

# Multi-Port Globe Valve, Metal

## Construction

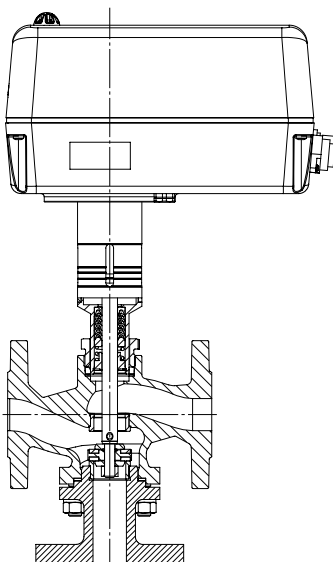
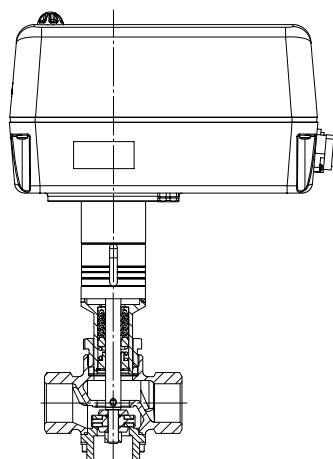
The GEMÜ 342/344 motorized 3/2-way valve has a compact electric linear actuator with a motor designed for DC and AC operating voltages. The actuator is available as an Open/Close version or with an integrated positioner and additional process controller. The valve spindle is sealed by a self-adjusting 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

## Advantages

- Good 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.sy-com interface for connecting a Bluetooth module or modem to enable access via PDA or PC

**GEMÜ 342****GEMÜ 344**

## 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	

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 (not Profibus DP)	1 x M12 plug, A-coded 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 $\Omega$
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

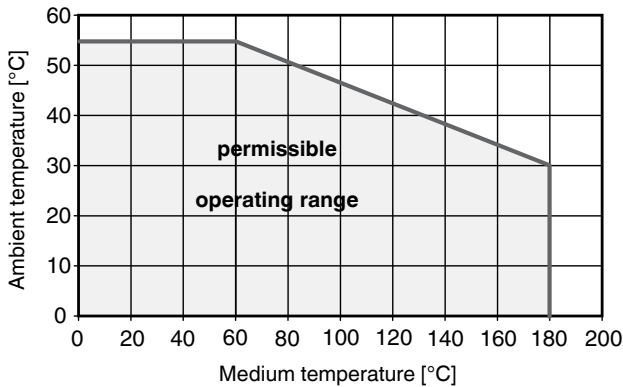
## Technical data

### Mechanical actuator data

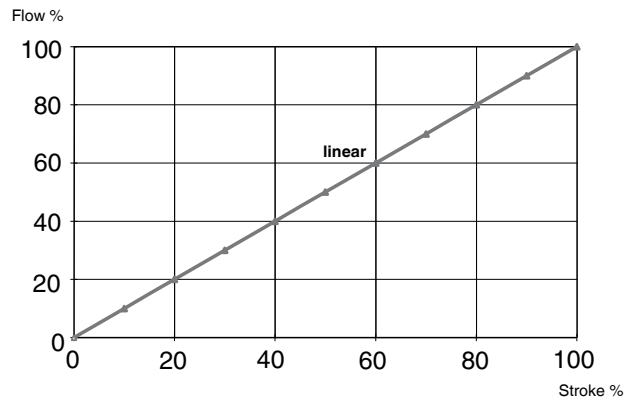
#### Actuator version 2D

Max. actuator stroke	28.8 mm
Actuating speed	max. 3.3 mm/sec.
Axial force	4.5 kN
Actuator size	2

**Derating curve**  
(ambient temperature - medium temperature)



**Linear characteristic**



DN	Operating pressure [bar]	Kv value [m <sup>3</sup> /h]				Total weight [kg]	
		GEMÜ 342		GEMÜ 344		GEMÜ 342	GEMÜ 344
		P→A	A→R	P→A	A→R		
25	16.0	18.5	12.7	10.6	7.3	10.0	7.7
32	16.0	26.0	15.0	18.0	10.4	16.0	8.0
40	16.0	40.0	27.0	31.0	20.9	17.0	8.2
50	12.0	60.0	43.0	47.0	33.7	21.0	9.4
65	8.0	104.0	68.0	-	-	28.0	-
80	4.5	145.0	96.0	-	-	34.0	-

\*Operating pressure at connection R may not be greater than operating pressure P→A (see drawing on page 4).

