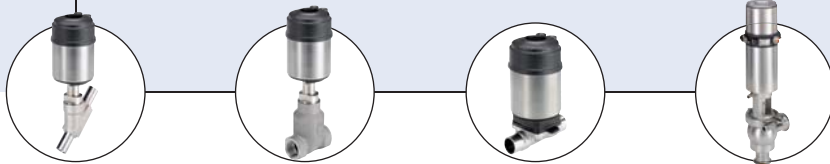




## Control head for decentralized automation of ELEMENT process valves

- Contact-free inductive valve position registration (Teach function)
- Coloured illuminated status display
- Integrated control air routing
- Fieldbus AS-Interface or DeviceNet (option)
- With ATEX II cat. 3G/D approval

Type 8691 can be combined with...



**Type 2100**

Angle seat valve

**Type 2101**

Globe valve

**Type 2103**

Diaphragm valve

Hygienic process valves

The control head Type 8691 is designed for decentralized automation of ELEMENT Type 21xx pneumatic process valves. The registration of the valve end position is done through a contact-free analog position sensor, which automatically recognises and saves the valve end position through the Teach function when starting up. The integrated pilot valve controls single or double-acting actuators. As an option a fieldbus interface, AS-Interface or DeviceNet, can be chosen.

The design of the control unit and the actuator enables an internal control air channel without external tubings. Besides the electrical position feedback signal the status of the device is shown directly on the control head itself through coloured powerful LEDs showing a clear visible valve position status, even under dirty or dark environments.

The housing is easy to clean and features proven IP protection and chemically resistant materials for use in hygienic processing in food, beverage and pharmaceutical industries. Focused on wash down applications the IP rating is supported by a positive pressure inside the control head. Combined with Bürkert ELEMENT actuators the unique pilot valve system enables a compressed air recycling that avoids actuator chambers contamination from the environment.

Technical data	
<b>Material</b>	Body Cover Sealing
	PPS, stainless steel PC EPDM
<b>Control medium</b>	neutral gases, air, quality classes acc. to ISO 8573-1 Dust concentration Class 7 (< 40 µm particle size) Particle density Class 5 (< 10 mg/m <sup>3</sup> ) Pressure condensation point Class 3 (< -20 °C) Oil concentration Class X (< 25 mg/m <sup>3</sup> )
<b>Supply pressure</b>	3 to 7 bar <sup>1)</sup>
<b>Air input filter</b>	exchangeable Mesh aperture ~0.1 mm
<b>Pilot air ports</b>	Threaded ports G 1/8, stainless steel or push-in connector (tube Ø 6 mm or 1/4" )
<b>Position feedback</b>	Analogue position sensor (contact-free) with teach function; switchpoint (PNP) (NPN on request)
<b>Stroke range valve spindle</b>	2,5 to 45 mm
<b>Ambient temperature</b>	with pilot valve without pilot valve
	-10 to +55 °C -20 to +60 °C
<b>Installation</b>	As required, preferably with actuator upright
<b>Protection type</b>	IP65/IP67 acc. to EN 60529, Type 4X acc. to NEMA 250 standard
<b>Protection class</b>	3 acc. to DIN EN 61140
<b>Fieldbus communication</b>	AS-Interface, DeviceNet
<b>Conformity</b>	EMC directive 2014/30/EU
<b>Approvals</b>	ATEX II cat. 3G/D cULus Cert. No. 238179
<b>Ignition protection</b>	II 3D Ex tc IIC T135 °C Dc II 3G Ex nA IIC T4 Gc
<b>Electrical connection</b>	
Multipole	M12, 8-pins, M12 4-pins (AS-Interface), M12 5-pins (DeviceNet)
Cable gland	M16x1,5

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

## Technical data, continued

### Without fieldbus communication

Technical data	
<b>Power supply</b>	24 V DC $\pm 10\%$ UL: NEC Class 2
<b>Residual ripple with DC</b>	10%
<b>Power consumption</b>	< 2 W
<b>Electrical connection</b>	Multipole Cable gland
	M12, 8-pole M16x1.5 (cable- $\varnothing$ 10 mm), terminal screws (1.5 mm <sup>2</sup> )

