eCONTROL – Universal controller

- Continuous, 2-point, 3-point, and on/off control
- Proportional regulation
- Sensor inputs (4 - 20 mA, 0 - 10 V, frequency, Pt100)
- Control of proportional, process, and motor valves
- Stored Bürkert proportional valves and flowmeters

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

Can be combined with

Type 2301
Pneumatically operated 2-way Globe Control Valve

Type 8012
Flowmeter with paddle wheel for continuous flow measurement

Type 6223
Servo-assisted 2-way high-flow solenoid control valve

Type 8222
Conductivity meter, ELEMENT design

Type 3280
Electromotive 2-way globe proportional valve

Type 3285
Electromotive 2-way globe proportional valve

Type description

Universal controller Type 8611 is ideally suited for the construction of compact control systems thanks to its compactness. It is compatible and has been tested with all Bürkert proportional valves and sensors, and can be used in combination with all non-Bürkert control valves with a standard signal (4 - 20 mA/0 - 10 V/PWM output). The process controller with PI behaviour comes with a variety of auxiliary functions. The process actual value can be connected to one of the three analog inputs of the universal controller as a standard signal (4–20 mA / 0–10 V), a frequency signal, or as a signal from a Pt100 resistance temperature sensor. The process setpoint can be specified via a current or voltage standard signal or via the keyboard. Specifically for temperature control tasks, there is the option to create a cascade structure with underlying flow control. A wide range of control tasks in fluid technology can be implemented for both liquid and gaseous media by enabling the control of proportional valves and process valves.

DTS 1000089169 EN Version: Z Status: RL (released | freigegeben | validé) printed: 18.12.2024

Table of contents

DTS 1000089169 EN Version: Z Status: RL (released | freigegeben | validé) printed: 18.12.2024

1. General technical data

Product properties	
Dimensions	Further information can be found in chapter "3. Dimensions" on page 5.
Material	
Housing, cover	PC (polycarbonate), + 20 % glass fibre
Front panel foil	Polyester
Screw	Stainless steel
Multi-pin plug	CuZn, nickel-plated
Wall-mounting holder	PVC
Display	Dual-line 8-digit LCD with backlight
Electrical data	
Operating voltage	24 V DC ± 10 %, filtered and regulated
Power consumption	Approximately 2 W (without valve, without sensor input)
Voltage supply cable	0.5 mm² maximum cross section, maximum 100 m, shielded
Electrical connection	Multi-pin plug: 8-pin M12 plug, 4-pin M8 plug, 3-pin M8 terminal block Insert for direct mounting with electrical connection in accordance with DIN EN 175301 - 803
Controller mode	PI control, 2-point and 3-point, cascaded up to 2 binary outputs with windows and hysteresis mode
Input data	
Set-point value	**Sourcing mode**
Standard 4...20 mA	Maximum input impedance: 70 Ω Resolution: 5.5 µA
Standard 0...10 V	Maximum input impedance: 11.5 kΩ Resolution: 2.5 mV
Sensor	**Sourcing mode**
Standard 4...20 mA	Maximum input impedance: 70 Ω Resolution: 5.5 µA
Standard 0...10 V	Maximum input impedance: 11.5 kΩ Resolution: 2.5 mV
Frequency	
Input 1	External sensor Minimum 0.25 Hz / maximum 1 kHz Input impedance: > 1 kΩ Signal type: sinus, square, triangle pulse (> 3000 mVpp, maximum 30 Vpp)
Input 2	Internal Hall sensor Minimum 0.25 Hz / maximum 1 kHz (only with Bürkert Type S030 flow fitting)
Pt100 (2 wires)	Measuring range: 0...+ 200 °C Measuring current: 1 mA Measuring error: < 0.5 °C
Binary input	Input impedance: 10 kΩ Operating threshold: 3...30 V Maximum frequency: 1 kHz
Output data	
Power supply sensor / actuator	24 V DC, maximum 1 A
Total load of all outputs	Maximum 1.5 A
Continuous signal	
Standard signal 4...20 mA	Maximum loop resistance: 680 Ω Accuracy: 0.5 %
Standard signal 0...10 V	Maximum current: 20 mA Accuracy: 0.5 %
Discontinuous signal	
2 transistor outputs for PWM [1)] or PTM [1)] signal	Control frequency 20 Hz...9999 Hz Resolution maximum: 16 bit (depending on frequency) Maximum current load: 1.5 A Switching voltage: 24 V DC
Binary output	
Transistor output (PNP) (configurable)	Maximum current load: 1.5 A Switching voltage: 24 V DC

