

Control head for hygienic process valves

8681
Control head

- Universal attachment for hygienic process valves
- Contactless position measurement system with 3 switching points (Teach-In function)
- Coloured status display
- Magnetic manual override without opening the device
- Communication interface AS-Interface (option)



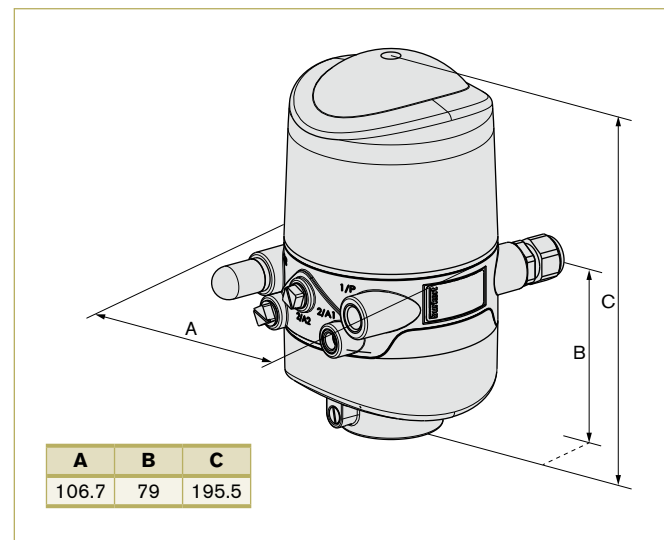
Type 8681 control head is optimised for decentralised automation of hygienic process valves. Thanks to its universal adapter it can be combined with all normal commercial butterfly valves, ball valves, single and double seated valves. With a decentralised automation concept, the control head takes over all pneumatic actuation, feedback and diagnostic functions up to and including field bus communication. The housing is easy to clean and features proven electrical IP protection and chemically resistant materials for use in hygienic processing in food, beverage and pharmaceutical industries.

Technical Data

Material	
Body	PA, PPO, VA
Cover	PC
Seal	CR, EPDM
Control medium	neutral gases, air DIN ISO 8573-1 (filter 5 µm recommended)
Dust concentration	class 5 (<40 µm particle size)
Particle density	class 5 (<10 mg/m ³)
Pressure condensation point	class 3 (<-20 °C)
Oil concentration	class 5 (<25 mg/m ³)
Supply pressure	2.5 to 8 bar
Air capacity solenoid valve¹⁾ (supply and exhaust air per solenoid valve adjustable)	110 l _N /min - for pressurization and exhaust, lifting device 110 l _N /min - delivery condition 200 l _N /min - max. typical flow rate (throttle)
Pilot air ports	
Air inlet and outlet	G 1/4"
Service ports	G 1/8"
Position sensor	Non-contact Position Sensor, 3 self-regulated switching points PNP (Teach-In-function) closer (normally open), PNP-output short-circuit proof, with clocking short-circuit protection
Outlet current	Max. 100 mA per feedback signal
Stroke range	0 to 80 mm
Resolution	≤ 0.1 mm
Total error	± 0.5 mm - when using a target for the dimensional drawing, material 1.4021 and a piston rod (Ø 22 mm, material 1.4301) (error refers to the reproducibility of a teach-position)
Ambient temperature	-10 °C to +55 °C +5 °C to +55 °C (ATEX II 3G Ex nA IIC T4; ATEX II 3G Ex tD A22 T135°C)
Installation	As required, preferably with actuator in upright position

¹⁾ QNn-value acc. to the definition with decrease in pressure from 7 to 6 bar absolute with 20°C.

