

Butterfly Valve, Metal

Construction

The motorized GEMÜ 428 2/2 way butterfly valve has a low maintenance electrical actuator with a powerful reversible DC motor. The secondary gear in the motor, consisting of a threaded spindle with swivel lever, provides the rotation through 90°. GEMÜ 428 has an optical position indicator and a manual override.

Features

- Suitable for inert, corrosive*, liquid and gaseous media
- Insensitive to media with high viscosities
- Quick on/off operation
- Electrical position indication by 2 potential-free, adjustable limit switches
- Opening and closing behaviour is independent of the operating pressure

Advantages

- Adjustable end positions by means of micro-switches
- Emergency power supply with 24V DC types through the emergency power supply module type 1570
- Various seal materials are available to suit the medium
- Low maintenance

* See page 2 for information on working medium

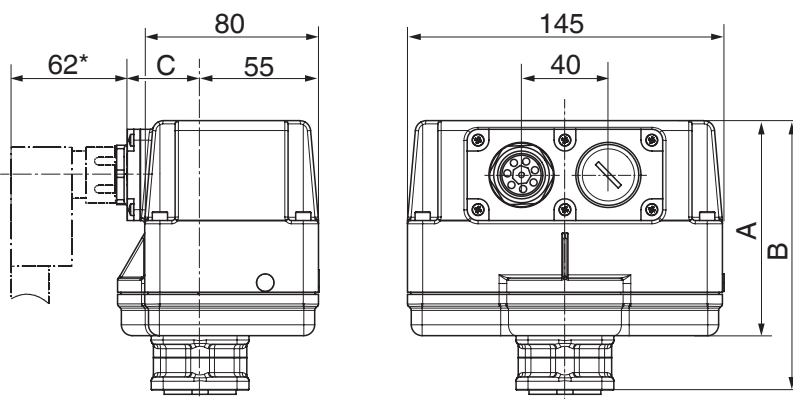


Overall height 1
(Voltages 12V, 24V)



Overall height 2
(Voltages 100-250V, 50-60 Hz)

Actuator dimensions [mm]



Overall height	Voltages	A	B	C
1	12V, 24V	68	95	49
2*	100V - 250V	94	121	53

* Standard for supply voltage code O4

Technical data

Working medium

Inert, corrosive gaseous and liquid media which have no negative impact on the physical and chemical properties of the body, disc and seal materials

Max. perm. working pressure 10 bar
(for water and non-hazardous media to which the body material is resistant)

Max. perm. temperature of working medium 100° C

Protection class to EN 60529

IP 65

Manual override

with Allan key SW3

Turn range

Nominal turn range 90°

Max. turn range 93°

Setting range limit switch Min. -2 ... 12°

Setting range limit switch Max. 76 ... 91°

Admissible temperatures

Ambient temperature -10...+60°C

Storage temperature -20...+60°C

Nominal size	Kv value [m ³ /h]		Weight [g]	
	DN	Brass (Code 12)	1.4581 (Code 38)	Brass (Code 12)
15	7	7*	1700	1600
20	12	15*	1750	1600
25	17	20*	1800	1600
32	40	55*	2050	1800
40	60	90*	2600	2200
50	100	140*	3500	2900

* ISO connection. All pressures are given as gauge pressures.

Electrical connection

Supply voltages	12V / 24V	100-250V AC
Mains frequency	DC or 50/60 Hz	50/60 Hz
Power consumption	approx.. 24 W	approx. 30 W
Control input voltage	motor voltage	20-250V AC/DC
Control input current	-	typ. 1 mA
Rating	continuously rated	rated 40% ED
Type of connection	cable gland PG 13.5	Hirschmann plug type N6RFFS11 (PG 11)
Diameter of cable	7.5 ... 12.5 mm	7 ... 9 mm
Max. cross section of wire	1.5 mm ²	1,5 mm ²
Recomm. connection cable	5x1 mm ² Ölflex®	1 connector (standard): 7x1 mm ² Ölflex®
Electrical protection	Motor protective system by customer	integrated stall and overload protection in addition excess current release T 1A 5x20 mm

Actuator materials

Supply voltages	12V / 24V	100-250V AC
Housing base	PP (30% GF)	PP (30% GF)
Housing cover	PPO (10% GF)	PP (30% GF)
Indicator	PPR natur	PPR natur

