GEMÜ®

Intelligent Positioner

Construction

The GEMÜ 1434 µPos is a digital electro-pneumatic positioner for process valve control. Designed for simple, safe and quick use with valves with strokes < 25mm. The positioner, travel sensor, switching valves and status LEDs are integrated in a solid compact housing with transparent cover. Pneumatic and electrical connections are in one mounting direction to save space and enable easy access.

Features

- Simple use and operation
- Direct or separate positioner mounting to the process valve
- For single acting normally open or normally closed linear actuators
- Multi-point calibration for optimum valve adaption
- Optimized initialization and valve control
- Fail safe design with "air exhaust" or "stayput" versions

Advantages

- No air consumption when idle
- Simple mounting to various valve actuators
- Simple commissioning due to automatic initialization
- **speed**-AP function, for quick mounting and initialization
- Simple operation, no settings necessary

Dimensional drawing [mm]

GEMÜ®1434 µPos
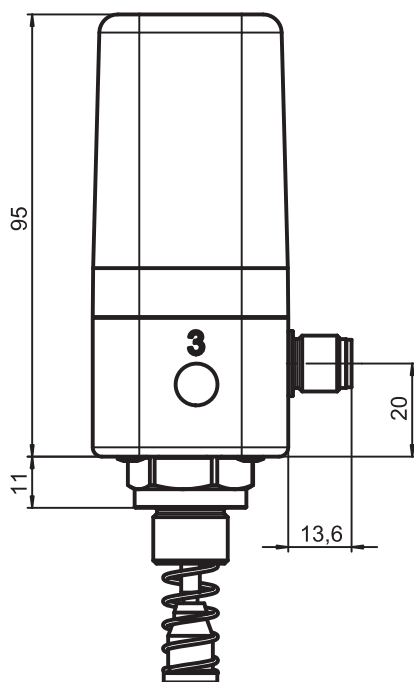
Technical data

General information

Protection class to EN 60529	IP 65/IP 67
EMC directives	
Immunity to interference	EN 61000-6-2
Emission of interference	EN 61000-6-4 (class B)
Weight	220 g
Dimensions L x W x H	See dimensional drawings
Mounting position	Optional
Special features	Fail safe function in case of power supply failure*

Travel sensor system
integrated for direct mounting

Linear version

Stroke	S2	0-10 / 0-30 mm
		S1... 10 mm (Code 010)
		S1... 25 mm (Code 030)
Resistance R		1 / 3 kΩ
Minimum stroke	S1	≥ 8% of travel sensor length

Operating conditions

|	
Ambient temperature	0 to +60°C
Storage temperature	-10 to +60°C
Control medium	Quality classes to DIN ISO 8573-1
Dust content	Class 3 (max. particle size 5 µm) (max. particle density 5 mg/m³)
Pressure dew point	Class 3 (max. pressure dew point -20°C)
Oil concentration	Class 3 (max. oil concentration 1 mg/m³)
Air supply	1 to 10 bar at 40°C 1 to 8 bar at 60°C
Air consumption (when idle)	0 l/min
Air output	15 l/min

Materials

Housing cover	Polypropylene (UV-stabilized)
Housing base	Anodized aluminium or stainless steel

Electrical data

Power supply

Power supply	U_V = 24 V DC ± 10%/-5%
Current consumption	I_{typ} = 70 mA (at 24 V DC)
Analogue inputs	
Accuracy	≤ 0.3%
Set value input	4-20 mA
Optional	0-20 mA / 0-10 V
External travel sensor	R_G = 1-10 kΩ
Digital input	
Initialization input	
Voltage	U_{rated} = 24 V DC
Level "Logical 1"	14 V DC ≤ U_H ≤ 28 V DC
Level "Logical 0"	0 V DC ≤ U_L ≤ 8 V DC
Input current	I_{typ} = 2.5 mA (at 24 V DC)
Analogue output (optional)	
Accuracy	≤ 0.5%
Actual value output	0-20 mA / 4-20 mA load resistor max. 600Ω, 0-10 V
Electrical connection	
Power supply and input signals	1 x M12 plug (A-coded)
Positioner data	
Deviation	≤ 1%
Initialization	automatic via 24 V DC signal
Display elements	
Status display	4 visible LEDs

* Dependent on the positioner version the air supply line of the process valve is vented ("air exhaust" version) or closed ("stayput version") in case of power supply failure.
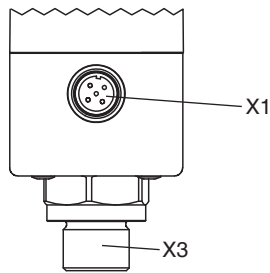
Positioner dimensions   [mm]

