

## Globe Valve, Metal

### Construction

The GEMÜ 558 motorized 2/2-way valve has a compact electric linear actuator with a motor designed for DC and AC operating voltages. The integrated gear translates the rotary motor movement into a linear movement.

The actuator is available as an Open/Close version or with an integrated positioner and additional process controller.

The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life.

The wiper ring fitted in front of the gland packing protects it against contamination and damage.

### Features

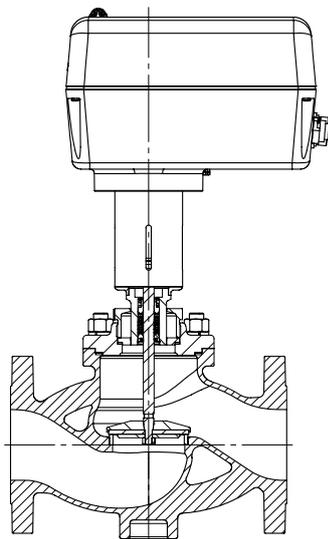
- OPEN/CLOSE function or CONTROL version
- Actuating speed and control parameters easily adjustable
- Optimized initialisation and valve control
- Parameterisation during operation
- Torque limitation
- Electronic limitation of opening and closing stroke
- Positioner and process controller are synchronized with each other
- Optional integrated emergency power supply module with selectable safety position
- Version with bellows (option)

### Advantages

- High flow capability
- 2-colour LEDs with good visibility for indication of end position and travel direction
- Extensive integrated diagnostic functions
- Simple commissioning and versatile operating facilities
  - Fascia keys
  - PC connection with Internet browser MS® Internet Explorer
  - Field bus interfaces, e.g. Profibus DP
  - e<sup>SY</sup>-com interface for connecting a Bluetooth module or industrial modem to enable access via PDA or PC



GEMÜ 558



## Technical data

### Working medium

Corrosive, inert, gaseous and liquid media and steam which have no negative impact on the physical and chemical properties of the body and seal material.

Max. perm. pressure of working medium see table on page 3

Media temperature -10° to 180° C

Max. permissible viscosity 600 mm<sup>2</sup>/s (cSt)  
Other versions for higher viscosities on request

### Leakage rate

Leakage rate A to P11/P12 EN 12266-1

### Operating conditions

Storage temperature -10 to +60°C

Ambient temperature see Derating curve on page 3

### General information

Protection class to EN 60529 IP 65  
Weight See table  
Dimensions L x W x H See dimensional drawing  
Mounting position Optional  
Particulars: Safety function during electrical power supply failure (by optional emergency power supply module)

**Position indication**  
LED 2-colour, good visibility

**Directives**  
EC low voltage directive 73/23/EEC  
EMC directive 89/336/EEC  
Interference emission EN 61000-6-4  
Interference resistance EN 61000-6-2  
Rating 40%

### Actuator materials

Housing cover PSU  
Housing base PPS 40 glass reinforced  
Distance piece 1.4301

### Electrical data (all versions)

**Power supply**  
Power supply  $U_V = 24V DC \pm 10\%$   
max. residual ripple  $\pm 10\%$   
 $U_V = 120V 50/60 Hz \pm 10\%$   
 $U_V = 230V 50/60 Hz \pm 10\%$   
Power consumption DC approx. 96 W  
AC approx. 120 VA

**Electrical connection** (see electrical connection pages 6+7)  
Power supply 1 x Binder series 693  
Input/output signals 1 x M12 plug, A-coded  
(not Profibus DP) 1 x M12 socket, A-coded  
1 x M12 plug, B-coded

**Operating elements**  
Keys 4 membrane protected fascia keys

### Electrical data (Economy version)

**Input signals**  
Control inputs 2 x 24V DC  
Voltage  $U_{rated} = 24V DC$   
Level "Logical 1"  $14V DC \leq U_H \leq 28V DC$   
Level "Logical 0"  $0V DC \leq U_L \leq 8V DC$   
Input current  $I_{typ} = 2.5 mA (@ 24V DC)$

