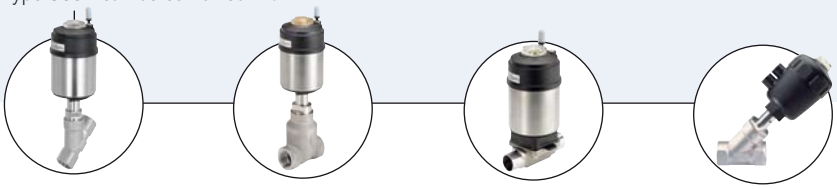
burkert
FLUID CONTROL SYSTEMS

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	
Material	
Body	PPS, stainless steel
Cover	PC
Sealing	EPDM
Control medium	neutral gases, air DIN ISO 8573-1
Dust concentration	Class 5 (<40µm particle size)
Particle density	Class 5 (<10mg/m³)
Pressure condensation point	Class 3 (<-20°C)
Oil concentration	Class 5 (<25mg/m³)
Supply pressure	3 to 7 bar [1]
Air input filter	exchangeable
Mesh aperture	~0.1mm
Pilot air ports	Push-in connector (external Ø 6 mm or 1/4") or threaded ports G1/8
Position feedback	Analogue position sensor (contact-free) with autotune switchpoint (PNP) (NPN on request)
Stroke range valve spindle	2 to 28 mm
Ambient temperature	0 to +55 °C
Installation	As required, preferably with actuator upright
Protection type	IP 65/67 according to EN 60529 (NEMA4x in preparation)
Protection class	3 according to VDE 0580
Fieldbus communication	AS-Interface, DeviceNet
Conformity	according to CE in compliance with EMV2004/108/EG
Type of ignition protection	II 3 G nA II B T4 II 3 D tD A22 T135°
Electrical connection	
Multipole	M12, 8-pins, M12 4-pins (AS-Interface), M12 5-pins (DeviceNet)
Cable gland	M16x1,5 (cable-Ø10mm), terminal screws (1.5mm²)
Approval	CSA (in preparation)

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

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Technical data, continued

Without fieldbus communication

Technical data	
Power supply	24 VDC
Residual ripple with DC	10% no technical direct current!
Voltage tolerance	±10%
Power consumption	< 2 W
Electrical connection Multipole Cable gland	 M12, 8-pole M16x1.5 (cable-Ø10mm), terminal screws (1.5mm²)

With fieldbus communication; AS-Interface

Technical data	
Profile	S-B.A.E. (A/B slave, max. 62 slaves/master)
Power supply through bus line separated from bus signal	29.5 to 31.6 VDC according to specification on request
Power consumption **Units without external power supply** Max. power consumption Power consumption in normal operation (after current reduction; Valve + 1 end position achieved) **Units with external power supply** 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	 120 mA 90 mA 24 V ±10% 55 mA (after current reduction ≤ 30 mA) 55 mA
Output Contact rating Watch-dog function	 ≤ 1W over AS-Interface integrated
Input 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
Electrical connection	M12 4-pins
Programming data	see operating instructions

With fieldbus communication; DeviceNet

Technical data	
Profile	Group 2 Only Slave Device; MAC-ID and transfer rate adjustable through DIP-switch
Power supply	11 to 25 VDC
Power consumption	≤ 80 mA
Output Inrush current Hold current	 ≤ 50 mA ≤ 30 mA
Input "0" "1"	 0 to 1.5 V ≥ 8 V
Electrical connection	M12-Micro Style - flange connector 5-pins (configuration according DeviceNet-specification)

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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

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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, 1m 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

