TopControl ON/OFF

bürkert
Fluid Control Systems

- Easy control of pneumatically-activated process valves
- Compact unit consisting of pilot valve, position feedback and communication electronics
- Brief circuit times thanks to short hose connections
- Less effort to install, simple start-up

Type 8631 can be combined with ...

Type 2012
Globe valve

Type 2000/01/02
Angle-seat valve

Type 2030/2031
Diaphragm valve

Type 2652/2655
Ball valve

Type 2672/2675
Butterfly valve

Pneumatically-activated process valves can be controlled very easily using the TopControl ON/OFF type 8631. For example, these Bürkert types 2000, 2030, 2031, 2031K, 2652, 2655, 2658, 2672 and 2675. TopControl ON/OFF and pneumatic drive are connected to each other mechanically and form one optical and functional unit.

Various levels of extension and electrical connection concepts are made possible by TopControl ON/OFF's modular construction. A position feedback is possible via inductive proximity switches or mechanical terminal switches. The terminal switches can be height-adjusted.

TopControl ON/OFF effects advancement to a valve safety position in the event of operational or pneumatic emergency current failure.

Process valves equipped with TopControl ON/OFF can be used for a multitude of control tasks in fluid technology.

Technical data	
Body material	PPE/PA
Lid material	PSU (transparent)
Seal material	NBR
Control medium Dust content Particle density Pressure dew point Oil concentration	air, neutral gases Class 5 (≤ 40 µm particle size) Class 5 (≤ 10 mg/m³) Class 3 (≤ -20°C) Class 5 (≤ 25 mg/m³)
Device variants	for single and double-acting valve actuators
Control air temperature	-10 ... +50°C
Ambient temperature	-10 ... +50°C
Control air port power supply/exhaust air Working connection	 G1/4 (NPT 1/4 and RC 1/4 on request) G1/8
Compressed air	3 to 7 bar[1)]
Flow Q_{Nn}	100 Nl/min pilot valve
Pilot valve	3/2-way valve (single-acting drive) 5/2-way valve (double-acting drive)
Position feedback option 24 V version 24 V or 230 V version	 inductive limit switch (proximity switch), position feedback via binary outputs (NO) mechanical limit switch, position feedback via binary outputs (NO or NC)
Communication circuit option	ASI (AS interface) DeviceNet
Protection class	IP 65 according to EN 60529
Initiators	8 ... 30 V DC / max. 100 mA
Terminal position switches	max. 230 V AC / max. 1 A

[1)] The supply pressure applied must lie 0.5 to 1 bar above the minimum required control pressure of the valve actuator.

Technical data - continuation

Without field bus communication

Technical data - type 8631 II 2G EEx ia IIC T6 PTB 00 ATEX 2077X	
Initiators	Pepperl+Fuchs 2-wire NAMUR
Electrical connections	2 x M16x1.5 Bushing by means of screw clamps
Approval	according DIN EN 50014 and 50020 (see also: “Temperature categories T5 and T6” table)
Function-technical data Resistance at 20°C (R_{20}) Minimum clamp tension Minimum current	 510 Ohm 11.7 V 23 mA

Technical data - type 8631	
Operating voltage	24 V DC; 230 V AC on request
Residual ripple with DC	10 % Not technical direct current!
Voltage tolerance	± 10%
Power consumption	< 2 W
Electrical connection	M16x1.5 bushing by means of screw clamps

Temperature categories T5 and T6

Temperature category	Max. permitted ambient temperature[1] [°C]	Max. permitted output [W]
T6	+50	0.4
	+45	0.5
	+40	0.7
	+35	0.8
T5	+50	0.8
	+45	1.0
	+40	1.1

[1] Ambient temperature for complete TopControl 8631 (temperature inside the device is around a max. 5 °C higher)

