



Control head for decentralized automation of hygienic process valves

- Universal attachment for hygienic process valves
- Contactless position measurement system with 3 switching points (Teach-In function)
- Coloured status display
- Manual override operative with closed housing
- AS-Interface, IO-Link, bûS/CANopen

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

Can be combined with



Single seat valve
Double seat valve



Butterfly valve
Ball valve

Type description

The control head Type 8681 is optimized 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 including field bus communication.

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.

Depending on the process valve type, up to 3 pneumatic actuator chambers can be controlled independently from each other. The switching speeds of both movement directions can be set separately. A built-in check valve prevents incorrect switching of process valve actuator chambers which could result from back-pressure.

The process valve switching positions are detected by an inductive, analogue position sensor and reported to the PLC system. Up to 3 switching points can be adjusted automatically by a Teach-In function. Additionally a fourth switching position can be read in and fed back via an external inductive proximity switch. The coloured status display signals the particular process valve switching position or indicates a diagnostic function such as maintenance required status or fault conditions.

The pilot valves are equipped with a manual override. If the device housing is closed, the patented magnetically encoded manual override tool can be used to open the process valve from the exterior. Bus communication is available with AS-interface, IO-Link or bûS/CANopen.

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1. General technical data

1.1. Control head Type 8681

Product properties	
Dimensions	Detailed information can be found in chapter “3. Dimensions” on page 11.
Material	
Body	PA, PPO, VA
Seal	PC
Cover	CR, EPDM
Operation	
Operating keys	Teach-keys
DIP switch	Yes
Service interface	Connection with PC via USB connection
Configuration tool	Bürkert Communicator or PC service programme (acc. to device version)
Commissioning	
Setting valve end positions	Through automatic or manual Teach-Function
Manual override pilot valve	Yes
Status display	
Display of device and valve status	High-power LEDs (colours individually adjustable)
Communication	
Fieldbus	AS-Interface
Digital	IO-Link, bus/CANopen
Fieldbus specific data	
Bit configuration table	Detailed information can be found in chapter “1.7. Bit configuration table” on page 8.
Programming data table	Detailed information can be found in chapter “1.8. Programming data table” on page 8.
Performance data	
Functional overview	Detailed information can be found in chapter “1.9. Functional overview of control head Type 8681” on page 9.
Position sensor/Position feedback	
Analogue position sensor	Inductive (contactless), 3 self-regulated switching points PNP (Teach-In resp. Autotune-Function, closer (normally open), PNP output short circuit proof, clocking short circuit protection)
Output current	Max. 100 mA per feedback signal
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 the teach-position)
Stroke range for linear actuators	
Valve spindle	0...80 mm
Pneumatic data	
Control medium	
Dust content	Class 7 (< 40 µm particle size)
Particle density	Class 7 (< 10 mg/m ³)
Pressure dew point	Class 3 (< -20 °C)
Oil content	Class X (< 25 mg/m ³)
Supply pressure	2.5...8 bar
Pilot air ports	
Air inlet and outlet	G ¼
Service ports	G ⅙

Actuating system	
Circuit function	Single and double-acting
Luftleistung ^{1.)}	110 l _N /min for aeration and ventilation 110 l _N /min - delivery condition 200 l _N /min - max. typical flow rate
Approvals and certificates	
Conformity	EMV2004/108/EG; ATEX directives 2014/34/UG
UL	UL 61010-1 and CSA C22.2 NO. 61010-1
FM	FM NI Class I Division 2
ATEX	Dust: ATEX Category: II 3 D Ex tc IIIC T135 °C Dc X Gas: ATEX Category: II 3 G Ex ec IIC T4 Gc X
Environment and installation	
Installation and mechanical data	
Installation position	As required, preferably with actuator in upright position
Operating conditions	
Ambient temperature (max.)	- 10 bis +55 °C + 5 bis +55 °C (in Ex atmosphere (Zone 2))
Degree of protection	IP65/67 acc. to EN 60529
Operating altitude	Up to 2000 m above sea level

1.) Q_{Nn}-value for pressure drop from 7 to 6 bar absolute at 20 °C

1.2. Without fieldbus communication: Analogue version 24 V DC

Electrical data	
Power supply	12 bis 28 V DC
Residual ripple	Max. 10 %
Protection class	3 acc. to DIN EN 61140
Power consumption	<5 W (acc. to version and operating status, see operating manual ▶)
Inputs Valve control (Y1 - Y3)	
Signal level - active	U > 10 V, max. 24 V DC + 10 %
Signal level - inactive	U < 5 V
Impedance	U > 30 kOhm
Outputs/binary feedback signals (S1 OUT - S4 OUT)	
Design	Closer (normally open), PNP output short circuit proof, self-clocking short circuit protection
Switchable output current	Max. 100 mA per feedback signal
Output voltage - active	≥ (operating voltage - 2 V)
Output voltage - inactive	Max. 1 V in unloaded state
Input / proximity switch (external initiator: S4 IN)	
Operating voltage	Voltage present at control head - 10 %
Current carrying capacity, sensor power supply	Max. 90 mA short circuit protection
Design	DC 2 and 3 wire, NO or NC (factory setting NO), PNP output
Input current 1 Signal	I _{Sensor} > 6.5 mA, limited internally to 10 mA
Input voltage 1 Signal	U _{Sensor} > 10 V
Input current 0 Signal	I _{Sensor} < 4 mA
Input voltage 0 Signal	U _{Sensor} < 5 V
Electrical connection	
Multipole	M12, 12 pin with 8 cm cable, 1 x M16 x 1.5 cable glands for external initiator (clamping range 3...6 mm)
Cable gland	M16 x 1.5 (cable Ø 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)