Coordination Actuator version / Voltage/frequency

Voltage/frequency (Code)	B1	C1	B4	C4	O4
Actuator version 1006	X	X	X	X	-
Actuator version 1015	X	X	-	-	-
Actuator version 2006	-	-	-	-	X
Actuator version 2015	-	-	X	X	X

Order data

Body configuration	Code
2/2 way	D

Connections	Code
Butt weld spigots (only valve body material code 38)	
Spigots DIN	0
Spigots DIN 11850, series 1	16
Spigots DIN 11850, series 2	17
Spigots DIN 11850, series 3	18
Spigots SMS 3008	37
Spigots ASME BPE	59
Spigots EN ISO 1127	60
Threaded connections (only valve body material code 12)	
Threaded sockets DIN ISO 228	1

Valve body/disc material	Code
MS, Brass only available with threaded socket design	12
1.4581, St. steel investment casting only available with butt weld spigot design	38

Seal material	Code
FPM	4
PSI, Silicone rubber	9
EPDM	14

Voltage/frequency	Code
12V DC	B1
12V AC 50/60 Hz	B4
24V DC	C1
24V AC 50/60 Hz	C4
100-250V AC 50/60 Hz	O4

Functional module	Code
OPEN/CLOSED control standard	A0
OPEN/CLOSED control with 2 additional potential-free limit switches	AE

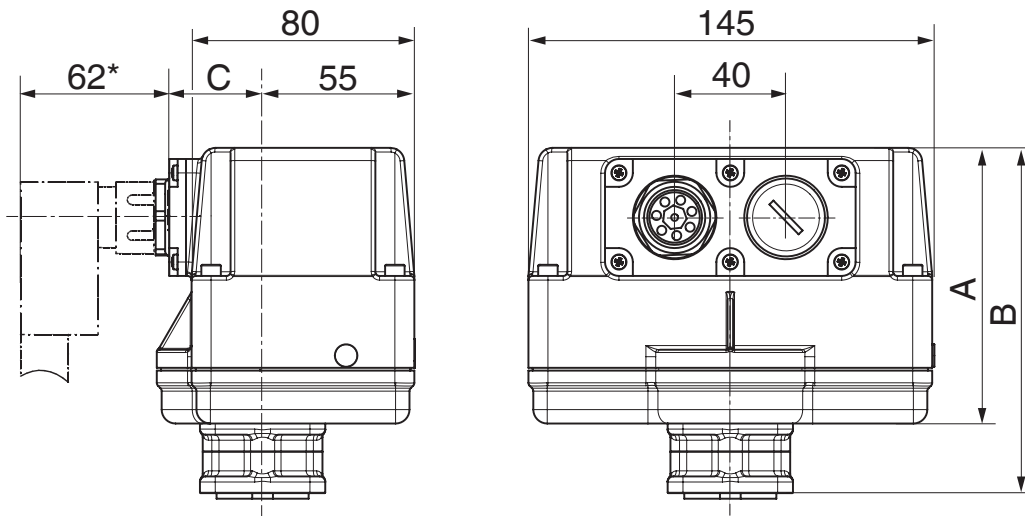
Actuator version	Code
Torque 6 Nm, operating time 4 sec; spur gear; DN 15-25; B1/C1/B4/C4	1006
Torque 15 Nm, operating time 11 sec; planetary gear; DN 15-50; B1/C1	1015
Torque 6 Nm, operating time 4 sec; spur gear; DN 15-25; O4	2006
Torque 15 Nm, operating time 11 sec; planetary gear; DN 15-50; B4/C4/O4	2015

Special design	K-No.
Connection with 1 Hirschmann socket DIN 43651 Type N6RFFS11 Cable diameter 7...9 mm; wire cross section up to 1.5 mm ² ; PG11)*	6598
Parallel operation*	6410
* Not possible for supply voltage code O4	

Order example	428	25	D	1	12	14	C1	A0	1006	-
Type	428									
Nominal size		25								
Body configuration (code)			D							
Connection (code)				1						
Valve body/disc material (code)					12					
Seal material (code)						14				
Supply voltages/frequency (code)							C1			
Functional module (code)								A0		
Actuator version (code)									1006	
Special design (K-No.)										-