With field bus communiaction

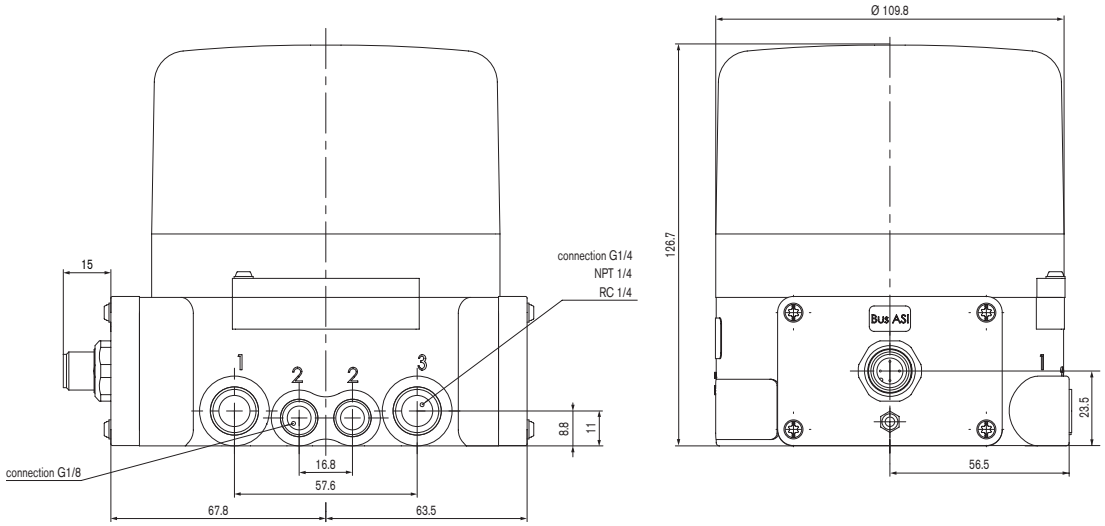
Technical data - type 8631 (ASI)	
Profile	S-D.F.F. (Standard slave, max. 31 slaves/master) S-D.A.E. (A/B slave, max. 62 slaves/master)
Operating voltage (via bus lines) (separated from bus signal)	29.5 ... 31.6 V DC according to specification on request
Power consumption maximum in normal operation with reduced current	 120 mA ≤ 80 mA ≤ 50 mA (after 100 ms)
Output Contact rating Watch-dog function	 ≤ 1 W via AS-interface integrated
Input Sensor operating voltage Acceptable current load Switching level High Input current High Input current Low	 24 V ± 10% (via AS-interface) ≤ 50 mA short circuit protected ≥ 10 V limited to 6.5 mA ≤ 1.5 mA
Electrical connections	M12 flange plug 4-pole Cable screw connection M16x1.5 incl. ASI flat-band cable seal
Programming data	see Operating instruction

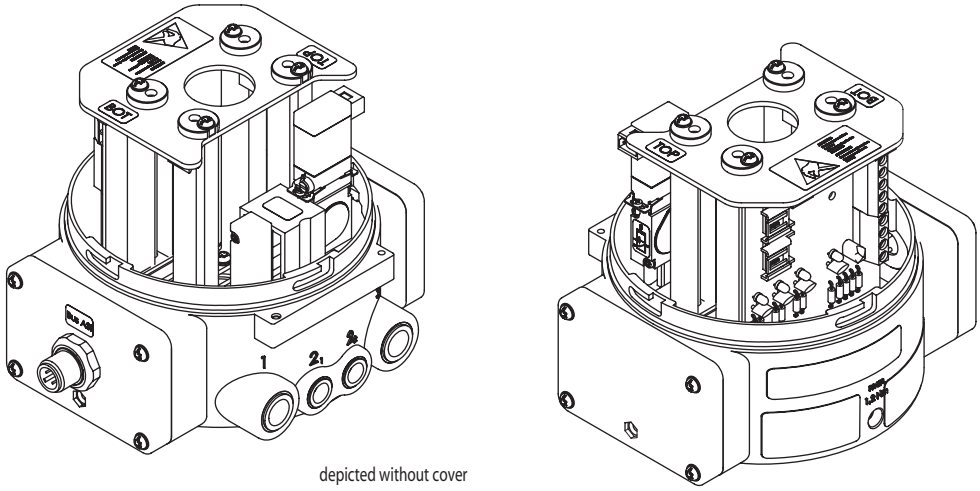
Technical data - type 8631 (DeviceNet)	
Profile	Group 2 Only Slave Device; MAC-ID and transmission rate adjustable via DIP switches
Operating voltage	11 ... 25 V DC
Power consumption	≤ 125 mA
Output Pull-in current Holding current	 120 mA 80 mA
Input “0” “1”	 0 ... 1.5 V ≥ 8 V
Electrical connection	M12-Micro Style - flange plug 5-pole (assignment according to DeviceNet specifications)