1.3. Without fieldbus communication: Analogue version 120 V AC

Electrical data	
Power supply	110...130 V AC/50/60 Hz
Protection class	1 acc. to DIN EN 61140
Current consumption (stand by current)	10 mA at 120 V AC
Inputs; valve control (Y1 - Y3)	
Signal level - active	U > 60 V AC
Signal level - inactive	U < 20 V AC
Impedance	> 40 kOhm
Outputs/binary feedback signals, S1 OUT - S3 OUT	
Design	Closer (normally open), L-L switching, short circuit protection via automatically resetting fuse
Switchable output current	Max. 50 mA per feedback signal
Output voltage - active	≥ (operating voltage - 2 V)
Output voltage - inactive	Max. 1 V in unloaded state
Input/proximity switches (external initiator: S4 IN)	
Operating voltage	Voltage present at control head: $U_{\text{Nominal}} = 120 \text{ V AC}, 50/60 \text{ Hz}$
Current carrying capacity sensor power supply	Max. 0.7 A
Design	DC 2 and 3 wire, NO contact, L switching
Input current 1-Signal	$I_{\text{Sensor}} < 2 \text{ mA}$
Electrical connection	
Cable gland	M16 x 1.5 (cable Ø 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)

1.4. With fieldbus communication: AS-Interface

Product properties	
Profile	S-7.A.E (A/B Slave max. 62 Slaves/Master) S-7.F.F (max. 31 Slaves/Master)
Electrical data	
Power supply	
Via bus cable	Acc. to specification
Isolated from bus signal	Reversible (jumper)
Protection class	3 acc. to DIN EN 61140
Power consumption equipment without external power supply	
Max. Current consumption	< 160 mA (incl. external initiator with 30 mA)
Current consumption in normal operation	< 150 mA
(acc. to current reduction; Valve + 1 end position achieved)	3 valves activated, 1 position feedback with LED display, no external initiator
Current consumption device with external power supply	
The power supply unit must contain a safe disconnection acc. to IEC 60364-4-41. It must comply with the SELV standard. The ground potential must not have an earth connection.	19.2 V DC to 31.6 V DC ≤ 110 mA 24 V DC ≤ 150 mA typical
Output (from master perspective)/solenoid valves	
Max. contact rating	0.9 W per solenoid valve for 200 ms acc. to power on
Typ. contact rating	0.6 W per solenoid valve from 200 ms acc. to power on
Watch-dog function	Integrated
Typ. inrush current per solenoid valve	30 mA resp. 0.9 W/200 ms (at 30.5 AS-i voltage)
Typ. hold current per solenoid valve	20 mA resp. 0.6 W/200 ms (at 30.5 AS-i voltage)
Operating mode	Continuous operation (100 % operation)
Valve type	6524
Input/proximity switches (external initiator: S4 IN)	
Operating voltage	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 wire, 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 (Standard: AS-i flat cable clip at 80 cm cable)	
Multipole	M12, 4 pin an 8 cm cable (resp. 0.3 m cable length acc. to AS-Interface specification) or an 80 cm cable (resp. 1.0 m cable length acc. to AS-Interface specification)
Cable gland	1 x M16 x 1.5 for external initiator (clamping range 3...6 mm)

1.5. With digital communication: IO-Link

Electrical data	
IO-Link specification	V1.1.2
SIO-Mode	No
VendorID	0x78, 120
DeviceID	See corresponding IODD file (Port Class A, resp. Port Class B) (The IODD file can be downloaded from our website ►, see Software > Device Description Files A.04)
Transmission rate	230.4 kbit/s
Frame type in operation	TYPE_2_V
Min. cycle time	2 ms
Data Storage	Yes
Max. cable length	20 m
Port Class	A resp. B
Operating voltage	18 bis 30 V DC (acc. to specification)
Power supply	Via IO-Link
Protection class	3 acc. to DIN EN 61140
Max. current consumption	
Port Class A	< 170 mA at 18 V, without external initiator for 3 solenoid valves
Port Class B	< 65 mA at 18 V, without external initiator from power 1; < 100 mA@18 V for 3 valves from power 2
Current consumption in normal operation (acc. to reduction of electric current 3x solenoid valve + 1 end position achieved)	
Port Class A	< 155 mA at 18 V, without external initiator at 3 solenoid valves
Port Class B	< 65 mA at 18 V, without external initiator from power 1; < 85 mA at 18 V for 3 solenoid valves from power 2
Output (from master perspective)/solenoid valves	
Max. contact rating	0.9 W (per solenoid valve)
Typ. continuous output	0.6 W (per solenoid valve)
Inrush current	40 mA resp. 0.9 W/200 ms (for voltage rating 24 V)
Hold current	25 mA resp. 0.6 W (for voltage rating 24 V)
Operating mode	Continuous operation (100 % ED)
Input/proximity switches (external initiator: S4 IN) solenoid valves	
Operating voltage	Voltage at power 1...10%
Current carrying capacity sensor power supply	Max. 30 mA, short circuit protection
Design	DC 2 and 3 wire, (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, 4 pin (IO-Link, Port Class A) M12, 5 pin (IO-Link, Port Class B)
Cable gland	M16 x 1.5 (clamping range 5...10 mm, screw terminals 0.14...1.5 mm ²) 1 x cable gland M16 x 1.5 (clamping range 3...6 mm, screw terminals 0.14...1.5 mm ²) for external initiator

1.6. With digital communication: Bürkert system bus (bùS) and CANopen

Electrical data	
Power supply	11 bis 25 V DC
Protection class	3 acc. to DIN EN 61140
Max. current consumption	< 180 mA at 24 V DC
Output (from master perspective)/solenoid valves	
Typ. contact rating	0.9 W per solenoid valve for 200 ms acc. to power on
Typ. continuous output	0.6 W per solenoid valve from 200 ms acc. to power on
Power reduction	Via the bùS/CANopen interface - electronically integrated
Typ. inrush current per solenoid valve	38 mA resp. 0.9 W/200 ms at 24 V DC
Typ. hold current per solenoid valve	75 mA typ. at 24 V DC (3 solenoid valve)
Operating mode	Continuous operation (100 % ED)
Valve type	6524
Input/proximity switches (external initiator: S4 IN)	
Operating voltage	Via the bùS/CANopen power supply - 10 %
Current carrying capacity sensor power supply	Max. 30 mA
Short circuit protection design	DC 2 and 3 wire, closer (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, 5 pin an 80 cm cable, 1 x M16×1.5 cable gland for external initiator (clamping range 3...6 mm)
Cable gland	1 x M16×1.5 cable gland (clamping range 5...10 mm), 1 x M16×1.5 cable gland for external initiator (clamping range 3...6 mm)

