

GEMÜ 639 eSyStep

Motorized diaphragm valve



Features

- CIP/SIP capable (only with stainless steel distance piece)
- Open/close function or with integrated positioner
- Actuating speed max. 3 mm/s
- Parameterizable via IO-Link
- On-site or remote end position programming via programming input
- Various functions integrated (e.g. feedback, stroke limiter, etc.)

Description

The GEMÜ 639 diaphragm valve is actuated by a compact motorized spindle actuator with step motor. Depending on the version, the valve is available for OPEN/CLOSE or simple control applications. The actuator has an integrated IO-Link interface for parameterization and diagnosis purposes. The self-locking actuator holds its position in a stable manner when idle and in the event of power supply failure.

Technical specifications

- Media temperature*: -10 to 100 °C
- Ambient temperature*: 0 to 60 °C
- Sterilization temperature: max. 150 °C
- Operating pressure*: 0 to 10 bar
- Nominal sizes*: DN 4 to 25
- Body configurations: 2/2-way body | i-body | Multi-port body | T body | Tank valve body | Welding configuration
- Connection types: Clamp | Flange | Spigot | Threaded connection
- Connection standards: ANSI | ASME | BS | DIN | EN | ISO | JIS | SMS
- Body materials: 1.4408, investment casting material | 1.4435 (316L), forged material | 1.4435 (BN2), forged material | 1.4435, investment casting material | 1.4539 (904L), forged material
- Diaphragm materials: CR | EPDM | FKM | NBR | PTFE/EPDM
- Supply voltage: 24 V DC
- Actuating speed: max. 3 mm/s
- Protection class: IP 65
- Conformities: BSE/TSE | FDA | Oxygen | Reg. (EU) No. 10/2011 | Regulation (EC) No. 1935/2004 | Regulation (EC) No. 2023/2006 | TA Luft (German Clean Air Act) | USP

* depending on version and/or operating parameters

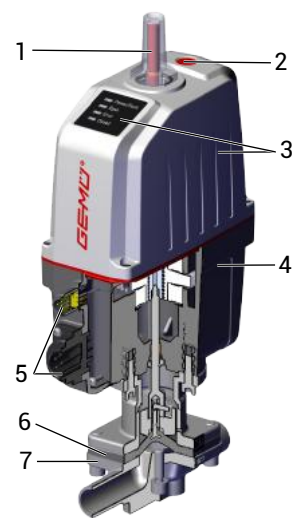


further information
webcode: GW-639



Product description

Construction



Item	Name	Materials
1	Optical position indicator	PA 12
2	Manual override	
3	Actuator top with LED display	Polyamide, 50% glass fibre
4	Actuator base	Polyamide, 50% glass fibre
5	Electrical connections	
6	Diaphragm	NBR, FPM, CR, EPDM, PTFE/EPDM
7	Valve body	1.4408, 1.4435, 1.4539

GEMÜ CONEXO

The interaction of valve components that are equipped with RFID chips and an associated IT infrastructure actively increase process reliability.



Thanks to serialization, every valve and every relevant valve component such as the body, actuator or diaphragm, and even automation components, can be clearly traced and read using the CONEXO pen RFID reader. The CONEXO app, which can be installed on mobile devices, not only facilitates and improves the "installation qualification" process, but also makes the maintenance process much more transparent and easier to document. The app actively guides the maintenance technician through the maintenance schedule and directly provides him with all the information assigned to the valve, such as test reports, testing documentation and maintenance histories. The CONEXO portal acts as a central element, helping to collect, manage and process all data.

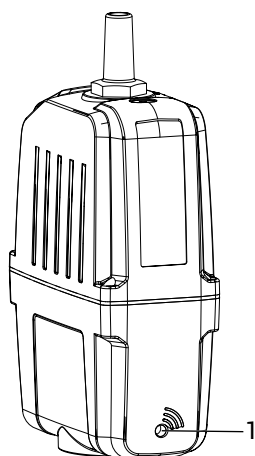
For further information on GEMÜ CONEXO please visit:

www.gemu-group.com/conexo

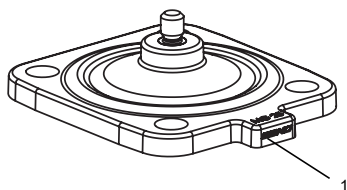
Ordering

GEMÜ Conexo must be ordered separately with the ordering option "CONEXO" (see order data).

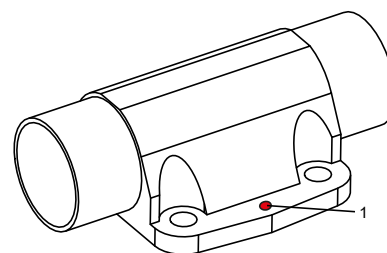
For electronic identification purposes, each replaceable component contained in the product is equipped with an RFID chip (1). Where you can find the RFID chip differs from product to product.



Actuator RFID chip



Diaphragm RFID chip



Valve body RFID chip

The CONEXO pen helps read out information stored in these RFID chips. The CONEXO app or CONEXO portal is required to view this information.

Overview of available functions

Function	Control module - OPEN/CLOSE control (code AE)	Control module - Positioner (code S0)
OPEN/CLOSE control	X	X
Positioner		X
Manual override	X	X
Optical status and position indicator	X	X
On-site initialisation	X	X
Deactivation of on-site initialisation	X	X
Initialisation via digital input	X	X
Initialisation via IO-Link	X	X
Feedback for operating mode	X	X
Activation OPEN	X	X
Activation CLOSE	X	X
Activation, analogue		X
Position feedback OPEN	X	X
Position feedback CLOSED	X	X
Position feedback analogue		X
Location function	X	X
Error output	X	X
Actuating speed adjustable	X	
Actuating force adjustable	X	X
Inversion of LED colours	X	X
Cycle counter	X	
Error counter	X	
Operating time determination	X	X
Switch point setting (tolerance)	X	X
Inversion input / output logic	X	X
Adjustable error action	X	X
Safe/On	X	X
Direction reversal		X
Open tight		X
Close tight		X
Split range		X
Stroke limiter / seal adjuster		X

Availability

Availability of grades of surface finish

Internal surface finishes for forged and block material bodies ¹⁾

Readings for Process Contact Surfaces	Mechanically polished ²⁾		Electropolished	
	Hygienic class DIN 11866	Code	Hygienic class DIN 11866	Code
Ra ≤ 0.80 µm	H3	1502	HE3	1503
Ra ≤ 0.60 µm	-	1507	-	1508
Ra ≤ 0.40 µm	H4	1536	HE4	1537
Ra ≤ 0.25 µm ³⁾	H5	1527	HE5	1516