- Flow QNn value Air [l/min] Measurement at +20 °C, 6 bar pressure at valve input and 1 bar pressure differential
- Pressure data [bar]: Overpressure with respect to atmospheric pressure

Dimensions [mm]

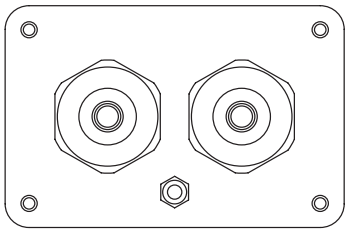
Dimensioned drawing 8631 - Connection M12



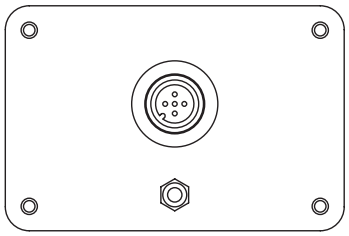


depicted without cover

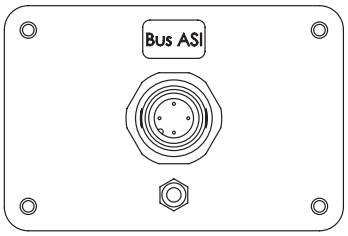
Connection diagram cable screw connection



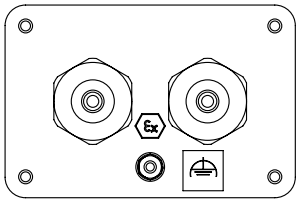
Connection diagram DeviceNet M12 5-pole



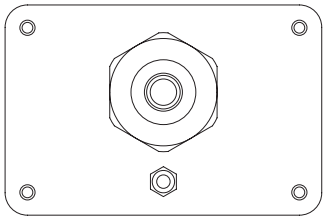
Connection diagram ASI with M12 4-pole



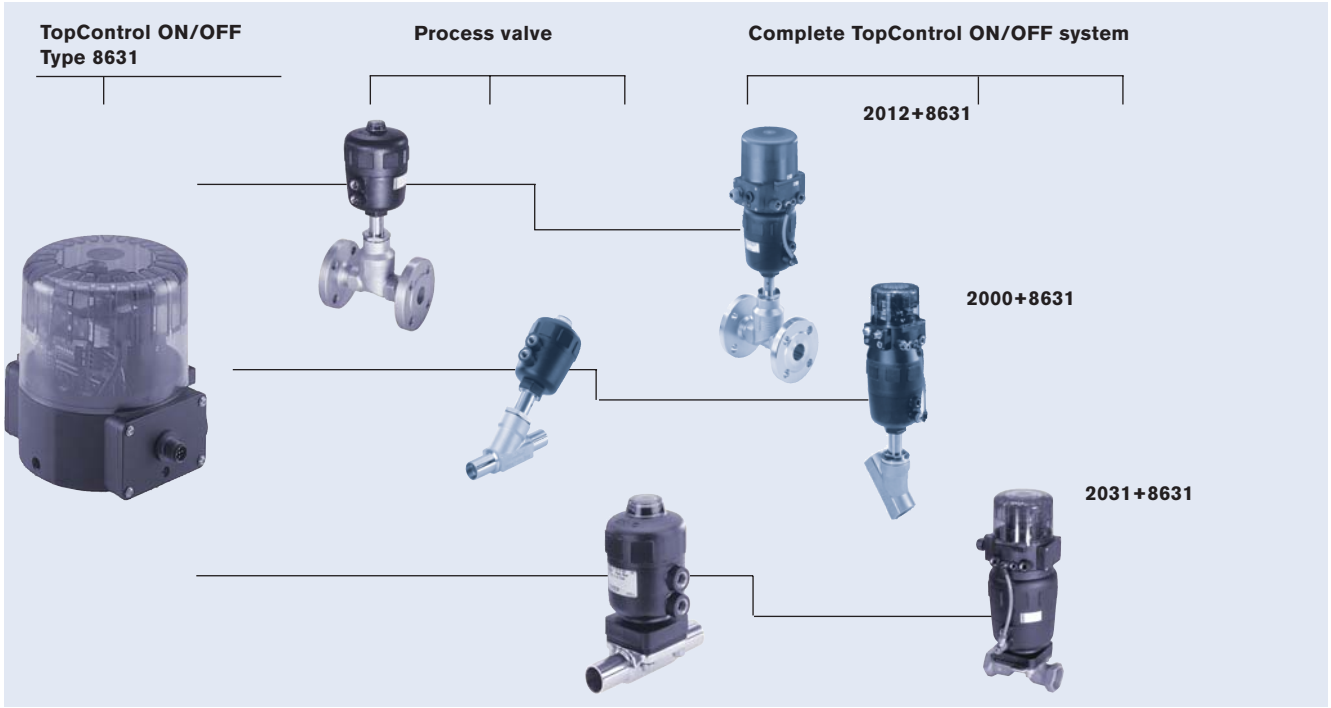
Connection diagram cable screw connection II 2G EEx ia IIC



