



eCONTROL - Universal controller

- Continuous, 2-point, 3-point and On/Off control
- Ratio control function
- Sensor inputs (4-20 mA, 0-10 V, frequency, RTD)
- Control of proportional, process and motor valves
- Bürkert proportional valves and flow meters are memorized

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

Can be combined with

	Type 2301 + 8696 ▶ Globe control valve system
	Type 8012 ▶ Flowmeter with paddle wheel for continuous flow measurement
	Type 6223 ▶ Servo-assisted 2-way high-flow solenoid control valve
	Type 8316 ▶ Pressure transmitter 4...20 mA
	Type 8222 ▶ Conductivity meter
	Type TST001 ▶ Resistance thermometer

Type description

Thanks to its compact design, the universal 8611 controller is especially designed for compact control system applications. It is compatible and tested with all Bürkert proportional valves and sensors and can be connected with every non-Bürkert Control valve by standard signal (4...20 mA, 0...10 V or PWM-output).

The Proportional & Integral (PI) process controller is equipped with many additional functions. The process value feedback can be supplied as one of three analogue inputs; a standard signal (4...20 mA/0...10 V), frequency or RTD signal; directly to the universal controller.

The process switching points can be set via a 4...20 mA or 0...10 V signal or with the keypad. For temperature specific control, it is possible to set a cascade structure with both temperature and flow as inputs.

Thanks to the proportional control capabilities, a wide range of control functions can be performed in a variety of liquids and gas mediums.

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1. General technical data

Product properties	
Dimensions	Detailed information can be found in chapter "2. Dimensions" on page 5.
Material	
Housing, cover	PC, +20 % glass fibre
Front panel folio	Polyester
Screws	Stainless steel
Multipin	CuZn, nickel-plated
Wall-mounting holder	PVC
Display	Dual-line 8-digit LCD with backlight
Electrical data	
Operating voltage	24 V DC \pm 10 %, filtered and regulated
Power consumption	Approx. 2 W (without valve - without sensor input)
Voltage supply cable	0.5 mm ² max. cross section, max. 100 m, shielded
Electrical connections	Multipin: M12-8 pin, M8-4 pin, M8-3 pin Terminals Insert for connecting to components according to DIN EN 175301-803
Controller modes	PI-Control, 2 point and 3 point, cascaded Up to 2 Binary out with windows and hysteresis mode
Input	
Setpoint	
Standard 4...20 mA	Sourcing mode Max. input impedance: 70 Ω Resolution: 5.5 μ A
Standard 0...10 V	Max. input impedance: 11.5 k Ω Resolution: 2.5 mV
Sensors	
Standard 4...20 mA	Sourcing mode Max. input impedance: 70 Ω Resolution: 5.5 μ A
Standard 0...10 V	Max. input impedance: 11.5 k Ω Resolution: 2.5 mV
Frequency	
Input 1	External sensor Min. 0.25 Hz / max. 1 kHz Input impedance: > 1 k Ω Signal type: Sinus, square, triangle pulse (>3000 mVpp, max. 30 Vpp)
Input 2	Internal Hall sensor Min. 0.25 Hz / max. 1 kHz (only with Bürkert Type S030 flow fitting)
Pt100 (2 wires)	Measuring range: 0...+200 $^{\circ}$ C Measuring current: 1 mA Measuring error: <0.5 $^{\circ}$ C
Binary input	Input impedance: 10 k Ω Operating threshold: 3...30 V Max. frequency: 1 kHz
Output	
Power supply sensor / actuator	24 V DC, max. 1 A
Total load of all outputs	Max. 1.5 A
Continuous signal	
Standard signal 4...20 mA	Max. loop resistance: 680 Ω Accuracy: 0.5 %
Standard signal 0...10 V	Max. current: 20 mA Accuracy: 0.5 %
Discontinuous signal	
2 transistor outputs for PWM ¹⁾ (pulse width modulation) or PTM ¹⁾ (pulse time modulation) signal	Control frequency 20 Hz...9999 Hz Resolution max.: 16 Bit (depending on frequency) Max. current load: 1.5 A Switching voltage: 24 V DC
Binary output	
Transistor output (PNP) (configurable)	Max. current load: 1.5 A Switching voltage: 24 V DC

