

GEMÜ 428

Motorized butterfly valve



Features

- Suitable for vacuum applications and low temperatures
- High-quality butterfly valve made from stainless steel or brass
- Available in small nominal sizes
- Compact and robust body

Description

The GEMÜ 428 soft seated butterfly valve made from stainless steel or brass is motorized. A manual override and an optical position indicator are integrated as standard. With its rounded and polished disc edges, the butterfly valve is optimized for frequent cycle duties. The surface of the butterfly valve can be further finished.

Technical specifications

- **Media temperature** : -20 to 120 °C
- **Ambient temperature**: -10 to 60 °C
- **Operating pressure** : 0 to 10 bar
- **Nominal sizes**: DN 15 to 50
- **Connection types**: Clamp | Spigot | Threaded connection
- **Connection standards**: ASME | DIN | EN | ISO | SMS
- **Housing materials**: 1.4408, investment casting material | CW614N, brass | CW617N, brass
- **Liner materials**: EPDM | FKM | Silicone
- **Disc materials**: 1.4408, investment casting material | CW614N, brass | CW617N, brass
- **Supply voltage**: 12 V AC, 50/60 Hz | 12 V DC | 24 V AC, 50/60 Hz | 24 V DC
- **Operating time 90°**: 4 to 100 s
- **Protection class**: IP 65. 66. 67. 68
- **Conformities**: ATEX | CSA | EAC | FDA

Technical data depends on the respective configuration



Product line

				
	GEMÜ K415	GEMÜ 411	GEMÜ 415	GEMÜ 428
Operation				
With bare shaft	●	-	-	-
Manual	-	●	-	-
Pneumatic	-	-	●	-
Motorized	-	-	-	●
Nominal sizes	DN 15 to 50	DN 15 to 50	DN 15 to 50	DN 15 to 50
Media temperature	-20 to 160 °C	-20 to 120 °C	-20 to 120 °C	-20 to 120 °C
Operating pressure	0 to 10 bar	0 to 10 bar	0 to 10 bar	0 to 10 bar
Connection types				
Clamp	●	●	●	●
Spigot	●	●	●	●
Threaded connection	●	●	●	●
Conformities				
ATEX	●	●	●	●
CSA	-	-	-	●
EAC	●	●	●	●
FDA	●	●	●	●

Motorized GEMÜ, Bernard actuators



	GEMÜ 9428	GEMÜ BC
Manufacturer	GEMÜ	Bernard Controls
Manufacturer type	9428	AQ, AQL
Torques	6 to 55 Nm	50 to 500 Nm
Duty cycle	100 %	30 % (ON/OFF actuator) 50 % (control actuator)
Heating	No	Yes
Voltage		
12 V AC, 50/60 Hz	●	-
12 V DC	●	-
230 V AC, 50 Hz	-	●
230 V AC, 60 Hz	-	●
24 V AC, 50/60 Hz	●	-
24 V DC	●	●
Protection class	IP 65, IP 67	IP 68
Ambient temperature	-10 to 60 °C	-40 to 60 °C
Housing materials		
Aluminium	-	●
PP	●	-
Versions		
Limit switches	●	●
ON/OFF actuator	●	●
Optional on-site control	-	●
Optional positioning actuator	-	●
Optional potentiometer	-	●



Use in non-aggressive environment (up to C3)		
Use in aggressive environment (C5)		
Use in protected outdoor areas		
Use in unprotected outdoor areas		
Applications with many/frequent cycle duties		
Fail-safe option		
Positioning application		

Chemical processes	●	●
Surface finishing	●	●
Water treatment	●	●
Mechanical engineering	●	●
Power generation and environmental systems	●	●
Food processing technology	●	●
Semiconductor	●	●
Medical systems	●	●
Pharmaceutical industry	●	●

A detailed diagram of a 2-position, 2-way solenoid valve with a manual override. The valve body is brass, and the solenoid actuator is a grey and black plastic housing. The manual override is a red knob on the left side of the housing. The solenoid housing has labels for 'closed' and 'open' positions, with a red indicator light. The valve has two ports: a top port and a bottom port. The diagram is labeled with numbers 1 through 6, corresponding to the parts listed in the table.