Envelope Dimensions [mm] (see datasheet for details)



Technical Data (continued)

Type of protection	IP 65/67 acc. to EN 60529
Protection class	3 (AS-Interface, 24 VDC, DeviceNet); 1 (120 VAC) acc. to DIN EN 61140
Fieldbus communication	AS-Interface, DeviceNet
EG-Conformity	EMV2004/108/EG; ATEX 94/9/EG
Ignition protection	ATEX II 3G Ex nA IIC T4 ATEX II 3G Ex tD A22 T135°C

Technical data (continued)

Without fieldbus communication; 24V DC	
Operating voltages	12 to 28 VDC
Residual ripple with DC	max. 10 %
Power consumption	< 5 W (acc. to version and operating status see instruction manual)
Valve control inputs (Y1 - Y3)	
Signal level - active	$U > 10 \text{ V}$, max. 24 V DC + 10%
Signal level - inactive	$U < 5 \text{ V}$
Impedance	$U > 30 \text{ k}\Omega$
Outputs / binary feedback signals	S1 out - S4 out
Design	Normally open contact, PNP output short-circuit proof with self-locking short circuit protection
Switchable output current	max. 100 mA per feedback signal
Output voltage -active	\geq (operating voltage - 2 V)
Output voltage -inactive	max. 1 V in unloaded state
Input / proximity switches (external initiator: S4 in)	
Power supply	Voltage present at control head - 10 %
Current carrying capacity, sensor power supply	max. 90 mA short-circuit protection
Design	DC 2- and 3-conductor, NO or NC (factory setting NO), PNP output
Input current 1 signal	$I_{\text{Sensor}} > 6.5 \text{ mA}$, limited internally to 10 mA
Input voltage 1 signal	$U_{\text{Sensor}} > 10 \text{ V}$
Input current 0 signal	$I_{\text{Sensor}} < 4 \text{ mA}$
Input voltage 0 signal	$U_{\text{Sensor}} < 5 \text{ V}$
Electrical connection	
Multipole	M12 12-pin with cable 8 cm, 1 x M16 x 1.5 cable glands for external initiator (clamping range 3 ... 6 mm)
Cable gland	M16 x 1.5 (cable- \varnothing 5 ... 10 mm, screw terminals 0.14 ... 1.5 mm ²), 1 x M16 x 1.5 cable glands for external initiator (clamping range 3 ... 6 mm)
With Fieldbus communication; AS-Interface	
Profil	S-7.A.E (A/B slave max. 62 slaves/master) S-7.F.F (max. 31 slaves/master)
Operating voltages	
above bus line	as Specification
from bus signal separated	reversible (Jumper)
Power consumption equipment without external power supply	
Max. Current consumption	240 mA (incl. external initiator with 90 mA)
Current consumption in normal operation	$\leq 150 \text{ mA}$
(acc. to reduction of electric current; valve + 1 end position achieved)	3 valves activated, 1 position feedback with LED display, no external initiator
Power consumption equipment with external power supply	
The power supply unit must include a secure disconnect in accordance with IEC 364-4-41. It must conform to the SELV standard. The ground potential may not have an earth connection.	19.2 V DC up to 31.6 V DC $\leq 100 \text{ mA}$ 24 V DC $\leq 150 \text{ mA}$ type.
Output	
Contact rating	0.8 W with AS-Interface, per Solenoid Valve (0.9 W Switch-on power)
Watch-dog function	integrated
Input / proximity switches (external Initiator: S4 in)	
Power supply	AS interface voltage present at control head - 10 %
Current carrying capacity, sensor power supply	max. 30 mA short-circuit protection
Design	DC 2- and 3-conductor, NO or NC (factory setting NO), PNP output
Input current 1 signal	$I_{\text{Sensor}} > 6.5 \text{ mA}$, limited internally to 10 mA
Input voltage 1 signal	$U_{\text{Sensor}} > 10 \text{ V}$
Input current 0 signal	$I_{\text{Sensor}} < 4 \text{ mA}$
Input voltage 0 signal	$U_{\text{Sensor}} < 5 \text{ V}$
Electrical connection	
(ASI flat cable clip at cable 80 cm as standard)	M12 4-pin at cable 8 cm (acc. 0.3 m cable length acc. to AS-Interface Specification) 1 x M 16 x 1.5 cable glands for external initiator clamping range 3 ... 6 mm. M12 4-pin at cable 80 cm (acc. 1.0 m cable length acc. to AS-Interface Specification) 1 x M 16 x 1.5 cable glands for external initiator clamping range 3 ... 6 mm.