Connection diagram ASI with cable screw connection



Ordering complete TopControl ON/OFF systems



Ordering chart (Extract, further layouts on request)

Function	24 V DC	ASI 31 slaves	ASI A/B 62 slaves	DeviceNet	Feedback	Electrical connection	Item no.
Control single-acting actuators	with	without	without	without	2 mechanical limit switches	Cable connector	140 637
	with	without	without	without	2 inductive proximity switches	Cable connector	147 958*
	with	without	without	without	2 inductive proximity switches	Multipol circular connector	170 343*
	without	with	without	without	2 inductive proximity switches	Cable connector	142 021
	without	with	without	without	2 inductive proximity switches	Multipol circular connector	142 594
	without	without	with	without	2 inductive proximity switches	Multipol circular connector	158 363
	without	without	with	without	1 inductive proximity switch	Multipol circular connector	162 764
	without	without	with	without	2 inductive proximity switches	Cable connector	162 766
	without	without	with	without	1 inductive proximity switch	Cable connector	163 051
	without	without	without	with	2 inductive proximity switches	Multipol circular connector	151 903
	without	without	without	with	2 mechanical limit switches	Multipol circular connector	157 917
Control double-acting actuators	with	without	without	without	2 mechanical limit switches	Cable connector	142 029
	with	without	without	without	2 inductive proximity switches	Cable connector	142 030
	without	with	without	without	2 inductive proximity switches	Cable connector	142 031
	without	with	without	without	2 inductive proximity switches	Multipol circular connector	142 045
	without	without	with	without	2 inductive proximity switches	Multipol circular connector	162 767
	without	without	with	without	2 inductive proximity switches	Cable connector	163 052
Position feedback; without control function	with	without	without	without	2 mechanical limit switches	Cable connector	146 643
	without	with	without	without	2 inductive proximity switches	Multipol circular connector	146 642

* II 2G EEx ia IIC T6 ATEX approval

Ordering information

Ordering information for complete TopControl systems

A TopControl ON/OFF will only be supplied together with a process valve as a complete TopControl system.
For the selection of a suitable process valve, please consult the data sheets for the Types 2000, 2012, 2030, 2031K, 2652, 2655, 2658, 2672 and 2675 verwenden.

Information required for the ordering of a complete TopControl system
- Item no. of the TopControl ON/OFF
- Item no. of the selected process valve
- Remark “TopControl System”

Order two components and receive a fully-assembled and tested TopControl system.

Ordering chart for accessories

Accessory	Item no.
M12 socket ASI or DeviceNet	917 116