Readings for Process Contact Surfaces according to ASME BPE 2016 ⁴⁾	Mechanically polished ²⁾		Electropolished	
	ASME BPE Surface Designation	Code	ASME BPE Surface Designation	Code
Ra Max. = 0.76 µm (30 µinch)	SF3	SF3	-	-
Ra Max. = 0.64 µm (25 µinch)	SF2	SF2	SF6	SF6
Ra Max. = 0.51 µm (20 µinch)	SF1	SF1	SF5	SF5
Ra Max. = 0.38 µm (15 µinch)	-	-	SF4	SF4

Internal surface finishes for investment cast bodies

Readings for Process Contact Surfaces	Mechanically polished ²⁾	
	Hygienic class DIN 11866	Code
Ra ≤ 6.30 µm	-	1500
Ra ≤ 0.80 µm	H3	1502
Ra ≤ 0.60 µm ⁵⁾	-	1507

Ra acc. to DIN EN ISO 4288 and ASME B46.1

- 1) Surface finishes of customized valve bodies may be limited in special cases.
- 2) Or any other finishing method that meets the Ra value (acc. to ASME BPE).
- 3) The smallest possible Ra finish for pipe connections with an internal pipe diameter < 6 mm is 0.38 µm.
- 4) When using these surfaces, the bodies are marked according to the specifications of ASME BPE.
The surfaces are only available for valve bodies which are made of materials (e.g. GEMÜ material codes 40, 41, F4, 44)) and use connections (e.g. GEMÜ connection codes 59, 80, 88) according to ASME BPE.
- 5) Not possible for GEMÜ connection code 59, DN 8 and GEMÜ connection code 0, DN 4.

Availability of valve bodies

Spigot

MG	DN	Connection types code ¹⁾																	
		0		16	17		18	35	36		37		55	59		60		63	65
		Material code ²⁾																	
		C3	40, 42, F4	40, 42, F4	C3	40, 42, F4	40, 42, F4	40, 42, F4	40, 42, F4	C3	40, 42, F4	40, 42, F4	C3	40, 42, F4	C3	40, 42, F4	40, 42, F4	40, 42, F4	
8	4	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	6	-	-	-	X	X	-	-	X	-	-	-	-	-	-	X	X	X	
	8	-	-	-	X	X	-	-	X	-	-	X	X	X	X	X	X	X	
	10	-	-	X	X	X	X	-	-	-	-	X	X	X	-	-	-	-	
	15	-	-	-	-	-	-	-	-	-	-	X	X	X	-	-	-	-	
10	10	-	-	X	X	X	X	-	X	-	-	X	-	X	X	X	X	X	
	15	-	X	X	X	X	X	-	X	-	-	X	-	X	X	X	X	X	
	20	-	-	-	-	-	-	-	-	-	-	X	X	X	-	-	-	-	
25	15	-	X	X	X	X	X	-	X	-	-	-	-	-	X	X	X	X	
	20	-	X	X	X	X	X	-	X	-	-	X	X	X	X	X	X	X	
	25	-	X	X	X	X	X	X	X	X	X	-	X	X	X	X	X	X	

MG = diaphragm size, X = standard

1) Connection type

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)/DIN 11866 series A

Code 18: Spigot DIN 11850 series 3

Code 35: Spigot JIS-G 3447

Code 36: Spigot JIS-G 3459 schedule 10s

Code 37: Spigot SMS 3008

Code 55: Spigot BS 4825, part 1

Code 59: Spigot ASME BPE / DIN 11866 series C

Code 60: Spigot ISO 1127/EN 10357 series C/DIN 11866 series B

Code 63: Spigot ANSI/ASME B36.19M schedule 10s

Code 65: Spigot ANSI/ASME B36.19M schedule 40s

2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code C3: 1.4435, investment casting

Code F4: 1.4539, forged body

Threaded connection

MG	DN	Connection types code ¹⁾		
		1	6	62
		Material code ²⁾		
		37	40, 42	40, 42
8	8	X	-	-
	10	-	W	W
10	10	-	W	W
	12	X	-	-
	15	X	W	W
25	15	X	W	W
	20	X	W	W
	25	X	W	W

MG = diaphragm size

X = Standard

W = welded assembly

1) Connection type

Code 1: Threaded socket DIN ISO 228

Code 6: Threaded spigot DIN 11851

Code 62: Threaded spigot on one side, DIN 11851, cone spigot and union nut, DIN 11851 on the other side

2) Valve body material

Code 37: 1.4408, investment casting

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, $\Delta \text{Fe} < 0.5\%$

Clamp

MG	DN	Connection types code ¹⁾				
		80	82	88	8A	8E
		Material code ²⁾				
		40, 42, F4	40, 42, F4	40, 42, F4	40, 42, F4	40, 42, F4
8	6	-	K	-	K	-
	8	K	K	-	K	-
	10	K	-	-	W	-
	15	K	-	W	-	-
10	10	-	K	-	K	-
	15	K	W	K	K	-
	20	K	-	K	-	-
25	15	-	W	-	K	-
	20	K	K	K	K	-
	25	K	K	K	K	K

MG = diaphragm size

K = connections completely machined (not welded)

W = welded assembly

1) Connection type

Code 80: Clamp ASME BPE, face-to-face dimension FTF ASME BPE, length only for body configuration D

Code 82: Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

Code 88: Clamp ASME BPE, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

Code 8A: Clamp DIN 32676 series A, face-to-face dimension FTF acc. to EN 558 series 7, length only for body configuration D

Code 8E: Clamp ISO 2852/SMS 3017, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code F4: 1.4539, forged body

Order data

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
Diaphragm valve, motorized, eSyStep	639

2 DN	Code
DN 4	4
DN 6	6
DN 8	8
DN 10	10
DN 15	15
DN 20	20
DN 25	25

3 Body configuration	Code
Tank bottom valve body	B
Body configuration code B: Dimensions and designs on request	
2/2-way body	D
T body	T
Body configuration code T: For dimensions, see T Valves brochure	

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)/DIN 11866 series A	17
Spigot DIN 11850 series 3	18
Spigot JIS-G 3447	35
Spigot JIS-G 3459 schedule 10s	36
Spigot SMS 3008	37
Spigot BS 4825, part 1	55
Spigot ASME BPE / DIN 11866 series C	59
Spigot ISO 1127/EN 10357 series C/DIN 11866 series B	60
Spigot ANSI/ASME B36.19M schedule 10s	63
Spigot ANSI/ASME B36.19M schedule 40s	65
Threaded connection	
Threaded socket DIN ISO 228	1
Threaded spigot DIN 11851	6
Threaded spigot on one side, DIN 11851, cone spigot and union nut, DIN 11851 on the other side	62
Clamp	
Clamp ASME BPE, face-to-face dimension FTF ASME BPE, length only for body configuration D	80