Approvals and Certificates

Standard	EMC, CE: EN 61326
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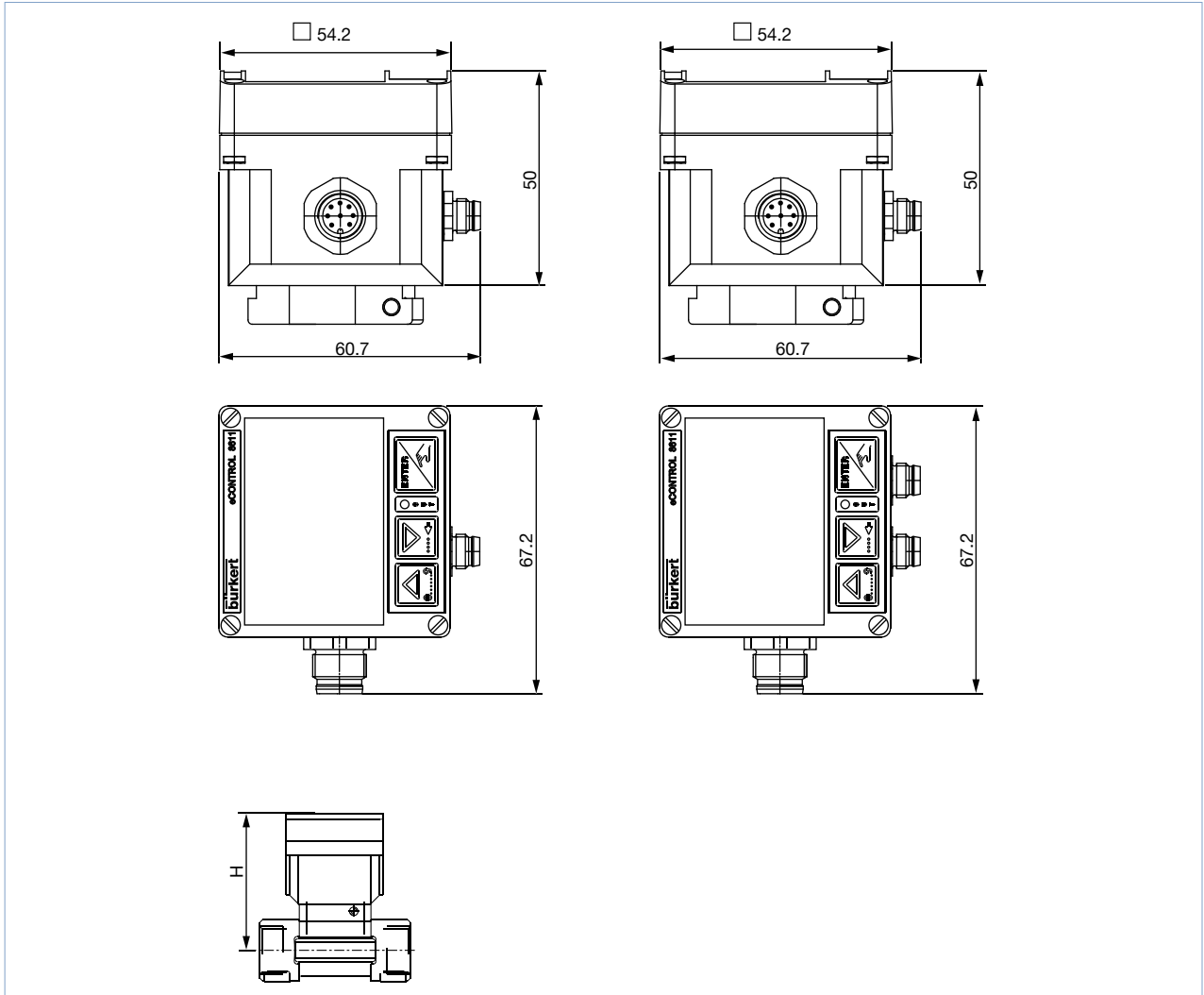
Environment and installation

