

GEMÜ Q40

Pneumatically operated pinch valve



Features

- Fast, safe tube replacement
- Minimized strain on the tube due to the optimized compressor
- Simple replacement of inserts and compressors for various tube sizes with the same actuator
- Resistant stainless steel piston actuator, free from non-ferrous metals
- High quality and long service life
- Positioners and process controllers can be mounted
- Several installation options possible in the plant thanks to the mounting flange or female thread on the body

Description

The GEMÜ Q40 2/2-way pinch valve has a stainless steel piston actuator and is pneumatically operated. The valve guides a tube which is compressed from above by a compressor to control and regulate media. The compressor's specially developed contour and the inserts' contour minimize the strain on the tube and thus increase the tubes' service life. Tubes can be safely inserted and removed in simple steps and without tools. The available control functions are "normally closed (NC)" and "normally open (NO)". An integral optical position indicator is standard.

Technical specifications

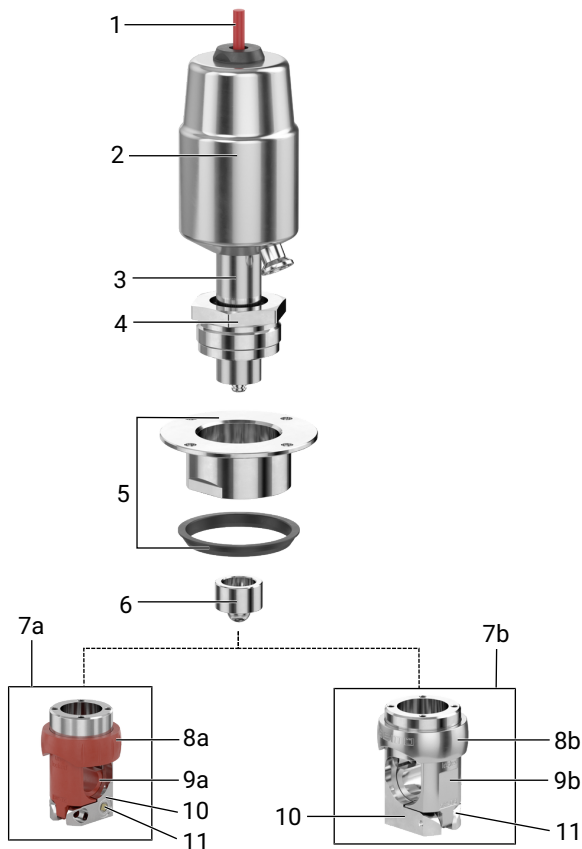
- **Media temperature:** Please observe the tube manufacturer's specifications
- **Ambient temperature:** Actuator: 0 to 60 °C, Tube: Please observe the tube manufacturer's specifications
- **Operating pressure:** max. 6 bar, Please observe the tube manufacturer's specifications
- **Tube outside diameter:** 1 1/8" - 1 3/16" | 1 13/32" - 1 1/2" | 9/16" | 1/4" | 3/8" | 7/16" | 1/2" | 5/8" | 3/4" | 7/8"
- **Tube inside diameter:** 3/16" | 5/16" | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1"
- **Body materials:** 1.4404 | 1.4408 | PA6
- **Conformity:** EAC | Machinery Directive

Technical data depends on the respective configuration



Product description

Construction



Item	Name	Materials
1	Optical position indicator	PP
2	Actuator	Stainless steel
3	Distance piece with leak detection hole	Stainless steel
4	Union nut	Stainless steel
5	Distance piece with mounting flange including EPDM seal	Stainless steel
6	Compressor	Stainless steel
7a	Valve body	Stainless steel/PA6
7b	Valve body	Stainless steel
8a	Locking ring	PA6
8b	Locking ring	Stainless steel
9a	Tube holder	PA6
9b	Tube holder	Stainless steel
10	Tube carrier	Stainless steel
11	CONEXO RFID chip (see "GEMÜ CONEXO", page 15)	

