



## Control Head for the integrated mounting on process valves

- Compact stainless steel design
- Integrated analogue valve position registration (Teach function)
- Coloured illuminated status display
- Internal control air channel
- Fieldbus interface AS-Interface/DeviceNet (option)

Type 8691 can be combined with...



**Type 2100**

Angle-seat valve



**Type 2101**

Globe valve



**Type 2103**

Diaphragm valve



**Type 2000**

Angle-seat valve

The 8691 control head is optimised for integrated mounting on the 21XX process valve series. 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.

### Technical data

<b>Material</b>	
Body	PPS, stainless steel
Cover	PC
Sealing	EPDM
<b>Control medium</b>	neutral gases, air DIN ISO 8573-1
Dust concentration	Class 5 (<40µm particle size)
Particle density	Class 5 (<10mg/m <sup>3</sup> )
Pressure condensation point	Class 3 (<-20°C)
Oil concentration	Class 5 (<25mg/m <sup>3</sup> )
<b>Supply pressure</b>	3 to 7 bar <sup>1)</sup>
<b>Air input filter</b>	exchangeable
Mesh aperture	~0.1mm
<b>Pilot air ports</b>	Push-in connector (external Ø 6 mm or 1/4") or threaded ports G1/8
<b>Position feedback</b>	Analogue position sensor (contact-free) with autotune switchpoint (PNP) (NPN on request)
<b>Stroke range valve spindle</b>	2 to 28 mm
<b>Ambient temperature</b>	0 to +55 °C
<b>Installation</b>	As required, preferably with actuator upright
<b>Protection type</b>	IP 65/67 according to EN 60529 (NEMA4x in preparation)
<b>Protection class</b>	3 according to VDE 0580
<b>Fieldbus communication</b>	AS-Interface, DeviceNet
<b>Conformity</b>	according to CE in compliance with EMV2004/108/EG
<b>Type of ignition protection</b>	II 3 G nA II B T4 II 3 D tD A22 T135°
<b>Electrical connection</b>	
Multipole	M12, 8-pins, M12 4-pins (AS-Interface), M12 5-pins (DeviceNet)
Cable gland	M16x1,5 (cable-Ø10mm), terminal screws (1.5mm <sup>2</sup> )
<b>Approval</b>	CSA (in preparation)

<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 VDC
<b>Residual ripple with DC</b>	10% no technical direct current!
<b>Voltage tolerance</b>	±10%
<b>Power consumption</b>	< 2 W
<b>Electrical connection</b>	Multipole Cable gland
	M12, 8-pole M16x1.5 (cable-Ø10mm), terminal screws (1.5mm <sup>2</sup> )

### With fieldbus communication; AS-Interface

Technical data	
<b>Profile</b>	S-B.A.E. (A/B slave, max. 62 slaves/master)
<b>Power supply</b> through bus line separated from bus signal	29.5 to 31.6 VDC 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 ±10% 55 mA (after current reduction ≤ 30 mA) 55 mA
<b>Output</b> Contact rating Watch-dog function	≤ 1W over AS-Interface integrated
<b>Input</b> Sensor operating voltage Ampacity Switching level High Input current High Input current Low	24 V ±10% (over AS-Interface) ≤ 50 mA short-circuit-proof ≥ 10 V limited to 6,5 mA ≤ 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 VDC
<b>Power consumption</b>	≤ 80 mA
<b>Output</b> Inrush current Hold current	≤ 50 mA ≤ 30 mA
<b>Input</b> "0" "1"	0 to 1.5 V ≥ 8 V
<b>Electrical connection</b>	M12-Micro Style - flange connector 5-pins (configuration according DeviceNet-specification)

## Ordering information for process valve system with integrated control head

A complete process valve system consists of a Control Head Type 8691 and a process valve Type 21xx or 20xx.