Approvals and conformities	
Further information can be found in chapter "2. Approvals and conformities" on page 4.	
Environment and installation	
Ambient temperature	0...+ 70 °C (operating and storage)
Degree of protection	IP65
Height above sea level	Maximum 2000 m
Relative humidity (environment)	≤ 80 %, without condensation

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

2. Approvals and conformities

2.1. General notes

- The approvals and conformities listed below must be stated when making enquiries. This is the only way to ensure that the product complies with all required specifications.
- Not all available versions can be supplied with the below mentioned approvals or conformities.

2.2. Conformity

In accordance with the Declaration of Conformity, the product is compliant with the EU Directives.

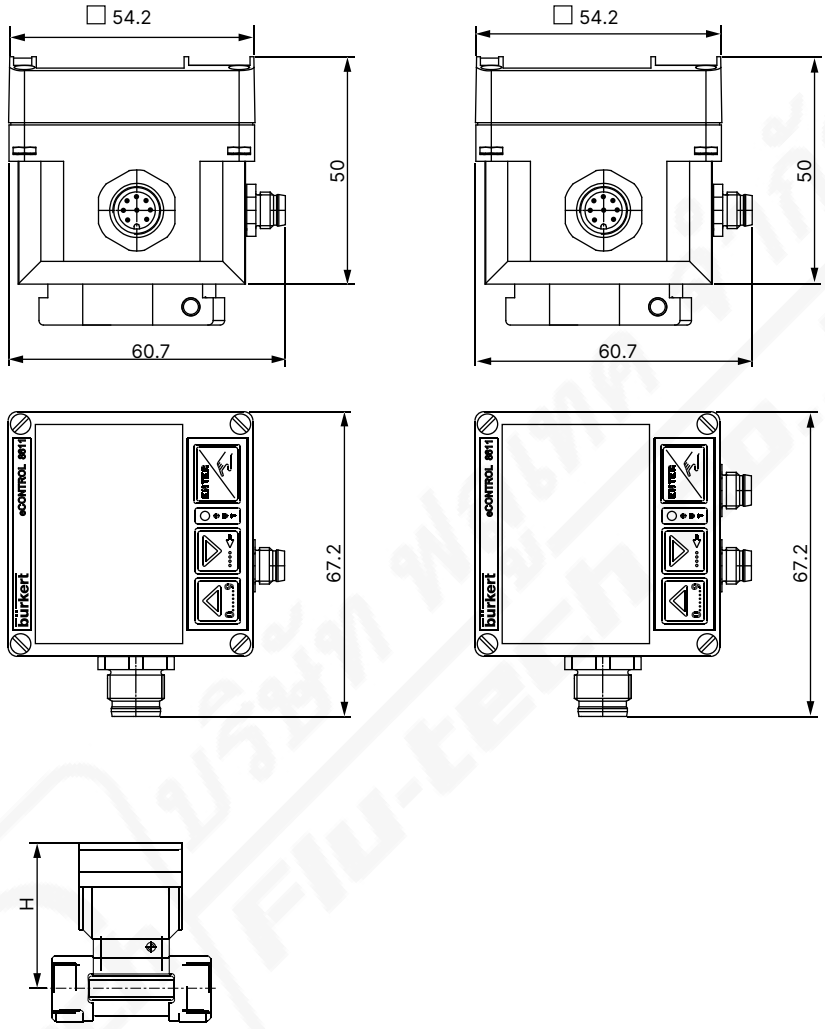
2.3. Standards

The applied standards which are used to demonstrate compliance with the EU Directives are listed in the EU-Type Examination Certificate and/or the EU Declaration of Conformity.