Availability

Sizes / Actuator sizes and valve bodies

Tube outside diameter	Size Actuator size		
	BG0 0P1	BG1 1P1	BG2 2P1
DA	7P 77		
DC	7P 77	77*	
DD	7P 77	77*	
DE	7P 77	77*	
DF		7P 77	
DG		7P 77	
DH		7P 77	77
DI		7P 77	77
DK			7P 77
DN			7P 77

* only code 4

Mounting flange

Mounting flange	Size Actuator size		
	BG0 0P1	BG1 1P1	BG2 2P1
0	X	X	X
FT	X	X	-
FB	-	-	X

Tube sizes

			Tube outside diameter										
			OD	1/4"	3/8"	7/16"	1/2"	9/16"	5/8"	3/4"	7/8"	1 1/8" – 1 3/16"	1 13/32" – 1 1/2"
			inch	0.25	0.375	0.438	0.5	0.563	0.625	0.75	0.875	1.13– 1.18	1.405– 1.5
Tube inside diameter			mm	6.35	9.53	11.1	12.7	14.3	15.88	19.1	22.23	28.58– 29.97	35.69– 38.1
ID	inch	mm	Code	DA	DC	DD	DE	DF	DG	DH	DI	DK	DN
1/8"	0.125	3.18	2	X	X	-	-	-	-	-	-	-	-
3/16"	0.187	4.76	3	-	X	X	-	-	-	-	-	-	-
1/4"	0.250	6.35	4	-	X	X	X	-	-	-	-	-	-
5/16"	0.313	7.94	5	-	-	X	X	-	-	-	-	-	-
3/8"	0.375	9.53	6	-	-	-	-	X	X	-	-	-	-
1/2"	0.500	12.70	8	-	-	-	-	-	-	X	X	-	-
3/4"	0.750	19.05	12	-	-	-	-	-	-	-	-	X	-
1"	1.000	25.40	16	-	-	-	-	-	-	-	-	-	X

AD = outside diameter

ID = inside diameter

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
Pinch valve, pneumatically operated, stainless steel piston actuator	Q40

2 Tube inside diameter	Code
3.180 mm (1/8") inside diameter	2
4.760 mm (3/16") inside diameter	3
6.350 mm (1/4") inside diameter	4
7.95 mm (5/16") inside diameter	5
9.530 mm (3/8") inside diameter	6
12.700 mm (1/2") inside diameter	8
19.050 mm (3/4") inside diameter	12
25.400 mm (1") inside diameter	16

3 Tube outside diameter	Code
6.350 mm (1/4") outside diameter	DA
9.530 mm (3/8") outside diameter	DC
11.110 mm (7/16") outside diameter	DD
12.700 mm (1/2") outside diameter	DE
14.300 mm (9/16") outside diameter	DF
15.880 mm (5/8") outside diameter	DG
19.100 mm (3/4") outside diameter	DH
22.230 mm (7/8") outside diameter	DI
28.580–29.970 mm (1 1/8–1 3/16") outside diameter	DK
35.690–38.100 mm (1 13/32–1 1/2") outside diameter	DN

4 Tube carrier version	Code
Plastic design, stainless steel tube carrier and PA tube holder	7P
Stainless steel design, stainless steel tube carrier and stainless steel tube holder, stainless steel locking ring	77

5 Control function	Code
Normally closed (NC)	1
Normally open (NO)	2

6 Actuator version	Code
Actuator size 0P1	0P1
Actuator size 1P1	1P1
Actuator size 2P1	2P1

7 Mounting option	Code
Without mounting flange, with 4 x threaded holes in the body	0
With mounting flange below	FB
With mounting flange above	FT