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 desired process valve **Type 21xx or Type 20xx**

(see separate datasheet for e.g. Types 2100, 2101, 2103 and 2000, 2012, 2031)

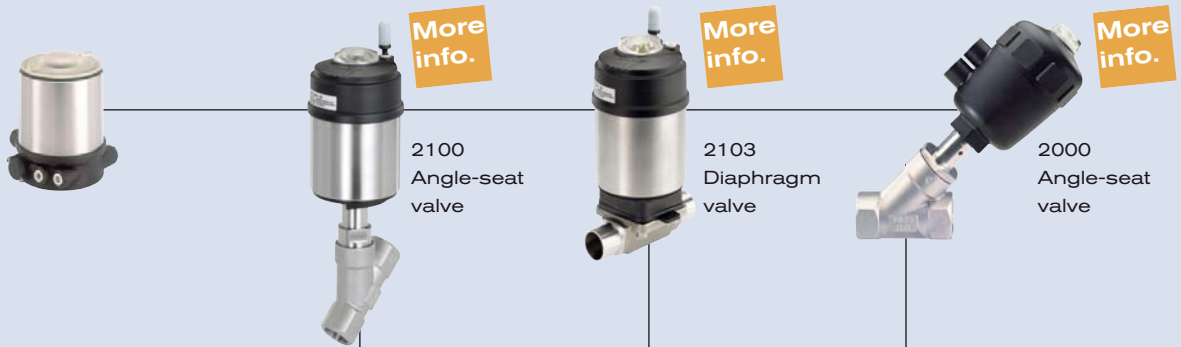
You order two components and receive a complete assembled and certified valve.

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 process valve systems

#### Control Head Type 8691

#### Desired process valve, example



#### Complete process valve system



**Process valve system  
On/Off ELEMENT  
Type 8801-YE-H  
2100+8691**



**Process valve system  
On/Off ELEMENT  
Type 8801-DF-H  
2103+8691**



**Process valve system  
On/Off Classic  
Type 8801-YA-H  
2000+8691**

## Ordering chart Control Head Type 8691 (other versions on request)

Communi- cation	Electrical connection	Valve function	Position feedback	Pilot air ports	Item no.	Item no. for usage with 20xx actuator
AS-Inter- face A/B	Multipole M12	Single-acting DN3,0	2 switching points	Push-in connector external ø 6 mm or 1/4"	179 024	209 722
		Double-acting DN3,0	2 switching points	Push-in connector external ø 6 mm or 1/4"	177 493	–
		Single-acting DN3,0	2 switching points	Threaded ports G1/8	185 189	186 217
		Double-acting DN3,0	2 switching points	Threaded ports G1/8	185 190	186 216
	Flat cable clip, 1 m cable	Single-acting DN3,0	2 switching points	Push-in connector external ø 6 mm or 1/4"	201 717	213 042
		Double-acting DN3,0	2 switching points	Push-in connector external ø 6 mm or 1/4"	201 718	–
		Single-acting DN3,0	2 switching points	Threaded ports G1/8	201 719	–
		Double-acting DN3,0	2 switching points	Threaded ports G1/8	201 720	–
DeviceNet	Multipole M12	Single-acting DN3,0	2 switching points	Push-in connector external ø 6 mm or 1/4"	185 191	205 488
		Double-acting DN3,0	2 switching points	Push-in connector external ø 6 mm or 1/4"	185 192	–
		Single-acting DN3,0	2 switching points	Threaded ports G1/8	185 193	205 489
		Double-acting DN3,0	2 switching points	Threaded ports G1/8	185 194	212 266
Without	Multipole M12	Single-acting DN3,0	2 switching points	Push-in connector external ø 6 mm or 1/4"	176 620	205 484
		Double-acting DN3,0	2 switching points	Push-in connector external ø 6 mm or 1/4"	185 186	–
		Single-acting DN3,0	2 switching points	Threaded ports G1/8	185 187	205 485
		Double-acting DN3,0	2 switching points	Threaded ports G1/8	185 188	–
	Cable gland	Single-acting DN3,0	2 switching points	Push-in connector external ø 6 mm or 1/4"	176 619	205 486
		Double-acting DN3,0	2 switching points	Push-in connector external ø 6 mm or 1/4"	185 183	212 339
		Single-acting DN3,0	2 switching points	Threaded ports G1/8	185 184	205 487
		Double-acting DN3,0	2 switching points	Threaded ports G1/8	185 185	213 608

