








Control head for decentralised automation of ELEMENT process valves

- Contact-free inductive valve position registration (Teach-In function)
- Coloured illuminated status display
- Integrated control air routing in the actuator
- AS-Interface, DeviceNet, IO-Link, Bürkert system bus (büS)
- With ATEX II cat. 3G/D approval

Product variants described in the data sheet may differ from the product presentation and description.

Can be combined with

	Type 2100 ▶ Pneumatically operated 2/2 way angle seat valve ELEMENT for decentralized automation
	Type 2101 ▶ Pneumatically operated 2/2 way globe valve ELEMENT for decentralised automation
	Type 2103 ▶ Pneumatically operated 2/2 way diaphragm valve ELEMENT for decentralized automation
	Type 2104 ▶ Pneumatically operated zero dead volume T-valve ELEMENT for decentralized automation
	Hygienic process valves

Type description

The control head Type 8695 is designed for decentralized automation of ELEMENT Type 21xx pneumatic process valves with smaller orifice. The registration of the valve position is done through a contact-free analogue sensor element, which automatically recognises and saves the valve end position through the Teach-In function during start-up. The integrated pilot valve controls single or double-acting actuators.

The design of the control head and the actuator is specially designed for the requirements of hygienic process environments and enables an internal control air routing without external tubing.

Besides the electrical position feedback, the status of the device is shown directly on the control head itself through coloured LEDs. As an option a communication interface, AS-Interface, can be chosen.

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.

Combined with Bürkert ELEMENT actuators, the pneumatic actuating system enables spring chamber aeration that avoids actuator chamber contamination from the environment.

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1. General Technical Data

1.1. Control head Type 8695

Product properties	
Dimensions	Detailed information can be found in chapter "3. Dimensions" on page 6.
Material	
Body	PPS, stainless steel
Seal	EPDM
Cover	PC
Operation	
Operating keys	2
Service interface	Connected to PC via USB connection
Configuration tool	Bürkert Communicator
Commissioning	
Setting valve end positions	Automatic using Teach-Function or manual (for device version without pilot valve)
Status display	
Display of device and valve status	Coloured LEDs
Communication	
Fieldbus	AS-Interface, DeviceNet
Digital	IO-Link, Bürkert system bus (based on CANopen)
Position sensor/Position feedback	
Analogue position sensor	Inductive (contactless) with self-adjusting switching points (PNP) (NPN on request)
Stroke range for linear actuators	
Valve spindle	2.5...32 mm
Electrical data	
Operating voltage	24 V DC \pm 10 %, UL: NEC Class 2
Protection class	3 acc. to DIN EN 61140
Residual ripple for DC	10 %
Power consumption	< 2 W
Electrical connection	
Multipole	Circular plug M12
Pneumatic data	
Control medium	
Dust content	Neutral gases, air, quality class acc. to ISO 8573-1
Particle density	Class 7 (< 40 μ m particle size)
Pressure dew point	Class 5 (< 10 mg/m ³)
Oil content	Class 3 (< -20 °C)
Supply pressure	Class X (< 25 mg/m ³)
Pilot air ports	0...7 bar ¹⁾
Pilot air ports	Threaded connection G 1/8 Stainless steel
Actuating system	
Circuit function	Single and double-acting
Air capacity	7 l _N /min (for aeration and ventilation) (Q _{Nn} -value acc. to definition at pressure drop from 7 to 6 bar absolute)
Actuator series/size	Type 21xx, Ø actuator 50 mm
Approvals and certificates	
Conformity	EMC directive 2014/30/EU
Ignition protection	II 3D Ex tc IIIC T135 °C Dc II 3G Ex ec IIC T4 Gc
UL	cULus Certificate; E238179
ATEX	II 3D Ex tc IIIC T135 °C Dc II 3G Ex ec IIC T4 Gc Certificate; BVS 14 ATEX E 008 X
IECEX	Ex tc IIIC T135 °C Dc Ex ec IIC T4 Gc Certificate; IECEX BVS 14.0009 X

Environment and installation	
Operating conditions	
Ambient temperature	
With pilot valve	- 10...+55 °C
Without Pilot valve	-20...+60 °C
Degree of protection	IP65/IP67 acc. to EN 60529, 4X acc. to NEMA 250 Standard
Max. operating altitude	2000 m above sea level
Installation and mechanical data	
Installation variants	Direct mounting
Installation position	As required, preferably with actuator in upright position
Valve actuator	ELEMENT Actuator series Type 21xx, actuator size 50 mm and third-party actuators
Adapter kits	Detailed information can be found in chapter "Adapter kits" on page 11.