8 CONEXO	Code
Without	
Integrated RFID chip for electronic identification and traceability	C

Order example

Ordering option	Code	Description
1 Type	Q40	Pinch valve, pneumatically operated, stainless steel piston actuator
2 Tube inside diameter	8	12.700 mm (1/2") inside diameter
3 Tube outside diameter	DH	19.100 mm (3/4") outside diameter
4 Tube carrier version	7P	Plastic design, stainless steel tube carrier and PA tube holder
5 Control function	1	Normally closed (NC)
6 Actuator version	1P1	Actuator size 1P1
7 Mounting option	0	Without mounting flange, with 4 x threaded holes in the body
8 CONEXO		Without

Technical data

The media-conveying tubes are not part of the scope of delivery. All technical data applies solely to the valve itself. The suitability and selection of the media-conveying tubes for the intended process is the user's responsibility. For tested tube combinations that are compatible with the valve, please refer to the chapter "Tested tube combinations" (see "Tested tube combinations", page 7).

Medium

Working medium: Please observe the tube manufacturer's specifications

Control medium: Inert gases

Temperature

Media temperature: Please observe the tube manufacturer's specifications

Ambient temperature: Actuator: 0 – 60 °C, Tube: Please observe the tube manufacturer's specifications

Control medium temperature: max. 60 °C

Storage temperature: 0 – 60 °C

Pressure

Operating pressure: max. 6 bar
Please observe the tube manufacturer's specifications

Control pressure: Normally closed (NC) 4 – 8 bar
Normally open (NO) 2.5 – 4 bar

Actuator data

Filling volume: Actuator size 0P1 0.025 dm³
Actuator size 1P1 0.084 dm³
Actuator size 2P1 0.437 dm³

Piston diameter: Actuator size 0P1 42 mm
Actuator size 1P1 60 mm
Actuator size 2P1 100 mm

Product compliance

Machinery Directive: 2006/42/EC

Mechanical data

Weight:

Actuator size	Mounting flange	Tube holder	
		Stainless steel/PA6	Stainless steel
0P1	FT	0.92	0.96
	0	0.90	0.94
1P1	FT	1.60	1.73
	0	1.50	1.63
2P1	FB	6.30	6.99
	0	6.08	6.77

Weights in kg

Installation position: Optional

Tested tube combinations

The following hose combinations have been tested taking into account the specifications of the respective tube manufacturer and have been found to be suitable for use in our pinch valves.*

However, the versions below are not a substitute for testing the tube for its suitability for the intended process by the user.

Inside diameter (order code)	Inside diameter [inches]	Inside diameter [mm]	Outside diameter (order code)	Outside diameter [inches]	Outside diameter [mm]	Tube type	Clocking	Pressure [bar]	Service life until breakage
2	1/8"	3.18	DA	1/4"	6.35	Silicone	2/2 s	1.6	10,000 cycle duties
2	1/8"	3.18	DC	3/8"	9.53	reinforced	2/2 s	6	7250 cycle duties
3	3/16"	4.76	DC	3/8"	9.53	TPE	2/2 s	2.0	25,000 cycle duties
3	3/16"	4.76	DC	3/8"	9.53	Silicone	2/2 s	1.4	25,000 cycle duties
3	3/16"	4.76	DC	3/8"	9.53	reinforced	2/2 s	4.0	7000 cycle duties
3	3/16"	4.76	DD	7/16"	11.11	Silicone	2/2 s	1.7	25,000 cycle duties
4	1/4"	6.35	DD	7/16"	11.11	Silicone	2/2 s	1.2	10,000 cycle duties
4	1/4"	6.35	DE	1/2"	12.70	reinforced	2/2 s	6	1 x 3200 cycle duties 1 x 7700 cycle duties
4	1/4"	6.35	DE	1/2"	12.70	reinforced	2/2 s	3.8	8000 cycle duties
5	5/16"	7.94	DD	7/16"	11.11	N/A	2/2 s	1.0	23,000 cycle duties
5	5/16"	7.94	DE	1/2"	12.70	Silicone	2/2 s	1.2	20,000 cycle duties
5	5/16"	7.94	DE	1/2"	12.70	TPE	2/2 s	1.6	15,000 cycle duties
6	3/8"	9.53	DF	9/16"	14.30	Silicone	2/2 s	1.1	8900 cycle duties
6	3/8"	9.53	DG	5/8"	15.88	TPE	2/2 s	1.6	25,000 cycle duties
6	3/8"	9.53	DG	5/8"	15.88	reinforced	2/2 s	6	4750 cycle duties
6	3/8"	9.53	DG	5/8"	15.88	reinforced	2/2 s	3.8	2700 cycle duties
8	1/2"	12.70	DH	3/4"	19.05	TPE	2/2 s	1.5	25,000 cycle duties
8	1/2"	12.70	DI	7/8"	22.32	reinforced	2/2 s	6	4750 cycle duties
12	3/4"	19.05	DK	1 1/8"	28.58	reinforced	2/2 s	6	1650 cycle duties
12	3/4"	19.05	DK	1 1/8"	28.58	Silicone	2/2 s	1	25,000 cycle duties
12	3/4"	19.05	DK	1 1/6"	29.97	double reinforced	2/2 s	6	2000 cycle duties