DTS 1000089169 EN Version: Z Status: RL (released | freigegeben | validé) printed: 18.12.2024

3. Dimensions

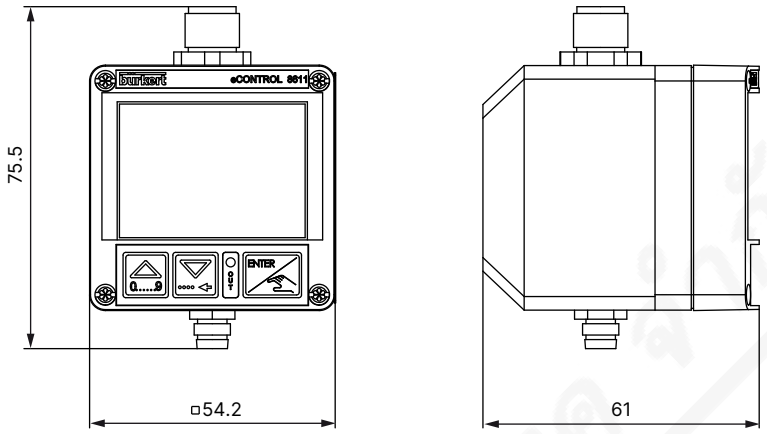
3.1. Fitting-mounting



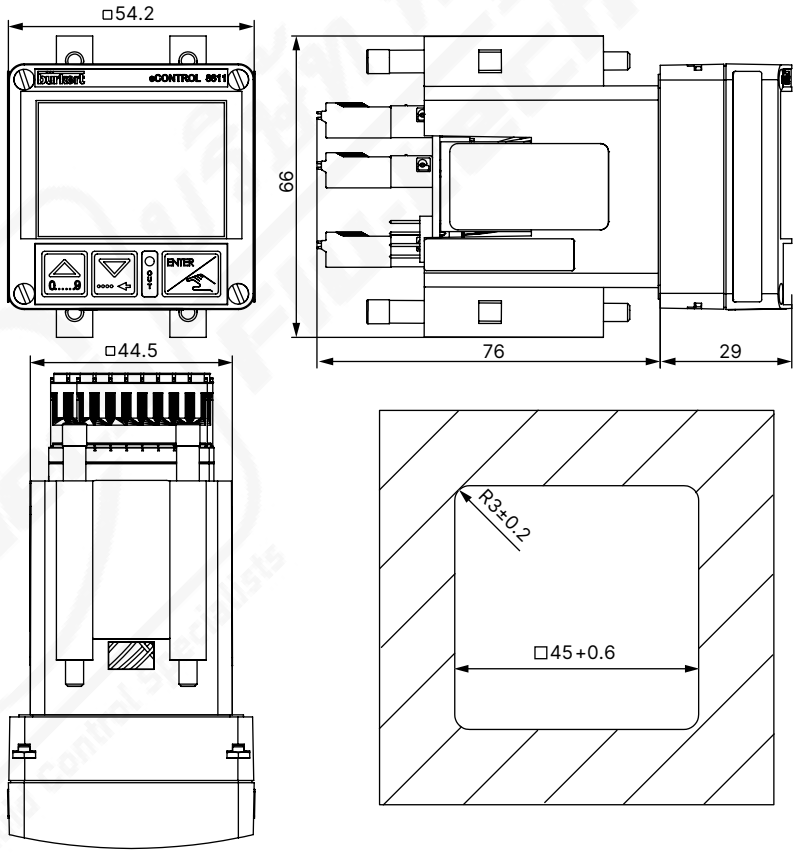
DN	H
[mm]	[mm]
06	79.5
08	79.5
15	84.5
20	82.0
25	82.2
32	85.8
40	89.6
50	95.7
65	98.7

DTS 1000089169 EN Version: Z Status: RL (released | freigegeben | validé) printed: 18.12.2024