4 Continuation of Connection type	Code
Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 7, length only for body configuration D	82
Clamp ASME BPE, face-to-face dimension FTF EN 558 series 7, length only for body configuration D	88
Clamp DIN 32676 series A, face-to-face dimension FTF acc. to EN 558 series 7, length only for body configuration D	8A
Clamp ISO 2852/SMS 3017, face-to-face dimension FTF EN 558 series 7, length only for body configuration D	8E

5 Valve body material	Code
1.4408, investment casting	37
1.4435 (F316L), forged body	40
1.4435 (BN2), forged body, $\Delta Fe < 0.5\%$	42
1.4435, investment casting	C3
1.4539, forged body	F4

6 Diaphragm material	Code
NBR	2
FPM	4
CR	8
EPDM	13
EPDM	17
EPDM	29
EPDM	36
PTFE/EPDM	52

7 Voltage/Frequency	Code
24 V DC	C1

8 Control module	Code
Open/close control with additional end position feedback	AE
Open/Close control with additional end position feedback, configured for emergency power supply module (NC)	A5
Open/Close control with additional end position feedback, configured for emergency power supply module (NO)	A6
Positioner	S0
Positioner, configured for emergency power supply module (NC)	S5
Positioner, configured for emergency power supply module (NO)	S6

Order data

9 Surface	Code
Ra ≤ 6.3 µm (250 µin.) for media wetted surfaces, mechanically polished internal	1500
Ra ≤ 0.8 µm (30 µin.) for media wetted surfaces, in accordance with DIN 11866 H3, mechanically polished internal	1502
Ra ≤ 0.8 µm (30 µin.) for media wetted surfaces, in accordance with DIN 11866 HE3, electropolished internal/external	1503
Ra ≤ 0.6 µm (25 µin.) for media wetted surfaces, mechanically polished internal	1507
Ra ≤ 0.6 µm (25 µin.) for media wetted surfaces, electropolished internal/external	1508
Ra ≤ 0.4 µm (15 µin.) for media wetted surfaces, in accordance with DIN 11866 H4, mechanically polished internal	1536
Ra ≤ 0.4 µm (15 µin.) for media wetted surfaces, in accordance with DIN 11866 HE4, electropolished internal/external	1537
Ra ≤ 0.25 µm (10 µin.) for media wetted surfaces *), in accordance with DIN 11866 HE5, electropolished internal/external, *) for inner pipe diameters < 6 mm, in the spigot Ra ≤ 0.38 µm	1516
Ra ≤ 0.25 µm (10 µin.) for media wetted surfaces *), in accordance with DIN 11866 H5, mechanically polished internal, *) for inner pipe diameters < 6 mm, in the spigot Ra ≤ 0.38 µm	1527
Ra max. 0.51 µm (20 µin.) for media wetted surfaces, in accordance with ASME BPE SF1, mechanically polished internal	SF1
Ra max. 0.64 µm (25 µin.) for media wetted surfaces, in accordance with ASME BPE SF2, mechanically polished internal	SF2
Ra max. 0.76 µm (30 µin.) for media wetted surfaces, in accordance with ASME BPE SF3, mechanically polished internal	SF3
Ra max. 0.38 µm (15 µin.) for media wetted surfaces, in accordance with ASME BPE SF4, electropolished internal/external	SF4
Ra max. 0.51 µm (20 µin.) for media wetted surfaces, in accordance with ASME BPE SF5, electropolished internal/external	SF5
Ra max. 0.64 µm (25 µin.) for media-wetted surfaces, in accordance with ASME BPE SF6, electropolished internal/external	SF6
10 Actuator version	Code
Actuator size 0	0A
Actuator size 0 diaphragm size 8	0B
Actuator size 1	1A

11 Special version	Code
without	
Special version for oxygen, maximum medium temperature: 60 °C	S
12 CONEXO	Code
without	
Integrated RFID chip for electronic identification and traceability	C

Order example

Order option	Code	Description
1 Type	639	Diaphragm valve, motorized, eSyStep
2 DN	15	DN 15
3 Body configuration	D	2/2-way body
4 Connection type	60	Spigot ISO 1127/EN 10357 series C/DIN 11866 series B
5 Valve body material	40	1.4435 (F316L), forged body
6 Diaphragm material	52	PTFE/EPDM
7 Voltage/Frequency	C1	24 V DC
8 Control module	S0	Positioner
9 Surface	1503	Ra ≤ 0.8 µm (30 µin.) for media wetted surfaces, in accordance with DIN 11866 HE3, electropolished internal/external
10 Actuator version	0A	Actuator size 0
11 Special version		without
12 CONEXO	C	Integrated RFID chip for electronic identification and traceability

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 and diaphragm material.
For special oxygen version (code S): only gaseous oxygen

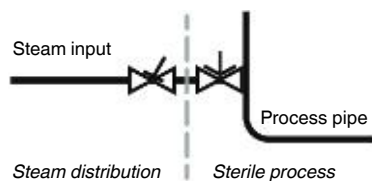
Temperature

Media temperature:

Diaphragm material	Standard	Special version oxygen
NBR (Code 2)	-10 to 100 °C	-
FKM (Code 4)	-10 to 90 °C	-
CR (Code 8)	-10 to 100 °C	-
EPDM (Code 13)	-10 to 100 °C	0 to 60 °C
EPDM (Code 14)	-10 to 90 °C	-
EPDM (Code 17)	-10 to 100 °C	-
EPDM (Code 36)	-10 to 100 °C	-
PTFE (Code 54)	-10 to 100 °C	-

Sterilisation temperature: EPDM (Code 13) max. 150 °C, max. 60 min per cycle
EPDM (Code 17) max. 150 °C, max. 180 min per cycle
EPDM (Code 36) max. 150 °C, max. 60 min per cycle
PTFE (Code 54) max. 150 °C, permanent temperature per cycle

The sterilisation temperature is only valid for steam (saturated steam) or superheated water. If the sterilisation temperatures listed above are applied to the EPDM diaphragms for longer periods of time, the service life of the diaphragms will be reduced. In these cases, maintenance cycles must be adapted accordingly. PTFE diaphragms can also be used as moisture barriers; however, this will reduce their service life. This also applies to PTFE diaphragms exposed to high temperature fluctuations. The maintenance cycles must be adapted accordingly. GEMÜ 555 and 505 globe valves are particularly suitable for use in the area of steam generation and distribution. The following valve arrangement for interfaces between steam pipes and process pipes has proven itself over time: A globe valve for shutting off steam pipes and a diaphragm valve as an interface to the process pipes.