### Pressure / temperature correlation

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
1	9	16.0	16.0	16.0	13.5	-	-

\* The valves can be used down to -10°C

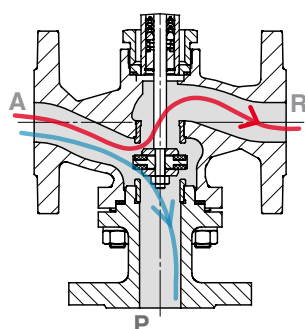
RT = Room Temperature

All pressures are gauge pressures.

## Technical data

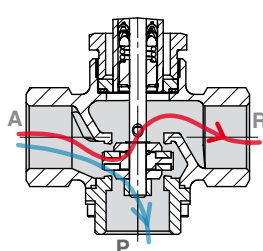
### Functions

GEMÜ 312 Distribution



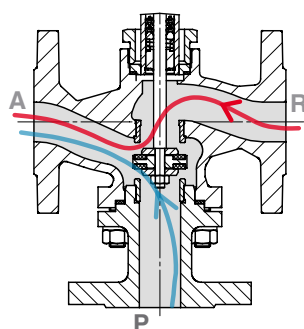
A - R  
A - P

GEMÜ 314 Distribution



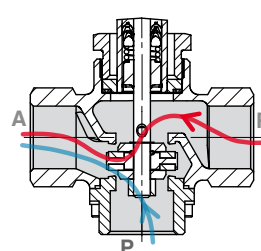
A - R  
A - P

GEMÜ 312 Mixing



R - A  
P - A

GEMÜ 314 Mixing



R - A  
P - A

### Features of the different actuator versions

Features	<i>SideStep® Economy</i> OPEN / CLOSE control	<i>SideStep® Industrial</i> OPEN / CLOSE control	<i>SideStep® Industrial</i> 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. <sup>9</sup> V-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
Multi-port design	M

Connection	Code
Threaded sockets DIN ISO 228 (GEMÜ 344)	1
Flanges EN 1092 / PN 16 / form B, length EN 558, series 1, ISO 5752, basic series 1 (GEMÜ 342)	8
Flanges ANSI CLASS 125/150 RF, length EN 558, series 1, ISO 5752, basic series 1 (GEMÜ 342)	39

Valve body material	Code
GEMÜ 342: EN-GJL-250 (GG 25) Cast iron	8
GEMÜ 344: (Rg 5) CC499K, Cast bronze	9

Seat seal	Code
PTFE	5
PTFE, glass reinforced	5G

Supply voltage/mains frequency	Code
24 V 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	D
Positioner	S
Positioner + emergency power supply module	T
Positioner and process controller	P
Positioner and process controller + emergency power supply module	R

\* With version "Main function A (Economy)" no options are possible

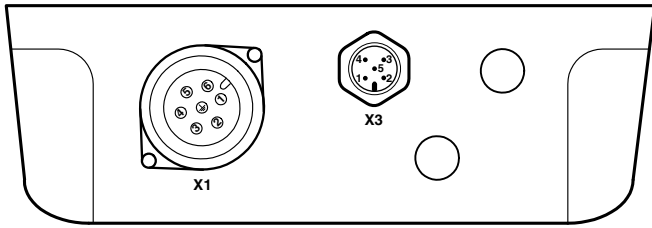
Option	Code
Without	0
Digital inputs	1
Profibus DP	2

R-Number	Code
Version with regulating cone on request	-

Actuator version	Code
Actuator size 2, actuating force 4.5 kN	2D

Order example	342	50	M	8	8	5	C1	S	1	-	2D
Type	342										
Nominal size		50									
Body configuration (code)			M								
Connection (code)				8							
Valve body material (code)					8						
Seat seal (code)						5					
Supply voltage/mains frequency (code)							C1				
Main function (code)								S			
Option (code)									1		
R-Number (code) - Version with regulating cone on request										-	
Actuator version (code)											2D