www.gemu-group.com

Item	Name	Material
2	Pipe connections	Brass (CW617N), investment casting (1.4408)
3	Housing base	Actuator versions 1006, 1015, 2006, 2015: PP + 30 % glass fibre reinforced Actuator version 3035: PP + 20 % glass bead reinforced
4	Connection for manual override	
5	Optical position indicator	PP-R natural
6	Housing cover	Actuator versions 1006, 1015, 2006, 2015: PPE + 30 % glass fibre reinforced Actuator version 3035: PP + 20 % glass bead reinforced

Availability

Body

DN	NPS	Body material code ¹⁾									
		Brass code 12		Investment casting code 37							
		Connection type code ²⁾									
		Threaded socket		Spigot						Clamp	
		1	31	0	16	17	37	59	60	86	88
15	1/2"	X	X	X	X	X	-	X	X	X	X
20	3/4"	X	X	X	X	X	-	X	X	X	X
25	1"	X	X	X	X	X	X	X	X	X	X
32	1¼"	X	X	X	X	X	X	-	X	X	-
40	1½"	X	X	X	X	X	X	X	X	X	X
50	2"	X	X	X	X	X	X	X	X	X	X

1) **Body material**

Code 12: CW614N, CW617N (brass)

Code 37: 1.4408, investment casting

2) **Connection type**

Code 1: Threaded socket DIN ISO 228

Code 31: Threaded socket NPT

Code 0: Spigot DIN

Code 16: Spigot EN 10357 series B (formerly DIN 11850 series 1)

Code 17: Spigot EN 10357 series A (formerly DIN 11850 series 2)

Code 37: Spigot SMS 3008

Code 59: Spigot ASME BPE

Code 60: Spigot ISO 1127 / EN 10357 series C

Code 86: Clamp DIN 32676 series A, face-to-face dimension FTF EN 558 series 14

Code 88: Clamp ASME BPE, face-to-face dimension FTF EN 558 series 14

Actuator

GEMÜ 9428 actuator - Voltage/Frequency

Actuator version Code ¹⁾	Control module Code ²⁾	Voltage/Frequency				
		12 V DC (code B1)	12 V AC (code B4)	24 V DC (code C1)	24 V AC (code C4)	100-250 V AC (code O4)
A3	A0, AE	X	X	X	X	-
A4	A0, AE	X	-	X	-	-
A7	A0, AE	-	-	X	-	-

1) Actuator version

Code 1006: Actuator, motorized, operating time 4s, torque 6Nm, GEMUE, size 1 supply voltage B1, C1, B4, C4

Code 1015: Actuator, motorized, operating time 11s, torque 15Nm, GEMUE, size 1 supply voltage B1, C1

Code 3035: Actuator, motorized, operating time 15s, torque 35Nm, GEMUE, size 3 supply voltage C1

2) Control module

Code A0: ON/OFF actuator

Code AE: OPEN/CLOSE control, 2 additional potential-free limit switches, Class A (EN15714-2)

GEMÜ 9428 actuator

DN	Actuator version ¹⁾		
	1006	1015	3035
15	X	X	-
20	X	X	-
25	X	X	-
32	-	X	X
40	-	-	X
50	-	-	X

1) Actuator version

Code 1006: Actuator, motorized, operating time 4s, torque 6Nm, GEMUE, size 1 supply voltage B1, C1, B4, C4

Code 1015: Actuator, motorized, operating time 11s, torque 15Nm, GEMUE, size 1 supply voltage B1, C1

Code 3035: Actuator, motorized, operating time 15s, torque 35Nm, GEMUE, size 3 supply voltage C1

Bernard actuator

DN	Actuator version ¹⁾	
	BC1L	BC3L
15	X	X
20	X	X
25	X	X
32	-	X
40	-	X
50	-	X

1) Actuator version

Code BC1L: BERNARD actuator, motorized, type AQ1L, operating time 13s, torque 15Nm, 2 additional limit switches, heating, manual override, aluminium housing, RAL5002, IP 67

Code BC3L: BERNARD actuator, motorized, type AQ30, operating time 15s, torque 30Nm, 2 additional limit switches, heating, manual override, aluminium housing, RAL5002, IP 67