Bit configuration

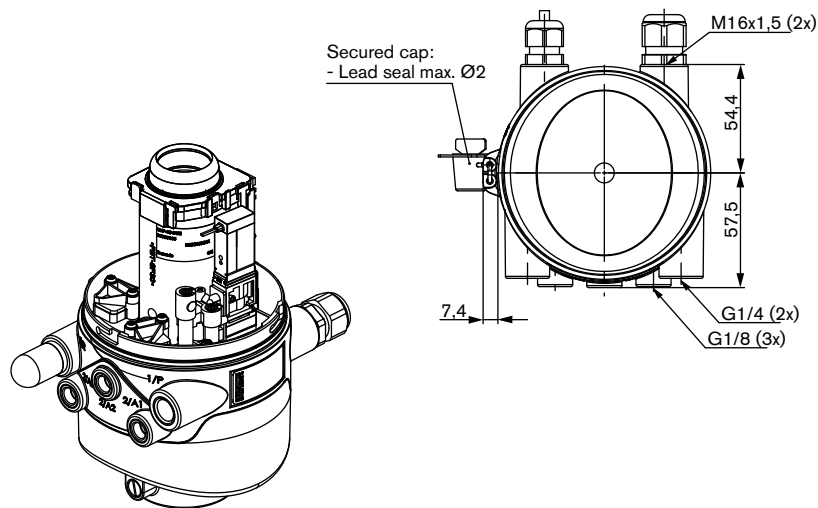
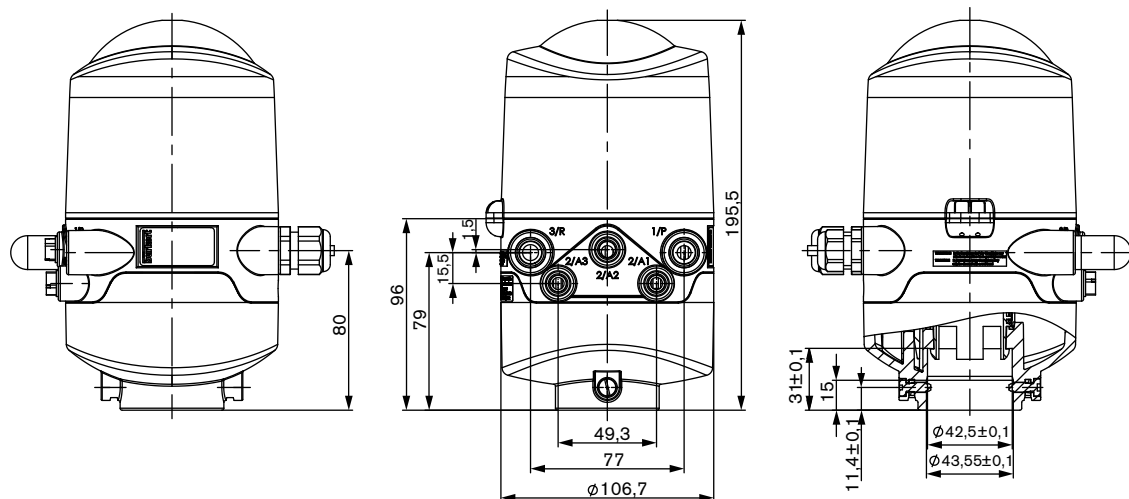
Databit	D3	D2	D1	D0
Input	external initiator S4	position 3	position 2	position 1
Output	not configured	solenoid valve 3	solenoid valve 2	solenoid valve 1
Parameterbit	D3	D2	D1	D0
Output	not configured	not configured	not configured	not configured