### With fieldbus communication; AS-Interface

Technical data	
<b>Profile</b>	S-B.A.E. (A/B slave, max. 62 slaves/master) Certificate No. 77601 acc. to version 3.0
<b>Power supply</b> through bus line separated from bus signal	29.5 to 31.6 V DC, UL: NEC Class 2 according to specification on request
<b>Power consumption</b> <b>Units without external power supply</b> Max. power consumption Power consumption in normal operation (after current reduction; Valve + 1 end position achieved)	120 mA 90 mA
<b>Units with external power supply</b> External power supply The power supply unit must contain one secured disconnection acc. to IEC 364-4-41 (PELV or SELV) Max. power consumption Max. power consumption from ASI	24 V $\pm 10\%$ 55 mA (after power reduction $\leq 30$ mA) 55 mA
<b>Output</b> Contact rating Watch-dog function	$\leq 1$ W over AS-Interface integrated
<b>Input</b> Sensor operating voltage Ampacity Switching level high Input current high Input current low	24 V $\pm 10\%$ (over AS-Interface) $\leq 50$ mA short-circuit-proof $\geq 10$ V limited to 6,5 mA $\leq 1.5$ mA
<b>Electrical connection</b>	M12 4-pins
<b>Programming data</b>	see operating instructions

### With fieldbus communication; DeviceNet

Technical data	
<b>Profile</b>	Group 2 Only Slave Device; MAC-ID and transfer rate adjustable through DIP-switch
<b>Power supply</b>	11 to 25 V DC UL: NEC Class 2
<b>Power consumption</b>	$\leq 80$ mA
<b>Output</b> Inrush current Hold current	$\leq 50$ mA $\leq 30$ mA
<b>Input</b> "0" "1"	0 to 1.5 V $\geq 8$ V
<b>Electrical connection</b>	M12-Micro Style - flange connector 5-pins (configuration according DeviceNet-specification)

## Ordering information for decentralized automation of On/Off ELEMENT valve systems

A decentralized, automated valve system consists of **control head Type 8691** and a **process valve ELEMENT Type 21xx**.

The following information is necessary for the selection of a complete system:

- **Item no.** of the desired control head **Type 8691** (see ordering chart on p. 4)
- **Item no.** of the selected process valve **Type 21xx** (see separate datasheets, Type 2100, 2101, 2103)

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

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 for decentralized automation of On/Off ELEMENT valve systems

#### Control head Type 8691

#### Pneumatic process valves



More info.

**Angle seat valve**  
Type 2100



More info.

**Globe valve**  
Type 2101



More info.

**Diaphragm valve**  
Type 2103



More info.

**Third party hygienic process valve actuators**

#### Valve system On/Off ELEMENT



**Valve system**  
**Type 8801-YE-H**  
2100 + 8691



**Valve system**  
**Type 8801-GC-H**  
2101+8691



**Valve system**  
**Type 8801-DF-H**  
2103+8691



**Customised attachment to third party actuators\***

\*please see datasheet 8681/ELEMENT installation kits to third party process valves or contact your sales office for related drawings or individual engineering support

## Ordering chart for control head Type 8691 (other versions on request)

### Control head for decentralized automation of ELEMENT On/Off process valves Type 21xx

Communication	Electrical connection	Control function	Pilot air ports threaded ports	Item no.	
				Standard	ATEX II cat. 3G/D
AS-Interface S-B.A.E	M12 multipole	single-acting	G 1/8	227 254	264 988
		double-acting	G 1/8	227 240	264 975
	M12 connector / flat cable clip / 80 cm cable	single-acting	G 1/8	227 258	264 990
		double-acting	G 1/8	227 244	264 977
DeviceNet	M12 multipole	single-acting	G 1/8	227 255	264 989
		double-acting	G 1/8	227 241	264 976
	M12 multipole	single-acting	G 1/8	227 262	264 992
		double-acting	G 1/8	227 248	264 979
			G 1/8	246 211	264 972
	Cable gland	single-acting	G 1/8	227 260	264 991
		double-acting	G 1/8	227 246	264 978
			G 1/8	264 943	264 971