3.2. Valve-mounting

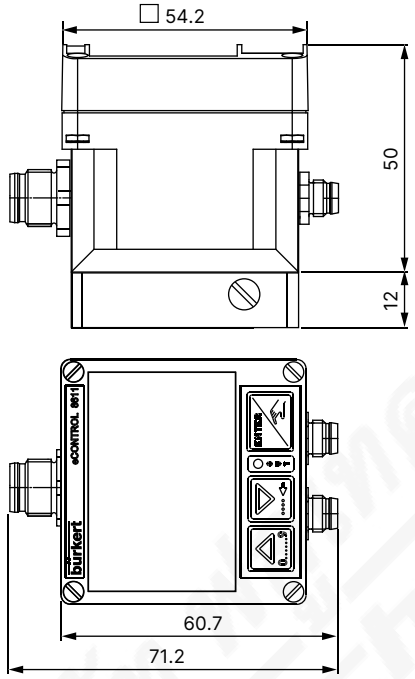


3.3. Control cabinet-mounting

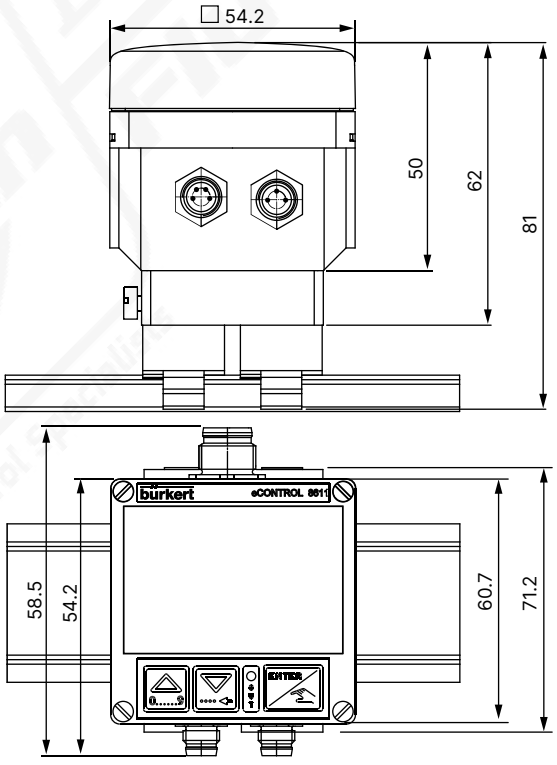


DTS 1000089169 EN Version: Z Status: RL (released | freigegeben | validé) printed: 18.12.2024

3.4. Wall-mounting



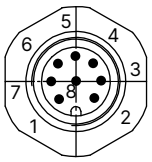
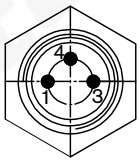
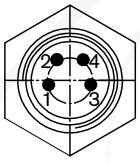
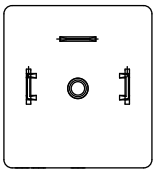
3.5. Standard rail-mounting