Ambient temperature: 0 to 60 °C*
* depending on version and/or operating parameters (see chapter Duty cycle and service life)

Pressure

Operating pressure:

MG	DN	Actuator version	Elastomer		PTFE		
			Diaphragm material	all valve body materials	Diaphragm material	Forged body	Investment cast body
8	4 to 15	0B	3A, 17	0 - 10	5A	0 - 10	0 - 6
10	10 to 20	0A	2, 4, 8, 13, 14, 17, 36	0 - 10	54, 5M	0 - 10	0 - 6
25	15 to 25	1A	13, 17	0 - 8	5E	0 - 8	0 - 6

MG = diaphragm size

All pressures are gauge pressures. Operating pressure values were determined with static operating pressure applied on one side of a closed valve. Sealing at the valve seat and atmospheric sealing is ensured for the given values.

Information on operating pressures applied on both sides and for high purity media on request.

Leakage rate:

Leakage rate A to P11/P12 EN 12266-1

Kv values:

MG	DN	Connection types code ¹⁾						
		0	16	17	18	37	59	60
8	4	0,5	-	-	-	-	-	-
	6	-	-	1.1	-	-	-	1.2
	8	-	-	1.3	-	-	0.6	2.2
	10	-	2.1	2.1	2.1	-	1.3	-
	15	-	-	-	-	-	2.0	-
10	10	-	2.4	2.4	2.4	-	2.2	3.3
	15	3.3	3.8	3.8	3.8	-	2.2	4.0
	20	-	-	-	-	-	3.8	-
25	15	4.1	4.7	4.7	4.7	-	-	7.4
	20	6.3	7.0	7.0	7.0	-	4.4	13.2
	25	13.9	15.0	15.0	15.0	12.6	12.2	16.2

MG = diaphragm size, Kv values in m³/h

Kv values determined in accordance with DIN EN 60534 standard, inlet pressure 5 bar, Δp 1 bar, stainless steel valve body and soft elastomer diaphragm. The Kv values for other product configurations (e.g. other diaphragm or body materials) may differ. In general, all diaphragms are subject to the influences of pressure, temperature, the process and their tightening torques. Therefore the Kv values may exceed the tolerance limits of the standard.

1) Connection type

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)/DIN 11866 series A

Code 18: Spigot DIN 11850 series 3

Code 37: Spigot SMS 3008

Code 59: Spigot ASME BPE / DIN 11866 series C

Code 60: Spigot ISO 1127/EN 10357 series C/DIN 11866 series B

Product compliance

Pressure Equipment Directive: 2014/68/EU

Machinery Directive: 2006/42/EU

Food: Regulation (EC) No. 1935/2004*
Regulation (EC) No. 10/2011*
FDA*
USP* Class VI
* depending on version and/or operating parameters

EMC Directive: 2014/30/EU

Technical data

Interference resistance: DIN EN 61000-6-2
DIN EN 61326-1 (industrial processes)

Interference emission: DIN EN 61000-6-4 (Sep. 2011)
Interference emission class: Class A
Interference emission group: Group 1

Mechanical data

Protection class: IP 65 acc. to EN 60529

Weight: **Actuator**
Actuator size 0 (code 0A / 0B) 0.95 kg
Actuator size 1 (code 1A) 1.88 kg

Body

Connection types		0, 16, 17, 18, 35, 36, 37, 55, 59, 60, 63, 65	1	6, 62	80, 82, 88, 8A , 8E
Valve body		Spigot	Threaded socket	Threaded spigot	Clamp
MG	DN				
8	4	0.09	-	-	-
	6	0.09	-	-	-
	8	0.09	0.09	-	0.15
	10	0.09	-	0.21	0.18
	15	0.09	-	-	0.18
10	10	0.30	-	0.33	0.30
	15	0.30	0.26	0.35	0.43
	20	0.30	-	-	0.43
25	15	0.62	0.32	0.71	0.75
	20	0.58	0.34	0.78	0.71
	25	0.55	0.39	0.79	0.63

Weights in kg

Actuating speed: Max. 3 mm/s

**Mechanical
environmental conditions:** Class 4M8 acc. to EN 60721-3-4:1998

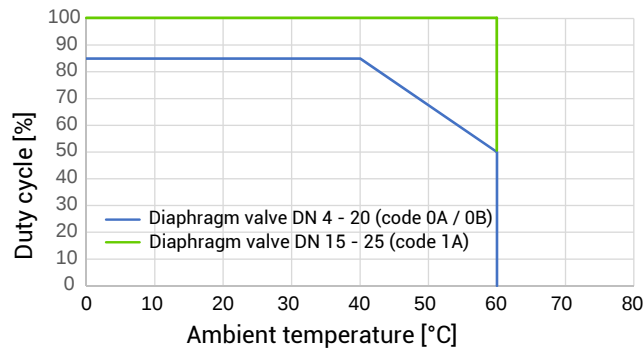
Vibration: 5g acc. to IEC 60068-2-6 Test Fc

Shock: 25g acc. to 60068-2-27 Test Ea

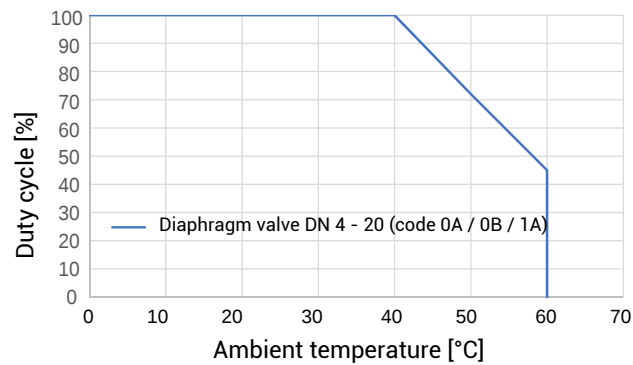
Duty cycle and service life

Service life: **Control operation** - Class C according to EN 15714-2 (1,800,000 starts and 1200 starts per hour).
Open/Close duty - At least 500,000 switching cycles at room temperature and permissible duty cycle.

Duty cycle: Control module Open/Close control (code AE)
Duty cycle with full valve lift and playing time 10 minutes.



Control module Positioner (code S0), Open/Close duty



The specified curves and values apply to the factory setting.

With reduced forces, higher duty cycles and/or higher ambient temperatures are possible. At higher force settings the duty cycle and/or ambient temperature is reduced (for IO-Link parameters see operating instructions).