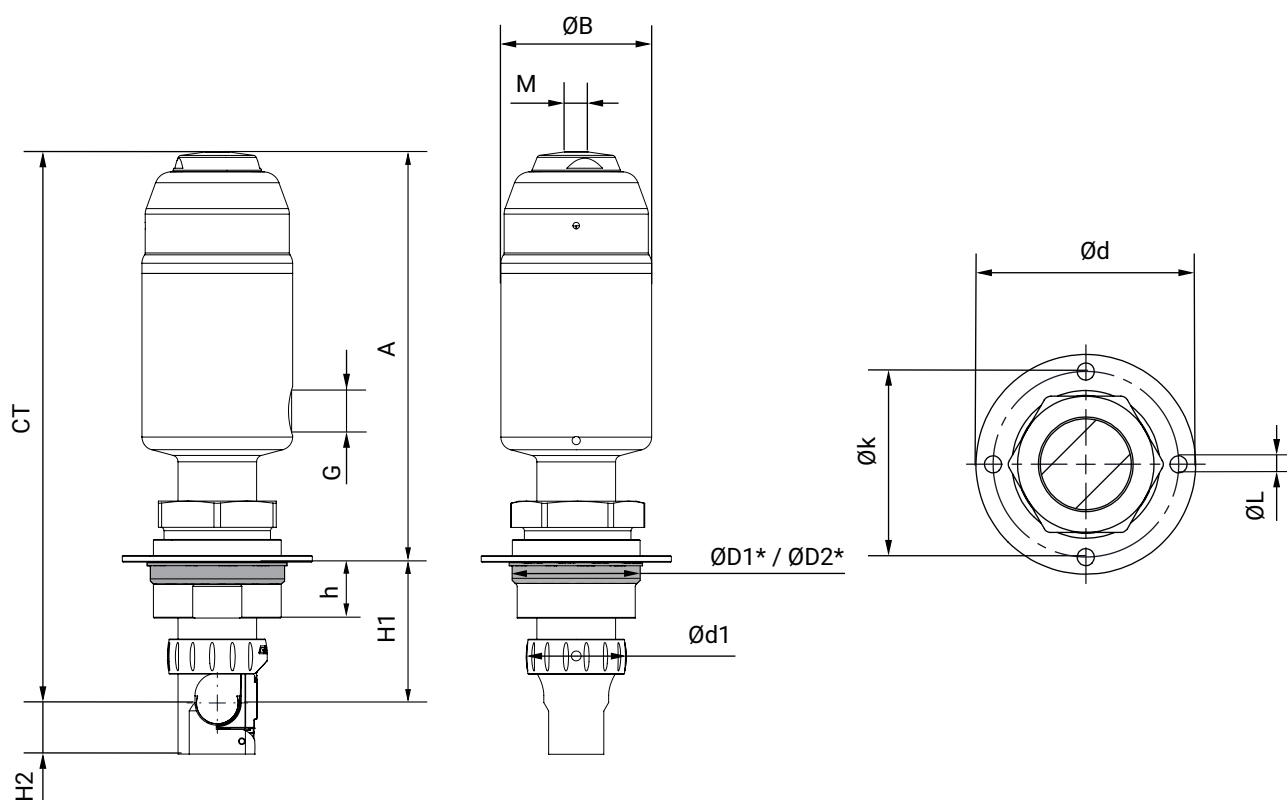
Dimensions

Inside diameter (order code)	Inside diameter [inches]	Inside diameter [mm]	Outside diameter (order code)	Outside diameter [inches]	Outside diameter [mm]	Tube type	Clocking	Pressure [bar]	Service life until breakage
16	1"	25.40	DN	1 13/32"	35.69	reinforced	2/2 s	4	3000 cycle duties
16	1"	25.40	DN	1 7/16"	36.32	double reinforced	2/2 s	6	3150 cycle duties

* Test medium: Water. The results in use may vary from those of the test environment due to the influence of deviating media.