1.7. Bit configuration table

Bit assignment				
Databit	D3	D2	D1	D0
Input	External initiator S4	Position 3	Position 2	Position 1
Output	Not assigned	Solenoid valve 3	Solenoid valve 2	Solenoid valve 1
Parameterbit	D3	D2	D1	D0
Output	Not assigned	Not assigned	Not assigned	Not assigned

1.8. Programming data table

Programming data		
Databit	Programming data with 62 slaves AS-Interface - Device 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 "1.7. Bit configuration table" on page 8	7 hex (4 Inputs/4 Outputs) see "1.7. Bit configuration table" on page 8
ID-Code	A hex	F hex
Extended ID-Code 1	7 hex	(F hex)
Extended ID-Code 2	E hex	(F hex)
Profile	S- 7.A.E	S- 7.F.F

1.9. Functional overview of control head Type 8681

Function	Version					
	24 V DC	120 V AC	AS- Interface Standard- Slave	AS- Interface A/B-Slave	IO- Link	büS/ CAN- open
Basic functions						
Teach function of the position measuring system for 3 definable teach points (S1, S2, S3) ^{1.)}	X	X	X	X	X	X
Manual override solenoid valves (mechanical)	X	X	X	X	X	X
Manual override, magnetic (for solenoid valve MV1 = 2/A1)	X	X	X	X	X	X
Position feedback process valve OPEN/CLOSED ^{2.)}	X	X	X	X	X	X
Feedback signal current valve position (intermediate position) in mm	–	–	–	–	X ^{3.)}	X ^{3.)}
Optical position feedback of teach points (S1, S2, S3) and S4 ^{1.)}	X	X	X	X	X	X
Change of the colours of the optical position feedback possible (LED in 3 colours: green, yellow, red)	X	X	X	X	X	X
Selection of different LED display modes	–	–	–	–	X	X
LED status display / Status LEDs (on the electronic module)	–	–	X	X	X	X
Locating function	–	–	–	–	X	X
büS communication interface (for Bürkert COMMUNICATOR)	–	–	–	–	X	X
Diagnosis						
Counter switching cycles of solenoid valves MV1...3 with definable limit value	X	X	X	X	X	X
Counter operating hours with definable limit value	X	X	X	X	X	X
Maintenance/service notification (feedback when selected limit values are exceeded)	X	X	X	X	X	X
Active diagnostic messages (via Bürkert COMMUNICATOR)	–	–	–	–	X	X
Device reset (to reset counter values)	X	X	X	X	X	X
Feedback Teach error	X	X	X	X	X	X
Feedback over-temperature	–	–	–	–	X	X
Feedback communication error	–	–	X	X	X	X
Tolerance band of end position detection	–	–	–	–	X	–
Tolerance for switching time overrun	–	–	–	–	X	–
Error detection if the setpoint position is not reached (end positions not reached)	–	–	–	–	X	–
Detection of under-voltage and over-voltage of the power supply	–	–	–	–	X	–
Trigger maintenance function	–	–	–	–	X	X
Tolerance band of end position detection	X	X	X	X	X	X
Log function for error cases (via Bürkert COMMUNICATOR)	–	–	–	–	X	X
Parameterisation						
Parameterisation via PC-Tool (service interface on electronic module)	X	X	X	X	–	–
Deactivate/activate safety position in case of bus error	–	–	X	X	X	X
Fail-safe positions are defined in the event of power and compressed air failure	X	X	X	X	X	X
Deactivation/activation of the magnetic manual override	X	X	X	X	X	X
Deactivation of local operation (Lock function)	–	–	–	–	X	X
Factory reset function (reset to factory setting)	X	X	X	X	X	X

1.) S1 - mostly lower valve position (valve completely closed)

S2 - mostly upper valve position (valve fully open)

S3 - mostly specific intermediate position (e.g. upper cycle stroke for double-seat valves)

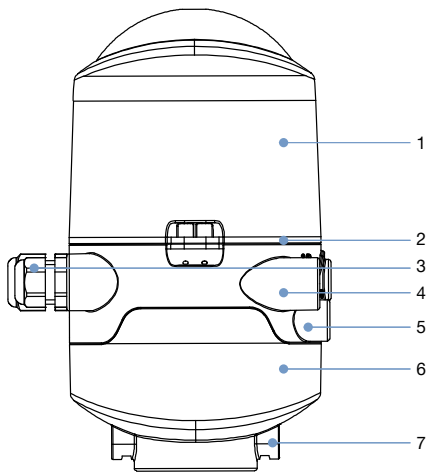
S4 - external feedback/initiator (e.g. lower cycle stroke for double-seat valves)

2.) OPEN/CLOSED via S1/S2 / intermediate position via S3 / external feedback/initiator via S4

3.) Specification for IO-Link and büS/CANopen instead of in mm 0.1*mm

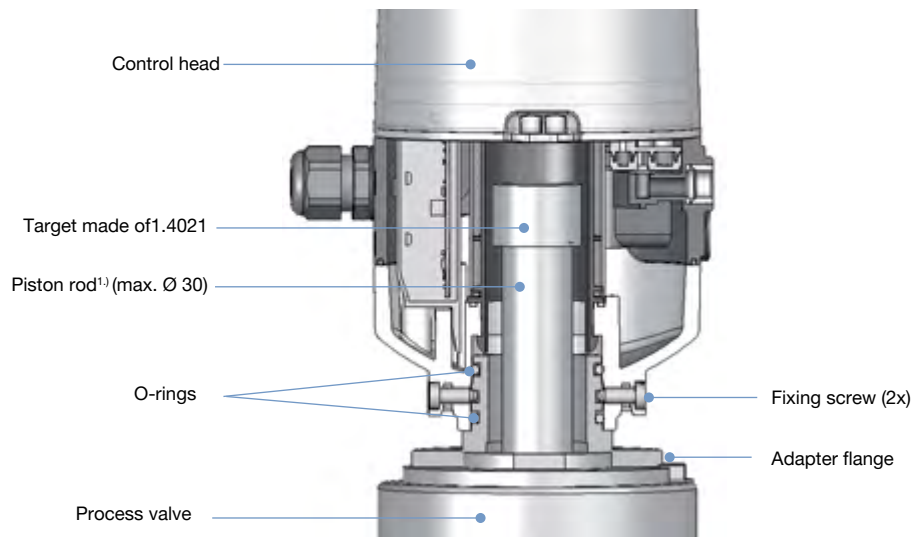
2. Materials

2.1. Material specifications



No.	Element	Material
1	Cover	PC
2	Seals	EPDM, CR
3	Cable glands	PA
4	Fluid part	PPO
5	Screws/Threaded ports	VA
6	Housing lower part	PPO
7	Screws/Threaded ports	VA

