



Digital electropneumatic Positioner for the integrated mounting on process control valves

- Digital smart positioner
- Automatic teach function
- Contact-free position sensor
- Compact stainless steel design
- Analogue feedback (option)
- Internal control air routing
- With ATEX II cat. 3G/D approval

Type 8696 can be combined with...



Type 2301

Globe control valve,
actuator ø 50 mm



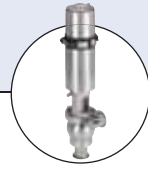
Type 2300

Angle-seat control
valve, actuator
ø 50 mm



Type 2103

Diaphragm control
valve, actuator
ø 50 mm



Hygienic process
valves

Compact positioner for integrated mounting on pneumatically operated process valves. Remote setpoint adjustment via a 4-20 mA signal. Pilot valve system without intrinsic compressed air consumption during steady state.

A contact-free continuous 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, linearisation 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	24 VDC +/- 10%
Residual ripple	max. 10%
Setpoint setting	4 - 20mA (default setting) / 0 - 20mA
Output resistance	180 Ω
Control medium	neutral gases, air DIN ISO 8573-1 Dust concentration Class 5 (<40µm particle size) Particle density Class 5 (<10mg/m ³) Pressure condensation point Class 3 (<-20°C) Oil concentration Class 5 (<25mg/m ³)
Ambient temperature	-10 to +55°C
Pilot air ports	Threaded ports G1/8 stainless steel or push-in connector (tube Ø 6mm / 1/4")
Supply pressure	0 to 7 bar ¹⁾
Actuator system	for single-acting actuators ø Actuator 50 mm
Position detection module	Contact-free, wear-free
Stroke range valve spindle	3 to 32 mm
Installation	as required, preferably with actuator in upright position
Protection class	IP65 and IP67 acc. to EN 60529
Approvals	ATEX II cat. 3G/D
Ignition protection	II 3D Ex tc IIIC T135 °C Dc II 3G Ex nA IIC T4 Gc
Power consumption	< 3.5 W
Electrical connection	Multipole connection M12 (8-pins), stainless steel
Protection class	3 according to VDE 0580
Conformity	CE acc. to EMV2004/108/EG
Options	Analogue position feedback, 4-20mA

¹⁾ The supply pressure has to be 0,5 - 1 bar above the minimum required pilot pressure for the valve actuator.

Ordering information for TopControl-Control valve systems

A complete TopControl-Control valve system consists of a TopControl Basic Type 8696 and a process valve Type 23XX or 2103 actuator size \varnothing 50 mm. The following information is necessary for the selection of a complete control valve:

- **Item no.** of the Positioner TopControl Basic **Type 8696** without process valve, see ordering chart on p. 3
- **Item no.** of the selected process valve **Type 23XX/2103 actuator size \varnothing 50 mm** (see separate datasheets, e.g. 2300, 2301, 2103)

You order two components and receive a complete assembled and certified valve.

When you click on the orange box "More info." below, you will come to our website for the resp. product where you can download the datasheet.

Example of variations of control valves

8696 Positioner TopControl Basic

Required process valve, example



More info.

2301
Globe Control Valve
Actuator
 \varnothing 50 mm



More info.

2300
Angle-Seat Control Valve
Actuator
 \varnothing 50 mm



Third party
hygienic
control
valves

**Complete control valve
with required body and
port connection**



**Valve system
Continuous ELEMENT
Type 8802-GD-N
2301 + 8696**



**Valve system
Continuous ELEMENT
Type 8802-YG-N
2300 + 8696**



**Customised attachment
to third party actuators***

*Please see datasheet 8681/ELEMENT installation kits to 3rd party process valves or contact your sales office for related drawings or individual engineering support]

More info.

Ordering chart Type 8696 (other versions on request)

Control function	Electrical connection	Analogue feedback	1 Binary input	Pilot air ports threaded ports	Item no.	
Actuator series ELEMENT Type 23xx, size Ø 50mm (internal control air routing)					Standard	ATEX II cat. 3G/D
single-acting	M12 multipole		yes	G1/8	227 448	265 082
		yes	yes	G1/8	227 449	265 083
Mounting on 3rd party actuators (external control air routing)						
single-acting	M12 multipole		yes	G1/8	223 897	265 084
		yes	yes	G1/8	223 898	265 085

i Further versions on request



Approvals
FM, cULus



Additional
push-in pilot air ports (tube Ø 6mm / 1/4")
NEMA4X

Ordering chart adapter kit (has to be ordered separately)