### Electrical data (Industrial version)

**Input signals**  
Control inputs 2 x 24V DC  
**Digital inputs**  
Function 2 x (optional)  
selectable (ON, OFF, safety position, loading of parameter set)  
Voltage  $U_{rated} = 24V DC$   
Level "Logical 1"  $14V DC \leq U_H \leq 28V DC$   
Level "Logical 0"  $0V DC \leq U_L \leq 8V DC$   
Input current  $I_{typ} = 2.5 mA (@ 24V DC)$   
**Output signals**  
**Digital outputs**  
Number 2 relay outputs (potential-free)  
Switching voltage =  $U_V$   
Switching current  $\leq 0.5 A$   
Function selectable  
(position, warnings, errors)  
**Display elements**  
Text display 2-line display with 16 digits each, with background light  
LED Field bus status  
(only with Profibus DP version)  
**Interfaces**  
PC interface RS 232 with PPP protocol for Internet browser  
Field bus Profibus DP V1 interface certified

### Electrical data (Industrial version with integrated control module)

**Analogue inputs \*)**  
Set value external 0/4 - 20 mA (selectable)  
(for version with positioner)  
Actual value external 0/4 - 20 mA (selectable)  
(for version with process controller)  
Input resistance 120  $\Omega$   
**Analogue output**  
Actual value position feedback 4 - 20 mA  
**Digital inputs**  
Number of integrated inputs 2 inputs (use of the analogue inputs)  
Voltage  $U_{rated} = 24V DC$   
Level "Logical 1"  $14V DC \leq U_H \leq 28V DC$   
Level "Logical 0"  $0V DC \leq U_L \leq 8V DC$   
Input current  $I_{typ} = 18 mA (@ 24V DC)$   
**Positioner**  
Deviation  $\geq 0.1 \%$  (adjustable)  
P D parameters adjustable  
Initialisation automatic or manual  
**Process controller** (for version with process controller)  
Type of controller continuous controller  
PID parameters adjustable

\*) Analogue inputs can be used as digital inputs by external wiring with a resistor according to the operating instructions and software function.

### Electrical data (optional integrated emergency power supply module)

Charging time max. 3 min  
(for complete charging)  
Additional current consumption during charging process max. 3 A  
Number of guaranteed switching cycles at full load 1 switching cycle

## Technical data

### Mechanical actuator data

#### Actuator version 2D

Max. actuator stroke	28.8 mm
Actuating speed	max. 3.3 mm/sec.
Axial force	4500 N
Actuator size	2

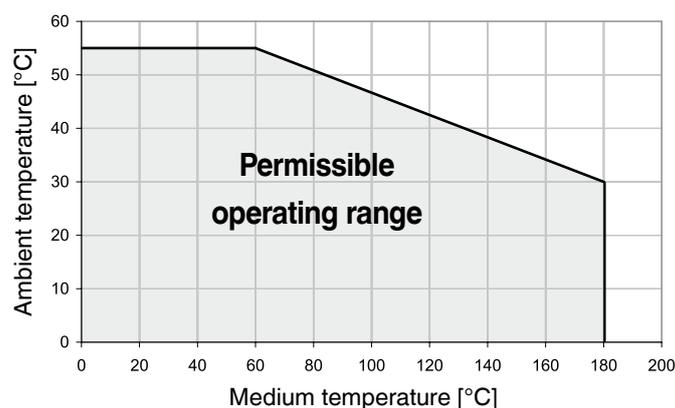
### Max. operating pressure\* [bar]

DN	Actuator version 2D	Kv value [m <sup>3</sup> /h]
25	25	13
32	25	22
40	20	35
50	12	50
65	8	60
80	6	89

Operating pressure for seal material PTFE (code 5), for seal material steel (code 10) only 60% of the values indicated above.

\* Please observe pressure / temperature correlation (see table below). Kv values determined acc. to IEC 534 standard, valve body material cast iron EN-GJL-250 and flanges EN 1092.

### Derating curve



### Pressure / temperature correlation for globe valve bodies

Connection code	Material code	Max. allowable operating pressures in bar at temperature °C*					
		RT	100	150	200	250	300
8	8	16.0	16.0	14.4	12.8	11.2	9.6
11	11	39.0	34.1	31.7	28.4	26.0	23.5

\* The valves can be used down to -10°C RT = Room Temperature All pressures are gauge pressures.