 Further versions on request

**Approvals**  
CSA

**Additional**  
Switchpoint NPN-coded

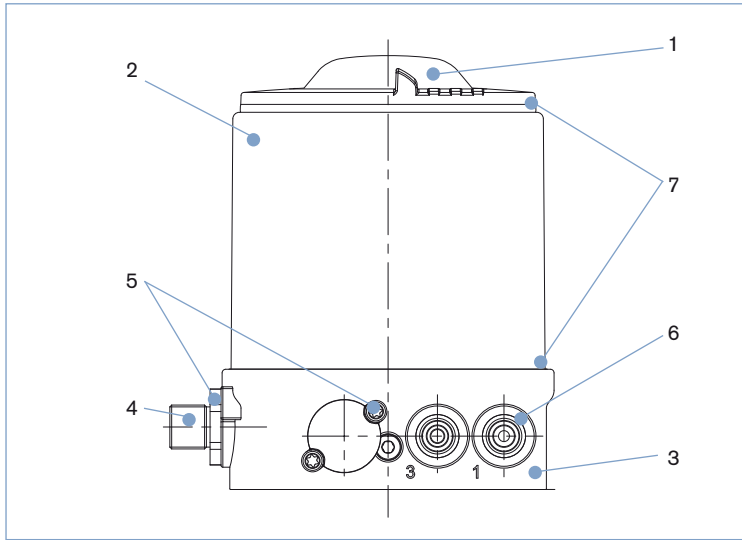
## Ordering chart adapter kit (has to be ordered separately)

Descrip- tion	Actuator size	Control function	Item no.
Adapter set for Type 21xx	Ø 70 / 90 mm	Universal	665 721
Adapter set for Type 20xx	Ø 50 mm Type 2000, 2012	Universal	674 521
	Ø 50 mm Type 2030, 2031	Universal	679 018
	Ø 63 mm	Universal	674 522
	Ø 80 mm	Universal	674 523
	Ø 100 mm	Universal	674 524
	Ø 125 mm	Universal	674 525
	Ø 175/225 mm	Universal	678 047

## Ordering chart accessories

Descrip- tion	Item no.
M12 socket, 8-pins, 2 m assembled cable	919 061
M12 socket, 4-pins, 5 m assembled cable	918 038
M12 socket, 5-pins, 2 m assembled cable	438 680
ASI flat cable clip with stainless steel socket M12	799 646
Silencer G1/8	780 779
Silencer, push-in connector	902 662