Direct mounting

SW 20 with mounting kit M12 x1
SW 24 with mounting kit M16 x1

Remote mounting

GEMÜ®
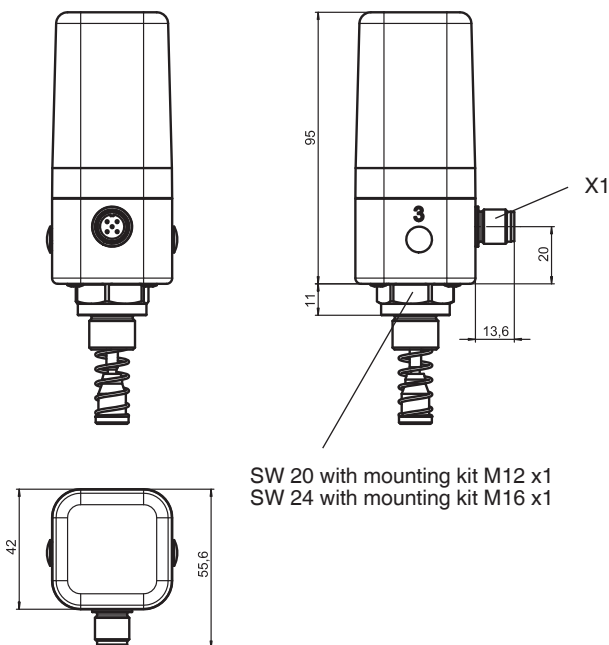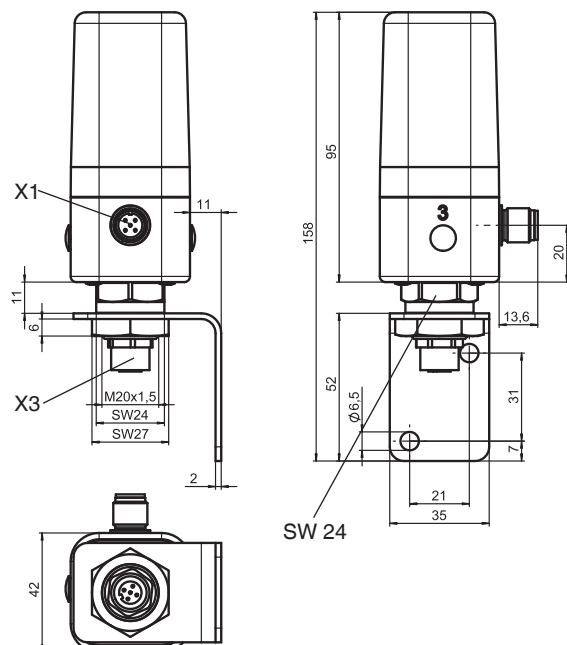
Connections and operating elements

Electrical connections

| Connection	Pin	Signal name
X 1 A-coded M12 - plug	1	U_V, 24 V DC Supply voltage
	2	I+ / U+, 4-20 mA / 0-20 mA / 0-10 V (set value input)
	3	U_V, GND
	4	I+ / U+, 4-20 mA / 0-20 mA / 0-10 V (actual value output-optional))
	5	U_V, Initialization 24 V DC, Initialization is started by an impulse signal t ≥ 100 ms

X1

X3

X1
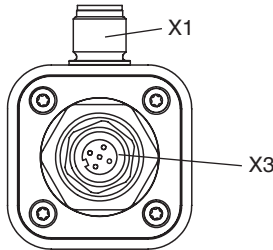
Connection	Pin	Signal name
X 3 A-coded M12 - socket	1	U+, Potentiometer signal voltage plus
	2	U, Potentiometer signal output
	3	U-, Potentiometer signal voltage minus
	4	n. c.
	5	n. c.