### Features of the different actuator versions

Features	SideStep® Economy OPEN / CLOSE control	SideStep® Industrial OPEN / CLOSE control	SideStep® Industrial control system
	Code A	Code C, D	Code S, T, P, R
2-line display	-	X	X
Automatic initialisation	X	X	X
4 fascia keys	X	X	X
Position indication by LED	X	X	X
Operating indication by LED	X	-	-
e.SY-com interface	-	X	X
Axial force (adjustable)	-	X	X
Actuating speed (adjustable)	-	X	X
Option Profibus	-	X	X
Positioner	-	-	X
Option process controller	-	-	X
Option digital inputs	-	X	X
Extended diagnostic facilities	-	X	X
Alarm outputs (adjustable)	-	X	X
Analogue output	-	-	X
Min / Max position (adjustable)	-	-	X

## Order data

Body configuration	Code
2/2-way body	D

Connection	Code
<b>Flansch</b> Flanges EN 1092 / PN16 / form B length EN 558, series 1 ISO 5752, basic series 1	8
Flanges EN 1092 / PN40 / form B length EN 558, series 1 ISO 5752, basic series 1	11

Valve body material	Code
EN-GJL-250 (GG 25) cast iron	8
GP240GH (GS-C 25), cast steel	11

Seat seal	Code
PTFE	5
Other seat seals such as NBR, etc. available on request	

Supply voltage/mains frequency	Code
24V DC	C1
120V 50/60 Hz	G4
230V 50/60 Hz	L4

Main function	Code
OPEN/CLOSE control (Economy)	A
OPEN/CLOSE control (Industrial)	C
OPEN/CLOSE control (Industrial) + emergency power supply module (not available for actuator version 3)	D
Positioner	S
Positioner + emergency power supply module (not available for actuator version 3)	T
Process controller and positioner	P
Process controller and positioner + emergency power supply module (not available for actuator version 3)	R

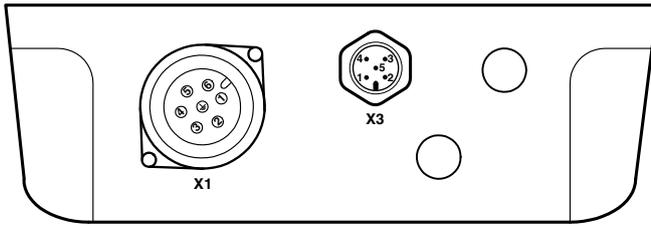
Option	Code
Without option	0
Digital inputs	1
Profibus DP	2

R-Number	Code
Version with regulating cone on request	-

Actuator version	Code
Actuator size 2, actuating force 4500 N	2D

Order example	558	25	D	8	8	5	C1	A	0	-	2D
Type	558										
Nominal size		25									
Body configuration (code)			D								
Connection (code)				8							
Valve body material (code)					8						
Seat seal (code)						5					
Supply voltage/mains frequency (code)							C1				
Main function (code)								A			
Option (code)									0		
R-Number (code) - Version with regulating cone on request										-	
Actuator version (code)											2D

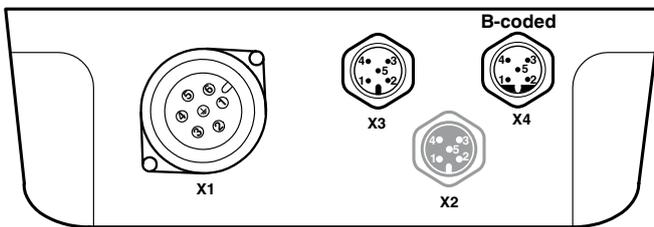
## Electrical connection - OPEN/CLOSE Economy



Connection	Pin	Signal name
X 3 M12 plug A-coded	1	U <sub>v</sub> , signal supply, 24V DC
	2	L+, direction of travel OPEN
	3	GND, direction of travel OPEN/CLOSED
	4	L+, direction of travel CLOSED
	5	Input, keypad lock, 24V DC

Connection	Pin	Signal name
X 1 Connector Binder series 693	1	U <sub>v</sub> , L1 / L+ supply voltage
	2	U <sub>v</sub> , N / L- supply voltage
	3	n.c.
	4	n.c.
	5	n.c.
	6	n.c.
PE		Protective earth conductor

## Electrical connection - OPEN/CLOSE Industrial



Connection	Pin	Signal name
X 2 * M12 socket A-coded	1	U <sub>v</sub> , signal supply, 24V DC
	2	Digital input 1
	3	GND, signal supply
	4	Digital input 2
	5	n.c.