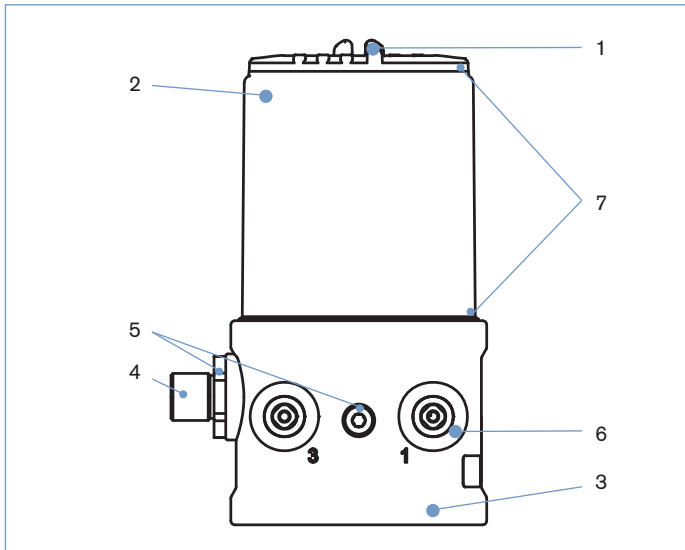
Description	Actuator size	Control function	Item no.
Adapter kit ELEMENT Types 23xx	ø 50 mm	A (NO), B (NC)	679 918

For installation kits to 3rd party process valves please see datasheet 8681/ELEMENT or contact your sales office for related drawings or individual engineering support

Ordering chart accessories

Description	Item no.
M12 socket, 8-pins, 5m assembled cable	919 267
Silencer G1/8	780 779
Silencer, push-in connector	902 662
USB interface for serial communication	227 093

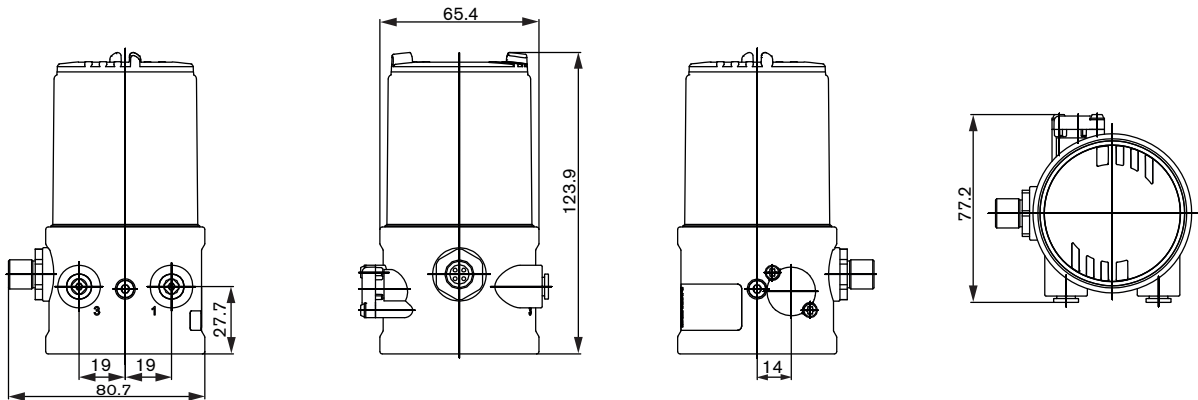
Materials



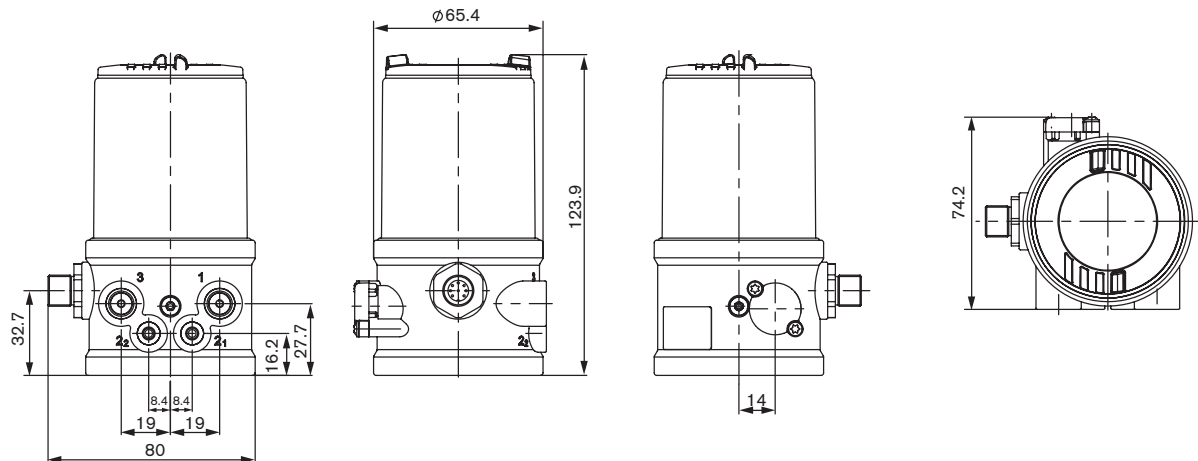
1 Cover	PC
2 Body casing	Stainless steel
3 Basic body	PPS
4 Plug M12	Stainless steel
5 Screws	Stainless steel
6 Push-in connector	POM/stainless steel
Threaded ports G1/8	Stainless steel
7 Sealing	EPDM