2.2. Flange for process valve and target specification



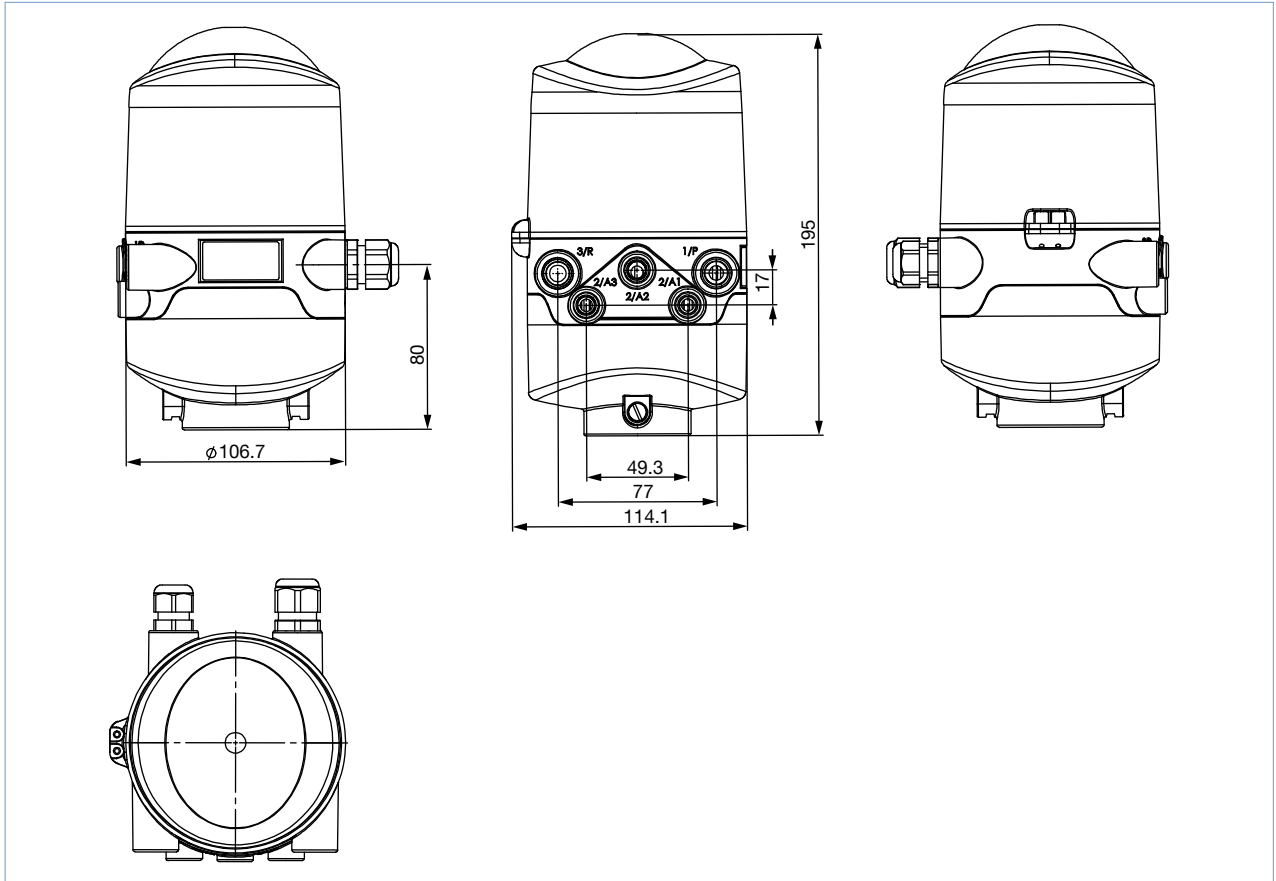
1.) Target and piston should not be made of ferromagnetic or material with high electrical conductivity (e.g. copper, aluminium). Stainless steel without ferromagnetic properties such as 1.4404 are suitable (if necessary verify after handling).

3. Dimensions

3.1. Control head

Note:

