

# Digital electropneumatic Process Controller for the integrated mounting on process control valves

8693

- Compact stainless steel design
- Graphic display with backlight
- Easy start-up of process controller and positioner
- Comprehensive range of additional software functions
- Internal control air channel
- Profibus DPV1 or DeviceNet (option)



The compact Process Controller, Type 8693, is optimised for integrated mounting on the pneumatic actuators in the process valve series, Type 23XX/2103 and is specially designed for the requirements of a hygienic process environment.

The actual value of the process factor is directly supplied to the device as 4-20 mA, PT100 or a frequency signal. The process controller calculates the setpoint for the subordinated positioner through the variance comparison. Due to the analogue feedback all analogue values on the controlling level can be transferred.

The parameterization of process controller and positioner can be carried out automatically.

The easy handling and the selection of additional software functions are done either on a big graphic display with backlight and keypad or over a PC interface.

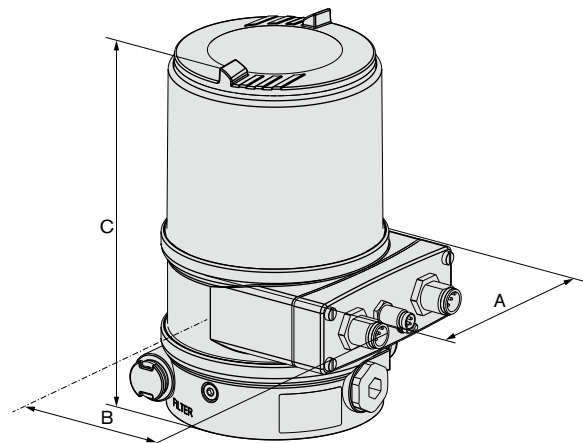
The Positioner registers the valve position without deterioration through a contact-free, analog position sensor. The control of single- or double-acting actuators is done without internal air consumption. Communication interfaces such as Profibus DPV1 or DeviceNet and analogue as well as binary feedback can also be chosen.

## Technical data

<b>Material</b>	
Body	PPS, stainless steel
Cover	PC
Sealing	EPDM
<b>Power supply</b>	24V DC +/-10%
<b>Residual ripple</b>	10%, no technical direct current!
<b>Setpoint setting</b>	0/4 to 20 mA and 0 to 5/10 V
<b>Input resistance</b>	0/4 to 20 mA: 180 Ω 0 to 5/10 V: 19 k Ω
<b>Sensor input</b>	4-20 mA (180 Ω input resistance) frequency 0-1000 Hz (17 kΩ input resistance) PT100 -20 to +220 °C (resolution < 0.1 °C)
<b>Control medium</b>	
Dust concentration	neutral gases, air DIN ISO 8573-1 Class 5 (< 40 µm particle size)
Particle density	Class 5 (< 10 mg/m <sup>3</sup> )
Pressure condensation point	Class 3 (< -20 °C)
Oil concentration	Class 5 (< 25 mg/m <sup>3</sup> )
<b>Ambient temperature</b>	0 °C to +55 °C
<b>Control air ports</b>	Push-in connector (external Ø 6 mm or 1/4") or threaded ports G 1/8"

Dimensions [mm] (see datasheet for more details)

