GEMÜ 566

Motorized control valve

Features

- Control of liquid and gaseous media from 63 l/h to 2500 l/h
- Linear or equal-percentage control characteristic options
- Hermetic separation between medium and actuator
- Actuator and actuator type can be changed without draining or removing the valve body from the piping
- Various types of actuators available

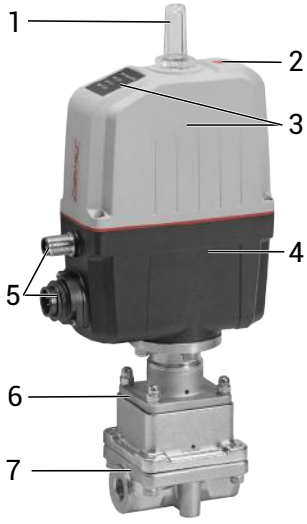
Description

The GEMÜ 566 2/2-way straight seat control valve has a body with an integrated control mechanism. Manual, pneumatic and motorized actuator types are available. The GEMÜ 566 valve was specially developed for controlling small quantities and allows flow rates from 63 l/h to 2500 l/h.

Product comparison

			
	GEMÜ 566	**GEMÜ 566**	**GEMÜ 566**
Operation			
Manual	●	-	-
Pneumatic	-	●	-
Motorized	-	-	●
Nominal sizes	DN 8 to 15	DN 8 to 15	DN 8 to 15
Operating pressure	0 to 6 bar	0 to 6 bar	0 to 6 bar
Body material			
1.4435, investment casting material	●	●	●
Connection types			
Clamp	●	●	●
Threaded connection	●	●	●

Product description



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	Distance piece with leak detection hole	1.4305 / 1.4408
7	Valve body	ASTM A 351 CF3M, investment casting

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.

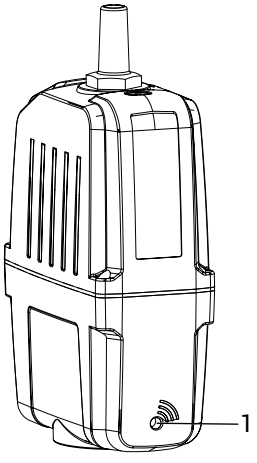
For further information on GEMÜ CONEXO please visit:
www.gemu-group.com/conexo

Ordering

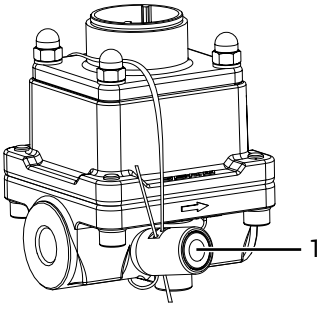
GEMÜ Conexo must be ordered separately with the ordering option "CONEXO" (see order data).

In the corresponding design with CONEXO, this product has an RFID chip (1) for electronic recognition. The position of the RFID chip can be seen below.

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



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.

Availability

Availability of valve bodies

Threaded connection / Flange

DN	Connection type code 1 [1]	Connection type code 88 [1]
	Material code C1 [2]	
8	X	-
10	X	-
15	X	X
20	-	X

X = Standard

1) **Connection type**
Code 1: Threaded socket DIN ISO 228
Code 88: Clamp ASME BPE, face-to-face dimension FTF EN 558 series 7

2) **Valve body material**
Code C1: ASTM A 351 CF3M, investment casting

Order data - motorized valve

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
Control valve	566

2 DN	Code
DN 8	8
DN 10	10
DN 15	15
DN 20	20

3 Body configuration	Code
2/2-way body	D

4 Connection type	Code
Threaded socket DIN ISO 228	1
Clamp ASME BPE, face-to-face dimension FTF EN 558 series 7	88

5 Valve body material	Code
ASTM A 351 CF3M, investment casting	C1

6 Seal material	Code
FPM	4
EPDM	33

7 Voltage/frequency	Code
24 V DC	C1

8 Control module	Code
Positioner	S0
Positioner, configured for emergency power supply module (NC)	S5
Positioner, configured for emergency power supply module (NO)	S6

9 Control characteristic	Code
Modified equal-percentage	G
Linear	L

10 Kv value	Code
63 l/h	63
100 l/h	100
160 l/h	160
1000 l/h	1000
1600 l/h	1600
2500 l/h	2500

11 Actuator version	Code
Actuator size 0	0A

12 CONEXO	Code
without	
Integrated RFID chip for electronic identification and traceability	C

Order example

Order option	Code	Description
1 Type	566	Control valve
2 DN	8	DN 8
3 Body configuration	D	2/2-way body
4 Connection type	1	Threaded socket DIN ISO 228
5 Valve body material	C1	ASTM A 351 CF3M, investment casting
6 Seal material	4	FPM
7 Voltage/frequency	C1	24 V DC
8 Control module	S0	Positioner
9 Control characteristic	G	Modified equal-percentage
10 Kv value	63	63 l/h
11 Actuator version	0A	Actuator size 0
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.