Order data

Butterfly valve with GEMÜ 9428 actuator

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

Order codes

1 Type	Code
Butterfly valve, motorized	428

2 DN	Code
DN 15	15
DN 20	20
DN 25	25
DN 32	32
DN 40	40
DN 50	50

3 Body configuration	Code
2/2-way body	D

4 Connection type	Code
Spigot	
Spigot DIN	0
Spigot EN 10357 series B (formerly DIN 11850 series 1)	16
Spigot EN 10357 series A (formerly DIN 11850 series 2)	17
Spigot SMS 3008	37
Spigot ASME BPE	59
Spigot ISO 1127 / EN 10357 series C	60
Threaded socket	
Threaded socket DIN ISO 228	1
Threaded socket NPT	31
Clamp	
Clamp DIN 32676 series A, face-to-face dimension FTF EN 558 series 14	86
Clamp ASME BPE, face-to-face dimension FTF EN 558 series 14	88

5 Body material	Code
CW614N, CW617N (brass)	12
1.4408, investment casting	37

6 Liner	Code
FPM (FKM)	4
Silicone (MVQ)	9
EPDM	14

7 Voltage/Frequency	Code
12 VDC	B1
12 V 50/60 Hz	B4
24 VDC	C1
24 V 50/60 Hz	C4

8 Control module	Code
On/Off actuator	A0

8 Control module	Code
On/Off actuator, 2 additional potential-free limit switches, Class A (EN15714-2)	AE

9 Actuator version	Code
GEMÜ actuator, motorized, size 1, operating time 4 s, torque 6 Nm, supply voltage B1, C1, B4, C4	1006
GEMÜ actuator, motorized, size 1, operating time 11 s, torque 15 Nm, supply voltage B1, C1	1015
GEMÜ actuator, motorized, size 3, operating time 15 s, torque 35 Nm, supply voltage C1, O4	3035

10 Type of design	Code
Standard	
Parallel operation of several actuators	6410
1 Hirschmann connector N6R	6598
2 Harting connectors Han 7D	6722

Order example

Ordering option	Code	Description
1 Type	428	Butterfly valve, motorized
2 DN	25	DN 25
3 Body configuration	D	2/2-way body
4 Connection type	1	Threaded socket DIN ISO 228
5 Body material	12	CW614N, CW617N (brass)
6 Liner	14	EPDM
7 Voltage/Frequency	C1	24 VDC
8 Control module	A0	On/Off actuator
9 Actuator version	1006	GEMÜ actuator, motorized, size 1, operating time 4 s, torque 6 Nm, supply voltage B1, C1, B4, C4
10 Type of design		Standard

Butterfly valve with Bernard actuator

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

Order codes

1 Type	Code
Butterfly valve, motorized	428

2 DN	Code
DN 15	15
DN 20	20
DN 25	25
DN 32	32
DN 40	40
DN 50	50

3 Body configuration	Code
2/2-way body	D

4 Connection type	Code
Spigot	
Spigot DIN	0
Spigot EN 10357 series B (formerly DIN 11850 series 1)	16
Spigot EN 10357 series A (formerly DIN 11850 series 2)	17
Spigot SMS 3008	37
Spigot ASME BPE	59
Spigot ISO 1127 / EN 10357 series C	60
Threaded socket	
Threaded socket DIN ISO 228	1
Threaded socket NPT	31
Clamp	
Clamp DIN 32676 series A, face-to-face dimension FTF EN 558 series 14	86
Clamp ASME BPE, face-to-face dimension FTF EN 558 series 14	88

5 Body material	Code
CW614N, CW617N (brass)	12
1.4408, investment casting	37

6 Liner	Code
FPM (FKM)	4
Silicone (MVQ)	9
EPDM	14

7 Voltage/Frequency	Code
24VDC 85-260VAC	Y5

8 Control module	Code
On/Off actuator, 2 additional potential-free limit switches, Class A (EN15714-2)	AE
On/Off actuator, potentiometer output, Class A (EN15714-2)	AP
On/Off actuator, analogue position feedback 0/4-20mA, 2 additional potential-free limit switches	AT
Control actuator, external set value 0/4-20 mA	E2

9 Actuator version	Code
BERNARD actuator, motorized, type AQ1L, operating time 13s, torque 15Nm, 2 additional limit switches, heating, manual override, aluminium housing, RAL5002, IP 67	BC1L
BERNARD actuator, motorized, type AQ30, operating time 15s, torque 30Nm, 2 additional limit switches, heating, manual override, aluminium housing, RAL5002, IP 67	BC3L