Height above sea level	Max. 2000 m
Relative humidity (environment)	≤ 80 %, without condensation
Ambient temperature	0...+ 70 °C (operating and storage)
Degree of protection	IP65

- 1.) PWM = pulse width modulation
PTM = pulse time modulation

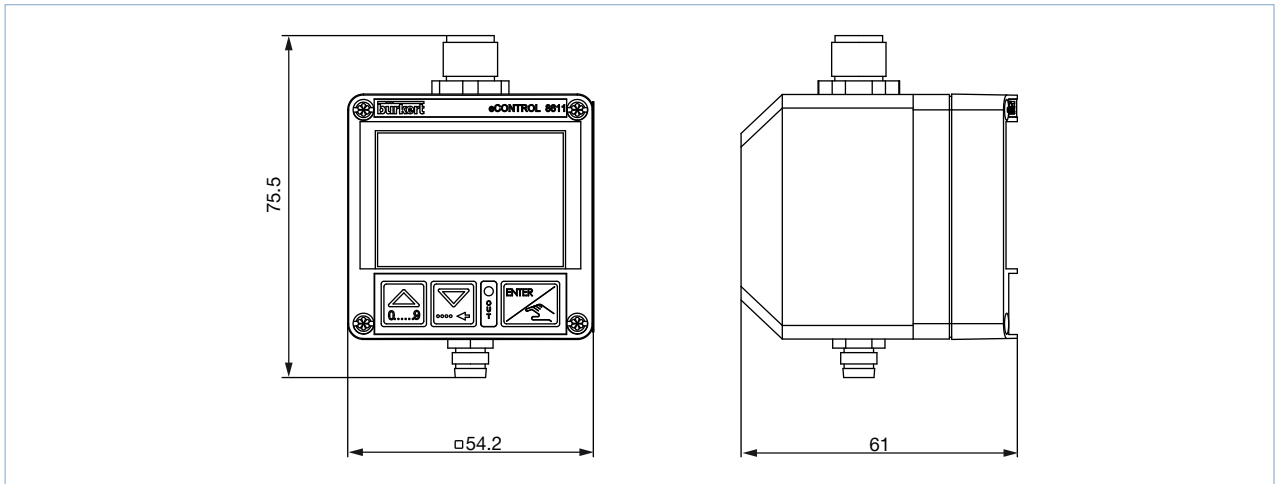
2. Dimensions

2.1. Fitting-mounting

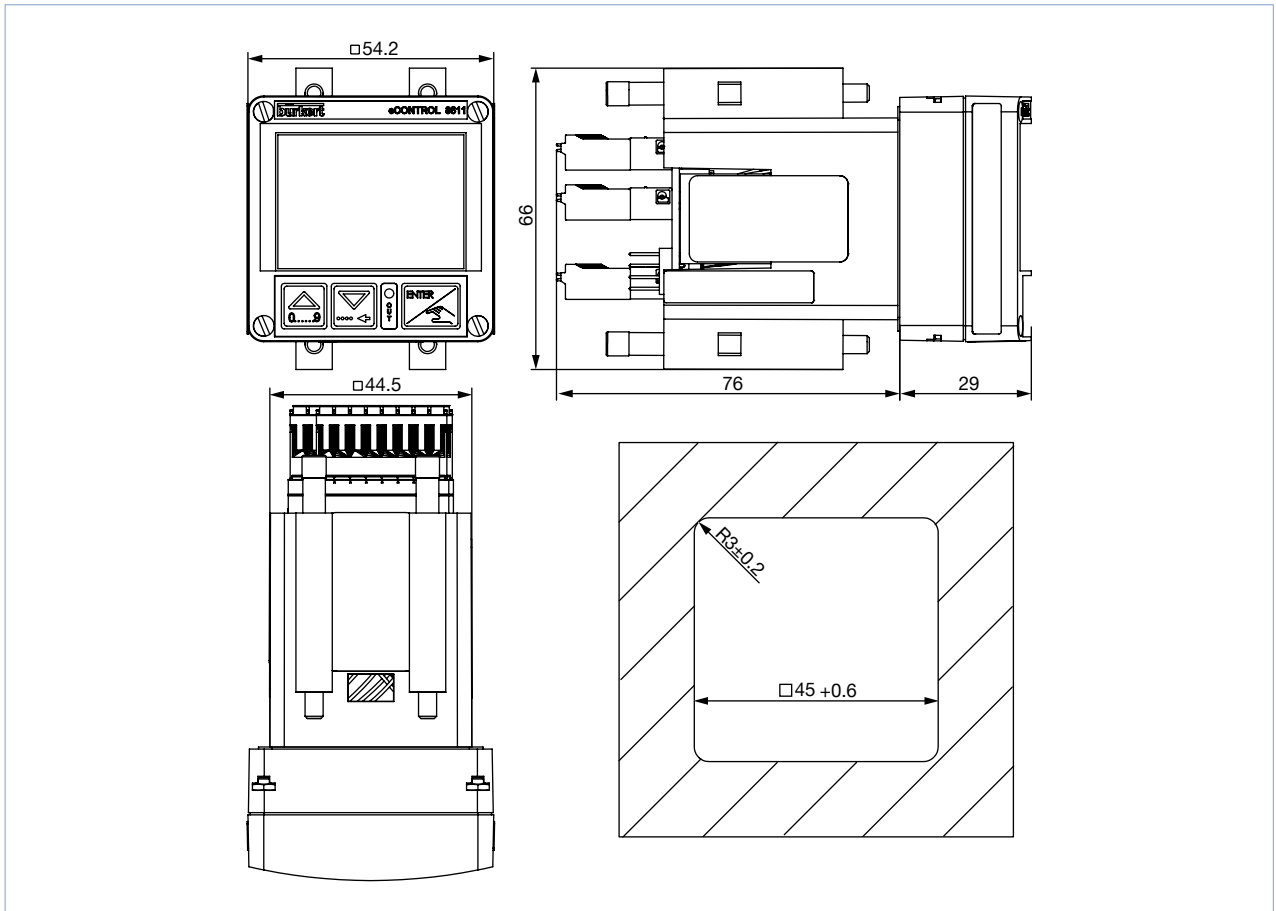


DN [mm]	H [mm]
06	79.5
08	79.5
15	84.5
20	82.0
25	82.2
32	85.8
40	89.6
50	95.7
65	98.7

2.2. Valve-mounting

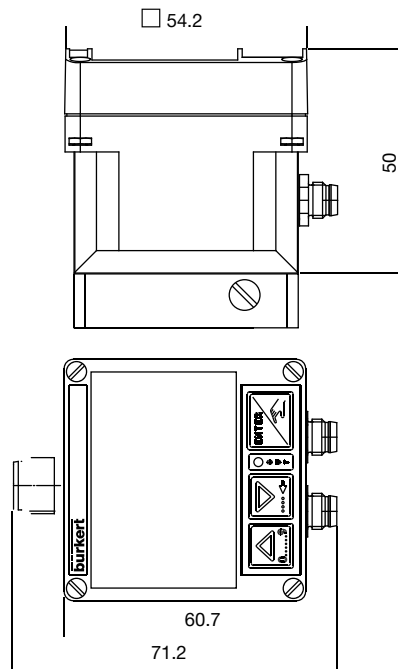


2.3. Panel-mounting



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2.4. Wall-mounting

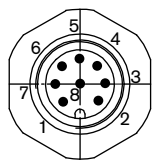


3. Device/Process connections

3.1. Connection feasibility and controller versions

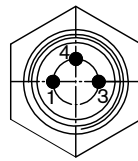
Assembly	Flow sensor fitting mounting	Wall and rail mounting	Valve mounting
Sensor	Integrated HALL-sensor, without external sensor input	Integrated HALL-sensor, with external sensor input	Without HALL-sensor, with external sensor input
Control	<ul style="list-style-type: none"> Flow control 	<ul style="list-style-type: none"> Temperature control with flow display Temperature control with flow input for cascade control Ratio control 	<ul style="list-style-type: none"> Temperature control Pressure control Flow control
	<p>8 pin M12 4 pin M8</p>	<p>8 pin M12 4 pin M8 3 pin M8</p>	<p>8 pin M12 3 pin M8</p>