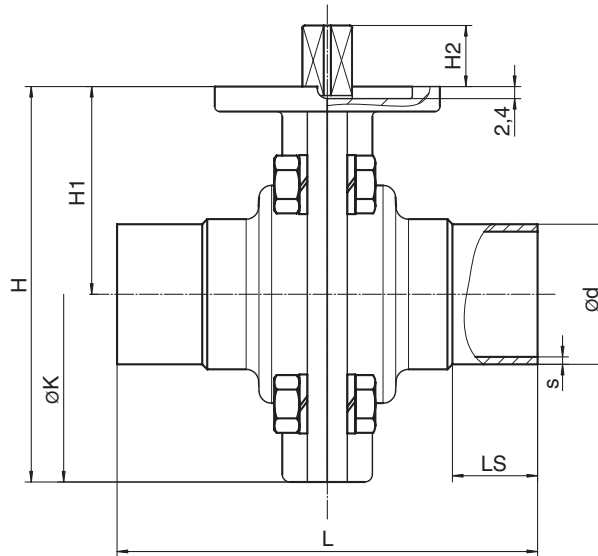
Actuator dimensions [mm]

* Standard with supply voltage reference number O4



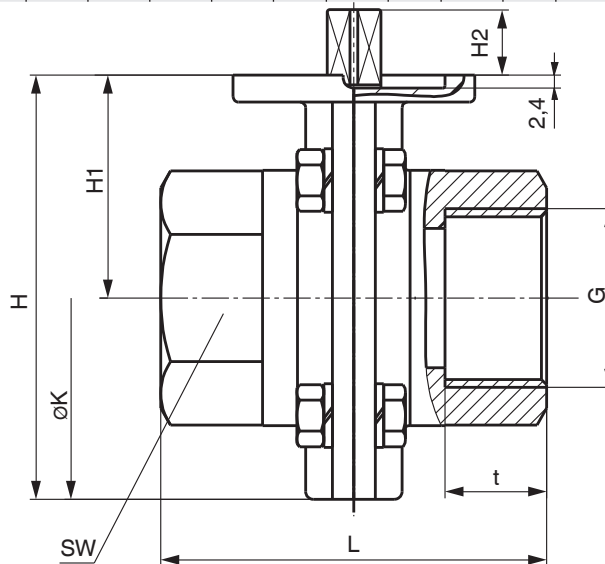
Overall height	Voltages	A	B	C
1	12V, 24V	69	94	49
2*	100V - 250V	99	124	53

Body dimensions [mm]



Butt weld spigots

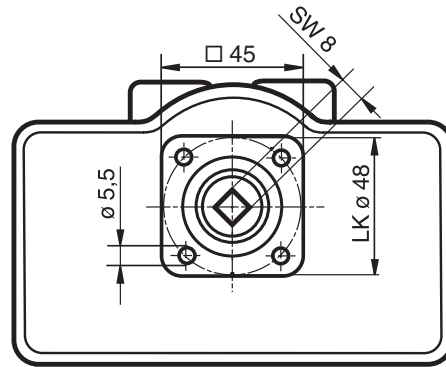
DN	NPS	L	H	H1	H2	øK	LS	ød	s	DIN series 0; Code 0		DIN 11850 series 1; Code 16		DIN 11850 series 2; Code 17		DIN 11850 series 3; Code 18		SMS 3008 Code 37		EN ISO 1127 Code 60		ASME BPE Code 59	
										ød	s	ød	s	ød	s	ød	s	ød	s	ød	s	ød	s
15	1/2"	80	79	41.5	13	75	20	18	1.5	18	1	19	1.5	20	2	-	-	21.3	1.6	12.70	1.65		
20	3/4"	84	79	41.5	13	75	22	22	1.5	22	1	23	1.5	24	2	-	-	26.9	1.6	19.05	1.65		
25	1"	84	79	41.5	13	75	22	28	1.5	28	1	29	1.5	30	2	25.0	1.2	33.7	2.0	25.40	1.65		
32	1 1/4"	88	91	48.0	13	85	25	34	1.5	34	1	35	1.5	36	2	33.7	1.2	42.4	2.0	-	-		
40	1 1/2"	96	108	56.0	13	103	25	40	1.5	40	1	41	1.5	42	2	38.0	1.2	48.3	2.0	38.10	1.65		
50	2	110	123	65.0	13	116	30	52	1.5	52	1	53	1.5	54	2	51.0	1.2	60.3	2.0	50.80	1.65		