10 Type of design	Code
Standard	
Parallel operation of several actuators	6410
1 Hirschmann connector N6R	6598
2 Harting connectors Han 7D	6722

Order example

Ordering option	Code	Description
1 Type	428	Butterfly valve, motorized
2 DN	25	DN 25
3 Body configuration	D	2/2-way body
4 Connection type	1	Threaded socket DIN ISO 228
5 Body material	12	CW614N, CW617N (brass)
6 Liner	14	EPDM
7 Voltage/Frequency	Y5	24VDC 85-260VAC
8 Control module	AE	On/Off actuator, 2 additional potential-free limit switches, Class A (EN15714-2)
9 Actuator version	BC1L	BERNARD actuator, motorized, type AQ1L, operating time 13s, torque 15Nm, 2 additional limit switches, heating, manual override, aluminium housing, RAL5002, IP 67
10 Type of design		Standard

Butterfly valve technical data

Medium

Working medium: Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body, disc and seal material. The product is only suitable for use with fluids of group 2 according to the Pressure Equipment Directive.

Temperature

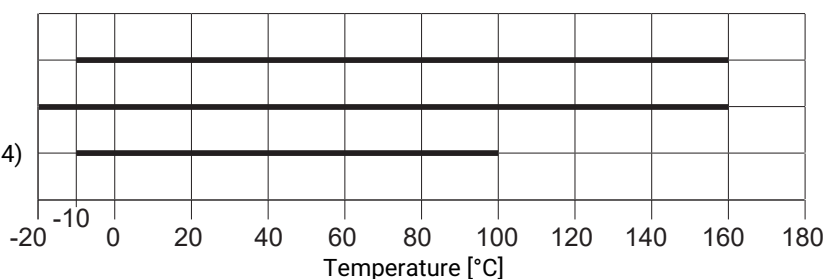
Media temperature:

Liner material

FPM (Code 4)

PSI (Code 9)

EPDM (Code 14)



For media temperatures above 100 °C additionally use mounting kit GEMÜ MSC (see accessories).

Ambient temperature: -10 – 60 °C

Storage temperature: -20 – 60 °C

Pressure

Operating pressure: 0 – 10 bar

Pressure rating: PN 10

Kv values:

DN	Threaded socket	Butt weld spigot
	Body material	
	Code 12	Code 37
15	7	7
20	12	15
25	17	20
32	40	55
40	60	90
50	100	140

Kv values in m³/h

Product compliance

Machinery Directive:	2006/42/EC
Pressure Equipment Directive:	2014/68/EU
EMC Directive:	2014/30/EU
Low Voltage Directive:	2014/35/EU
Approvals:	FDA

Mechanical data

Protection class:	IP 65 acc. to EN 60529
Nominal travel:	90°
Max. travel:	93°
Setting range:	0 to 20° (limit switch Min.) 70 to 93° (limit switch Max.)

Weight: **Body**

DN	Body material	
	Code 12	Code 37
15	670	900
20	750	940
25	910	1020
32	930	1100
40	1410	1500
50	2020	1950

Weight in g

Torques:

DN	Torques
15	6.0
20	6.0
25	6.0
32	8.0
40	20.0
50	21.0

Torques in Nm

Technical data of actuator

GEMÜ 9428 actuators

Mechanical data

Weight: **GEMÜ 9428**

Supply voltage 12 V / 24 V:	1.0
Actuator version 3035:	2.4

Weights in kg

Electrical data

Electrical protection: Motor protective system by customer

Electrical protection class: I (DIN EN 61140)
Continuous duty

Electrical connection

Electrical connection type: Cable connection PG 13.5
Binder RD24 flange plug series 693, number of poles: 6+PE, IP67 (GEMÜ 3006, 3015)

Cable diameter: 7.5 – 12.5 mm

Max. cross section of wire: 1.5 mm²

Recommended motor protection:

Voltage	12 V DC	24 V DC
Motor protection switch type	Siemens 3RV 1011-1CA10	Siemens 3RV 1011-1BA10
Set current	2.20	1.70

Current data in A

Rated voltage: 12 V / 24 V AC or DC ($\pm 10\%$)