**Note:** All non-ATEX versions are UL approved.

#### **i** Further versions on request

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

## Ordering chart adapter kit (has to be ordered separately)

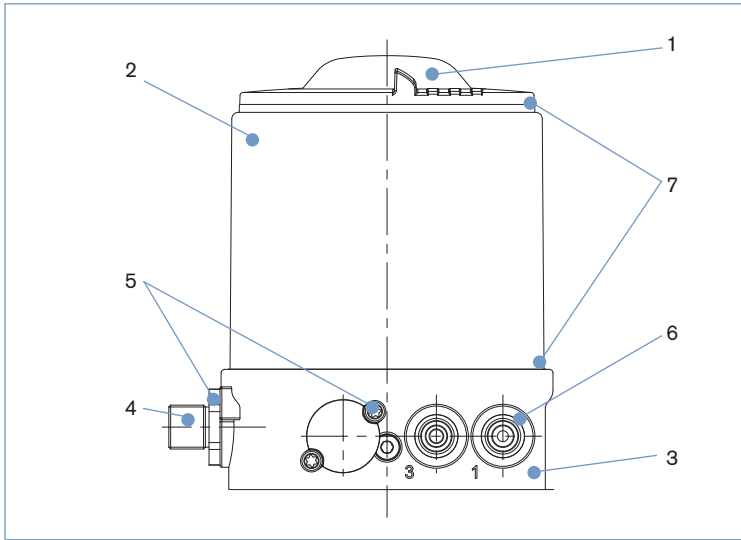
Description	Actuator size	Control function	Item no.
Adapter kit ELEMENT Type 21xx	Ø 70 / 90 / 130 mm	universal	679 917

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

## Ordering chart accessories

Description	Item no.
M12 socket 8-pin with 5 m cable for power supply and input/output signals	919 267
ASI flat cable clip with stainless steel socket M12 (spare part)	799 646
Silencer G 1/8	780 779
Silencer, push-in connector	902 662
Sensor puck (spare part)	682 240

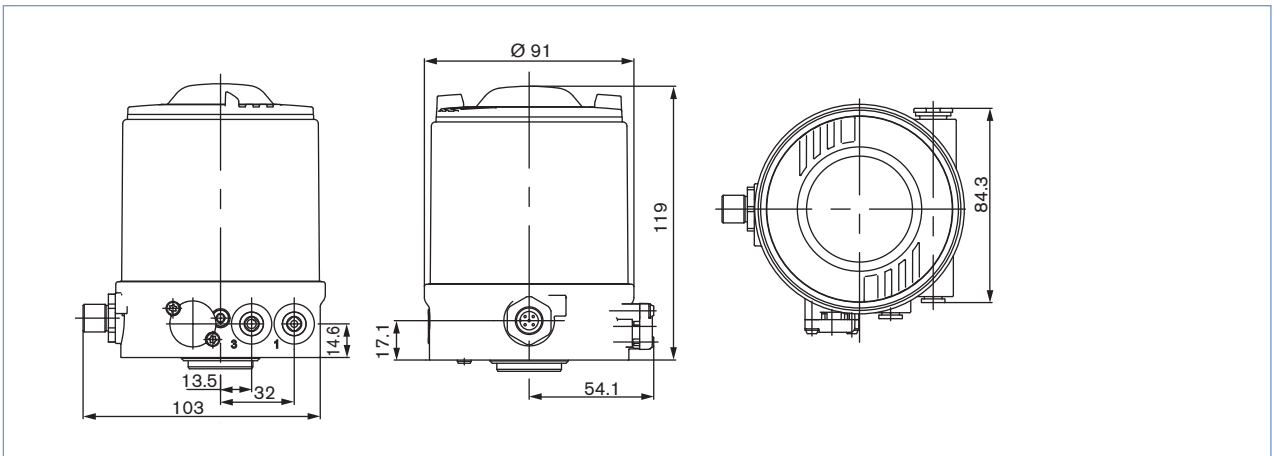
## Materials



<b>1 Cover</b>	PC
<b>2 Housing</b>	Stainless steel
<b>3 BASIC body</b>	PPS
<b>4 Plug M12</b>	Stainless steel
<b>5 Screws</b>	Stainless steel
<b>6 Push-in connector</b>	POM/Stainless steel
<b>Threaded ports G 1/8</b>	Stainless steel
<b>7 Sealing</b>	EPDM

## Dimensions [mm]

## Mounting on process valve ELEMENT Type 21xx



Mounting on 3rd party hygienic process valves



More info.

