

Digital electropneumatic Positioner for the integrated mounting on process control valves

8694

Basic version for Ø 70-225 mm

- Digital smart positioner
- Automatic teach function
- Contact-free position sensor
- Compact stainless steel design
- AS-Interface communication (option)
- Internal control air routing



Compact positioner for integrated mounting on pneumatically operated process valves. Remote setpoint adjustment via a 4-20 mA signal or through AS-Interface. Without intrinsic compressed air consumption during steady state.

A contact-free analog position sensor measures the position of the valve spindle.

Simple installation through automatic tune function and setting through DIP-switch:

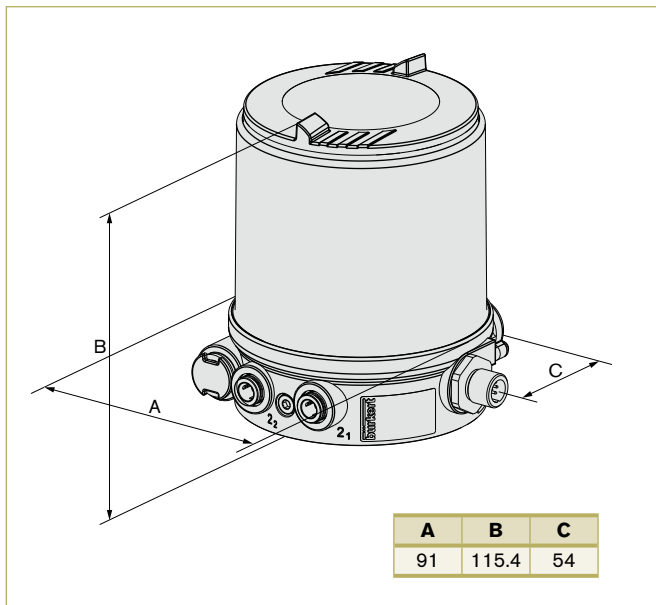
- Close tight function
- Characteristic curves selection
- Reversal of effective direction
- Switching manual /automatic operation
- Binary input

Additional parametrisation options are possible through DTM devices. A software interface can be used for, amongst others, lionization of the operation characteristics by using free programmable fixed points. The valve position indication is shown through LED components. As an option an analogue position feedback can be integrated.

Technical Data

Material	
Body	PPS, stainless steel
Cover	PC
Sealing	EPDM
Power supply	24V DC ±10%
Residual ripple	Max. 10%
Setpoint setting	4-20 mA (0-20 mA adjustable via communication interface)
Output resistance	180 Ω
Control medium	neutral gases, air DIN ISO 8573-1
Dust concentration	Class 5 (<40 µm particle size)
Particle density	Class 5 (<10 mg/m³)
Pressure condensation point	Class 3 (<-20 °C)
Oil concentration	Class 5 (<25 mg/m³)
Ambient temperature	0 °C to +60 °C
Pilot air ports	Threaded ports G 1/8" stainless steel or Push-in connectors (Ø 6 mm and 1/4" tube)
Supply pressure	Low air flow rate 0-7 bar ¹⁾ High air flow rate 3-7 bar (in preparation)
Air input filter	Exchangeable (mesh aperture ~0.1 mm)

Dimensions [mm] (see datasheet for more details)



Technical Data (cont.)

Actuator system	
Actuator series ELEMENT 23XX	Low air flow rate: Ø Actuator 70/90 mm High air flow rate: Ø Actuator 130 mm
Actuator series CLASSIC 27XX	Low air flow rate: Ø Actuator 80/100 mm High air flow rate: Ø Actuator 125/175/225 mm
Position detection module	Contact-free, wear-free
Stroke range valve spindle	3-45 mm
Installation	as required, preferably with actuator in upright position
Type of protection	IP65 and IP67 acc. to EN 60529
Protection class	3 acc. to VDE 0580
Conformity	CE acc. to EMV2004/108/EG
Options	Analogue position feedback, 4-20 mA
Communication	AS-Interface (option, in preparation)

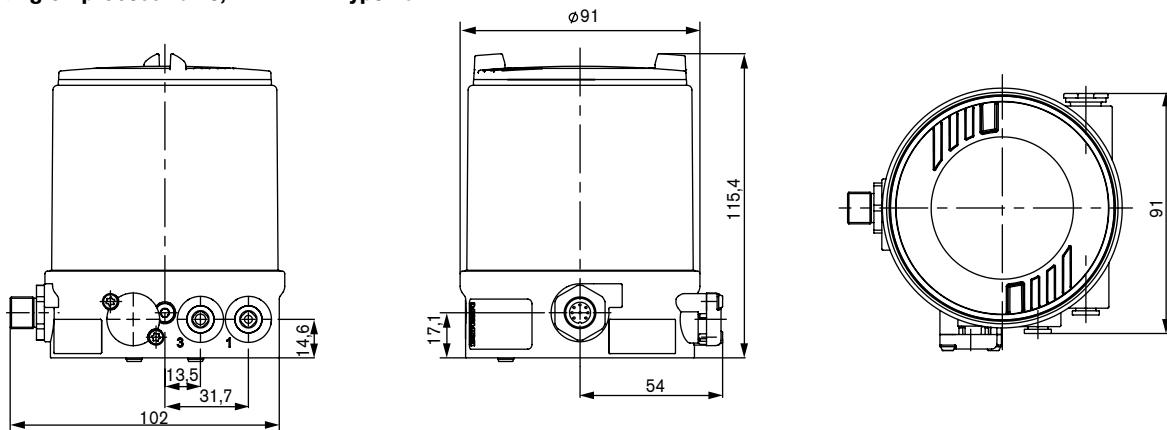
¹⁾ The supply pressure has to be 0.5-1 bar above the minimum required pilot pressure for the valve actuator.