Rated frequency: 50/60 Hz (at AC rated voltage)

Max. current at start up:

Actuator version	12 V DC	12 V AC	24 V DC	24 V AC	100-250 V AC
	Code B1	Code B4	Code C1	Code C4	Code O4
1006, 3006	30.0	30.0	30.0	30.0	-
1015, 3015	30.0	-	30.0	-	-
2006	-	-	-	-	-
2015	-	30.0	-	30.0	-
3035	-	-	30.0	-	-
3055	-	-	40.0	-	-

Power consumption in W

Max. current at start up:

Actuator version	12 V DC	12 V AC	24 V DC	24 V AC	100-250 V AC
	Code B1	Code B4	Code C1	Code C4	Code O4
1006, 3006	2.2	2.0	1.20	1.5	-
1015, 3015	2.2	-	1.20	-	-
2006	-	-	-	-	-
2015	-	2.0	-	1.2	-
3035	-	-	1.30	-	-
3055	-	-	1.65	-	-

Current data in A

Actuator version (code)	12 V DC	12 V AC	24 V DC	24 V AC	100-250 V AC
	Code B1	Code B4	Code C1	Code C4	Code O4
1006	6.3	2.4	4.0	1.8	-
1015	9.2	-	3.8	-	-
2006	-	-	-	-	-
2015	-	2.3	-	1.8	-
3035	-	-	3.3	-	-

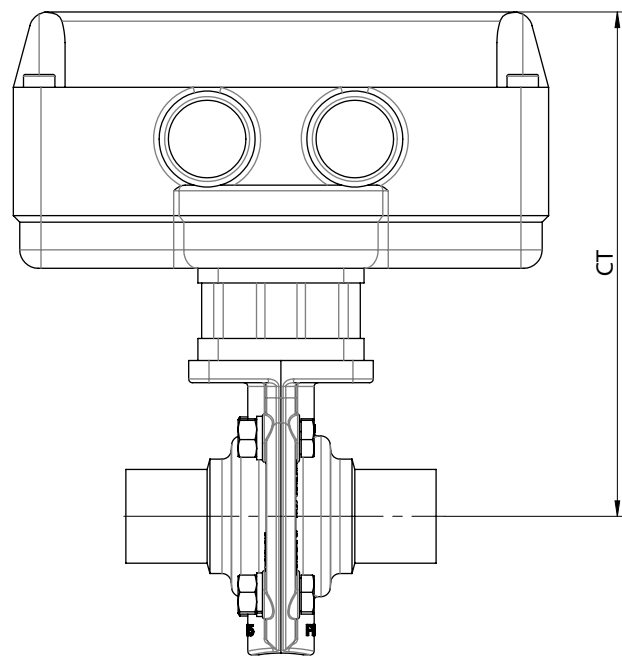
Current data in A

Bernard actuators

Note: For technical data see manufacturer's original datasheets

Dimensions

Mounting height



DN	CT		
	Actuator version		
	1006, 3006, 1015, 3015	3035	3006, 3015
15	135.5	-	135.5
20	135.5	-	135.5
25	135.5	-	135.5
32	142.0	148.5	142.0
40	-	156.5	150.0
50	-	165.5	159.0

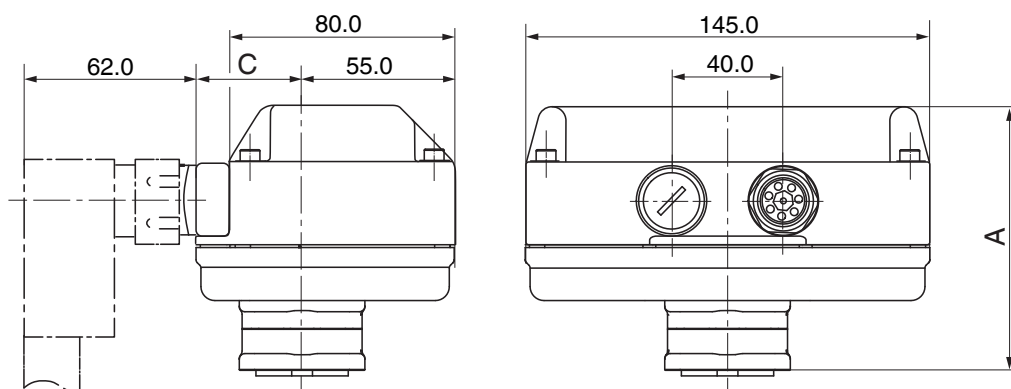
Dimensions in mm

See also

 Mounting height [[► 16](#)]