Type 8681

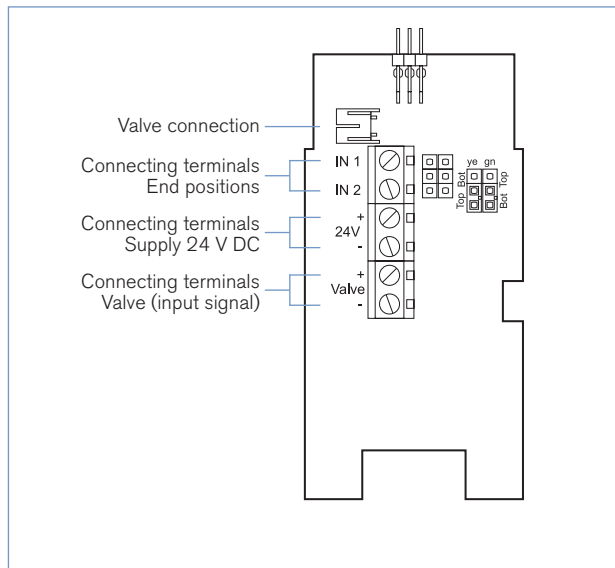
\*please see datasheet 8681/ELEMENT installation kits to third party process valves or contact your sales office for related drawings or individual engineering support

DTS 1000110599 EN Version: P Status: RL (released | freigegeben | validé) printed: 01.09.2017

Connection options

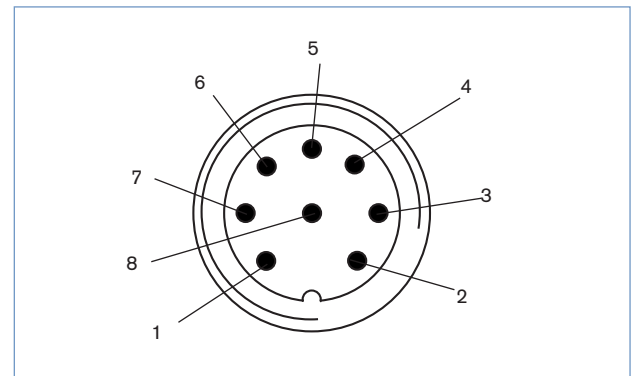
Without fieldbus communication

Cable gland



24 V DC

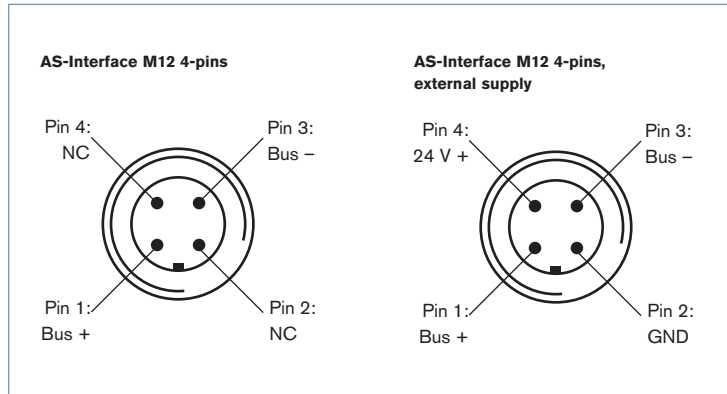
Multipole connection M12, 8-pins



Pin	Description	Configuration
1	Limit switch 1	IN 1 / TOP
2	Limit switch 2	IN 2 / BOTTOM
3	Power supply	GND
4	Operating voltage +	24 V DC
5	Valve control +	Valve +
6	Valve control -	Valve -
7	n.a.	not assigned
8	n.a.	not assigned

**Connection options, continued**

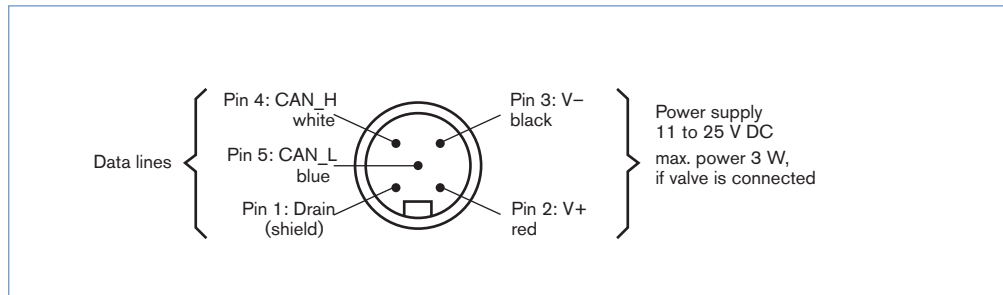
**With fieldbus communication AS-Interface**  
**Version with Multipole fitting connector**



**Version with flat cable clip**



**With fieldbus communication DeviceNet**



DTS 1000110599 EN Version: P Status: RL (released | freigegeben | validé) printed: 01.09.2017

To find your nearest Bürkert facility, click on the orange box → [www.burkert.com](http://www.burkert.com)