X3

X3 is only required in combination with an external travel sensor system

Remote mounting

GEMÜ 4232
(travel sensor)

GEMÜ 4232 S01
(travel sensor
mounting kit)
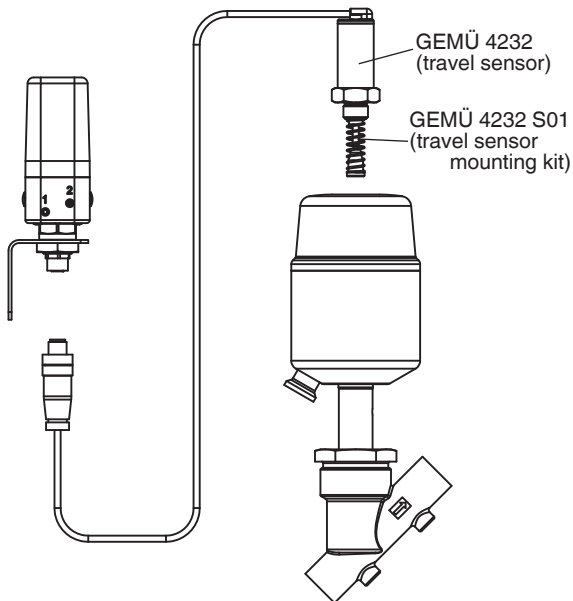
Direct mounting
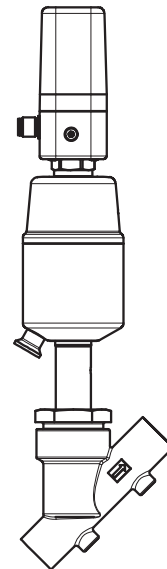
Pneumatic connection
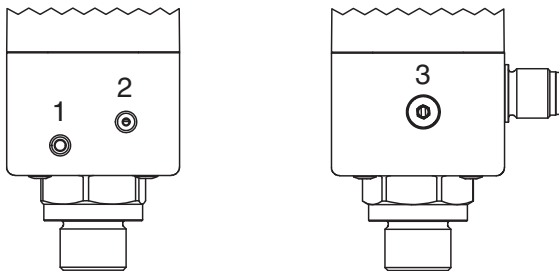
Connection	Designation
1	Air supply connection P (max. 10 bar)
2	Working connection for process valve A1
3	Venting connection R

Display elements

OPEN
ERROR
CLOSED
POWER
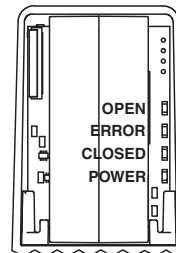
LED	Designation
1	OPEN
2	ERROR
3	CLOSED
4	POWER

1434

Order data

Field bus	Code
Without (3-wire version)	000

Pneumatic connection	Code
Air supply / outgoing air via M5 connection thread	1
Air supply / outgoing air via push-in connector angle, 4 mm	2
Air supply / outgoing air via push-in connector angle, 6 mm	3

Accessory	Code
Accessory	Z

Action	Code
Single acting, "air exhaust"	1
Single acting, "stayput"	A

Option	Code
Without	00
4-20 mA actual value output	A0
0-20 mA actual value output	B0
0-10 V actual value output	C0

Set value input	Code
4-20 mA set value input	A
0-20 mA set value input	B
0-10 V set value input	C

Flow rate	Code
15 l/min	01

Material	Code
Aluminium base, PP cover	14
Stainless steel base, PP cover	07

Travel sensor version	Code
Potentiometer, 10 mm length	010
Potentiometer, 30 mm length	030
Potentiometer external, M12 connector	S01

Order example	1434	000	Z	1	A	14	3	00	01	010
Type	1434									
Field bus (code)		000								
Accessory (code)			Z							
Action (code)				1						
Set value input (code)					A					
Material (code)						14				
Pneumatic connection (code)							3			
Option (code)								00		
Flow rate (code)									01	
Travel sensor version (code)										010

Note: Mounting kit 1434 S01   Z.../4232 S01 Z... depends on the valve type. Pleae order separately specifying valve type, DN and control function. Observe mounting kit travel sensor length.

The photograph on page 1 shows the GEMÜ 1434 µPos travel sensor with mounting kit.

Required parts for direct mounting
GEMÜ 1434...010/030 (positioner) GEMÜ 1434 S01 Z... (travel sensor mounting kit) GEMÜ 1440... (air connectors) GEMÜ 1219... (connector socket)

Required parts for remote mounting
GEMÜ 1434...S01 (positioner) GEMÜ 4232 S01 Z... (travel sensor mounting kit) GEMÜ 4232 000 Z... 4001 (travel sensor) GEMÜ 1440... (air connectors) GEMÜ 1434 000 Z MP (mounting bracket) GEMÜ 1219... (connector socket)

For further positioners, accessories and other products, please see our Producct Range catalogue and Price List. Contact GEMÜ.

TÜV CERT
DIN EN ISO 9001
Zertifikat: 09 100 4136

GEMÜ ® VALVES, MEASUREMENT AND CONTROL SYSTEMS

Should there be any doubts or misunderstandings, the German version of this data sheet is the authoritative document!