Actuator

Actuator version 1006, 1015

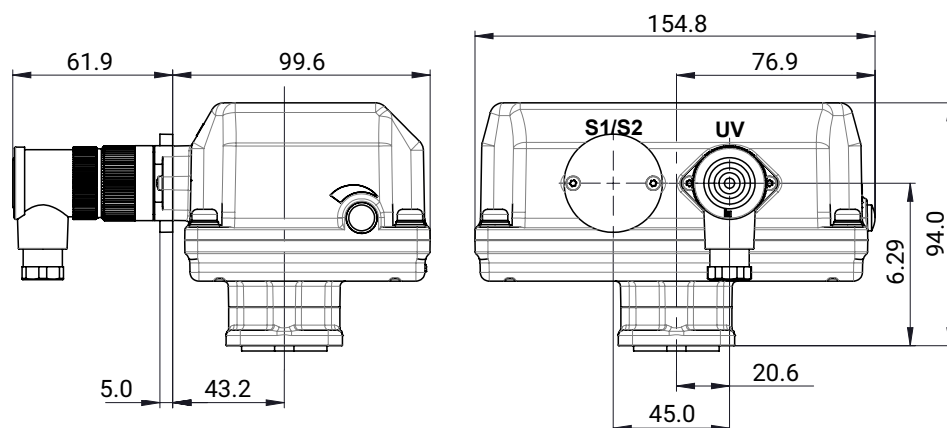


Actuator version	A	C
1006, 1015	94.0	49.0

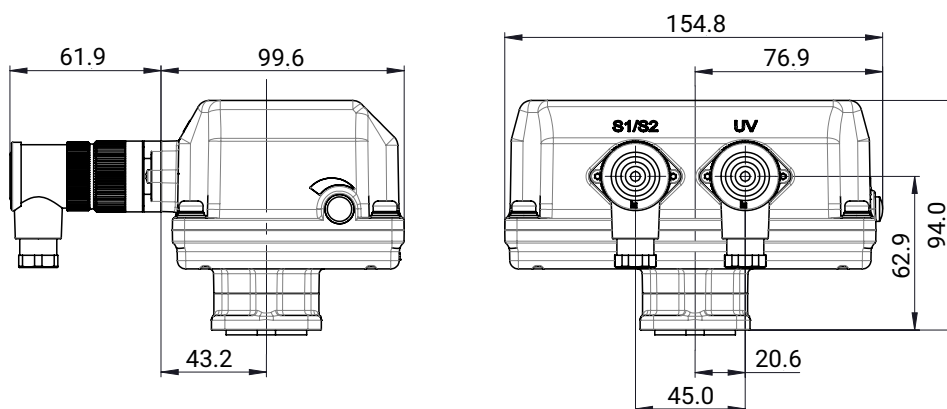
Dimensions in mm

Actuator version 3006, 3015

ON/OFF actuator (control module code A0)

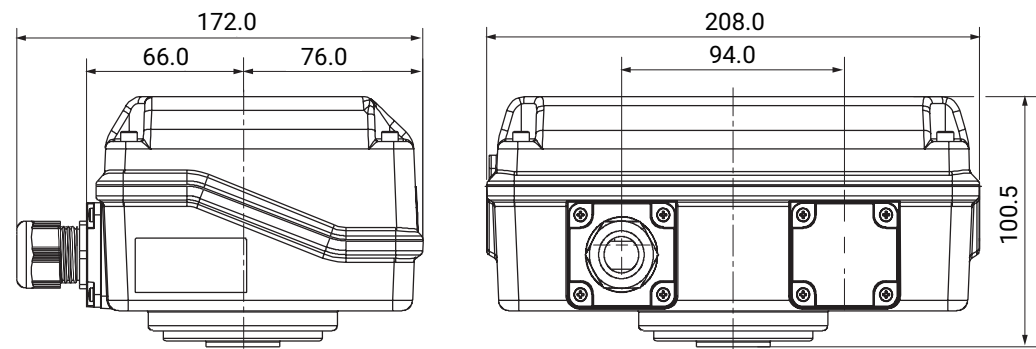


OPEN/CLOSE control, 2 additional potential-free limit switches (control module code AE)