Electrical data

Supply voltage U_v:	24 V DC $\pm$ 10%	
Rating:	Actuator size 0 (code 0A)	20 W
	Actuator size 1 (code 1A)	60 W
Operation:	Step motor, self-locking	
Reverse battery protection:	Yes	

Analogue input signals – Control module Positioner (code S0)

Set value

Input signals:	0/4 - 20 mA; 0 - 10 V (function selectable via IO-Link)
Input type:	passive
Input resistance:	250 Ω
Accuracy/linearity:	$\leq \pm 0.3\%$ of full flow
Temperature drift:	$\leq \pm 0.1\%$ / 10°K
Resolution:	12 bit
Reverse battery protection:	Yes (up to $\pm$ 24 V DC)

Digital input signals

Inputs:	Function selectable via IO-Link (see table Overview of available functions – Input and output signals)
Input voltage:	24 V DC
Logic level "1":	> 15.3 V DC
Logic level "0":	< 5.8 V DC
Input current:	typically < 0.5 mA

Analogue output signals – Control module Positioner (code S0)

Actual value

Output signal:	0/4 - 20 mA; 0 - 10 V (function selectable via IO-Link)
Output type:	active
Accuracy:	$\leq \pm 1\%$ of full flow
Temperature drift:	$\leq \pm 0.1\%$ / 10°K
Load resistor:	≤ 750 k Ω
Resolution:	12 bit
Short-circuit proof:	Yes

Digital output signals

Outputs:	Function selectable via IO-Link (see table Overview of available functions – Input and output signals)
-----------------	--

Type of contact:	Push-Pull
Switching voltage:	Power supply U _v
Switching current:	≤ 140 mA
Short-circuit proof:	Yes

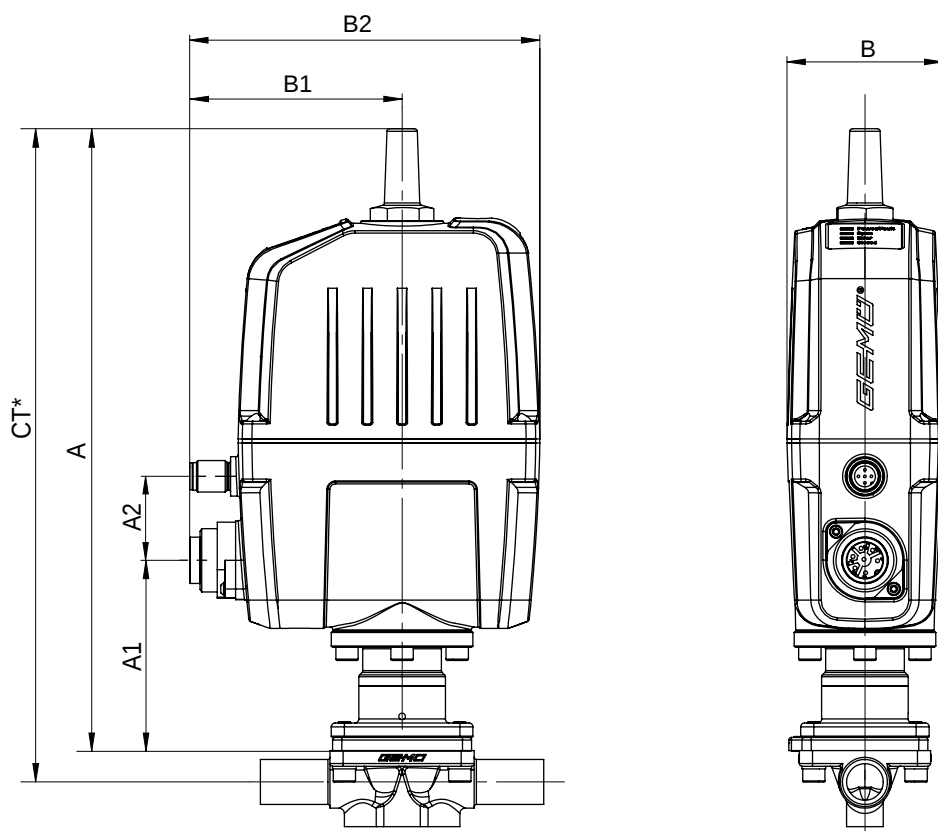
Communication

Interface:	IO-Link
Function:	Parameterization/process data
Transmission rate:	38400 baud
Frame type in Operate:	2.5 (eSyStep ON/OFF, code AE) 2.V (eSyStep positioner, code S0), PDout 3Byte; PDin 3 Byte; OnRequestData 2 Byte
Min. cycle time:	2.3 ms (eSyStep ON/OFF, code AE) 20 ms (eSyStep positioner, code S0)
Vendor-ID:	401
Device-ID:	1906701 (eSyStep ON/OFF, code AE) 1906801 (eSyStep positioner, code S0),
Product-ID:	eSyStep On/Off (code AE) eSyStep Positioner (code S0)
ISDU support:	Yes
SIO operation:	Yes
IO-Link specification:	V1.1

IODD files can be downloaded via <https://ioddfinder.io-link.com/> or www.gemu-group.com.

Dimensions

Installation and actuator dimensions



MG	DN	Actuator version	A	A1	A2	B	B1	B2
8	4	0B	222.5	58.0	33.2	59.4	81.0	133.5
	6	0B	222.5	58.0	33.2	59.4	81.0	133.5
	8	0B	222.5	58.0	33.2	59.4	81.0	133.5
	10	0B	222.5	58.0	33.2	59.4	81.0	133.5
	15	0B	222.5	58.0	33.2	59.4	81.0	133.5
10	10	0A	237.0	72.5	33.2	59.4	81.0	133.5
	15	0A	237.0	72.5	33.2	59.4	81.0	133.5
	20	0A	237.0	72.5	33.2	59.4	81.0	133.5
25	15	1A	306.0	124.0	32.5	70.0	82.0	150.0
	20	1A	306.0	124.0	32.5	70.0	82.0	150.0
	25	1A	306.0	124.0	32.5	70.0	82.0	150.0

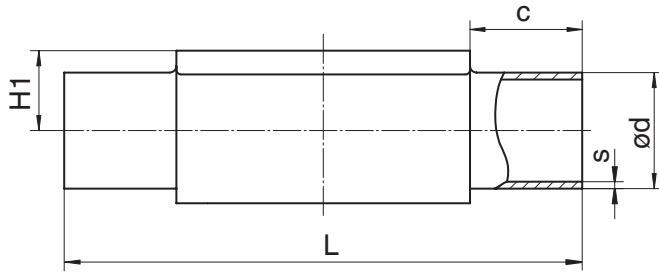
Dimensions in mm, MG = diaphragm size

Dimension A2 only for control module – positioner (code S0)