### Ausführung Anschluss Multipol



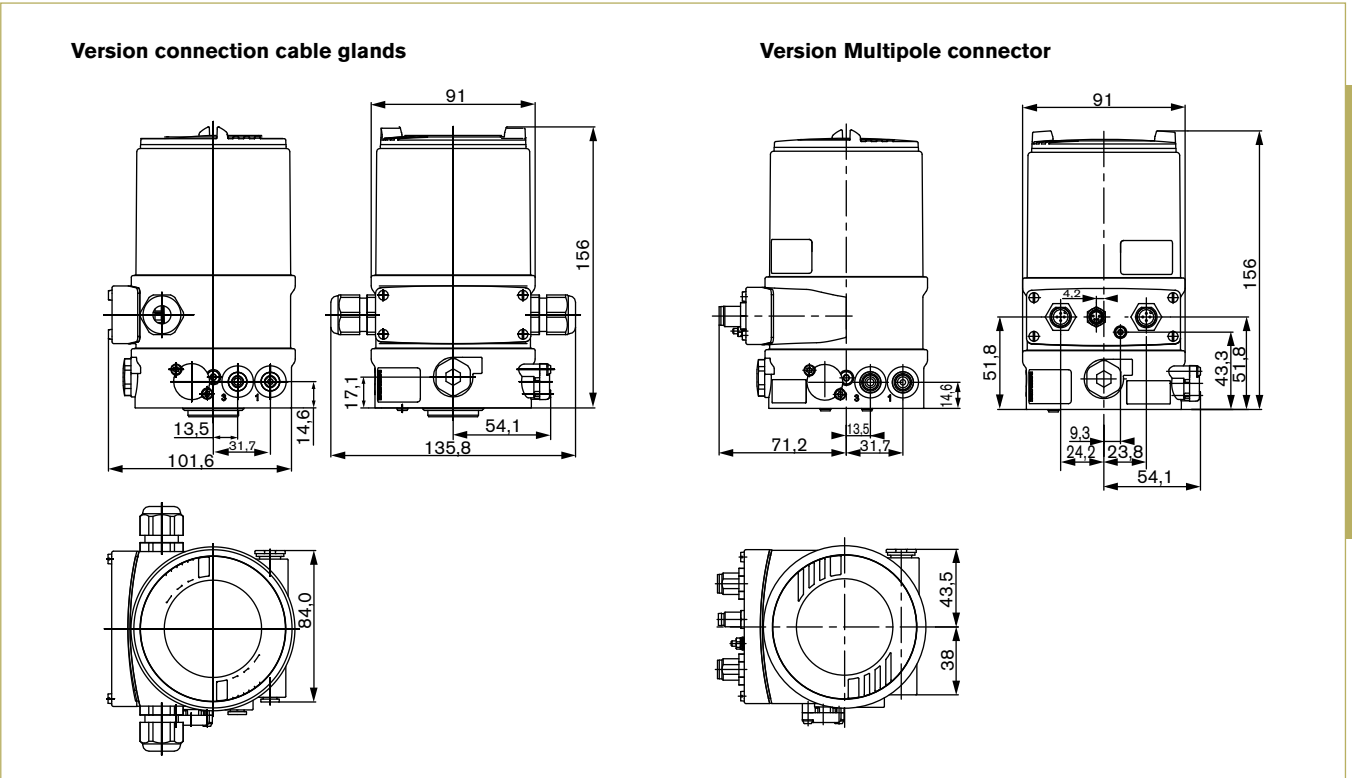
A	B	C
91	71.2	156

## Technical data (cont.)

<b>Supply pressure</b>	Low air flow rate 0-7 bar <sup>1)</sup> High air flow rate 3-7 bar
<b>Air input filter</b>	Exchangeable (mesh aperture ~0.1 mm)
<b>Actuator system</b>	Low air flow rate: Ø Actuator 70/90 mm High air flow rate: Ø Actuator 130 mm
<b>Position detection module</b>	Contact-free, wear-free
<b>Stroke range valve spindle</b>	3-28 mm (3-45 mm on request)
<b>Installation</b>	as required, preferably with actuator in upright position
<b>Type of protection</b>	IP65/67 acc. to EN 60529 (NEMA 4x in preparation)
<b>Power consumption</b>	< 5 W
<b>Electrical connection</b>	
Multipole connection	M12, 8-pin or 4-pin
Cable gland	2xM16x1.5 (Cable Ø10 mm) on terminal screws (1.5 mm <sup>2</sup> )
<b>Bus communication</b>	Profibus DPV1, DeviceNet
<b>Protection class</b>	3 acc. to VDE 0580
<b>Conformity</b>	CE acc. to EMV2004/108/EG

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

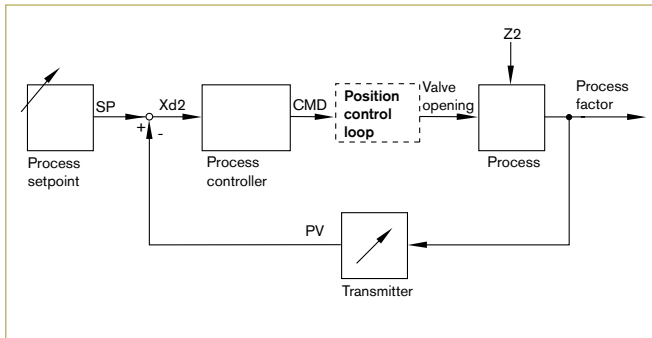
Dimensions [mm] (see datasheet for more details)



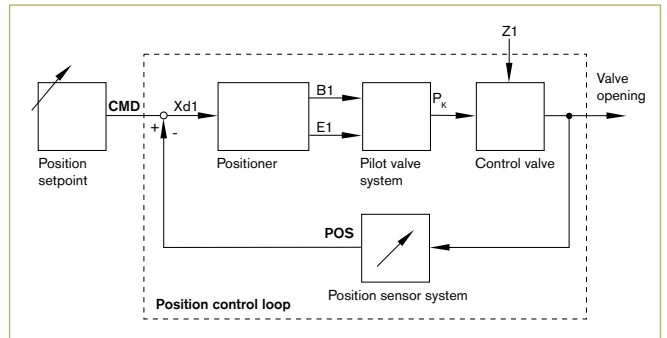
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Signal flow diagram