Dimensions

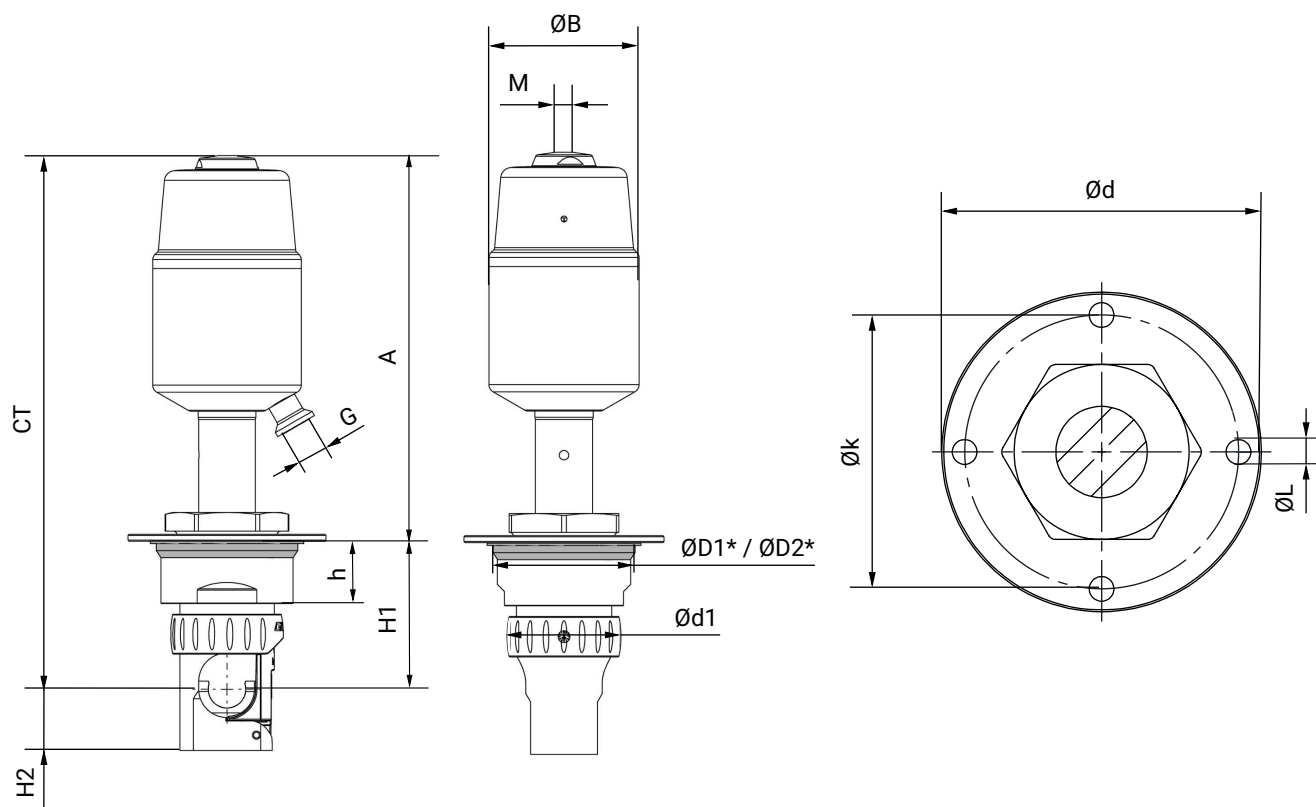
Actuator size 0P1



A	ØB	CT	ØD1*	ØD2*	Ød	Ød1	G	H1	H2	Øk	ØL	M	h
127.0	46.0	170.0	39.0	42.0	58.0	30.5	G1/8	43.0	15.6	49.0	4.5	M16x1	17.1

Dimensions in mm

* D1 = diameter without seal, D2 = diameter with seal