Technical data (cont.)

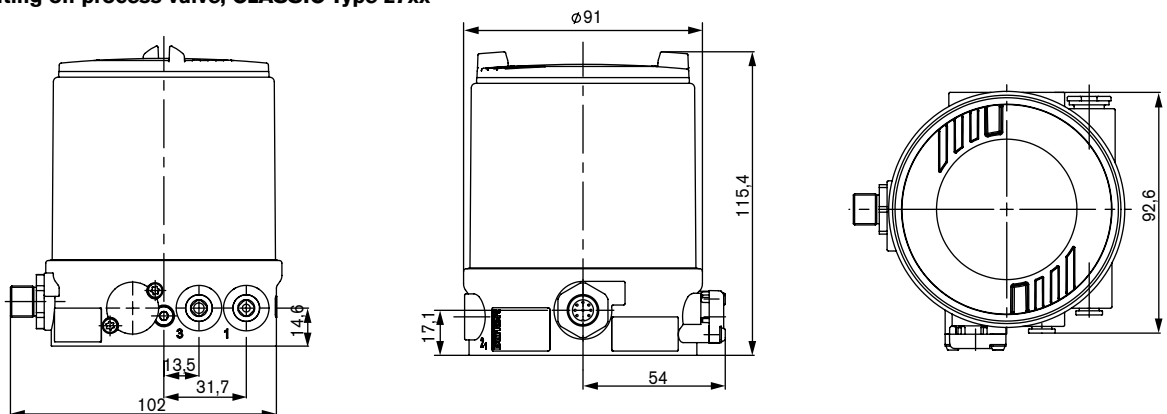
Without filed bus communication	
Power supply	24V DC +/- 10%
Risidual ripple	10%
Power consumption	< 3.5W
Electrical connection	
Multipole	M12 (8 pins), stainless steel
Cable gland	1xM16x1.5 (cable Ø5-10), terminal screws (1.5 mm ²)
Technical Data AS-interface - (Option)	
Profile	S-7.3.4 Output: 16 Bit setpoint / Certificate no. 87301 acc. to Version 3.0 -7.A S.5 Output: 16 Bit setpoint; Input: 16 Bit feedback / Certificate no. 95401 acc. to version 3.0
Programmed Information	see operating instructions
Power supply through bus line	29.5 to 31.6 VDC acc. to specification
Max. Current consumption	150 mA
Electrical connection	M12x1, 4-pin stainless steel plug assembled to 80 cm cable and flat cable clip

Dimensions [mm]