1.) The supply pressure must be 0.5 to 1 bar above the minimum required pilot pressure of the valve actuator.

1.2. Without fieldbus communication: 24 V DC

Electrical data	
Operating voltage	24 V DC \pm 10 % UL: NEC Class 2
Residual ripple with DC	10 %
Power consumption	< 2 W
Electrical connection	
Multipole	M12, 8 pin
Outputs	Max. 100 mA per output

1.3. With fieldbus communication: AS-Interface

Product properties	
Profile	S-B.A.E. (A/B slave, max. 62 slaves/master) Certificate No. 87301 acc. to version 3.0
Electrical data	
Operating voltage	29.5...31.6 V DC, UL: NEC Class 2
With bus cable	Acc. to specification
Separated from bus signal	On request
Power consumption	
Max. Current consumption	120 mA
Current consumption in normal operation	90 mA (after current reduction; valve + 1 end position achieved)
Electrical connection	M12, 4 pin
Outputs	
Contact rating	\leq 1 W over AS-Interface
Watchdog function	Integrated

1.4. With fieldbus communication: DeviceNet

Product properties	
Profile	Group 2 only slave device, MAC-ID and transmission rate are adjustable through DIP-Switch
Electrical data	
Power consumption	≤ 80 mA
Power supply	11...25 V DC UL: NEC Class 2
Electrical connection	M12-Micro version, 5 pin, flange connection (Configuration acc. to DeviceNet specification)
Inputs	
"0"	0...1.5 V
"1"	≥ 8 V
Outputs	
Inrush current	≤ 50 mA
Hold current	≤ 30 mA

1.5. With digital communication: IO-Link

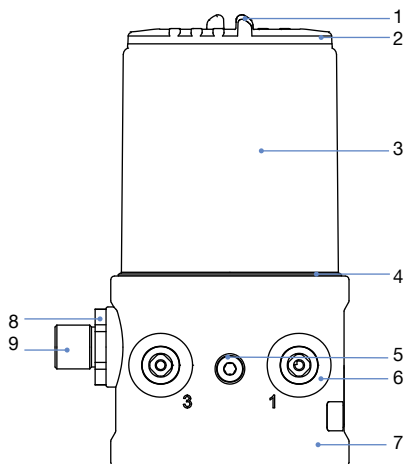
Electrical data	
Electrical connection	M12 × 1, 5 pin, A-coded
IO-Link specification	V1.1.2
SIO-Mode	No
VendorID	0x0078, 120
DeviceID	See IODD file (The IODD file can be downloaded from our website ►, see Software > Device Description Files A.04)
Transmission rate	230.4 kbit/s (COM 3)
Data storage	Yes
Max. cable length	20 m
Port class	B
Power supply	Over IO-Link
Operating voltage	
System supply (Pin 1 + 3)	18...30 V DC (acc. to specification) 24 V DC ± 25% (acc. to specification)
Actuator supply (Pin 2 + 5) galvanically isolated	24 V DC ± 25% (acc. to specification)
Current consumption	
System supply (Pin 1 + 3)	Max. 50 mA
Actuator supply (Pin 2 + 5)	Max. 100 mA

1.6. With digital communication: Bürkert system bus (būS)

Electrical data	
Operating voltage	18...30 V DC (acc. to specification)
Electrical connection	M12 × 1, 5 pin, A-coded
Current consumption	Max. 150 mA