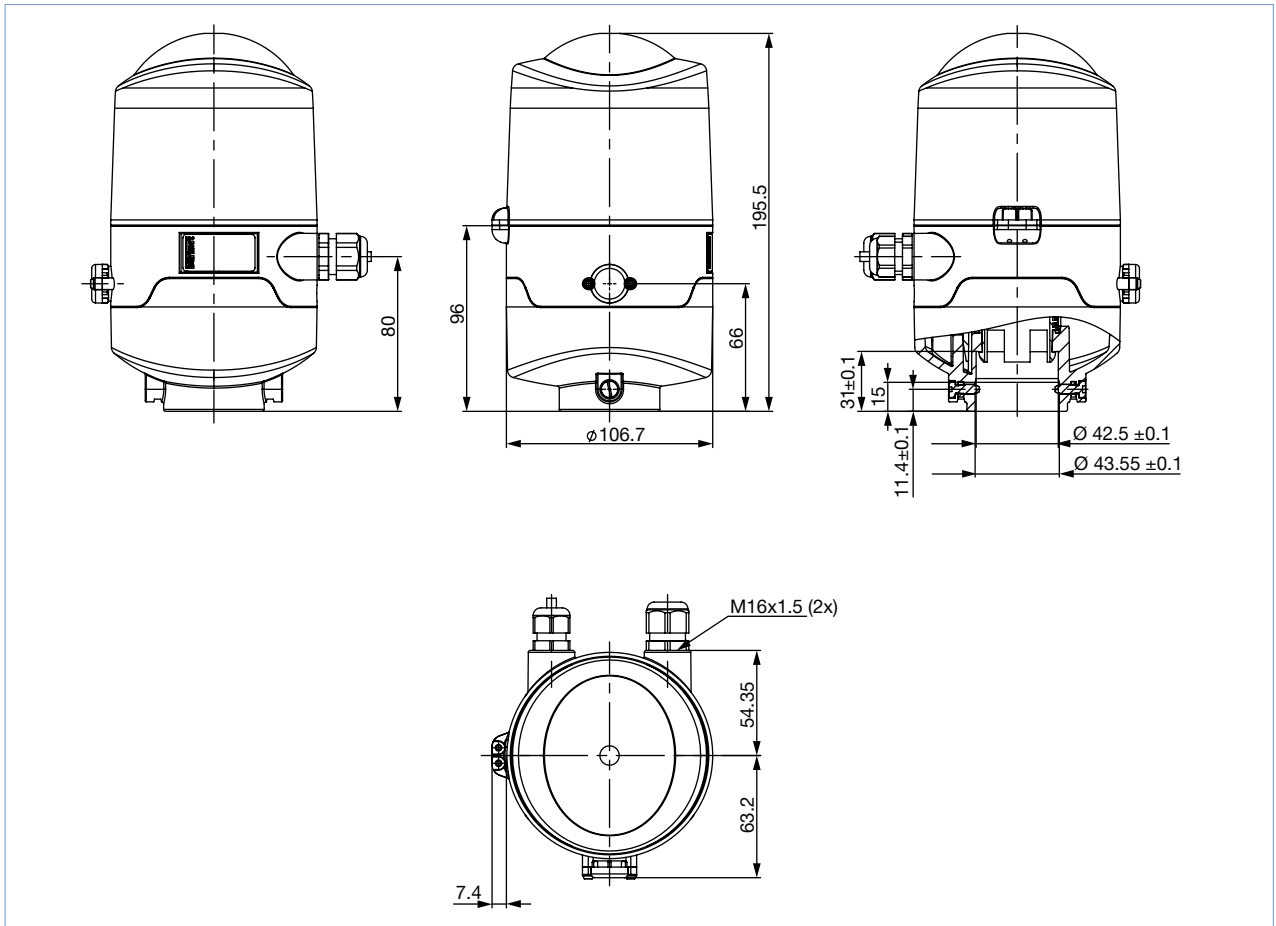
Dimensions in mm



3.2. Feedback version (without pilot valves)

Note:

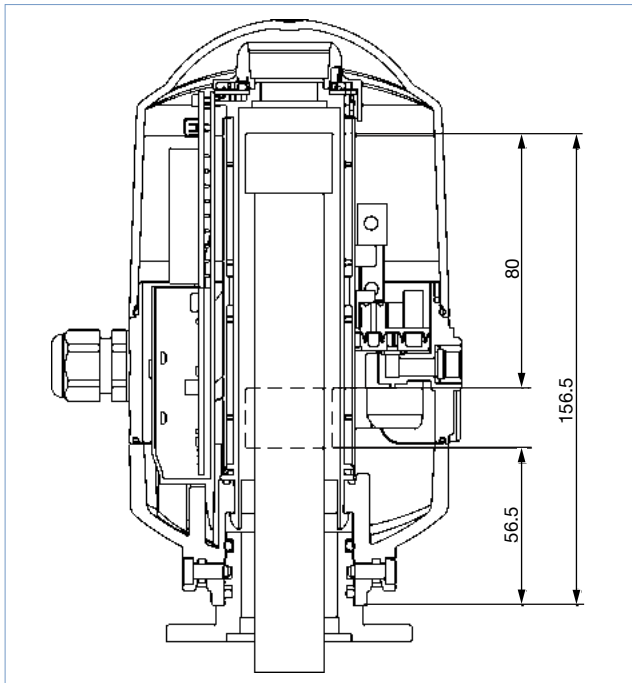
Dimensions in mm



3.3. Measuring range of piston rod and target

Note:

Dimensions in mm

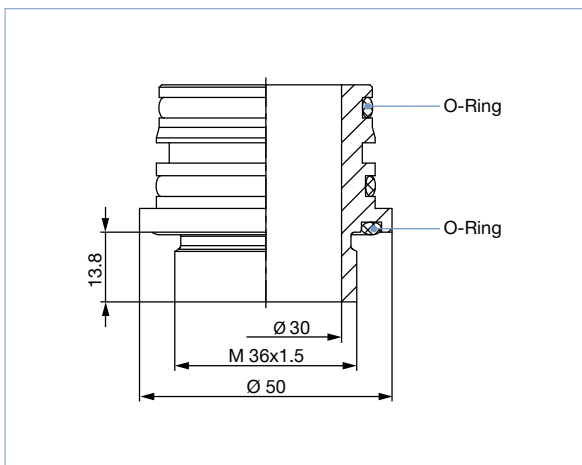


3.4. Accessories Dimensions

Note:

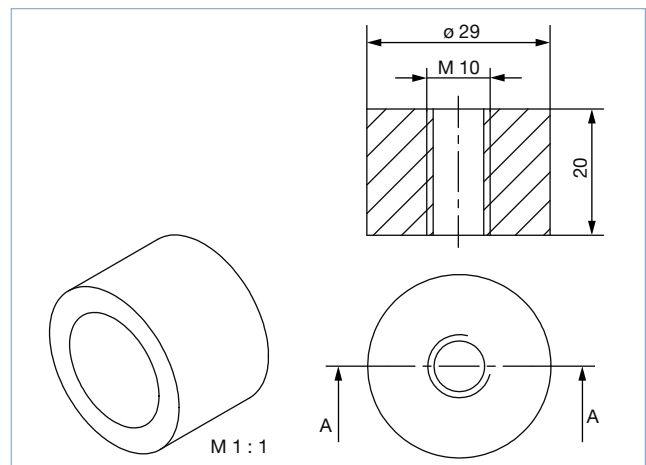
Dimensions in mm

Universal stainless steel flange



Manufacturing a customized flange adaptor requires detailed drawing to ensure the control head functions and seals proper

Target for Type 8681 (1.4021)