Temperature

Media temperature:

Standard:	0 °C to 90 °C
CIP max. 30 min.	85 °C
(isolating diaphragm material code 33)	

Ambient temperature: 0 to 60 °C (code S0, S5, S6)*

* je nach Ausführung und/oder Betriebsparametern (siehe Kapitel Einschalt- und Lebensdauer)

Storage temperature: 0 to 40 °C

* je nach Ausführung und/oder Betriebsparametern (siehe Kapitel Einschalt- und Lebensdauer)

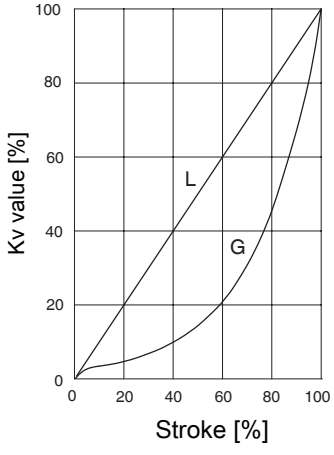
Pressure

Operating pressure: 0 to 6 bar
All pressures are gauge pressures. Valve bodies are approved up to PN 10.

Leakage rate:

Seat seal	Standard	Test procedure	Leakage rate	Test medium
Metal	DIN EN 60534-4	1	IV	Air

Kv values:



Equal-percentage (connection code 1) / linear (connection code 1)

Control characteristic	Seat Ø [mm]	Kv value	DN 8	DN 10	DN 15
G	3	63	X	-	-
G, L	3	100	X	-	-
G	3	160	X	-	-
G, L	6	250	X	-	-
G	6	400	X	-	-
G, L	6	630	X	-	-
G	11	1000	-	X	-
G, L	11	1600	-	X	-
G, L	15	2500	-	-	X

Kv values:

Equal-percentage (connection code 88) / linear (connection code 88)

Control characteristic	Seat Ø [mm]	Kv value	DN 15	DN 20
G	3	63	X	-
G, L	3	100	X	-
G	3	160	X	-
G, L	6	250	X	-
G	6	400	X	-
G, L	6	630	X	-
G	11	1000	X	-
G, L	11	1600	X	-
G, L	15	2500	-	X

Product compliance

Food: FDA*

* only for seal material code 33

Machinery Directive: 2006/42/EU

EMC Directive: 2014/30/EU

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

EAC: TR CU 010/2011
TR CU 004/2011

Mechanical data

Protection class: IP 65 acc. to EN 60529

Actuating speed: Max. 3 mm/s

Stroke: 5 mm

Weight:

DN 8	4.0
DN 10	4.0
DN 15	3.5
DN 15, code 88	4,2
DN 20, code 88	4.2

Weights in kg

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.

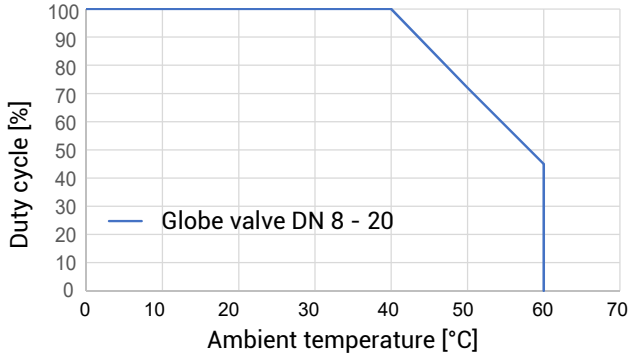
Mechanical environmental conditions: Class 4M8 acc. to EN 60721-3-4:1998

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

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

Electrical data

Supply voltage Uv:	24 V DC ± 10%	
Rating:	Actuator size 0 (code 0A)	20 W
Operation:	Stepper motor, self-locking	
Reverse battery protection:	Yes	
Duty cycle:	Control module Positioner (code S0, S5, S6), Open/Close duty	



The specified characteristics 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).