2. Materials

2.1. Material specifications



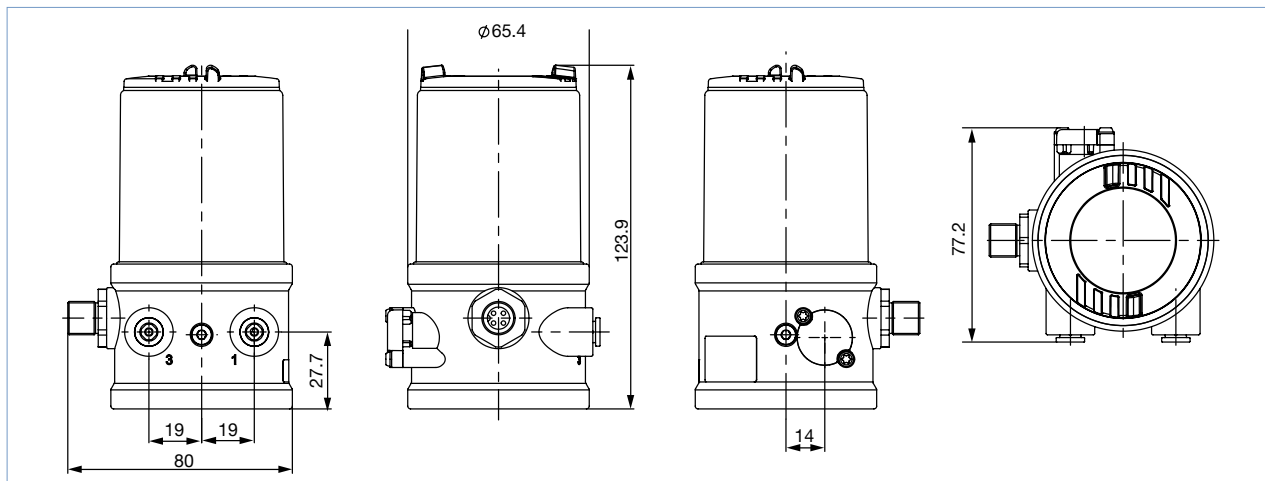
No.	Element	Material
1	Cover	PC
2	Seal	EPDM
3	Body casing	Stainless steel
4	Seal	EPDM
5	Screws	Stainless steel
6	Push-in connector Threaded ports G 1/8	POM/Stainless steel Stainless steel
7	Basic housing	PPS
8	Screws	Stainless steel
9	Plug connector M12	Stainless steel

3. Dimensions

3.1. Mounting on process valve ELEMENT Type 21xx

Note:

Dimensions in mm

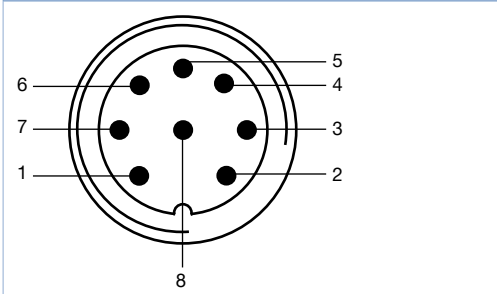


4. Device/Process connections

4.1. Electrical connections

Without fieldbus communication 24 V DC

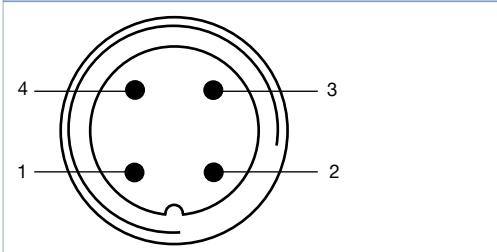
Circular plug M12, 8 pin



Pin	Description	Pin assignment
1	Limit switches 1	IN 1 / TOP
2	Limit switches 2	IN 2 / BOTTOM
3	Operating voltage	GND
4	Operating voltage +	24 V DC
5	Valve control +	Valve +
6	Valve control -	Valve -
7	-	Not assigned
8	-	Not assigned

AS-Interface connection

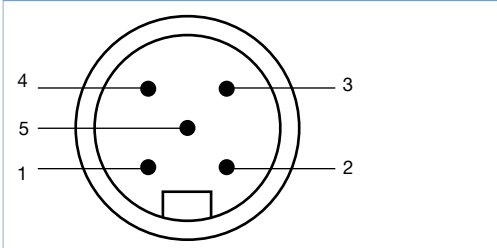
Circular plug M12, 4 pin



Pin	Description	Pin assignment
1	Bus +	Bus cable AS-Interface +
2	NC	Not assigned
3	Bus -	Bus cable AS-Interface -
4	NC	Not assigned

DeviceNet connection

Circular plug M12, 5 pin

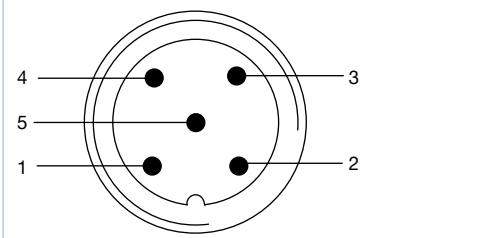


Pin	Description	Pin assignment
1	Data lines	Drain (shielding)
2	Supply voltage 11...25 V DC	V+ (red)
3	Supply voltage 11...25 V DC	V- (black)
4	Data lines	CAN_H (white)
5	Data lines	CAN_L (blue)