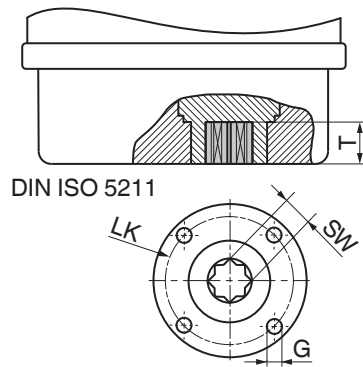
Dimensions in mm

Actuator version 3035



Dimensions in mm

Connection dimensions actuator version (10XX, 20XX, 30XX)



Actuator version (code)	Connection size (code)	Location spigot (code)	SW	G	LK	T
1006, 1015, 2015, 3006, 3015	G05	Y	S08	Ø5.5	48.0	15.0
	F03	N	S09	M5	36.0	16.0
	F04	N	S09	M5	42.0	16.0
	F05	N	S09	M6	50.0	16.0
	F05	N	S11	M6	50.0	16.0
3035, 3055	F05	Y	S14	M6	50.0	22.0

Dimensions in mm

See also

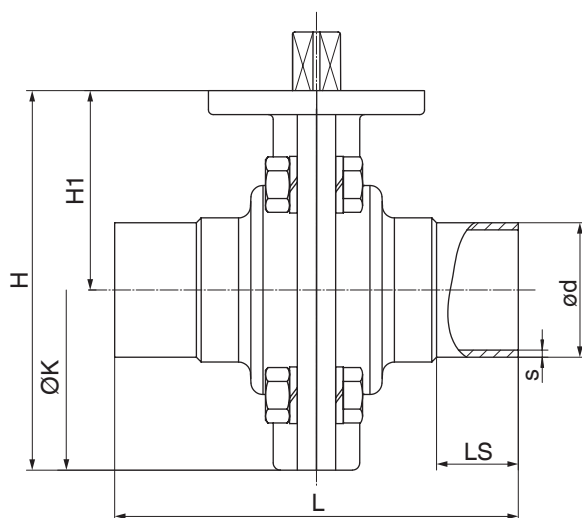
Connection dimensions actuator version (10XX, 20XX, 30XX) [18]

Third-party actuators

For more detailed information on third-party actuators, refer to the manufacturers' documentation

Body

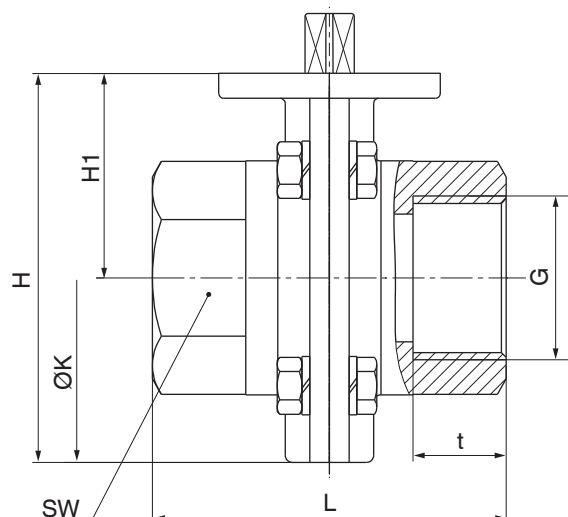
Butt weld spigot (connection type code 0, 16, 17, 37, 59, 60)



							DIN		EN 10357			
							Code 0		Code 16		Code 17	
DN	NPS	L	H	H1	ØK	LS	ød	s	ød	s	ød	s
15	1/2"	80.0	79.0	41.5	75.0	20.0	18.0	1.5	18.0	1.0	19.0	1.5
20	3/4"	84.0	79.0	41.5	75.0	22.0	22.0	1.5	22.0	1.0	23.0	1.5
25	1"	84.0	79.0	41.5	75.0	22.0	28.0	1.5	28.0	1.0	29.0	1.5
32	1¼"	88.0	91.0	48.0	85.0	25.0	34.0	1.5	34.0	1.0	35.0	1.5
40	1½"	96.0	108.0	56.0	103.0	25.0	40.0	1.5	40.0	1.0	41.0	1.5
50	2"	110.0	123.0	65.0	116.0	30.0	52.0	1.5	52.0	1.0	53.0	1.5