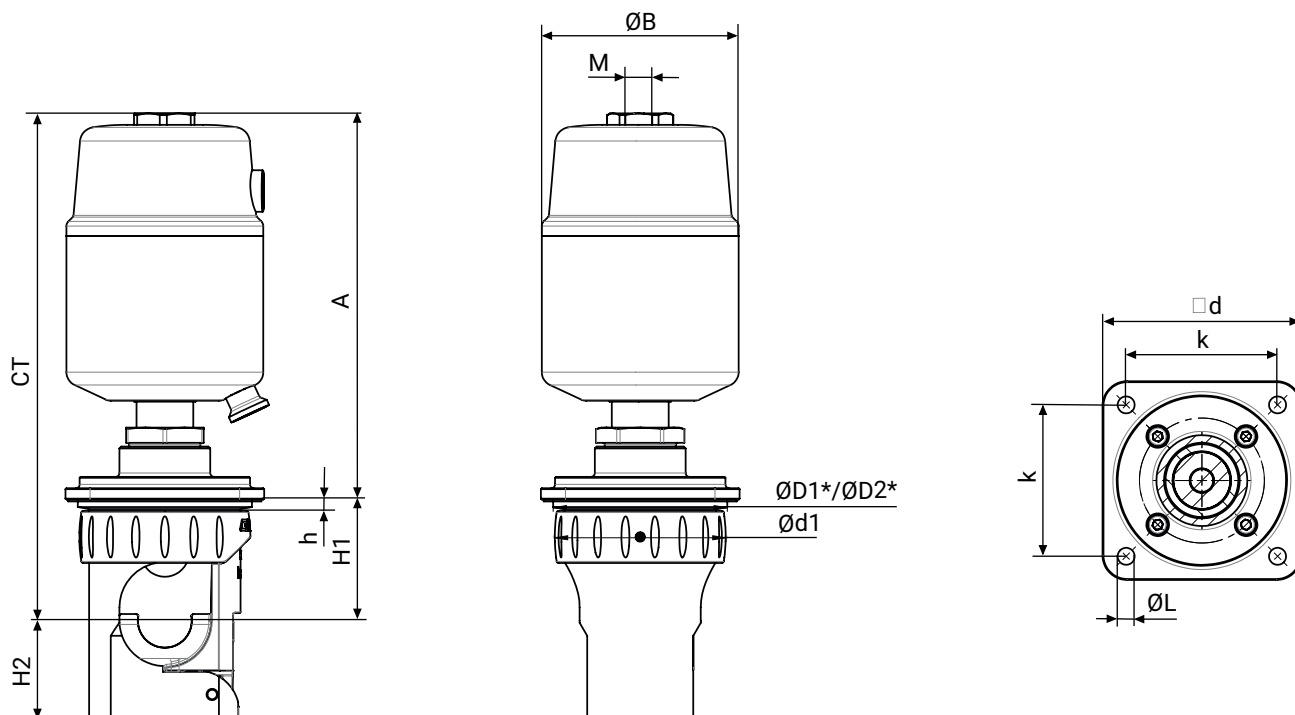
Actuator size 1P1

A	$\varnothing B$	CT	$\varnothing D1^*$	$\varnothing D2^*$	$\varnothing d$	$\varnothing d1$	G	H1	H2	$\varnothing k$	$\varnothing L$	M	h
164.0	63.0	227.0	56.0	60.0	84.0	47.8	G1/8	63.0	26.0	72.0	6.5	M16x1	26.5