Max. power 3 W, if valve is connected

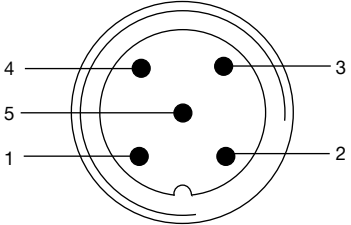
IO-Link connection

Circular plug M12, 5 pin



Pin	Description	Pin assignment	
1	L +	24 V DC	System supply
2	P24	24 V DC	Actuator supply
3	L -	0 V (GND)	System supply
4	Q/C	IO-Link	-
5	M24	0 V (GND)	Actuator supply

Bürkert system bus (būS) connection

Circular plug M12, 5 pin																			
	<table border="1"><thead><tr><th>Pin</th><th>Description</th><th>Cable colour</th></tr></thead><tbody><tr><td>1</td><td>CAN Shield/Shielding</td><td>CAN Shield/Shielding</td></tr><tr><td>2</td><td>+24 V DC $\pm 25\%$, max. residual ripple 10 %</td><td>Red</td></tr><tr><td>3</td><td>GND / CAN_GND</td><td>Black</td></tr><tr><td>4</td><td>CAN_H</td><td>White</td></tr><tr><td>5</td><td>CAN_L</td><td>Blue</td></tr></tbody></table>	Pin	Description	Cable colour	1	CAN Shield/Shielding	CAN Shield/Shielding	2	+24 V DC $\pm 25\%$, max. residual ripple 10 %	Red	3	GND / CAN_GND	Black	4	CAN_H	White	5	CAN_L	Blue
	Pin	Description	Cable colour																
	1	CAN Shield/Shielding	CAN Shield/Shielding																
	2	+24 V DC $\pm 25\%$, max. residual ripple 10 %	Red																
	3	GND / CAN_GND	Black																
4	CAN_H	White																	
5	CAN_L	Blue																	

5. Product installation

5.1. Combination options with pneumatic process valves

Note:

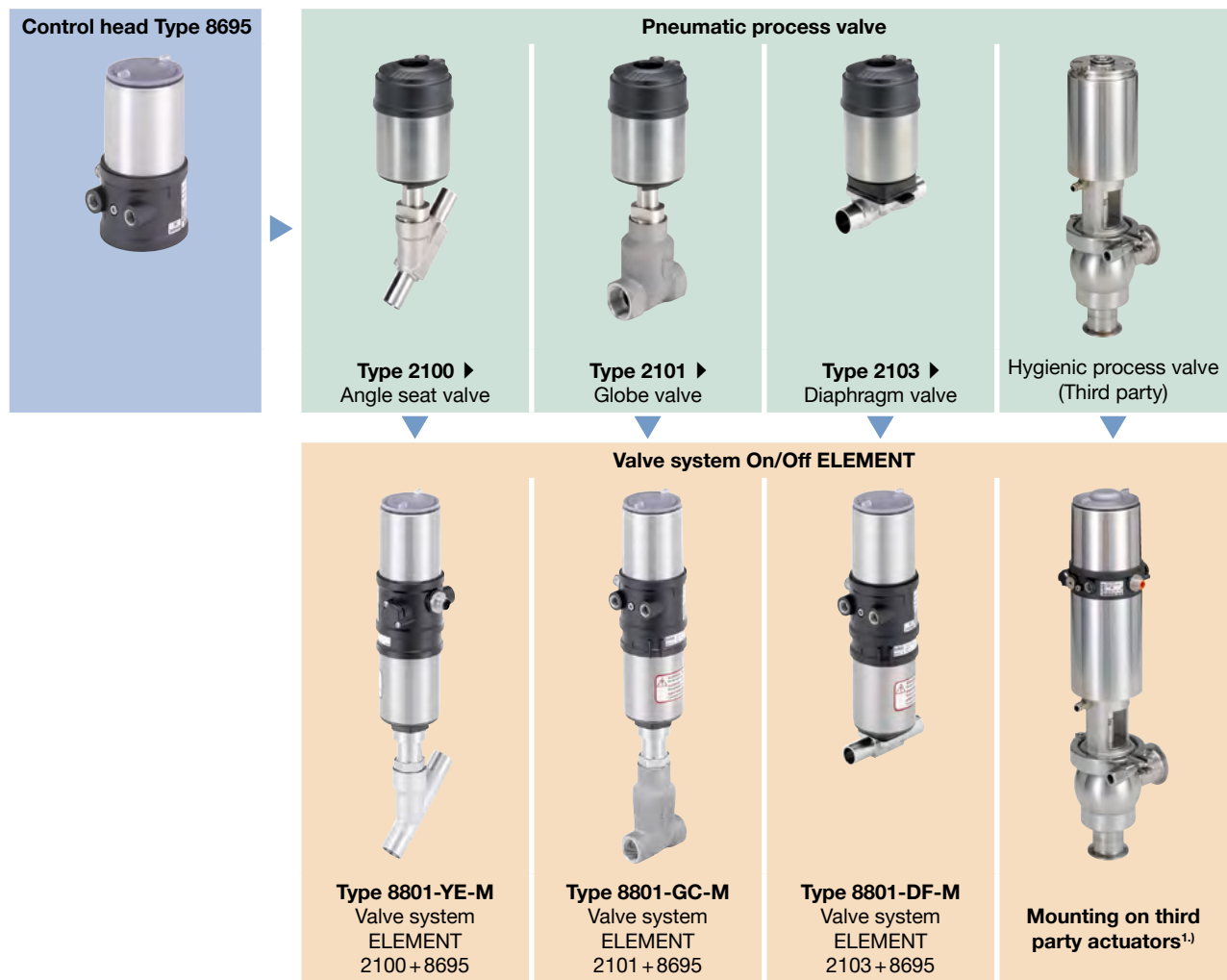
A decentralized, automated valve system consists of **Control head Type 8695** and a **Process valve ELEMENT Type 21xx**, actuator size 50 mm.