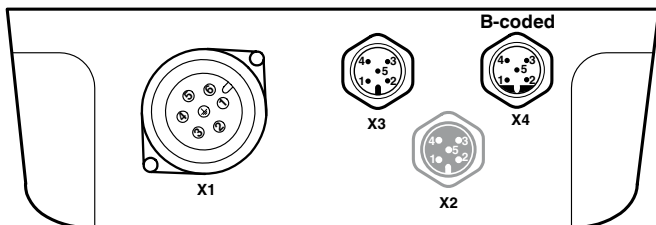
## Electrical connection - OPEN/CLOSE Economy



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



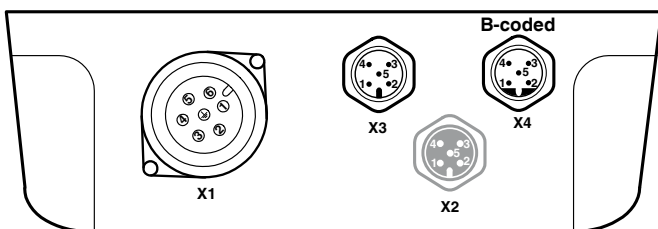
Connection	Pin	Signal name
X 2 * M12 socket A-coded	1	U <sub>v</sub> , signal supply, 24V DC
	2	Digital input 1
	3	GND, signal supply
	4	Digital input 2
	5	n.c.

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 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



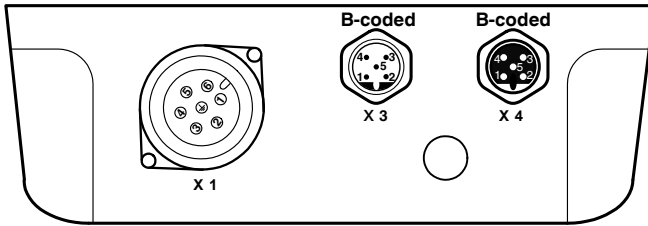
Connection	Pin	Signal name
X 2 * M12 socket A-coded	1	U <sub>v</sub> , signal supply, 24V DC
	2	Digital input 1
	3	GND, signal supply
	4	Digital input 2
	5	n.c.

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 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

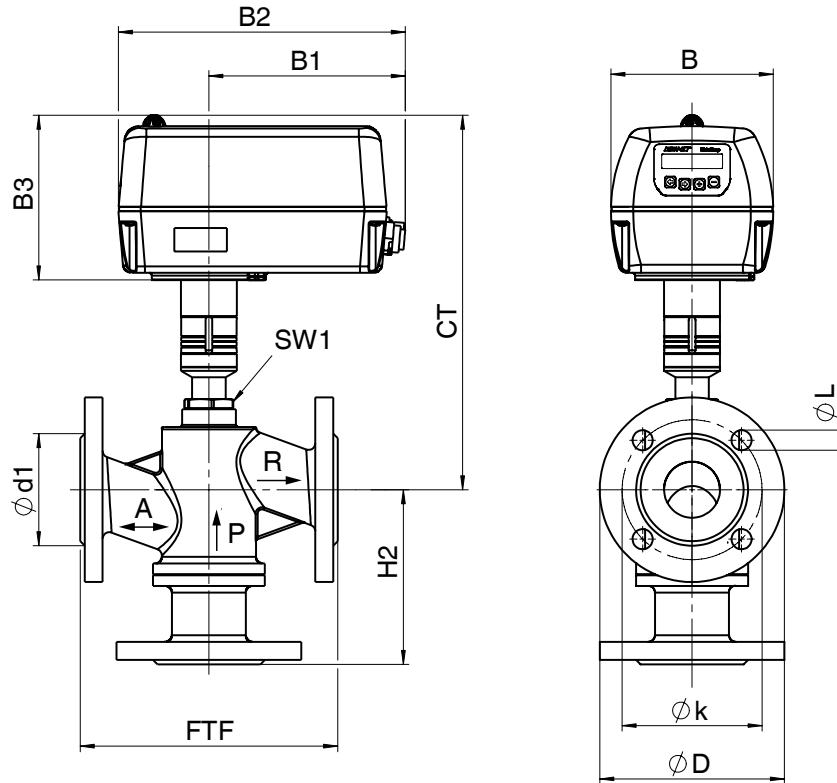
Connection	Pin	Signal name
X 1 Connector Binder series 693	1	U <sub>v</sub> , L1 / L+ supply voltage
	2	U <sub>v</sub> , N / L- supply voltage
	3	n. c.
	4	n. c.
	5	n. c.
	6	n. c.
	PE	Protective earth conductor