8 pin M12 plug



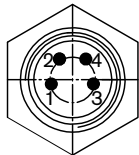
- Power supply 24 V DC
- Set point value (0...10 V / 4...20 mA)
- Binary input
- Process value output (0...10 V / 4...20 mA)
- PI-control output (0...10 V / 4...20 mA)
- Binary output

3 pin M8 plug



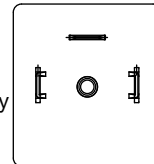
- Sensor input
- 4...20 mA / 0...10 V, frequency or Pt100
- Sensor power supply 24 V DC

4 pin M8 plug

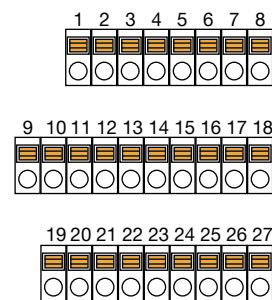


- PI-control output:
- 1 x PWM output
 - 2 x PTM output
 - 0...10 V/4...20 mA output and power supply actuator 24 V DC (only article no. 182383 and 567181)

DIN 175301 - 803



PWM output for Solenoid control valve

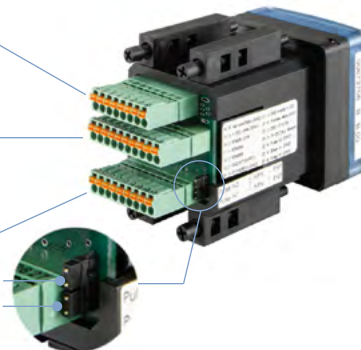


Terminal block 1

Terminal block 2

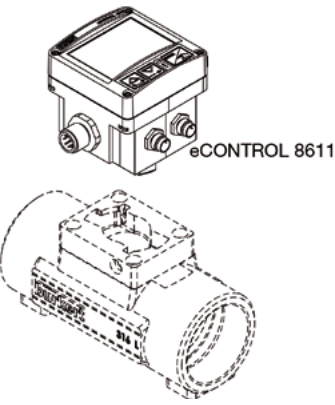
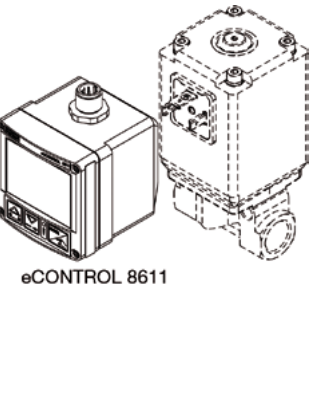
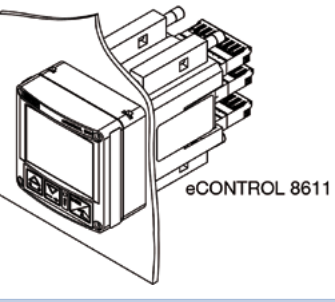
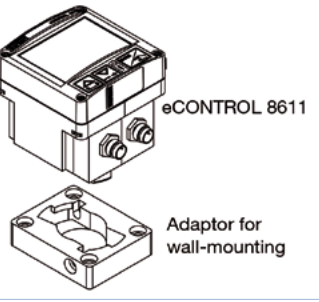
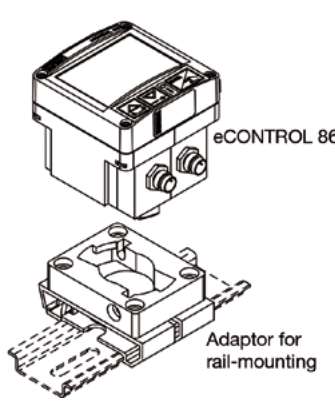
Terminal block 3

Jumper 1 (NPN/PNP)
Jumper 2 (NPN/PNP)



4. Product installation

4.1. Mounting options

Mounting on flow-fitting	Mounting on proportional valve
 <p>eCONTROL 8611</p>	 <p>eCONTROL 8611</p>
Mounting in a panel	Mounting on a wall
 <p>eCONTROL 8611</p>	 <p>eCONTROL 8611</p> <p>Adaptor for wall-mounting</p>
Mounting on a rail	
 <p>eCONTROL 8611</p> <p>Adaptor for rail-mounting</p>	