The following information is required to select a complete system:

- **Article no.** of the desired control head **Type 8695**
- **Article no.** of the desired process valve **Type 21xx** (see separate data sheets, **Type 2100 ▶**, **Type 2101 ▶**, **Type 2103 ▶**)

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


Example for decentralised automation of On/Off ELEMENT valve systems



1.) See data sheet **adaptations for third-party drives, KK01 ▶** or contact the appropriate Bürkert sales office.

6. Ordering information

6.1. Bürkert eShop – Easy ordering and quick delivery




Bürkert eShop – Easy ordering and fast delivery

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6.2. Bürkert product filter



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6.3. Ordering chart

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











Note:

- Adapter kits must be ordered separately - see [“Adapter kits” on page 11](#)
- All standard versions are UL approved (UL approval for IO-Link and büS in preparation)
- ATEX/IECEX for IO-Link and büS is in preparation
- Feedback version of IO-Link is in preparation
- Other versions are available on request


Electrical Connection	Communication	Control function pilot valve system	Pilot air ports threaded connection	Article no.	
				Standard	ATEX II Cat. 3G/D, IECEX
M12 plug connector	IO-Link	Single-acting	G 1/8	326432	In preparation
		Double-acting	G 1/8	326430	In preparation
		Without	G 1/8	In preparation	In preparation
	büS	Single-acting	G 1/8	326426	In preparation
		Double-acting	G 1/8	326424	In preparation
		Without	G 1/8	326422	In preparation
	AS-Interface S-B.A.E	Single-acting	G 1/8	227444	265075
		Double-acting	G 1/8	227440	265069
	DeviceNet	Single-acting	G 1/8	238724	265076
		Double-acting	G 1/8	265081	265070
	Without fieldbus communication	Single-acting	G 1/8	227446	265077
		Double-acting	G 1/8	227442	265071
Without		G 1/8	234246	265067	

6.4. Ordering chart Accessories

Standard accessories

Description	Article no.
M12 socket, 8 pin with 5 m cable for input and output signals	919267 
Silencer G 1/8	780779 
Silencer, push-in connector	902662 
Sensor puck (spare part)	677245 
USB bÜS interface set (bÜS stick + connecting cable with M12 connector + connecting cable M12 to micro USB for bÜS service interface) for connecting to the PC tool Bürkert Communicator	772551 
bÜS cable extension M12, length 1 m	772404 
bÜS cable extension M12, length 3 m	772405 
bÜS cable extension M12, length 5 m	772406 
bÜS cable extension M12, length 10 m	772407 
Software Bürkert Communicator	Link 

Adapter kits

Adapter kits for third-party actuators can be found in the data sheet **Adaptation for third-party actuators, KK01**  or contact the appropriate Bürkert sales office.

Description	Actuator size	Control function	Article no.
Adapter kit ELEMENT Types 21xx	Ø 50 mm	Universal	679918 

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