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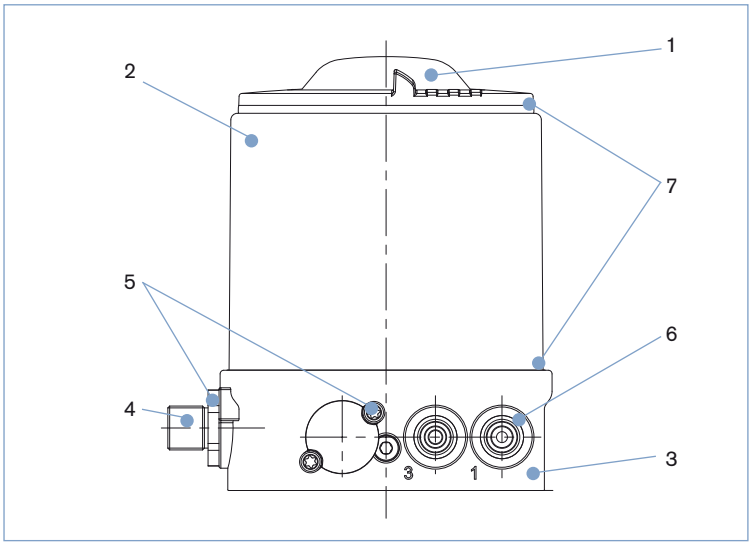
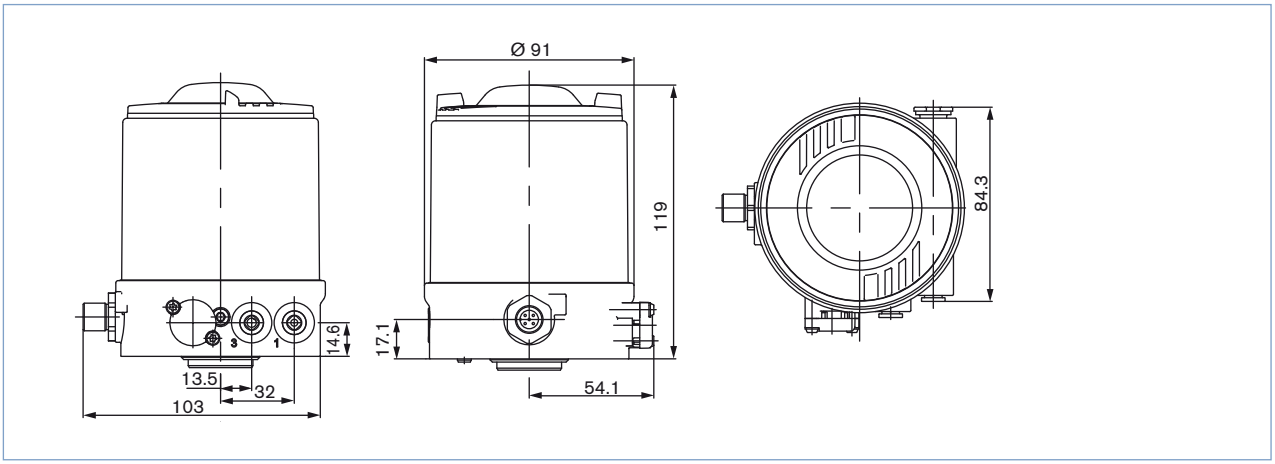
Materials



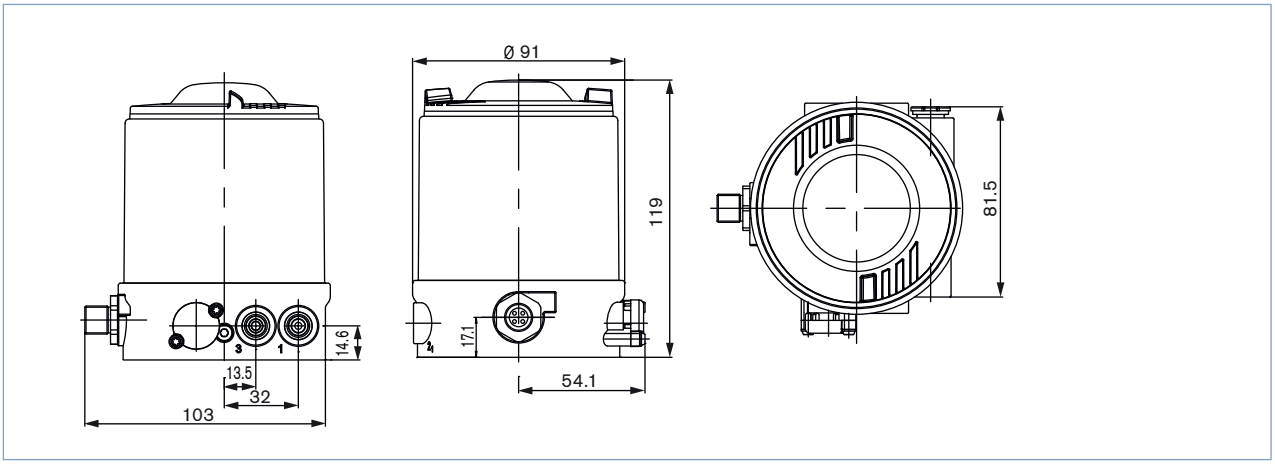
1	Cover	PC
2	Housing	St. st.
3	Basic body	PPS
4	Plug M12	St. st.
5	Screws	St. st.
6	Push-in connector Threaded ports G1/8	POM/St. st. St. st.
7	Sealing	EPDM