Analogue input signals – Control module Positioner (code S0)

Set value

Input signal:	0/4 - 20 mA; 0 - 10 V (function selectable via IO-Link)
Input type:	passive
Input resistance:	250 Ω
Accuracy/linearity:	≤ ±0.3% of full flow
Temperature drift:	≤ ±0.1% / 10°K
Resolution:	12 bit
Reverse battery protection:	Yes (up to ± 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:	≤ ±1% of full flow
Temperature drift:	≤ ±0.1% / 10°K
Load resistor:	≤ 750 kΩ
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 Uv
Switching current:	≤ 140 mA
Short-circuit proof:	Yes

Communication

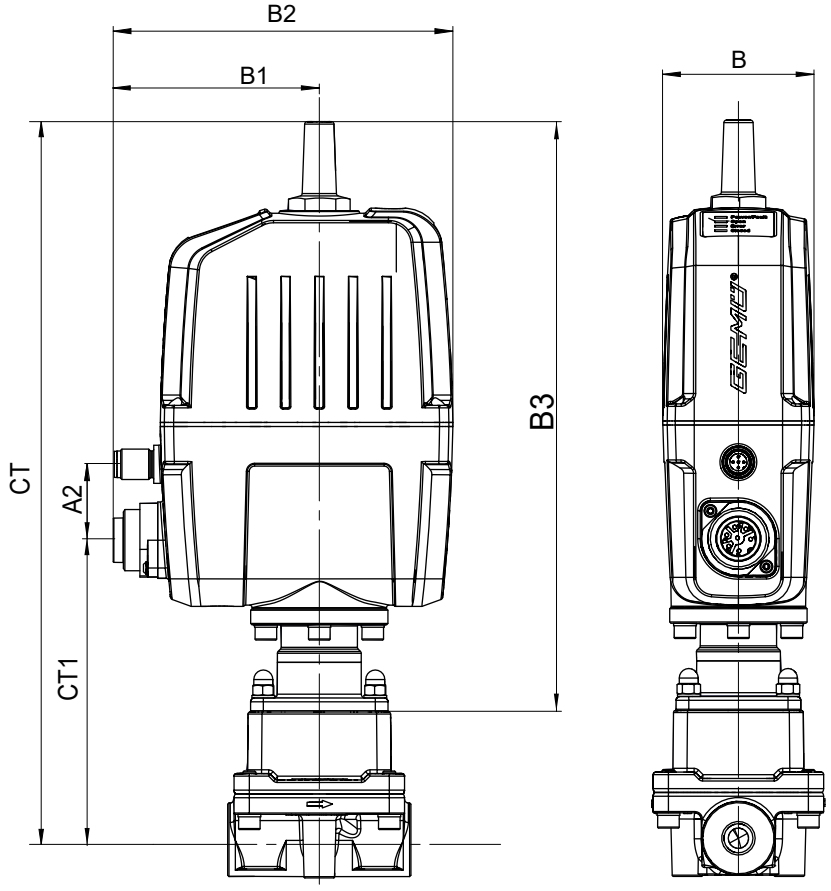
Interface:	IO-Link
Function:	Parameterization/process data
Transmission rate:	38400 baud
Frame type in Operate:	2.V (eSyStep positioner, code S0), PDout 3Byte; PDin 3 Byte; OnRequestData 2 Byte
Min. cycle time:	20 ms (eSyStep positioner, code S0)
Vendor-ID:	401
Device-ID:	1906801 (eSyStep positioner, code S0),
Product-ID:	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

Valve with threaded sockets, code 1

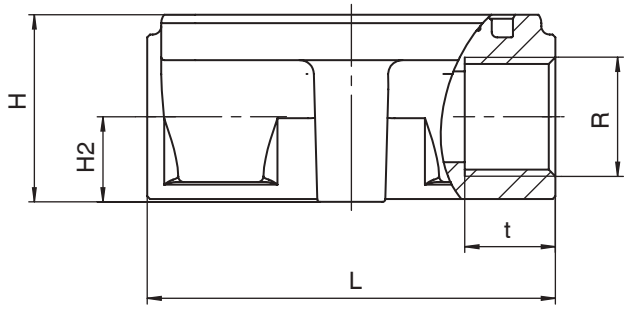


DN	Actuator version	A2	B	B1	B2	B3	CT	CT1
8	0A	32.0	59.4	81.0	133.5	197.7	282.2	117.7
10	0A	32.0	59.4	81.0	133.5	197.7	282.2	117.7
15	0A	32.0	59.4	81.0	133.5	197.7	282.2	117.7