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 GEMÜ 342 [mm]

### Actuator dimensions

B	B1	B2	B3
145	175	256	147



### Body dimensions / Installation dimensions

#### Flanges - DIN EN 1092, connection code 8 Valve body material: GG 25 (code 8)

DN	FTF	$\phi D$	$\phi k$	$\phi L$	Number of bolts	SW1	$\phi d1$	CT	H2
25	160	115	85	14	4	41	68	313	117
32	180	140	100	18	4	41	78	319	141
40	200	150	110	18	4	41	88	328	146
50	230	165	125	18	4	41	102	338	156
65	290	185	145	18	4	55	122	346	184
80	310	200	160	18	8	55	138	357	205

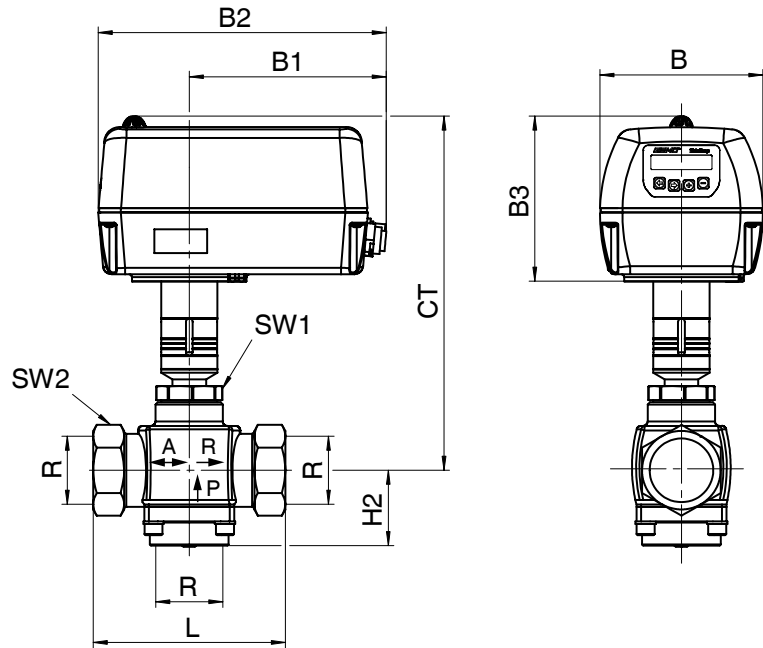
#### Flanges - ANSI class 125/150 RF, connection code 39 Valve body material: GG 25 (code 8)

DN	FTF	$\phi D$	$\phi k$	$\phi L$	Number of bolts	SW1	$\phi d1$	CT	H2
25	160	110	79.4	15.9	4	41	50.8	313	117
32	180	115	88.9	15.9	4	41	63.5	319	141
40	200	125	98.4	15.9	4	41	73.2	328	146
50	230	150	120.7	19.0	4	41	91.9	338	156
65	290	180	139.7	19.0	4	55	104.6	346	184
80	310	190	152.4	19.0	8	55	127.0	357	205

## Dimensions GEMÜ 344 [mm]

### Actuator dimensions

B	B1	B2	B3
145	175	256	147



### Body dimensions / Installation dimensions

#### Threaded sockets, connection code 1 Valve body material: Cast bronze (code 9)

DN	R	L	SW1	SW2	CT	H2
25	G 1	107	36	41	300	47
32	G 1 1/4	123	36	50	304	66
40	G 1 1/2	147	41	58	304	67
50	G 2	171	55	70	308	74

#### Overview of valve bodies - GEMÜ 342, 344

Connection code	1 (GEMÜ 344)	8 (GEMÜ 342)	39 (GEMÜ 342)
Material code	9	8	8
25	X	X	X
32	X	X	X
40	X	X	X
50	X	X	X
65	-	X	X
80	-	X	X

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