Programming data

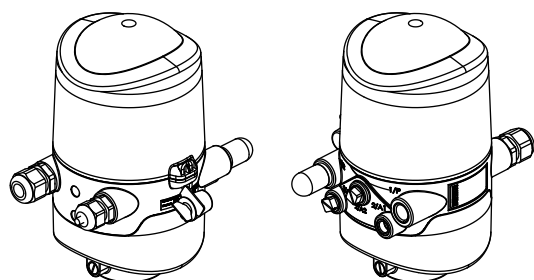
Databit	Programming data with 62 Slaves AS-Interface - apparatus for A/B-Slave-addressing (standard device)	Programming data with 31 Slaves AS-Interface (optional)
E/A - configuration	7 hex (4 Inputs / 4 Outputs) see bit configuration chart	7 hex (4 Inputs / 4 Outputs) see bit configuration chart
ID-code	A hex	F hex
combinative ID-code 1	7 hex	(F hex)
combinative ID-code 2	E hex	(F hex)
profile	S-7.A.E	S-7.F.F

Dimensions [mm]

Feedback version (without pilot valves)

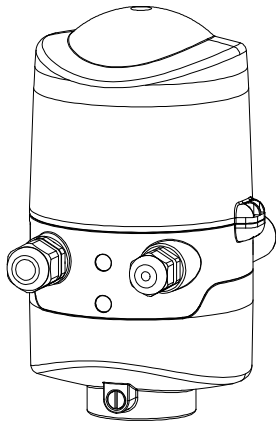


Version: 1 to 3 valves



Without Fieldbus communication 24VDC

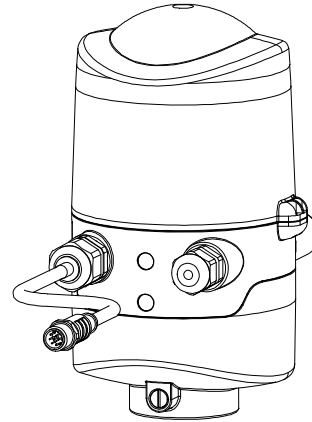
Cable glands



Connection left: Voltage, signals
Connection right: external initiator

Cable glands with multipole connection

Version with 12 pin plug (24 V)¹⁾



Connection left: Voltage, signals
Connection right: external initiator

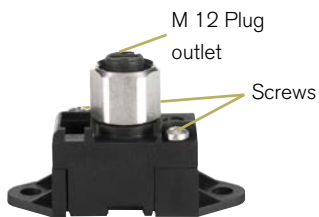
¹⁾ M12 plug acc. IEC 61076-2-101, 12 pin at cable 8 cm

With Fieldbus communication AS-Interface

with multipole connection

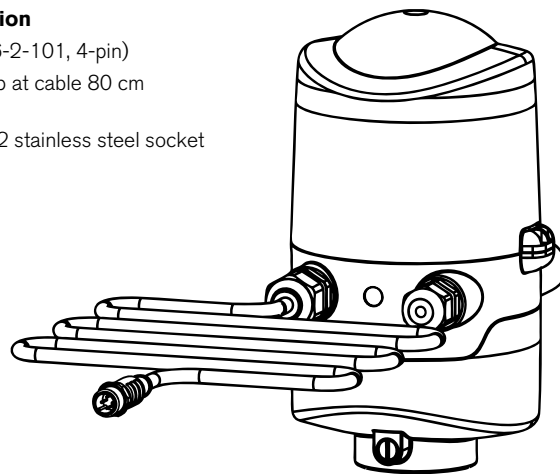
(M12-plug acc. IEC 61076-2-101, 4-pin)
with mounted flat cable clip at cable 80 cm

ASI-flat cable clip with M12 stainless steel socket



M 12 Plug outlet

Screws



left: AS-Interface
right: external initiator