* CT = A + H1 (see body dimensions)

Body dimensions

Spigot DIN/EN ISO



MG	DN	Connection types code ¹⁾															
						0		16		17		18		60			
		Material code ²⁾															
					C3	40, 42, F4	40, 42, C3, F4										
		NPS	L	c (min)	H1	H1	ød	s	ød	s	ød	s	ød	s	ød	s	
8	4	-	72.0	20.0	8.5	8.5	6.0	1.0	-	-	-	-	-	-	-	-	
	6	-	72.0	20.0	8.5	8.5	-	-	-	-	8.0	1.0	-	-	10.2	1.6	
	8	1/4"	72.0	20.0	8.5	8.5	-	-	-	-	10.0	1.0	-	-	13.5	1.6	
	10	3/8"	72.0	20.0	8.5	8.5	-	-	12.0	1.0	13.0	1.5	14.0	2.0	-	-	
10	10	3/8"	108.0	25.0	12.5	12.5	-	-	12.0	1.0	13.0	1.5	14.0	2.0	17.2	1.6	
	15	1/2"	108.0	25.0	12.5	12.5	18.0	1.5	18.0	1.0	19.0	1.5	20.0	2.0	21.3	1.6	
25	15	1/2"	120.0	25.0	13.0	19.0	18.0	1.5	18.0	1.0	19.0	1.5	20.0	2.0	21.3	1.6	
	20	3/4"	120.0	25.0	16.0	19.0	22.0	1.5	22.0	1.0	23.0	1.5	24.0	2.0	26.9	1.6	
	25	1"	120.0	25.0	19.0	19.0	28.0	1.5	28.0	1.0	29.0	1.5	30.0	2.0	33.7	2.0	

Dimensions in mm, MG = diaphragm size

1) Connection type

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)/DIN 11866 series A

Code 18: Spigot DIN 11850 series 3

Code 60: Spigot ISO 1127/EN 10357 series C/DIN 11866 series B

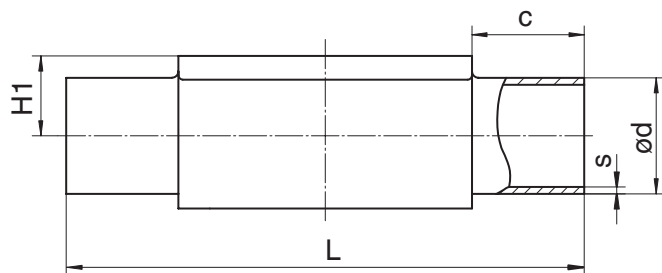
2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code C3: 1.4435, investment casting

Code F4: 1.4539, forged body

Spigot JIS/SMS

MG	DN	Connection types code ¹⁾										
						35		36		37		
		Material code ²⁾										
					C3	40, 42, F4	40, 42, F4		40, 42, F4		40, 42, C3, F4	
	NPS	L	c (min)	H1	H1	ød	s	ød	s	ød	s	
8	6	-	72.0	20.0	-	8.5	-	-	10.5	1.20	-	-
	8	1/4"	72.0	20.0	-	8.5	-	-	13.8	1.65	-	-
10	10	3/8"	108.0	25.0	-	12.5	-	-	17.3	1.65	-	-
	15	1/2"	108.0	25.0	-	12.5	-	-	21.7	2.10	-	-
25	15	1/2"	120.0	25.0	-	19.0	-	-	21.7	2.10	-	-
	20	3/4"	120.0	25.0	-	19.0	-	-	27.2	2.10	-	-
	25	1"	120.0	25.0	19.0	19.0	25.4	1.2	34.0	2.80	25.0	1.2

Dimensions in mm, MG = diaphragm size

1) **Connection type**

Code 35: Spigot JIS-G 3447

Code 36: Spigot JIS-G 3459 schedule 10s

Code 37: Spigot SMS 3008

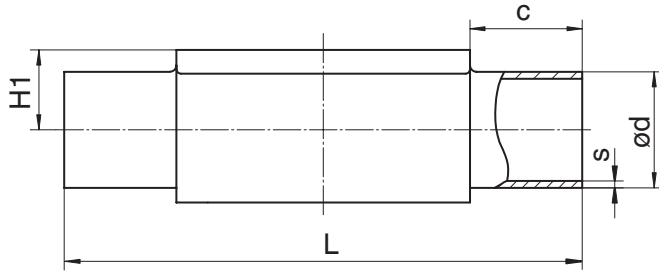
2) **Valve body material**

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code C3: 1.4435, investment casting

Code F4: 1.4539, forged body

Spigot ASME/BS

MG	DN	Connection types code ¹⁾													
						55		59		63		65			
		Material code ²⁾													
					C3	40, 42, F4	40, 42, F4		40, 42, C3, F4		40, 42, F4		40, 42, F4		
		NPS	L	c (min)	H1	H1	ød	s	ød	s	ød	s	ød	s	
8	6	-	72.0	20.0	-	8.5	-	-	-	-	10.3	1.24	10.3	1.73	
	8	1/4"	72.0	20.0	8.5	8.5	6.35	1.2	6.35	0.89	13.7	1.65	13.7	2.24	
	10	3/8"	72.0	20.0	8.5	8.5	9.53	1.2	9.53	0.89	-	-	-	-	
	15	1/2"	72.0	20.0	8.5	8.5	12.70	1.2	12.70	1.65	-	-	-	-	
10	10	3/8"	108.0	25.0	-	12.5	9.53	1.2	9.53	0.89	17.1	1.65	17.1	2.31	
	15	1/2"	108.0	25.0	-	12.5	12.70	1.2	12.70	1.65	21.3	2.11	21.3	2.77	
	20	3/4"	108.0	25.0	12.5	12.5	19.05	1.2	19.05	1.65	-	-	-	-	
25	15	1/2"	120.0	25.0	-	19.0	-	-	-	-	21.3	2.11	21.3	2.77	
	20	3/4"	120.0	25.0	16.0	19.0	19.05	1.2	19.05	1.65	26.7	2.11	26.7	2.87	
	25	1"	120.0	25.0	19.0	19.0	-	-	25.40	1.65	33.4	2.77	33.4	3.38	