Mounting on process valve, ELEMENT Type 23xx

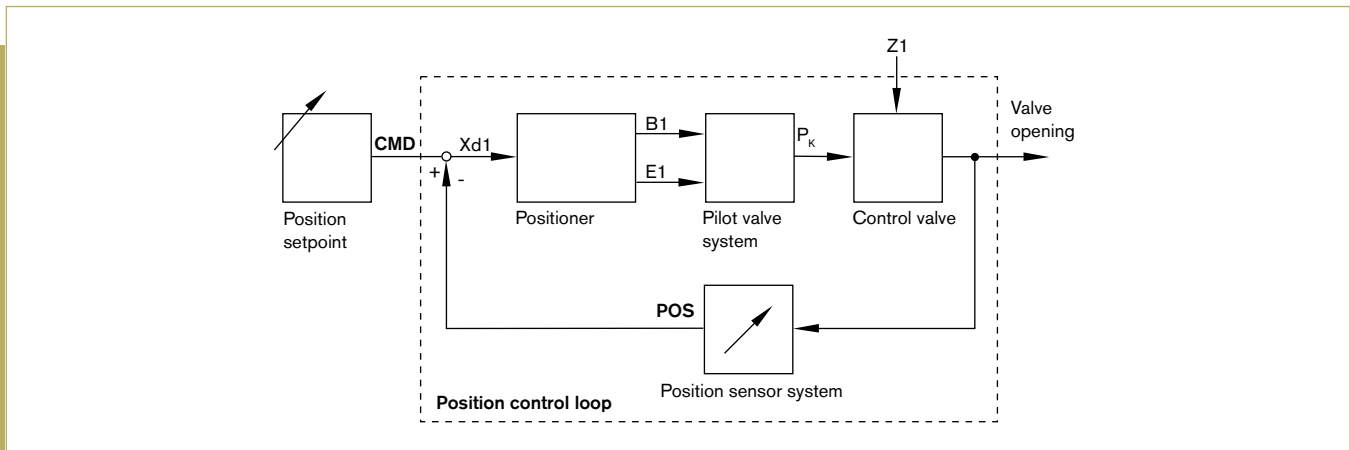


Mounting on process valve, CLASSIC Type 27xx

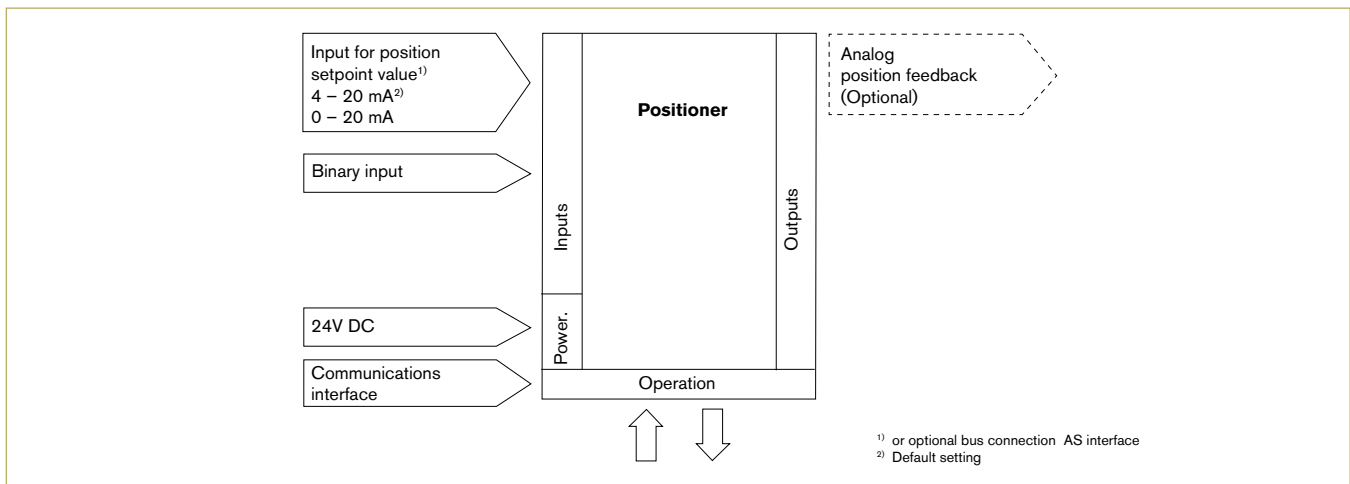


Signal flow diagram

Position control loop



Schematic diagram of the TopControl Basic



Ordering chart

Control function pilot valve system	Communication	Electrical connection	Analogue feedback	Item no.	
				Pilot air ports threaded G 1/8"	Pilot air ports Push-in (Ø 6 mm and 1/4")
Actuator series ELEMENT types 23xx actuator size Ø 70 / 90 mm					
Low air flow rate single acting	No	M12 connector	No	227 405	227 407
			Yes	227 406	227 408
	No	Cable gland	No	227 401	227 403
			Yes	227 402	227 404
	AS-Interface S-7.3.4	M12 / flat cable clip / 80 cm cable	No	227 398	227 399
	AS-Interface S-7.A.5		16 Bit via Bus	239 615	239 613
Actuator series ELEMENT types 23xx actuator size Ø 130 mm					
High air flow rate single acting	No	M12 connector	No	227 426	227 428
			Yes	227 427	227 429
	No	Cable gland	No	227 422	227 424
			Yes	227 423	227 425
	AS-Interface S-7.3.4	M12 / flat cable clip / 80 cm cable	No	227 420	227 421
	AS-Interface S-7.A.5		16 Bit via Bus	239 616	239 614
Actuator series CLASSIC types 27xx actuator size Ø 80 / 100 mm					
Low air flow rate single acting	No	M12 connector	No	227 416	227 418
			Yes	227 417	227 419
	No	Cable gland	No	227 411	227 414
			Yes	227 413	227 415
	AS-Interface S-7.3.4	M12 / flat cable clip / 80 cm cable	No	227 409	227 410
	AS-Interface S-7.A.5		16 Bit via Bus	239 611	239 609
Actuator series CLASSIC types 27xx actuator size Ø 125 / 175 / 225 mm					
High air flow rate single acting	No	M12 connector	No	227 436	227 438
			Yes	227 437	227 439
	No	Cable gland	No	227 432	227 434
			Yes	227 433	227 435
	AS-Interface S-7.3.4	M12 / flat cable clip / 80 cm cable	No	227 430	227 431
	AS-Interface S-7.A.5		16 Bit via Bus	239 612	239 610