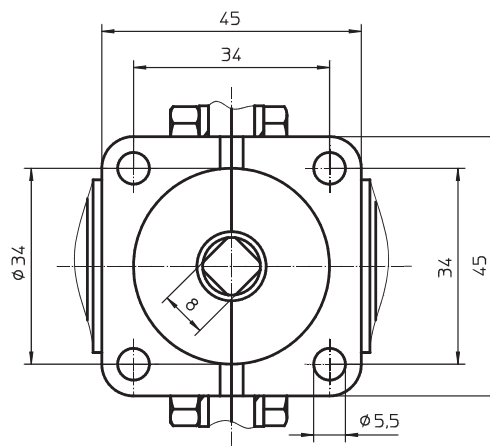
Threaded sockets DIN ISO 228

DN	G	H	H1	H2	t	L	øK	SW	Number of wrench surfaces
15	1/2	79	41.5	13	15.0	72	75	27	6
20	3/4	79	41.5	13	16.0	72	75	32	6
25	1	79	41.5	13	19.0	72	75	41	6
32	1 1/4	91	48.0	13	21.4	72	85	50	8
40	1 1/2	108	56.0	13	21.4	83	103	55	8
50	2	123	65.0	13	25.7	83	116	70	8

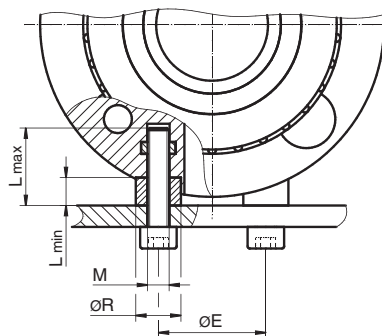
Valve connection dimensions [mm]



Actuator mounting dimensions [mm]

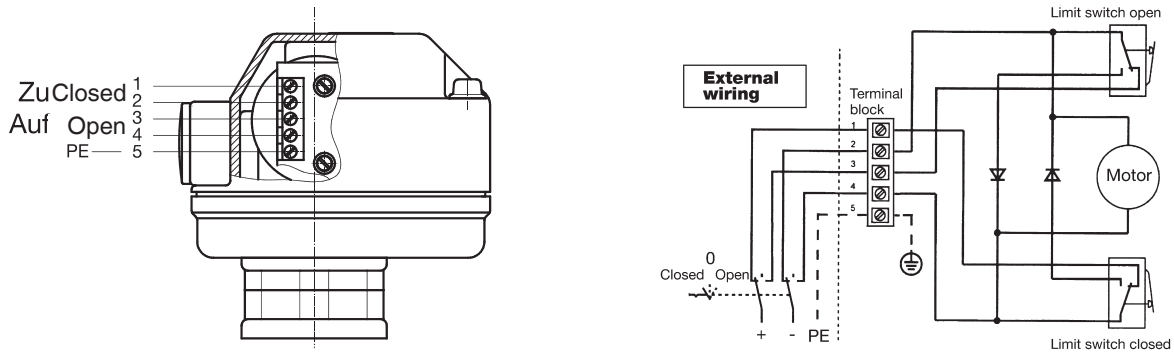


Valve body mounting dimensions [mm]



DN	M	øE	øR	L _{max}	L _{min}
15	M 5	25	10	18	7
20	M 5	25	10	18	7
25	M 5	25	10	18	7
32	M 6	65	33	33	22
40	M 6	80	41	41	30
50	M 6	80	41	41	30