4. Device/Process connections

4.1. Without bus actuation 24 V DC

Cable glands	
Connection left: Voltage, signals	Connection right: External initiator
Version with 12 pin plug (for 24 V) ¹⁾	
Connection left: Voltage, signals	Connection right: External initiator

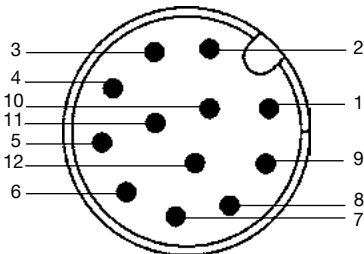
1.) M12 plug acc. to IEC 61076-2-101, 12 pin with 8 cm cable

	<table border="1"> <thead> <tr> <th>Pin</th> <th>Description</th> <th>Pin assignment</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>T1 T2 T3</td> <td>Teach-In keys</td> </tr> <tr> <td>2</td> <td>Service</td> <td>Service interface</td> </tr> <tr> <td>3</td> <td>-</td> <td>DIP button for colour coding of LED</td> </tr> <tr> <td>4</td> <td>V2 V3</td> <td>Solenoid valve connection with Status LED for valves 2, 3</td> </tr> <tr> <td>5</td> <td>24 V S4IN GND</td> <td>Connection of the external initiators</td> </tr> <tr> <td>6</td> <td>Y1 Y2 Y3</td> <td>Control unit solenoid valve Y1...3</td> </tr> <tr> <td>7</td> <td>S1 OUT S2 OUT S3 OUT S4 OUT</td> <td>Feedback signals S1...4 OUT</td> </tr> <tr> <td>8</td> <td>GND</td> <td>Operating voltage</td> </tr> <tr> <td>9</td> <td>-</td> <td>Terminal strip</td> </tr> <tr> <td>10</td> <td>-</td> <td>Solenoid valve connection with Status LED for valve 1</td> </tr> </tbody> </table>	Pin	Description	Pin assignment	1	T1 T2 T3	Teach-In keys	2	Service	Service interface	3	-	DIP button for colour coding of LED	4	V2 V3	Solenoid valve connection with Status LED for valves 2, 3	5	24 V S4IN GND	Connection of the external initiators	6	Y1 Y2 Y3	Control unit solenoid valve Y1...3	7	S1 OUT S2 OUT S3 OUT S4 OUT	Feedback signals S1...4 OUT	8	GND	Operating voltage	9	-	Terminal strip	10	-	Solenoid valve connection with Status LED for valve 1
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Multipole connection M12, 12 pin

Input and output signals to the higher level control system (SPS)

12 pin circular plug connector M12 x 1.0 (acc. to IEC 61076-2-101)



Pin	Description	Pin assignment
1	24 V	Power supply 24 V
2	GND	GND
3	S1 OUT	Output Position S1
4	S2 OUT	Output Position S2
5	S3 OUT	Output Position S3
6	S4 OUT	Output external initiator S4
7	Y1	Solenoid valve input 1
8	Y2	Solenoid valve input 2
9	Y3	Solenoid valve input 3
10	-	Not assigned
11	-	Not assigned
12	-	Not assigned

4.2. Without bus actuation 120 V AC

Cable gland		Description terminal strip 1	Pin assignment	
		PE	Protective earth conductor	
		L	Power supply	Conductor Neutral conductor
		N	120 V AC	
		S1 OUT	Output Position 1	
		S2 OUT	Output Position 2	
		S3 OUT	Output Position 3	
		S4 OUT	Output external initiator	
		Y1	Solenoid valve input 1	
		Y2	Solenoid valve input 2	
		Y3	Solenoid valve input 3	
		Description terminal strip 2	Pin assignment (external initiator)	
<p>Connection left: Voltage, signals</p> <p>Connection right: External initiator</p>		L	Power supply - live conductor	
		S4 IN	Input external initiator	
		N	Power supply - neutral conductor	

4.3. AS-Interface connection

With multipole connection ¹⁾ (M12 plug acc. to IEC 61076-2-101, 4 pin) an 8 cm cable		With multipole connection (M12 plug acc. to IEC 61076-2-101, 4 pin) with mounted AS-i flat cable clip at cable 80 cm cable	
		<p>AS-i flat cable clip with M12 stainless steel socket</p> <p>M12 plug outlet</p> <p>Screws</p>	
Connection left: AS-Interface	Connection right: External initiator	Connection left: AS-Interface	Connection right: External initiator

1.) On request

Circular plug M12, 4 pin							
<p>Bus connection Power supply via Bus</p>		<p>Bus connection with external Power supply</p>					
Pin	Description	Pin assignment	Wire colour	Pin	Description	Pin assignment	Wire colour
1	ASI +	AS-Interface - AS-i +	Brown	1	ASI +	AS-Interface - AS-i +	Brown
2	NC	Not assigned	White	2	GND	GND	White
3	ASI -	AS-Interface - AS-i -	Blue	3	ASI -	AS-Interface - AS-i -	Blue
4	NC	Not assigned	Black	4	24 V +	24 V +	Black
<p>Power Valve 24V ASI S4IN Ext. GND</p> <p>Jumper</p>				<p>Power Valve 24V ASI S4IN Ext. GND</p> <p>Jumper</p>			

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4.4. IO-Link connection

Multipole connection		Cable gland	
M12 plug acc. to IEC 61076-2-101, 4 pin (Port Class A) or 5 pin (Port Class B) an 15 cm cable		M16 x 1.5 (SW22)	
Connection left: Voltage, signals (IO-Link connection)	Connection right: External initiator	Connection left: Voltage, signals (IO-Link connection)	Connection right: External initiator

Circular plug M12, 4 pin, Port Class A				
	Pin	Description	Pin assignment	Wire colour
	1	L+	24 V DC	Brown
	2	DIO/2L+	Not assigned	(White)
	3	L-	0 V (GND)	Blue
4	C/Q	IO-Link	Black	

Circular plug M12, 5 pin, Port Class B				
	Pin	Description	Pin assignment	Wire colour
	1	L+	24 V DC (Power 1)	Brown
	2	DIO/2L+	24 V DC (Power 2)	White
	3	L-	0 V (GND - Power 1)	Blue
	4	C/Q	IO-Link	Black
5	2M	0 V (GND - Power 2)	Grey or yellow/green	