Dimensions in mm, MG = diaphragm size

1) Connection type

Code 55: Spigot BS 4825, part 1

Code 59: Spigot ASME BPE / DIN 11866 series C

Code 63: Spigot ANSI/ASME B36.19M schedule 10s

Code 65: Spigot ANSI/ASME B36.19M schedule 40s

2) Valve body material

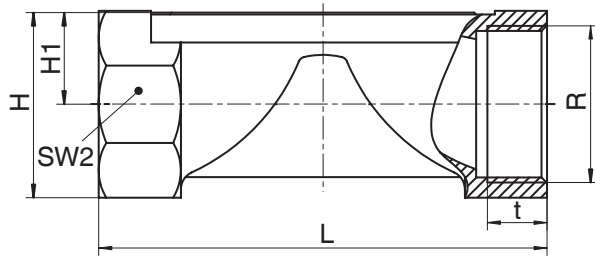
Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code C3: 1.4435, investment casting

Code F4: 1.4539, forged body

Threaded socket

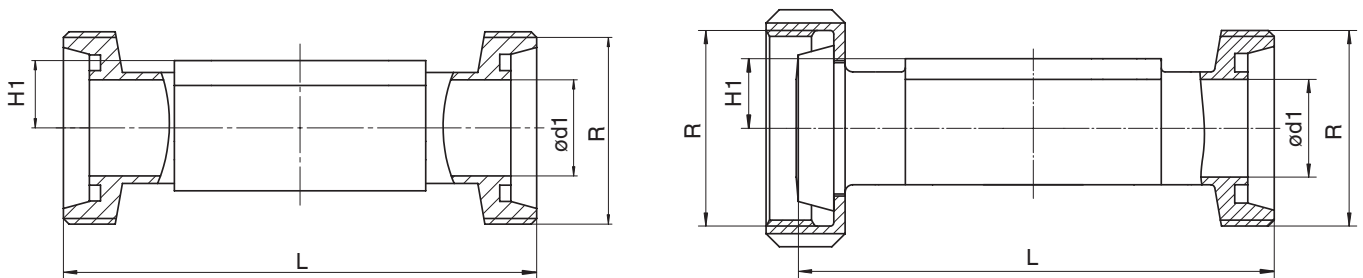


MG	DN	Connection type code 1 ¹⁾						
		Material code 37 ²⁾						
		R	H	H1	t	L	SW 2	n
8	8	G1/4	19.0	9.0	11.0	72.0	18.0	6
10	12	G3/8	25.0	13.0	12.0	55.0	22.0	2
	15	G1/2	30.0	15.0	15.0	68.0	27.0	2
25	15	G 1/2	29.0	16.0	15.0	85.0	27.0	6
	20	G 3/4	32.0	16.0	16.0	85.0	32.0	6
	25	G 1	37.0	16.0	13.0	110.0	41.0	6

Dimensions in mm, MG = diaphragm size
n = number of flats

- 1) **Connection type**
Code 1: Threaded socket DIN ISO 228
- 2) **Valve body material**
Code 37: 1.4408, investment casting

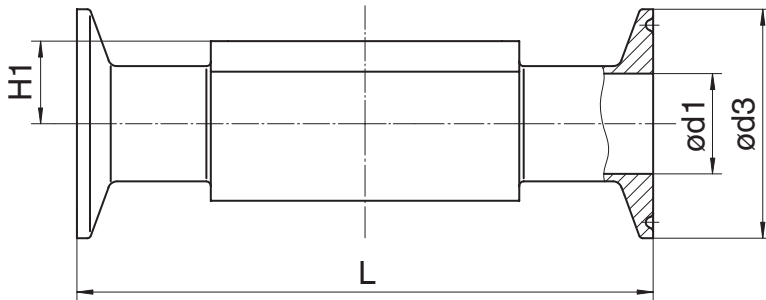
Threaded spigot



MG	DN	Connection types code 1 ¹⁾				
		Material code 40, 42 ²⁾			Code 6	Code 62
		H1	ød1	R	L	L
8	10	8.5	10.0	Rd 28 x 1/8	92.0	90.0
10	10	12.5	10.0	Rd 28 x 1/8	118.0	116.0
	15	12.5	16.0	Rd 34 x 1/8	118.0	116.0
25	15	19.0	16.0	Rd 34 x 1/8	118.0	116.0
	20	19.0	20.0	Rd 44 x 1/6	118.0	114.0
	25	19.0	26.0	Rd 52 x 1/6	128.0	127.0

Dimensions in mm, MG = diaphragm size

- 1) **Connection type**
Code 6: Threaded spigot DIN 11851
Code 62: Threaded spigot on one side, DIN 11851, cone spigot and union nut, DIN 11851 on the other side
- 2) **Valve body material**
Code 40: 1.4435 (F316L), forged body
Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Clamp ASME

MG	DN	Connection types code ¹⁾								
						80		88		
		Material code 40, 42, F4 ²⁾								
		NPS	H1*	H1	ød1	ød3	L	ød1	ød3	L
8	8	1/4"	8.5	8.5	4.57	25.0	63.5	-	-	-
	10	3/8"	8.5	8.5	7.75	25.0	63.5	-	-	-
	15	1/2"	8.5	8.5	9.40	25.0	63.5	9.40	25.0	108.0
10	15	1/2"	12.5	12.5	9.40	25.0	88.9	940	25.0	108.0
	20	3/4"	12.5	12.5	15.75	25.0	101.6	15.75	25.0	117.0
25	15	1/2"	13.0	19.0	9.40	25.0	101.6	9.40	25.0	108.0
	20	3/4"	16.0	19.0	15.75	25.0	101.6	15.75	250	117.0
	25	1"	19.0	19.0	22.10	50.5	114.3	22.10	50.5	127.0

Dimensions in mm, MG = diaphragm size

1) Connection type

Code 80: Clamp ASME BPE, face-to-face dimension FTF ASME BPE, length only for body configuration D