							SMS 3008		EN ISO 1127		ASME BPE	
							Code 37		Code 60		Code 59	
DN	NPS	L	H	H1	ØK	LS	ød	s	ød	s	ød	s
15	1/2"	80.0	79.0	41.5	75.0	20.0	-	-	21.3	1.6	12.7	1.65
20	3/4"	84.0	79.0	41.5	75.0	22.0	-	-	26.9	1.6	19.1	1.65
25	1"	84.0	79.0	41.5	75.0	22.0	25.0	1.2	33.7	2.0	25.4	1.65
32	1¼"	88.0	91.0	48.0	85.0	25.0	33.7	1.2	42.4	2.0	-	-
40	1½"	96.0	108.0	56.0	103.0	25.0	38.0	1.2	48.3	2.0	38.1	1.65
50	2"	110.0	123.0	65.0	116.0	30.0	51.0	1.2	60.3	2.0	50.8	1.65

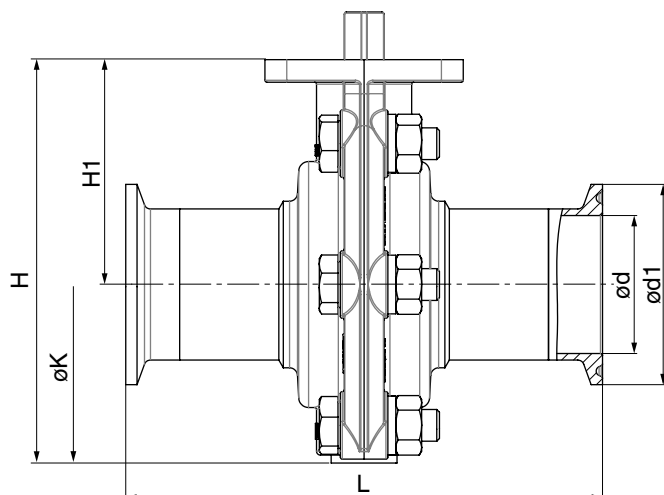
Dimensions in mm

Threaded socket (connection type code 1, 31)

DN	G	L	H	H1	t	øK	SW	n
15	1/2"	72.0	79.0	41.5	15.0	75.0	27.0	6
20	3/4"	72.0	79.0	41.5	16.0	75.0	32.0	6
25	1"	72.0	79.0	41.5	19.0	75.0	41.0	6
32	1¼"	72.0	91.0	48.0	21.4	85.0	50.0	8
40	1½"	83.0	108.0	56.0	21.4	103.0	55.0	8
50	2"	88.0	123.0	65.0	25.7	116.0	70.0	8

Dimensions in mm

n = number of flats

Clamp (connection type code 86, 88)

						DIN 32676 series A		ASME BPE	
						Code 86		Code 88	
DN	NPS	L	H	H1	øK	ød	ød1	ød	ød1
15	1/2"	115.0	79.0	41.5	75.0	16.0	34.0	9.4	25.0
20	3/4"	120.0	79.0	41.5	75.0	20.0	34.0	15.8	25.0
25	1"	125.0	79.0	41.5	75.0	26.0	50.5	22.1	50.5
32	1¼"	130.0	91.0	48.0	85.0	32.0	50.5	-	-
40	1½"	140.0	108.0	56.0	103.0	38.0	50.5	34.8	50.5
50	2	150.0	123.0	65.0	116.0	50.0	50.5	47.5	64.0

Dimensions in mm

Accessories**GEMÜ MSC****Mounting kit**

The MSC mounting kit is an interface, for the same and different ends, to join flange designs according to ISO 5211. This mounting kit ensures thermal separation of actuator and valve body. It can also be used as height compensation for insulated pipelines. The mounting kit is available in steel, electrogalvanized and stainless steel in an open or closed design.



GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG
Fritz-Müller-Straße 6-8, 74653 Ingelfingen-Criesbach, Germany
Phone +49 (0) 7940 1230 · info@gemue.de
www.gemu-group.com