Dimensions in mm

* D1 = diameter without seal, D2 = diameter with seal

Actuator size 2P1

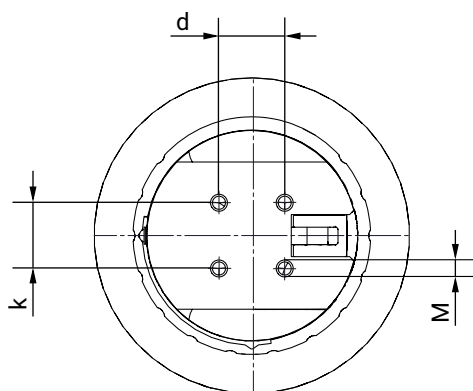


A	ϕB	CT	$\phi D1^*$	$\phi D2^*$	$\square d$	$\phi d1$	G	H1	H2	k	ϕL	M	h
206.0	104.0	270.0	80.0	92.0	105.0	90.4	G1/4	64.0	52.0	80.0	9.0	M22x1.5	7.0

Dimensions in mm

* D1 = diameter without seal, D2 = diameter with seal

Valve body, without mounting flange



Actuator size	d	k	M
0P1	7.0	7.0	M2
1P1	12.0	12.0	M4
2P1	25.0	25.0	M6

Dimensions in mm

Accessories



GEMÜ 2023

Pneumatic fitting

We offer various pneumatic fittings under the GEMÜ 2023 type. Various connection sizes are available with female thread, male thread, connector, plug-in nipple or quick connectors.



GEMÜ 4232

Travel sensor for linear actuators

The GEMÜ 4232 travel sensor is intended for the attachment to valves with linear actuators and is used to determine the valve position. It is used as a travel sensor for the GEMÜ 1434 μ Pos, GEMÜ 1435 ePos, GEMÜ 1436 cPos and GEMÜ 1441 cPos-X intelligent positioners, which can be connected using either the open cable ends or an M12 cable connector (depending on the design and/or selection of the positioner).

Add-on components



GEMÜ 1235

Electrical position indicator

The GEMÜ 1235 electrical position indicator is suitable for installation on pneumatically operated linear actuators and, with specific mounting parts, likewise suitable for pneumatically operated quarter turn actuators as well as further selected actuator versions. The position of the valve spindle is reliably electronically detected and evaluated using play-free and non-positive mounting. Intelligent microprocessor-controlled functions facilitate commissioning and support during operation. The current position of the valve is displayed via high-visibility LEDs and fed back via electrical signals.



GEMÜ 1236

Electrical position indicator

The GEMÜ 1236 electrical position indicator is suitable for installation on pneumatically operated linear actuators. The position of the valve spindle is reliably electronically detected and evaluated using play-free and non-positive mounting. Intelligent microprocessor-controlled functions facilitate commissioning and support during operation. The current position of the valve is displayed via high-visibility LEDs and fed back via electrical signals.



GEMÜ 1240

Electrical position indicator

The position indicator GEMÜ 1240 is suitable for mounting on pneumatically operated linear actuators. The position of the valve spindle is reliably detected electronically and fed back via microswitches or proximity switches, using play-free and non-positive mounting. The product has been designed specially for valves with a stroke of 5 to 75 mm.



GEMÜ 1242

Electrical position indicator

The position indicator GEMÜ 1242 is suitable for mounting on pneumatically operated actuators. The position of the valve spindle is reliably electronically detected and evaluated using play-free and non-positive mounting. Intelligent microprocessor controlled functions facilitate commissioning and support during operation. The current position of the valve is displayed via high-visibility LEDs and fed back via electrical signals. The GEMÜ 1242 has been specially designed for valves with a stroke of 2 to 75 mm.