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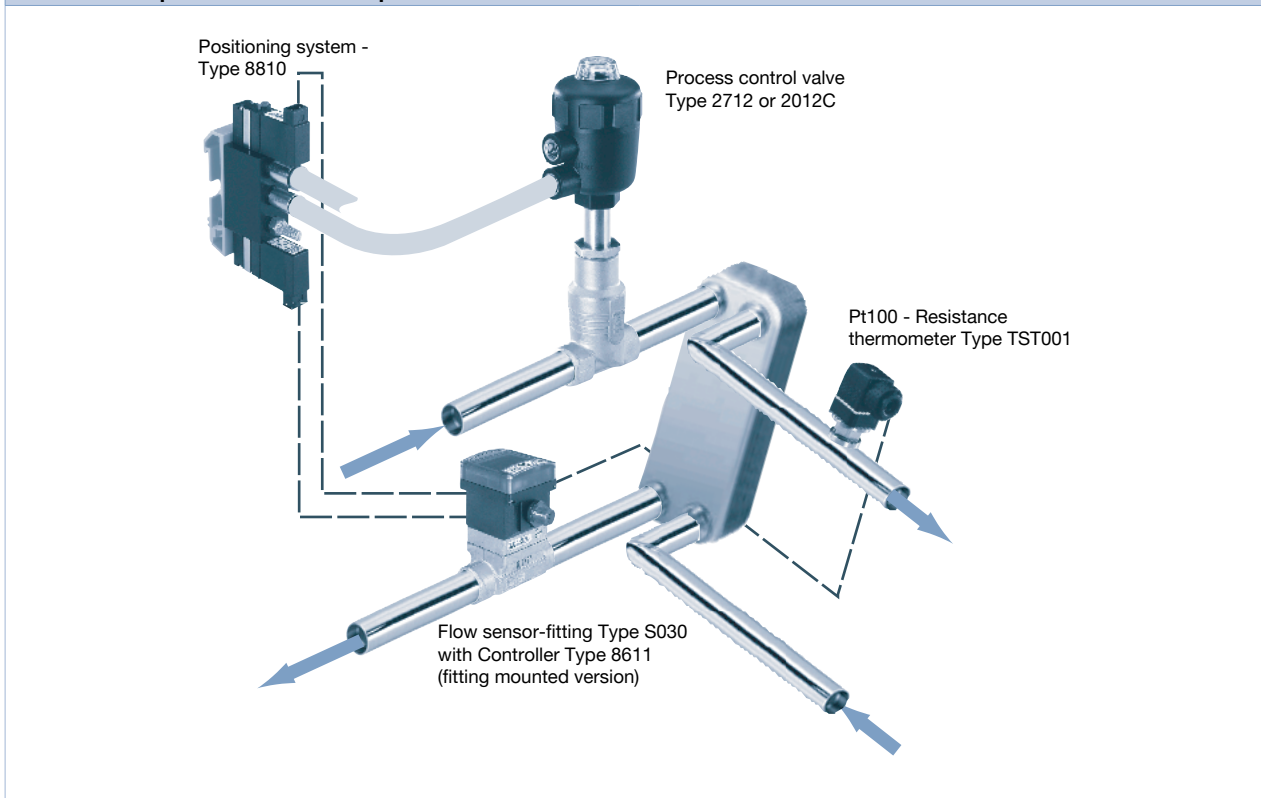
5. Product design and assembly