Code 88: Clamp ASME BPE, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

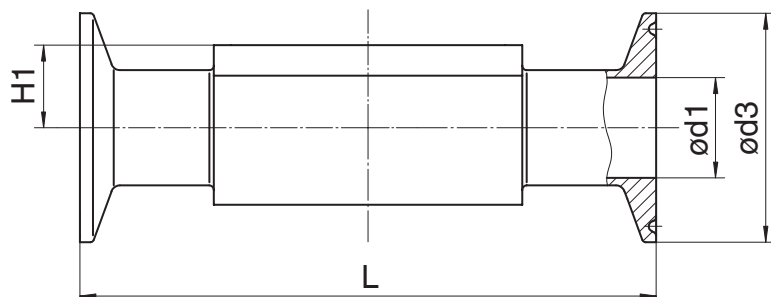
2) Valve body material

Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, $\Delta Fe < 0.5\%$

Code F4: 1.4539, forged body

Clamp DIN/ISO



MG	DN	Connection types code ¹⁾											
					82			8A			8E		
		Material code 40, 42, F4 ²⁾											
		NPS	H1*	H1	ød1	ød3	L	ød1	ød3	L	ød1	ød3	L
8	6	1/8"	8.5	8.5	7.0	25.0	63.5	6.0	25.0	63.5	-	-	-
	8	1/4"	8.5	8.5	10.3	25.0	63.5	8.0	25.0	63.5	-	-	-
	10	3/8"	8.5	8.5	-	-	-	10.0	34.0	88.9	-	-	-
10	10	3/8"	12.5	12.5	14.0	25.0	108.0	10.0	34.0	108.0	-	-	-
	15	1/2"	12.5	12.5	18.1	50.5	108.0	16.0	34.0	108.0	-	-	-
25	15	1/2"	13.0	19.0	18.1	50.5	108.0	16.0	34.0	108.0	-	-	-
	20	3/4"	16.0	19.0	23.7	50.5	117.0	20.0	34.0	117.0	-	-	-
	25	1"	19.0	19.0	29.7	50.5	1270	26.0	50.5	127.0	22.6	50.5	127.0

Dimensions in mm, MG = diaphragm size

1) Connection type

Code 82: Clamp DIN 32676 series B, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

Code 8A: Clamp DIN 32676 series A, face-to-face dimension FTF acc. to EN 558 series 7, length only for body configuration D

Code 8E: Clamp ISO 2852/SMS 3017, face-to-face dimension FTF EN 558 series 7, length only for body configuration D

2) Valve body material

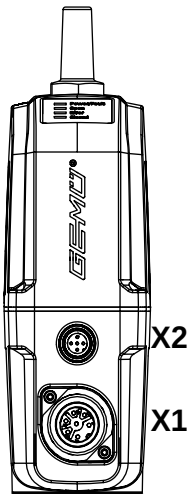
Code 40: 1.4435 (F316L), forged body

Code 42: 1.4435 (BN2), forged body, Δ Fe < 0.5%

Code F4: 1.4539, forged body

Electrical connection

Position of the connectors



Electrical connection

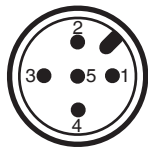
Connection X1



7-pin plug, Binder, type 693

Pin	Signal name
1	Uv, 24 V DC supply voltage
2	GND
3	Digital input 1
4	Digital input 2
5	Digital input/output
6	Digital output, IO-Link
7	n. c.

Connection X2 (only for control module code S0)



5-pin M12 plug, A-coded

Pin	Signal name
1	I+/U+, set value input
2	I-/U-, set value input
3	I+/U+, actual value output
4	I-/U-, actual value output
5	n. c.

Overview of available functions – Input and output signals

NOTICE

The factory default setting is reset to default settings when a reset is carried out.

NOTICE

When configuring the emergency power module (code A5 / A6), the control of the valve changes. Valve is controlled 1-pole via digital input 1. Level logic 1 moves the valve OPEN, level logic 0 moves the valve CLOSE.

	Function	Control module AE	Control module A5 + A6
		Default settings	Factory default setting
Digital input 1	Off Open Close Safe/On Initialization	Open	Open
Digital input 2	Off Open Close Safe/On Initialization	Close	Safe/On
Digital input/output	Open Close Error Error+warning Initialization	Open	Open
Digital output	Open Close Error Error+warning	Close	Close

	Function	Control module S0	Control module S5 + S6
		Default settings	Factory default setting
Digital input 1	Off Open Close Safe/On Initialization	Initialization	Initialization
Digital input 2	Off Open Close Safe/On Initialization	Off	Safe/On
Digital input/output	Open Close Error Error+warning Initialization	Error	Error
Digital output	Open Close Error Error+warning	Close	Close

	Function	Control module S0	Control module S5 + S6
		Default settings	Factory default setting
Analogue input	4 – 20 mA 0 – 20 mA 0 – 10 V	4 – 20 mA	4 – 20 mA
Analogue output	4 – 20 mA 0 – 20 mA 0 – 10 V	4 – 20 mA	4 – 20 mA

Accessories

GEMÜ 1218



The GEMÜ 1218 is a connector (cable socket / cable plug), 7-pin. Straight and/or 90° angled plug type.

Ordering information

GEMÜ 1218 Binder connector			
Connection X1 – supply voltage, relay outputs			
Binder plug	Mating connector 468/ eSy series	Terminal compartment/ screws, 7-pin	88220649
		Terminal compartment/ screws, 7-pin, 90°	88377714 ¹⁾

1) provided in the scope of delivery

GEMÜ 1219



Cable socket / cable plug M12

The GEMÜ 1219 is a connector (cable socket / cable plug) M12, 5-pin. Straight and/or 90° angled plug type. Defined cable length or with threaded connection without cable. Various materials available for the fixing nut.

Ordering information

Suitable for electrical connection of the connector X2

Description	Length	Order number
5-pin, angle	without cable	88205545 ¹⁾
	2 m cable	88205534
	5 m cable	88205540
	10 m cable	88210911
	15 m cable	88244667
5-pin, straight	without cable	88205544
	2 m cable	88205542
	5 m cable	88205543
	10 m cable	88270972
	15 m cable	88346791

1) provided in the scope of delivery for control module code S0

**GEMÜ 1571****Emergency power supply module**

The capacitive emergency power module GEMÜ 1571 is suitable for valves with motorized actuators such as GEMÜ eSyStep and eSyDrive. In the event of a power failure, the product provides an uninterrupted power supply so that the valve can be moved to the safety position. The emergency power module has a capacity of 1700Ws. The input and output voltage is 24 V.

Ordering information

GEMÜ 1571 emergency power supply module			
Input voltage	Output voltage	Capacitance	Item number
24 V	24 V	1700 Ws	88660398

**GEMÜ 1573****Switching power supply unit**

The switching power supply unit GEMÜ 1573 converts unstabilized input voltages of 100 to 240 V AC into a constant output voltage of 24 V DC. The product can be used as an accessory for valves with motorized actuators such as GEMÜ eSyStep und eSyDrive. Different powers and output currents are available.

Ordering information

GEMÜ 1573 switching power supply unit			
Input voltage	Output voltage	Output current	Item number
100 - 240 V AC	24 V DC	5 A	88660400
		10 A	88660401



 92, Lot Mauritania - Zone Industrielle Bernoussi
Casablanca MAROC 20590

 www.marocsealing.com  marocsealing@marocsealing.com

 (+212) 05 22 35 41 49/50  (+212) 05 22 35 41 52  +212 6 62 14 80 39



Maroc Sealing
FLUID CONTROL