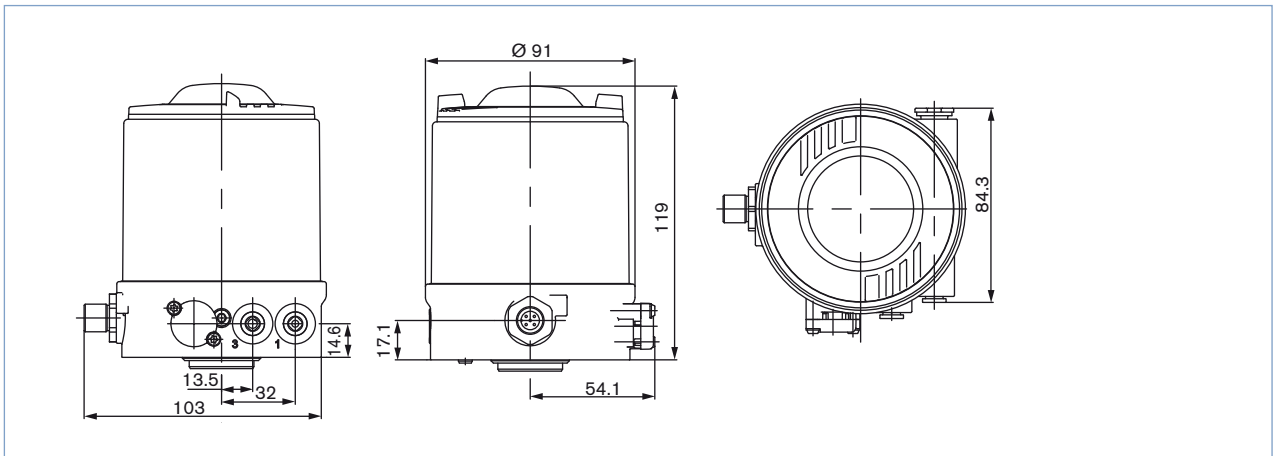
Materials



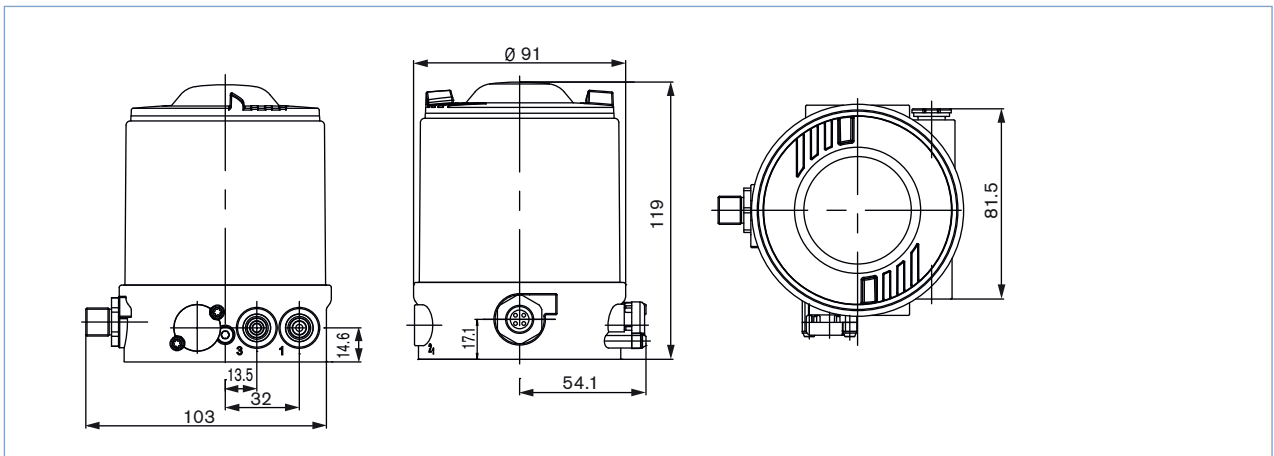
- |   |                     |             |
|---|---------------------|-------------|
| 1 | Cover               | PC          |
| 2 | Housing             | St. st.     |
| 3 | Basic body          | PPS         |
| 4 | Plug M12            | St. st.     |
| 5 | Screws              | St. st.     |
| 6 | Push-in connector   | POM/St. st. |
|   | Threaded ports G1/8 | St. st.     |
| 7 | Sealing             | EPDM        |

Dimensions [mm]