5.1. Fields of application

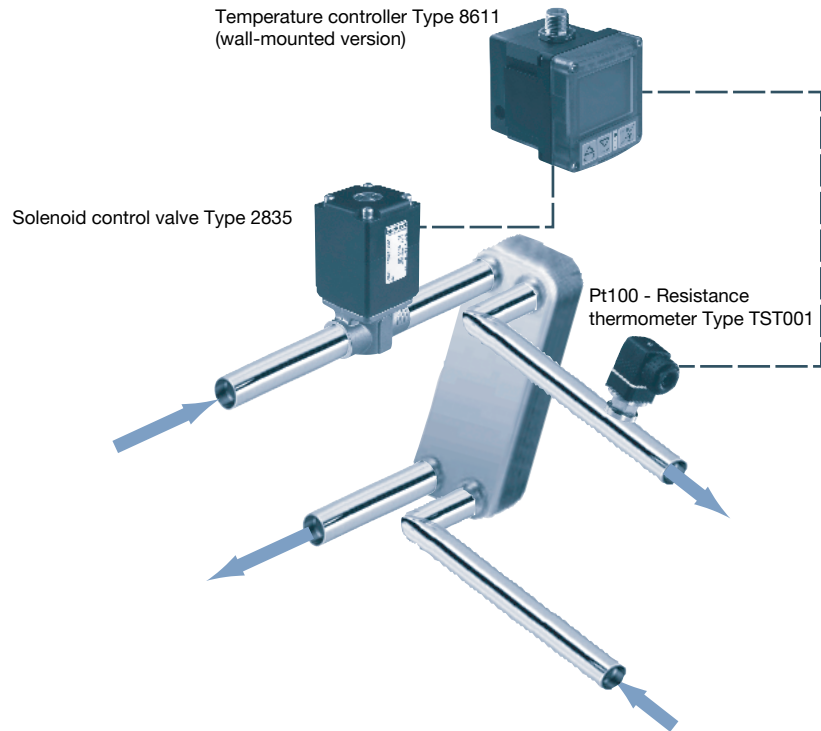
- Flow control, Ratio control
- Pressure control
- Temperature control
- Conductivity control
- pH control
- Level control

5.2. Application examples

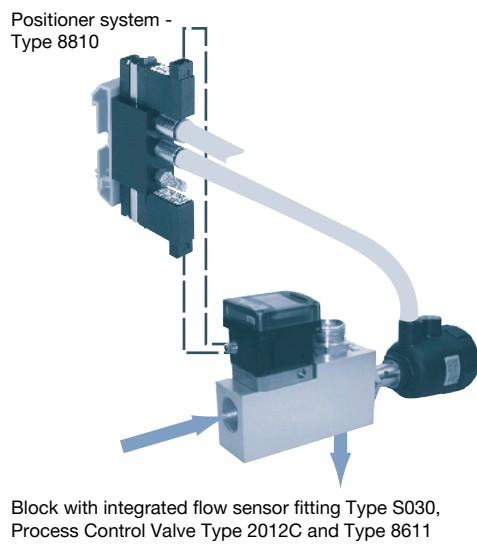
Cascaded temperature control with process control valve



Temperature control with solenoid control valve



Flow control with process control valve



Multi channel solution

With process control valve



With solenoid control valve



6. Ordering information

6.1. Bürkert eShop – Easy ordering and quick delivery



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6.2. Bürkert product filter



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6.3. Ordering chart

A controller Type 8611 consists of:

Fitting-mounting (DN06...DN65)

- An electronic module Typ 8611
- An inline fitting Typ S030 (Refer to corresponding data sheet - has to be ordered separately)

Wall-mounting

- An electronic module Typ 8611
- A wall-mounting adaptor (included)

Rail-mounting




- An electronic module Typ 8611
- A rail-mounted adaptor (included)

Valve-mounting

- An electronic module Typ 8611
- A proportional valve (Refer to corresponding data sheet of the proportional valve - has to be ordered separately)

Panel-mounting

- An electronic module Typ 8611
- 4 mounting brackets and 1 sealing (included)