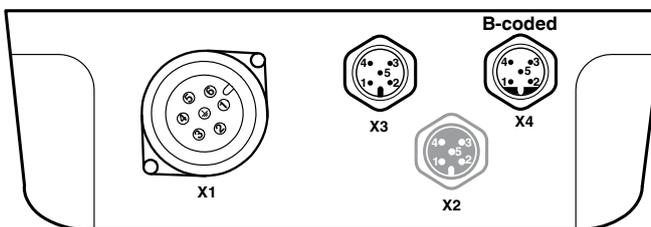
Connection	Pin	Signal name
X 3 M12 plug A-coded	1	L+, direction of travel OPEN
	2	GND, direction of travel OPEN
	3	L+, direction of travel CLOSED
	4	GND, direction of travel CLOSED
	5	n.c.

Connection	Pin	Signal name
X 1 Connector Binder series 693	1	U <sub>v</sub> , L1 / L+ supply voltage
	2	U <sub>v</sub> , N / L- supply voltage
	3	Common, relay output K1
	4	Make-contact, relay output K1
	5	Common, relay output K2
	6	Make-contact, relay output K2
PE		Protective earth conductor

Connection	Pin	Signal name
X 4 M12 plug B-coded	1	n.c.
	2	n.c.
	3	RxD, Receive Data, RS 232
	4	TxD, Transmit Data, RS 232
	5	GND, RS 232

\* Connection X 2 only available as Option Digital inputs Code 1

## Electrical connection - Positioner/ process controller



Connection	Pin	Signal name
X 2 * M12 socket A-coded	1	U <sub>v</sub> , signal supply, 24V DC
	2	Digital input 1
	3	GND, signal supply
	4	Digital input 2
	5	n.c.

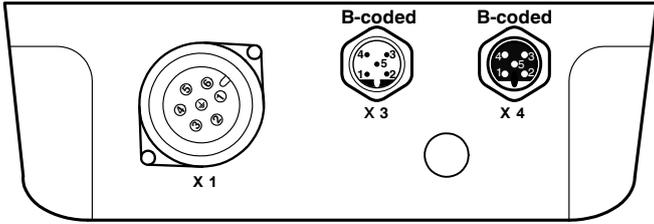
Connection	Pin	Signal name
X 3 M12 plug A-coded	1	I+, set value input 0/4 - 20 mA
	2	I-, set value input 0/4 - 20 mA
	3	I+, actual value output 4 - 20 mA
	4	I-, actual value output 4 - 20 mA
	5	n.c.

Connection	Pin	Signal name
X 1 Connector Binder series 693	1	U <sub>v</sub> , L1 / L+ supply voltage
	2	U <sub>v</sub> , N / L- supply voltage
	3	Common, relay output K1
	4	Make-contact, relay output K1
	5	Common, relay output K2
	6	Make-contact, relay output K2
PE		Protective earth conductor

Connection	Pin	Signal name
X 4 M12 plug B-coded	1	I+, actual value input 0/4 - 20 mA
	2	I-, actual value input 0/4 - 20 mA
	3	RxD, Receive Data, RS 232
	4	TxD, Transmit Data, RS 232
	5	GND, RS 232