GEMÜ 1434 µPos

Intelligent electro-pneumatic positioner

The GEMÜ 1434 µPos digital electro-pneumatic positioner is used to control pneumatically operated small to medium nominal size process valves with single acting linear actuators. The solid compact housing has a transparent cover. LEDs for status indication are integrated. Due to factory preconfiguration, this product does not require a display with operating keys. Pneumatic and electrical connections arranged so as to save space and enable easy access. All these features make the GEMÜ 1434 µPos a cost-effective solution for control tasks with basic requirements.



GEMÜ 1435 ePos

Intelligent electro-pneumatic positioner

The GEMÜ 1435 ePos digital electro-pneumatic positioner is used to control pneumatically operated process valves with single acting or double acting linear or quarter turn actuators, and detects the position of the valve using an external travel sensor. It has a robust aluminium housing with protected operating keys and an LCD display which allows the product to be individually adapted to the control task. The travel times can be set using integrated throttles. Connection and mounting to NAMUR is also possible. Therefore, the GEMÜ 1435 ePos is an optimal solution for control tasks with high requirements, especially in applications with harsh environmental conditions.



GEMÜ 1436 cPos

Intelligent positioner and integrated process controller

The GEMÜ 1436 cPos digital electro-pneumatic positioner has an optional integrated process controller to control pneumatically operated process valves with single acting or double acting linear or quarter turn actuators. When using the optional process controller, the signals from the sensors (e.g. flow, level, pressure, temperature) are detected and the media adjusted according to the specified set value. GEMÜ 1436 cPos has a robust aluminium housing with protected operating keys and an LCD display which allows the product to be individually adapted to complex control tasks. With additional equipment, the positioner can be used directly in fieldbus environments.



GEMÜ 1441 cPos-X

Intelligent electro-pneumatic positioner

The GEMÜ 1441 cPos-X is an intelligent, digital electro-pneumatic positioner in 2-wire technology used to control pneumatically operated process valves. It can be combined with single acting or double acting linear actuators or quarter turn actuators. This means that it can be used, among other things, for diaphragm, globe and diaphragm globe valves as well as for ball valves and butterfly valves, for instance. The positioner has a robust housing with a covered LCD display for status information. The positioner can be operated remotely using a mobile device in order to configure settings and to view detailed information.



GEMÜ 4240

Combi switchbox

The GEMÜ 4240 combi switchbox is suitable for mounting to pneumatically operated linear actuators. The position of the valve spindle is reliably detected electronically and fed back via microswitches or proximity switches, using play-free and non-positive mounting. Integrated pilot valves enable direct activation of the process valve connected to them. The product has been designed specially for valves with a stroke of 5 to 75 mm.



GEMÜ 4242

Combi switchbox with integrated pilot valve

The GEMÜ 4242 combi switchbox is suitable for installation on pneumatically operated linear actuators. The position of the valve spindle is reliably electronically detected and evaluated using play-free and non-positive mounting. Integrated pilot valves enable direct activation of the process valve connected to them. Intelligent microprocessor-controlled functions facilitate commissioning and support during operation. The current position of the valve is displayed via high-visibility LEDs and fed back via electrical signals.



GEMÜ 334

Electrically operated pilot solenoid valve

The GEMÜ 334 directly controlled 3/2-way pilot solenoid valve is designed for direct mounting to pneumatically operated valves (inlet and outlet at an angle of 90°). A lockable manual override is integrated as standard. The body is made of plastic. The coil is plastic encapsulated.



GEMÜ 0324

Electrically operated pilot solenoid valve

The GEMÜ 0324 directly controlled 3/2-way pilot solenoid valve is designed for direct mounting to pneumatically operated valves. The body is made of plastic. The coil is plastic encapsulated.

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".



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