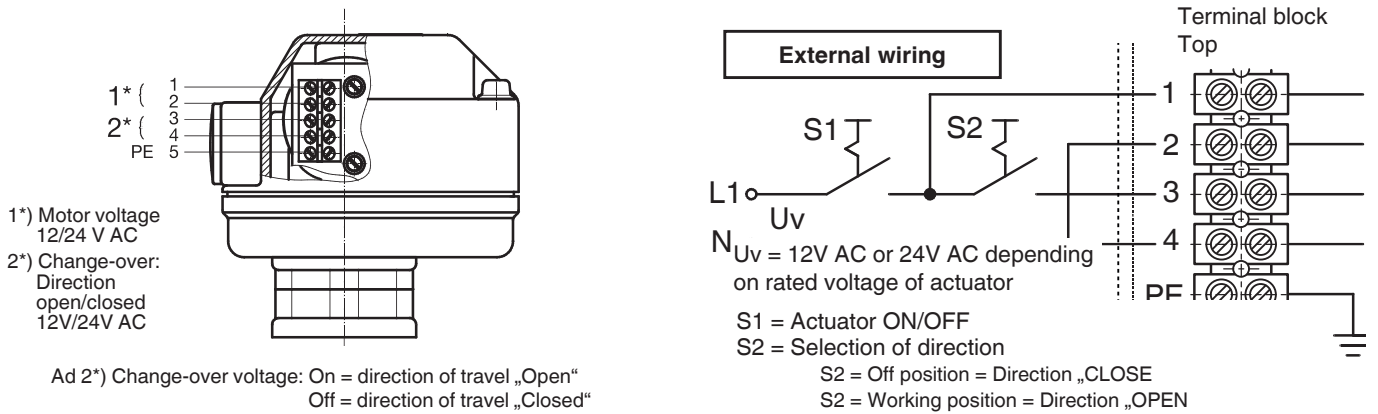
Connection / wiring diagram A0 - 12V / 24V DC (Open / Closed version)



Terminals must not be bridged!

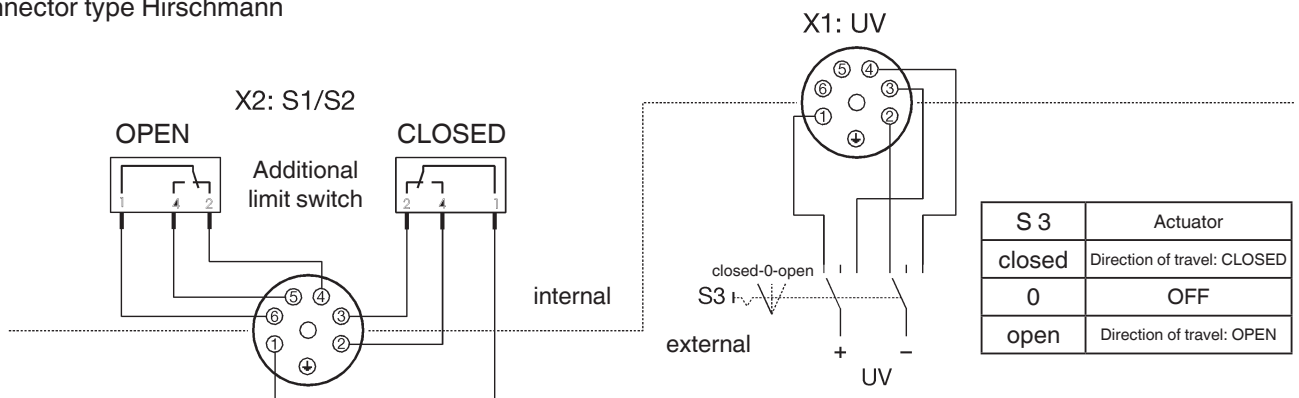
If parallel connection of several actuators is required, the variant with K-No. 6410 must be used.

Connection / wiring diagram A0 - 12V / 24V AC (Open/Closed version)