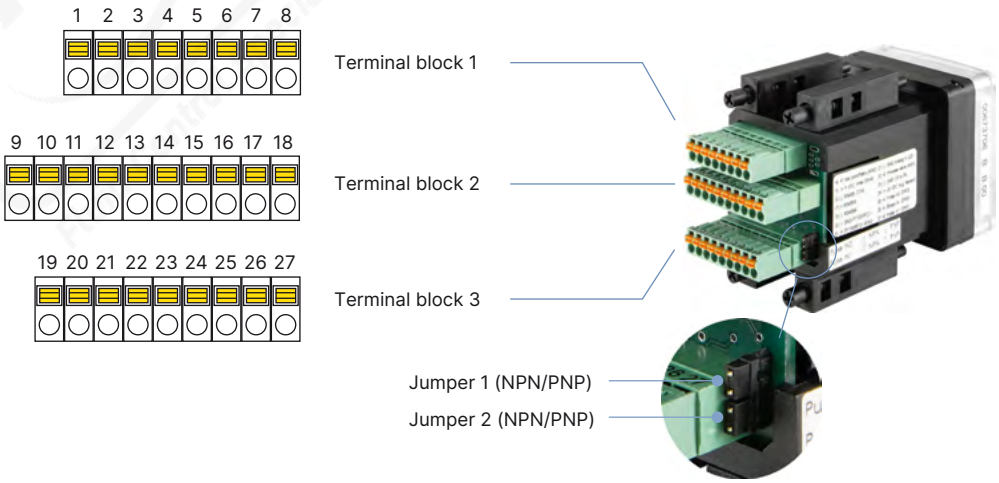


4. Device/Process connections

4.1. Connection feasibility and controller variants

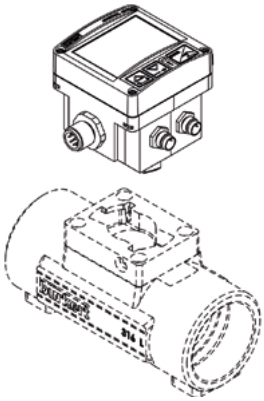
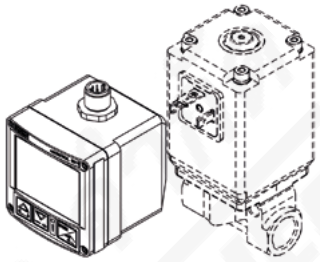
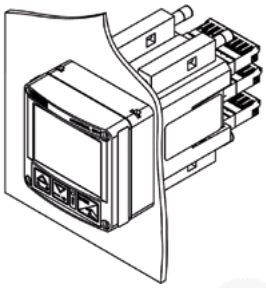
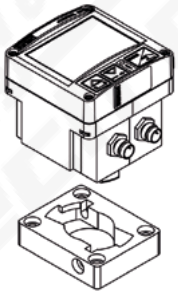
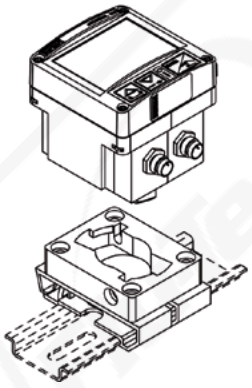
Assembly	Flow sensor fitting mounting		Wall and standard rail-mounting	Valve mounting
Sensor	Integrated Hall sensor, without external sensor input	Integrated Hall sensor, with external sensor input	Without Hall sensor, with external sensor input	Without Hall sensor, with external sensor input
Control	• Flow control	• Temperature control with flow display • Temperature control with flow input for cascade control • Ratio control	• Temperature control • Pressure control • Flow control	• Temperature control • Pressure control • Flow control
	8-pin M12  4-pin M8	8-pin M12  4-pin M8 3-pin M8	8-pin M12  4-pin M8 3-pin M8	8-pin M12  3-pin M8

8-pin M12 plug		3-pin M8 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		• Sensor input • 4...20 mA / 0...10 V, frequency or Pt100 • Sensor power supply 24 V DC
4-pin M8 plug		**DIN 175301 - 803**	
	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)		PWM output for solenoid control valve



5. Product installation

5.1. Mounting options

Mounting on flow fitting	Mounting on proportional valve
 eCONTROL Type 8611	 eCONTROL Type 8611
Mounting in a control cabinet	**Mounting on a wall**
 eCONTROL Type 8611	 eCONTROL Type 8611 Adaptor for wall-mounting
Mounting on standard rail	
 eCONTROL Type 8611 Adaptor for rail-mounting	

