnetic proportional valve	With motor-driven proportional valve
Turndown ratio	50:1[1]	
Max. operating pressure Data in overpressure to atmospheric pressure	10 bar (with MFCs the max. pressure depends on the orifice of the valve) optional up to 25 bar for MFM	22 bar (with MFCs the max. pressure depends on the orifice of the valve)
Accuracy (after 15 min. warm up time)	±1.5 % o.R. ±0.3 % F.S.	±2 % o.R. ±0.5 % F.S.
Repeatability	±0.1 % F.S.	±0.5 % F.S.
Settling/Response time (t95 %)	<500 ms	<5 sec.
Proportional valve	(electromagnetic) normally closed, valve orifice range: 0.8…12mm, Kvs value range: 0.02…2.5m³/h	(motor-driven) normally persisting, valve orifice range: 2…20mm, Kvs value range: 0.5…7.8m³/h

[1] With vertical installation and flow downwards the turndown ratio is 10:1

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