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4.5. Bürkert system bus (büS) and CANopen connection

Multipole

Connection left: büS/CANopen	Connection right: External initiator
--	--

Circular plug M12, 5 pin

Pin	Description	Wire colour
1	Shielding	Shielding
2	V+	Red
3	V-	Black
4	CAN_H	White
5	CAN_L	Blue

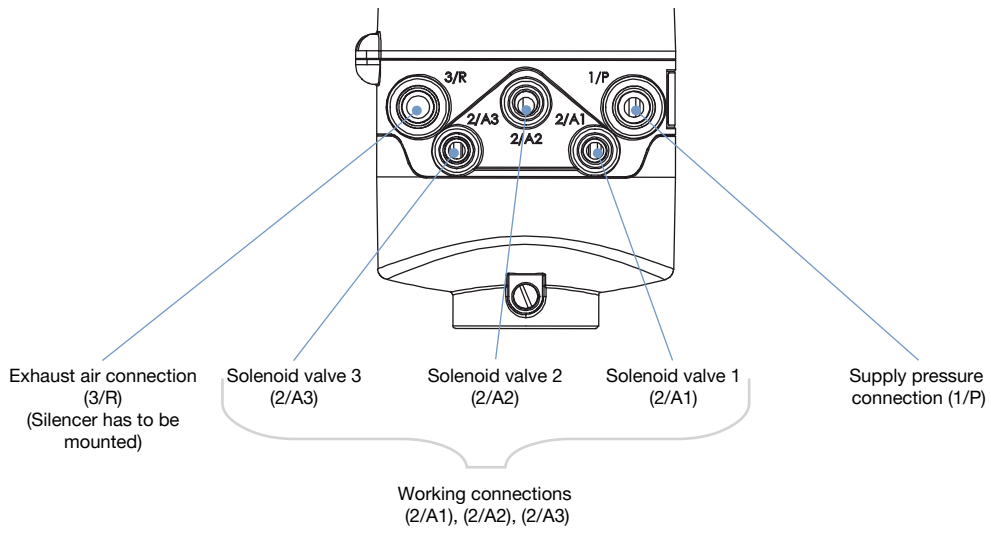
Cable gland

Description terminal strip 1	Wire colour	Pin assignment
V+	Red	Power supply büS/CANopen
V-	Black	Power supply büS/CANopen
CAN_H	White	Bus signal CAN high
CAN_L	Blue	Bus signal CAN low
Description terminal strip 2	Pin assignment	
V+	Power supply for external initiator	
S4 IN	Input external initiator	
GND	GND external initiator	

Connection left: Voltage, signals	Connection right: External initiator
---	--

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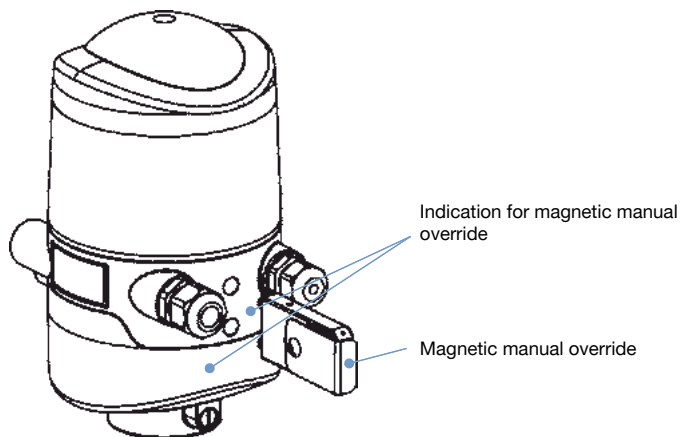
4.6. Pneumatic connection



5. Product operation

5.1. Magnetic manual override

Activation / Deactivation solenoid valve 1 (process valve maintenance)



6. Ordering information

6.1. Bürkert eShop – Easy ordering and quick delivery



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6.3. Ordering chart

Note:

- ATEX and UL for büS/CANopen in preparation
- Further versions on request

Communi- cation	Power supply	Connection	ATEX Zone 2/22 Cat. 3	FM NI Class I Division 2	cULus	Number of solenoid valves	Position feedback	Article no.		
Analogue	12...28 V DC	Cable gland	-	-	-	0	3 int. + 1 ext.	196410		
			-	-	-	1	3 int. + 1 ext.	196411		
			-	-	-	2	3 int. + 1 ext.	196412		
			-	-	-	3	3 int. + 1 ext.	196413		
			Yes	-	-	1	3 int. + 1 ext.	196415		
	12...28 V DC	M12, 12 pin, 8 cm cable	-	-	-	0	3 int. + 1 ext.	196420		
			-	-	-	1	3 int. + 1 ext.	196421		
			-	-	-	2	3 int. + 1 ext.	196422		
			-	-	-	3	3 int. + 1 ext.	196423		
			Yes	-	-	1	3 int. + 1 ext.	196425		
	120 V AC	Cable gland	-	-	-	0	3 int. + 1 ext.	196470		
			-	-	-	1	3 int. + 1 ext.	196471		
			-	-	-	2	3 int. + 1 ext.	196472		
			-	-	-	3	3 int. + 1 ext.	196473		
			Yes	-	-	1	3 int. + 1 ext.	196475		
	AS-Inter- face (62 Slaves)	29.5...31.6 V DC	Version with AS-i flat cable clip and 80 cm cable	-	-	-	0	3 int. + 1 ext.	196430	
-				-	-	1	3 int. + 1 ext.	196431		
-				-	-	2	3 int. + 1 ext.	196432		
-				-	-	3	3 int. + 1 ext.	196433		
Yes				-	-	1	3 int. + 1 ext.	196435		
IO-Link	18...30 V DC (acc. to Specifi- cation)	Multipole M12, 5 pin (Port Class B) with 15 cm cable	-	-	-	0	3 int. + 1 ext.	359308		
			-	-	-	1	3 int. + 1 ext.	359307		
			-	-	-	2	3 int. + 1 ext.	359309		
			-	-	-	3	3 int. + 1 ext.	355009		
			Yes	-	-	0	3 int. + 1 ext.	359322		
			Yes	-	-	1	3 int. + 1 ext.	359323		
			Yes	-	-	2	3 int. + 1 ext.	359324		
			Yes	-	-	3	3 int. + 1 ext.	359325		
			Multipole, 4 pin (Port Class A) with 15 cm cable	-	-	-	0	3 int. + 1 ext.	359167	
				-	-	-	1	3 int. + 1 ext.	358578	
		-		-	-	2	3 int. + 1 ext.	359258		
		-		-	-	3	3 int. + 1 ext.	358579		
		Yes		-	-	0	3 int. + 1 ext.	359318		
		büS / CANopen	Via Bus	Cable gland	-	-	-	0	3 int. + 1 ext.	363169
					-	-	-	1	3 int. + 1 ext.	363164
-	-				-	2	3 int. + 1 ext.	363166		
-	-				-	3	3 int. + 1 ext.	363168		
Multipole M12, 5 pin, 80 cm cable	-	-	-	1	3 int. + 1 ext.	363140				
	-	-	-	2	3 int. + 1 ext.	363160				
	-	-	-	3	3 int. + 1 ext.	363163				