Dimensions [mm]

Mounting on process valve Type 21xx



Mounting on process valve Type 20xx



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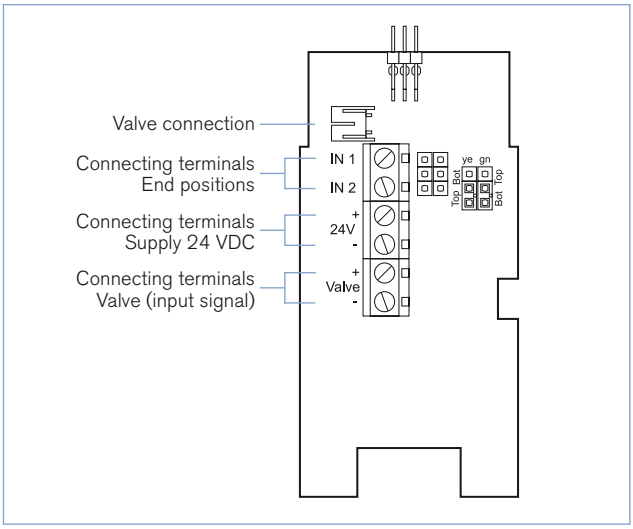
Connection options

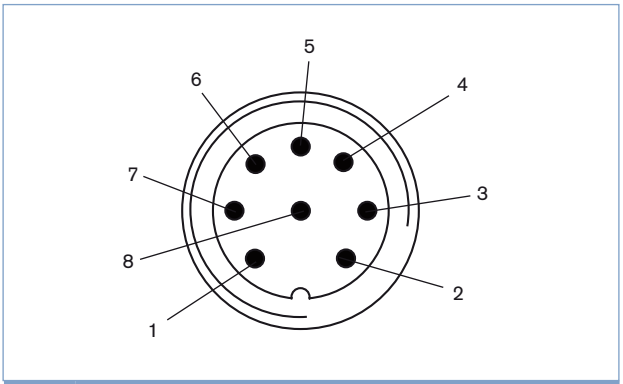
Without fieldbus communication

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

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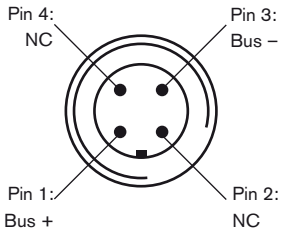
Connection options, continued

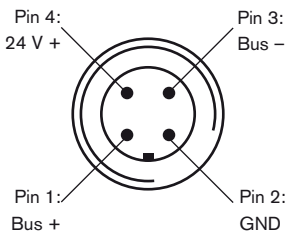
With fieldbus communication AS-Interface

Version with Multipole fitting connector

AS-Interface M12 4-pins

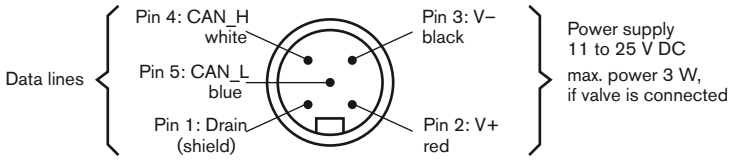


AS-Interface M12 4-pins, external supply



Version with flat cable clip

With fieldbus communication DeviceNet



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