Mounting disposition	Sensor input		Controller outputs ^{1.)}		Operating voltage	Setpoint setting	Process value output ^{1.)}	Binary In/Out	Article no.
	External								
	–	Flow rate (Fitting S030)	1 x PWM 2 x PTM	4...20 mA 0...10 V	24 V DC	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 1 x Bin Out	177455
	–	Temperature (Pt100)	1 x PWM 2 x PTM	4...20 mA 0...10 V	24 V DC	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 1 x Bin Out	177458
	–	Ratio or Temp. (4...20 mA / 0...10 V)	1 x PWM 2 x PTM	4...20 mA 0...10 V	24 V DC	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 1 x Bin Out	177463
	–	Ratio (frequency-NPN)	1 x PWM 2 x PTM	4...20 mA 0...10 V	24 V DC	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 1 x Bin Out	208048
	–	Flow rate (frequency-NPN)	1 x PWM 2 x PTM	4...20 mA 0...10 V	24 V DC	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 1 x Bin Out	177454
	–	Temperature (Pt100)	1 x PWM 2 x PTM	4...20 mA 0...10 V	24 V DC	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 1 x Bin Out	177457
	–	All sensors with standard signal (4...20 mA / 0...10 V)	1 x PWM 2 x PTM	4...20 mA 0...10 V	24 V DC	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 1 x Bin Out	177462
	–	All sensors with standard signal (4...20 mA / 0...10 V)	4...20 mA 0...10 V	–	24 V DC	4...20 mA 0...10 V	–	1 x Bin In 1 x Bin Out	182383
	–	Flow rate (frequency-NPN)	1 x PWM 2 x PTM	4...20 mA 0...10 V	24 V DC	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 1 x Bin Out	177091
	–	Temperature (Pt100)	1 x PWM 2 x PTM	4...20 mA 0...10 V	24 V DC	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 1 x Bin Out	177456
	–	All sensors with standard signal (4...20 mA / 0...10 V)	1 x PWM 2 x PTM	4...20 mA 0...10 V	24 V DC	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 1 x Bin Out	177460

1.) Either PWM/PTM or 4...20 mA/0...10 V selectable as PI-control output. If 4...20 mA/0...10 V selected as PI-output, the process value isn't available.

Mounting disposition	Sensor input	Controller outputs	Setpoint setting	Process value output	Binary In/Out	Article no.
	External					
Proportional valve 	Temperature (Pt100)	1 x PWM	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 1 x Bin Out	204642
	Flow rate (frequency- NPN)	1 x PWM	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 1 x Bin Out	204639
	All sensors with standard signal (4...20 mA / 0...10 V)	1 x PWM	4...20 mA 0...10 V	4...20 mA 0...10 V	1 x Bin In 1 x Bin Out	186289

Mounting disposition	Sensor input	Controller outputs ^{1.)}	Setpoint setting	Process value output	Binary In/Out	Article no.
	External					
Panel 	2 x frequency (NPN/PNP) 1 x 4...20 mA / 0...10 V 1 x Pt100 Ratio control	1 x PWM 2 x PTM 1 x 4...20 mA/0...10 V	4...20 mA 0...10 V	4...20 mA ^{1.)} 0...10 V	1 x Bin In 2 x Bin Out	210206

1.) Either PWM/PTM or 4...20 mA/0...10 V selectable as PI-control output. If 4...20 mA/0...10 V selected as PI-output, the process value isn't available.

6.4. Ordering chart accessories

Note:

Accessories have to be ordered separately.







Description	Article no.
Positioning system 8810 for pneumatic actuators with rail-mount adaptor	204458
4 pin M8 female right angle connector with self-locking threaded joint and 2 m moulded cable (valve output)	918718
4 pin M8 female right angle connector with self-locking threaded joint and 5 m moulded cable (valve output)	919412
3 pin M8 female right angle connector with self-locking threaded joint and 2 m moulded cable (sensor input)	918717
3 pin M8 female right angle connector with self-locking threaded joint and 5 m moulded cable (sensor input)	919410
4 pin M8 female connector, straight with snap-on connection and 2 m moulded cable (valve output)	919060
3 pin M8 female connector, straight with snap-on connection and 2 m moulded cable (sensor input)	918039
8 pin M12 female connector, straight with screw connection and 2 m moulded cable (PUR) (Power supply)	919061
8 pin M12 female connector, straight with screw connection, to assemble (Power supply)	918998
2 pin female connector, straight with 3 m cable (for connection to Positioning system 8810)	133486
2 pin female connector, straight with 5 m cable (for connection to Positioning system 8810)	167494
2 pin female connector, straight with 0.3 m wire (for connection to Positioning system 8810)	644068
2 pin female connector, straight with 0.6 m wire (for connection to Positioning system 8810)	162144

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6.5. Ordering chart spare parts

Note:

Spare parts have to be ordered separately.

Description		Article no.
	Wall-mounting adaptor	427098 
	Rail-mounting adaptor	655980 
	Mounting brackets (set of 4 pieces)	560225 

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