**Process control loop**

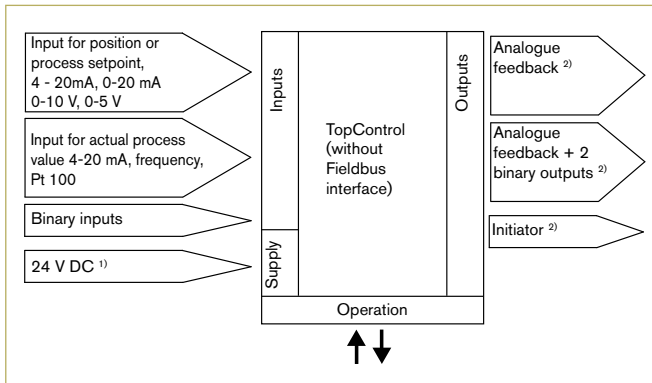


**Position control loop**

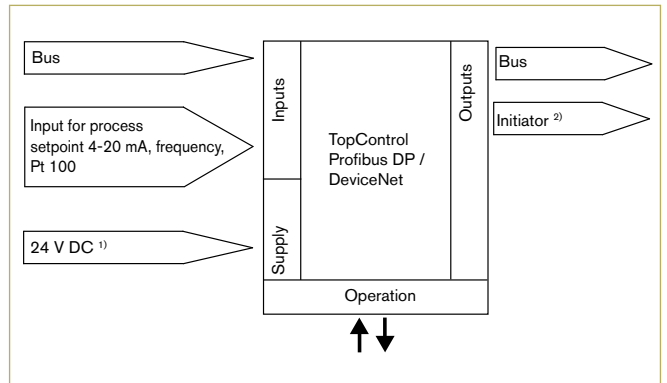


Schematic diagram Type 8693

**Without Fieldbus interface**



**With Profibus DP / DeviceNet**



<sup>1)</sup> The operating voltage is supplied with a 3-wire unit independent from the setpoint signal.  
<sup>2)</sup> Alternative options

## Ordering chart

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Valve function	Communication	Electrical connection	Analogue feedback	Analogue feedback + 2 binary outputs	Initiator	Binary input	Pilot air ports	Item no.	
<b>Actuator size Ø 70 / 90 mm</b>									
Single-acting	No	Cable gland	No	No	No	Yes	Push-in connector external Ø 6 mm or G 1/4"	227 353	
			4 - 20 mA	No	No	Yes	Push-in connector external Ø 6 mm or G 1/4"	227 354	
			No	No	No	Yes	Threaded ports G 1/8"	227 352	
		Mutipole	No	No	No	Yes	Push-in connector external Ø 6 mm or G 1/4"	227 355	
			4 - 20 mA	No	No	Yes	Push-in connector external Ø 6 mm or G 1/4"	227 356	
			No	Yes	No	Yes	Push-in connector external Ø 6 mm or G 1/4"	227 357	
	Profibus	Mutipole	No	No	No	No	Push-in connector external Ø 6 mm or G 1/4"	227 359	
			DeviceNet	Mutipole	No	No	No	Push-in connector external Ø 6 mm or G 1/4"	227 358
	<b>Actuator size Ø 130 mm</b>								
	Single-acting	No	Cable gland	No	No	No	Yes	Push-in connector external Ø 6 mm or G 1/4"	227 376
4 - 20 mA				No	No	Yes	Push-in connector external Ø 6 mm or G 1/4"	227 377	
No				No	No	Yes	Threaded ports G 1/8"	227 375	
Mutipole			No	No	No	Yes	Push-in connector external Ø 6 mm or G 1/4"	227 378	
			4 - 20 mA	No	No	Yes	Push-in connector external Ø 6 mm or G 1/4"	227 379	
			No	Yes	No	Yes	Push-in connector external Ø 6 mm or G 1/4"	227 390	
Profibus		Mutipole	No	No	No	No	Push-in connector external Ø 6 mm or G 1/4"	227 382	
			DeviceNet	Mutipole	No	No	No	Push-in connector external Ø 6 mm or G 1/4"	227 381
<b>Actuator size Ø 70 / 90 mm</b>									
Double-acting		No	Cable gland	No	No	No	Yes	Push-in connector external Ø 6 mm or G 1/4"	227 340
	4 - 20 mA			No	No	Yes	Push-in connector external Ø 6 mm or G 1/4"	227 341	
	No			No	No	Yes	Threaded ports G 1/8"	227 339	
	Mutipole		No	No	No	Yes	Push-in connector external Ø 6 mm or G 1/4"	227 342	
			4 - 20 mA	No	No	Yes	Push-in connector external Ø 6 mm or G 1/4"	227 343	
			No	No	Yes	Yes	Push-in connector external Ø 6 mm or G 1/4"	227 350	
	Profibus	Mutipole	No	No	No	No	Push-in connector external Ø 6 mm or G 1/4"	227 345	
	DeviceNet	Mutipole	No	No	No	No	Push-in connector external Ø 6 mm or G 1/4"	227 344	

## Accessories

Specifications	Actuator size	For control function	Item no.
Adapter kit for Type 23xx / 2103	Ø 70 / 90 mm	spring-closed (A) spring-open t (B) and double-acting (I)	679 917

Specifications	Item no.
M12 socket, 8-pin, 2 m assembled cable	919 061
M12 socket, 4-pin, 5 m assembled cable	918 038
M8 socket, 4-pin, 2 m cable, actual process value	918 718
Silencer with G1/8"	780 779
Silencer with push-in connector	902 662
M8 plug, 4-pin, initiator	917 131