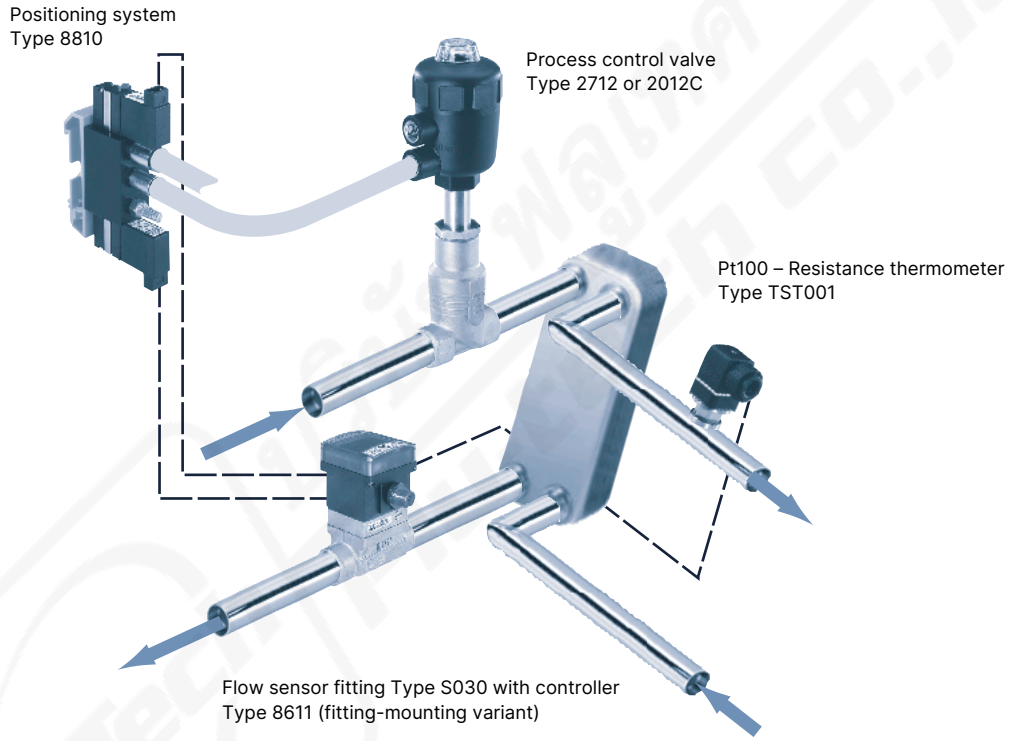
6. Product design and assembly

6.1. Fields of application

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

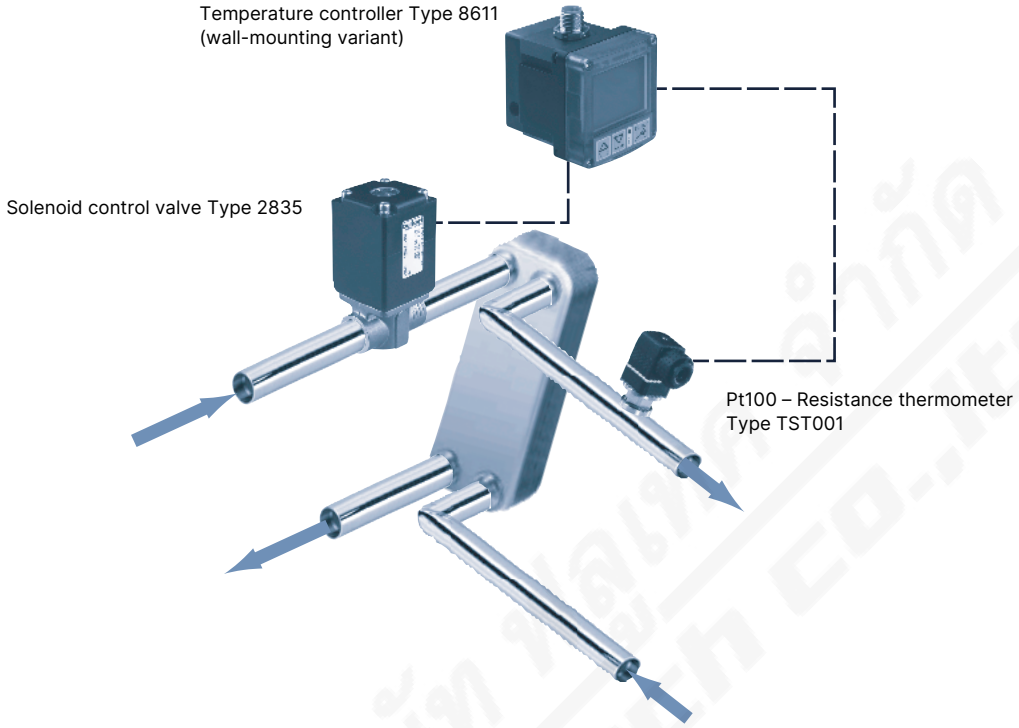
6.2. Application examples

Cascaded temperature control with process control valve

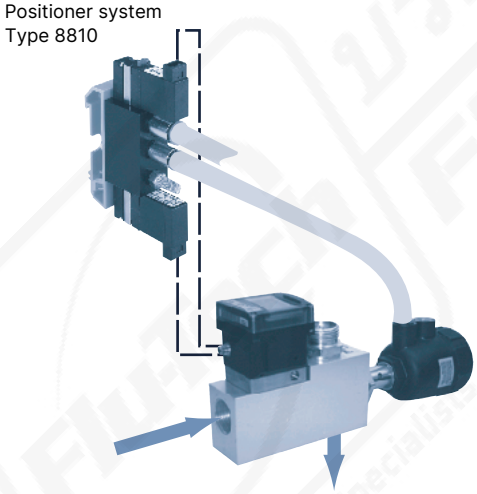


DTS 1000089169 EN Version: Z Status: RL (released | freigegeben | validé) printed: 18.12.2024