Communi- cation	Power supply	Connection	ATEX Zone 2/22 Cat. 3	FM NI Class I Division 2	cULus	Number of solenoid valves	Position feedback	Article no.
FM/UL version								
Analogue	12...28 V DC	Cable gland	-	Yes	-	0	3 int. + 1 ext.	267358
			-	Yes	-	1	3 int. + 1 ext.	261483
			-	Yes	-	3	3 int. + 1 ext.	261484
			-	-	Yes	1	3 int. + 1 ext.	281497
			-	-	Yes	3	3 int. + 1 ext.	281498
AS-Inter- face (62 Slaves)	29.5...31.6 V DC	Cable gland	-	Yes	-	1	3 int. + 1 ext.	261485
			-	Yes	-	2	3 int. + 1 ext.	268730
			-	Yes	-	3	3 int. + 1 ext.	261486
			-	-	Yes	1	3 int. + 1 ext.	329396
			-	-	Yes	3	3 int. + 1 ext.	329397
IO-Link	18...30 V DC (acc. to specification)	Cable gland (Port Class B)	-	Yes	-	1	3 int. + 1 ext.	20003495
			-	Yes	-	2	3 int. + 1 ext.	20003499
			-	Yes	-	3	3 int. + 1 ext.	20003500
		Multipole 5 pin (Port Class B) with 15 cm cable	-	-	Yes	0	3 int. + 1 ext.	359314
			-	-	Yes	1	3 int. + 1 ext.	359315
			-	-	Yes	2	3 int. + 1 ext.	359316
			-	-	Yes	3	3 int. + 1 ext.	359317
		Cable gland (Port Class A)	-	Yes	-	1	3 int. + 1 ext.	20002932
			-	Yes	-	2	3 int. + 1 ext.	20003418
			-	Yes	-	3	3 int. + 1 ext.	20003427
		Multipole, 4 pin (Port Class A) with 15 cm cable	-	-	Yes	0	3 int. + 1 ext.	359310
			-	-	Yes	1	3 int. + 1 ext.	359311
			-	-	Yes	2	3 int. + 1 ext.	359312
			-	-	Yes	3	3 int. + 1 ext.	359313

Further versions on request

**Additional**

AS-Interface: connection M12, 4 pin 8 cm cable
 AS-Interface (31 Slaves)

6.4. Ordering chart accessories

Standard accessories

Note:

Standard gateway (non-configured) see [data sheet Type ME43](#) ▶.

Version	Article no.
Rotary push-in fitting, brass nickel-plated G ¼ for Ø tube 8/6	780084
Rotary push-in fitting, brass nickel-plated G ⅜ for Ø tube 6/4	780082
Universal Adaptor with O-ring	196495
Target for position sensor, 1.4021	196494
Magnetic manual override tool	196490
AS-i flat cable clamp with M12 stainless steel bush	799646
USB Adapter set for PC communication	227093
büS Stick Set 1 (incl. cable (M12 and Micro USB) Stick with integrated terminating resistor, power supply and software) to connect with Bürkert Communicator	772426
Software Bürkert Communicator	LINK ▶
Silencer PE G ¼	780780
Blind plug PP G ⅜	770901
Cable 8 cm with M12 plug, 12 pin for 24 V DC	217574
Cable 80 cm with M12 plug, 4 pin for AS-i	217572
Cable 8 cm with M12 plug, 4 pin for AS-i	217573
Set with 20 lead seals, to avoid tool-free opening of the cover	257100

Special accessories for Type 8681 büS/CANopen

Note:

Standard gateway (non-configured) see [data sheet Type ME43](#) ▶.

Version	Article no.
Preconfigured gateway SYME43 ^{1.)} for integration of Type 8681 büS/CANopen into Ethernet/IP	316696
CAN Junction Box with plug 8x M12, VA	338398
Connection cable with M12 plug, 5 pin, 99 cm	218187
Connection cable with M12 socket, VA, 1 m	773482
Connection cable with M12 socket, VA, 3 m	773483
Extension cable M12 male and M12 female, VA, length 0.5 m	773484
Extension cable M12 male and M12 female, VA, length 1 m	773485
Extension cable M12 male and M12 female, VA, length 3 m	773486
Extension cable M12 male and M12 female, VA, length 5 m	773487
Extension cable M12 male and M12 female, VA, length 10 m	773488
Extension cable M12 male and M12 female, VA, length 20 m	773489
CAN termination M12 male, VA, 120 Ω	773490
CAN termination M12 female, VA, 120 Ω	773491
M12 CAN-Y connector VA (1x M12 male, 2x M12 female)	773492
M12 CAN-T connector VA (1x M12 male, 2x M12 female)	773493
Mounting plate for M12 CAN-T connector VA	773494
Screw plug for M12 socket	308778
Set protection cover M12 with O-ring (spare part)	308785
büS Stick Set 1 (incl. cable (M12 and Micro USB) Stick with integrated terminating resistor, power supply and software)	772426

1.) Further system specific configuration possible on request

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