Dimensions [mm]

Mounting on ELEMENT process control valves, Type 23xx / 2103 (internal control air routing to actuator)

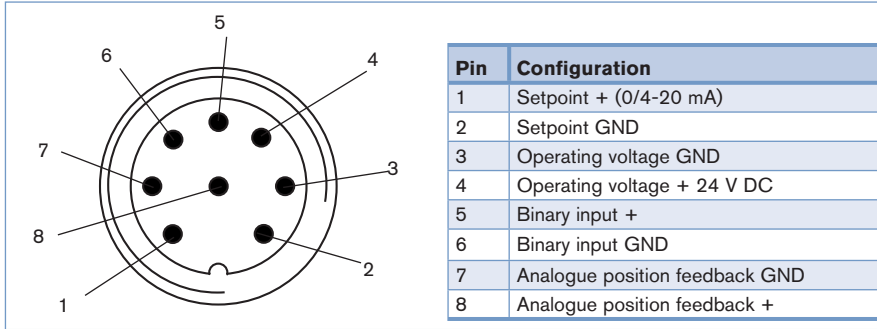


Mounting on CLASSIC process control valves, Type 27xx (external control air routing)



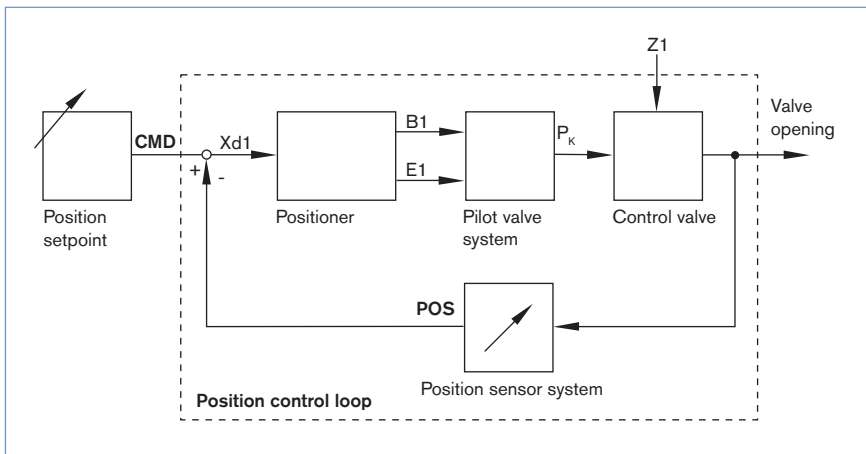
Connection Multipole

Circular connector M12 - 8-pins



Signal flow diagram

Position control loop



TopControl Basic functions

- Automatic start of the control system
- Binary input (safety position)
- Analogue position feedback (optional)

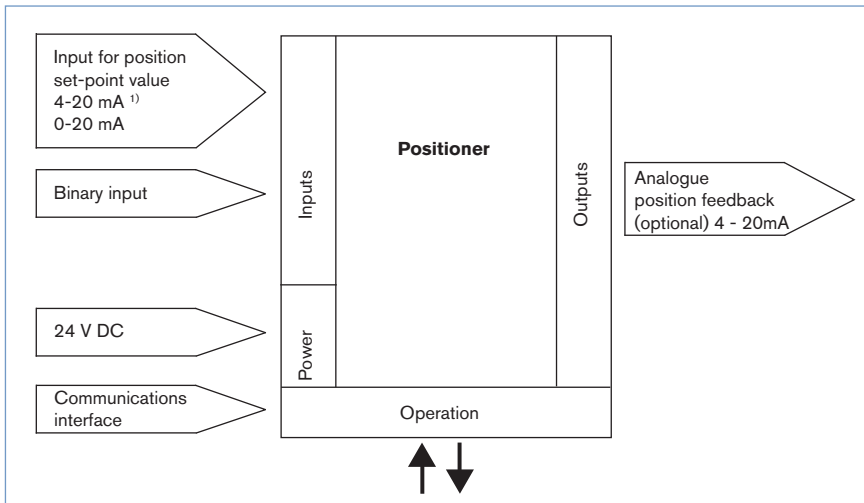
DIP-Switch activated device

- Close-tight function
- Inversion of the operating direction of the setpoint signal
- Linear characteristic curves selection or customised programming (software interface)
- Manual and automatic operation

Communications software with activatable and parameter driven functions

- Customised programming transmission characteristics
- Choices of setpoint signal
- Range splitting setpoint signal
- Limitation of the valve stroke
- Limitation of the operation speed.
- Definition of the safety position
- Signal failure detection

Schematic diagram of the TopControl Basic



¹⁾ Default setting

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