Temperature control with solenoid control valve



Flow control with process control valve



Block with integrated flow sensor fitting Type S030, process control valve Type 2012C and controller Type 8611

Multi channel solution

With process control valve

With solenoid control valve

7. Ordering information

7.1. Bürkert eShop

Bürkert eShop – Easy ordering and quick delivery

You want to find your desired Bürkert product or spare part quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

Order online now

7.2. Bürkert product filter

Bürkert product filter – Get quickly to the right product

You want to select products comfortably based on your technical requirements?
Use the Bürkert product filter and find suitable articles for your application quickly and easily.

Try out our product filter

DTS 1000089169 EN Version: Z Status: RL (released | freigegeben | validé) printed: 18.12.2024

7.3. Ordering chart

A controller Type 8611 consists of:

Fitting-mounting (DN 06...DN 65)
- An electronic module Type 8611
- An inline fitting Typ S030, DN 06...DN 65 (see **data sheet Type S030** ▶, has to be ordered separately)

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

Standard mounting
- An electronic module Type 8611
- A rail-mounted adaptor (included)

Valve-mounting
- An electronic module Type 8611
- A proportional valve (see data sheets of the proportional valve, has to be ordered separately)

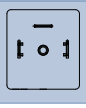
Control cabinet-mounting
- An electronic module Type 8611
- 4 mounting brackets and 1 sealing (included)

DTS 1000089169 EN Version: Z Status: RL (released | freigegeben | validé) printed: 18.12.2024

Mounting disposition	Sensor input		Controller outputs [1]		Operating voltage	Setpoint setting	Process value output [1]	Binary In/Out	Article no.
	External								
Fitting 	–	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)	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	177458
	Ratio or temp. (4...20 mA / 0...10 V)	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	177463
	Ratio (frequency NPN)	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	208048
			4...20 mA 0...10 V	–	24 V DC	4...20 mA 0...10 V	–	1 x Bin In 1 x Bin Out	567181
Wall 	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
Rail 	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 is not available.

DTS 1000089169 EN Version: Z Status: RL (released | freigegeben | validé) printed: 18.12.2024

Mounting disposition	Sensor input External	Controller outputs	Set-point value setting default	Process value output	Binary In/Out	Article no.
						
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

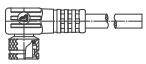
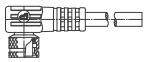
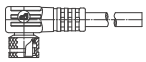
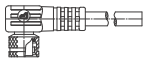
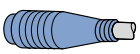
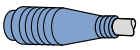
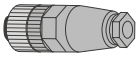
Mounting disposition	Sensor input External	Controller outputs [1.)]	Setpoint setting	Process value output	Binary In/Out	Article no.
Control cabinet 	2 x frequency (NPN/PNP) 1 × 4...20 mA / 0...10 V 1 x Pt100 ratio control	1 x PWM 2 x PTM 1 × 4...20 mA/0...10 V	4...20 mA 0...10 V	4...20 mA [1.)] 0...10 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 is not available.

DTS 1000089169 EN Version: Z Status: RL (released | freigegeben | validé) printed: 18.12.2024

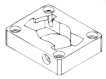
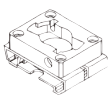
7.4. Ordering chart accessories

Note:
Must be ordered separately.

Description		Article no.
	Positioning system Type 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 Type 8810)	133486
	2-pin female connector,straight with 5 m cable (for connection to positioning system Type 8810)	167494
	2-pin female connector, straight with 0.3 m wire (for connection to positioning system Type 8810)	644068
	2-pin female connector, straight with 0.6 m wire (for connection to positioning system Type 8810)	162144

7.5. Ordering chart spare parts

Note:
Must be ordered separately.

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

DTS 1000089169 EN Version: Z Status: RL (released | freigegeben | validé) printed: 18.12.2024