\* Connection X 2 only available as Option Digital inputs Code 1

## Electrical connection - Profibus DP



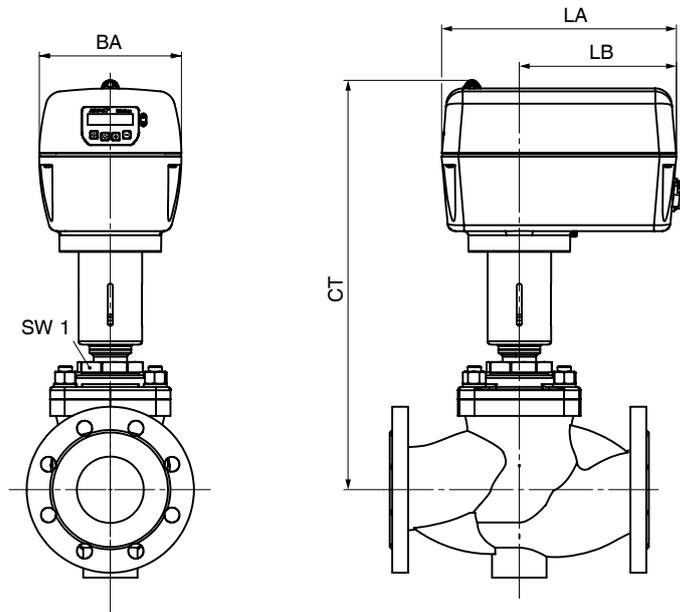
Connection	Pin	Signal name
X 3 M12 plug B-coded	1	n.c.
	2	RxD / TxD-N
	3	n.c.
	4	RxD / TxD-P
	5	Shield

Connection	Pin	Signal name
X 1 Connector Binder series 693	1	U <sub>v</sub> , L1 / L+ supply voltage
	2	U <sub>v</sub> , N / L- supply voltage
	3	n. c.
	4	n. c.
	5	n. c.
	6	n. c.
	PE	Protective earth conductor

Connection	Pin	Signal name
X 4 M12 socket B-coded	1	BUS-VDC, +5 V DC
	2	RxD / TxD-N
	3	GND
	4	RxD / TxD-P
	5	Shield

## Dimensions [mm]

Installation dimensions							Weight [kg] (Actuator)
DN	Material code		Actuator version 2D				
	8	11	BA	CT	LA	LB	
	SW 1						2D
25	46	41	145	330	239	159	6.5
32	60	60	145	335	239	159	6.5
40	60	60	145	346	239	159	6.8
50	75	75	145	354	239	159	7.0
65	75	60	145	364	239	159	-
80	75	75	145	384	239	159	-

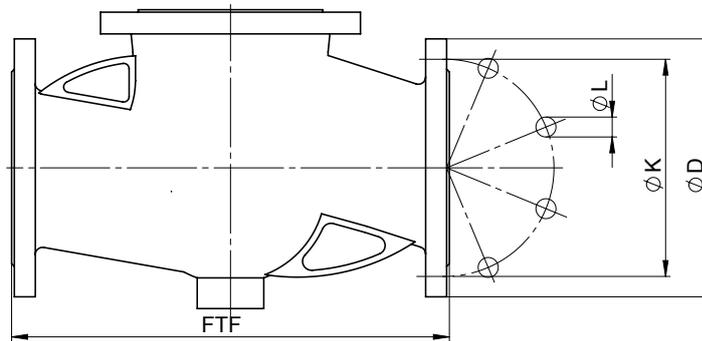


## Body dimensions [mm]

**Flanges, connection code 8, 11**  
**Valve body material: GG 25 (code 8), GS-C (code 11)**

DN	FTF	Connection code 8				Connection code 11			
		ø D	ø L	ø K	Number of bolts	ø D	ø L	ø K	Number of bolts
25	160	115	14	85	4	115	14	85	4
32	180	140	18	100	4	140	18	100	4
40	200	150	18	110	4	150	18	110	4
50	230	165	18	125	4	165	18	125	4
65	290	185	18	145	4	185	18	145	8
80	310	200	18	160	8	200	18	160	8

For materials see overview below



### Overview of metal bodies for GEMÜ 558

Connection code	8	11
<b>Material code</b>	<b>8</b>	<b>11</b>
DN 25	X	X
DN 32	X	X
DN 40	X	X
DN 50	X	X
DN 65	X	X
DN 80	X	X

\* DIN flange drilled to ANSI Class 150

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

**GEMÜ**® VALVES, MEASUREMENT  
 AND CONTROL SYSTEMS