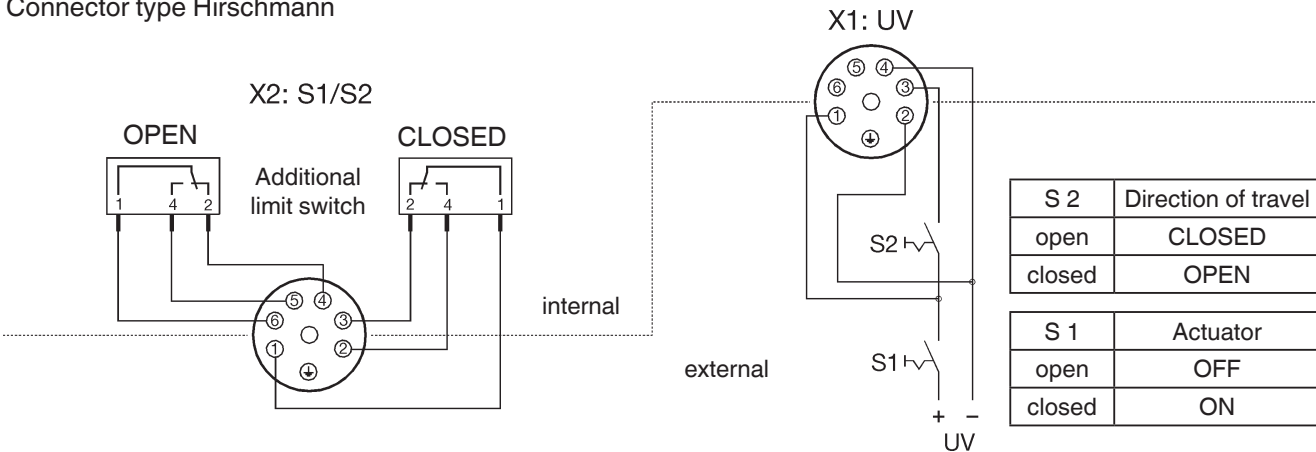
Connection / wiring diagram AE - 12V / 24V DC (2 potential-free limit switches)

Connector type Hirschmann

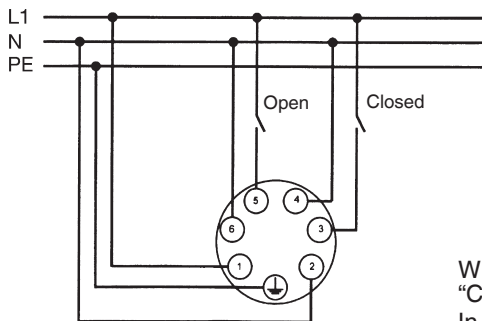


Connection / wiring diagram AE - 12V / 24V AC (2 potential-free limit switches)

Connector type Hirschmann



Connection / wiring diagram A0 - 100-250V AC (Open / Closed version)



Pin	Signal name
1	L1 / L+, Supply voltage
2	N1 / L-, Supply voltage
3	L1 / L+, Direction of travel CLOSED
4	N / L-, Direction of travel CLOSED
5	L1 / L+, Direction of travel OPEN
6	N / L-, Direction of travel OPEN
Ⓧ	PE, Protective earth conductor

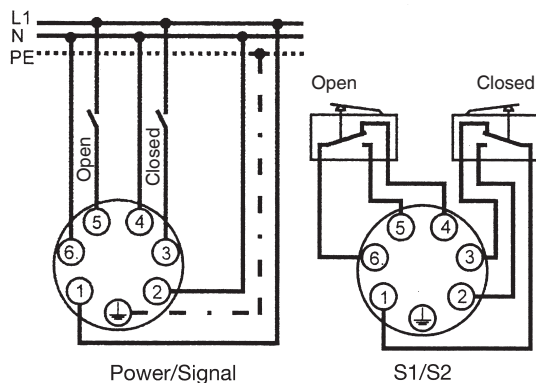
When the OPEN and CLOSED switches are operated simultaneously the actuator "CLOSES".

In the connector plug pins 2, 4 and 6 can be connected.

→ Advantage: 5-wire cable can be used.

No galvanic separation of inputs!

Connection / wiring diagram AE - 100-250V AC (2 potential-free limit switches)



Pin	Signal name
1	L1 / L+, Supply voltage
2	N1 / L-, Supply voltage
3	L1 / L+, Direction of travel CLOSED
4	N / L-, Direction of travel CLOSED
5	L1 / L+, Direction of travel OPEN
6	N / L-, Direction of travel OPEN
Ⓧ	PE, Protective earth conductor

N/L signals in the unit are separated.

Potential assignment by customer.

Pin	Signal name
1	S 1:1, Change-over contact limit switch CLOSED
2	S 1:4, Make-contact limit switch CLOSED
3	S 1:2, Break-contact limit switch CLOSED
4	S 2:2, Break-contact limit switch OPEN
5	S 2:4, Make-contact limit switch OPEN
6	S 2:1, Change-over contact limit switch OPEN
Ⓧ	PE, Protective earth conductor

For further butterfly valves, accessories and other products, please see our Product Range catalogue and Price List. Contact GEMÜ.

GEMÜ® VALVES, MEASUREMENT AND CONTROL SYSTEMS