Mounting on process valve Type 21xx



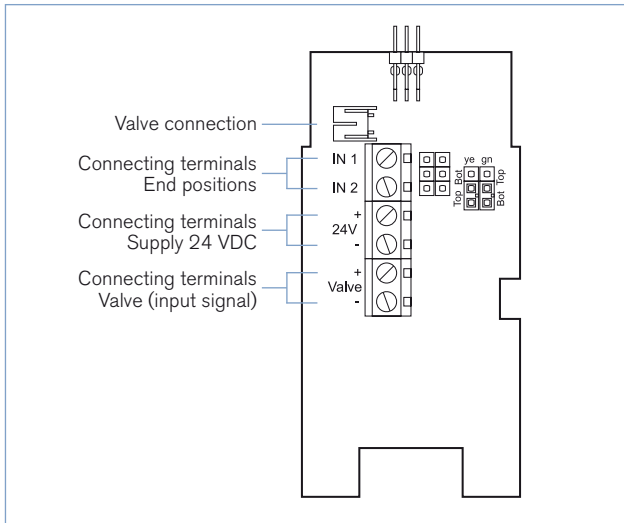
Mounting on process valve Type 20xx



## Connection options

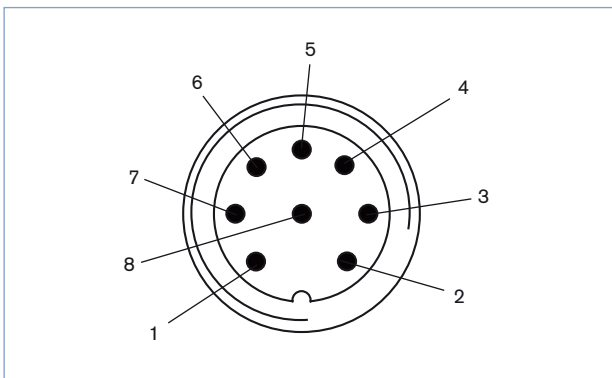
### Without fieldbus communication

#### Cable gland



### 24 V DC

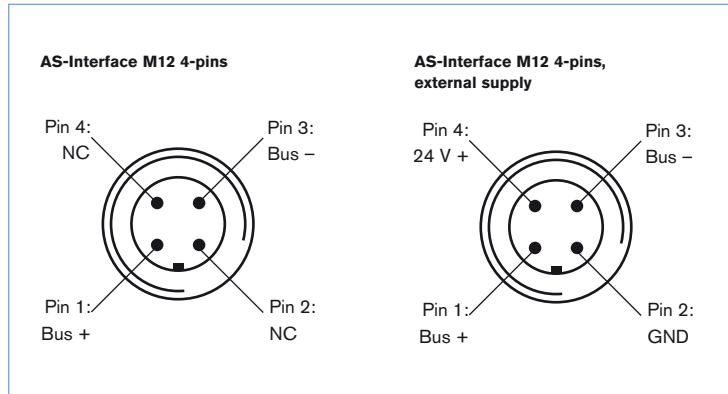
#### Multipole connection M12, 8-pins



Pin	Description	Configuration
1	Limit switch 1	IN 1
2	Limit switch 2	IN 2
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**

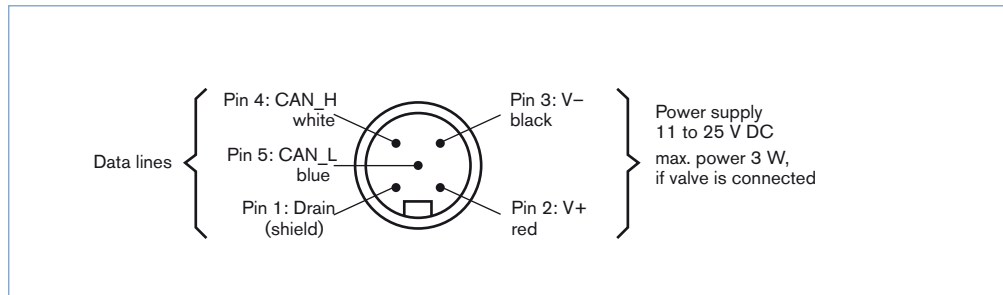
**With fieldbus communication AS-Interface**  
**Version with Multipole fitting connector**



**Version with flat cable clip**



**With fieldbus communication DeviceNet**



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