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

Body dimensions

Threaded socket



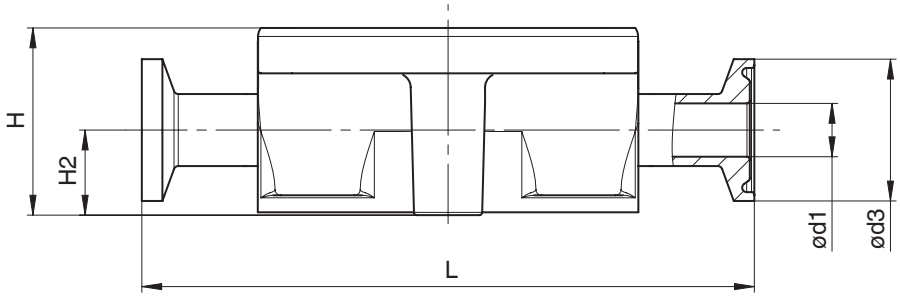
DN	Connection type code 1 [1]				
	Material code C1 [2]				
	R	t	H	H2	L
8	G 1/4	16.0	33.0	15.0	72.0
10	G 3/8	16.0	33.0	15.0	72.0
15	G 1/2	16.0	33.0	15.0	72.0

Dimensions in mm

1) **Connection type**
Code 1: Threaded socket DIN ISO 228

2) **Valve body material**
Code C1: ASTM A 351 CF3M, investment casting

Clamp



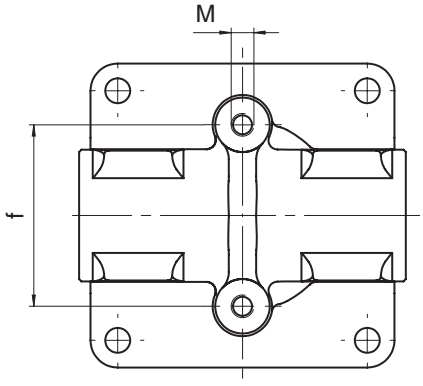
DN	Connection type code 88 [1]				
	Material code C1 [2]				
	L	H	H2	ød1	ød3
15	108.0	33.0	15.2	9.40	25.0
20	117.0	33.0	15.2	15.75	25.0

Dimensions in mm

1) **Connection type**
Code 88: Clamp ASME BPE, face-to-face dimension FTF EN 558 series 7

2) **Valve body material**
Code C1: ASTM A 351 CF3M, investment casting

Valve body mounting

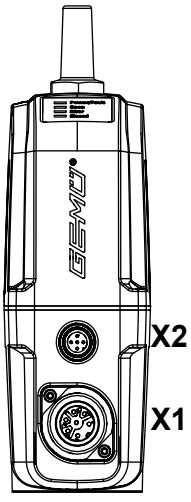


DN	f	M
8,10,15,20	40	M5

Dimensions in mm

Electrical connection

Position of the connectors



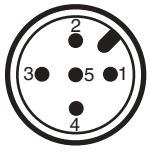
Electrical connection

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 positioner design)



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

	Function	Control module S0	Control module S5, S6
		Default settings	Factory default setting "Configured for emergency power supply module"
Digital input 1	Off/Open/Closed/Safe/On/Initialization	Initialization	Initialization
Digital input 2	Off/Open/Closed/Safe/On/Initialization	Off	Safe/On
Digital input/output	Open/Closed/Error/Error and warning/Initialization	Error	Error
Digital output	Open/Closed/Error/Error and warning	Closed	Closed
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 GEMÜ 1573 switching power supply unit converts unstable input voltages from 100 to 240 V AC into a continuous DC voltage. It can be used as an accessory for valves with motorized actuators, e.g. GEMÜ eSyStep and eSyDrive, and for additional devices with a 24 V DC power supply. Different power levels, output currents and a 48 V DC version for servoDrive actuators 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

GEMÜ SERVICE-IO-LINK-KIT

Programming set

The GEMÜ service IO-Link set comprises an IO-Link master, an adapter and a cable gland. The programming set is suitable for all GEMÜ IO-Link interfaces.

Ordering information

Order number: 99072365

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